sky130_fd_sc_hs_tt_1.20v_25C.ccs Library

Cell Groups
SKY130_FD_SC_HS__A2111OIx
SKY130_FD_SC_HS__A2111Ox
SKY130_FD_SC_HS__A211OIx
SKY130_FD_SC_HS__A211Ox
SKY130_FD_SC_HS__A21BOIx
SKY130_FD_SC_HS__A21BOx
SKY130_FD_SC_HS__A21OIx
SKY130_FD_SC_HS__A21Ox
SKY130_FD_SC_HS__A221OIx
SKY130_FD_SC_HS__A221Ox
SKY130_FD_SC_HS__A222OIx
SKY130_FD_SC_HS__A222Ox
SKY130_FD_SC_HS__A22OIx
SKY130_FD_SC_HS__A22Ox
SKY130_FD_SC_HS__A2BB2OIx
SKY130_FD_SC_HS__A2BB2Ox
SKY130_FD_SC_HS__A311OIx
SKY130_FD_SC_HS__A311Ox
SKY130_FD_SC_HS__A31OIx
SKY130_FD_SC_HS__A31Ox
SKY130_FD_SC_HS__A32OIx
SKY130_FD_SC_HS__A32Ox
SKY130_FD_SC_HS__A41OIx

SKY130_FD_SC_HS__A41Ox
SKY130_FD_SC_HS__AND2Bx
SKY130_FD_SC_HS__AND2x
SKY130_FD_SC_HS__AND3Bx
SKY130_FD_SC_HS__AND3x
SKY130_FD_SC_HS__AND4BBx
SKY130_FD_SC_HS__AND4Bx
SKY130_FD_SC_HS__AND4x
SKY130_FD_SC_HS__BUFx
SKY130_FD_SC_HS__CLKBUFx
SKY130_FD_SC_HS__CLKDLYINVx
SKY130_FD_SC_HS__CLKINVx
SKY130_FD_SC_HS__CONB
SKY130_FD_SC_HS__DELAYx
SKY130_FD_SC_HS__DFBBNx
SKY130_FD_SC_HS__DFBBP
SKY130_FD_SC_HS__DFRBPx
SKY130_FD_SC_HS__DFRTN
SKY130_FD_SC_HS__DFRTPx
SKY130_FD_SC_HS__DFSBPx
SKY130_FD_SC_HS__DFSTPx
SKY130_FD_SC_HS__DFXBPx
SKY130_FD_SC_HS__DFXTPx
SKY130_FD_SC_HS__DIODE_2
SKY130_FD_SC_HS__DLCLKPx
SKY130_FD_SC_HS__DLRBNx

SKY130_FD_SC_HS__DLRBPx
SKY130_FD_SC_HS__DLRTNx
SKY130_FD_SC_HS__DLRTPx
SKY130_FD_SC_HS__DLXBNx
SKY130_FD_SC_HS__DLXBP
SKY130_FD_SC_HS__DLXTNx
SKY130_FD_SC_HS__DLXTP
SKY130_FD_SC_HS__DLYGATE4SDx
SKY130_FD_SC_HS__EBUFNx
SKY130_FD_SC_HS__EDFXBP
SKY130_FD_SC_HS__EDFXTP
SKY130_FD_SC_HS__EINVNx
SKY130_FD_SC_HS__EINVPx
SKY130_FD_SC_HS__FAHCIN
SKY130_FD_SC_HS__FAHCON
SKY130_FD_SC_HS__FAHx
SKY130_FD_SC_HS__FAx
SKY130_FD_SC_HS__HAx
SKY130_FD_SC_HS__INVx
SKY130_FD_SC_HS__MAJ3x
SKY130_FD_SC_HS__MUX2Ix
SKY130_FD_SC_HS__MUX2x
SKY130_FD_SC_HS__MUX4x
SKY130_FD_SC_HS__NAND2Bx
SKY130_FD_SC_HS__NAND2x
SKY130_FD_SC_HS__NAND3Bx

SKY130_FD_SC_HS__NAND3x
SKY130_FD_SC_HS__NAND4BBx
SKY130_FD_SC_HS__NAND4Bx
SKY130_FD_SC_HS__NAND4x
SKY130_FD_SC_HS__NOR2Bx
SKY130_FD_SC_HS__NOR2x
SKY130_FD_SC_HS__NOR3Bx
SKY130_FD_SC_HS__NOR3x
SKY130_FD_SC_HS__NOR4BBx
SKY130_FD_SC_HS__NOR4Bx
SKY130_FD_SC_HS__NOR4x
SKY130_FD_SC_HS__O2111AIx
SKY130_FD_SC_HS__O2111Ax
SKY130_FD_SC_HS__O211AIx
SKY130_FD_SC_HS__O211Ax
SKY130_FD_SC_HS__O21AIx
SKY130_FD_SC_HS__O21Ax
SKY130_FD_SC_HS__O21BAIx
SKY130_FD_SC_HS__O21BAx
SKY130_FD_SC_HS__O221AIx
SKY130_FD_SC_HS__O221Ax
SKY130_FD_SC_HS__O22AIx
SKY130_FD_SC_HS__O22Ax
SKY130_FD_SC_HS__O2BB2AIx
SKY130_FD_SC_HS__O2BB2Ax
SKY130_FD_SC_HS__O311AIx

SKY130_FD_SC_HS__O311Ax
SKY130_FD_SC_HS__O31AIx
SKY130_FD_SC_HS__O31Ax
SKY130_FD_SC_HS__O32AIx
SKY130_FD_SC_HS__O32Ax
SKY130_FD_SC_HS__O41AIx
SKY130_FD_SC_HS__O41Ax
SKY130_FD_SC_HS__OR2Bx
SKY130_FD_SC_HS__OR2x
SKY130_FD_SC_HS__OR3Bx
SKY130_FD_SC_HS__OR3x
SKY130_FD_SC_HS__OR4BBx
SKY130_FD_SC_HS__OR4Bx
SKY130_FD_SC_HS__OR4x
SKY130_FD_SC_HS__SDFBBNx
SKY130_FD_SC_HS__SDFBBP
SKY130_FD_SC_HS__SDFRBPx
SKY130_FD_SC_HS__SDFRTN
SKY130_FD_SC_HS__SDFRTPx
SKY130_FD_SC_HS__SDFSBPx
SKY130_FD_SC_HS__SDFSTPx
SKY130_FD_SC_HS__SDFXBPx
SKY130_FD_SC_HS__SDFXTPx
SKY130_FD_SC_HS__SDLCLKPx
SKY130_FD_SC_HS__SEDFXBPx
SKY130_FD_SC_HS__SEDFXTPx

SKY130_FD_SC_HS__XNOR2x
SKY130_FD_SC_HS__XNOR3x
SKY130_FD_SC_HS__XOR2x
SKY130_FD_SC_HS__XOR3x

SKY130_FD_SC_HS__A2111OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	C1	D1	Y
0	x	0	0	0	1
0	x	0	x	1	0
0	x	x	1	x	0
x	x	1	x	x	0
1	0	0	0	0	1
1	0	0	x	1	0
1	0	x	1	x	0
1	1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111oi_1	11.18880
sky130_fd_sc_hs__a2111oi_2	19.18080
sky130_fd_sc_hs__a2111oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__a2111oi_1	0.00258	0.00245	0.00259	0.00272	0.00271	0.08689
sky130_fd_sc_hs__a2111oi_2	0.00489	0.00467	0.00394	0.00396	0.00397	0.16602
sky130_fd_sc_hs__a2111oi_4	0.00969	0.00936	0.00770	0.00756	0.00775	0.31828

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111oi_1	0.00000	0.00351	0.01104
sky130_fd_sc_hs__a2111oi_2	0.00000	0.00624	0.02167
sky130_fd_sc_hs__a2111oi_4	0.00000	0.01247	0.04335

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (FR)	0.67319	2.39426	12.44020
	A2->Y (FR)	0.78814	2.53723	12.66060
	B1->Y (FR)	0.74223	2.44711	12.74750
	C1->Y (FR)	0.65636	2.34761	12.85180
	D1->Y (FR)	0.51859	2.14884	12.14450
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.59796	2.08530	12.46490
	A2->Y (FR)	0.73806	2.23989	12.66820
	B1->Y (FR)	0.66504	2.13637	12.74030
	C1->Y (FR)	0.57257	2.02928	12.86870
	D1->Y (FR)	0.37837	1.77741	12.10780
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.55841	1.83049	12.34850
	A2->Y (FR)	0.70447	1.99395	12.60690
	B1->Y (FR)	0.63312	1.89536	12.69840
	C1->Y (FR)	0.53192	1.77959	12.83320
	D1->Y (FR)	0.34825	1.53333	12.10050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.05734	0.57876	3.96194
	A2->Y (RF)	0.06385	0.56477	3.90517
	B1->Y (RF)	0.04199	0.49249	3.49567
	C1->Y (RF)	0.04298	0.48412	3.47581
	D1->Y (RF)	0.04005	0.47334	3.45205
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.04861	0.54014	4.01432
	A2->Y (RF)	0.05840	0.53247	3.93929
	B1->Y (RF)	0.05406	0.58284	4.45893
	C1->Y (RF)	0.05396	0.56837	4.42838
	D1->Y (RF)	0.04647	0.54668	4.39176
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.04791	0.51112	4.06676
	A2->Y (RF)	0.05682	0.49504	3.89250
	B1->Y (RF)	0.04842	0.53172	4.35906
	C1->Y (RF)	0.04905	0.51629	4.32806
	D1->Y (RF)	0.04234	0.49650	4.32785

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00033	0.00024	0.00021
	A1	0.00378	0.00368	0.00368
	A2	0.00052	0.00047	0.00044
	A2	0.00441	0.00436	0.00434
	B1	0.00059	0.00051	0.00049
	B1	0.00399	0.00392	0.00389
	C1	0.00059	0.00050	0.00047
	C1	0.00365	0.00357	0.00354
	D1	0.00056	0.00046	0.00049
	D1	0.00331	0.00321	0.00324
sky130_fd_sc_hs__a2111oi_2	A1	0.00025	0.00009	0.00007
	A1	0.00670	0.00655	0.00655
	A2	0.00095	0.00081	0.00077
	A2	0.00824	0.00810	0.00807
	B1	0.00136	0.00127	0.00124
	B1	0.00721	0.00712	0.00709
	C1	0.00141	0.00131	0.00129
	C1	0.00647	0.00638	0.00634
	D1	0.00137	0.00124	0.00128
	D1	0.00568	0.00556	0.00558

sky130_fd_sc_hs__a2111oi_4	**A1**	0.00007	-0.00023	-0.00026
	A1	0.01302	0.01273	0.01274
	A2	0.00136	0.00110	0.00103
	A2	0.01602	0.01572	0.01569
	B1	0.00225	0.00209	0.00204
	B1	0.01395	0.01377	0.01372
	C1	0.00229	0.00213	0.00209
	C1	0.01239	0.01222	0.01218
	D1	0.00221	0.00196	0.00207
	D1	0.01080	0.01047	0.01065

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.00471	0.00462	0.00448
	A1	0.00143	0.00133	0.00123
	A2	0.00518	0.00509	0.00493
	A2	0.00142	0.00133	0.00122
	B1	0.00419	0.00414	0.00405
	B1	0.00083	0.00076	0.00069
	C1	0.00352	0.00349	0.00342
	C1	0.00045	0.00040	0.00035
	D1	0.00281	0.00280	0.00277
	D1	0.00003	-0.00000	-0.00003

sky130_fd_sc_hs__a2111oi_2	**A1**	0.00866	0.00844	0.00816
	A1	0.00258	0.00236	0.00215
	A2	0.00955	0.00937	0.00904
	A2	0.00255	0.00236	0.00212
	B1	0.00719	0.00706	0.00687
	B1	0.00143	0.00128	0.00113
	C1	0.00570	0.00560	0.00548
	C1	0.00063	0.00052	0.00040
	D1	0.00389	0.00387	0.00384
	D1	-0.00050	-0.00054	-0.00056
sky130_fd_sc_hs__a2111oi_4	**A1**	0.01695	0.01651	0.01600
	A1	0.00475	0.00430	0.00392
	A2	0.01877	0.01842	0.01780
	A2	0.00471	0.00432	0.00388
	B1	0.01409	0.01378	0.01343
	B1	0.00254	0.00223	0.00196
	C1	0.01111	0.01087	0.01068
	C1	0.00097	0.00071	0.00057
	D1	0.00772	0.00762	0.00765
	D1	-0.00105	-0.00119	-0.00114

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A2 * B1 * D1 * !Y)**	0.00068	0.00068	0.00068
	(A2 * B1 * D1 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * B1 * C1 * !D1 * !Y)	0.00068	0.00068	0.00068
	(A2 * B1 * C1 * !D1 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * B1 * !C1 * !D1 * !Y)	0.00068	0.00068	0.00068
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * !B1 * C1 * D1 * !Y)	0.00067	0.00068	0.00068
	(A2 * !B1 * C1 * D1 * !Y)	-0.00073	-0.00077	-0.00077
	(A2 * !B1 * C1 * !D1 * !Y)	0.00067	0.00068	0.00068
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00073	-0.00077	-0.00077
	(A2 * !B1 * !C1 * D1 * !Y)	0.00068	0.00068	0.00068
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00073	-0.00076	-0.00075
	(!A2 * B1 * D1 * !Y)	0.00063	0.00064	0.00063
	(!A2 * B1 * D1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A2 * B1 * C1 * !D1 * !Y)	0.00063	0.00064	0.00063
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00063	0.00063	0.00063
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * C1 * D1 * !Y)	0.00063	0.00064	0.00063
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00063	0.00063	0.00063
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00063	0.00063	0.00063
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00026	0.00026	0.00025
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00095	-0.00095	-0.00097

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00135	0.00136	0.00135
	(A2 * B1 * D1 * !Y)	-0.00155	-0.00160	-0.00159
	(A2 * B1 * C1 * !D1 * !Y)	0.00135	0.00136	0.00135
	(A2 * B1 * C1 * !D1 * !Y)	-0.00155	-0.00160	-0.00159
	(A2 * B1 * !C1 * !D1 * !Y)	0.00135	0.00136	0.00135
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00155	-0.00161	-0.00159
	(A2 * !B1 * C1 * D1 * !Y)	0.00135	0.00136	0.00135
	(A2 * !B1 * C1 * D1 * !Y)	-0.00146	-0.00154	-0.00152
	(A2 * !B1 * C1 * !D1 * !Y)	0.00135	0.00136	0.00135
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00146	-0.00152	-0.00152
	(A2 * !B1 * !C1 * D1 * !Y)	0.00135	0.00136	0.00135
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00144	-0.00150	-0.00150
	(!A2 * B1 * D1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * B1 * D1 * !Y)	-0.00165	-0.00165	-0.00165
	(!A2 * B1 * C1 * !D1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00165	-0.00165	-0.00165
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00164	-0.00165	-0.00165
	(!A2 * !B1 * C1 * D1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00164	-0.00166	-0.00165
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00164	-0.00165	-0.00165
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00126	0.00126	0.00126
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00164	-0.00165	-0.00165
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00054	0.00054	0.00050
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00189	-0.00189	-0.00195

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00271	0.00274	0.00271
	(A2 * B1 * D1 * !Y)	-0.00309	-0.00321	-0.00319
	(A2 * B1 * C1 * !D1 * !Y)	0.00271	0.00274	0.00271
	(A2 * B1 * C1 * !D1 * !Y)	-0.00309	-0.00322	-0.00319
	(A2 * B1 * !C1 * !D1 * !Y)	0.00271	0.00274	0.00271
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00309	-0.00321	-0.00319
	(A2 * !B1 * C1 * D1 * !Y)	0.00271	0.00274	0.00271
	(A2 * !B1 * C1 * D1 * !Y)	-0.00293	-0.00309	-0.00305
	(A2 * !B1 * C1 * !D1 * !Y)	0.00271	0.00274	0.00271
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00293	-0.00306	-0.00305
	(A2 * !B1 * !C1 * D1 * !Y)	0.00272	0.00274	0.00272
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00289	-0.00301	-0.00300
	(!A2 * B1 * D1 * !Y)	0.00253	0.00253	0.00253
	(!A2 * B1 * D1 * !Y)	-0.00331	-0.00331	-0.00331
	(!A2 * B1 * C1 * !D1 * !Y)	0.00252	0.00253	0.00253
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00331	-0.00331	-0.00331
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00252	0.00254	0.00253
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00330	-0.00332	-0.00331
	(!A2 * !B1 * C1 * D1 * !Y)	0.00252	0.00254	0.00253
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00330	-0.00331	-0.00331
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00252	0.00254	0.00253
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00330	-0.00332	-0.00331
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00252	0.00254	0.00253
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00330	-0.00332	-0.00331
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00104	0.00103	0.00097
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00383	-0.00383	-0.00394

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A2 * B1 * D1 * !Y)**	-0.00068	-0.00068	-0.00068
	(A2 * B1 * D1 * !Y)	0.00080	0.00080	0.00080
	(A2 * B1 * C1 * !D1 * !Y)	-0.00068	-0.00068	-0.00068
	(A2 * B1 * C1 * !D1 * !Y)	0.00081	0.00080	0.00080
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00068	-0.00068	-0.00068
	(A2 * B1 * !C1 * !D1 * !Y)	0.00080	0.00080	0.00080
	(A2 * !B1 * C1 * D1 * !Y)	-0.00067	-0.00068	-0.00068
	(A2 * !B1 * C1 * D1 * !Y)	0.00076	0.00077	0.00077
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00067	-0.00068	-0.00068
	(A2 * !B1 * C1 * !D1 * !Y)	0.00076	0.00077	0.00077
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00067	-0.00068	-0.00068
	(A2 * !B1 * !C1 * D1 * !Y)	0.00075	0.00076	0.00075
	(!A2 * B1 * D1 * !Y)	-0.00061	-0.00064	-0.00063
	(!A2 * B1 * D1 * !Y)	0.00083	0.00083	0.00083
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00061	-0.00064	-0.00063
	(!A2 * B1 * C1 * !D1 * !Y)	0.00083	0.00083	0.00083
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00061	-0.00063	-0.00063
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00083	0.00083	0.00083
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00061	-0.00064	-0.00063
	(!A2 * !B1 * C1 * D1 * !Y)	0.00083	0.00083	0.00083
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00061	-0.00063	-0.00063
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00083	0.00083	0.00083
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00061	-0.00063	-0.00063
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00083	0.00083	0.00083
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00097	0.00099	0.00098

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00135	-0.00135	-0.00135
	(A2 * B1 * D1 * !Y)	0.00159	0.00160	0.00159
	(A2 * B1 * C1 * !D1 * !Y)	-0.00135	-0.00135	-0.00135
	(A2 * B1 * C1 * !D1 * !Y)	0.00159	0.00160	0.00159
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00135	-0.00135	-0.00135
	(A2 * B1 * !C1 * !D1 * !Y)	0.00159	0.00161	0.00159
	(A2 * !B1 * C1 * D1 * !Y)	-0.00135	-0.00136	-0.00135
	(A2 * !B1 * C1 * D1 * !Y)	0.00152	0.00154	0.00152
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00135	-0.00135	-0.00135
	(A2 * !B1 * C1 * !D1 * !Y)	0.00152	0.00152	0.00152
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00135	-0.00135	-0.00135
	(A2 * !B1 * !C1 * D1 * !Y)	0.00149	0.00150	0.00150
	(!A2 * B1 * D1 * !Y)	-0.00122	-0.00127	-0.00126
	(!A2 * B1 * D1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00121	-0.00127	-0.00126
	(!A2 * B1 * C1 * !D1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00121	-0.00127	-0.00126
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00166	0.00167	0.00165
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00121	-0.00127	-0.00126
	(!A2 * !B1 * C1 * D1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00121	-0.00127	-0.00126
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00166	0.00167	0.00165
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00121	-0.00126	-0.00126
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00166	0.00167	0.00165
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00195	0.00198	0.00195

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00271	-0.00272	-0.00271
	(A2 * B1 * D1 * !Y)	0.00318	0.00321	0.00319
	(A2 * B1 * C1 * !D1 * !Y)	-0.00271	-0.00272	-0.00271
	(A2 * B1 * C1 * !D1 * !Y)	0.00318	0.00322	0.00319
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00271	-0.00272	-0.00271
	(A2 * B1 * !C1 * !D1 * !Y)	0.00318	0.00321	0.00319
	(A2 * !B1 * C1 * D1 * !Y)	-0.00271	-0.00273	-0.00271
	(A2 * !B1 * C1 * D1 * !Y)	0.00305	0.00309	0.00305
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00271	-0.00271	-0.00271
	(A2 * !B1 * C1 * !D1 * !Y)	0.00305	0.00306	0.00305
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00271	-0.00272	-0.00271
	(A2 * !B1 * !C1 * D1 * !Y)	0.00300	0.00301	0.00300
	(!A2 * B1 * D1 * !Y)	-0.00243	-0.00253	-0.00253
	(!A2 * B1 * D1 * !Y)	0.00331	0.00334	0.00331
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00243	-0.00253	-0.00253
	(!A2 * B1 * C1 * !D1 * !Y)	0.00331	0.00334	0.00331
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00241	-0.00254	-0.00253
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00330	0.00335	0.00331
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00242	-0.00254	-0.00253
	(!A2 * !B1 * C1 * D1 * !Y)	0.00330	0.00334	0.00331
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00242	-0.00254	-0.00253
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00333	0.00337	0.00331
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00242	-0.00254	-0.00253
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00333	0.00336	0.00331
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00093	-0.00095	-0.00093
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00395	0.00400	0.00395

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * B1 * D1 * !Y)**	0.00072	0.00073	0.00072
	(A1 * B1 * D1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * B1 * C1 * !D1 * !Y)	0.00072	0.00073	0.00072
	(A1 * B1 * C1 * !D1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * B1 * !C1 * !D1 * !Y)	0.00072	0.00073	0.00072
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * !B1 * C1 * D1 * !Y)	0.00072	0.00072	0.00072
	(A1 * !B1 * C1 * D1 * !Y)	-0.00074	-0.00078	-0.00077
	(A1 * !B1 * C1 * !D1 * !Y)	0.00072	0.00072	0.00072
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00074	-0.00078	-0.00077
	(A1 * !B1 * !C1 * D1 * !Y)	0.00072	0.00072	0.00072
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00073	-0.00076	-0.00076
	(!A1 * B1 * !Y)	0.00067	0.00068	0.00067
	(!A1 * B1 * !Y)	-0.00083	-0.00084	-0.00083
	(!A1 * !B1 * C1 * !Y)	0.00068	0.00068	0.00067
	(!A1 * !B1 * C1 * !Y)	-0.00083	-0.00084	-0.00083
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00068	0.00068	0.00067
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00083	-0.00084	-0.00083
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00068	0.00068	0.00067
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00136	0.00137	0.00136
	(A1 * B1 * D1 * !Y)	-0.00154	-0.00160	-0.00159
	(A1 * B1 * C1 * !D1 * !Y)	0.00136	0.00137	0.00136
	(A1 * B1 * C1 * !D1 * !Y)	-0.00154	-0.00160	-0.00159
	(A1 * B1 * !C1 * !D1 * !Y)	0.00136	0.00137	0.00136
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00154	-0.00160	-0.00159
	(A1 * !B1 * C1 * D1 * !Y)	0.00136	0.00137	0.00136
	(A1 * !B1 * C1 * D1 * !Y)	-0.00146	-0.00154	-0.00152
	(A1 * !B1 * C1 * !D1 * !Y)	0.00136	0.00137	0.00136
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00146	-0.00154	-0.00152
	(A1 * !B1 * !C1 * D1 * !Y)	0.00136	0.00137	0.00136
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00144	-0.00151	-0.00150
	(!A1 * B1 * !Y)	0.00128	0.00127	0.00127
	(!A1 * B1 * !Y)	-0.00164	-0.00164	-0.00164
	(!A1 * !B1 * C1 * !Y)	0.00126	0.00127	0.00127
	(!A1 * !B1 * C1 * !Y)	-0.00163	-0.00164	-0.00164
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00128	0.00128	0.00127
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00164	-0.00164	-0.00164
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00128	0.00127	0.00127
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00165	-0.00164	-0.00164

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00273	0.00276	0.00273
	(A1 * B1 * D1 * !Y)	-0.00309	-0.00320	-0.00318
	(A1 * B1 * C1 * !D1 * !Y)	0.00273	0.00276	0.00273
	(A1 * B1 * C1 * !D1 * !Y)	-0.00308	-0.00320	-0.00318
	(A1 * B1 * !C1 * !D1 * !Y)	0.00273	0.00276	0.00273
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00308	-0.00320	-0.00318
	(A1 * !B1 * C1 * D1 * !Y)	0.00273	0.00276	0.00273
	(A1 * !B1 * C1 * D1 * !Y)	-0.00294	-0.00308	-0.00305
	(A1 * !B1 * C1 * !D1 * !Y)	0.00273	0.00276	0.00273
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00294	-0.00308	-0.00305
	(A1 * !B1 * !C1 * D1 * !Y)	0.00274	0.00275	0.00273
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00289	-0.00303	-0.00300
	(!A1 * B1 * !Y)	0.00254	0.00255	0.00254
	(!A1 * B1 * !Y)	-0.00330	-0.00331	-0.00330
	(!A1 * !B1 * C1 * !Y)	0.00253	0.00253	0.00253
	(!A1 * !B1 * C1 * !Y)	-0.00329	-0.00329	-0.00330
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00252	0.00255	0.00253
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00329	-0.00331	-0.00330
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00255	0.00255	0.00254
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00330	-0.00331	-0.00329

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * B1 * D1 * !Y)**	-0.00072	-0.00072	-0.00072
	(A1 * B1 * D1 * !Y)	0.00080	0.00080	0.00080
	(A1 * B1 * C1 * !D1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * C1 * !D1 * !Y)	0.00080	0.00080	0.00080
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * !C1 * !D1 * !Y)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * D1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * !B1 * C1 * D1 * !Y)	0.00077	0.00078	0.00077
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * !B1 * C1 * !D1 * !Y)	0.00077	0.00078	0.00077
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * !B1 * !C1 * D1 * !Y)	0.00076	0.00076	0.00076
	(!A1 * B1 * !Y)	-0.00066	-0.00068	-0.00067
	(!A1 * B1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * !B1 * C1 * !Y)	-0.00066	-0.00068	-0.00067
	(!A1 * !B1 * C1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00066	-0.00068	-0.00067
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00065	-0.00068	-0.00067
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00084	0.00084	0.00084

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00136	-0.00136	-0.00136
	(A1 * B1 * D1 * !Y)	0.00159	0.00160	0.00159
	(A1 * B1 * C1 * !D1 * !Y)	-0.00136	-0.00136	-0.00136
	(A1 * B1 * C1 * !D1 * !Y)	0.00159	0.00160	0.00159
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00136	-0.00136	-0.00136
	(A1 * B1 * !C1 * !D1 * !Y)	0.00159	0.00160	0.00159
	(A1 * !B1 * C1 * D1 * !Y)	-0.00135	-0.00137	-0.00136
	(A1 * !B1 * C1 * D1 * !Y)	0.00151	0.00154	0.00152
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00135	-0.00137	-0.00136
	(A1 * !B1 * C1 * !D1 * !Y)	0.00151	0.00154	0.00152
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00136	-0.00137	-0.00136
	(A1 * !B1 * !C1 * D1 * !Y)	0.00150	0.00151	0.00150
	(!A1 * B1 * !Y)	-0.00123	-0.00127	-0.00127
	(!A1 * B1 * !Y)	0.00164	0.00165	0.00164
	(!A1 * !B1 * C1 * !Y)	-0.00123	-0.00127	-0.00127
	(!A1 * !B1 * C1 * !Y)	0.00164	0.00165	0.00164
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00123	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00164	0.00165	0.00164
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00122	-0.00127	-0.00127
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00166	0.00165	0.00165

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00272	-0.00273	-0.00273
	(A1 * B1 * D1 * !Y)	0.00317	0.00320	0.00318
	(A1 * B1 * C1 * !D1 * !Y)	-0.00272	-0.00273	-0.00273
	(A1 * B1 * C1 * !D1 * !Y)	0.00317	0.00320	0.00318
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00272	-0.00273	-0.00273
	(A1 * B1 * !C1 * !D1 * !Y)	0.00317	0.00320	0.00318
	(A1 * !B1 * C1 * D1 * !Y)	-0.00272	-0.00274	-0.00273
	(A1 * !B1 * C1 * D1 * !Y)	0.00304	0.00308	0.00305
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00272	-0.00274	-0.00273
	(A1 * !B1 * C1 * !D1 * !Y)	0.00304	0.00308	0.00305
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00273	-0.00275	-0.00273
	(A1 * !B1 * !C1 * D1 * !Y)	0.00300	0.00303	0.00300
	(!A1 * B1 * !Y)	-0.00246	-0.00255	-0.00254
	(!A1 * B1 * !Y)	0.00331	0.00332	0.00331
	(!A1 * !B1 * C1 * !Y)	-0.00246	-0.00253	-0.00253
	(!A1 * !B1 * C1 * !Y)	0.00331	0.00332	0.00331
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00246	-0.00255	-0.00253
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00331	0.00332	0.00331
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00242	-0.00255	-0.00254
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00336	0.00333	0.00331

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * A2 * C1 * D1 * !Y)**	0.00071	0.00072	0.00071
	(A1 * A2 * C1 * D1 * !Y)	-0.00062	-0.00063	-0.00062
	(A1 * A2 * C1 * !D1 * !Y)	0.00071	0.00072	0.00071
	(A1 * A2 * C1 * !D1 * !Y)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !C1 * D1 * !Y)	0.00070	0.00071	0.00070
	(A1 * A2 * !C1 * D1 * !Y)	-0.00059	-0.00059	-0.00058
	(A1 * A2 * !C1 * !D1 * !Y)	0.00071	0.00071	0.00070
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00052	-0.00052	-0.00052
	(A1 * !A2 * C1 * D1 * !Y)	0.00071	0.00070	0.00070
	(A1 * !A2 * C1 * D1 * !Y)	-0.00078	-0.00079	-0.00079
	(A1 * !A2 * C1 * !D1 * !Y)	0.00071	0.00070	0.00070
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00077	-0.00079	-0.00079
	(A1 * !A2 * !C1 * D1 * !Y)	0.00070	0.00071	0.00070
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00071	-0.00075	-0.00074
	(!A1 * C1 * D1 * !Y)	0.00071	0.00070	0.00070
	(!A1 * C1 * D1 * !Y)	-0.00078	-0.00079	-0.00079
	(!A1 * C1 * !D1 * !Y)	0.00071	0.00070	0.00070
	(!A1 * C1 * !D1 * !Y)	-0.00077	-0.00079	-0.00079
	(!A1 * !C1 * D1 * !Y)	0.00070	0.00071	0.00070
	(!A1 * !C1 * D1 * !Y)	-0.00071	-0.00075	-0.00074

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00081	0.00082	0.00080
	(A1 * A2 * C1 * D1 * !Y)	-0.00123	-0.00124	-0.00123
	(A1 * A2 * C1 * !D1 * !Y)	0.00081	0.00082	0.00080
	(A1 * A2 * C1 * !D1 * !Y)	-0.00120	-0.00120	-0.00120
	(A1 * A2 * !C1 * D1 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !C1 * D1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * A2 * !C1 * !D1 * !Y)	0.00080	0.00081	0.00080
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * C1 * D1 * !Y)	0.00080	0.00081	0.00080
	(A1 * !A2 * C1 * D1 * !Y)	-0.00153	-0.00158	-0.00157
	(A1 * !A2 * C1 * !D1 * !Y)	0.00081	0.00081	0.00080
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00152	-0.00158	-0.00157
	(A1 * !A2 * !C1 * D1 * !Y)	0.00081	0.00080	0.00080
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00143	-0.00151	-0.00148
	(!A1 * C1 * D1 * !Y)	0.00080	0.00081	0.00080
	(!A1 * C1 * D1 * !Y)	-0.00153	-0.00158	-0.00157
	(!A1 * C1 * !D1 * !Y)	0.00081	0.00081	0.00080
	(!A1 * C1 * !D1 * !Y)	-0.00153	-0.00158	-0.00157
	(!A1 * !C1 * D1 * !Y)	0.00081	0.00080	0.00080
	(!A1 * !C1 * D1 * !Y)	-0.00143	-0.00151	-0.00149

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00155	0.00157	0.00154
	(A1 * A2 * C1 * D1 * !Y)	-0.00253	-0.00255	-0.00252
	(A1 * A2 * C1 * !D1 * !Y)	0.00156	0.00157	0.00154
	(A1 * A2 * C1 * !D1 * !Y)	-0.00248	-0.00249	-0.00246
	(A1 * A2 * !C1 * D1 * !Y)	0.00155	0.00156	0.00155
	(A1 * A2 * !C1 * D1 * !Y)	-0.00240	-0.00241	-0.00239
	(A1 * A2 * !C1 * !D1 * !Y)	0.00156	0.00156	0.00154
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00217	-0.00216	-0.00213
	(A1 * !A2 * C1 * D1 * !Y)	0.00155	0.00155	0.00154
	(A1 * !A2 * C1 * D1 * !Y)	-0.00318	-0.00325	-0.00325
	(A1 * !A2 * C1 * !D1 * !Y)	0.00156	0.00155	0.00154
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00316	-0.00325	-0.00325
	(A1 * !A2 * !C1 * D1 * !Y)	0.00156	0.00154	0.00154
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00294	-0.00307	-0.00304
	(!A1 * C1 * D1 * !Y)	0.00156	0.00155	0.00154
	(!A1 * C1 * D1 * !Y)	-0.00319	-0.00325	-0.00325
	(!A1 * C1 * !D1 * !Y)	0.00156	0.00155	0.00154
	(!A1 * C1 * !D1 * !Y)	-0.00316	-0.00325	-0.00325
	(!A1 * !C1 * D1 * !Y)	0.00156	0.00154	0.00154
	(!A1 * !C1 * D1 * !Y)	-0.00294	-0.00307	-0.00305

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * A2 * C1 * D1 * !Y)**	-0.00070	-0.00071	-0.00070
	(A1 * A2 * C1 * D1 * !Y)	0.00062	0.00063	0.00062
	(A1 * A2 * C1 * !D1 * !Y)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * C1 * !D1 * !Y)	0.00061	0.00061	0.00061
	(A1 * A2 * !C1 * D1 * !Y)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * !C1 * D1 * !Y)	0.00059	0.00059	0.00058
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00064	-0.00065	-0.00065
	(A1 * A2 * !C1 * !D1 * !Y)	0.00058	0.00058	0.00057
	(A1 * !A2 * C1 * D1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * C1 * D1 * !Y)	0.00079	0.00079	0.00079
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * C1 * !D1 * !Y)	0.00079	0.00079	0.00079
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !C1 * D1 * !Y)	0.00074	0.00075	0.00074
	(!A1 * C1 * D1 * !Y)	-0.00070	-0.00070	-0.00070
	(!A1 * C1 * D1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * C1 * !D1 * !Y)	-0.00070	-0.00070	-0.00070
	(!A1 * C1 * !D1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * !C1 * D1 * !Y)	-0.00070	-0.00070	-0.00070
	(!A1 * !C1 * D1 * !Y)	0.00074	0.00075	0.00074

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00080	-0.00081	-0.00080
	(A1 * A2 * C1 * D1 * !Y)	0.00123	0.00124	0.00123
	(A1 * A2 * C1 * !D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * C1 * !D1 * !Y)	0.00120	0.00120	0.00120
	(A1 * A2 * !C1 * D1 * !Y)	-0.00080	-0.00081	-0.00081
	(A1 * A2 * !C1 * D1 * !Y)	0.00117	0.00117	0.00117
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !C1 * !D1 * !Y)	0.00113	0.00112	0.00111
	(A1 * !A2 * C1 * D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * C1 * D1 * !Y)	0.00158	0.00158	0.00157
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * C1 * !D1 * !Y)	0.00158	0.00158	0.00157
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * !C1 * D1 * !Y)	0.00148	0.00151	0.00148
	(!A1 * C1 * D1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A1 * C1 * D1 * !Y)	0.00158	0.00158	0.00157
	(!A1 * C1 * !D1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A1 * C1 * !D1 * !Y)	0.00156	0.00158	0.00157
	(!A1 * !C1 * D1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A1 * !C1 * D1 * !Y)	0.00148	0.00151	0.00149

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00154	-0.00154	-0.00153
	(A1 * A2 * C1 * D1 * !Y)	0.00253	0.00255	0.00252
	(A1 * A2 * C1 * !D1 * !Y)	-0.00154	-0.00154	-0.00153
	(A1 * A2 * C1 * !D1 * !Y)	0.00248	0.00249	0.00246
	(A1 * A2 * !C1 * D1 * !Y)	-0.00155	-0.00156	-0.00155
	(A1 * A2 * !C1 * D1 * !Y)	0.00240	0.00241	0.00239
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00143	-0.00144	-0.00142
	(A1 * A2 * !C1 * !D1 * !Y)	0.00226	0.00227	0.00226
	(A1 * !A2 * C1 * D1 * !Y)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * C1 * D1 * !Y)	0.00324	0.00325	0.00325
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00153	-0.00153	-0.00153
	(A1 * !A2 * C1 * !D1 * !Y)	0.00325	0.00325	0.00325
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00154	-0.00154	-0.00154
	(A1 * !A2 * !C1 * D1 * !Y)	0.00305	0.00307	0.00304
	(!A1 * C1 * D1 * !Y)	-0.00153	-0.00154	-0.00153
	(!A1 * C1 * D1 * !Y)	0.00325	0.00325	0.00325
	(!A1 * C1 * !D1 * !Y)	-0.00153	-0.00153	-0.00153
	(!A1 * C1 * !D1 * !Y)	0.00325	0.00325	0.00325
	(!A1 * !C1 * D1 * !Y)	-0.00155	-0.00154	-0.00154
	(!A1 * !C1 * D1 * !Y)	0.00306	0.00307	0.00305

Passive power(pJ) for C1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * B1 * D1 * !Y)**	0.00075	0.00076	0.00074
	(A1 * B1 * D1 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * B1 * !D1 * !Y)	0.00074	0.00075	0.00074
	(A1 * B1 * !D1 * !Y)	-0.00049	-0.00050	-0.00049
	(A1 * A2 * !B1 * D1 * !Y)	0.00077	0.00075	0.00074
	(A1 * A2 * !B1 * D1 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !B1 * !D1 * !Y)	0.00075	0.00075	0.00074
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00050	-0.00050	-0.00049
	(A1 * !A2 * !B1 * D1 * !Y)	0.00082	0.00075	0.00074
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00068	-0.00076	-0.00076
	(!A1 * B1 * D1 * !Y)	0.00075	0.00076	0.00074
	(!A1 * B1 * D1 * !Y)	-0.00055	-0.00056	-0.00055
	(!A1 * B1 * !D1 * !Y)	0.00074	0.00075	0.00074
	(!A1 * B1 * !D1 * !Y)	-0.00049	-0.00050	-0.00049
	(!A1 * !B1 * D1 * !Y)	0.00082	0.00075	0.00074
	(!A1 * !B1 * D1 * !Y)	-0.00068	-0.00076	-0.00076

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00078	0.00079	0.00077
	(A1 * B1 * D1 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * B1 * !D1 * !Y)	0.00076	0.00077	0.00076
	(A1 * B1 * !D1 * !Y)	-0.00105	-0.00107	-0.00106
	(A1 * A2 * !B1 * D1 * !Y)	0.00079	0.00078	0.00077
	(A1 * A2 * !B1 * D1 * !Y)	-0.00123	-0.00125	-0.00123
	(A1 * A2 * !B1 * !D1 * !Y)	0.00078	0.00078	0.00076
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00107	-0.00107	-0.00106
	(A1 * !A2 * !B1 * D1 * !Y)	0.00086	0.00077	0.00076
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00152	-0.00163	-0.00163
	(!A1 * B1 * D1 * !Y)	0.00078	0.00079	0.00078
	(!A1 * B1 * D1 * !Y)	-0.00118	-0.00118	-0.00117
	(!A1 * B1 * !D1 * !Y)	0.00076	0.00078	0.00076
	(!A1 * B1 * !D1 * !Y)	-0.00106	-0.00108	-0.00106
	(!A1 * !B1 * D1 * !Y)	0.00087	0.00077	0.00076
	(!A1 * !B1 * D1 * !Y)	-0.00152	-0.00163	-0.00163

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00151	0.00153	0.00150
	(A1 * B1 * D1 * !Y)	-0.00230	-0.00232	-0.00229
	(A1 * B1 * !D1 * !Y)	0.00151	0.00151	0.00148
	(A1 * B1 * !D1 * !Y)	-0.00212	-0.00211	-0.00208
	(A1 * A2 * !B1 * D1 * !Y)	0.00156	0.00150	0.00148
	(A1 * A2 * !B1 * D1 * !Y)	-0.00241	-0.00242	-0.00240
	(A1 * A2 * !B1 * !D1 * !Y)	0.00151	0.00151	0.00148
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00210	-0.00210	-0.00208
	(A1 * !A2 * !B1 * D1 * !Y)	0.00177	0.00150	0.00147
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00287	-0.00317	-0.00318
	(!A1 * B1 * D1 * !Y)	0.00152	0.00154	0.00150
	(!A1 * B1 * D1 * !Y)	-0.00232	-0.00233	-0.00231
	(!A1 * B1 * !D1 * !Y)	0.00149	0.00151	0.00148
	(!A1 * B1 * !D1 * !Y)	-0.00208	-0.00211	-0.00209
	(!A1 * !B1 * D1 * !Y)	0.00177	0.00150	0.00147
	(!A1 * !B1 * D1 * !Y)	-0.00287	-0.00317	-0.00318

Passive power(pJ) for C1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * B1 * D1 * !Y)**	-0.00074	-0.00074	-0.00074
	(A1 * B1 * D1 * !Y)	0.00055	0.00055	0.00055
	(A1 * B1 * !D1 * !Y)	-0.00073	-0.00073	-0.00072
	(A1 * B1 * !D1 * !Y)	0.00051	0.00051	0.00051
	(A1 * A2 * !B1 * D1 * !Y)	-0.00073	-0.00074	-0.00074
	(A1 * A2 * !B1 * D1 * !Y)	0.00058	0.00058	0.00058
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00063	-0.00064	-0.00072
	(A1 * A2 * !B1 * !D1 * !Y)	0.00058	0.00058	0.00051
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00073	-0.00073	-0.00073
	(A1 * !A2 * !B1 * D1 * !Y)	0.00076	0.00076	0.00076
	(!A1 * B1 * D1 * !Y)	-0.00073	-0.00074	-0.00074
	(!A1 * B1 * D1 * !Y)	0.00055	0.00056	0.00055
	(!A1 * B1 * !D1 * !Y)	-0.00073	-0.00073	-0.00072
	(!A1 * B1 * !D1 * !Y)	0.00052	0.00051	0.00051
	(!A1 * !B1 * D1 * !Y)	-0.00073	-0.00073	-0.00073
	(!A1 * !B1 * D1 * !Y)	0.00076	0.00076	0.00076

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00077	-0.00077	-0.00077
	(A1 * B1 * D1 * !Y)	0.00117	0.00117	0.00116
	(A1 * B1 * !D1 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * B1 * !D1 * !Y)	0.00108	0.00108	0.00108
	(A1 * A2 * !B1 * D1 * !Y)	-0.00077	-0.00078	-0.00077
	(A1 * A2 * !B1 * D1 * !Y)	0.00123	0.00125	0.00123
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00056	-0.00058	-0.00070
	(A1 * A2 * !B1 * !D1 * !Y)	0.00120	0.00120	0.00112
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * !B1 * D1 * !Y)	0.00162	0.00163	0.00163
	(!A1 * B1 * D1 * !Y)	-0.00077	-0.00077	-0.00077
	(!A1 * B1 * D1 * !Y)	0.00118	0.00118	0.00117
	(!A1 * B1 * !D1 * !Y)	-0.00075	-0.00076	-0.00075
	(!A1 * B1 * !D1 * !Y)	0.00108	0.00109	0.00109
	(!A1 * !B1 * D1 * !Y)	-0.00076	-0.00076	-0.00076
	(!A1 * !B1 * D1 * !Y)	0.00163	0.00163	0.00163

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00148	-0.00149	-0.00148
	(A1 * B1 * D1 * !Y)	0.00230	0.00232	0.00229
	(A1 * B1 * !D1 * !Y)	-0.00145	-0.00146	-0.00145
	(A1 * B1 * !D1 * !Y)	0.00214	0.00215	0.00214
	(A1 * A2 * !B1 * D1 * !Y)	-0.00149	-0.00149	-0.00148
	(A1 * A2 * !B1 * D1 * !Y)	0.00241	0.00242	0.00240
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00114	-0.00117	-0.00138
	(A1 * A2 * !B1 * !D1 * !Y)	0.00233	0.00232	0.00217
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00147	-0.00147	-0.00146
	(A1 * !A2 * !B1 * D1 * !Y)	0.00317	0.00317	0.00318
	(!A1 * B1 * D1 * !Y)	-0.00149	-0.00149	-0.00148
	(!A1 * B1 * D1 * !Y)	0.00232	0.00233	0.00231
	(!A1 * B1 * !D1 * !Y)	-0.00144	-0.00145	-0.00143
	(!A1 * B1 * !D1 * !Y)	0.00215	0.00216	0.00215
	(!A1 * !B1 * D1 * !Y)	-0.00147	-0.00147	-0.00146
	(!A1 * !B1 * D1 * !Y)	0.00317	0.00317	0.00318

Passive power(pJ) for D1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00082	0.00084	0.00083
	(A1 * C1 * !Y)	-0.00045	-0.00046	-0.00045
	(A1 * B1 * !C1 * !Y)	0.00083	0.00084	0.00083
	(A1 * B1 * !C1 * !Y)	-0.00045	-0.00046	-0.00045
	(A1 * A2 * !B1 * !C1 * !Y)	0.00082	0.00084	0.00083
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00045	-0.00046	-0.00045
	(!A1 * C1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * C1 * !Y)	-0.00045	-0.00046	-0.00045
	(!A1 * B1 * !C1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * B1 * !C1 * !Y)	-0.00045	-0.00046	-0.00045

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00094	0.00096	0.00095
	(A1 * C1 * !Y)	-0.00091	-0.00093	-0.00091
	(A1 * B1 * !C1 * !Y)	0.00095	0.00096	0.00094
	(A1 * B1 * !C1 * !Y)	-0.00092	-0.00093	-0.00091
	(A1 * A2 * !B1 * !C1 * !Y)	0.00094	0.00096	0.00095
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00091	-0.00093	-0.00091
	(!A1 * C1 * !Y)	0.00095	0.00096	0.00095
	(!A1 * C1 * !Y)	-0.00092	-0.00093	-0.00091
	(!A1 * B1 * !C1 * !Y)	0.00095	0.00096	0.00095
	(!A1 * B1 * !C1 * !Y)	-0.00092	-0.00093	-0.00091
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00187	0.00190	0.00187
	(A1 * C1 * !Y)	-0.00180	-0.00183	-0.00180
	(A1 * B1 * !C1 * !Y)	0.00188	0.00190	0.00187
	(A1 * B1 * !C1 * !Y)	-0.00181	-0.00182	-0.00180
	(A1 * A2 * !B1 * !C1 * !Y)	0.00187	0.00190	0.00187
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00180	-0.00182	-0.00180
	(!A1 * C1 * !Y)	0.00188	0.00190	0.00187
	(!A1 * C1 * !Y)	-0.00181	-0.00183	-0.00180
	(!A1 * B1 * !C1 * !Y)	0.00188	0.00190	0.00187
	(!A1 * B1 * !C1 * !Y)	-0.00181	-0.00182	-0.00180

Passive power(pJ) for D1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00079	-0.00079	-0.00082
	(A1 * C1 * !Y)	0.00049	0.00049	0.00046
	(A1 * B1 * !C1 * !Y)	-0.00073	-0.00073	-0.00081
	(A1 * B1 * !C1 * !Y)	0.00053	0.00053	0.00047
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00058	-0.00060	-0.00076
	(A1 * A2 * !B1 * !C1 * !Y)	0.00062	0.00062	0.00050
	(!A1 * C1 * !Y)	-0.00079	-0.00079	-0.00082
	(!A1 * C1 * !Y)	0.00049	0.00049	0.00046
	(!A1 * B1 * !C1 * !Y)	-0.00072	-0.00073	-0.00081
	(!A1 * B1 * !C1 * !Y)	0.00053	0.00053	0.00047
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00082	-0.00083	-0.00093
	(A1 * C1 * !Y)	0.00104	0.00104	0.00095
	(A1 * B1 * !C1 * !Y)	-0.00069	-0.00070	-0.00090
	(A1 * B1 * !C1 * !Y)	0.00111	0.00111	0.00096
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00042	-0.00044	-0.00081
	(A1 * A2 * !B1 * !C1 * !Y)	0.00130	0.00129	0.00102
	(!A1 * C1 * !Y)	-0.00082	-0.00083	-0.00093
	(!A1 * C1 * !Y)	0.00104	0.00104	0.00095
	(!A1 * B1 * !C1 * !Y)	-0.00068	-0.00070	-0.00090
	(!A1 * B1 * !C1 * !Y)	0.00110	0.00111	0.00096
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00165	-0.00168	-0.00184
	(A1 * C1 * !Y)	0.00200	0.00200	0.00186
	(A1 * B1 * !C1 * !Y)	-0.00138	-0.00140	-0.00178
	(A1 * B1 * !C1 * !Y)	0.00218	0.00217	0.00189
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00087	-0.00092	-0.00162
	(A1 * A2 * !B1 * !C1 * !Y)	0.00250	0.00249	0.00200
	(!A1 * C1 * !Y)	-0.00165	-0.00167	-0.00184
	(!A1 * C1 * !Y)	0.00201	0.00200	0.00186
	(!A1 * B1 * !C1 * !Y)	-0.00137	-0.00140	-0.00178
	(!A1 * B1 * !C1 * !Y)	0.00217	0.00218	0.00189

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	C1	D1	X
0	x	0	0	0	0
0	x	0	x	1	1
0	x	x	1	x	1
x	x	1	x	x	1
1	0	0	0	0	0
1	0	0	x	1	1
1	0	x	1	x	1
1	1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111o_1	14.38560
sky130_fd_sc_hs__a2111o_2	15.98400
sky130_fd_sc_hs__a2111o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__a2111o_1	0.00238	0.00249	0.00239	0.00243	0.00240	0.43443
sky130_fd_sc_hs__a2111o_2	0.00263	0.00273	0.00258	0.00267	0.00279	0.85620
sky130_fd_sc_hs__a2111o_4	0.00446	0.00434	0.00458	0.00459	0.00453	1.65572

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111o_1	0.00000	0.01017	0.02824
sky130_fd_sc_hs__a2111o_2	0.00000	0.01054	0.03271
sky130_fd_sc_hs__a2111o_4	0.00000	0.02737	0.07208

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (RR)	0.18257	1.17471	8.53131
	A2->X (RR)	0.19021	1.18530	8.76724
	B1->X (RR)	0.14192	1.11370	8.44972
	C1->X (RR)	0.13905	1.10029	8.37369
	D1->X (RR)	0.13219	1.07956	8.28570
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.18449	1.06736	8.77367
	A2->X (RR)	0.19150	1.06594	8.94182
	B1->X (RR)	0.13596	0.99462	8.66066
	C1->X (RR)	0.13238	0.98004	8.59140
	D1->X (RR)	0.12769	0.96566	8.51733
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.19499	0.97641	8.78546
	A2->X (RR)	0.20461	0.98243	8.99957
	B1->X (RR)	0.13498	0.88644	8.66322
	C1->X (RR)	0.13229	0.87633	8.59996
	D1->X (RR)	0.12540	0.85614	8.50720

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.96244	1.78867	6.90054
	A2->X (FF)	1.05856	1.89672	7.09686
	B1->X (FF)	0.99407	1.79379	7.00568
	C1->X (FF)	0.91388	1.70319	6.92760
	D1->X (FF)	0.78945	1.50968	6.23976
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	1.17771	2.03342	7.49813
	A2->X (FF)	1.27092	2.14179	7.66583
	B1->X (FF)	1.20908	2.03658	7.61067
	C1->X (FF)	1.11813	1.93367	7.58630
	D1->X (FF)	0.99443	1.74601	7.00323
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	1.19273	1.99627	7.45457
	A2->X (FF)	1.34034	2.16000	7.67936
	B1->X (FF)	1.28978	2.07148	7.66180
	C1->X (FF)	1.20008	1.96457	7.64252
	D1->X (FF)	1.00227	1.70370	6.88882

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.00591	0.00589	0.00591
	A1	0.00283	0.00280	0.00283
	A2	0.00625	0.00624	0.00619
	A2	0.00282	0.00282	0.00280
	B1	0.00533	0.00530	0.00533
	B1	0.00227	0.00224	0.00227
	C1	0.00469	0.00465	0.00470
	C1	0.00192	0.00188	0.00194
	D1	0.00401	0.00392	0.00403
	D1	0.00153	0.00143	0.00157
sky130_fd_sc_hs__a2111o_2	A1	0.00752	0.00759	0.00762
	A1	0.00408	0.00416	0.00426
	A2	0.00797	0.00808	0.00806
	A2	0.00411	0.00421	0.00423
	B1	0.00688	0.00695	0.00698
	B1	0.00347	0.00354	0.00358
	C1	0.00612	0.00618	0.00622
	C1	0.00300	0.00307	0.00312
	D1	0.00547	0.00549	0.00556
	D1	0.00262	0.00264	0.00270

sky130_fd_sc_hs__a2111o_4	**A1**	0.01403	0.01420	0.01438
	A1	0.00806	0.00824	0.00849
	A2	0.01489	0.01516	0.01523
	A2	0.00806	0.00832	0.00849
	B1	0.01321	0.01336	0.01351
	B1	0.00700	0.00716	0.00735
	C1	0.01181	0.01197	0.01212
	C1	0.00624	0.00640	0.00657
	D1	0.01003	0.01012	0.01039
	D1	0.00514	0.00524	0.00554

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00189	0.00192	0.00241
	A1	0.00508	0.00512	0.00512
	A2	0.00215	0.00221	0.00221
	A2	0.00564	0.00571	0.00569
	B1	0.00210	0.00216	0.00254
	B1	0.00516	0.00523	0.00522
	C1	0.00210	0.00216	0.00272
	C1	0.00485	0.00491	0.00491
	D1	0.00215	0.00216	0.00262
	D1	0.00459	0.00461	0.00484

sky130_fd_sc_hs__a2111o_2	**A1**	0.00315	0.00330	0.00338
	A1	0.00671	0.00686	0.00692
	A2	0.00333	0.00353	0.00360
	A2	0.00728	0.00749	0.00754
	B1	0.00312	0.00331	0.00416
	B1	0.00678	0.00696	0.00701
	C1	0.00336	0.00353	0.00584
	C1	0.00645	0.00663	0.00668
	D1	0.00333	0.00345	0.00440
	D1	0.00614	0.00625	0.00648
sky130_fd_sc_hs__a2111o_4	**A1**	0.00590	0.00625	0.00725
	A1	0.01213	0.01249	0.01270
	A2	0.00642	0.00682	0.00814
	A2	0.01341	0.01382	0.01405
	B1	0.00576	0.00617	0.00816
	B1	0.01264	0.01302	0.01323
	C1	0.00580	0.00621	0.00785
	C1	0.01200	0.01233	0.01255
	D1	0.00643	0.00675	0.00843
	D1	0.01123	0.01154	0.01216

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A2 * B1 * D1 * X)**	0.00070	0.00071	0.00070
	(A2 * B1 * D1 * X)	-0.00070	-0.00073	-0.00072
	(A2 * B1 * C1 * !D1 * X)	0.00070	0.00071	0.00070
	(A2 * B1 * C1 * !D1 * X)	-0.00070	-0.00073	-0.00072
	(A2 * B1 * !C1 * !D1 * X)	0.00070	0.00071	0.00070
	(A2 * B1 * !C1 * !D1 * X)	-0.00070	-0.00073	-0.00072
	(A2 * !B1 * C1 * D1 * X)	0.00071	0.00071	0.00070
	(A2 * !B1 * C1 * D1 * X)	-0.00067	-0.00070	-0.00069
	(A2 * !B1 * C1 * !D1 * X)	0.00071	0.00071	0.00070
	(A2 * !B1 * C1 * !D1 * X)	-0.00067	-0.00070	-0.00069
	(A2 * !B1 * !C1 * D1 * X)	0.00070	0.00071	0.00070
	(A2 * !B1 * !C1 * D1 * X)	-0.00066	-0.00068	-0.00068
	(!A2 * B1 * D1 * X)	0.00066	0.00067	0.00066
	(!A2 * B1 * D1 * X)	-0.00074	-0.00075	-0.00074
	(!A2 * B1 * C1 * !D1 * X)	0.00066	0.00067	0.00066
	(!A2 * B1 * C1 * !D1 * X)	-0.00074	-0.00075	-0.00074
	(!A2 * B1 * !C1 * !D1 * X)	0.00066	0.00067	0.00066
	(!A2 * B1 * !C1 * !D1 * X)	-0.00074	-0.00075	-0.00074
	(!A2 * !B1 * C1 * D1 * X)	0.00066	0.00066	0.00066
	(!A2 * !B1 * C1 * D1 * X)	-0.00074	-0.00075	-0.00074
	(!A2 * !B1 * C1 * !D1 * X)	0.00066	0.00066	0.00066
	(!A2 * !B1 * C1 * !D1 * X)	-0.00074	-0.00075	-0.00074
	(!A2 * !B1 * !C1 * D1 * X)	0.00066	0.00066	0.00066
	(!A2 * !B1 * !C1 * D1 * X)	-0.00074	-0.00075	-0.00074
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00032	0.00032	0.00031
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00087	-0.00087	-0.00089

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00072	0.00072	0.00071
	(A2 * B1 * D1 * X)	-0.00079	-0.00081	-0.00081
	(A2 * B1 * C1 * !D1 * X)	0.00072	0.00072	0.00071
	(A2 * B1 * C1 * !D1 * X)	-0.00079	-0.00081	-0.00081
	(A2 * B1 * !C1 * !D1 * X)	0.00072	0.00072	0.00072
	(A2 * B1 * !C1 * !D1 * X)	-0.00079	-0.00081	-0.00081
	(A2 * !B1 * C1 * D1 * X)	0.00071	0.00072	0.00071
	(A2 * !B1 * C1 * D1 * X)	-0.00075	-0.00079	-0.00078
	(A2 * !B1 * C1 * !D1 * X)	0.00071	0.00072	0.00071
	(A2 * !B1 * C1 * !D1 * X)	-0.00075	-0.00079	-0.00078
	(A2 * !B1 * !C1 * D1 * X)	0.00072	0.00072	0.00071
	(A2 * !B1 * !C1 * D1 * X)	-0.00074	-0.00077	-0.00077
	(!A2 * B1 * D1 * X)	0.00067	0.00067	0.00067
	(!A2 * B1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(!A2 * B1 * C1 * !D1 * X)	0.00067	0.00067	0.00067
	(!A2 * B1 * C1 * !D1 * X)	-0.00084	-0.00084	-0.00084
	(!A2 * B1 * !C1 * !D1 * X)	0.00067	0.00067	0.00067
	(!A2 * B1 * !C1 * !D1 * X)	-0.00084	-0.00085	-0.00084
	(!A2 * !B1 * C1 * D1 * X)	0.00067	0.00067	0.00067
	(!A2 * !B1 * C1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(!A2 * !B1 * C1 * !D1 * X)	0.00066	0.00067	0.00067
	(!A2 * !B1 * C1 * !D1 * X)	-0.00084	-0.00084	-0.00084
	(!A2 * !B1 * !C1 * D1 * X)	0.00066	0.00066	0.00067
	(!A2 * !B1 * !C1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00028	0.00028	0.00027
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00098	-0.00098	-0.00100

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00120	0.00120	0.00119
	(A2 * B1 * D1 * X)	-0.00144	-0.00147	-0.00147
	(A2 * B1 * C1 * !D1 * X)	0.00120	0.00120	0.00119
	(A2 * B1 * C1 * !D1 * X)	-0.00144	-0.00147	-0.00147
	(A2 * B1 * !C1 * !D1 * X)	0.00120	0.00120	0.00119
	(A2 * B1 * !C1 * !D1 * X)	-0.00143	-0.00147	-0.00147
	(A2 * !B1 * C1 * D1 * X)	0.00119	0.00120	0.00119
	(A2 * !B1 * C1 * D1 * X)	-0.00135	-0.00142	-0.00140
	(A2 * !B1 * C1 * !D1 * X)	0.00119	0.00120	0.00119
	(A2 * !B1 * C1 * !D1 * X)	-0.00135	-0.00142	-0.00140
	(A2 * !B1 * !C1 * D1 * X)	0.00120	0.00120	0.00119
	(A2 * !B1 * !C1 * D1 * X)	-0.00134	-0.00140	-0.00138
	(!A2 * B1 * D1 * X)	0.00111	0.00112	0.00112
	(!A2 * B1 * D1 * X)	-0.00152	-0.00152	-0.00152
	(!A2 * B1 * C1 * !D1 * X)	0.00111	0.00112	0.00112
	(!A2 * B1 * C1 * !D1 * X)	-0.00152	-0.00152	-0.00152
	(!A2 * B1 * !C1 * !D1 * X)	0.00111	0.00112	0.00112
	(!A2 * B1 * !C1 * !D1 * X)	-0.00152	-0.00153	-0.00152
	(!A2 * !B1 * C1 * D1 * X)	0.00111	0.00112	0.00112
	(!A2 * !B1 * C1 * D1 * X)	-0.00152	-0.00152	-0.00152
	(!A2 * !B1 * C1 * !D1 * X)	0.00111	0.00112	0.00112
	(!A2 * !B1 * C1 * !D1 * X)	-0.00152	-0.00152	-0.00152
	(!A2 * !B1 * !C1 * D1 * X)	0.00111	0.00112	0.00112
	(!A2 * !B1 * !C1 * D1 * X)	-0.00152	-0.00152	-0.00152
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00048	0.00048	0.00045
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00174	-0.00174	-0.00179

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A2 * B1 * D1 * X)**	-0.00070	-0.00071	-0.00070
	(A2 * B1 * D1 * X)	0.00072	0.00073	0.00072
	(A2 * B1 * C1 * !D1 * X)	-0.00070	-0.00071	-0.00070
	(A2 * B1 * C1 * !D1 * X)	0.00072	0.00073	0.00072
	(A2 * B1 * !C1 * !D1 * X)	-0.00070	-0.00071	-0.00070
	(A2 * B1 * !C1 * !D1 * X)	0.00072	0.00073	0.00072
	(A2 * !B1 * C1 * D1 * X)	-0.00070	-0.00071	-0.00070
	(A2 * !B1 * C1 * D1 * X)	0.00069	0.00070	0.00069
	(A2 * !B1 * C1 * !D1 * X)	-0.00070	-0.00071	-0.00070
	(A2 * !B1 * C1 * !D1 * X)	0.00069	0.00070	0.00069
	(A2 * !B1 * !C1 * D1 * X)	-0.00070	-0.00070	-0.00070
	(A2 * !B1 * !C1 * D1 * X)	0.00068	0.00068	0.00068
	(!A2 * B1 * D1 * X)	-0.00065	-0.00067	-0.00066
	(!A2 * B1 * D1 * X)	0.00074	0.00075	0.00075
	(!A2 * B1 * C1 * !D1 * X)	-0.00065	-0.00067	-0.00066
	(!A2 * B1 * C1 * !D1 * X)	0.00074	0.00075	0.00075
	(!A2 * B1 * !C1 * !D1 * X)	-0.00065	-0.00067	-0.00066
	(!A2 * B1 * !C1 * !D1 * X)	0.00074	0.00075	0.00075
	(!A2 * !B1 * C1 * D1 * X)	-0.00065	-0.00066	-0.00066
	(!A2 * !B1 * C1 * D1 * X)	0.00074	0.00075	0.00075
	(!A2 * !B1 * C1 * !D1 * X)	-0.00065	-0.00066	-0.00066
	(!A2 * !B1 * C1 * !D1 * X)	0.00074	0.00075	0.00075
	(!A2 * !B1 * !C1 * D1 * X)	-0.00065	-0.00066	-0.00066
	(!A2 * !B1 * !C1 * D1 * X)	0.00074	0.00075	0.00075
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00090	0.00090	0.00089

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00072	-0.00071	-0.00071
	(A2 * B1 * D1 * X)	0.00082	0.00081	0.00081
	(A2 * B1 * C1 * !D1 * X)	-0.00072	-0.00071	-0.00071
	(A2 * B1 * C1 * !D1 * X)	0.00082	0.00081	0.00081
	(A2 * B1 * !C1 * !D1 * X)	-0.00072	-0.00071	-0.00071
	(A2 * B1 * !C1 * !D1 * X)	0.00082	0.00081	0.00081
	(A2 * !B1 * C1 * D1 * X)	-0.00071	-0.00072	-0.00071
	(A2 * !B1 * C1 * D1 * X)	0.00079	0.00079	0.00078
	(A2 * !B1 * C1 * !D1 * X)	-0.00071	-0.00072	-0.00071
	(A2 * !B1 * C1 * !D1 * X)	0.00079	0.00079	0.00078
	(A2 * !B1 * !C1 * D1 * X)	-0.00072	-0.00072	-0.00071
	(A2 * !B1 * !C1 * D1 * X)	0.00077	0.00077	0.00077
	(!A2 * B1 * D1 * X)	-0.00065	-0.00067	-0.00067
	(!A2 * B1 * D1 * X)	0.00084	0.00085	0.00084
	(!A2 * B1 * C1 * !D1 * X)	-0.00065	-0.00067	-0.00067
	(!A2 * B1 * C1 * !D1 * X)	0.00084	0.00084	0.00084
	(!A2 * B1 * !C1 * !D1 * X)	-0.00065	-0.00067	-0.00067
	(!A2 * B1 * !C1 * !D1 * X)	0.00084	0.00085	0.00084
	(!A2 * !B1 * C1 * D1 * X)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * C1 * D1 * X)	0.00084	0.00084	0.00084
	(!A2 * !B1 * C1 * !D1 * X)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * C1 * !D1 * X)	0.00084	0.00085	0.00084
	(!A2 * !B1 * !C1 * D1 * X)	-0.00065	-0.00066	-0.00067
	(!A2 * !B1 * !C1 * D1 * X)	0.00084	0.00085	0.00084
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00026	-0.00026	-0.00026
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00100	0.00102	0.00100

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00119	-0.00119	-0.00119
	(A2 * B1 * D1 * X)	0.00147	0.00147	0.00147
	(A2 * B1 * C1 * !D1 * X)	-0.00119	-0.00119	-0.00119
	(A2 * B1 * C1 * !D1 * X)	0.00146	0.00147	0.00147
	(A2 * B1 * !C1 * !D1 * X)	-0.00118	-0.00119	-0.00119
	(A2 * B1 * !C1 * !D1 * X)	0.00146	0.00147	0.00147
	(A2 * !B1 * C1 * D1 * X)	-0.00119	-0.00120	-0.00119
	(A2 * !B1 * C1 * D1 * X)	0.00140	0.00142	0.00140
	(A2 * !B1 * C1 * !D1 * X)	-0.00119	-0.00120	-0.00119
	(A2 * !B1 * C1 * !D1 * X)	0.00139	0.00142	0.00140
	(A2 * !B1 * !C1 * D1 * X)	-0.00119	-0.00120	-0.00119
	(A2 * !B1 * !C1 * D1 * X)	0.00138	0.00140	0.00138
	(!A2 * B1 * D1 * X)	-0.00108	-0.00112	-0.00112
	(!A2 * B1 * D1 * X)	0.00152	0.00153	0.00152
	(!A2 * B1 * C1 * !D1 * X)	-0.00108	-0.00112	-0.00112
	(!A2 * B1 * C1 * !D1 * X)	0.00152	0.00153	0.00152
	(!A2 * B1 * !C1 * !D1 * X)	-0.00107	-0.00112	-0.00112
	(!A2 * B1 * !C1 * !D1 * X)	0.00152	0.00153	0.00152
	(!A2 * !B1 * C1 * D1 * X)	-0.00108	-0.00112	-0.00112
	(!A2 * !B1 * C1 * D1 * X)	0.00152	0.00153	0.00152
	(!A2 * !B1 * C1 * !D1 * X)	-0.00107	-0.00112	-0.00112
	(!A2 * !B1 * C1 * !D1 * X)	0.00152	0.00153	0.00152
	(!A2 * !B1 * !C1 * D1 * X)	-0.00107	-0.00112	-0.00112
	(!A2 * !B1 * !C1 * D1 * X)	0.00152	0.00153	0.00152
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00179	0.00182	0.00180

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * B1 * D1 * X)**	0.00064	0.00065	0.00064
	(A1 * B1 * D1 * X)	-0.00073	-0.00075	-0.00075
	(A1 * B1 * C1 * !D1 * X)	0.00064	0.00065	0.00064
	(A1 * B1 * C1 * !D1 * X)	-0.00073	-0.00075	-0.00075
	(A1 * B1 * !C1 * !D1 * X)	0.00064	0.00065	0.00064
	(A1 * B1 * !C1 * !D1 * X)	-0.00073	-0.00075	-0.00075
	(A1 * !B1 * C1 * D1 * X)	0.00064	0.00064	0.00064
	(A1 * !B1 * C1 * D1 * X)	-0.00069	-0.00073	-0.00072
	(A1 * !B1 * C1 * !D1 * X)	0.00064	0.00064	0.00064
	(A1 * !B1 * C1 * !D1 * X)	-0.00069	-0.00073	-0.00072
	(A1 * !B1 * !C1 * D1 * X)	0.00064	0.00064	0.00064
	(A1 * !B1 * !C1 * D1 * X)	-0.00068	-0.00072	-0.00071
	(!A1 * B1 * X)	0.00060	0.00060	0.00060
	(!A1 * B1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * !B1 * C1 * X)	0.00060	0.00060	0.00060
	(!A1 * !B1 * C1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * !B1 * !C1 * D1 * X)	0.00060	0.00060	0.00060
	(!A1 * !B1 * !C1 * D1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00052	0.00052	0.00052
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00086	-0.00086	-0.00086

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00072	0.00073	0.00072
	(A1 * B1 * D1 * X)	-0.00079	-0.00081	-0.00081
	(A1 * B1 * C1 * !D1 * X)	0.00072	0.00073	0.00072
	(A1 * B1 * C1 * !D1 * X)	-0.00079	-0.00081	-0.00081
	(A1 * B1 * !C1 * !D1 * X)	0.00072	0.00073	0.00072
	(A1 * B1 * !C1 * !D1 * X)	-0.00079	-0.00081	-0.00081
	(A1 * !B1 * C1 * D1 * X)	0.00072	0.00073	0.00072
	(A1 * !B1 * C1 * D1 * X)	-0.00075	-0.00079	-0.00078
	(A1 * !B1 * C1 * !D1 * X)	0.00072	0.00073	0.00072
	(A1 * !B1 * C1 * !D1 * X)	-0.00075	-0.00079	-0.00078
	(A1 * !B1 * !C1 * D1 * X)	0.00072	0.00072	0.00072
	(A1 * !B1 * !C1 * D1 * X)	-0.00074	-0.00077	-0.00076
	(!A1 * B1 * X)	0.00067	0.00068	0.00067
	(!A1 * B1 * X)	-0.00085	-0.00085	-0.00084
	(!A1 * !B1 * C1 * X)	0.00067	0.00067	0.00067
	(!A1 * !B1 * C1 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * !B1 * !C1 * D1 * X)	0.00067	0.00067	0.00067
	(!A1 * !B1 * !C1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00090	-0.00090	-0.00090

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00122	0.00124	0.00122
	(A1 * B1 * D1 * X)	-0.00143	-0.00148	-0.00148
	(A1 * B1 * C1 * !D1 * X)	0.00122	0.00124	0.00122
	(A1 * B1 * C1 * !D1 * X)	-0.00143	-0.00148	-0.00148
	(A1 * B1 * !C1 * !D1 * X)	0.00122	0.00124	0.00123
	(A1 * B1 * !C1 * !D1 * X)	-0.00143	-0.00148	-0.00148
	(A1 * !B1 * C1 * D1 * X)	0.00122	0.00124	0.00122
	(A1 * !B1 * C1 * D1 * X)	-0.00136	-0.00143	-0.00141
	(A1 * !B1 * C1 * !D1 * X)	0.00122	0.00124	0.00123
	(A1 * !B1 * C1 * !D1 * X)	-0.00136	-0.00143	-0.00141
	(A1 * !B1 * !C1 * D1 * X)	0.00123	0.00124	0.00123
	(A1 * !B1 * !C1 * D1 * X)	-0.00134	-0.00141	-0.00139
	(!A1 * B1 * X)	0.00115	0.00115	0.00114
	(!A1 * B1 * X)	-0.00153	-0.00153	-0.00153
	(!A1 * !B1 * C1 * X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * C1 * X)	-0.00152	-0.00154	-0.00153
	(!A1 * !B1 * !C1 * D1 * X)	0.00115	0.00115	0.00114
	(!A1 * !B1 * !C1 * D1 * X)	-0.00153	-0.00153	-0.00153
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00115	0.00115	0.00114
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00154	-0.00154	-0.00153

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * B1 * D1 * X)**	-0.00064	-0.00064	-0.00064
	(A1 * B1 * D1 * X)	0.00076	0.00075	0.00075
	(A1 * B1 * C1 * !D1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * C1 * !D1 * X)	0.00076	0.00075	0.00075
	(A1 * B1 * !C1 * !D1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * !C1 * !D1 * X)	0.00076	0.00075	0.00075
	(A1 * !B1 * C1 * D1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !B1 * C1 * D1 * X)	0.00072	0.00073	0.00072
	(A1 * !B1 * C1 * !D1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !B1 * C1 * !D1 * X)	0.00072	0.00073	0.00072
	(A1 * !B1 * !C1 * D1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !B1 * !C1 * D1 * X)	0.00071	0.00072	0.00071
	(!A1 * B1 * X)	-0.00058	-0.00060	-0.00060
	(!A1 * B1 * X)	0.00078	0.00079	0.00078
	(!A1 * !B1 * C1 * X)	-0.00058	-0.00060	-0.00060
	(!A1 * !B1 * C1 * X)	0.00078	0.00078	0.00078
	(!A1 * !B1 * !C1 * D1 * X)	-0.00058	-0.00060	-0.00060
	(!A1 * !B1 * !C1 * D1 * X)	0.00078	0.00078	0.00078
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00049	-0.00052	-0.00052
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00088	0.00087	0.00086

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00072	-0.00072	-0.00072
	(A1 * B1 * D1 * X)	0.00082	0.00081	0.00081
	(A1 * B1 * C1 * !D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * C1 * !D1 * X)	0.00082	0.00081	0.00081
	(A1 * B1 * !C1 * !D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * !C1 * !D1 * X)	0.00082	0.00081	0.00081
	(A1 * !B1 * C1 * D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !B1 * C1 * D1 * X)	0.00078	0.00079	0.00078
	(A1 * !B1 * C1 * !D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !B1 * C1 * !D1 * X)	0.00078	0.00079	0.00078
	(A1 * !B1 * !C1 * D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !B1 * !C1 * D1 * X)	0.00077	0.00077	0.00076
	(!A1 * B1 * X)	-0.00066	-0.00068	-0.00067
	(!A1 * B1 * X)	0.00085	0.00085	0.00085
	(!A1 * !B1 * C1 * X)	-0.00066	-0.00067	-0.00067
	(!A1 * !B1 * C1 * X)	0.00085	0.00085	0.00085
	(!A1 * !B1 * !C1 * D1 * X)	-0.00066	-0.00067	-0.00067
	(!A1 * !B1 * !C1 * D1 * X)	0.00085	0.00085	0.00085
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00059	-0.00062	-0.00062
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00092	0.00091	0.00090

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00122	-0.00122	-0.00122
	(A1 * B1 * D1 * X)	0.00149	0.00148	0.00148
	(A1 * B1 * C1 * !D1 * X)	-0.00122	-0.00122	-0.00122
	(A1 * B1 * C1 * !D1 * X)	0.00149	0.00148	0.00148
	(A1 * B1 * !C1 * !D1 * X)	-0.00122	-0.00122	-0.00122
	(A1 * B1 * !C1 * !D1 * X)	0.00148	0.00148	0.00148
	(A1 * !B1 * C1 * D1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !B1 * C1 * D1 * X)	0.00140	0.00143	0.00141
	(A1 * !B1 * C1 * !D1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !B1 * C1 * !D1 * X)	0.00140	0.00143	0.00141
	(A1 * !B1 * !C1 * D1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !B1 * !C1 * D1 * X)	0.00139	0.00141	0.00139
	(!A1 * B1 * X)	-0.00111	-0.00115	-0.00114
	(!A1 * B1 * X)	0.00153	0.00154	0.00153
	(!A1 * !B1 * C1 * X)	-0.00111	-0.00115	-0.00114
	(!A1 * !B1 * C1 * X)	0.00153	0.00154	0.00153
	(!A1 * !B1 * !C1 * D1 * X)	-0.00111	-0.00115	-0.00114
	(!A1 * !B1 * !C1 * D1 * X)	0.00153	0.00154	0.00153
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00109	-0.00115	-0.00114
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00156	0.00154	0.00154

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * A2 * C1 * D1 * X)**	0.00065	0.00066	0.00065
	(A1 * A2 * C1 * D1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * C1 * !D1 * X)	0.00065	0.00066	0.00065
	(A1 * A2 * C1 * !D1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !C1 * D1 * X)	0.00065	0.00066	0.00065
	(A1 * A2 * !C1 * D1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * A2 * !C1 * !D1 * X)	0.00065	0.00066	0.00065
	(A1 * A2 * !C1 * !D1 * X)	-0.00046	-0.00047	-0.00047
	(A1 * !A2 * C1 * D1 * X)	0.00065	0.00066	0.00065
	(A1 * !A2 * C1 * D1 * X)	-0.00069	-0.00071	-0.00071
	(A1 * !A2 * C1 * !D1 * X)	0.00065	0.00066	0.00065
	(A1 * !A2 * C1 * !D1 * X)	-0.00068	-0.00071	-0.00071
	(A1 * !A2 * !C1 * D1 * X)	0.00066	0.00065	0.00065
	(A1 * !A2 * !C1 * D1 * X)	-0.00064	-0.00066	-0.00067
	(!A1 * C1 * D1 * X)	0.00065	0.00066	0.00065
	(!A1 * C1 * D1 * X)	-0.00069	-0.00071	-0.00071
	(!A1 * C1 * !D1 * X)	0.00065	0.00066	0.00065
	(!A1 * C1 * !D1 * X)	-0.00068	-0.00071	-0.00071
	(!A1 * !C1 * D1 * X)	0.00066	0.00065	0.00065
	(!A1 * !C1 * D1 * X)	-0.00064	-0.00066	-0.00067

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00069	0.00070	0.00069
	(A1 * A2 * C1 * D1 * X)	-0.00062	-0.00063	-0.00062
	(A1 * A2 * C1 * !D1 * X)	0.00070	0.00070	0.00069
	(A1 * A2 * C1 * !D1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !C1 * D1 * X)	0.00069	0.00070	0.00069
	(A1 * A2 * !C1 * D1 * X)	-0.00059	-0.00059	-0.00058
	(A1 * A2 * !C1 * !D1 * X)	0.00070	0.00070	0.00069
	(A1 * A2 * !C1 * !D1 * X)	-0.00052	-0.00052	-0.00051
	(A1 * !A2 * C1 * D1 * X)	0.00070	0.00070	0.00069
	(A1 * !A2 * C1 * D1 * X)	-0.00078	-0.00079	-0.00079
	(A1 * !A2 * C1 * !D1 * X)	0.00070	0.00070	0.00069
	(A1 * !A2 * C1 * !D1 * X)	-0.00077	-0.00079	-0.00079
	(A1 * !A2 * !C1 * D1 * X)	0.00069	0.00070	0.00069
	(A1 * !A2 * !C1 * D1 * X)	-0.00071	-0.00075	-0.00074
	(!A1 * C1 * D1 * X)	0.00070	0.00070	0.00069
	(!A1 * C1 * D1 * X)	-0.00078	-0.00079	-0.00079
	(!A1 * C1 * !D1 * X)	0.00070	0.00070	0.00069
	(!A1 * C1 * !D1 * X)	-0.00077	-0.00079	-0.00079
	(!A1 * !C1 * D1 * X)	0.00069	0.00070	0.00069
	(!A1 * !C1 * D1 * X)	-0.00071	-0.00075	-0.00074

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00129	0.00130	0.00128
	(A1 * A2 * C1 * D1 * X)	-0.00115	-0.00116	-0.00115
	(A1 * A2 * C1 * !D1 * X)	0.00129	0.00130	0.00128
	(A1 * A2 * C1 * !D1 * X)	-0.00113	-0.00114	-0.00112
	(A1 * A2 * !C1 * D1 * X)	0.00128	0.00129	0.00129
	(A1 * A2 * !C1 * D1 * X)	-0.00111	-0.00111	-0.00110
	(A1 * A2 * !C1 * !D1 * X)	0.00129	0.00130	0.00128
	(A1 * A2 * !C1 * !D1 * X)	-0.00099	-0.00098	-0.00097
	(A1 * !A2 * C1 * D1 * X)	0.00129	0.00129	0.00128
	(A1 * !A2 * C1 * D1 * X)	-0.00143	-0.00146	-0.00145
	(A1 * !A2 * C1 * !D1 * X)	0.00130	0.00129	0.00128
	(A1 * !A2 * C1 * !D1 * X)	-0.00142	-0.00146	-0.00146
	(A1 * !A2 * !C1 * D1 * X)	0.00129	0.00130	0.00128
	(A1 * !A2 * !C1 * D1 * X)	-0.00132	-0.00139	-0.00138
	(!A1 * C1 * D1 * X)	0.00129	0.00129	0.00128
	(!A1 * C1 * D1 * X)	-0.00143	-0.00146	-0.00145
	(!A1 * C1 * !D1 * X)	0.00130	0.00129	0.00128
	(!A1 * C1 * !D1 * X)	-0.00142	-0.00146	-0.00146
	(!A1 * !C1 * D1 * X)	0.00129	0.00130	0.00128
	(!A1 * !C1 * D1 * X)	-0.00133	-0.00139	-0.00138

Passive power(pJ) for B1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * A2 * C1 * D1 * X)**	-0.00065	-0.00065	-0.00065
	(A1 * A2 * C1 * D1 * X)	0.00056	0.00056	0.00056
	(A1 * A2 * C1 * !D1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * C1 * !D1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * !C1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !C1 * D1 * X)	0.00053	0.00053	0.00053
	(A1 * A2 * !C1 * !D1 * X)	-0.00059	-0.00060	-0.00061
	(A1 * A2 * !C1 * !D1 * X)	0.00052	0.00052	0.00051
	(A1 * !A2 * C1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * C1 * D1 * X)	0.00071	0.00071	0.00071
	(A1 * !A2 * C1 * !D1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * C1 * !D1 * X)	0.00071	0.00071	0.00071
	(A1 * !A2 * !C1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * !C1 * D1 * X)	0.00066	0.00066	0.00067
	(!A1 * C1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * C1 * D1 * X)	0.00071	0.00071	0.00071
	(!A1 * C1 * !D1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * C1 * !D1 * X)	0.00071	0.00071	0.00071
	(!A1 * !C1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * !C1 * D1 * X)	0.00066	0.00066	0.00067

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00069	-0.00069	-0.00069
	(A1 * A2 * C1 * D1 * X)	0.00062	0.00063	0.00062
	(A1 * A2 * C1 * !D1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * C1 * !D1 * X)	0.00061	0.00061	0.00061
	(A1 * A2 * !C1 * D1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !C1 * D1 * X)	0.00059	0.00059	0.00058
	(A1 * A2 * !C1 * !D1 * X)	-0.00063	-0.00063	-0.00064
	(A1 * A2 * !C1 * !D1 * X)	0.00057	0.00058	0.00056
	(A1 * !A2 * C1 * D1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * C1 * D1 * X)	0.00079	0.00079	0.00079
	(A1 * !A2 * C1 * !D1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * C1 * !D1 * X)	0.00079	0.00079	0.00079
	(A1 * !A2 * !C1 * D1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * !C1 * D1 * X)	0.00074	0.00075	0.00074
	(!A1 * C1 * D1 * X)	-0.00069	-0.00069	-0.00069
	(!A1 * C1 * D1 * X)	0.00079	0.00079	0.00079
	(!A1 * C1 * !D1 * X)	-0.00069	-0.00069	-0.00069
	(!A1 * C1 * !D1 * X)	0.00079	0.00079	0.00079
	(!A1 * !C1 * D1 * X)	-0.00069	-0.00069	-0.00069
	(!A1 * !C1 * D1 * X)	0.00074	0.00075	0.00074

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00128	-0.00129	-0.00128
	(A1 * A2 * C1 * D1 * X)	0.00115	0.00116	0.00115
	(A1 * A2 * C1 * !D1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * A2 * C1 * !D1 * X)	0.00113	0.00114	0.00112
	(A1 * A2 * !C1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !C1 * D1 * X)	0.00111	0.00111	0.00110
	(A1 * A2 * !C1 * !D1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * A2 * !C1 * !D1 * X)	0.00106	0.00106	0.00105
	(A1 * !A2 * C1 * D1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * C1 * D1 * X)	0.00145	0.00146	0.00145
	(A1 * !A2 * C1 * !D1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * C1 * !D1 * X)	0.00146	0.00146	0.00146
	(A1 * !A2 * !C1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !C1 * D1 * X)	0.00138	0.00139	0.00138
	(!A1 * C1 * D1 * X)	-0.00128	-0.00128	-0.00128
	(!A1 * C1 * D1 * X)	0.00145	0.00146	0.00145
	(!A1 * C1 * !D1 * X)	-0.00128	-0.00128	-0.00128
	(!A1 * C1 * !D1 * X)	0.00146	0.00146	0.00146
	(!A1 * !C1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * !C1 * D1 * X)	0.00138	0.00139	0.00138

Passive power(pJ) for C1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * B1 * D1 * X)**	0.00067	0.00067	0.00066
	(A1 * B1 * D1 * X)	-0.00050	-0.00051	-0.00051
	(A1 * B1 * !D1 * X)	0.00066	0.00067	0.00066
	(A1 * B1 * !D1 * X)	-0.00046	-0.00046	-0.00046
	(A1 * A2 * !B1 * D1 * X)	0.00069	0.00067	0.00066
	(A1 * A2 * !B1 * D1 * X)	-0.00053	-0.00054	-0.00054
	(A1 * A2 * !B1 * !D1 * X)	0.00066	0.00067	0.00066
	(A1 * A2 * !B1 * !D1 * X)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * !B1 * D1 * X)	0.00074	0.00067	0.00066
	(A1 * !A2 * !B1 * D1 * X)	-0.00061	-0.00070	-0.00070
	(!A1 * B1 * D1 * X)	0.00068	0.00068	0.00066
	(!A1 * B1 * D1 * X)	-0.00051	-0.00051	-0.00051
	(!A1 * B1 * !D1 * X)	0.00066	0.00067	0.00066
	(!A1 * B1 * !D1 * X)	-0.00046	-0.00046	-0.00046
	(!A1 * !B1 * D1 * X)	0.00074	0.00067	0.00066
	(!A1 * !B1 * D1 * X)	-0.00061	-0.00070	-0.00070

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00069	0.00070	0.00069
	(A1 * B1 * D1 * X)	-0.00060	-0.00060	-0.00059
	(A1 * B1 * !D1 * X)	0.00069	0.00070	0.00069
	(A1 * B1 * !D1 * X)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * !B1 * D1 * X)	0.00071	0.00069	0.00069
	(A1 * A2 * !B1 * D1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * !D1 * X)	0.00070	0.00070	0.00069
	(A1 * A2 * !B1 * !D1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * !B1 * D1 * X)	0.00077	0.00070	0.00069
	(A1 * !A2 * !B1 * D1 * X)	-0.00074	-0.00082	-0.00082
	(!A1 * B1 * D1 * X)	0.00070	0.00071	0.00069
	(!A1 * B1 * D1 * X)	-0.00061	-0.00061	-0.00060
	(!A1 * B1 * !D1 * X)	0.00069	0.00070	0.00069
	(!A1 * B1 * !D1 * X)	-0.00055	-0.00055	-0.00054
	(!A1 * !B1 * D1 * X)	0.00077	0.00070	0.00069
	(!A1 * !B1 * D1 * X)	-0.00074	-0.00082	-0.00082

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00127	0.00128	0.00126
	(A1 * B1 * D1 * X)	-0.00110	-0.00110	-0.00109
	(A1 * B1 * !D1 * X)	0.00126	0.00127	0.00125
	(A1 * B1 * !D1 * X)	-0.00101	-0.00101	-0.00100
	(A1 * A2 * !B1 * D1 * X)	0.00127	0.00126	0.00125
	(A1 * A2 * !B1 * D1 * X)	-0.00116	-0.00116	-0.00115
	(A1 * A2 * !B1 * !D1 * X)	0.00127	0.00127	0.00125
	(A1 * A2 * !B1 * !D1 * X)	-0.00101	-0.00101	-0.00099
	(A1 * !A2 * !B1 * D1 * X)	0.00137	0.00126	0.00125
	(A1 * !A2 * !B1 * D1 * X)	-0.00138	-0.00151	-0.00151
	(!A1 * B1 * D1 * X)	0.00127	0.00129	0.00126
	(!A1 * B1 * D1 * X)	-0.00111	-0.00111	-0.00110
	(!A1 * B1 * !D1 * X)	0.00127	0.00127	0.00125
	(!A1 * B1 * !D1 * X)	-0.00102	-0.00101	-0.00100
	(!A1 * !B1 * D1 * X)	0.00137	0.00126	0.00125
	(!A1 * !B1 * D1 * X)	-0.00138	-0.00151	-0.00151

Passive power(pJ) for C1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * B1 * D1 * X)**	-0.00065	-0.00066	-0.00065
	(A1 * B1 * D1 * X)	0.00050	0.00051	0.00051
	(A1 * B1 * !D1 * X)	-0.00065	-0.00065	-0.00064
	(A1 * B1 * !D1 * X)	0.00047	0.00047	0.00047
	(A1 * A2 * !B1 * D1 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !B1 * D1 * X)	0.00053	0.00054	0.00054
	(A1 * A2 * !B1 * !D1 * X)	-0.00057	-0.00057	-0.00064
	(A1 * A2 * !B1 * !D1 * X)	0.00053	0.00052	0.00047
	(A1 * !A2 * !B1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * !B1 * D1 * X)	0.00070	0.00070	0.00070
	(!A1 * B1 * D1 * X)	-0.00065	-0.00066	-0.00065
	(!A1 * B1 * D1 * X)	0.00051	0.00051	0.00051
	(!A1 * B1 * !D1 * X)	-0.00065	-0.00065	-0.00064
	(!A1 * B1 * !D1 * X)	0.00047	0.00047	0.00047
	(!A1 * !B1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * !B1 * D1 * X)	0.00070	0.00070	0.00070

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00068	-0.00069	-0.00068
	(A1 * B1 * D1 * X)	0.00060	0.00060	0.00059
	(A1 * B1 * !D1 * X)	-0.00068	-0.00068	-0.00067
	(A1 * B1 * !D1 * X)	0.00055	0.00056	0.00056
	(A1 * A2 * !B1 * D1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * !B1 * D1 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * !D1 * X)	-0.00057	-0.00058	-0.00067
	(A1 * A2 * !B1 * !D1 * X)	0.00062	0.00062	0.00055
	(A1 * !A2 * !B1 * D1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * !B1 * D1 * X)	0.00082	0.00082	0.00082
	(!A1 * B1 * D1 * X)	-0.00069	-0.00069	-0.00068
	(!A1 * B1 * D1 * X)	0.00061	0.00061	0.00060
	(!A1 * B1 * !D1 * X)	-0.00067	-0.00068	-0.00067
	(!A1 * B1 * !D1 * X)	0.00056	0.00057	0.00056
	(!A1 * !B1 * D1 * X)	-0.00068	-0.00068	-0.00068
	(!A1 * !B1 * D1 * X)	0.00082	0.00082	0.00082

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00125	-0.00126	-0.00125
	(A1 * B1 * D1 * X)	0.00110	0.00110	0.00109
	(A1 * B1 * !D1 * X)	-0.00124	-0.00125	-0.00124
	(A1 * B1 * !D1 * X)	0.00101	0.00102	0.00102
	(A1 * A2 * !B1 * D1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * !B1 * D1 * X)	0.00116	0.00116	0.00115
	(A1 * A2 * !B1 * !D1 * X)	-0.00108	-0.00109	-0.00119
	(A1 * A2 * !B1 * !D1 * X)	0.00112	0.00112	0.00105
	(A1 * !A2 * !B1 * D1 * X)	-0.00124	-0.00124	-0.00124
	(A1 * !A2 * !B1 * D1 * X)	0.00151	0.00151	0.00151
	(!A1 * B1 * D1 * X)	-0.00125	-0.00126	-0.00125
	(!A1 * B1 * D1 * X)	0.00111	0.00111	0.00110
	(!A1 * B1 * !D1 * X)	-0.00124	-0.00124	-0.00123
	(!A1 * B1 * !D1 * X)	0.00102	0.00102	0.00103
	(!A1 * !B1 * D1 * X)	-0.00124	-0.00124	-0.00124
	(!A1 * !B1 * D1 * X)	0.00151	0.00151	0.00151

Passive power(pJ) for D1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00071	0.00072	0.00071
	(A1 * C1 * X)	-0.00043	-0.00043	-0.00043
	(A1 * B1 * !C1 * X)	0.00071	0.00072	0.00071
	(A1 * B1 * !C1 * X)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * !B1 * !C1 * X)	0.00071	0.00072	0.00071
	(A1 * A2 * !B1 * !C1 * X)	-0.00043	-0.00043	-0.00043
	(!A1 * C1 * X)	0.00071	0.00072	0.00071
	(!A1 * C1 * X)	-0.00043	-0.00043	-0.00043
	(!A1 * B1 * !C1 * X)	0.00071	0.00072	0.00071
	(!A1 * B1 * !C1 * X)	-0.00043	-0.00043	-0.00043

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00085	0.00086	0.00085
	(A1 * C1 * X)	-0.00046	-0.00047	-0.00046
	(A1 * B1 * !C1 * X)	0.00085	0.00086	0.00085
	(A1 * B1 * !C1 * X)	-0.00046	-0.00047	-0.00046
	(A1 * A2 * !B1 * !C1 * X)	0.00086	0.00086	0.00085
	(A1 * A2 * !B1 * !C1 * X)	-0.00047	-0.00047	-0.00046
	(!A1 * C1 * X)	0.00085	0.00086	0.00085
	(!A1 * C1 * X)	-0.00046	-0.00047	-0.00046
	(!A1 * B1 * !C1 * X)	0.00085	0.00086	0.00085
	(!A1 * B1 * !C1 * X)	-0.00046	-0.00047	-0.00046
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00137	0.00139	0.00138
	(A1 * C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * B1 * !C1 * X)	0.00137	0.00139	0.00138
	(A1 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !B1 * !C1 * X)	0.00139	0.00139	0.00138
	(A1 * A2 * !B1 * !C1 * X)	-0.00088	-0.00088	-0.00087
	(!A1 * C1 * X)	0.00137	0.00139	0.00138
	(!A1 * C1 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1 * !C1 * X)	0.00137	0.00139	0.00138
	(!A1 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00087

Passive power(pJ) for D1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00067	-0.00068	-0.00070
	(A1 * C1 * X)	0.00046	0.00046	0.00044
	(A1 * B1 * !C1 * X)	-0.00062	-0.00063	-0.00069
	(A1 * B1 * !C1 * X)	0.00049	0.00049	0.00044
	(A1 * A2 * !B1 * !C1 * X)	-0.00050	-0.00051	-0.00065
	(A1 * A2 * !B1 * !C1 * X)	0.00058	0.00057	0.00047
	(!A1 * C1 * X)	-0.00067	-0.00068	-0.00070
	(!A1 * C1 * X)	0.00046	0.00046	0.00044
	(!A1 * B1 * !C1 * X)	-0.00062	-0.00063	-0.00069
	(!A1 * B1 * !C1 * X)	0.00049	0.00049	0.00044
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00081	-0.00082	-0.00084
	(A1 * C1 * X)	0.00050	0.00050	0.00047
	(A1 * B1 * !C1 * X)	-0.00075	-0.00076	-0.00083
	(A1 * B1 * !C1 * X)	0.00054	0.00054	0.00048
	(A1 * A2 * !B1 * !C1 * X)	-0.00061	-0.00062	-0.00079
	(A1 * A2 * !B1 * !C1 * X)	0.00064	0.00063	0.00051
	(!A1 * C1 * X)	-0.00081	-0.00082	-0.00084
	(!A1 * C1 * X)	0.00050	0.00050	0.00047
	(!A1 * B1 * !C1 * X)	-0.00075	-0.00075	-0.00083
	(!A1 * B1 * !C1 * X)	0.00054	0.00054	0.00048
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00125	-0.00127	-0.00136
	(A1 * C1 * X)	0.00099	0.00098	0.00090
	(A1 * B1 * !C1 * X)	-0.00114	-0.00115	-0.00133
	(A1 * B1 * !C1 * X)	0.00105	0.00105	0.00091
	(A1 * A2 * !B1 * !C1 * X)	-0.00090	-0.00091	-0.00125
	(A1 * A2 * !B1 * !C1 * X)	0.00122	0.00121	0.00097
	(!A1 * C1 * X)	-0.00125	-0.00127	-0.00136
	(!A1 * C1 * X)	0.00099	0.00099	0.00090
	(!A1 * B1 * !C1 * X)	-0.00114	-0.00115	-0.00133
	(!A1 * B1 * !C1 * X)	0.00105	0.00105	0.00091

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	C1	Y
0	x	0	0	1
0	x	x	1	0
x	x	1	x	0
1	0	0	0	1
1	0	x	1	0
1	1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211oi_1	9.59040
sky130_fd_sc_hs__a211oi_2	15.98400
sky130_fd_sc_hs__a211oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__a211oi_1	0.00263	0.00246	0.00262	0.00268	0.12085
sky130_fd_sc_hs__a211oi_2	0.00478	0.00498	0.00401	0.00381	0.23020
sky130_fd_sc_hs__a211oi_4	0.00962	0.00954	0.00761	0.00776	0.44190

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211oi_1	0.00000	0.00525	0.01084
sky130_fd_sc_hs__a211oi_2	0.00000	0.00946	0.02167
sky130_fd_sc_hs__a211oi_4	0.00000	0.01892	0.04335

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (FR)	0.42585	2.02001	12.49980
	A2->Y (FR)	0.50156	2.12155	12.69520
	B1->Y (FR)	0.45314	2.04454	12.89220
	C1->Y (FR)	0.36420	1.89466	12.30690
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.36452	1.73725	12.44570
	A2->Y (FR)	0.46705	1.84295	12.54830
	B1->Y (FR)	0.40585	1.76592	12.77190
	C1->Y (FR)	0.27753	1.57953	12.15170
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.34251	1.53063	12.39370
	A2->Y (FR)	0.44739	1.65124	12.62340
	B1->Y (FR)	0.37687	1.56103	12.84980
	C1->Y (FR)	0.26240	1.38888	12.26230

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.05553	0.60394	4.46586
	A2->Y (RF)	0.06146	0.58819	4.35207
	B1->Y (RF)	0.04081	0.50820	3.90193
	C1->Y (RF)	0.03806	0.49881	3.88841
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.04803	0.56176	4.53328
	A2->Y (RF)	0.05897	0.55605	4.40858
	B1->Y (RF)	0.05284	0.59920	4.98020
	C1->Y (RF)	0.04335	0.57181	4.89920
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.04689	0.52810	4.60461
	A2->Y (RF)	0.05594	0.51200	4.35387
	B1->Y (RF)	0.05041	0.55876	5.02705
	C1->Y (RF)	0.04249	0.53525	4.99273

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00029	0.00021	0.00020
	A1	0.00322	0.00314	0.00313
	A2	0.00048	0.00043	0.00041
	A2	0.00381	0.00376	0.00374
	B1	0.00051	0.00044	0.00042
	B1	0.00340	0.00333	0.00331
	C1	0.00044	0.00035	0.00038
	C1	0.00304	0.00296	0.00298
sky130_fd_sc_hs__a211oi_2	A1	0.00006	-0.00008	-0.00009
	A1	0.00563	0.00550	0.00550
	A2	0.00083	0.00068	0.00065
	A2	0.00733	0.00718	0.00715
	B1	0.00126	0.00117	0.00114
	B1	0.00621	0.00612	0.00609
	C1	0.00120	0.00110	0.00114
	C1	0.00535	0.00526	0.00530
sky130_fd_sc_hs__a211oi_4	A1	-0.00011	-0.00036	-0.00037
	A1	0.01095	0.01070	0.01073
	A2	0.00116	0.00090	0.00086
	A2	0.01404	0.01378	0.01374
	B1	0.00210	0.00193	0.00190
	B1	0.01182	0.01165	0.01160
	C1	0.00206	0.00182	0.00191
	C1	0.01026	0.01003	0.01012

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00383	0.00374	0.00365
	A1	0.00101	0.00092	0.00085
	A2	0.00427	0.00419	0.00409
	A2	0.00100	0.00092	0.00084
	B1	0.00327	0.00321	0.00317
	B1	0.00037	0.00031	0.00027
	C1	0.00257	0.00255	0.00253
	C1	-0.00007	-0.00009	-0.00011
sky130_fd_sc_hs__a211oi_2	A1	0.00705	0.00688	0.00671
	A1	0.00170	0.00151	0.00140
	A2	0.00805	0.00788	0.00769
	A2	0.00168	0.00151	0.00135
	B1	0.00568	0.00553	0.00549
	B1	0.00071	0.00056	0.00048
	C1	0.00376	0.00375	0.00374
	C1	-0.00048	-0.00052	-0.00053
sky130_fd_sc_hs__a211oi_4	A1	0.01390	0.01349	0.01317
	A1	0.00330	0.00288	0.00267
	A2	0.01584	0.01552	0.01513
	A2	0.00327	0.00291	0.00263
	B1	0.01073	0.01043	0.01039
	B1	0.00098	0.00067	0.00058
	C1	0.00721	0.00710	0.00726
	C1	-0.00118	-0.00130	-0.00123

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a211oi_1	**(A2 * B1 * C1 * !Y)**	0.00068	0.00069	0.00068
	(A2 * B1 * C1 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * B1 * !C1 * !Y)	0.00068	0.00069	0.00068
	(A2 * B1 * !C1 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * !B1 * C1 * !Y)	0.00068	0.00069	0.00068
	(A2 * !B1 * C1 * !Y)	-0.00073	-0.00077	-0.00076
	(!A2 * B1 * C1 * !Y)	0.00063	0.00064	0.00063
	(!A2 * B1 * C1 * !Y)	-0.00083	-0.00083	-0.00082
	(!A2 * B1 * !C1 * !Y)	0.00063	0.00064	0.00063
	(!A2 * B1 * !C1 * !Y)	-0.00082	-0.00083	-0.00082
	(!A2 * !B1 * C1 * !Y)	0.00063	0.00063	0.00063
	(!A2 * !B1 * C1 * !Y)	-0.00082	-0.00083	-0.00082
	(!A2 * !B1 * !C1 * Y)	0.00025	0.00025	0.00024
	(!A2 * !B1 * !C1 * Y)	-0.00096	-0.00096	-0.00098
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00139	0.00140	0.00139
	(A2 * B1 * C1 * !Y)	-0.00152	-0.00158	-0.00157
	(A2 * B1 * !C1 * !Y)	0.00139	0.00140	0.00139
	(A2 * B1 * !C1 * !Y)	-0.00152	-0.00157	-0.00157
	(A2 * !B1 * C1 * !Y)	0.00140	0.00141	0.00139
	(A2 * !B1 * C1 * !Y)	-0.00145	-0.00150	-0.00151
	(!A2 * B1 * C1 * !Y)	0.00130	0.00131	0.00130
	(!A2 * B1 * C1 * !Y)	-0.00161	-0.00162	-0.00162
	(!A2 * B1 * !C1 * !Y)	0.00130	0.00131	0.00130
	(!A2 * B1 * !C1 * !Y)	-0.00161	-0.00162	-0.00162
	(!A2 * !B1 * C1 * !Y)	0.00130	0.00131	0.00130
	(!A2 * !B1 * C1 * !Y)	-0.00161	-0.00162	-0.00162
	(!A2 * !B1 * !C1 * Y)	0.00058	0.00059	0.00055
	(!A2 * !B1 * !C1 * Y)	-0.00184	-0.00185	-0.00191

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00269	0.00272	0.00270
	(A2 * B1 * C1 * !Y)	-0.00308	-0.00321	-0.00318
	(A2 * B1 * !C1 * !Y)	0.00270	0.00272	0.00270
	(A2 * B1 * !C1 * !Y)	-0.00308	-0.00320	-0.00318
	(A2 * !B1 * C1 * !Y)	0.00270	0.00273	0.00270
	(A2 * !B1 * C1 * !Y)	-0.00293	-0.00306	-0.00305
	(!A2 * B1 * C1 * !Y)	0.00250	0.00252	0.00251
	(!A2 * B1 * C1 * !Y)	-0.00329	-0.00331	-0.00330
	(!A2 * B1 * !C1 * !Y)	0.00250	0.00253	0.00251
	(!A2 * B1 * !C1 * !Y)	-0.00329	-0.00331	-0.00330
	(!A2 * !B1 * C1 * !Y)	0.00250	0.00252	0.00251
	(!A2 * !B1 * C1 * !Y)	-0.00329	-0.00331	-0.00330
	(!A2 * !B1 * !C1 * Y)	0.00103	0.00102	0.00096
	(!A2 * !B1 * !C1 * Y)	-0.00382	-0.00382	-0.00393

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a211oi_1	**(A2 * B1 * C1 * !Y)**	-0.00068	-0.00068	-0.00068
	(A2 * B1 * C1 * !Y)	0.00080	0.00080	0.00080
	(A2 * B1 * !C1 * !Y)	-0.00068	-0.00068	-0.00068
	(A2 * B1 * !C1 * !Y)	0.00079	0.00080	0.00080
	(A2 * !B1 * C1 * !Y)	-0.00068	-0.00068	-0.00068
	(A2 * !B1 * C1 * !Y)	0.00076	0.00077	0.00076
	(!A2 * B1 * C1 * !Y)	-0.00062	-0.00064	-0.00063
	(!A2 * B1 * C1 * !Y)	0.00083	0.00083	0.00083
	(!A2 * B1 * !C1 * !Y)	-0.00061	-0.00064	-0.00063
	(!A2 * B1 * !C1 * !Y)	0.00082	0.00083	0.00083
	(!A2 * !B1 * C1 * !Y)	-0.00061	-0.00063	-0.00063
	(!A2 * !B1 * C1 * !Y)	0.00082	0.00083	0.00083
	(!A2 * !B1 * !C1 * Y)	-0.00023	-0.00023	-0.00023
	(!A2 * !B1 * !C1 * Y)	0.00098	0.00100	0.00098
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00139	-0.00140	-0.00139
	(A2 * B1 * C1 * !Y)	0.00157	0.00158	0.00157
	(A2 * B1 * !C1 * !Y)	-0.00139	-0.00139	-0.00139
	(A2 * B1 * !C1 * !Y)	0.00157	0.00157	0.00157
	(A2 * !B1 * C1 * !Y)	-0.00139	-0.00139	-0.00139
	(A2 * !B1 * C1 * !Y)	0.00150	0.00150	0.00151
	(!A2 * B1 * C1 * !Y)	-0.00125	-0.00131	-0.00130
	(!A2 * B1 * C1 * !Y)	0.00162	0.00163	0.00162
	(!A2 * B1 * !C1 * !Y)	-0.00124	-0.00131	-0.00130
	(!A2 * B1 * !C1 * !Y)	0.00161	0.00164	0.00162
	(!A2 * !B1 * C1 * !Y)	-0.00124	-0.00131	-0.00130
	(!A2 * !B1 * C1 * !Y)	0.00161	0.00164	0.00162
	(!A2 * !B1 * !C1 * Y)	-0.00053	-0.00054	-0.00053
	(!A2 * !B1 * !C1 * Y)	0.00191	0.00194	0.00192

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00269	-0.00270	-0.00269
	(A2 * B1 * C1 * !Y)	0.00318	0.00321	0.00318
	(A2 * B1 * !C1 * !Y)	-0.00269	-0.00270	-0.00269
	(A2 * B1 * !C1 * !Y)	0.00318	0.00320	0.00318
	(A2 * !B1 * C1 * !Y)	-0.00270	-0.00270	-0.00270
	(A2 * !B1 * C1 * !Y)	0.00305	0.00306	0.00305
	(!A2 * B1 * C1 * !Y)	-0.00241	-0.00252	-0.00251
	(!A2 * B1 * C1 * !Y)	0.00330	0.00333	0.00331
	(!A2 * B1 * !C1 * !Y)	-0.00241	-0.00253	-0.00251
	(!A2 * B1 * !C1 * !Y)	0.00333	0.00334	0.00331
	(!A2 * !B1 * C1 * !Y)	-0.00240	-0.00252	-0.00251
	(!A2 * !B1 * C1 * !Y)	0.00333	0.00334	0.00331
	(!A2 * !B1 * !C1 * Y)	-0.00093	-0.00094	-0.00092
	(!A2 * !B1 * !C1 * Y)	0.00393	0.00399	0.00393

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a211oi_1	**(A1 * B1 * C1 * !Y)**	0.00069	0.00070	0.00069
	(A1 * B1 * C1 * !Y)	-0.00078	-0.00081	-0.00080
	(A1 * B1 * !C1 * !Y)	0.00069	0.00070	0.00069
	(A1 * B1 * !C1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * !B1 * C1 * !Y)	0.00069	0.00070	0.00069
	(A1 * !B1 * C1 * !Y)	-0.00074	-0.00078	-0.00077
	(!A1 * B1 * !Y)	0.00064	0.00065	0.00064
	(!A1 * B1 * !Y)	-0.00083	-0.00084	-0.00083
	(!A1 * !B1 * C1 * !Y)	0.00064	0.00064	0.00064
	(!A1 * !B1 * C1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * !C1 * Y)	0.00064	0.00065	0.00064
	(!A1 * !B1 * !C1 * Y)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00142	0.00144	0.00143
	(A1 * B1 * C1 * !Y)	-0.00156	-0.00162	-0.00162
	(A1 * B1 * !C1 * !Y)	0.00143	0.00144	0.00143
	(A1 * B1 * !C1 * !Y)	-0.00157	-0.00162	-0.00162
	(A1 * !B1 * C1 * !Y)	0.00143	0.00144	0.00143
	(A1 * !B1 * C1 * !Y)	-0.00149	-0.00157	-0.00155
	(!A1 * B1 * !Y)	0.00134	0.00135	0.00135
	(!A1 * B1 * !Y)	-0.00168	-0.00169	-0.00168
	(!A1 * !B1 * C1 * !Y)	0.00134	0.00135	0.00135
	(!A1 * !B1 * C1 * !Y)	-0.00168	-0.00169	-0.00168
	(!A1 * !B1 * !C1 * Y)	0.00123	0.00124	0.00123
	(!A1 * !B1 * !C1 * Y)	-0.00179	-0.00180	-0.00179
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00277	0.00280	0.00278
	(A1 * B1 * C1 * !Y)	-0.00311	-0.00323	-0.00321
	(A1 * B1 * !C1 * !Y)	0.00278	0.00280	0.00278
	(A1 * B1 * !C1 * !Y)	-0.00311	-0.00322	-0.00321
	(A1 * !B1 * C1 * !Y)	0.00279	0.00281	0.00278
	(A1 * !B1 * C1 * !Y)	-0.00296	-0.00312	-0.00308
	(!A1 * B1 * !Y)	0.00258	0.00259	0.00257
	(!A1 * B1 * !Y)	-0.00335	-0.00335	-0.00334
	(!A1 * !B1 * C1 * !Y)	0.00256	0.00260	0.00257
	(!A1 * !B1 * C1 * !Y)	-0.00333	-0.00335	-0.00334
	(!A1 * !B1 * !C1 * Y)	0.00256	0.00259	0.00257
	(!A1 * !B1 * !C1 * Y)	-0.00332	-0.00335	-0.00333

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a211oi_1	**(A1 * B1 * C1 * !Y)**	-0.00069	-0.00069	-0.00069
	(A1 * B1 * C1 * !Y)	0.00081	0.00081	0.00080
	(A1 * B1 * !C1 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * !C1 * !Y)	0.00081	0.00080	0.00080
	(A1 * !B1 * C1 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * C1 * !Y)	0.00077	0.00078	0.00077
	(!A1 * B1 * !Y)	-0.00063	-0.00065	-0.00064
	(!A1 * B1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * !B1 * C1 * !Y)	-0.00062	-0.00064	-0.00064
	(!A1 * !B1 * C1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * Y)	-0.00061	-0.00065	-0.00064
	(!A1 * !B1 * !C1 * Y)	0.00085	0.00084	0.00083
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00142	-0.00143	-0.00143
	(A1 * B1 * C1 * !Y)	0.00161	0.00162	0.00162
	(A1 * B1 * !C1 * !Y)	-0.00142	-0.00143	-0.00143
	(A1 * B1 * !C1 * !Y)	0.00162	0.00162	0.00162
	(A1 * !B1 * C1 * !Y)	-0.00143	-0.00144	-0.00143
	(A1 * !B1 * C1 * !Y)	0.00155	0.00157	0.00155
	(!A1 * B1 * !Y)	-0.00131	-0.00135	-0.00135
	(!A1 * B1 * !Y)	0.00168	0.00169	0.00169
	(!A1 * !B1 * C1 * !Y)	-0.00131	-0.00135	-0.00135
	(!A1 * !B1 * C1 * !Y)	0.00168	0.00170	0.00169
	(!A1 * !B1 * !C1 * Y)	-0.00118	-0.00124	-0.00123
	(!A1 * !B1 * !C1 * Y)	0.00181	0.00181	0.00180

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00277	-0.00278	-0.00277
	(A1 * B1 * C1 * !Y)	0.00321	0.00323	0.00321
	(A1 * B1 * !C1 * !Y)	-0.00277	-0.00277	-0.00277
	(A1 * B1 * !C1 * !Y)	0.00320	0.00322	0.00321
	(A1 * !B1 * C1 * !Y)	-0.00277	-0.00279	-0.00277
	(A1 * !B1 * C1 * !Y)	0.00308	0.00312	0.00308
	(!A1 * B1 * !Y)	-0.00250	-0.00259	-0.00257
	(!A1 * B1 * !Y)	0.00335	0.00336	0.00335
	(!A1 * !B1 * C1 * !Y)	-0.00250	-0.00260	-0.00257
	(!A1 * !B1 * C1 * !Y)	0.00335	0.00336	0.00335
	(!A1 * !B1 * !C1 * Y)	-0.00245	-0.00259	-0.00257
	(!A1 * !B1 * !C1 * Y)	0.00341	0.00337	0.00335

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * A2 * C1 * !Y)	0.00075	0.00074	0.00072
	(A1 * A2 * C1 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * !C1 * !Y)	0.00073	0.00073	0.00072
	(A1 * A2 * !C1 * !Y)	-0.00052	-0.00052	-0.00051
	(A1 * !A2 * C1 * !Y)	0.00079	0.00073	0.00072
	(A1 * !A2 * C1 * !Y)	-0.00072	-0.00079	-0.00079
	(!A1 * C1 * !Y)	0.00079	0.00073	0.00072
	(!A1 * C1 * !Y)	-0.00072	-0.00079	-0.00079
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00088	0.00089	0.00087
	(A1 * A2 * C1 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * A2 * !C1 * !Y)	0.00085	0.00087	0.00085
	(A1 * A2 * !C1 * !Y)	-0.00100	-0.00102	-0.00100
	(A1 * !A2 * C1 * !Y)	0.00094	0.00085	0.00085
	(A1 * !A2 * C1 * !Y)	-0.00144	-0.00155	-0.00155
	(!A1 * C1 * !Y)	0.00094	0.00085	0.00085
	(!A1 * C1 * !Y)	-0.00144	-0.00155	-0.00155
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00159	0.00158	0.00154
	(A1 * A2 * C1 * !Y)	-0.00241	-0.00242	-0.00240
	(A1 * A2 * !C1 * !Y)	0.00155	0.00155	0.00152
	(A1 * A2 * !C1 * !Y)	-0.00212	-0.00212	-0.00209
	(A1 * !A2 * C1 * !Y)	0.00175	0.00154	0.00152
	(A1 * !A2 * C1 * !Y)	-0.00296	-0.00322	-0.00322
	(!A1 * C1 * !Y)	0.00175	0.00154	0.00152
	(!A1 * C1 * !Y)	-0.00296	-0.00322	-0.00322

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * A2 * C1 * !Y)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * C1 * !Y)	0.00060	0.00060	0.00060
	(A1 * A2 * !C1 * !Y)	-0.00068	-0.00069	-0.00070
	(A1 * A2 * !C1 * !Y)	0.00056	0.00056	0.00054
	(A1 * !A2 * C1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * C1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * C1 * !Y)	-0.00072	-0.00072	-0.00072
	(!A1 * C1 * !Y)	0.00079	0.00079	0.00079
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * C1 * !Y)	0.00116	0.00117	0.00116
	(A1 * A2 * !C1 * !Y)	-0.00078	-0.00079	-0.00079
	(A1 * A2 * !C1 * !Y)	0.00107	0.00107	0.00106
	(A1 * !A2 * C1 * !Y)	-0.00085	-0.00085	-0.00084
	(A1 * !A2 * C1 * !Y)	0.00154	0.00155	0.00155
	(!A1 * C1 * !Y)	-0.00085	-0.00085	-0.00084
	(!A1 * C1 * !Y)	0.00155	0.00155	0.00155
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00153	-0.00154	-0.00153
	(A1 * A2 * C1 * !Y)	0.00241	0.00242	0.00240
	(A1 * A2 * !C1 * !Y)	-0.00139	-0.00140	-0.00142
	(A1 * A2 * !C1 * !Y)	0.00223	0.00223	0.00221
	(A1 * !A2 * C1 * !Y)	-0.00152	-0.00152	-0.00151
	(A1 * !A2 * C1 * !Y)	0.00321	0.00322	0.00322
	(!A1 * C1 * !Y)	-0.00152	-0.00152	-0.00151
	(!A1 * C1 * !Y)	0.00322	0.00322	0.00322

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00086	0.00087	0.00086
	(A1 * B1 * !Y)	-0.00045	-0.00046	-0.00045
	(A1 * A2 * !B1 * !Y)	0.00086	0.00087	0.00086
	(A1 * A2 * !B1 * !Y)	-0.00045	-0.00046	-0.00045
	(!A1 * B1 * !Y)	0.00086	0.00087	0.00086
	(!A1 * B1 * !Y)	-0.00045	-0.00046	-0.00045
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00091	0.00092	0.00091
	(A1 * B1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * !B1 * !Y)	0.00091	0.00092	0.00091
	(A1 * A2 * !B1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * B1 * !Y)	0.00091	0.00092	0.00091
	(!A1 * B1 * !Y)	-0.00092	-0.00093	-0.00092
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00184	0.00187	0.00184
	(A1 * B1 * !Y)	-0.00186	-0.00187	-0.00185
	(A1 * A2 * !B1 * !Y)	0.00184	0.00187	0.00184
	(A1 * A2 * !B1 * !Y)	-0.00185	-0.00187	-0.00184
	(!A1 * B1 * !Y)	0.00184	0.00187	0.00184
	(!A1 * B1 * !Y)	-0.00186	-0.00188	-0.00185

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00082	-0.00082	-0.00085
	(A1 * B1 * !Y)	0.00049	0.00049	0.00046
	(A1 * A2 * !B1 * !Y)	-0.00070	-0.00072	-0.00083
	(A1 * A2 * !B1 * !Y)	0.00056	0.00057	0.00048
	(!A1 * B1 * !Y)	-0.00081	-0.00082	-0.00085
	(!A1 * B1 * !Y)	0.00049	0.00049	0.00046
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00078	-0.00079	-0.00089
	(A1 * B1 * !Y)	0.00104	0.00104	0.00095
	(A1 * A2 * !B1 * !Y)	-0.00059	-0.00061	-0.00085
	(A1 * A2 * !B1 * !Y)	0.00116	0.00116	0.00098
	(!A1 * B1 * !Y)	-0.00078	-0.00079	-0.00089
	(!A1 * B1 * !Y)	0.00105	0.00105	0.00096
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00161	-0.00163	-0.00181
	(A1 * B1 * !Y)	0.00207	0.00206	0.00191
	(A1 * A2 * !B1 * !Y)	-0.00120	-0.00123	-0.00171
	(A1 * A2 * !B1 * !Y)	0.00231	0.00232	0.00196
	(!A1 * B1 * !Y)	-0.00160	-0.00163	-0.00181
	(!A1 * B1 * !Y)	0.00206	0.00207	0.00191

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	C1	X
0	x	0	0	0
0	x	x	1	1
x	x	1	x	1
1	0	0	0	0
1	0	x	1	1
1	1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211o_1	12.78720
sky130_fd_sc_hs__a211o_2	12.78720
sky130_fd_sc_hs__a211o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__a211o_1	0.00244	0.00227	0.00248	0.00245	0.44309
sky130_fd_sc_hs__a211o_2	0.00267	0.00264	0.00263	0.00254	0.86900
sky130_fd_sc_hs__a211o_4	0.00451	0.00460	0.00491	0.00443	1.66957

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211o_1	0.00000	0.01452	0.02824
sky130_fd_sc_hs__a211o_2	0.00000	0.01840	0.03100
sky130_fd_sc_hs__a211o_4	0.00000	0.03760	0.06489

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (RR)	0.17206	1.14889	8.50715
	A2->X (RR)	0.17842	1.16044	8.74786
	B1->X (RR)	0.13620	1.09537	8.44010
	C1->X (RR)	0.13118	1.07702	8.35321
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.17086	1.03588	8.72165
	A2->X (RR)	0.17774	1.03704	8.90384
	B1->X (RR)	0.12912	0.97606	8.65058
	C1->X (RR)	0.12505	0.96151	8.57768
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.17372	0.92909	8.62492
	A2->X (RR)	0.18113	0.93703	8.83725
	B1->X (RR)	0.12435	0.85623	8.52155
	C1->X (RR)	0.12409	0.84786	8.45344

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.62612	1.40974	6.45517
	A2->X (FF)	0.71119	1.50376	6.65637
	B1->X (FF)	0.65252	1.42003	6.52628
	C1->X (FF)	0.56919	1.27570	5.87523
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.83061	1.63245	7.00056
	A2->X (FF)	0.93689	1.75162	7.19879
	B1->X (FF)	0.88189	1.67248	7.19930
	C1->X (FF)	0.79069	1.51591	6.59054
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.75403	1.50617	6.81592
	A2->X (FF)	0.81728	1.57908	6.97595
	B1->X (FF)	0.77502	1.50908	6.93961
	C1->X (FF)	0.67268	1.34617	6.28542

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00519	0.00511	0.00514
	A1	0.00259	0.00251	0.00255
	A2	0.00555	0.00551	0.00546
	A2	0.00258	0.00254	0.00249
	B1	0.00469	0.00463	0.00470
	B1	0.00201	0.00194	0.00202
	C1	0.00404	0.00394	0.00408
	C1	0.00163	0.00153	0.00176
sky130_fd_sc_hs__a211o_2	A1	0.00647	0.00649	0.00652
	A1	0.00360	0.00363	0.00367
	A2	0.00695	0.00702	0.00698
	A2	0.00360	0.00366	0.00367
	B1	0.00606	0.00611	0.00617
	B1	0.00309	0.00315	0.00322
	C1	0.00538	0.00541	0.00552
	C1	0.00269	0.00272	0.00284
sky130_fd_sc_hs__a211o_4	A1	0.01194	0.01208	0.01230
	A1	0.00683	0.00696	0.00722
	A2	0.01291	0.01315	0.01325
	A2	0.00684	0.00708	0.00727
	B1	0.01103	0.01107	0.01126
	B1	0.00572	0.00578	0.00600
	C1	0.00934	0.00942	0.00976
	C1	0.00485	0.00493	0.00529

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00181	0.00185	0.00184
	A1	0.00449	0.00452	0.00451
	A2	0.00200	0.00206	0.00248
	A2	0.00500	0.00508	0.00506
	B1	0.00188	0.00194	0.00205
	B1	0.00455	0.00461	0.00459
	C1	0.00186	0.00187	0.00216
	C1	0.00423	0.00426	0.00450
sky130_fd_sc_hs__a211o_2	A1	0.00285	0.00300	0.00305
	A1	0.00576	0.00592	0.00596
	A2	0.00301	0.00319	0.00378
	A2	0.00638	0.00657	0.00660
	B1	0.00281	0.00300	0.00386
	B1	0.00598	0.00615	0.00619
	C1	0.00302	0.00316	0.00399
	C1	0.00566	0.00580	0.00608
sky130_fd_sc_hs__a211o_4	A1	0.00536	0.00576	0.00696
	A1	0.01063	0.01102	0.01115
	A2	0.00546	0.00592	0.00636
	A2	0.01159	0.01206	0.01218
	B1	0.00574	0.00609	0.00747
	B1	0.01098	0.01135	0.01146
	C1	0.00574	0.00605	0.00778
	C1	0.01015	0.01050	0.01108

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a211o_1	**(A2 * B1 * C1 * X)**	0.00061	0.00061	0.00060
	(A2 * B1 * C1 * X)	-0.00073	-0.00074	-0.00074
	(A2 * B1 * !C1 * X)	0.00061	0.00061	0.00060
	(A2 * B1 * !C1 * X)	-0.00072	-0.00074	-0.00074
	(A2 * !B1 * C1 * X)	0.00061	0.00061	0.00060
	(A2 * !B1 * C1 * X)	-0.00069	-0.00072	-0.00071
	(!A2 * B1 * C1 * X)	0.00056	0.00057	0.00056
	(!A2 * B1 * C1 * X)	-0.00078	-0.00078	-0.00077
	(!A2 * B1 * !C1 * X)	0.00056	0.00057	0.00056
	(!A2 * B1 * !C1 * X)	-0.00078	-0.00078	-0.00077
	(!A2 * !B1 * C1 * X)	0.00056	0.00057	0.00056
	(!A2 * !B1 * C1 * X)	-0.00078	-0.00078	-0.00077
	(!A2 * !B1 * !C1 * !X)	0.00021	0.00021	0.00020
	(!A2 * !B1 * !C1 * !X)	-0.00093	-0.00093	-0.00094
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00075	0.00075	0.00074
	(A2 * B1 * C1 * X)	-0.00070	-0.00071	-0.00071
	(A2 * B1 * !C1 * X)	0.00075	0.00075	0.00074
	(A2 * B1 * !C1 * X)	-0.00069	-0.00071	-0.00071
	(A2 * !B1 * C1 * X)	0.00074	0.00074	0.00074
	(A2 * !B1 * C1 * X)	-0.00065	-0.00069	-0.00068
	(!A2 * B1 * C1 * X)	0.00069	0.00069	0.00069
	(!A2 * B1 * C1 * X)	-0.00074	-0.00074	-0.00073
	(!A2 * B1 * !C1 * X)	0.00069	0.00069	0.00069
	(!A2 * B1 * !C1 * X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * C1 * X)	0.00068	0.00069	0.00069
	(!A2 * !B1 * C1 * X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * !C1 * !X)	0.00025	0.00025	0.00024
	(!A2 * !B1 * !C1 * !X)	-0.00093	-0.00092	-0.00094

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00119	0.00119	0.00118
	(A2 * B1 * C1 * X)	-0.00145	-0.00148	-0.00148
	(A2 * B1 * !C1 * X)	0.00119	0.00119	0.00118
	(A2 * B1 * !C1 * X)	-0.00144	-0.00148	-0.00148
	(A2 * !B1 * C1 * X)	0.00118	0.00119	0.00118
	(A2 * !B1 * C1 * X)	-0.00136	-0.00144	-0.00142
	(!A2 * B1 * C1 * X)	0.00109	0.00109	0.00109
	(!A2 * B1 * C1 * X)	-0.00153	-0.00154	-0.00154
	(!A2 * B1 * !C1 * X)	0.00109	0.00110	0.00109
	(!A2 * B1 * !C1 * X)	-0.00154	-0.00154	-0.00154
	(!A2 * !B1 * C1 * X)	0.00109	0.00110	0.00109
	(!A2 * !B1 * C1 * X)	-0.00154	-0.00154	-0.00154
	(!A2 * !B1 * !C1 * !X)	0.00042	0.00041	0.00039
	(!A2 * !B1 * !C1 * !X)	-0.00180	-0.00180	-0.00184

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a211o_1	**(A2 * B1 * C1 * X)**	-0.00061	-0.00060	-0.00060
	(A2 * B1 * C1 * X)	0.00075	0.00074	0.00074
	(A2 * B1 * !C1 * X)	-0.00061	-0.00060	-0.00060
	(A2 * B1 * !C1 * X)	0.00075	0.00074	0.00074
	(A2 * !B1 * C1 * X)	-0.00060	-0.00061	-0.00060
	(A2 * !B1 * C1 * X)	0.00072	0.00072	0.00071
	(!A2 * B1 * C1 * X)	-0.00055	-0.00057	-0.00056
	(!A2 * B1 * C1 * X)	0.00078	0.00078	0.00078
	(!A2 * B1 * !C1 * X)	-0.00055	-0.00057	-0.00056
	(!A2 * B1 * !C1 * X)	0.00078	0.00078	0.00078
	(!A2 * !B1 * C1 * X)	-0.00055	-0.00057	-0.00056
	(!A2 * !B1 * C1 * X)	0.00078	0.00078	0.00078
	(!A2 * !B1 * !C1 * !X)	-0.00019	-0.00019	-0.00019
	(!A2 * !B1 * !C1 * !X)	0.00094	0.00096	0.00095
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00074	-0.00074	-0.00074
	(A2 * B1 * C1 * X)	0.00072	0.00071	0.00071
	(A2 * B1 * !C1 * X)	-0.00074	-0.00074	-0.00074
	(A2 * B1 * !C1 * X)	0.00072	0.00071	0.00071
	(A2 * !B1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A2 * !B1 * C1 * X)	0.00069	0.00069	0.00068
	(!A2 * B1 * C1 * X)	-0.00067	-0.00069	-0.00069
	(!A2 * B1 * C1 * X)	0.00074	0.00074	0.00074
	(!A2 * B1 * !C1 * X)	-0.00067	-0.00069	-0.00069
	(!A2 * B1 * !C1 * X)	0.00073	0.00074	0.00074
	(!A2 * !B1 * C1 * X)	-0.00067	-0.00069	-0.00069
	(!A2 * !B1 * C1 * X)	0.00073	0.00074	0.00074
	(!A2 * !B1 * !C1 * !X)	-0.00023	-0.00024	-0.00023
	(!A2 * !B1 * !C1 * !X)	0.00094	0.00096	0.00094

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00118	-0.00118	-0.00118
	(A2 * B1 * C1 * X)	0.00149	0.00148	0.00148
	(A2 * B1 * !C1 * X)	-0.00118	-0.00118	-0.00118
	(A2 * B1 * !C1 * X)	0.00149	0.00148	0.00148
	(A2 * !B1 * C1 * X)	-0.00118	-0.00118	-0.00117
	(A2 * !B1 * C1 * X)	0.00144	0.00144	0.00142
	(!A2 * B1 * C1 * X)	-0.00106	-0.00109	-0.00109
	(!A2 * B1 * C1 * X)	0.00154	0.00155	0.00154
	(!A2 * B1 * !C1 * X)	-0.00106	-0.00110	-0.00109
	(!A2 * B1 * !C1 * X)	0.00154	0.00155	0.00154
	(!A2 * !B1 * C1 * X)	-0.00106	-0.00110	-0.00109
	(!A2 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(!A2 * !B1 * !C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !C1 * !X)	0.00184	0.00187	0.00184

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a211o_1	**(A1 * B1 * C1 * X)**	0.00062	0.00062	0.00062
	(A1 * B1 * C1 * X)	-0.00071	-0.00074	-0.00074
	(A1 * B1 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * B1 * !C1 * X)	-0.00071	-0.00074	-0.00074
	(A1 * !B1 * C1 * X)	0.00062	0.00062	0.00062
	(A1 * !B1 * C1 * X)	-0.00068	-0.00072	-0.00071
	(!A1 * B1 * X)	0.00058	0.00058	0.00058
	(!A1 * B1 * X)	-0.00076	-0.00077	-0.00076
	(!A1 * !B1 * C1 * X)	0.00058	0.00058	0.00058
	(!A1 * !B1 * C1 * X)	-0.00076	-0.00077	-0.00076
	(!A1 * !B1 * !C1 * !X)	0.00052	0.00052	0.00052
	(!A1 * !B1 * !C1 * !X)	-0.00082	-0.00083	-0.00082

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00081	0.00080	0.00079
	(A1 * B1 * C1 * X)	-0.00070	-0.00072	-0.00072
	(A1 * B1 * !C1 * X)	0.00081	0.00080	0.00079
	(A1 * B1 * !C1 * X)	-0.00070	-0.00072	-0.00072
	(A1 * !B1 * C1 * X)	0.00080	0.00080	0.00079
	(A1 * !B1 * C1 * X)	-0.00066	-0.00070	-0.00069
	(!A1 * B1 * X)	0.00074	0.00074	0.00074
	(!A1 * B1 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * C1 * X)	0.00074	0.00075	0.00074
	(!A1 * !B1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * !C1 * !X)	0.00063	0.00063	0.00063
	(!A1 * !B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00143	0.00143	0.00142
	(A1 * B1 * C1 * X)	-0.00139	-0.00144	-0.00143
	(A1 * B1 * !C1 * X)	0.00143	0.00143	0.00142
	(A1 * B1 * !C1 * X)	-0.00138	-0.00144	-0.00143
	(A1 * !B1 * C1 * X)	0.00143	0.00142	0.00142
	(A1 * !B1 * C1 * X)	-0.00132	-0.00139	-0.00138
	(!A1 * B1 * X)	0.00134	0.00135	0.00134
	(!A1 * B1 * X)	-0.00148	-0.00148	-0.00148
	(!A1 * !B1 * C1 * X)	0.00134	0.00136	0.00134
	(!A1 * !B1 * C1 * X)	-0.00148	-0.00149	-0.00148
	(!A1 * !B1 * !C1 * !X)	0.00131	0.00132	0.00132
	(!A1 * !B1 * !C1 * !X)	-0.00151	-0.00151	-0.00151

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a211o_1	**(A1 * B1 * C1 * X)**	-0.00062	-0.00062	-0.00062
	(A1 * B1 * C1 * X)	0.00074	0.00074	0.00074
	(A1 * B1 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * B1 * !C1 * X)	0.00074	0.00074	0.00074
	(A1 * !B1 * C1 * X)	-0.00062	-0.00062	-0.00061
	(A1 * !B1 * C1 * X)	0.00071	0.00072	0.00071
	(!A1 * B1 * X)	-0.00057	-0.00058	-0.00058
	(!A1 * B1 * X)	0.00077	0.00077	0.00077
	(!A1 * !B1 * C1 * X)	-0.00056	-0.00058	-0.00058
	(!A1 * !B1 * C1 * X)	0.00076	0.00077	0.00077
	(!A1 * !B1 * !C1 * !X)	-0.00050	-0.00052	-0.00052
	(!A1 * !B1 * !C1 * !X)	0.00084	0.00083	0.00083
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00080	-0.00080	-0.00079
	(A1 * B1 * C1 * X)	0.00072	0.00072	0.00072
	(A1 * B1 * !C1 * X)	-0.00080	-0.00080	-0.00079
	(A1 * B1 * !C1 * X)	0.00072	0.00072	0.00072
	(A1 * !B1 * C1 * X)	-0.00080	-0.00080	-0.00079
	(A1 * !B1 * C1 * X)	0.00070	0.00070	0.00069
	(!A1 * B1 * X)	-0.00073	-0.00074	-0.00074
	(!A1 * B1 * X)	0.00074	0.00075	0.00074
	(!A1 * !B1 * C1 * X)	-0.00073	-0.00075	-0.00074
	(!A1 * !B1 * C1 * X)	0.00074	0.00075	0.00074
	(!A1 * !B1 * !C1 * !X)	-0.00060	-0.00063	-0.00063
	(!A1 * !B1 * !C1 * !X)	0.00088	0.00087	0.00086

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00142	-0.00143	-0.00142
	(A1 * B1 * C1 * X)	0.00142	0.00145	0.00143
	(A1 * B1 * !C1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * B1 * !C1 * X)	0.00142	0.00145	0.00143
	(A1 * !B1 * C1 * X)	-0.00142	-0.00142	-0.00142
	(A1 * !B1 * C1 * X)	0.00137	0.00139	0.00138
	(!A1 * B1 * X)	-0.00131	-0.00135	-0.00134
	(!A1 * B1 * X)	0.00148	0.00150	0.00148
	(!A1 * !B1 * C1 * X)	-0.00131	-0.00136	-0.00134
	(!A1 * !B1 * C1 * X)	0.00148	0.00150	0.00149
	(!A1 * !B1 * !C1 * !X)	-0.00126	-0.00132	-0.00132
	(!A1 * !B1 * !C1 * !X)	0.00154	0.00153	0.00152

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * A2 * C1 * X)	0.00076	0.00074	0.00073
	(A1 * A2 * C1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * !C1 * X)	0.00073	0.00074	0.00072
	(A1 * A2 * !C1 * X)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * C1 * X)	0.00080	0.00073	0.00072
	(A1 * !A2 * C1 * X)	-0.00063	-0.00071	-0.00071
	(!A1 * C1 * X)	0.00080	0.00073	0.00072
	(!A1 * C1 * X)	-0.00063	-0.00071	-0.00071
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00079	0.00078	0.00076
	(A1 * A2 * C1 * X)	-0.00055	-0.00055	-0.00054
	(A1 * A2 * !C1 * X)	0.00076	0.00076	0.00075
	(A1 * A2 * !C1 * X)	-0.00047	-0.00047	-0.00046
	(A1 * !A2 * C1 * X)	0.00082	0.00075	0.00074
	(A1 * !A2 * C1 * X)	-0.00063	-0.00071	-0.00071
	(!A1 * C1 * X)	0.00082	0.00075	0.00074
	(!A1 * C1 * X)	-0.00064	-0.00071	-0.00071
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00138	0.00137	0.00134
	(A1 * A2 * C1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * !C1 * X)	0.00134	0.00135	0.00132
	(A1 * A2 * !C1 * X)	-0.00100	-0.00099	-0.00098
	(A1 * !A2 * C1 * X)	0.00146	0.00133	0.00132
	(A1 * !A2 * C1 * X)	-0.00134	-0.00148	-0.00149
	(!A1 * C1 * X)	0.00146	0.00133	0.00132
	(!A1 * C1 * X)	-0.00134	-0.00148	-0.00149

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * A2 * C1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * C1 * X)	0.00054	0.00054	0.00054
	(A1 * A2 * !C1 * X)	-0.00069	-0.00069	-0.00071
	(A1 * A2 * !C1 * X)	0.00051	0.00050	0.00049
	(A1 * !A2 * C1 * X)	-0.00072	-0.00072	-0.00071
	(A1 * !A2 * C1 * X)	0.00071	0.00071	0.00071
	(!A1 * C1 * X)	-0.00071	-0.00072	-0.00071
	(!A1 * C1 * X)	0.00070	0.00071	0.00071
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * C1 * X)	0.00055	0.00055	0.00054
	(A1 * A2 * !C1 * X)	-0.00071	-0.00072	-0.00073
	(A1 * A2 * !C1 * X)	0.00051	0.00051	0.00049
	(A1 * !A2 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * C1 * X)	0.00071	0.00071	0.00071
	(!A1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * C1 * X)	0.00071	0.00071	0.00071
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00133	-0.00133	-0.00133
	(A1 * A2 * C1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * !C1 * X)	-0.00125	-0.00127	-0.00128
	(A1 * A2 * !C1 * X)	0.00106	0.00106	0.00103
	(A1 * !A2 * C1 * X)	-0.00131	-0.00131	-0.00130
	(A1 * !A2 * C1 * X)	0.00148	0.00148	0.00149
	(!A1 * C1 * X)	-0.00131	-0.00131	-0.00130
	(!A1 * C1 * X)	0.00148	0.00148	0.00149

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00080	0.00081	0.00079
	(A1 * B1 * X)	-0.00043	-0.00043	-0.00042
	(A1 * A2 * !B1 * X)	0.00080	0.00081	0.00079
	(A1 * A2 * !B1 * X)	-0.00042	-0.00043	-0.00042
	(!A1 * B1 * X)	0.00080	0.00081	0.00079
	(!A1 * B1 * X)	-0.00043	-0.00043	-0.00042
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00079	0.00081	0.00080
	(A1 * B1 * X)	-0.00044	-0.00045	-0.00044
	(A1 * A2 * !B1 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * !B1 * X)	-0.00045	-0.00044	-0.00044
	(!A1 * B1 * X)	0.00080	0.00081	0.00080
	(!A1 * B1 * X)	-0.00044	-0.00045	-0.00044
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00128	0.00130	0.00129
	(A1 * B1 * X)	-0.00084	-0.00086	-0.00085
	(A1 * A2 * !B1 * X)	0.00130	0.00130	0.00129
	(A1 * A2 * !B1 * X)	-0.00086	-0.00086	-0.00085
	(!A1 * B1 * X)	0.00128	0.00130	0.00129
	(!A1 * B1 * X)	-0.00085	-0.00087	-0.00086

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00076	-0.00076	-0.00079
	(A1 * B1 * X)	0.00046	0.00046	0.00043
	(A1 * A2 * !B1 * X)	-0.00066	-0.00066	-0.00077
	(A1 * A2 * !B1 * X)	0.00053	0.00053	0.00045
	(!A1 * B1 * X)	-0.00076	-0.00076	-0.00079
	(!A1 * B1 * X)	0.00046	0.00046	0.00043
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00076	-0.00077	-0.00079
	(A1 * B1 * X)	0.00048	0.00048	0.00045
	(A1 * A2 * !B1 * X)	-0.00067	-0.00067	-0.00077
	(A1 * A2 * !B1 * X)	0.00054	0.00054	0.00047
	(!A1 * B1 * X)	-0.00076	-0.00076	-0.00079
	(!A1 * B1 * X)	0.00048	0.00048	0.00045
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00120	-0.00121	-0.00127
	(A1 * B1 * X)	0.00094	0.00094	0.00088
	(A1 * A2 * !B1 * X)	-0.00101	-0.00102	-0.00123
	(A1 * A2 * !B1 * X)	0.00107	0.00106	0.00090
	(!A1 * B1 * X)	-0.00119	-0.00120	-0.00127
	(!A1 * B1 * X)	0.00094	0.00094	0.00088

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A1	A2	B1_N	Y
x	x	0	0
0	x	1	1
1	0	1	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21boi_1	11.18880
sky130_fd_sc_hs__a21boi_2	14.38560
sky130_fd_sc_hs__a21boi_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__a21boi_1	0.00257	0.00247	0.00241	0.19213
sky130_fd_sc_hs__a21boi_2	0.00487	0.00466	0.00234	0.37557
sky130_fd_sc_hs__a21boi_4	0.00964	0.00951	0.00344	0.70491

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21boi_1	0.00000	0.03043	0.05518
sky130_fd_sc_hs__a21boi_2	0.00000	0.02894	0.04619
sky130_fd_sc_hs__a21boi_4	0.00000	0.07501	0.13106

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (FR)	0.21949	1.65288	12.68670
	A2->Y (FR)	0.26902	1.73024	12.88390
	B1_N->Y (RR)	0.25681	1.45883	8.74160
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.19402	1.44484	12.78340
	A2->Y (FR)	0.24810	1.50101	12.82200
	B1_N->Y (RR)	0.23142	1.24366	8.74822
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.18979	1.28052	12.68030
	A2->Y (FR)	0.24306	1.32717	12.61090
	B1_N->Y (RR)	0.19207	1.10136	9.08456

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.05144	0.64915	5.35492
	A2->Y (RF)	0.05757	0.62969	5.13765
	B1_N->Y (FF)	0.16855	0.78713	3.88505
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.04694	0.60452	5.50420
	A2->Y (RF)	0.05582	0.59120	5.25935
	B1_N->Y (FF)	0.19582	0.84453	4.45239
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.04775	0.56159	5.55452
	A2->Y (RF)	0.05633	0.54047	5.17383
	B1_N->Y (FF)	0.19862	0.80888	4.19905

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00041	0.00036	0.00035
	A1	0.00228	0.00222	0.00221
	A2	0.00067	0.00063	0.00061
	A2	0.00292	0.00288	0.00271
	B1_N	0.00369	0.00352	0.00366
	B1_N	0.00247	0.00230	0.00245
sky130_fd_sc_hs__a21boi_2	A1	0.00088	0.00079	0.00079
	A1	0.00448	0.00439	0.00426
	A2	0.00166	0.00154	0.00152
	A2	0.00604	0.00594	0.00577
	B1_N	0.00551	0.00534	0.00550
	B1_N	0.00494	0.00478	0.00493
sky130_fd_sc_hs__a21boi_4	A1	0.00180	0.00161	0.00165
	A1	0.00913	0.00892	0.00897
	A2	0.00306	0.00282	0.00281
	A2	0.01200	0.01177	0.01174
	B1_N	0.00961	0.00940	0.00968
	B1_N	0.00947	0.00926	0.00954

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00248	0.00242	0.00237
	A1	0.00066	0.00058	0.00055
	A2	0.00291	0.00286	0.00284
	A2	0.00066	0.00059	0.00055
	B1_N	0.00207	0.00202	0.00237
	B1_N	0.00325	0.00319	0.00354
sky130_fd_sc_hs__a21boi_2	A1	0.00443	0.00428	0.00440
	A1	0.00091	0.00073	0.00068
	A2	0.00530	0.00517	0.00522
	A2	0.00089	0.00075	0.00068
	B1_N	0.00381	0.00388	0.00416
	B1_N	0.00429	0.00434	0.00464
sky130_fd_sc_hs__a21boi_4	A1	0.00871	0.00836	0.00841
	A1	0.00155	0.00117	0.00113
	A2	0.01055	0.01023	0.01026
	A2	0.00159	0.00127	0.00115
	B1_N	0.00771	0.00789	0.00857
	B1_N	0.00769	0.00786	0.00854

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A2 * !B1_N * !Y)	0.00072	0.00071	0.00070
	(A2 * !B1_N * !Y)	-0.00081	-0.00084	-0.00084
	(!A2 * B1_N * Y)	0.00031	0.00031	0.00030
	(!A2 * B1_N * Y)	-0.00096	-0.00096	-0.00098
	(!A2 * !B1_N * !Y)	0.00065	0.00066	0.00065
	(!A2 * !B1_N * !Y)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00141	0.00140	0.00138
	(A2 * !B1_N * !Y)	-0.00155	-0.00161	-0.00161
	(!A2 * B1_N * Y)	0.00057	0.00056	0.00053
	(!A2 * B1_N * Y)	-0.00191	-0.00191	-0.00196
	(!A2 * !B1_N * !Y)	0.00129	0.00130	0.00129
	(!A2 * !B1_N * !Y)	-0.00164	-0.00165	-0.00165
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00279	0.00274	0.00271
	(A2 * !B1_N * !Y)	-0.00311	-0.00326	-0.00325
	(!A2 * B1_N * Y)	0.00106	0.00105	0.00099
	(!A2 * B1_N * Y)	-0.00386	-0.00385	-0.00395
	(!A2 * !B1_N * !Y)	0.00252	0.00254	0.00253
	(!A2 * !B1_N * !Y)	-0.00332	-0.00333	-0.00332

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A2 * !B1_N * !Y)	-0.00070	-0.00070	-0.00070
	(A2 * !B1_N * !Y)	0.00084	0.00084	0.00084
	(!A2 * B1_N * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * B1_N * Y)	0.00098	0.00098	0.00098
	(!A2 * !B1_N * !Y)	-0.00063	-0.00066	-0.00065
	(!A2 * !B1_N * !Y)	0.00086	0.00086	0.00086
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00138	-0.00138	-0.00138
	(A2 * !B1_N * !Y)	0.00161	0.00161	0.00161
	(!A2 * B1_N * Y)	-0.00051	-0.00051	-0.00050
	(!A2 * B1_N * Y)	0.00196	0.00197	0.00196
	(!A2 * !B1_N * !Y)	-0.00124	-0.00130	-0.00129
	(!A2 * !B1_N * !Y)	0.00165	0.00166	0.00165
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00271	-0.00271	-0.00270
	(A2 * !B1_N * !Y)	0.00327	0.00326	0.00325
	(!A2 * B1_N * Y)	-0.00095	-0.00095	-0.00095
	(!A2 * B1_N * Y)	0.00395	0.00397	0.00396
	(!A2 * !B1_N * !Y)	-0.00243	-0.00254	-0.00253
	(!A2 * !B1_N * !Y)	0.00333	0.00336	0.00333

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A1 * !B1_N * !Y)	0.00076	0.00074	0.00073
	(A1 * !B1_N * !Y)	-0.00077	-0.00081	-0.00081
	(!A1 * B1_N * Y)	0.00068	0.00069	0.00068
	(!A1 * B1_N * Y)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1_N * !Y)	0.00069	0.00069	0.00068
	(!A1 * !B1_N * !Y)	-0.00082	-0.00083	-0.00082
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00138	0.00137	0.00135
	(A1 * !B1_N * !Y)	-0.00154	-0.00161	-0.00161
	(!A1 * B1_N * Y)	0.00126	0.00127	0.00126
	(!A1 * B1_N * Y)	-0.00163	-0.00165	-0.00164
	(!A1 * !B1_N * !Y)	0.00127	0.00128	0.00126
	(!A1 * !B1_N * !Y)	-0.00165	-0.00165	-0.00164
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00282	0.00278	0.00274
	(A1 * !B1_N * !Y)	-0.00309	-0.00325	-0.00324
	(!A1 * B1_N * Y)	0.00245	0.00246	0.00244
	(!A1 * B1_N * Y)	-0.00345	-0.00345	-0.00343
	(!A1 * !B1_N * !Y)	0.00256	0.00260	0.00257
	(!A1 * !B1_N * !Y)	-0.00329	-0.00332	-0.00330

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A1 * !B1_N * !Y)	-0.00073	-0.00073	-0.00073
	(A1 * !B1_N * !Y)	0.00081	0.00081	0.00081
	(!A1 * B1_N * Y)	-0.00065	-0.00069	-0.00068
	(!A1 * B1_N * Y)	0.00084	0.00084	0.00083
	(!A1 * !B1_N * !Y)	-0.00067	-0.00069	-0.00068
	(!A1 * !B1_N * !Y)	0.00082	0.00083	0.00083
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * !B1_N * !Y)	0.00160	0.00161	0.00161
	(!A1 * B1_N * Y)	-0.00121	-0.00127	-0.00126
	(!A1 * B1_N * Y)	0.00166	0.00166	0.00165
	(!A1 * !B1_N * !Y)	-0.00123	-0.00128	-0.00126
	(!A1 * !B1_N * !Y)	0.00165	0.00166	0.00165
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00273	-0.00274	-0.00273
	(A1 * !B1_N * !Y)	0.00323	0.00325	0.00324
	(!A1 * B1_N * Y)	-0.00234	-0.00246	-0.00244
	(!A1 * B1_N * Y)	0.00349	0.00346	0.00345
	(!A1 * !B1_N * !Y)	-0.00250	-0.00260	-0.00257
	(!A1 * !B1_N * !Y)	0.00331	0.00334	0.00331

Passive power(pJ) for B1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A1 * A2 * !Y)	0.00229	0.00214	0.00226
	(A1 * A2 * !Y)	0.00049	0.00034	0.00046
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00273	0.00259	0.00266
	(A1 * A2 * !Y)	0.00098	0.00082	0.00091
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00425	0.00401	0.00409
	(A1 * A2 * !Y)	0.00166	0.00141	0.00151

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A1 * A2 * !Y)	0.00049	0.00040	0.00076
	(A1 * A2 * !Y)	0.00228	0.00219	0.00256
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00135	0.00125	0.00153
	(A1 * A2 * !Y)	0.00308	0.00298	0.00325
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00285	0.00272	0.00329
	(A1 * A2 * !Y)	0.00540	0.00526	0.00583

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A1	A2	B1_N	X
x	x	0	1
0	x	1	0
1	0	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21bo_1	12.78720
sky130_fd_sc_hs__a21bo_2	12.78720
sky130_fd_sc_hs__a21bo_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__a21bo_1	0.00240	0.00229	0.00202	0.41624
sky130_fd_sc_hs__a21bo_2	0.00257	0.00239	0.00212	0.80778
sky130_fd_sc_hs__a21bo_4	0.00441	0.00467	0.00245	1.54755

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21bo_1	0.00000	0.04366	0.06903
sky130_fd_sc_hs__a21bo_2	0.00000	0.04896	0.07202
sky130_fd_sc_hs__a21bo_4	0.00000	0.06697	0.08319

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (RR)	0.16780	1.14309	8.39900
	A2->X (RR)	0.17305	1.15931	8.64789
	B1_N->X (FR)	0.27227	1.41337	9.81370
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.15978	1.01301	8.52839
	A2->X (RR)	0.16605	1.01904	8.71741
	B1_N->X (FR)	0.28332	1.28786	9.90515
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.16259	0.91001	8.52546
	A2->X (RR)	0.17140	0.92543	8.75922
	B1_N->X (FR)	0.32540	1.25893	10.46660

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.37271	1.12882	5.96335
	A2->X (FF)	0.41888	1.18287	6.14818
	B1_N->X (RF)	0.40803	0.90285	3.31012
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.48274	1.23531	6.34659
	A2->X (FF)	0.54356	1.30572	6.53838
	B1_N->X (RF)	0.54896	1.05345	3.51578
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.45076	1.16730	6.25179
	A2->X (FF)	0.49579	1.21907	6.42612
	B1_N->X (RF)	0.48914	0.96722	3.51401

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00397	0.00392	0.00400
	A1	0.00221	0.00215	0.00224
	A2	0.00437	0.00438	0.00439
	A2	0.00221	0.00222	0.00223
	B1_N	0.00373	0.00370	0.00398
	B1_N	0.00463	0.00459	0.00488
sky130_fd_sc_hs__a21bo_2	A1	0.00517	0.00522	0.00532
	A1	0.00333	0.00338	0.00349
	A2	0.00555	0.00567	0.00569
	A2	0.00332	0.00344	0.00347
	B1_N	0.00514	0.00516	0.00540
	B1_N	0.00605	0.00607	0.00638
sky130_fd_sc_hs__a21bo_4	A1	0.00947	0.00958	0.00988
	A1	0.00628	0.00641	0.00672
	A2	0.01054	0.01078	0.01090
	A2	0.00629	0.00653	0.00665
	B1_N	0.00905	0.00928	0.00945
	B1_N	0.00971	0.00992	0.01020

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00212	0.00214	0.00217
	A1	0.00391	0.00392	0.00391
	A2	0.00218	0.00219	0.00256
	A2	0.00433	0.00441	0.00439
	B1_N	0.00484	0.00474	0.00486
	B1_N	0.00392	0.00381	0.00392
sky130_fd_sc_hs__a21bo_2	A1	0.00304	0.00319	0.00326
	A1	0.00490	0.00507	0.00508
	A2	0.00329	0.00351	0.00353
	A2	0.00549	0.00572	0.00573
	B1_N	0.00629	0.00629	0.00641
	B1_N	0.00532	0.00533	0.00540
sky130_fd_sc_hs__a21bo_4	A1	0.00598	0.00632	0.00704
	A1	0.00920	0.00960	0.00968
	A2	0.00612	0.00657	0.00666
	A2	0.01032	0.01078	0.01083
	B1_N	0.01046	0.01066	0.01094
	B1_N	0.00970	0.00997	0.01011

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A2 * !B1_N * X)	0.00064	0.00061	0.00061
	(A2 * !B1_N * X)	-0.00076	-0.00080	-0.00080
	(!A2 * B1_N * !X)	0.00025	0.00025	0.00025
	(!A2 * B1_N * !X)	-0.00092	-0.00092	-0.00093
	(!A2 * !B1_N * X)	0.00056	0.00056	0.00056
	(!A2 * !B1_N * X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00075	0.00073	0.00072
	(A2 * !B1_N * X)	-0.00075	-0.00078	-0.00078
	(!A2 * B1_N * !X)	0.00032	0.00032	0.00031
	(!A2 * B1_N * !X)	-0.00091	-0.00091	-0.00093
	(!A2 * !B1_N * X)	0.00067	0.00067	0.00067
	(!A2 * !B1_N * X)	-0.00080	-0.00080	-0.00080
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00121	0.00116	0.00115
	(A2 * !B1_N * X)	-0.00143	-0.00149	-0.00149
	(!A2 * B1_N * !X)	0.00042	0.00042	0.00039
	(!A2 * B1_N * !X)	-0.00176	-0.00176	-0.00180
	(!A2 * !B1_N * X)	0.00106	0.00106	0.00106
	(!A2 * !B1_N * X)	-0.00152	-0.00152	-0.00152

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A2 * !B1_N * X)	-0.00061	-0.00060	-0.00060
	(A2 * !B1_N * X)	0.00081	0.00080	0.00080
	(!A2 * B1_N * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * B1_N * !X)	0.00093	0.00095	0.00094
	(!A2 * !B1_N * X)	-0.00055	-0.00056	-0.00056
	(!A2 * !B1_N * X)	0.00082	0.00083	0.00082
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00072	-0.00072	-0.00071
	(A2 * !B1_N * X)	0.00079	0.00078	0.00078
	(!A2 * B1_N * !X)	-0.00029	-0.00030	-0.00030
	(!A2 * B1_N * !X)	0.00093	0.00094	0.00093
	(!A2 * !B1_N * X)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1_N * X)	0.00080	0.00081	0.00080
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00115	-0.00115	-0.00114
	(A2 * !B1_N * X)	0.00150	0.00149	0.00149
	(!A2 * B1_N * !X)	-0.00038	-0.00038	-0.00037
	(!A2 * B1_N * !X)	0.00181	0.00183	0.00181
	(!A2 * !B1_N * X)	-0.00102	-0.00106	-0.00106
	(!A2 * !B1_N * X)	0.00152	0.00153	0.00153

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * !B1_N * X)	0.00073	0.00072	0.00071
	(A1 * !B1_N * X)	-0.00070	-0.00073	-0.00073
	(!A1 * B1_N * !X)	0.00067	0.00067	0.00067
	(!A1 * B1_N * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * !B1_N * X)	0.00067	0.00067	0.00067
	(!A1 * !B1_N * X)	-0.00075	-0.00075	-0.00075
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00073	0.00071	0.00070
	(A1 * !B1_N * X)	-0.00072	-0.00076	-0.00076
	(!A1 * B1_N * !X)	0.00065	0.00066	0.00065
	(!A1 * B1_N * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * !B1_N * X)	0.00065	0.00065	0.00065
	(!A1 * !B1_N * X)	-0.00078	-0.00078	-0.00078
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00147	0.00144	0.00143
	(A1 * !B1_N * X)	-0.00141	-0.00148	-0.00148
	(!A1 * B1_N * !X)	0.00134	0.00135	0.00134
	(!A1 * B1_N * !X)	-0.00151	-0.00151	-0.00151
	(!A1 * !B1_N * X)	0.00134	0.00135	0.00134
	(!A1 * !B1_N * X)	-0.00150	-0.00151	-0.00151

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * !B1_N * X)	-0.00071	-0.00071	-0.00071
	(A1 * !B1_N * X)	0.00073	0.00074	0.00073
	(!A1 * B1_N * !X)	-0.00064	-0.00067	-0.00067
	(!A1 * B1_N * !X)	0.00076	0.00075	0.00075
	(!A1 * !B1_N * X)	-0.00065	-0.00067	-0.00067
	(!A1 * !B1_N * X)	0.00075	0.00075	0.00075
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00070	-0.00070	-0.00070
	(A1 * !B1_N * X)	0.00076	0.00076	0.00076
	(!A1 * B1_N * !X)	-0.00063	-0.00066	-0.00065
	(!A1 * B1_N * !X)	0.00079	0.00079	0.00078
	(!A1 * !B1_N * X)	-0.00063	-0.00065	-0.00065
	(!A1 * !B1_N * X)	0.00078	0.00078	0.00078
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00143	-0.00144	-0.00143
	(A1 * !B1_N * X)	0.00147	0.00149	0.00148
	(!A1 * B1_N * !X)	-0.00128	-0.00135	-0.00134
	(!A1 * B1_N * !X)	0.00154	0.00153	0.00151
	(!A1 * !B1_N * X)	-0.00131	-0.00135	-0.00134
	(!A1 * !B1_N * X)	0.00151	0.00152	0.00151

Passive power(pJ) for B1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * A2 * X)	0.00190	0.00178	0.00191
	(A1 * A2 * X)	0.00039	0.00025	0.00040
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00215	0.00201	0.00213
	(A1 * A2 * X)	0.00056	0.00041	0.00054
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00292	0.00278	0.00286
	(A1 * A2 * X)	0.00108	0.00093	0.00102

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * A2 * X)	0.00059	0.00053	0.00090
	(A1 * A2 * X)	0.00210	0.00203	0.00241
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00071	0.00063	0.00099
	(A1 * A2 * X)	0.00229	0.00221	0.00257
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00110	0.00101	0.00128
	(A1 * A2 * X)	0.00292	0.00282	0.00309

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A1	A2	B1	Y
0	x	0	1
x	x	1	0
1	0	0	1
1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21oi_1	6.39360
sky130_fd_sc_hs__a21oi_2	12.78720
sky130_fd_sc_hs__a21oi_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__a21oi_1	0.00267	0.00247	0.00261	0.19194
sky130_fd_sc_hs__a21oi_2	0.00482	0.00499	0.00385	0.34541
sky130_fd_sc_hs__a21oi_4	0.00983	0.00948	0.00759	0.68941

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21oi_1	0.00000	0.00720	0.01084
sky130_fd_sc_hs__a21oi_2	0.00000	0.01337	0.02167
sky130_fd_sc_hs__a21oi_4	0.00000	0.02674	0.04335

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (FR)	0.22055	1.65463	12.68020
	A2->Y (FR)	0.26558	1.72661	12.87270
	B1->Y (FR)	0.21175	1.61631	12.50850
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.19701	1.45425	12.62990
	A2->Y (FR)	0.25951	1.50743	12.57240
	B1->Y (FR)	0.11688	1.32153	12.20560
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.18269	1.28046	12.68940
	A2->Y (FR)	0.23530	1.32751	12.61100
	B1->Y (FR)	0.10663	1.15544	12.29350

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.05182	0.64915	5.34849
	A2->Y (RF)	0.05691	0.62908	5.13711
	B1->Y (RF)	0.03452	0.53574	4.56396
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.04638	0.59585	5.34660
	A2->Y (RF)	0.05734	0.58478	5.10628
	B1->Y (RF)	0.04023	0.61438	5.70096
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.04619	0.55696	5.50490
	A2->Y (RF)	0.05441	0.53648	5.12566
	B1->Y (RF)	0.04043	0.58041	5.92618

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00004	-0.00011	-0.00012
	A1	0.00237	0.00231	0.00230
	A2	0.00013	0.00009	0.00008
	A2	0.00295	0.00291	0.00274
	B1	0.00012	0.00006	0.00007
	B1	0.00252	0.00246	0.00248
sky130_fd_sc_hs__a21oi_2	A1	-0.00017	-0.00026	-0.00026
	A1	0.00433	0.00425	0.00424
	A2	0.00051	0.00037	0.00036
	A2	0.00598	0.00586	0.00583
	B1	0.00090	0.00081	0.00084
	B1	0.00490	0.00474	0.00485
sky130_fd_sc_hs__a21oi_4	A1	-0.00067	-0.00086	-0.00082
	A1	0.00856	0.00837	0.00842
	A2	0.00070	0.00046	0.00045
	A2	0.01166	0.01142	0.01139
	B1	0.00159	0.00138	0.00146
	B1	0.00943	0.00925	0.00934

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00298	0.00291	0.00286
	A1	0.00062	0.00054	0.00050
	A2	0.00341	0.00336	0.00332
	A2	0.00062	0.00055	0.00051
	B1	0.00237	0.00236	0.00236
	B1	-0.00006	-0.00009	-0.00009
sky130_fd_sc_hs__a21oi_2	A1	0.00528	0.00510	0.00505
	A1	0.00088	0.00071	0.00066
	A2	0.00640	0.00624	0.00615
	A2	0.00090	0.00075	0.00067
	B1	0.00356	0.00355	0.00374
	B1	-0.00055	-0.00059	-0.00057
sky130_fd_sc_hs__a21oi_4	A1	0.01061	0.01019	0.01038
	A1	0.00159	0.00119	0.00114
	A2	0.01246	0.01216	0.01200
	A2	0.00155	0.00123	0.00113
	B1	0.00694	0.00683	0.00726
	B1	-0.00110	-0.00122	-0.00111

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00074	0.00072	0.00071
	(A2 * B1 * !Y)	-0.00076	-0.00080	-0.00079
	(!A2 * B1 * !Y)	0.00066	0.00067	0.00066
	(!A2 * B1 * !Y)	-0.00082	-0.00083	-0.00082
	(!A2 * !B1 * Y)	0.00025	0.00025	0.00024
	(!A2 * !B1 * Y)	-0.00098	-0.00099	-0.00100
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00145	0.00143	0.00141
	(A2 * B1 * !Y)	-0.00148	-0.00156	-0.00155
	(!A2 * B1 * !Y)	0.00129	0.00129	0.00129
	(!A2 * B1 * !Y)	-0.00162	-0.00162	-0.00162
	(!A2 * !B1 * Y)	0.00054	0.00055	0.00051
	(!A2 * !B1 * Y)	-0.00185	-0.00186	-0.00192
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00294	0.00288	0.00285
	(A2 * B1 * !Y)	-0.00295	-0.00311	-0.00310
	(!A2 * B1 * !Y)	0.00265	0.00266	0.00265
	(!A2 * B1 * !Y)	-0.00319	-0.00321	-0.00320
	(!A2 * !B1 * Y)	0.00102	0.00103	0.00096
	(!A2 * !B1 * Y)	-0.00384	-0.00387	-0.00397

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00071	-0.00071	-0.00071
	(A2 * B1 * !Y)	0.00079	0.00080	0.00079
	(!A2 * B1 * !Y)	-0.00064	-0.00067	-0.00066
	(!A2 * B1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * !B1 * Y)	-0.00023	-0.00023	-0.00023
	(!A2 * !B1 * Y)	0.00100	0.00101	0.00101
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00142	-0.00142	-0.00141
	(A2 * B1 * !Y)	0.00156	0.00156	0.00155
	(!A2 * B1 * !Y)	-0.00121	-0.00129	-0.00129
	(!A2 * B1 * !Y)	0.00162	0.00164	0.00162
	(!A2 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(!A2 * !B1 * Y)	0.00192	0.00193	0.00193
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00286	-0.00286	-0.00285
	(A2 * B1 * !Y)	0.00311	0.00311	0.00310
	(!A2 * B1 * !Y)	-0.00253	-0.00266	-0.00265
	(!A2 * B1 * !Y)	0.00319	0.00326	0.00321
	(!A2 * !B1 * Y)	-0.00092	-0.00093	-0.00092
	(!A2 * !B1 * Y)	0.00397	0.00399	0.00398

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00074	0.00072	0.00072
	(A1 * B1 * !Y)	-0.00076	-0.00079	-0.00079
	(!A1 * B1 * !Y)	0.00066	0.00067	0.00066
	(!A1 * B1 * !Y)	-0.00082	-0.00083	-0.00082
	(!A1 * !B1 * Y)	0.00066	0.00067	0.00067
	(!A1 * !B1 * Y)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00151	0.00149	0.00147
	(A1 * B1 * !Y)	-0.00149	-0.00157	-0.00156
	(!A1 * B1 * !Y)	0.00134	0.00135	0.00134
	(!A1 * B1 * !Y)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * Y)	0.00128	0.00129	0.00128
	(!A1 * !B1 * Y)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00287	0.00281	0.00277
	(A1 * B1 * !Y)	-0.00302	-0.00321	-0.00319
	(!A1 * B1 * !Y)	0.00257	0.00256	0.00256
	(!A1 * B1 * !Y)	-0.00332	-0.00331	-0.00331
	(!A1 * !B1 * Y)	0.00253	0.00256	0.00254
	(!A1 * !B1 * Y)	-0.00332	-0.00334	-0.00333

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00072	-0.00072	-0.00071
	(A1 * B1 * !Y)	0.00080	0.00079	0.00079
	(!A1 * B1 * !Y)	-0.00065	-0.00067	-0.00066
	(!A1 * B1 * !Y)	0.00082	0.00083	0.00082
	(!A1 * !B1 * Y)	-0.00064	-0.00067	-0.00067
	(!A1 * !B1 * Y)	0.00084	0.00083	0.00082
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00147	-0.00147	-0.00147
	(A1 * B1 * !Y)	0.00155	0.00157	0.00156
	(!A1 * B1 * !Y)	-0.00129	-0.00135	-0.00134
	(!A1 * B1 * !Y)	0.00163	0.00163	0.00162
	(!A1 * !B1 * Y)	-0.00122	-0.00129	-0.00128
	(!A1 * !B1 * Y)	0.00171	0.00169	0.00168
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00277	-0.00278	-0.00277
	(A1 * B1 * !Y)	0.00318	0.00321	0.00319
	(!A1 * B1 * !Y)	-0.00249	-0.00256	-0.00256
	(!A1 * B1 * !Y)	0.00332	0.00333	0.00332
	(!A1 * !B1 * Y)	-0.00243	-0.00256	-0.00254
	(!A1 * !B1 * Y)	0.00339	0.00336	0.00334

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00084	0.00085	0.00084
	(A1 * A2 * !Y)	-0.00046	-0.00046	-0.00046
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00094	0.00095	0.00094
	(A1 * A2 * !Y)	-0.00095	-0.00096	-0.00094
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00181	0.00183	0.00181
	(A1 * A2 * !Y)	-0.00182	-0.00184	-0.00182

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00075	-0.00076	-0.00083
	(A1 * A2 * !Y)	0.00053	0.00053	0.00048
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00076	-0.00078	-0.00091
	(A1 * A2 * !Y)	0.00109	0.00109	0.00098
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00148	-0.00151	-0.00176
	(A1 * A2 * !Y)	0.00210	0.00211	0.00189

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A1	A2	B1	X
0	x	0	0
x	x	1	1
1	0	0	0
1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21o_1	11.18880
sky130_fd_sc_hs__a21o_2	11.18880
sky130_fd_sc_hs__a21o_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__a21o_1	0.00223	0.00228	0.00230	0.44357
sky130_fd_sc_hs__a21o_2	0.00251	0.00239	0.00255	0.87288
sky130_fd_sc_hs__a21o_4	0.00452	0.00426	0.00463	1.66605

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21o_1	0.00000	0.02043	0.02824
sky130_fd_sc_hs__a21o_2	0.00000	0.02572	0.03100
sky130_fd_sc_hs__a21o_4	0.00000	0.05243	0.06200

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (RR)	0.15970	1.11438	8.33421
	A2->X (RR)	0.16680	1.13309	8.59640
	B1->X (RR)	0.12224	1.05655	8.27211
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.15585	0.99497	8.52874
	A2->X (RR)	0.16222	1.00155	8.71935
	B1->X (RR)	0.11419	0.93364	8.44265
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.17208	0.91351	8.51873
	A2->X (RR)	0.18095	0.92685	8.75584
	B1->X (RR)	0.11837	0.83718	8.42522

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.35375	1.11296	6.00003
	A2->X (FF)	0.40686	1.17372	6.21859
	B1->X (FF)	0.35218	1.06575	5.53030
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.45894	1.21385	6.40032
	A2->X (FF)	0.51981	1.28276	6.58918
	B1->X (FF)	0.46826	1.17065	5.98967
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.45453	1.17626	6.40688
	A2->X (FF)	0.51491	1.24398	6.60585
	B1->X (FF)	0.45582	1.12594	5.97254

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00425	0.00420	0.00429
	A1	0.00221	0.00216	0.00225
	A2	0.00476	0.00476	0.00475
	A2	0.00222	0.00221	0.00221
	B1	0.00365	0.00350	0.00367
	B1	0.00155	0.00144	0.00161
sky130_fd_sc_hs__a21o_2	A1	0.00560	0.00565	0.00575
	A1	0.00335	0.00341	0.00352
	A2	0.00606	0.00618	0.00620
	A2	0.00335	0.00346	0.00350
	B1	0.00508	0.00504	0.00517
	B1	0.00273	0.00270	0.00283
sky130_fd_sc_hs__a21o_4	A1	0.01059	0.01070	0.01099
	A1	0.00632	0.00643	0.00677
	A2	0.01136	0.01161	0.01171
	A2	0.00631	0.00656	0.00667
	B1	0.00938	0.00936	0.00972
	B1	0.00498	0.00496	0.00533

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00162	0.00164	0.00185
	A1	0.00370	0.00371	0.00371
	A2	0.00167	0.00168	0.00174
	A2	0.00421	0.00428	0.00426
	B1	0.00180	0.00181	0.00219
	B1	0.00385	0.00386	0.00411
sky130_fd_sc_hs__a21o_2	A1	0.00258	0.00273	0.00280
	A1	0.00487	0.00505	0.00507
	A2	0.00276	0.00299	0.00370
	A2	0.00546	0.00570	0.00571
	B1	0.00280	0.00285	0.00375
	B1	0.00509	0.00524	0.00551
sky130_fd_sc_hs__a21o_4	A1	0.00520	0.00553	0.00626
	A1	0.00955	0.00995	0.01002
	A2	0.00575	0.00622	0.00745
	A2	0.01079	0.01126	0.01133
	B1	0.00574	0.00587	0.00708
	B1	0.01004	0.01036	0.01094

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00060	0.00058	0.00057
	(A2 * B1 * X)	-0.00069	-0.00073	-0.00073
	(!A2 * B1 * X)	0.00053	0.00053	0.00053
	(!A2 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A2 * !B1 * !X)	0.00022	0.00022	0.00021
	(!A2 * !B1 * !X)	-0.00086	-0.00086	-0.00088
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00071	0.00069	0.00068
	(A2 * B1 * X)	-0.00070	-0.00074	-0.00074
	(!A2 * B1 * X)	0.00063	0.00064	0.00063
	(!A2 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A2 * !B1 * !X)	0.00027	0.00027	0.00026
	(!A2 * !B1 * !X)	-0.00089	-0.00089	-0.00091
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00128	0.00125	0.00123
	(A2 * B1 * X)	-0.00139	-0.00147	-0.00146
	(!A2 * B1 * X)	0.00115	0.00116	0.00115
	(!A2 * B1 * X)	-0.00151	-0.00152	-0.00152
	(!A2 * !B1 * !X)	0.00049	0.00049	0.00045
	(!A2 * !B1 * !X)	-0.00177	-0.00177	-0.00182

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00057	-0.00057	-0.00057
	(A2 * B1 * X)	0.00074	0.00073	0.00073
	(!A2 * B1 * X)	-0.00051	-0.00053	-0.00053
	(!A2 * B1 * X)	0.00076	0.00076	0.00076
	(!A2 * !B1 * !X)	-0.00021	-0.00021	-0.00020
	(!A2 * !B1 * !X)	0.00089	0.00089	0.00088
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00068	-0.00068	-0.00068
	(A2 * B1 * X)	0.00075	0.00074	0.00074
	(!A2 * B1 * X)	-0.00061	-0.00064	-0.00063
	(!A2 * B1 * X)	0.00077	0.00078	0.00077
	(!A2 * !B1 * !X)	-0.00025	-0.00025	-0.00025
	(!A2 * !B1 * !X)	0.00091	0.00093	0.00091
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00122	-0.00123	-0.00122
	(A2 * B1 * X)	0.00146	0.00147	0.00146
	(!A2 * B1 * X)	-0.00111	-0.00116	-0.00115
	(!A2 * B1 * X)	0.00151	0.00153	0.00152
	(!A2 * !B1 * !X)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * !X)	0.00183	0.00186	0.00183

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00074	0.00073	0.00072
	(A1 * B1 * X)	-0.00068	-0.00072	-0.00072
	(!A1 * B1 * X)	0.00068	0.00069	0.00068
	(!A1 * B1 * X)	-0.00074	-0.00075	-0.00075
	(!A1 * !B1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !B1 * !X)	-0.00074	-0.00075	-0.00074
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00075	0.00073	0.00072
	(A1 * B1 * X)	-0.00070	-0.00074	-0.00074
	(!A1 * B1 * X)	0.00067	0.00068	0.00067
	(!A1 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * !B1 * !X)	0.00068	0.00068	0.00067
	(!A1 * !B1 * !X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00125	0.00122	0.00121
	(A1 * B1 * X)	-0.00138	-0.00147	-0.00146
	(!A1 * B1 * X)	0.00113	0.00113	0.00113
	(!A1 * B1 * X)	-0.00151	-0.00152	-0.00151
	(!A1 * !B1 * !X)	0.00113	0.00113	0.00112
	(!A1 * !B1 * !X)	-0.00152	-0.00152	-0.00151

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * X)	0.00072	0.00072	0.00072
	(!A1 * B1 * X)	-0.00067	-0.00069	-0.00068
	(!A1 * B1 * X)	0.00075	0.00075	0.00075
	(!A1 * !B1 * !X)	-0.00066	-0.00069	-0.00068
	(!A1 * !B1 * !X)	0.00076	0.00075	0.00075
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * X)	0.00074	0.00074	0.00074
	(!A1 * B1 * X)	-0.00065	-0.00068	-0.00067
	(!A1 * B1 * X)	0.00077	0.00077	0.00077
	(!A1 * !B1 * !X)	-0.00065	-0.00068	-0.00067
	(!A1 * !B1 * !X)	0.00078	0.00077	0.00077
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * B1 * X)	0.00147	0.00147	0.00146
	(!A1 * B1 * X)	-0.00109	-0.00113	-0.00113
	(!A1 * B1 * X)	0.00151	0.00152	0.00152
	(!A1 * !B1 * !X)	-0.00107	-0.00113	-0.00112
	(!A1 * !B1 * !X)	0.00154	0.00153	0.00152

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00070	0.00070	0.00069
	(A1 * A2 * X)	-0.00044	-0.00044	-0.00043
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00082	0.00083	0.00082
	(A1 * A2 * X)	-0.00043	-0.00044	-0.00043
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00142	0.00145	0.00143
	(A1 * A2 * X)	-0.00089	-0.00090	-0.00089

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00061	-0.00062	-0.00068
	(A1 * A2 * X)	0.00051	0.00051	0.00045
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00073	-0.00074	-0.00081
	(A1 * A2 * X)	0.00050	0.00050	0.00045
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00126	-0.00128	-0.00140
	(A1 * A2 * X)	0.00104	0.00104	0.00093

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	B2	C1	Y
0	x	0	x	0	1
0	x	x	x	1	0
0	x	1	0	0	1
x	x	1	1	x	0
1	0	0	x	0	1
1	0	x	x	1	0
1	0	1	0	0	1
1	1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221oi_1	12.78720
sky130_fd_sc_hs__a221oi_2	19.18080
sky130_fd_sc_hs__a221oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__a221oi_1	0.00256	0.00249	0.00262	0.00268	0.00271	0.11560
sky130_fd_sc_hs__a221oi_2	0.00546	0.00484	0.00536	0.00480	0.00495	0.21474
sky130_fd_sc_hs__a221oi_4	0.00997	0.00980	0.00988	0.00949	0.00980	0.40107

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221oi_1	0.00000	0.00695	0.01084
sky130_fd_sc_hs__a221oi_2	0.00000	0.01391	0.02167
sky130_fd_sc_hs__a221oi_4	0.00000	0.02781	0.04335

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (FR)	0.61264	2.22392	12.60950
	A2->Y (FR)	0.68480	2.30827	12.70810
	B1->Y (FR)	0.53822	2.11240	12.73340
	B2->Y (FR)	0.61886	2.20708	12.86970
	C1->Y (FR)	0.47490	1.99772	12.24510
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.54187	1.90890	12.33510
	A2->Y (FR)	0.66321	2.06799	12.73620
	B1->Y (FR)	0.49779	1.84842	12.67300
	B2->Y (FR)	0.58941	1.96668	12.90570
	C1->Y (FR)	0.43496	1.75407	12.30410
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.56719	1.76965	12.46230
	A2->Y (FR)	0.67298	1.89309	12.66800
	B1->Y (FR)	0.48416	1.65182	12.58080
	B2->Y (FR)	0.59470	1.78725	12.86150
	C1->Y (FR)	0.44440	1.57665	12.31220

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.05951	0.61593	4.42288
	A2->Y (RF)	0.06549	0.59780	4.31380
	B1->Y (RF)	0.06189	0.60180	4.41504
	B2->Y (RF)	0.06909	0.58989	4.31522
	C1->Y (RF)	0.04027	0.50011	3.83526
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.05197	0.56570	4.38436
	A2->Y (RF)	0.06114	0.55950	4.30699
	B1->Y (RF)	0.05355	0.54321	4.33915
	B2->Y (RF)	0.06154	0.54120	4.26652
	C1->Y (RF)	0.03627	0.45523	3.79762
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.05311	0.54072	4.45510
	A2->Y (RF)	0.06182	0.52005	4.22357
	B1->Y (RF)	0.05695	0.51831	4.42341
	B2->Y (RF)	0.06529	0.50492	4.19319
	C1->Y (RF)	0.03387	0.41213	3.70176

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00092	0.00082	0.00079
	A1	0.00439	0.00429	0.00427
	A2	0.00105	0.00100	0.00098
	A2	0.00499	0.00493	0.00490
	B1	0.00092	0.00082	0.00079
	B1	0.00389	0.00379	0.00376
	B2	0.00111	0.00104	0.00102
	B2	0.00453	0.00445	0.00442
	C1	0.00108	0.00098	0.00100
	C1	0.00411	0.00401	0.00403
sky130_fd_sc_hs__a221oi_2	A1	0.00110	0.00089	0.00085
	A1	0.00823	0.00801	0.00799
	A2	0.00177	0.00160	0.00156
	A2	0.00947	0.00932	0.00927
	B1	0.00127	0.00105	0.00102
	B1	0.00727	0.00706	0.00702
	B2	0.00176	0.00160	0.00157
	B2	0.00843	0.00827	0.00821
	C1	0.00173	0.00151	0.00157
	C1	0.00762	0.00740	0.00747

sky130_fd_sc_hs__a221oi_4	**A1**	0.00203	0.00159	0.00153
	A1	0.01615	0.01570	0.01567
	A2	0.00308	0.00277	0.00269
	A2	0.01890	0.01857	0.01847
	B1	0.00192	0.00150	0.00145
	B1	0.01410	0.01364	0.01361
	B2	0.00305	0.00277	0.00269
	B2	0.01692	0.01661	0.01651
	C1	0.00301	0.00262	0.00277
	C1	0.01479	0.01441	0.01455

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.00480	0.00471	0.00458
	A1	0.00162	0.00153	0.00142
	A2	0.00528	0.00520	0.00506
	A2	0.00161	0.00153	0.00140
	B1	0.00362	0.00356	0.00349
	B1	0.00067	0.00061	0.00055
	B2	0.00408	0.00403	0.00396
	B2	0.00065	0.00060	0.00053
	C1	0.00299	0.00299	0.00296
	C1	-0.00010	-0.00012	-0.00014

sky130_fd_sc_hs__a221oi_2	**A1**	0.00904	0.00884	0.00860
	A1	0.00245	0.00225	0.00205
	A2	0.00978	0.00962	0.00935
	A2	0.00252	0.00235	0.00213
	B1	0.00686	0.00672	0.00662
	B1	0.00087	0.00073	0.00063
	B2	0.00768	0.00757	0.00744
	B2	0.00095	0.00084	0.00072
	C1	0.00554	0.00550	0.00550
	C1	-0.00052	-0.00058	-0.00057
sky130_fd_sc_hs__a221oi_4	**A1**	0.01825	0.01780	0.01740
	A1	0.00522	0.00480	0.00444
	A2	0.02005	0.01965	0.01917
	A2	0.00519	0.00481	0.00439
	B1	0.01387	0.01354	0.01343
	B1	0.00184	0.00151	0.00139
	B2	0.01573	0.01550	0.01525
	B2	0.00183	0.00158	0.00142
	C1	0.01145	0.01131	0.01140
	C1	-0.00067	-0.00086	-0.00077

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A2 * B1 * B2 * C1 * !Y)**	0.00067	0.00068	0.00067
	(A2 * B1 * B2 * C1 * !Y)	-0.00077	-0.00079	-0.00079
	(A2 * B1 * B2 * !C1 * !Y)	0.00067	0.00068	0.00067
	(A2 * B1 * B2 * !C1 * !Y)	-0.00077	-0.00079	-0.00079
	(A2 * B1 * !B2 * C1 * !Y)	0.00068	0.00068	0.00067
	(A2 * B1 * !B2 * C1 * !Y)	-0.00074	-0.00077	-0.00076
	(A2 * !B1 * C1 * !Y)	0.00068	0.00068	0.00067
	(A2 * !B1 * C1 * !Y)	-0.00074	-0.00077	-0.00076
	(!A2 * B1 * B2 * C1 * !Y)	0.00062	0.00063	0.00062
	(!A2 * B1 * B2 * C1 * !Y)	-0.00082	-0.00082	-0.00082
	(!A2 * B1 * B2 * !C1 * !Y)	0.00062	0.00063	0.00062
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00081	-0.00082	-0.00081
	(!A2 * B1 * !B2 * C1 * !Y)	0.00062	0.00062	0.00062
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00082	-0.00081	-0.00082
	(!A2 * B1 * !B2 * !C1 * Y)	0.00025	0.00025	0.00024
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00094	-0.00094	-0.00096
	(!A2 * !B1 * C1 * !Y)	0.00062	0.00062	0.00062
	(!A2 * !B1 * C1 * !Y)	-0.00082	-0.00081	-0.00082
	(!A2 * !B1 * !C1 * Y)	0.00025	0.00025	0.00024
	(!A2 * !B1 * !C1 * Y)	-0.00094	-0.00094	-0.00096

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00143	0.00145	0.00143
	(A2 * B1 * B2 * C1 * !Y)	-0.00161	-0.00167	-0.00167
	(A2 * B1 * B2 * !C1 * !Y)	0.00143	0.00145	0.00143
	(A2 * B1 * B2 * !C1 * !Y)	-0.00160	-0.00167	-0.00167
	(A2 * B1 * !B2 * C1 * !Y)	0.00144	0.00145	0.00144
	(A2 * B1 * !B2 * C1 * !Y)	-0.00155	-0.00163	-0.00161
	(A2 * !B1 * C1 * !Y)	0.00144	0.00145	0.00144
	(A2 * !B1 * C1 * !Y)	-0.00155	-0.00163	-0.00161
	(!A2 * B1 * B2 * C1 * !Y)	0.00135	0.00136	0.00136
	(!A2 * B1 * B2 * C1 * !Y)	-0.00174	-0.00175	-0.00174
	(!A2 * B1 * B2 * !C1 * !Y)	0.00135	0.00136	0.00135
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00174	-0.00175	-0.00174
	(!A2 * B1 * !B2 * C1 * !Y)	0.00135	0.00136	0.00136
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00174	-0.00174	-0.00174
	(!A2 * B1 * !B2 * !C1 * Y)	0.00058	0.00057	0.00054
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00205	-0.00205	-0.00210
	(!A2 * !B1 * C1 * !Y)	0.00135	0.00136	0.00136
	(!A2 * !B1 * C1 * !Y)	-0.00174	-0.00175	-0.00174
	(!A2 * !B1 * !C1 * Y)	0.00058	0.00057	0.00054
	(!A2 * !B1 * !C1 * Y)	-0.00205	-0.00205	-0.00210

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00276	0.00279	0.00276
	(A2 * B1 * B2 * C1 * !Y)	-0.00312	-0.00322	-0.00321
	(A2 * B1 * B2 * !C1 * !Y)	0.00276	0.00279	0.00276
	(A2 * B1 * B2 * !C1 * !Y)	-0.00310	-0.00322	-0.00320
	(A2 * B1 * !B2 * C1 * !Y)	0.00276	0.00279	0.00276
	(A2 * B1 * !B2 * C1 * !Y)	-0.00295	-0.00307	-0.00307
	(A2 * !B1 * C1 * !Y)	0.00276	0.00279	0.00276
	(A2 * !B1 * C1 * !Y)	-0.00295	-0.00306	-0.00307
	(!A2 * B1 * B2 * C1 * !Y)	0.00258	0.00260	0.00258
	(!A2 * B1 * B2 * C1 * !Y)	-0.00331	-0.00333	-0.00331
	(!A2 * B1 * B2 * !C1 * !Y)	0.00257	0.00259	0.00258
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00329	-0.00332	-0.00330
	(!A2 * B1 * !B2 * C1 * !Y)	0.00258	0.00259	0.00258
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00334	-0.00335	-0.00334
	(!A2 * B1 * !B2 * !C1 * Y)	0.00103	0.00103	0.00097
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00391	-0.00394	-0.00404
	(!A2 * !B1 * C1 * !Y)	0.00258	0.00260	0.00258
	(!A2 * !B1 * C1 * !Y)	-0.00335	-0.00336	-0.00334
	(!A2 * !B1 * !C1 * Y)	0.00103	0.00103	0.00097
	(!A2 * !B1 * !C1 * Y)	-0.00391	-0.00394	-0.00404

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A2 * B1 * B2 * C1 * !Y)**	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * C1 * !Y)	0.00080	0.00079	0.00079
	(A2 * B1 * B2 * !C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * !C1 * !Y)	0.00079	0.00079	0.00079
	(A2 * B1 * !B2 * C1 * !Y)	-0.00068	-0.00068	-0.00067
	(A2 * B1 * !B2 * C1 * !Y)	0.00077	0.00077	0.00076
	(A2 * !B1 * C1 * !Y)	-0.00067	-0.00068	-0.00067
	(A2 * !B1 * C1 * !Y)	0.00076	0.00077	0.00076
	(!A2 * B1 * B2 * C1 * !Y)	-0.00061	-0.00063	-0.00062
	(!A2 * B1 * B2 * C1 * !Y)	0.00082	0.00082	0.00082
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00060	-0.00063	-0.00062
	(!A2 * B1 * B2 * !C1 * !Y)	0.00081	0.00083	0.00082
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00061	-0.00062	-0.00062
	(!A2 * B1 * !B2 * C1 * !Y)	0.00082	0.00082	0.00082
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00023	-0.00024	-0.00023
	(!A2 * B1 * !B2 * !C1 * Y)	0.00096	0.00097	0.00096
	(!A2 * !B1 * C1 * !Y)	-0.00061	-0.00062	-0.00062
	(!A2 * !B1 * C1 * !Y)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !C1 * Y)	-0.00023	-0.00024	-0.00023
	(!A2 * !B1 * !C1 * Y)	0.00096	0.00097	0.00096

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00143	-0.00143	-0.00143
	(A2 * B1 * B2 * C1 * !Y)	0.00166	0.00167	0.00167
	(A2 * B1 * B2 * !C1 * !Y)	-0.00143	-0.00143	-0.00143
	(A2 * B1 * B2 * !C1 * !Y)	0.00166	0.00167	0.00167
	(A2 * B1 * !B2 * C1 * !Y)	-0.00143	-0.00144	-0.00143
	(A2 * B1 * !B2 * C1 * !Y)	0.00160	0.00163	0.00161
	(A2 * !B1 * C1 * !Y)	-0.00143	-0.00144	-0.00143
	(A2 * !B1 * C1 * !Y)	0.00161	0.00163	0.00161
	(!A2 * B1 * B2 * C1 * !Y)	-0.00131	-0.00136	-0.00136
	(!A2 * B1 * B2 * C1 * !Y)	0.00174	0.00175	0.00174
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00131	-0.00136	-0.00135
	(!A2 * B1 * B2 * !C1 * !Y)	0.00176	0.00176	0.00174
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00131	-0.00136	-0.00136
	(!A2 * B1 * !B2 * C1 * !Y)	0.00174	0.00176	0.00174
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * B1 * !B2 * !C1 * Y)	0.00211	0.00214	0.00211
	(!A2 * !B1 * C1 * !Y)	-0.00131	-0.00136	-0.00136
	(!A2 * !B1 * C1 * !Y)	0.00174	0.00176	0.00174
	(!A2 * !B1 * !C1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * !C1 * Y)	0.00211	0.00214	0.00211

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00275	-0.00276	-0.00276
	(A2 * B1 * B2 * C1 * !Y)	0.00320	0.00322	0.00321
	(A2 * B1 * B2 * !C1 * !Y)	-0.00275	-0.00277	-0.00276
	(A2 * B1 * B2 * !C1 * !Y)	0.00319	0.00322	0.00320
	(A2 * B1 * !B2 * C1 * !Y)	-0.00275	-0.00276	-0.00275
	(A2 * B1 * !B2 * C1 * !Y)	0.00306	0.00307	0.00307
	(A2 * !B1 * C1 * !Y)	-0.00275	-0.00275	-0.00275
	(A2 * !B1 * C1 * !Y)	0.00306	0.00306	0.00307
	(!A2 * B1 * B2 * C1 * !Y)	-0.00249	-0.00260	-0.00258
	(!A2 * B1 * B2 * C1 * !Y)	0.00331	0.00334	0.00332
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00249	-0.00259	-0.00258
	(!A2 * B1 * B2 * !C1 * !Y)	0.00333	0.00334	0.00331
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00248	-0.00259	-0.00258
	(!A2 * B1 * !B2 * C1 * !Y)	0.00334	0.00338	0.00335
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00093	-0.00095	-0.00093
	(!A2 * B1 * !B2 * !C1 * Y)	0.00404	0.00410	0.00404
	(!A2 * !B1 * C1 * !Y)	-0.00248	-0.00260	-0.00258
	(!A2 * !B1 * C1 * !Y)	0.00335	0.00338	0.00335
	(!A2 * !B1 * !C1 * Y)	-0.00094	-0.00095	-0.00093
	(!A2 * !B1 * !C1 * Y)	0.00404	0.00410	0.00404

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * B1 * B2 * C1 * !Y)**	0.00072	0.00072	0.00072
	(A1 * B1 * B2 * C1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * B1 * B2 * !C1 * !Y)	0.00072	0.00072	0.00072
	(A1 * B1 * B2 * !C1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * B1 * !B2 * C1 * !Y)	0.00073	0.00072	0.00072
	(A1 * B1 * !B2 * C1 * !Y)	-0.00075	-0.00078	-0.00077
	(A1 * !B1 * C1 * !Y)	0.00073	0.00072	0.00072
	(A1 * !B1 * C1 * !Y)	-0.00075	-0.00078	-0.00077
	(!A1 * B1 * B2 * !Y)	0.00067	0.00068	0.00067
	(!A1 * B1 * B2 * !Y)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00067	0.00067	0.00067
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * B1 * !B2 * !C1 * Y)	0.00067	0.00068	0.00067
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * !C1 * Y)	0.00067	0.00068	0.00067
	(!A1 * !B1 * !C1 * Y)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00136	0.00138	0.00136
	(A1 * B1 * B2 * C1 * !Y)	-0.00149	-0.00155	-0.00154
	(A1 * B1 * B2 * !C1 * !Y)	0.00136	0.00138	0.00136
	(A1 * B1 * B2 * !C1 * !Y)	-0.00149	-0.00155	-0.00154
	(A1 * B1 * !B2 * C1 * !Y)	0.00137	0.00138	0.00136
	(A1 * B1 * !B2 * C1 * !Y)	-0.00144	-0.00150	-0.00149
	(A1 * !B1 * C1 * !Y)	0.00137	0.00138	0.00136
	(A1 * !B1 * C1 * !Y)	-0.00144	-0.00150	-0.00149
	(!A1 * B1 * B2 * !Y)	0.00128	0.00129	0.00128
	(!A1 * B1 * B2 * !Y)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00129	0.00130	0.00128
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !B2 * !C1 * Y)	0.00122	0.00122	0.00122
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00167	-0.00167	-0.00167
	(!A1 * !B1 * !C1 * Y)	0.00122	0.00122	0.00122
	(!A1 * !B1 * !C1 * Y)	-0.00167	-0.00167	-0.00167

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00279	0.00282	0.00279
	(A1 * B1 * B2 * C1 * !Y)	-0.00314	-0.00323	-0.00322
	(A1 * B1 * B2 * !C1 * !Y)	0.00279	0.00282	0.00279
	(A1 * B1 * B2 * !C1 * !Y)	-0.00311	-0.00321	-0.00321
	(A1 * B1 * !B2 * C1 * !Y)	0.00280	0.00282	0.00279
	(A1 * B1 * !B2 * C1 * !Y)	-0.00297	-0.00312	-0.00309
	(A1 * !B1 * C1 * !Y)	0.00280	0.00282	0.00279
	(A1 * !B1 * C1 * !Y)	-0.00297	-0.00312	-0.00308
	(!A1 * B1 * B2 * !Y)	0.00261	0.00264	0.00262
	(!A1 * B1 * B2 * !Y)	-0.00332	-0.00334	-0.00332
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00261	0.00263	0.00262
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00336	-0.00337	-0.00337
	(!A1 * B1 * !B2 * !C1 * Y)	0.00243	0.00246	0.00244
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00354	-0.00356	-0.00355
	(!A1 * !B1 * !C1 * Y)	0.00243	0.00246	0.00244
	(!A1 * !B1 * !C1 * Y)	-0.00354	-0.00356	-0.00355

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * B1 * B2 * C1 * !Y)**	-0.00072	-0.00072	-0.00072
	(A1 * B1 * B2 * C1 * !Y)	0.00080	0.00080	0.00080
	(A1 * B1 * B2 * !C1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * B2 * !C1 * !Y)	0.00080	0.00080	0.00080
	(A1 * B1 * !B2 * C1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * !B2 * C1 * !Y)	0.00077	0.00078	0.00077
	(A1 * !B1 * C1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * !B1 * C1 * !Y)	0.00078	0.00078	0.00077
	(!A1 * B1 * B2 * !Y)	-0.00065	-0.00068	-0.00067
	(!A1 * B1 * B2 * !Y)	0.00083	0.00084	0.00084
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00065	-0.00067	-0.00067
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00083	0.00084	0.00084
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00064	-0.00068	-0.00067
	(!A1 * B1 * !B2 * !C1 * Y)	0.00085	0.00084	0.00083
	(!A1 * !B1 * !C1 * Y)	-0.00064	-0.00068	-0.00067
	(!A1 * !B1 * !C1 * Y)	0.00085	0.00084	0.00083

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00135	-0.00136	-0.00136
	(A1 * B1 * B2 * C1 * !Y)	0.00153	0.00155	0.00154
	(A1 * B1 * B2 * !C1 * !Y)	-0.00135	-0.00136	-0.00136
	(A1 * B1 * B2 * !C1 * !Y)	0.00153	0.00155	0.00154
	(A1 * B1 * !B2 * C1 * !Y)	-0.00136	-0.00137	-0.00136
	(A1 * B1 * !B2 * C1 * !Y)	0.00148	0.00150	0.00149
	(A1 * !B1 * C1 * !Y)	-0.00136	-0.00137	-0.00136
	(A1 * !B1 * C1 * !Y)	0.00148	0.00150	0.00149
	(!A1 * B1 * B2 * !Y)	-0.00125	-0.00129	-0.00128
	(!A1 * B1 * B2 * !Y)	0.00160	0.00162	0.00161
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00125	-0.00130	-0.00128
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00160	0.00161	0.00161
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00117	-0.00122	-0.00122
	(!A1 * B1 * !B2 * !C1 * Y)	0.00169	0.00168	0.00167
	(!A1 * !B1 * !C1 * Y)	-0.00117	-0.00122	-0.00122
	(!A1 * !B1 * !C1 * Y)	0.00169	0.00168	0.00167

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00278	-0.00279	-0.00279
	(A1 * B1 * B2 * C1 * !Y)	0.00321	0.00323	0.00322
	(A1 * B1 * B2 * !C1 * !Y)	-0.00278	-0.00279	-0.00279
	(A1 * B1 * B2 * !C1 * !Y)	0.00320	0.00321	0.00321
	(A1 * B1 * !B2 * C1 * !Y)	-0.00278	-0.00280	-0.00279
	(A1 * B1 * !B2 * C1 * !Y)	0.00308	0.00312	0.00309
	(A1 * !B1 * C1 * !Y)	-0.00278	-0.00280	-0.00279
	(A1 * !B1 * C1 * !Y)	0.00308	0.00312	0.00308
	(!A1 * B1 * B2 * !Y)	-0.00255	-0.00264	-0.00262
	(!A1 * B1 * B2 * !Y)	0.00333	0.00336	0.00333
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00255	-0.00263	-0.00262
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00338	0.00340	0.00338
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00233	-0.00246	-0.00244
	(!A1 * B1 * !B2 * !C1 * Y)	0.00360	0.00357	0.00356
	(!A1 * !B1 * !C1 * Y)	-0.00234	-0.00246	-0.00244
	(!A1 * !B1 * !C1 * Y)	0.00360	0.00357	0.00356

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * A2 * B2 * C1 * !Y)**	0.00070	0.00070	0.00069
	(A1 * A2 * B2 * C1 * !Y)	-0.00063	-0.00063	-0.00063
	(A1 * A2 * B2 * !C1 * !Y)	0.00069	0.00070	0.00069
	(A1 * A2 * B2 * !C1 * !Y)	-0.00053	-0.00053	-0.00052
	(A1 * A2 * !B2 * C1 * !Y)	0.00064	0.00065	0.00064
	(A1 * A2 * !B2 * C1 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * !B2 * !C1 * !Y)	0.00064	0.00064	0.00064
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00052	-0.00053	-0.00052
	(A1 * !A2 * B2 * C1 * !Y)	0.00071	0.00070	0.00069
	(A1 * !A2 * B2 * C1 * !Y)	-0.00077	-0.00079	-0.00079
	(A1 * !A2 * !B2 * C1 * !Y)	0.00064	0.00064	0.00064
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !B2 * !C1 * Y)	0.00025	0.00025	0.00024
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00096	-0.00096	-0.00098
	(!A1 * B2 * C1 * !Y)	0.00071	0.00070	0.00069
	(!A1 * B2 * C1 * !Y)	-0.00077	-0.00079	-0.00079
	(!A1 * !B2 * C1 * !Y)	0.00064	0.00064	0.00064
	(!A1 * !B2 * C1 * !Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !B2 * !C1 * Y)	0.00025	0.00025	0.00024
	(!A1 * !B2 * !C1 * Y)	-0.00096	-0.00096	-0.00098

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00142	0.00143	0.00140
	(A1 * A2 * B2 * C1 * !Y)	-0.00127	-0.00129	-0.00128
	(A1 * A2 * B2 * !C1 * !Y)	0.00140	0.00142	0.00140
	(A1 * A2 * B2 * !C1 * !Y)	-0.00109	-0.00111	-0.00109
	(A1 * A2 * !B2 * C1 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !B2 * C1 * !Y)	-0.00121	-0.00121	-0.00121
	(A1 * A2 * !B2 * !C1 * !Y)	0.00131	0.00131	0.00131
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00108	-0.00109	-0.00109
	(A1 * !A2 * B2 * C1 * !Y)	0.00145	0.00140	0.00139
	(A1 * !A2 * B2 * C1 * !Y)	-0.00159	-0.00165	-0.00165
	(A1 * !A2 * !B2 * C1 * !Y)	0.00129	0.00131	0.00130
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * !A2 * !B2 * !C1 * Y)	0.00052	0.00051	0.00049
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00202	-0.00202	-0.00206
	(!A1 * B2 * C1 * !Y)	0.00145	0.00140	0.00139
	(!A1 * B2 * C1 * !Y)	-0.00159	-0.00165	-0.00165
	(!A1 * !B2 * C1 * !Y)	0.00130	0.00131	0.00130
	(!A1 * !B2 * C1 * !Y)	-0.00171	-0.00172	-0.00171
	(!A1 * !B2 * !C1 * Y)	0.00052	0.00051	0.00049
	(!A1 * !B2 * !C1 * Y)	-0.00202	-0.00202	-0.00206

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00279	0.00281	0.00276
	(A1 * A2 * B2 * C1 * !Y)	-0.00243	-0.00246	-0.00243
	(A1 * A2 * B2 * !C1 * !Y)	0.00277	0.00279	0.00275
	(A1 * A2 * B2 * !C1 * !Y)	-0.00209	-0.00209	-0.00207
	(A1 * A2 * !B2 * C1 * !Y)	0.00255	0.00258	0.00256
	(A1 * A2 * !B2 * C1 * !Y)	-0.00232	-0.00233	-0.00232
	(A1 * A2 * !B2 * !C1 * !Y)	0.00257	0.00257	0.00256
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00205	-0.00207	-0.00206
	(A1 * !A2 * B2 * C1 * !Y)	0.00285	0.00277	0.00274
	(A1 * !A2 * B2 * C1 * !Y)	-0.00290	-0.00314	-0.00313
	(A1 * !A2 * !B2 * C1 * !Y)	0.00254	0.00256	0.00255
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00331	-0.00332	-0.00331
	(A1 * !A2 * !B2 * !C1 * Y)	0.00103	0.00102	0.00096
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00387	-0.00388	-0.00398
	(!A1 * B2 * C1 * !Y)	0.00285	0.00277	0.00274
	(!A1 * B2 * C1 * !Y)	-0.00290	-0.00314	-0.00314
	(!A1 * !B2 * C1 * !Y)	0.00254	0.00257	0.00255
	(!A1 * !B2 * C1 * !Y)	-0.00331	-0.00332	-0.00331
	(!A1 * !B2 * !C1 * Y)	0.00103	0.00103	0.00096
	(!A1 * !B2 * !C1 * Y)	-0.00387	-0.00388	-0.00398

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * A2 * B2 * C1 * !Y)**	-0.00069	-0.00070	-0.00069
	(A1 * A2 * B2 * C1 * !Y)	0.00063	0.00063	0.00063
	(A1 * A2 * B2 * !C1 * !Y)	-0.00062	-0.00063	-0.00065
	(A1 * A2 * B2 * !C1 * !Y)	0.00059	0.00059	0.00057
	(A1 * A2 * !B2 * C1 * !Y)	-0.00063	-0.00065	-0.00064
	(A1 * A2 * !B2 * C1 * !Y)	0.00060	0.00060	0.00060
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00062	-0.00064	-0.00064
	(A1 * A2 * !B2 * !C1 * !Y)	0.00052	0.00053	0.00052
	(A1 * !A2 * B2 * C1 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * B2 * C1 * !Y)	0.00080	0.00079	0.00079
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00062	-0.00064	-0.00064
	(A1 * !A2 * !B2 * C1 * !Y)	0.00082	0.00083	0.00082
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00023	-0.00023	-0.00023
	(A1 * !A2 * !B2 * !C1 * Y)	0.00098	0.00100	0.00098
	(!A1 * B2 * C1 * !Y)	-0.00069	-0.00069	-0.00069
	(!A1 * B2 * C1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * !B2 * C1 * !Y)	-0.00062	-0.00064	-0.00064
	(!A1 * !B2 * C1 * !Y)	0.00082	0.00083	0.00082
	(!A1 * !B2 * !C1 * Y)	-0.00023	-0.00023	-0.00023
	(!A1 * !B2 * !C1 * Y)	0.00098	0.00100	0.00098

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00140	-0.00141	-0.00140
	(A1 * A2 * B2 * C1 * !Y)	0.00127	0.00129	0.00128
	(A1 * A2 * B2 * !C1 * !Y)	-0.00132	-0.00133	-0.00133
	(A1 * A2 * B2 * !C1 * !Y)	0.00116	0.00117	0.00116
	(A1 * A2 * !B2 * C1 * !Y)	-0.00127	-0.00132	-0.00131
	(A1 * A2 * !B2 * C1 * !Y)	0.00121	0.00121	0.00121
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00126	-0.00131	-0.00131
	(A1 * A2 * !B2 * !C1 * !Y)	0.00108	0.00110	0.00109
	(A1 * !A2 * B2 * C1 * !Y)	-0.00140	-0.00140	-0.00139
	(A1 * !A2 * B2 * C1 * !Y)	0.00167	0.00165	0.00165
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00126	-0.00131	-0.00130
	(A1 * !A2 * !B2 * C1 * !Y)	0.00171	0.00172	0.00171
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00047	-0.00048	-0.00047
	(A1 * !A2 * !B2 * !C1 * Y)	0.00206	0.00209	0.00206
	(!A1 * B2 * C1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A1 * B2 * C1 * !Y)	0.00165	0.00165	0.00165
	(!A1 * !B2 * C1 * !Y)	-0.00126	-0.00131	-0.00130
	(!A1 * !B2 * C1 * !Y)	0.00171	0.00172	0.00171
	(!A1 * !B2 * !C1 * Y)	-0.00047	-0.00048	-0.00047
	(!A1 * !B2 * !C1 * Y)	0.00206	0.00209	0.00206

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00275	-0.00277	-0.00275
	(A1 * A2 * B2 * C1 * !Y)	0.00243	0.00246	0.00243
	(A1 * A2 * B2 * !C1 * !Y)	-0.00260	-0.00262	-0.00262
	(A1 * A2 * B2 * !C1 * !Y)	0.00225	0.00226	0.00221
	(A1 * A2 * !B2 * C1 * !Y)	-0.00247	-0.00258	-0.00256
	(A1 * A2 * !B2 * C1 * !Y)	0.00232	0.00233	0.00232
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00244	-0.00257	-0.00256
	(A1 * A2 * !B2 * !C1 * !Y)	0.00205	0.00208	0.00206
	(A1 * !A2 * B2 * C1 * !Y)	-0.00273	-0.00274	-0.00273
	(A1 * !A2 * B2 * C1 * !Y)	0.00312	0.00314	0.00313
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00244	-0.00256	-0.00255
	(A1 * !A2 * !B2 * C1 * !Y)	0.00331	0.00334	0.00332
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00092	-0.00094	-0.00092
	(A1 * !A2 * !B2 * !C1 * Y)	0.00398	0.00403	0.00398
	(!A1 * B2 * C1 * !Y)	-0.00273	-0.00274	-0.00273
	(!A1 * B2 * C1 * !Y)	0.00312	0.00314	0.00314
	(!A1 * !B2 * C1 * !Y)	-0.00244	-0.00257	-0.00255
	(!A1 * !B2 * C1 * !Y)	0.00331	0.00334	0.00332
	(!A1 * !B2 * !C1 * Y)	-0.00092	-0.00094	-0.00092
	(!A1 * !B2 * !C1 * Y)	0.00398	0.00403	0.00398

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * A2 * B1 * C1 * !Y)**	0.00072	0.00073	0.00072
	(A1 * A2 * B1 * C1 * !Y)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * B1 * !C1 * !Y)	0.00072	0.00072	0.00071
	(A1 * A2 * B1 * !C1 * !Y)	-0.00056	-0.00055	-0.00055
	(A1 * A2 * !B1 * C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * A2 * !B1 * C1 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	0.00066	0.00067	0.00066
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00054	-0.00055	-0.00055
	(A1 * !A2 * B1 * C1 * !Y)	0.00073	0.00071	0.00071
	(A1 * !A2 * B1 * C1 * !Y)	-0.00079	-0.00082	-0.00082
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00066	0.00067	0.00066
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * !B1 * !C1 * Y)	0.00061	0.00061	0.00061
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * B1 * C1 * !Y)	0.00073	0.00071	0.00071
	(!A1 * B1 * C1 * !Y)	-0.00079	-0.00082	-0.00082
	(!A1 * !B1 * !C1 * Y)	0.00061	0.00061	0.00061
	(!A1 * !B1 * !C1 * Y)	-0.00090	-0.00090	-0.00090

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00138	0.00139	0.00136
	(A1 * A2 * B1 * C1 * !Y)	-0.00119	-0.00121	-0.00119
	(A1 * A2 * B1 * !C1 * !Y)	0.00136	0.00138	0.00136
	(A1 * A2 * B1 * !C1 * !Y)	-0.00100	-0.00102	-0.00100
	(A1 * A2 * !B1 * C1 * !Y)	0.00127	0.00128	0.00127
	(A1 * A2 * !B1 * C1 * !Y)	-0.00113	-0.00114	-0.00113
	(A1 * A2 * !B1 * !C1 * !Y)	0.00126	0.00127	0.00126
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * B1 * C1 * !Y)	0.00140	0.00136	0.00135
	(A1 * !A2 * B1 * C1 * !Y)	-0.00148	-0.00155	-0.00154
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00159	-0.00160	-0.00159
	(A1 * !A2 * !B1 * !C1 * Y)	0.00121	0.00121	0.00121
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00164	-0.00164	-0.00164
	(!A1 * B1 * C1 * !Y)	0.00140	0.00136	0.00135
	(!A1 * B1 * C1 * !Y)	-0.00148	-0.00155	-0.00154
	(!A1 * !B1 * !C1 * Y)	0.00121	0.00121	0.00121
	(!A1 * !B1 * !C1 * Y)	-0.00164	-0.00164	-0.00164

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00278	0.00282	0.00276
	(A1 * A2 * B1 * C1 * !Y)	-0.00244	-0.00246	-0.00243
	(A1 * A2 * B1 * !C1 * !Y)	0.00276	0.00280	0.00276
	(A1 * A2 * B1 * !C1 * !Y)	-0.00207	-0.00210	-0.00207
	(A1 * A2 * !B1 * C1 * !Y)	0.00256	0.00258	0.00256
	(A1 * A2 * !B1 * C1 * !Y)	-0.00232	-0.00233	-0.00232
	(A1 * A2 * !B1 * !C1 * !Y)	0.00255	0.00258	0.00256
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00206	-0.00207	-0.00206
	(A1 * !A2 * B1 * C1 * !Y)	0.00287	0.00277	0.00275
	(A1 * !A2 * B1 * C1 * !Y)	-0.00291	-0.00314	-0.00313
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00255	0.00257	0.00255
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00331	-0.00332	-0.00331
	(A1 * !A2 * !B1 * !C1 * Y)	0.00255	0.00256	0.00254
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00331	-0.00332	-0.00330
	(!A1 * B1 * C1 * !Y)	0.00287	0.00277	0.00275
	(!A1 * B1 * C1 * !Y)	-0.00292	-0.00314	-0.00313
	(!A1 * !B1 * !C1 * Y)	0.00255	0.00256	0.00255
	(!A1 * !B1 * !C1 * Y)	-0.00331	-0.00332	-0.00330

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * A2 * B1 * C1 * !Y)**	-0.00072	-0.00072	-0.00071
	(A1 * A2 * B1 * C1 * !Y)	0.00065	0.00066	0.00065
	(A1 * A2 * B1 * !C1 * !Y)	-0.00066	-0.00066	-0.00067
	(A1 * A2 * B1 * !C1 * !Y)	0.00061	0.00060	0.00059
	(A1 * A2 * !B1 * C1 * !Y)	-0.00065	-0.00067	-0.00067
	(A1 * A2 * !B1 * C1 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00065	-0.00067	-0.00066
	(A1 * A2 * !B1 * !C1 * !Y)	0.00055	0.00055	0.00055
	(A1 * !A2 * B1 * C1 * !Y)	-0.00071	-0.00071	-0.00071
	(A1 * !A2 * B1 * C1 * !Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00065	-0.00067	-0.00066
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00085	0.00085	0.00085
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00058	-0.00061	-0.00061
	(A1 * !A2 * !B1 * !C1 * Y)	0.00092	0.00091	0.00090
	(!A1 * B1 * C1 * !Y)	-0.00071	-0.00071	-0.00071
	(!A1 * B1 * C1 * !Y)	0.00082	0.00082	0.00082
	(!A1 * !B1 * !C1 * Y)	-0.00058	-0.00061	-0.00061
	(!A1 * !B1 * !C1 * Y)	0.00092	0.00091	0.00090

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00136	-0.00137	-0.00136
	(A1 * A2 * B1 * C1 * !Y)	0.00119	0.00121	0.00119
	(A1 * A2 * B1 * !C1 * !Y)	-0.00125	-0.00127	-0.00128
	(A1 * A2 * B1 * !C1 * !Y)	0.00108	0.00109	0.00108
	(A1 * A2 * !B1 * C1 * !Y)	-0.00123	-0.00128	-0.00127
	(A1 * A2 * !B1 * C1 * !Y)	0.00113	0.00114	0.00113
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00123	-0.00127	-0.00126
	(A1 * A2 * !B1 * !C1 * !Y)	0.00100	0.00100	0.00100
	(A1 * !A2 * B1 * C1 * !Y)	-0.00136	-0.00136	-0.00135
	(A1 * !A2 * B1 * C1 * !Y)	0.00154	0.00155	0.00154
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00122	-0.00127	-0.00126
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00159	0.00160	0.00159
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00116	-0.00121	-0.00121
	(A1 * !A2 * !B1 * !C1 * Y)	0.00167	0.00165	0.00164
	(!A1 * B1 * C1 * !Y)	-0.00135	-0.00136	-0.00135
	(!A1 * B1 * C1 * !Y)	0.00153	0.00155	0.00154
	(!A1 * !B1 * !C1 * Y)	-0.00116	-0.00121	-0.00121
	(!A1 * !B1 * !C1 * Y)	0.00167	0.00165	0.00164

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00276	-0.00277	-0.00276
	(A1 * A2 * B1 * C1 * !Y)	0.00244	0.00246	0.00243
	(A1 * A2 * B1 * !C1 * !Y)	-0.00260	-0.00263	-0.00262
	(A1 * A2 * B1 * !C1 * !Y)	0.00226	0.00227	0.00221
	(A1 * A2 * !B1 * C1 * !Y)	-0.00248	-0.00258	-0.00256
	(A1 * A2 * !B1 * C1 * !Y)	0.00232	0.00233	0.00232
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00248	-0.00258	-0.00256
	(A1 * A2 * !B1 * !C1 * !Y)	0.00207	0.00207	0.00206
	(A1 * !A2 * B1 * C1 * !Y)	-0.00274	-0.00275	-0.00274
	(A1 * !A2 * B1 * C1 * !Y)	0.00312	0.00314	0.00313
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00247	-0.00257	-0.00255
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00332	0.00333	0.00332
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00243	-0.00256	-0.00254
	(A1 * !A2 * !B1 * !C1 * Y)	0.00337	0.00333	0.00332
	(!A1 * B1 * C1 * !Y)	-0.00274	-0.00275	-0.00274
	(!A1 * B1 * C1 * !Y)	0.00312	0.00314	0.00313
	(!A1 * !B1 * !C1 * Y)	-0.00243	-0.00256	-0.00255
	(!A1 * !B1 * !C1 * Y)	0.00337	0.00333	0.00332

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	(A1 * B1 * B2 * !Y)	0.00083	0.00085	0.00083
	(A1 * B1 * B2 * !Y)	-0.00050	-0.00050	-0.00050
	(A1 * A2 * B1 * !B2 * !Y)	0.00084	0.00085	0.00083
	(A1 * A2 * B1 * !B2 * !Y)	-0.00050	-0.00050	-0.00050
	(A1 * A2 * !B1 * !Y)	0.00083	0.00085	0.00083
	(A1 * A2 * !B1 * !Y)	-0.00050	-0.00050	-0.00050
	(!A1 * B1 * B2 * !Y)	0.00083	0.00085	0.00083
	(!A1 * B1 * B2 * !Y)	-0.00050	-0.00051	-0.00050
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00156	0.00158	0.00156
	(A1 * B1 * B2 * !Y)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * B1 * !B2 * !Y)	0.00155	0.00158	0.00156
	(A1 * A2 * B1 * !B2 * !Y)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * !B1 * !Y)	0.00156	0.00158	0.00156
	(A1 * A2 * !B1 * !Y)	-0.00091	-0.00092	-0.00091
	(!A1 * B1 * B2 * !Y)	0.00156	0.00158	0.00156
	(!A1 * B1 * B2 * !Y)	-0.00092	-0.00093	-0.00091
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00310	0.00312	0.00308
	(A1 * B1 * B2 * !Y)	-0.00186	-0.00186	-0.00183
	(A1 * A2 * B1 * !B2 * !Y)	0.00308	0.00312	0.00308
	(A1 * A2 * B1 * !B2 * !Y)	-0.00184	-0.00186	-0.00183
	(A1 * A2 * !B1 * !Y)	0.00310	0.00306	0.00308
	(A1 * A2 * !B1 * !Y)	-0.00185	-0.00182	-0.00183
	(!A1 * B1 * B2 * !Y)	0.00310	0.00308	0.00308
	(!A1 * B1 * B2 * !Y)	-0.00186	-0.00184	-0.00184

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	(A1 * B1 * B2 * !Y)	-0.00074	-0.00075	-0.00082
	(A1 * B1 * B2 * !Y)	0.00058	0.00058	0.00052
	(A1 * A2 * B1 * !B2 * !Y)	-0.00060	-0.00061	-0.00078
	(A1 * A2 * B1 * !B2 * !Y)	0.00068	0.00068	0.00054
	(A1 * A2 * !B1 * !Y)	-0.00060	-0.00061	-0.00078
	(A1 * A2 * !B1 * !Y)	0.00068	0.00068	0.00054
	(!A1 * B1 * B2 * !Y)	-0.00074	-0.00075	-0.00082
	(!A1 * B1 * B2 * !Y)	0.00058	0.00058	0.00052
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00138	-0.00140	-0.00153
	(A1 * B1 * B2 * !Y)	0.00108	0.00107	0.00095
	(A1 * A2 * B1 * !B2 * !Y)	-0.00114	-0.00117	-0.00147
	(A1 * A2 * B1 * !B2 * !Y)	0.00122	0.00122	0.00099
	(A1 * A2 * !B1 * !Y)	-0.00114	-0.00117	-0.00147
	(A1 * A2 * !B1 * !Y)	0.00122	0.00122	0.00099
	(!A1 * B1 * B2 * !Y)	-0.00138	-0.00140	-0.00153
	(!A1 * B1 * B2 * !Y)	0.00107	0.00107	0.00096
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00275	-0.00279	-0.00303
	(A1 * B1 * B2 * !Y)	0.00208	0.00208	0.00190
	(A1 * A2 * B1 * !B2 * !Y)	-0.00227	-0.00232	-0.00291
	(A1 * A2 * B1 * !B2 * !Y)	0.00243	0.00243	0.00200
	(A1 * A2 * !B1 * !Y)	-0.00228	-0.00232	-0.00291
	(A1 * A2 * !B1 * !Y)	0.00244	0.00243	0.00200
	(!A1 * B1 * B2 * !Y)	-0.00275	-0.00279	-0.00303
	(!A1 * B1 * B2 * !Y)	0.00209	0.00209	0.00191

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	B2	C1	X
0	x	0	x	0	0
0	x	x	x	1	1
0	x	1	0	0	0
x	x	1	1	x	1
1	0	0	x	0	0
1	0	x	x	1	1
1	0	1	0	0	0
1	1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221o_1	14.38560
sky130_fd_sc_hs__a221o_2	14.38560
sky130_fd_sc_hs__a221o_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__a221o_1	0.00242	0.00250	0.00240	0.00239	0.00238	0.44404
sky130_fd_sc_hs__a221o_2	0.00253	0.00259	0.00261	0.00261	0.00252	0.86498
sky130_fd_sc_hs__a221o_4	0.00441	0.00441	0.00460	0.00467	0.00455	1.53008

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.01870	0.02824
sky130_fd_sc_hs__a221o_2	0.00000	0.02323	0.03100
sky130_fd_sc_hs__a221o_4	0.00000	0.04747	0.06489

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (RR)	0.19016	1.18936	8.71003
	A2->X (RR)	0.19741	1.19390	8.90011
	B1->X (RR)	0.18380	1.16684	8.59148
	B2->X (RR)	0.19074	1.17330	8.78172
	C1->X (RR)	0.13801	1.09909	8.47774
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.19491	1.08268	8.90528
	A2->X (RR)	0.20242	1.07790	9.04377
	B1->X (RR)	0.18992	1.06615	8.82435
	B2->X (RR)	0.19665	1.06249	8.95494
	C1->X (RR)	0.13654	0.99240	8.69317
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.22190	1.03346	8.97599
	A2->X (RR)	0.23157	1.01736	9.11012
	B1->X (RR)	0.21209	1.00444	8.85442
	B2->X (RR)	0.22213	0.99581	8.99725
	C1->X (RR)	0.13701	0.89296	8.67232

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.78576	1.58441	6.81912
	A2->X (FF)	0.86257	1.66813	6.96661
	B1->X (FF)	0.73018	1.50078	6.69739
	B2->X (FF)	0.79679	1.57844	6.88405
	C1->X (FF)	0.65155	1.36867	6.11384
sky130_fd_sc_hs__a221o_2	A1->X (FF)	1.01631	1.84032	7.40558
	A2->X (FF)	1.10194	1.93599	7.55266
	B1->X (FF)	0.97553	1.77229	7.40455
	B2->X (FF)	1.04253	1.85150	7.57086
	C1->X (FF)	0.89864	1.63860	6.87767
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.97503	1.73735	7.11782
	A2->X (FF)	1.07254	1.84677	7.29628
	B1->X (FF)	0.92866	1.66503	7.12307
	B2->X (FF)	1.01304	1.76045	7.31704
	C1->X (FF)	0.84834	1.52638	6.56663

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.00602	0.00596	0.00596
	A1	0.00297	0.00291	0.00293
	A2	0.00648	0.00643	0.00636
	A2	0.00299	0.00294	0.00290
	B1	0.00501	0.00496	0.00501
	B1	0.00222	0.00217	0.00223
	B2	0.00542	0.00540	0.00536
	B2	0.00225	0.00223	0.00221
	C1	0.00445	0.00436	0.00449
	C1	0.00157	0.00148	0.00169
sky130_fd_sc_hs__a221o_2	A1	0.00744	0.00746	0.00747
	A1	0.00414	0.00417	0.00420
	A2	0.00793	0.00798	0.00792
	A2	0.00416	0.00420	0.00415
	B1	0.00650	0.00659	0.00664
	B1	0.00339	0.00348	0.00357
	B2	0.00696	0.00709	0.00707
	B2	0.00345	0.00358	0.00362
	C1	0.00595	0.00599	0.00609
	C1	0.00279	0.00283	0.00294

sky130_fd_sc_hs__a221o_4	**A1**	0.01453	0.01466	0.01477
	A1	0.00867	0.00879	0.00899
	A2	0.01534	0.01555	0.01554
	A2	0.00869	0.00891	0.00892
	B1	0.01246	0.01264	0.01286
	B1	0.00707	0.00724	0.00753
	B2	0.01342	0.01372	0.01378
	B2	0.00703	0.00746	0.00749
	C1	0.01095	0.01101	0.01130
	C1	0.00551	0.00557	0.00590

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00212	0.00215	0.00254
	A1	0.00538	0.00541	0.00539
	A2	0.00204	0.00204	0.00306
	A2	0.00590	0.00591	0.00586
	B1	0.00213	0.00212	0.00230
	B1	0.00491	0.00491	0.00489
	B2	0.00227	0.00231	0.00281
	B2	0.00540	0.00543	0.00540
	C1	0.00218	0.00219	0.00262
	C1	0.00499	0.00500	0.00520

sky130_fd_sc_hs__a221o_2	**A1**	0.00351	0.00367	0.00431
	A1	0.00701	0.00717	0.00721
	A2	0.00343	0.00359	0.00449
	A2	0.00762	0.00776	0.00776
	B1	0.00349	0.00361	0.00423
	B1	0.00659	0.00671	0.00674
	B2	0.00343	0.00363	0.00428
	B2	0.00712	0.00728	0.00729
	C1	0.00342	0.00358	0.00487
	C1	0.00674	0.00687	0.00710
sky130_fd_sc_hs__a221o_4	**A1**	0.00566	0.00607	0.00820
	A1	0.01253	0.01289	0.01306
	A2	0.00681	0.00721	0.00907
	A2	0.01376	0.01416	0.01426
	B1	0.00576	0.00613	0.00733
	B1	0.01176	0.01206	0.01211
	B2	0.00669	0.00708	0.00827
	B2	0.01286	0.01327	0.01333
	C1	0.00693	0.00724	0.00866
	C1	0.01218	0.01248	0.01296

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A2 * B1 * B2 * C1 * X)**	0.00061	0.00061	0.00061
	(A2 * B1 * B2 * C1 * X)	-0.00073	-0.00075	-0.00075
	(A2 * B1 * B2 * !C1 * X)	0.00061	0.00061	0.00061
	(A2 * B1 * B2 * !C1 * X)	-0.00072	-0.00075	-0.00075
	(A2 * B1 * !B2 * C1 * X)	0.00062	0.00062	0.00061
	(A2 * B1 * !B2 * C1 * X)	-0.00070	-0.00073	-0.00072
	(A2 * !B1 * C1 * X)	0.00062	0.00062	0.00061
	(A2 * !B1 * C1 * X)	-0.00070	-0.00073	-0.00072
	(!A2 * B1 * B2 * C1 * X)	0.00057	0.00057	0.00057
	(!A2 * B1 * B2 * C1 * X)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * B2 * !C1 * X)	0.00057	0.00057	0.00057
	(!A2 * B1 * B2 * !C1 * X)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * !B2 * C1 * X)	0.00057	0.00057	0.00057
	(!A2 * B1 * !B2 * C1 * X)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * !B2 * !C1 * !X)	0.00023	0.00023	0.00022
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00091	-0.00091	-0.00093
	(!A2 * !B1 * C1 * X)	0.00057	0.00057	0.00057
	(!A2 * !B1 * C1 * X)	-0.00078	-0.00078	-0.00078
	(!A2 * !B1 * !C1 * !X)	0.00023	0.00023	0.00022
	(!A2 * !B1 * !C1 * !X)	-0.00091	-0.00091	-0.00093

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00069	0.00070	0.00069
	(A2 * B1 * B2 * C1 * X)	-0.00072	-0.00074	-0.00074
	(A2 * B1 * B2 * !C1 * X)	0.00069	0.00070	0.00069
	(A2 * B1 * B2 * !C1 * X)	-0.00072	-0.00074	-0.00074
	(A2 * B1 * !B2 * C1 * X)	0.00070	0.00070	0.00069
	(A2 * B1 * !B2 * C1 * X)	-0.00070	-0.00073	-0.00072
	(A2 * !B1 * C1 * X)	0.00070	0.00070	0.00069
	(A2 * !B1 * C1 * X)	-0.00070	-0.00073	-0.00072
	(!A2 * B1 * B2 * C1 * X)	0.00064	0.00065	0.00064
	(!A2 * B1 * B2 * C1 * X)	-0.00077	-0.00078	-0.00077
	(!A2 * B1 * B2 * !C1 * X)	0.00064	0.00064	0.00064
	(!A2 * B1 * B2 * !C1 * X)	-0.00077	-0.00078	-0.00077
	(!A2 * B1 * !B2 * C1 * X)	0.00064	0.00065	0.00064
	(!A2 * B1 * !B2 * C1 * X)	-0.00077	-0.00078	-0.00077
	(!A2 * B1 * !B2 * !C1 * !X)	0.00025	0.00025	0.00024
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00092	-0.00091	-0.00094
	(!A2 * !B1 * C1 * X)	0.00064	0.00065	0.00064
	(!A2 * !B1 * C1 * X)	-0.00077	-0.00078	-0.00077
	(!A2 * !B1 * !C1 * !X)	0.00025	0.00025	0.00024
	(!A2 * !B1 * !C1 * !X)	-0.00092	-0.00091	-0.00094

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00138	0.00137	0.00137
	(A2 * B1 * B2 * C1 * X)	-0.00141	-0.00146	-0.00145
	(A2 * B1 * B2 * !C1 * X)	0.00138	0.00137	0.00137
	(A2 * B1 * B2 * !C1 * X)	-0.00141	-0.00146	-0.00145
	(A2 * B1 * !B2 * C1 * X)	0.00138	0.00138	0.00137
	(A2 * B1 * !B2 * C1 * X)	-0.00138	-0.00142	-0.00141
	(A2 * !B1 * C1 * X)	0.00138	0.00138	0.00137
	(A2 * !B1 * C1 * X)	-0.00138	-0.00142	-0.00141
	(!A2 * B1 * B2 * C1 * X)	0.00127	0.00128	0.00128
	(!A2 * B1 * B2 * C1 * X)	-0.00151	-0.00152	-0.00151
	(!A2 * B1 * B2 * !C1 * X)	0.00127	0.00127	0.00127
	(!A2 * B1 * B2 * !C1 * X)	-0.00151	-0.00152	-0.00152
	(!A2 * B1 * !B2 * C1 * X)	0.00127	0.00128	0.00128
	(!A2 * B1 * !B2 * C1 * X)	-0.00151	-0.00152	-0.00151
	(!A2 * B1 * !B2 * !C1 * !X)	0.00070	0.00069	0.00066
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00168	-0.00168	-0.00173
	(!A2 * !B1 * C1 * X)	0.00127	0.00128	0.00128
	(!A2 * !B1 * C1 * X)	-0.00151	-0.00152	-0.00151
	(!A2 * !B1 * !C1 * !X)	0.00070	0.00069	0.00066
	(!A2 * !B1 * !C1 * !X)	-0.00168	-0.00168	-0.00173

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A2 * B1 * B2 * C1 * X)**	-0.00061	-0.00061	-0.00061
	(A2 * B1 * B2 * C1 * X)	0.00075	0.00075	0.00075
	(A2 * B1 * B2 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A2 * B1 * B2 * !C1 * X)	0.00075	0.00075	0.00075
	(A2 * B1 * !B2 * C1 * X)	-0.00061	-0.00061	-0.00061
	(A2 * B1 * !B2 * C1 * X)	0.00073	0.00073	0.00072
	(A2 * !B1 * C1 * X)	-0.00061	-0.00061	-0.00061
	(A2 * !B1 * C1 * X)	0.00073	0.00073	0.00072
	(!A2 * B1 * B2 * C1 * X)	-0.00055	-0.00057	-0.00057
	(!A2 * B1 * B2 * C1 * X)	0.00078	0.00079	0.00078
	(!A2 * B1 * B2 * !C1 * X)	-0.00055	-0.00057	-0.00057
	(!A2 * B1 * B2 * !C1 * X)	0.00078	0.00079	0.00078
	(!A2 * B1 * !B2 * C1 * X)	-0.00055	-0.00057	-0.00057
	(!A2 * B1 * !B2 * C1 * X)	0.00078	0.00079	0.00078
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00021	-0.00022	-0.00021
	(!A2 * B1 * !B2 * !C1 * !X)	0.00092	0.00094	0.00093
	(!A2 * !B1 * C1 * X)	-0.00055	-0.00057	-0.00057
	(!A2 * !B1 * C1 * X)	0.00078	0.00079	0.00078
	(!A2 * !B1 * !C1 * !X)	-0.00021	-0.00022	-0.00021
	(!A2 * !B1 * !C1 * !X)	0.00092	0.00094	0.00093

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00069	-0.00069	-0.00069
	(A2 * B1 * B2 * C1 * X)	0.00075	0.00074	0.00074
	(A2 * B1 * B2 * !C1 * X)	-0.00069	-0.00069	-0.00069
	(A2 * B1 * B2 * !C1 * X)	0.00075	0.00074	0.00074
	(A2 * B1 * !B2 * C1 * X)	-0.00069	-0.00070	-0.00069
	(A2 * B1 * !B2 * C1 * X)	0.00072	0.00073	0.00072
	(A2 * !B1 * C1 * X)	-0.00069	-0.00070	-0.00069
	(A2 * !B1 * C1 * X)	0.00072	0.00073	0.00072
	(!A2 * B1 * B2 * C1 * X)	-0.00063	-0.00065	-0.00064
	(!A2 * B1 * B2 * C1 * X)	0.00077	0.00078	0.00077
	(!A2 * B1 * B2 * !C1 * X)	-0.00062	-0.00064	-0.00064
	(!A2 * B1 * B2 * !C1 * X)	0.00077	0.00078	0.00078
	(!A2 * B1 * !B2 * C1 * X)	-0.00062	-0.00065	-0.00064
	(!A2 * B1 * !B2 * C1 * X)	0.00077	0.00078	0.00078
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00023	-0.00024	-0.00023
	(!A2 * B1 * !B2 * !C1 * !X)	0.00094	0.00095	0.00094
	(!A2 * !B1 * C1 * X)	-0.00062	-0.00065	-0.00064
	(!A2 * !B1 * C1 * X)	0.00077	0.00078	0.00078
	(!A2 * !B1 * !C1 * !X)	-0.00023	-0.00024	-0.00023
	(!A2 * !B1 * !C1 * !X)	0.00094	0.00095	0.00094

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00138	-0.00137	-0.00137
	(A2 * B1 * B2 * C1 * X)	0.00145	0.00146	0.00145
	(A2 * B1 * B2 * !C1 * X)	-0.00138	-0.00137	-0.00137
	(A2 * B1 * B2 * !C1 * X)	0.00145	0.00146	0.00145
	(A2 * B1 * !B2 * C1 * X)	-0.00137	-0.00137	-0.00137
	(A2 * B1 * !B2 * C1 * X)	0.00142	0.00142	0.00141
	(A2 * !B1 * C1 * X)	-0.00137	-0.00137	-0.00137
	(A2 * !B1 * C1 * X)	0.00142	0.00142	0.00141
	(!A2 * B1 * B2 * C1 * X)	-0.00124	-0.00128	-0.00128
	(!A2 * B1 * B2 * C1 * X)	0.00153	0.00153	0.00152
	(!A2 * B1 * B2 * !C1 * X)	-0.00123	-0.00127	-0.00127
	(!A2 * B1 * B2 * !C1 * X)	0.00152	0.00154	0.00152
	(!A2 * B1 * !B2 * C1 * X)	-0.00124	-0.00128	-0.00128
	(!A2 * B1 * !B2 * C1 * X)	0.00153	0.00153	0.00152
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00064	-0.00065	-0.00064
	(!A2 * B1 * !B2 * !C1 * !X)	0.00173	0.00174	0.00174
	(!A2 * !B1 * C1 * X)	-0.00123	-0.00128	-0.00128
	(!A2 * !B1 * C1 * X)	0.00152	0.00153	0.00152
	(!A2 * !B1 * !C1 * !X)	-0.00064	-0.00065	-0.00064
	(!A2 * !B1 * !C1 * !X)	0.00173	0.00174	0.00174

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * B1 * B2 * C1 * X)**	0.00071	0.00072	0.00071
	(A1 * B1 * B2 * C1 * X)	-0.00070	-0.00072	-0.00072
	(A1 * B1 * B2 * !C1 * X)	0.00072	0.00072	0.00071
	(A1 * B1 * B2 * !C1 * X)	-0.00070	-0.00072	-0.00072
	(A1 * B1 * !B2 * C1 * X)	0.00072	0.00072	0.00071
	(A1 * B1 * !B2 * C1 * X)	-0.00068	-0.00071	-0.00070
	(A1 * !B1 * C1 * X)	0.00072	0.00072	0.00071
	(A1 * !B1 * C1 * X)	-0.00068	-0.00071	-0.00070
	(!A1 * B1 * B2 * X)	0.00067	0.00068	0.00067
	(!A1 * B1 * B2 * X)	-0.00075	-0.00076	-0.00075
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00067	0.00067	0.00067
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * B1 * !B2 * !C1 * !X)	0.00056	0.00057	0.00056
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * !B1 * !C1 * !X)	0.00056	0.00057	0.00056
	(!A1 * !B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00078	0.00078	0.00078
	(A1 * B1 * B2 * C1 * X)	-0.00070	-0.00072	-0.00072
	(A1 * B1 * B2 * !C1 * X)	0.00078	0.00078	0.00078
	(A1 * B1 * B2 * !C1 * X)	-0.00069	-0.00071	-0.00072
	(A1 * B1 * !B2 * C1 * X)	0.00078	0.00078	0.00078
	(A1 * B1 * !B2 * C1 * X)	-0.00067	-0.00070	-0.00069
	(A1 * !B1 * C1 * X)	0.00078	0.00078	0.00078
	(A1 * !B1 * C1 * X)	-0.00067	-0.00070	-0.00069
	(!A1 * B1 * B2 * X)	0.00073	0.00073	0.00073
	(!A1 * B1 * B2 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00073	0.00073	0.00073
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00074	-0.00075	-0.00075
	(!A1 * B1 * !B2 * !C1 * !X)	0.00062	0.00063	0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00085	-0.00086	-0.00085
	(!A1 * !B1 * !C1 * !X)	0.00062	0.00063	0.00062
	(!A1 * !B1 * !C1 * !X)	-0.00085	-0.00086	-0.00085

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00137	0.00135	0.00135
	(A1 * B1 * B2 * C1 * X)	-0.00140	-0.00145	-0.00144
	(A1 * B1 * B2 * !C1 * X)	0.00137	0.00135	0.00135
	(A1 * B1 * B2 * !C1 * X)	-0.00139	-0.00145	-0.00144
	(A1 * B1 * !B2 * C1 * X)	0.00136	0.00137	0.00135
	(A1 * B1 * !B2 * C1 * X)	-0.00136	-0.00141	-0.00140
	(A1 * !B1 * C1 * X)	0.00136	0.00137	0.00135
	(A1 * !B1 * C1 * X)	-0.00136	-0.00141	-0.00140
	(!A1 * B1 * B2 * X)	0.00126	0.00127	0.00126
	(!A1 * B1 * B2 * X)	-0.00150	-0.00151	-0.00150
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00126	0.00127	0.00126
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00150	-0.00151	-0.00150
	(!A1 * B1 * !B2 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00154	-0.00154	-0.00154
	(!A1 * !B1 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A1 * !B1 * !C1 * !X)	-0.00154	-0.00154	-0.00154

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * B1 * B2 * C1 * X)**	-0.00071	-0.00071	-0.00071
	(A1 * B1 * B2 * C1 * X)	0.00073	0.00072	0.00072
	(A1 * B1 * B2 * !C1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * B1 * B2 * !C1 * X)	0.00073	0.00072	0.00072
	(A1 * B1 * !B2 * C1 * X)	-0.00071	-0.00072	-0.00071
	(A1 * B1 * !B2 * C1 * X)	0.00071	0.00071	0.00070
	(A1 * !B1 * C1 * X)	-0.00071	-0.00072	-0.00071
	(A1 * !B1 * C1 * X)	0.00070	0.00071	0.00070
	(!A1 * B1 * B2 * X)	-0.00066	-0.00068	-0.00067
	(!A1 * B1 * B2 * X)	0.00075	0.00076	0.00075
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00066	-0.00067	-0.00067
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00075	0.00076	0.00075
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00053	-0.00056	-0.00056
	(!A1 * B1 * !B2 * !C1 * !X)	0.00088	0.00087	0.00086
	(!A1 * !B1 * !C1 * !X)	-0.00053	-0.00056	-0.00056
	(!A1 * !B1 * !C1 * !X)	0.00088	0.00087	0.00086

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00078	-0.00078	-0.00078
	(A1 * B1 * B2 * C1 * X)	0.00072	0.00072	0.00072
	(A1 * B1 * B2 * !C1 * X)	-0.00078	-0.00077	-0.00078
	(A1 * B1 * B2 * !C1 * X)	0.00072	0.00071	0.00072
	(A1 * B1 * !B2 * C1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * B1 * !B2 * C1 * X)	0.00070	0.00070	0.00069
	(A1 * !B1 * C1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * !B1 * C1 * X)	0.00070	0.00070	0.00069
	(!A1 * B1 * B2 * X)	-0.00071	-0.00073	-0.00073
	(!A1 * B1 * B2 * X)	0.00075	0.00075	0.00075
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00071	-0.00073	-0.00073
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00075	0.00075	0.00075
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00059	-0.00063	-0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	0.00087	0.00086	0.00086
	(!A1 * !B1 * !C1 * !X)	-0.00059	-0.00063	-0.00062
	(!A1 * !B1 * !C1 * !X)	0.00087	0.00086	0.00086

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00136	-0.00135	-0.00135
	(A1 * B1 * B2 * C1 * X)	0.00144	0.00145	0.00144
	(A1 * B1 * B2 * !C1 * X)	-0.00136	-0.00135	-0.00135
	(A1 * B1 * B2 * !C1 * X)	0.00144	0.00145	0.00144
	(A1 * B1 * !B2 * C1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * !B2 * C1 * X)	0.00140	0.00141	0.00140
	(A1 * !B1 * C1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * !B1 * C1 * X)	0.00140	0.00141	0.00140
	(!A1 * B1 * B2 * X)	-0.00123	-0.00127	-0.00126
	(!A1 * B1 * B2 * X)	0.00151	0.00152	0.00150
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00123	-0.00127	-0.00126
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00151	0.00152	0.00150
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00118	-0.00123	-0.00123
	(!A1 * B1 * !B2 * !C1 * !X)	0.00156	0.00155	0.00154
	(!A1 * !B1 * !C1 * !X)	-0.00118	-0.00123	-0.00123
	(!A1 * !B1 * !C1 * !X)	0.00156	0.00155	0.00154

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B2 * C1 * X)**	0.00062	0.00063	0.00062
	(A1 * A2 * B2 * C1 * X)	-0.00058	-0.00059	-0.00058
	(A1 * A2 * B2 * !C1 * X)	0.00061	0.00062	0.00061
	(A1 * A2 * B2 * !C1 * X)	-0.00050	-0.00051	-0.00050
	(A1 * A2 * !B2 * C1 * X)	0.00057	0.00058	0.00058
	(A1 * A2 * !B2 * C1 * X)	-0.00055	-0.00056	-0.00055
	(A1 * A2 * !B2 * !C1 * X)	0.00057	0.00057	0.00057
	(A1 * A2 * !B2 * !C1 * X)	-0.00050	-0.00050	-0.00050
	(A1 * !A2 * B2 * C1 * X)	0.00064	0.00062	0.00061
	(A1 * !A2 * B2 * C1 * X)	-0.00071	-0.00075	-0.00075
	(A1 * !A2 * !B2 * C1 * X)	0.00057	0.00057	0.00057
	(A1 * !A2 * !B2 * C1 * X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * !B2 * !C1 * !X)	0.00022	0.00022	0.00021
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00091	-0.00091	-0.00093
	(!A1 * B2 * C1 * X)	0.00064	0.00062	0.00061
	(!A1 * B2 * C1 * X)	-0.00071	-0.00075	-0.00075
	(!A1 * !B2 * C1 * X)	0.00057	0.00057	0.00057
	(!A1 * !B2 * C1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * !B2 * !C1 * !X)	0.00022	0.00022	0.00021
	(!A1 * !B2 * !C1 * !X)	-0.00091	-0.00091	-0.00093

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00075	0.00076	0.00075
	(A1 * A2 * B2 * C1 * X)	-0.00060	-0.00060	-0.00059
	(A1 * A2 * B2 * !C1 * X)	0.00074	0.00075	0.00074
	(A1 * A2 * B2 * !C1 * X)	-0.00051	-0.00052	-0.00051
	(A1 * A2 * !B2 * C1 * X)	0.00069	0.00070	0.00070
	(A1 * A2 * !B2 * C1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * !B2 * !C1 * X)	0.00069	0.00070	0.00069
	(A1 * A2 * !B2 * !C1 * X)	-0.00051	-0.00051	-0.00051
	(A1 * !A2 * B2 * C1 * X)	0.00077	0.00074	0.00074
	(A1 * !A2 * B2 * C1 * X)	-0.00072	-0.00076	-0.00076
	(A1 * !A2 * !B2 * C1 * X)	0.00069	0.00069	0.00069
	(A1 * !A2 * !B2 * C1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * !A2 * !B2 * !C1 * !X)	0.00026	0.00026	0.00025
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00096	-0.00096	-0.00098
	(!A1 * B2 * C1 * X)	0.00077	0.00074	0.00074
	(!A1 * B2 * C1 * X)	-0.00073	-0.00076	-0.00076
	(!A1 * !B2 * C1 * X)	0.00069	0.00069	0.00069
	(!A1 * !B2 * C1 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * !B2 * !C1 * !X)	0.00026	0.00026	0.00025
	(!A1 * !B2 * !C1 * !X)	-0.00096	-0.00096	-0.00098

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00134	0.00135	0.00133
	(A1 * A2 * B2 * C1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * B2 * !C1 * X)	0.00132	0.00134	0.00132
	(A1 * A2 * B2 * !C1 * X)	-0.00103	-0.00104	-0.00102
	(A1 * A2 * !B2 * C1 * X)	0.00125	0.00126	0.00125
	(A1 * A2 * !B2 * C1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * !B2 * !C1 * X)	0.00124	0.00125	0.00124
	(A1 * A2 * !B2 * !C1 * X)	-0.00101	-0.00103	-0.00102
	(A1 * !A2 * B2 * C1 * X)	0.00136	0.00132	0.00131
	(A1 * !A2 * B2 * C1 * X)	-0.00145	-0.00151	-0.00151
	(A1 * !A2 * !B2 * C1 * X)	0.00123	0.00125	0.00124
	(A1 * !A2 * !B2 * C1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * !B2 * !C1 * !X)	0.00056	0.00056	0.00052
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00183	-0.00182	-0.00188
	(!A1 * B2 * C1 * X)	0.00136	0.00132	0.00131
	(!A1 * B2 * C1 * X)	-0.00145	-0.00151	-0.00151
	(!A1 * !B2 * C1 * X)	0.00123	0.00125	0.00124
	(!A1 * !B2 * C1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * !B2 * !C1 * !X)	0.00056	0.00056	0.00052
	(!A1 * !B2 * !C1 * !X)	-0.00183	-0.00182	-0.00188

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B2 * C1 * X)**	-0.00061	-0.00062	-0.00062
	(A1 * A2 * B2 * C1 * X)	0.00058	0.00059	0.00058
	(A1 * A2 * B2 * !C1 * X)	-0.00057	-0.00058	-0.00058
	(A1 * A2 * B2 * !C1 * X)	0.00054	0.00054	0.00053
	(A1 * A2 * !B2 * C1 * X)	-0.00056	-0.00058	-0.00058
	(A1 * A2 * !B2 * C1 * X)	0.00055	0.00056	0.00055
	(A1 * A2 * !B2 * !C1 * X)	-0.00056	-0.00057	-0.00057
	(A1 * A2 * !B2 * !C1 * X)	0.00050	0.00050	0.00050
	(A1 * !A2 * B2 * C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * B2 * C1 * X)	0.00075	0.00075	0.00075
	(A1 * !A2 * !B2 * C1 * X)	-0.00055	-0.00057	-0.00057
	(A1 * !A2 * !B2 * C1 * X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00020	-0.00021	-0.00020
	(A1 * !A2 * !B2 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * B2 * C1 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * B2 * C1 * X)	0.00075	0.00075	0.00075
	(!A1 * !B2 * C1 * X)	-0.00055	-0.00057	-0.00057
	(!A1 * !B2 * C1 * X)	0.00077	0.00078	0.00077
	(!A1 * !B2 * !C1 * !X)	-0.00020	-0.00021	-0.00020
	(!A1 * !B2 * !C1 * !X)	0.00093	0.00094	0.00093

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00075	-0.00075	-0.00074
	(A1 * A2 * B2 * C1 * X)	0.00060	0.00060	0.00059
	(A1 * A2 * B2 * !C1 * X)	-0.00070	-0.00070	-0.00071
	(A1 * A2 * B2 * !C1 * X)	0.00055	0.00055	0.00054
	(A1 * A2 * !B2 * C1 * X)	-0.00068	-0.00070	-0.00070
	(A1 * A2 * !B2 * C1 * X)	0.00056	0.00056	0.00056
	(A1 * A2 * !B2 * !C1 * X)	-0.00067	-0.00070	-0.00069
	(A1 * A2 * !B2 * !C1 * X)	0.00051	0.00051	0.00051
	(A1 * !A2 * B2 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * B2 * C1 * X)	0.00076	0.00076	0.00076
	(A1 * !A2 * !B2 * C1 * X)	-0.00067	-0.00069	-0.00069
	(A1 * !A2 * !B2 * C1 * X)	0.00078	0.00079	0.00078
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00024	-0.00025	-0.00024
	(A1 * !A2 * !B2 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * B2 * C1 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * B2 * C1 * X)	0.00076	0.00076	0.00076
	(!A1 * !B2 * C1 * X)	-0.00067	-0.00069	-0.00069
	(!A1 * !B2 * C1 * X)	0.00078	0.00079	0.00078
	(!A1 * !B2 * !C1 * !X)	-0.00024	-0.00025	-0.00024
	(!A1 * !B2 * !C1 * !X)	0.00098	0.00099	0.00098

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00132	-0.00133	-0.00132
	(A1 * A2 * B2 * C1 * X)	0.00121	0.00122	0.00121
	(A1 * A2 * B2 * !C1 * X)	-0.00123	-0.00124	-0.00124
	(A1 * A2 * B2 * !C1 * X)	0.00111	0.00111	0.00110
	(A1 * A2 * !B2 * C1 * X)	-0.00121	-0.00126	-0.00125
	(A1 * A2 * !B2 * C1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * !B2 * !C1 * X)	-0.00120	-0.00125	-0.00124
	(A1 * A2 * !B2 * !C1 * X)	0.00102	0.00103	0.00102
	(A1 * !A2 * B2 * C1 * X)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * B2 * C1 * X)	0.00150	0.00151	0.00151
	(A1 * !A2 * !B2 * C1 * X)	-0.00120	-0.00125	-0.00124
	(A1 * !A2 * !B2 * C1 * X)	0.00155	0.00156	0.00155
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00050	-0.00051	-0.00050
	(A1 * !A2 * !B2 * !C1 * !X)	0.00188	0.00190	0.00188
	(!A1 * B2 * C1 * X)	-0.00130	-0.00130	-0.00130
	(!A1 * B2 * C1 * X)	0.00150	0.00151	0.00151
	(!A1 * !B2 * C1 * X)	-0.00119	-0.00125	-0.00124
	(!A1 * !B2 * C1 * X)	0.00155	0.00156	0.00155
	(!A1 * !B2 * !C1 * !X)	-0.00050	-0.00051	-0.00050
	(!A1 * !B2 * !C1 * !X)	0.00188	0.00190	0.00188

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B1 * C1 * X)**	0.00065	0.00065	0.00064
	(A1 * A2 * B1 * C1 * X)	-0.00058	-0.00058	-0.00057
	(A1 * A2 * B1 * !C1 * X)	0.00065	0.00065	0.00064
	(A1 * A2 * B1 * !C1 * X)	-0.00049	-0.00049	-0.00049
	(A1 * A2 * !B1 * C1 * X)	0.00060	0.00060	0.00060
	(A1 * A2 * !B1 * C1 * X)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * !B1 * !C1 * X)	0.00060	0.00060	0.00060
	(A1 * A2 * !B1 * !C1 * X)	-0.00049	-0.00049	-0.00049
	(A1 * !A2 * B1 * C1 * X)	0.00066	0.00064	0.00064
	(A1 * !A2 * B1 * C1 * X)	-0.00069	-0.00073	-0.00073
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00059	0.00060	0.00059
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00076	-0.00076	-0.00075
	(A1 * !A2 * !B1 * !C1 * !X)	0.00053	0.00053	0.00053
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00081	-0.00082	-0.00082
	(!A1 * B1 * C1 * X)	0.00066	0.00064	0.00064
	(!A1 * B1 * C1 * X)	-0.00069	-0.00073	-0.00073
	(!A1 * !B1 * !C1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !B1 * !C1 * !X)	-0.00081	-0.00082	-0.00082

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00077	0.00078	0.00077
	(A1 * A2 * B1 * C1 * X)	-0.00055	-0.00056	-0.00055
	(A1 * A2 * B1 * !C1 * X)	0.00077	0.00077	0.00076
	(A1 * A2 * B1 * !C1 * X)	-0.00047	-0.00047	-0.00046
	(A1 * A2 * !B1 * C1 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * !B1 * C1 * X)	-0.00052	-0.00052	-0.00052
	(A1 * A2 * !B1 * !C1 * X)	0.00071	0.00071	0.00071
	(A1 * A2 * !B1 * !C1 * X)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * B1 * C1 * X)	0.00079	0.00076	0.00076
	(A1 * !A2 * B1 * C1 * X)	-0.00066	-0.00070	-0.00070
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00070	0.00072	0.00071
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00072	-0.00073	-0.00073
	(A1 * !A2 * !B1 * !C1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00082	-0.00082	-0.00082
	(!A1 * B1 * C1 * X)	0.00079	0.00076	0.00076
	(!A1 * B1 * C1 * X)	-0.00066	-0.00070	-0.00070
	(!A1 * !B1 * !C1 * !X)	0.00061	0.00061	0.00061
	(!A1 * !B1 * !C1 * !X)	-0.00082	-0.00082	-0.00082

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00148	0.00150	0.00148
	(A1 * A2 * B1 * C1 * X)	-0.00115	-0.00117	-0.00116
	(A1 * A2 * B1 * !C1 * X)	0.00147	0.00148	0.00147
	(A1 * A2 * B1 * !C1 * X)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * !B1 * C1 * X)	0.00140	0.00141	0.00140
	(A1 * A2 * !B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(A1 * A2 * !B1 * !C1 * X)	0.00139	0.00140	0.00139
	(A1 * A2 * !B1 * !C1 * X)	-0.00096	-0.00097	-0.00097
	(A1 * !A2 * B1 * C1 * X)	0.00149	0.00147	0.00146
	(A1 * !A2 * B1 * C1 * X)	-0.00139	-0.00146	-0.00146
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00138	0.00139	0.00139
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00149	-0.00150	-0.00150
	(A1 * !A2 * !B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00154	-0.00155	-0.00154
	(!A1 * B1 * C1 * X)	0.00150	0.00148	0.00146
	(!A1 * B1 * C1 * X)	-0.00139	-0.00146	-0.00146
	(!A1 * !B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(!A1 * !B1 * !C1 * !X)	-0.00154	-0.00155	-0.00154

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B1 * C1 * X)**	-0.00064	-0.00064	-0.00064
	(A1 * A2 * B1 * C1 * X)	0.00058	0.00058	0.00057
	(A1 * A2 * B1 * !C1 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * B1 * !C1 * X)	0.00052	0.00052	0.00052
	(A1 * A2 * !B1 * C1 * X)	-0.00058	-0.00060	-0.00060
	(A1 * A2 * !B1 * C1 * X)	0.00054	0.00055	0.00054
	(A1 * A2 * !B1 * !C1 * X)	-0.00058	-0.00060	-0.00060
	(A1 * A2 * !B1 * !C1 * X)	0.00049	0.00049	0.00049
	(A1 * !A2 * B1 * C1 * X)	-0.00064	-0.00063	-0.00063
	(A1 * !A2 * B1 * C1 * X)	0.00073	0.00073	0.00073
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00058	-0.00060	-0.00059
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00076	0.00076	0.00076
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00050	-0.00053	-0.00053
	(A1 * !A2 * !B1 * !C1 * !X)	0.00084	0.00082	0.00082
	(!A1 * B1 * C1 * X)	-0.00064	-0.00063	-0.00063
	(!A1 * B1 * C1 * X)	0.00073	0.00073	0.00073
	(!A1 * !B1 * !C1 * !X)	-0.00050	-0.00053	-0.00053
	(!A1 * !B1 * !C1 * !X)	0.00084	0.00082	0.00082

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00077	-0.00077	-0.00076
	(A1 * A2 * B1 * C1 * X)	0.00055	0.00056	0.00055
	(A1 * A2 * B1 * !C1 * X)	-0.00071	-0.00072	-0.00072
	(A1 * A2 * B1 * !C1 * X)	0.00050	0.00051	0.00050
	(A1 * A2 * !B1 * C1 * X)	-0.00070	-0.00072	-0.00072
	(A1 * A2 * !B1 * C1 * X)	0.00052	0.00052	0.00052
	(A1 * A2 * !B1 * !C1 * X)	-0.00070	-0.00071	-0.00071
	(A1 * A2 * !B1 * !C1 * X)	0.00046	0.00046	0.00046
	(A1 * !A2 * B1 * C1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * B1 * C1 * X)	0.00070	0.00070	0.00070
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00069	-0.00072	-0.00071
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00073	0.00073	0.00073
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00058	-0.00061	-0.00061
	(A1 * !A2 * !B1 * !C1 * !X)	0.00084	0.00083	0.00083
	(!A1 * B1 * C1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * B1 * C1 * X)	0.00070	0.00070	0.00070
	(!A1 * !B1 * !C1 * !X)	-0.00058	-0.00061	-0.00061
	(!A1 * !B1 * !C1 * !X)	0.00084	0.00083	0.00083

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00147	-0.00148	-0.00147
	(A1 * A2 * B1 * C1 * X)	0.00115	0.00117	0.00116
	(A1 * A2 * B1 * !C1 * X)	-0.00137	-0.00138	-0.00139
	(A1 * A2 * B1 * !C1 * X)	0.00106	0.00106	0.00105
	(A1 * A2 * !B1 * C1 * X)	-0.00137	-0.00141	-0.00140
	(A1 * A2 * !B1 * C1 * X)	0.00109	0.00110	0.00109
	(A1 * A2 * !B1 * !C1 * X)	-0.00136	-0.00140	-0.00139
	(A1 * A2 * !B1 * !C1 * X)	0.00097	0.00097	0.00097
	(A1 * !A2 * B1 * C1 * X)	-0.00145	-0.00146	-0.00145
	(A1 * !A2 * B1 * C1 * X)	0.00145	0.00146	0.00146
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00136	-0.00139	-0.00139
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00150	0.00151	0.00150
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00135	-0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	0.00156	0.00155	0.00154
	(!A1 * B1 * C1 * X)	-0.00145	-0.00146	-0.00145
	(!A1 * B1 * C1 * X)	0.00145	0.00146	0.00146
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00135	-0.00134
	(!A1 * !B1 * !C1 * !X)	0.00156	0.00155	0.00154

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	(A1 * B1 * B2 * X)	0.00078	0.00079	0.00078
	(A1 * B1 * B2 * X)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * B1 * !B2 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * B1 * !B2 * X)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * !B1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !B1 * X)	-0.00043	-0.00043	-0.00043
	(!A1 * B1 * B2 * X)	0.00078	0.00079	0.00078
	(!A1 * B1 * B2 * X)	-0.00043	-0.00043	-0.00043
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00082	0.00083	0.00081
	(A1 * B1 * B2 * X)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * B1 * !B2 * X)	0.00082	0.00083	0.00081
	(A1 * A2 * B1 * !B2 * X)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * !B1 * X)	0.00082	0.00083	0.00081
	(A1 * A2 * !B1 * X)	-0.00043	-0.00043	-0.00043
	(!A1 * B1 * B2 * X)	0.00082	0.00083	0.00081
	(!A1 * B1 * B2 * X)	-0.00044	-0.00043	-0.00043
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00137	0.00139	0.00138
	(A1 * B1 * B2 * X)	-0.00090	-0.00092	-0.00090
	(A1 * A2 * B1 * !B2 * X)	0.00137	0.00139	0.00138
	(A1 * A2 * B1 * !B2 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * !B1 * X)	0.00137	0.00140	0.00138
	(A1 * A2 * !B1 * X)	-0.00090	-0.00091	-0.00090
	(!A1 * B1 * B2 * X)	0.00137	0.00139	0.00137
	(!A1 * B1 * B2 * X)	-0.00091	-0.00093	-0.00092

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	(A1 * B1 * B2 * X)	-0.00070	-0.00070	-0.00077
	(A1 * B1 * B2 * X)	0.00050	0.00050	0.00045
	(A1 * A2 * B1 * !B2 * X)	-0.00059	-0.00060	-0.00074
	(A1 * A2 * B1 * !B2 * X)	0.00057	0.00057	0.00046
	(A1 * A2 * !B1 * X)	-0.00059	-0.00060	-0.00074
	(A1 * A2 * !B1 * X)	0.00057	0.00057	0.00046
	(!A1 * B1 * B2 * X)	-0.00070	-0.00070	-0.00077
	(!A1 * B1 * B2 * X)	0.00051	0.00050	0.00045
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00073	-0.00074	-0.00080
	(A1 * B1 * B2 * X)	0.00050	0.00050	0.00045
	(A1 * A2 * B1 * !B2 * X)	-0.00062	-0.00064	-0.00077
	(A1 * A2 * B1 * !B2 * X)	0.00057	0.00057	0.00046
	(A1 * A2 * !B1 * X)	-0.00063	-0.00064	-0.00077
	(A1 * A2 * !B1 * X)	0.00057	0.00057	0.00046
	(!A1 * B1 * B2 * X)	-0.00073	-0.00074	-0.00080
	(!A1 * B1 * B2 * X)	0.00050	0.00050	0.00045
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00119	-0.00121	-0.00135
	(A1 * B1 * B2 * X)	0.00107	0.00107	0.00095
	(A1 * A2 * B1 * !B2 * X)	-0.00096	-0.00099	-0.00129
	(A1 * A2 * B1 * !B2 * X)	0.00123	0.00123	0.00099
	(A1 * A2 * !B1 * X)	-0.00096	-0.00099	-0.00129
	(A1 * A2 * !B1 * X)	0.00123	0.00123	0.00099
	(!A1 * B1 * B2 * X)	-0.00119	-0.00121	-0.00134
	(!A1 * B1 * B2 * X)	0.00109	0.00108	0.00096

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT						OUTPUT
A1	A2	B1	B2	C1	C2	Y
0	x	0	x	0	x	1
0	x	0	x	1	0	1
0	x	x	x	1	1	0
0	x	1	0	0	x	1
0	x	1	0	1	0	1
x	x	1	1	x	x	0
1	0	0	x	0	x	1
1	0	0	x	1	0	1
1	0	x	x	1	1	0
1	0	1	0	0	x	1
1	0	1	0	1	0	1
1	1	x	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222oi_1	14.38560
sky130_fd_sc_hs__a222oi_2	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	Y
sky130_fd_sc_hs__a222oi_1	0.00246	0.00229	0.00240	0.00241	0.00243	0.00251	0.10494
sky130_fd_sc_hs__a222oi_2	0.00493	0.00430	0.00487	0.00442	0.00440	0.00501	0.19562

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.01623	0.05096
sky130_fd_sc_hs__a222oi_2	0.00000	0.03245	0.10193

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (FR)	0.74078	2.36163	12.53970
	A2->Y (FR)	0.80669	2.44096	12.63230
	B1->Y (FR)	0.66408	2.24750	12.64810
	B2->Y (FR)	0.74244	2.33823	12.77400
	C1->Y (FR)	0.50846	2.02771	11.96090
	C2->Y (FR)	0.58306	2.10892	12.04310
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.68993	2.07095	12.35090
	A2->Y (FR)	0.77275	2.17299	12.52940
	B1->Y (FR)	0.61353	1.94788	12.40090
	B2->Y (FR)	0.70752	2.07921	12.72930
	C1->Y (FR)	0.45031	1.74444	11.90110
	C2->Y (FR)	0.54553	1.84718	11.99560

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.08091	0.65140	4.46686
	A2->Y (RF)	0.08697	0.63770	4.41185
	B1->Y (RF)	0.07651	0.62633	4.40355
	B2->Y (RF)	0.08357	0.61708	4.35283
	C1->Y (RF)	0.06225	0.59775	4.35520
	C2->Y (RF)	0.06893	0.59042	4.30849
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.07472	0.60320	4.42600
	A2->Y (RF)	0.08152	0.59709	4.39563
	B1->Y (RF)	0.07199	0.57932	4.38374
	B2->Y (RF)	0.07960	0.57909	4.36351
	C1->Y (RF)	0.05260	0.53205	4.25055
	C2->Y (RF)	0.06147	0.53580	4.22787

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00097	0.00087	0.00084
	A1	0.00467	0.00458	0.00455
	A2	0.00110	0.00105	0.00102
	A2	0.00517	0.00512	0.00508
	B1	0.00099	0.00089	0.00086
	B1	0.00418	0.00409	0.00405
	B2	0.00114	0.00107	0.00104
	B2	0.00473	0.00466	0.00463
	C1	0.00094	0.00082	0.00085
	C1	0.00378	0.00366	0.00368
	C2	0.00111	0.00103	0.00105
	C2	0.00433	0.00424	0.00425
sky130_fd_sc_hs__a222oi_2	A1	0.00156	0.00136	0.00131
	A1	0.00896	0.00875	0.00871
	A2	0.00200	0.00186	0.00182
	A2	0.00988	0.00975	0.00969
	B1	0.00160	0.00139	0.00135
	B1	0.00805	0.00784	0.00779
	B2	0.00198	0.00184	0.00179
	B2	0.00898	0.00883	0.00876
	C1	0.00153	0.00132	0.00141
	C1	0.00693	0.00674	0.00681
	C2	0.00189	0.00170	0.00177
	C2	0.00826	0.00809	0.00813

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00557	0.00549	0.00535
	A1	0.00222	0.00214	0.00204
	A2	0.00594	0.00587	0.00572
	A2	0.00221	0.00214	0.00202
	B1	0.00439	0.00436	0.00428
	B1	0.00132	0.00127	0.00121
	B2	0.00482	0.00479	0.00469
	B2	0.00132	0.00128	0.00120
	C1	0.00331	0.00330	0.00328
	C1	0.00042	0.00040	0.00038
	C2	0.00371	0.00371	0.00368
	C2	0.00041	0.00040	0.00037
sky130_fd_sc_hs__a222oi_2	A1	0.01044	0.01026	0.01002
	A1	0.00374	0.00357	0.00338
	A2	0.01100	0.01088	0.01060
	A2	0.00376	0.00362	0.00341
	B1	0.00831	0.00820	0.00807
	B1	0.00211	0.00200	0.00189
	B2	0.00904	0.00896	0.00879
	B2	0.00223	0.00213	0.00201
	C1	0.00596	0.00592	0.00594
	C1	0.00042	0.00037	0.00038
	C2	0.00697	0.00694	0.00689
	C2	0.00039	0.00034	0.00032

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a222oi_1	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00061	0.00061	0.00060
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00072	-0.00074	-0.00074
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00061	0.00061	0.00060
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00072	-0.00074	-0.00074
	(A2 * B1 * B2 * !C1 * !Y)	0.00061	0.00061	0.00060
	(A2 * B1 * B2 * !C1 * !Y)	-0.00072	-0.00074	-0.00074
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00061	0.00061	0.00060
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00070	-0.00073	-0.00072
	(A2 * !B1 * C1 * C2 * !Y)	0.00061	0.00061	0.00060
	(A2 * !B1 * C1 * C2 * !Y)	-0.00070	-0.00073	-0.00072
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00056	0.00057	0.00056
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00056	0.00056	0.00056
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * B2 * !C1 * !Y)	0.00056	0.00056	0.00056
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00056	0.00056	0.00056
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00078	-0.00077	-0.00078
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00024	0.00024	0.00023
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00089	-0.00089	-0.00091
	(!A2 * B1 * !B2 * !C1 * Y)	0.00024	0.00024	0.00023
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00089	-0.00089	-0.00091
	(!A2 * !B1 * C1 * C2 * !Y)	0.00056	0.00056	0.00056
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00078	-0.00078	-0.00078
	(!A2 * !B1 * C1 * !C2 * Y)	0.00024	0.00024	0.00023
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00089	-0.00089	-0.00091
	(!A2 * !B1 * !C1 * Y)	0.00024	0.00024	0.00023
	(!A2 * !B1 * !C1 * Y)	-0.00089	-0.00089	-0.00091

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00126	0.00126	0.00125
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00147	-0.00151	-0.00151
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00126	0.00126	0.00125
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00146	-0.00151	-0.00151
	(A2 * B1 * B2 * !C1 * !Y)	0.00126	0.00126	0.00125
	(A2 * B1 * B2 * !C1 * !Y)	-0.00146	-0.00151	-0.00151
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00127	0.00127	0.00125
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00141	-0.00148	-0.00146
	(A2 * !B1 * C1 * C2 * !Y)	0.00127	0.00127	0.00125
	(A2 * !B1 * C1 * C2 * !Y)	-0.00141	-0.00147	-0.00146
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00117	0.00118	0.00118
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00157	-0.00158	-0.00158
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00117	0.00118	0.00117
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00158	-0.00158	-0.00158
	(!A2 * B1 * B2 * !C1 * !Y)	0.00117	0.00118	0.00118
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00157	-0.00158	-0.00158
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00117	0.00118	0.00117
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00157	-0.00158	-0.00158
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00048	0.00048	0.00045
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00187	-0.00187	-0.00191
	(!A2 * B1 * !B2 * !C1 * Y)	0.00048	0.00048	0.00045
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00187	-0.00187	-0.00191
	(!A2 * !B1 * C1 * C2 * !Y)	0.00117	0.00118	0.00118
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00157	-0.00158	-0.00158
	(!A2 * !B1 * C1 * !C2 * Y)	0.00048	0.00047	0.00045
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00187	-0.00187	-0.00191
	(!A2 * !B1 * !C1 * Y)	0.00048	0.00048	0.00045
	(!A2 * !B1 * !C1 * Y)	-0.00187	-0.00187	-0.00191

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00061	-0.00060	-0.00060
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00075	0.00074	0.00074
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00061	-0.00061	-0.00060
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00074	0.00074	0.00074
	(A2 * B1 * B2 * !C1 * !Y)	-0.00061	-0.00060	-0.00060
	(A2 * B1 * B2 * !C1 * !Y)	0.00074	0.00074	0.00074
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00061	-0.00061	-0.00060
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00072	0.00073	0.00072
	(A2 * !B1 * C1 * C2 * !Y)	-0.00061	-0.00061	-0.00060
	(A2 * !B1 * C1 * C2 * !Y)	0.00072	0.00073	0.00072
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00055	-0.00057	-0.00056
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00078	0.00078	0.00078
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00055	-0.00056	-0.00056
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00078	0.00078	0.00078
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00055	-0.00056	-0.00056
	(!A2 * B1 * B2 * !C1 * !Y)	0.00078	0.00078	0.00078
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00055	-0.00056	-0.00056
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00078	0.00078	0.00078
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00023	-0.00023	-0.00022
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00092	0.00092	0.00091
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00023	-0.00023	-0.00022
	(!A2 * B1 * !B2 * !C1 * Y)	0.00092	0.00092	0.00091
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00055	-0.00056	-0.00056
	(!A2 * !B1 * C1 * C2 * !Y)	0.00078	0.00078	0.00078
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00023	-0.00023	-0.00022
	(!A2 * !B1 * C1 * !C2 * Y)	0.00092	0.00092	0.00091
	(!A2 * !B1 * !C1 * Y)	-0.00023	-0.00023	-0.00022
	(!A2 * !B1 * !C1 * Y)	0.00092	0.00092	0.00091

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00125	-0.00125	-0.00125
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00150	0.00151	0.00151
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00126	-0.00126	-0.00125
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00152	0.00151	0.00151
	(A2 * B1 * B2 * !C1 * !Y)	-0.00125	-0.00126	-0.00125
	(A2 * B1 * B2 * !C1 * !Y)	0.00150	0.00151	0.00151
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00126	-0.00126	-0.00125
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00147	0.00148	0.00146
	(A2 * !B1 * C1 * C2 * !Y)	-0.00125	-0.00126	-0.00125
	(A2 * !B1 * C1 * C2 * !Y)	0.00145	0.00147	0.00146
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00114	-0.00118	-0.00118
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00158	0.00159	0.00158
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00114	-0.00118	-0.00117
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00158	0.00159	0.00158
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00113	-0.00118	-0.00118
	(!A2 * B1 * B2 * !C1 * !Y)	0.00157	0.00159	0.00158
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00113	-0.00118	-0.00117
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00157	0.00159	0.00158
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00191	0.00194	0.00191
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * B1 * !B2 * !C1 * Y)	0.00191	0.00194	0.00191
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00114	-0.00118	-0.00118
	(!A2 * !B1 * C1 * C2 * !Y)	0.00159	0.00159	0.00158
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * C1 * !C2 * Y)	0.00191	0.00194	0.00191
	(!A2 * !B1 * !C1 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * !C1 * Y)	0.00191	0.00194	0.00191

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00063	0.00063	0.00063
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00072	-0.00074	-0.00074
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00064	0.00063	0.00063
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00072	-0.00074	-0.00074
	(A1 * B1 * B2 * !C1 * !Y)	0.00064	0.00063	0.00063
	(A1 * B1 * B2 * !C1 * !Y)	-0.00072	-0.00074	-0.00074
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00064	0.00063	0.00063
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00070	-0.00073	-0.00072
	(A1 * !B1 * C1 * C2 * !Y)	0.00064	0.00063	0.00063
	(A1 * !B1 * C1 * C2 * !Y)	-0.00070	-0.00073	-0.00072
	(!A1 * B1 * B2 * !Y)	0.00059	0.00059	0.00059
	(!A1 * B1 * B2 * !Y)	-0.00077	-0.00078	-0.00077
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00059	0.00059	0.00059
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00077	-0.00077	-0.00077
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00059	0.00059	0.00059
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * B1 * !B2 * !C1 * Y)	0.00059	0.00059	0.00059
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !B1 * C1 * !C2 * Y)	0.00059	0.00059	0.00059
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00077	-0.00077	-0.00077
	(!A1 * !B1 * !C1 * Y)	0.00059	0.00059	0.00059
	(!A1 * !B1 * !C1 * Y)	-0.00077	-0.00077	-0.00077

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00118	0.00119	0.00117
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00136	-0.00140	-0.00140
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00118	0.00119	0.00117
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00136	-0.00140	-0.00140
	(A1 * B1 * B2 * !C1 * !Y)	0.00118	0.00119	0.00117
	(A1 * B1 * B2 * !C1 * !Y)	-0.00136	-0.00140	-0.00140
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00118	0.00118	0.00117
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00130	-0.00137	-0.00136
	(A1 * !B1 * C1 * C2 * !Y)	0.00118	0.00118	0.00118
	(A1 * !B1 * C1 * C2 * !Y)	-0.00130	-0.00137	-0.00136
	(!A1 * B1 * B2 * !Y)	0.00110	0.00109	0.00110
	(!A1 * B1 * B2 * !Y)	-0.00145	-0.00145	-0.00145
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00110	0.00110	0.00110
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00145	-0.00145	-0.00145
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00105	0.00106	0.00105
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00149	-0.00150	-0.00149
	(!A1 * B1 * !B2 * !C1 * Y)	0.00105	0.00106	0.00105
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !B1 * C1 * !C2 * Y)	0.00105	0.00106	0.00105
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !B1 * !C1 * Y)	0.00105	0.00106	0.00105
	(!A1 * !B1 * !C1 * Y)	-0.00149	-0.00150	-0.00149

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00063	-0.00063	-0.00063
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00074	0.00074	0.00074
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00063	-0.00063	-0.00063
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00074	0.00074	0.00074
	(A1 * B1 * B2 * !C1 * !Y)	-0.00063	-0.00063	-0.00063
	(A1 * B1 * B2 * !C1 * !Y)	0.00074	0.00074	0.00074
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00063	-0.00063	-0.00063
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00072	0.00073	0.00072
	(A1 * !B1 * C1 * C2 * !Y)	-0.00063	-0.00063	-0.00063
	(A1 * !B1 * C1 * C2 * !Y)	0.00072	0.00073	0.00072
	(!A1 * B1 * B2 * !Y)	-0.00057	-0.00059	-0.00059
	(!A1 * B1 * B2 * !Y)	0.00077	0.00078	0.00078
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00057	-0.00059	-0.00059
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00077	0.00078	0.00078
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00056	-0.00059	-0.00059
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00079	0.00078	0.00078
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00056	-0.00059	-0.00059
	(!A1 * B1 * !B2 * !C1 * Y)	0.00079	0.00078	0.00078
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00056	-0.00059	-0.00059
	(!A1 * !B1 * C1 * !C2 * Y)	0.00079	0.00078	0.00078
	(!A1 * !B1 * !C1 * Y)	-0.00056	-0.00059	-0.00059
	(!A1 * !B1 * !C1 * Y)	0.00079	0.00078	0.00078

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00118	-0.00118	-0.00117
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00140	0.00140	0.00140
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00118	-0.00117	-0.00117
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00140	0.00140	0.00140
	(A1 * B1 * B2 * !C1 * !Y)	-0.00118	-0.00117	-0.00117
	(A1 * B1 * B2 * !C1 * !Y)	0.00140	0.00140	0.00140
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00117	-0.00118	-0.00117
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00134	0.00137	0.00136
	(A1 * !B1 * C1 * C2 * !Y)	-0.00117	-0.00118	-0.00117
	(A1 * !B1 * C1 * C2 * !Y)	0.00135	0.00137	0.00136
	(!A1 * B1 * B2 * !Y)	-0.00107	-0.00109	-0.00110
	(!A1 * B1 * B2 * !Y)	0.00145	0.00146	0.00145
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00107	-0.00110	-0.00110
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00146	0.00146	0.00146
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00152	0.00151	0.00150
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * B1 * !B2 * !C1 * Y)	0.00152	0.00151	0.00150
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * C1 * !C2 * Y)	0.00152	0.00151	0.00150
	(!A1 * !B1 * !C1 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * !C1 * Y)	0.00152	0.00151	0.00150

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00061	0.00062	0.00061
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00058	-0.00058	-0.00057
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00061	0.00061	0.00060
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00050	-0.00050	-0.00049
	(A1 * A2 * B2 * !C1 * !Y)	0.00061	0.00061	0.00060
	(A1 * A2 * B2 * !C1 * !Y)	-0.00050	-0.00050	-0.00049
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00056	0.00057	0.00057
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00056	0.00057	0.00056
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00049	-0.00049	-0.00049
	(A1 * A2 * !B2 * !C1 * !Y)	0.00056	0.00057	0.00056
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00049	-0.00049	-0.00049
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00063	0.00061	0.00060
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00069	-0.00073	-0.00073
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00056	0.00056	0.00056
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00022	0.00022	0.00022
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00088	-0.00088	-0.00090
	(A1 * !A2 * !B2 * !C1 * Y)	0.00022	0.00022	0.00022
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00088	-0.00088	-0.00090
	(!A1 * B2 * C1 * C2 * !Y)	0.00063	0.00061	0.00060
	(!A1 * B2 * C1 * C2 * !Y)	-0.00070	-0.00073	-0.00073
	(!A1 * !B2 * C1 * C2 * !Y)	0.00056	0.00056	0.00056
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00076	-0.00076	-0.00076
	(!A1 * !B2 * C1 * !C2 * Y)	0.00022	0.00022	0.00022
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00088	-0.00088	-0.00090
	(!A1 * !B2 * !C1 * Y)	0.00022	0.00022	0.00022
	(!A1 * !B2 * !C1 * Y)	-0.00088	-0.00088	-0.00090

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00127	0.00128	0.00126
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00117	-0.00118	-0.00117
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00125	0.00127	0.00125
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * B2 * !C1 * !Y)	0.00125	0.00127	0.00125
	(A1 * A2 * B2 * !C1 * !Y)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00118	0.00119	0.00118
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00117	0.00118	0.00118
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * A2 * !B2 * !C1 * !Y)	0.00118	0.00118	0.00118
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00101	-0.00102	-0.00102
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00131	0.00127	0.00125
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00144	-0.00152	-0.00152
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00116	0.00117	0.00117
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00156	-0.00157	-0.00157
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00046	0.00046	0.00044
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00187	-0.00187	-0.00191
	(A1 * !A2 * !B2 * !C1 * Y)	0.00046	0.00046	0.00044
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00187	-0.00187	-0.00191
	(!A1 * B2 * C1 * C2 * !Y)	0.00131	0.00127	0.00125
	(!A1 * B2 * C1 * C2 * !Y)	-0.00144	-0.00152	-0.00152
	(!A1 * !B2 * C1 * C2 * !Y)	0.00117	0.00118	0.00117
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00157	-0.00157	-0.00157
	(!A1 * !B2 * C1 * !C2 * Y)	0.00046	0.00046	0.00044
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00187	-0.00187	-0.00191
	(!A1 * !B2 * !C1 * Y)	0.00046	0.00046	0.00044
	(!A1 * !B2 * !C1 * Y)	-0.00187	-0.00187	-0.00191

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00058	0.00058	0.00057
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00053	-0.00054	-0.00056
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00056	0.00056	0.00054
	(A1 * A2 * B2 * !C1 * !Y)	-0.00053	-0.00054	-0.00056
	(A1 * A2 * B2 * !C1 * !Y)	0.00056	0.00056	0.00054
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00055	-0.00057	-0.00057
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00055	0.00055	0.00055
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00055	-0.00057	-0.00056
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00049	0.00049	0.00049
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00055	-0.00057	-0.00056
	(A1 * A2 * !B2 * !C1 * !Y)	0.00049	0.00049	0.00049
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00073	0.00073	0.00073
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00054	-0.00056	-0.00056
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00076	0.00076	0.00076
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00021	-0.00021	-0.00021
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00091	0.00091	0.00090
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00021	-0.00021	-0.00021
	(A1 * !A2 * !B2 * !C1 * Y)	0.00091	0.00091	0.00090
	(!A1 * B2 * C1 * C2 * !Y)	-0.00060	-0.00060	-0.00060
	(!A1 * B2 * C1 * C2 * !Y)	0.00073	0.00073	0.00073
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00054	-0.00056	-0.00056
	(!A1 * !B2 * C1 * C2 * !Y)	0.00076	0.00076	0.00076
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00021	-0.00021	-0.00021
	(!A1 * !B2 * C1 * !C2 * Y)	0.00091	0.00091	0.00090
	(!A1 * !B2 * !C1 * Y)	-0.00021	-0.00021	-0.00021
	(!A1 * !B2 * !C1 * Y)	0.00091	0.00091	0.00090

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00125	-0.00127	-0.00126
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00117	0.00118	0.00117
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00116	-0.00116	-0.00118
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00112	0.00111	0.00110
	(A1 * A2 * B2 * !C1 * !Y)	-0.00115	-0.00117	-0.00118
	(A1 * A2 * B2 * !C1 * !Y)	0.00111	0.00112	0.00110
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00115	-0.00119	-0.00118
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00112	0.00113	0.00112
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00114	-0.00118	-0.00118
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00102	0.00102	0.00102
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00114	-0.00118	-0.00118
	(A1 * A2 * !B2 * !C1 * !Y)	0.00101	0.00102	0.00102
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00125	-0.00125	-0.00124
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00153	0.00152	0.00152
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00113	-0.00117	-0.00117
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00156	0.00158	0.00157
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00191	0.00193	0.00191
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * !B2 * !C1 * Y)	0.00191	0.00193	0.00191
	(!A1 * B2 * C1 * C2 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * B2 * C1 * C2 * !Y)	0.00151	0.00152	0.00152
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00113	-0.00118	-0.00117
	(!A1 * !B2 * C1 * C2 * !Y)	0.00158	0.00158	0.00157
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00042	-0.00043	-0.00042
	(!A1 * !B2 * C1 * !C2 * Y)	0.00191	0.00193	0.00191
	(!A1 * !B2 * !C1 * Y)	-0.00042	-0.00043	-0.00042
	(!A1 * !B2 * !C1 * Y)	0.00191	0.00193	0.00191

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00067	0.00068	0.00067
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00066	0.00067	0.00066
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00049	-0.00050	-0.00049
	(A1 * A2 * B1 * !C1 * !Y)	0.00066	0.00067	0.00066
	(A1 * A2 * B1 * !C1 * !Y)	-0.00049	-0.00050	-0.00049
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00062	0.00063	0.00062
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00049	-0.00049	-0.00049
	(A1 * A2 * !B1 * !C1 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00049	-0.00049	-0.00049
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00069	0.00067	0.00066
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00069	-0.00073	-0.00074
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00061	0.00062	0.00062
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00054	0.00054	0.00054
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00083	-0.00084	-0.00084
	(A1 * !A2 * !B1 * !C1 * Y)	0.00054	0.00054	0.00054
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00084	-0.00084	-0.00084
	(!A1 * B1 * C1 * C2 * !Y)	0.00069	0.00067	0.00066
	(!A1 * B1 * C1 * C2 * !Y)	-0.00069	-0.00073	-0.00074
	(!A1 * !B1 * C1 * !C2 * Y)	0.00054	0.00054	0.00054
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00084	-0.00084	-0.00084
	(!A1 * !B1 * !C1 * Y)	0.00054	0.00054	0.00054
	(!A1 * !B1 * !C1 * Y)	-0.00084	-0.00084	-0.00084

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	0.00122	0.00125	0.00123
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00109	-0.00109	-0.00108
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00122	0.00124	0.00122
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * B1 * !C1 * !Y)	0.00122	0.00124	0.00122
	(A1 * A2 * B1 * !C1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00115	0.00116	0.00115
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00114	0.00115	0.00114
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * !B1 * !C1 * !Y)	0.00114	0.00115	0.00114
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00129	0.00123	0.00122
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00131	-0.00140	-0.00140
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00114	0.00114	0.00113
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00145	-0.00146	-0.00145
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00108	0.00108	0.00108
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00151	-0.00151	-0.00151
	(A1 * !A2 * !B1 * !C1 * Y)	0.00108	0.00108	0.00108
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00151	-0.00151	-0.00151
	(!A1 * B1 * C1 * C2 * !Y)	0.00129	0.00123	0.00122
	(!A1 * B1 * C1 * C2 * !Y)	-0.00131	-0.00140	-0.00140
	(!A1 * !B1 * C1 * !C2 * Y)	0.00108	0.00108	0.00108
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00151	-0.00151	-0.00151
	(!A1 * !B1 * !C1 * Y)	0.00108	0.00108	0.00108
	(!A1 * !B1 * !C1 * Y)	-0.00151	-0.00151	-0.00151

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00058	0.00058	0.00058
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00059	-0.00060	-0.00062
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00055	0.00056	0.00054
	(A1 * A2 * B1 * !C1 * !Y)	-0.00059	-0.00060	-0.00062
	(A1 * A2 * B1 * !C1 * !Y)	0.00055	0.00056	0.00054
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00061	-0.00063	-0.00062
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00055	0.00055	0.00055
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00049	0.00049	0.00049
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	0.00049	0.00049	0.00049
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00066	-0.00065	-0.00065
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00073	0.00073	0.00074
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00060	-0.00062	-0.00062
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00076	0.00077	0.00076
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00051	-0.00054	-0.00054
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00086	0.00084	0.00084
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00051	-0.00054	-0.00054
	(A1 * !A2 * !B1 * !C1 * Y)	0.00086	0.00084	0.00084
	(!A1 * B1 * C1 * C2 * !Y)	-0.00066	-0.00065	-0.00065
	(!A1 * B1 * C1 * C2 * !Y)	0.00074	0.00073	0.00074
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00051	-0.00054	-0.00054
	(!A1 * !B1 * C1 * !C2 * Y)	0.00086	0.00084	0.00084
	(!A1 * !B1 * !C1 * Y)	-0.00051	-0.00054	-0.00054
	(!A1 * !B1 * !C1 * Y)	0.00086	0.00084	0.00084

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	-0.00122	-0.00123	-0.00122
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00109	0.00109	0.00108
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00111	-0.00112	-0.00114
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00103	0.00103	0.00101
	(A1 * A2 * B1 * !C1 * !Y)	-0.00110	-0.00112	-0.00114
	(A1 * A2 * B1 * !C1 * !Y)	0.00102	0.00103	0.00101
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00112	-0.00116	-0.00115
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00104	0.00104	0.00104
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00111	-0.00115	-0.00114
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00092	0.00093	0.00092
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00111	-0.00115	-0.00114
	(A1 * A2 * !B1 * !C1 * !Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00121	-0.00121	-0.00121
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00140	0.00140	0.00140
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00111	-0.00114	-0.00113
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00145	0.00146	0.00145
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00102	-0.00108	-0.00108
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00154	0.00152	0.00151
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00102	-0.00108	-0.00108
	(A1 * !A2 * !B1 * !C1 * Y)	0.00154	0.00152	0.00151
	(!A1 * B1 * C1 * C2 * !Y)	-0.00122	-0.00121	-0.00121
	(!A1 * B1 * C1 * C2 * !Y)	0.00140	0.00140	0.00140
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00102	-0.00108	-0.00108
	(!A1 * !B1 * C1 * !C2 * Y)	0.00154	0.00152	0.00151
	(!A1 * !B1 * !C1 * Y)	-0.00102	-0.00108	-0.00108
	(!A1 * !B1 * !C1 * Y)	0.00154	0.00152	0.00151

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * B1 * B2 * C2 * !Y)	0.00073	0.00074	0.00073
	(A1 * B1 * B2 * C2 * !Y)	-0.00043	-0.00044	-0.00043
	(A1 * B1 * B2 * !C2 * !Y)	0.00069	0.00069	0.00069
	(A1 * B1 * B2 * !C2 * !Y)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00073	0.00074	0.00073
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00043	-0.00044	-0.00043
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00068	0.00069	0.00069
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * !B1 * C2 * !Y)	0.00073	0.00074	0.00073
	(A1 * A2 * !B1 * C2 * !Y)	-0.00043	-0.00044	-0.00043
	(A1 * A2 * !B1 * !C2 * !Y)	0.00069	0.00069	0.00069
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00043	-0.00043	-0.00043
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00025	0.00025	0.00024
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00090	-0.00091	-0.00092
	(A1 * !A2 * !B1 * !C2 * Y)	0.00025	0.00025	0.00024
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00090	-0.00091	-0.00092
	(!A1 * B1 * B2 * C2 * !Y)	0.00073	0.00074	0.00073
	(!A1 * B1 * B2 * C2 * !Y)	-0.00043	-0.00044	-0.00043
	(!A1 * B1 * B2 * !C2 * !Y)	0.00069	0.00069	0.00069
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00043	-0.00043	-0.00043
	(!A1 * B1 * !B2 * !C2 * Y)	0.00025	0.00025	0.00024
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00090	-0.00091	-0.00092
	(!A1 * !B1 * !C2 * Y)	0.00025	0.00025	0.00024
	(!A1 * !B1 * !C2 * Y)	-0.00090	-0.00091	-0.00092

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00128	0.00130	0.00128
	(A1 * B1 * B2 * C2 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * B1 * B2 * !C2 * !Y)	0.00119	0.00120	0.00120
	(A1 * B1 * B2 * !C2 * !Y)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00128	0.00130	0.00128
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00085	-0.00086	-0.00084
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00120	0.00120	0.00120
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * !B1 * C2 * !Y)	0.00128	0.00130	0.00128
	(A1 * A2 * !B1 * C2 * !Y)	-0.00085	-0.00086	-0.00084
	(A1 * A2 * !B1 * !C2 * !Y)	0.00120	0.00120	0.00120
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00045	0.00045	0.00042
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00167	-0.00168	-0.00171
	(A1 * !A2 * !B1 * !C2 * Y)	0.00045	0.00045	0.00042
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00168	-0.00168	-0.00171
	(!A1 * B1 * B2 * C2 * !Y)	0.00128	0.00130	0.00128
	(!A1 * B1 * B2 * C2 * !Y)	-0.00085	-0.00086	-0.00085
	(!A1 * B1 * B2 * !C2 * !Y)	0.00120	0.00120	0.00120
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00084	-0.00085	-0.00084
	(!A1 * B1 * !B2 * !C2 * Y)	0.00045	0.00045	0.00042
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00167	-0.00168	-0.00171
	(!A1 * !B1 * !C2 * Y)	0.00045	0.00045	0.00042
	(!A1 * !B1 * !C2 * Y)	-0.00168	-0.00168	-0.00171

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C2 * !Y)**	-0.00064	-0.00065	-0.00072
	(A1 * B1 * B2 * C2 * !Y)	0.00052	0.00052	0.00045
	(A1 * B1 * B2 * !C2 * !Y)	-0.00067	-0.00069	-0.00069
	(A1 * B1 * B2 * !C2 * !Y)	0.00043	0.00043	0.00043
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00050	-0.00051	-0.00068
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00062	0.00061	0.00048
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00067	-0.00069	-0.00069
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00043	0.00044	0.00043
	(A1 * A2 * !B1 * C2 * !Y)	-0.00049	-0.00051	-0.00068
	(A1 * A2 * !B1 * C2 * !Y)	0.00062	0.00061	0.00048
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00067	-0.00069	-0.00069
	(A1 * A2 * !B1 * !C2 * !Y)	0.00043	0.00044	0.00043
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00023	-0.00024	-0.00023
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00023	-0.00024	-0.00023
	(A1 * !A2 * !B1 * !C2 * Y)	0.00092	0.00093	0.00092
	(!A1 * B1 * B2 * C2 * !Y)	-0.00063	-0.00064	-0.00072
	(!A1 * B1 * B2 * C2 * !Y)	0.00051	0.00052	0.00045
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00067	-0.00069	-0.00069
	(!A1 * B1 * B2 * !C2 * !Y)	0.00043	0.00044	0.00043
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00023	-0.00024	-0.00023
	(!A1 * B1 * !B2 * !C2 * Y)	0.00092	0.00093	0.00092
	(!A1 * !B1 * !C2 * Y)	-0.00023	-0.00024	-0.00023
	(!A1 * !B1 * !C2 * Y)	0.00092	0.00093	0.00092

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00109	-0.00111	-0.00125
	(A1 * B1 * B2 * C2 * !Y)	0.00100	0.00100	0.00089
	(A1 * B1 * B2 * !C2 * !Y)	-0.00116	-0.00120	-0.00120
	(A1 * B1 * B2 * !C2 * !Y)	0.00084	0.00085	0.00084
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00086	-0.00087	-0.00119
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00116	0.00115	0.00093
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00116	-0.00120	-0.00120
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00084	0.00085	0.00084
	(A1 * A2 * !B1 * C2 * !Y)	-0.00086	-0.00089	-0.00119
	(A1 * A2 * !B1 * C2 * !Y)	0.00116	0.00116	0.00093
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00116	-0.00120	-0.00120
	(A1 * A2 * !B1 * !C2 * !Y)	0.00084	0.00085	0.00084
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00041	-0.00042	-0.00041
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00171	0.00173	0.00172
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00041	-0.00042	-0.00041
	(A1 * !A2 * !B1 * !C2 * Y)	0.00171	0.00173	0.00172
	(!A1 * B1 * B2 * C2 * !Y)	-0.00109	-0.00111	-0.00125
	(!A1 * B1 * B2 * C2 * !Y)	0.00100	0.00101	0.00089
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00116	-0.00120	-0.00120
	(!A1 * B1 * B2 * !C2 * !Y)	0.00084	0.00085	0.00084
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00041	-0.00042	-0.00041
	(!A1 * B1 * !B2 * !C2 * Y)	0.00171	0.00173	0.00172
	(!A1 * !B1 * !C2 * Y)	-0.00041	-0.00042	-0.00041
	(!A1 * !B1 * !C2 * Y)	0.00171	0.00173	0.00172

Passive power(pJ) for C2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * !Y)**	0.00077	0.00077	0.00076
	(A1 * B1 * B2 * C1 * !Y)	-0.00045	-0.00045	-0.00044
	(A1 * B1 * B2 * !C1 * !Y)	0.00072	0.00072	0.00072
	(A1 * B1 * B2 * !C1 * !Y)	-0.00044	-0.00044	-0.00044
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00076	0.00077	0.00076
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00044	-0.00045	-0.00044
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00072	0.00072	0.00072
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00044	-0.00044	-0.00044
	(A1 * A2 * !B1 * C1 * !Y)	0.00076	0.00077	0.00076
	(A1 * A2 * !B1 * C1 * !Y)	-0.00044	-0.00045	-0.00044
	(A1 * A2 * !B1 * !C1 * !Y)	0.00072	0.00072	0.00072
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00044	-0.00044	-0.00044
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00055	0.00056	0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00085	-0.00086	-0.00085
	(A1 * !A2 * !B1 * !C1 * Y)	0.00056	0.00056	0.00055
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00086	-0.00086	-0.00085
	(!A1 * B1 * B2 * C1 * !Y)	0.00076	0.00077	0.00076
	(!A1 * B1 * B2 * C1 * !Y)	-0.00044	-0.00045	-0.00044
	(!A1 * B1 * B2 * !C1 * !Y)	0.00072	0.00072	0.00072
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00044	-0.00044	-0.00044
	(!A1 * B1 * !B2 * !C1 * Y)	0.00055	0.00056	0.00055
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00085	-0.00086	-0.00085
	(!A1 * !B1 * !C1 * Y)	0.00056	0.00056	0.00055
	(!A1 * !B1 * !C1 * Y)	-0.00086	-0.00086	-0.00085

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00152	0.00155	0.00152
	(A1 * B1 * B2 * C1 * !Y)	-0.00088	-0.00089	-0.00088
	(A1 * B1 * B2 * !C1 * !Y)	0.00144	0.00146	0.00145
	(A1 * B1 * B2 * !C1 * !Y)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00153	0.00155	0.00152
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00088	-0.00089	-0.00088
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00145	0.00146	0.00145
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !B1 * C1 * !Y)	0.00154	0.00152	0.00152
	(A1 * A2 * !B1 * C1 * !Y)	-0.00089	-0.00087	-0.00088
	(A1 * A2 * !B1 * !C1 * !Y)	0.00145	0.00146	0.00145
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00111	0.00112	0.00111
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00172	-0.00172	-0.00171
	(A1 * !A2 * !B1 * !C1 * Y)	0.00111	0.00111	0.00111
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00172	-0.00172	-0.00171
	(!A1 * B1 * B2 * C1 * !Y)	0.00154	0.00152	0.00152
	(!A1 * B1 * B2 * C1 * !Y)	-0.00089	-0.00087	-0.00088
	(!A1 * B1 * B2 * !C1 * !Y)	0.00145	0.00146	0.00145
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00088	-0.00088	-0.00088
	(!A1 * B1 * !B2 * !C1 * Y)	0.00111	0.00112	0.00111
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00172	-0.00173	-0.00171
	(!A1 * !B1 * !C1 * Y)	0.00111	0.00111	0.00111
	(!A1 * !B1 * !C1 * Y)	-0.00172	-0.00172	-0.00171

Passive power(pJ) for C2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * !Y)**	-0.00067	-0.00068	-0.00075
	(A1 * B1 * B2 * C1 * !Y)	0.00052	0.00052	0.00046
	(A1 * B1 * B2 * !C1 * !Y)	-0.00071	-0.00072	-0.00072
	(A1 * B1 * B2 * !C1 * !Y)	0.00044	0.00044	0.00044
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00053	-0.00054	-0.00071
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00062	0.00062	0.00049
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00071	-0.00072	-0.00072
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00044	0.00044	0.00044
	(A1 * A2 * !B1 * C1 * !Y)	-0.00053	-0.00054	-0.00071
	(A1 * A2 * !B1 * C1 * !Y)	0.00063	0.00062	0.00049
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00071	-0.00072	-0.00072
	(A1 * A2 * !B1 * !C1 * !Y)	0.00044	0.00044	0.00044
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00053	-0.00056	-0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00087	0.00086	0.00086
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00053	-0.00056	-0.00055
	(A1 * !A2 * !B1 * !C1 * Y)	0.00087	0.00086	0.00086
	(!A1 * B1 * B2 * C1 * !Y)	-0.00067	-0.00068	-0.00075
	(!A1 * B1 * B2 * C1 * !Y)	0.00053	0.00053	0.00046
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00071	-0.00072	-0.00072
	(!A1 * B1 * B2 * !C1 * !Y)	0.00044	0.00044	0.00044
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00053	-0.00056	-0.00055
	(!A1 * B1 * !B2 * !C1 * Y)	0.00087	0.00086	0.00086
	(!A1 * !B1 * !C1 * Y)	-0.00053	-0.00056	-0.00055
	(!A1 * !B1 * !C1 * Y)	0.00087	0.00086	0.00086

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00134	-0.00136	-0.00150
	(A1 * B1 * B2 * C1 * !Y)	0.00103	0.00103	0.00092
	(A1 * B1 * B2 * !C1 * !Y)	-0.00142	-0.00146	-0.00145
	(A1 * B1 * B2 * !C1 * !Y)	0.00087	0.00088	0.00087
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00110	-0.00113	-0.00144
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00119	0.00119	0.00096
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00142	-0.00146	-0.00145
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00087	0.00088	0.00087
	(A1 * A2 * !B1 * C1 * !Y)	-0.00110	-0.00113	-0.00144
	(A1 * A2 * !B1 * C1 * !Y)	0.00119	0.00119	0.00096
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00142	-0.00146	-0.00145
	(A1 * A2 * !B1 * !C1 * !Y)	0.00087	0.00088	0.00087
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00105	-0.00111	-0.00111
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00174	0.00172	0.00172
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00105	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !C1 * Y)	0.00174	0.00173	0.00172
	(!A1 * B1 * B2 * C1 * !Y)	-0.00134	-0.00136	-0.00150
	(!A1 * B1 * B2 * C1 * !Y)	0.00104	0.00104	0.00092
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00142	-0.00146	-0.00145
	(!A1 * B1 * B2 * !C1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00105	-0.00111	-0.00111
	(!A1 * B1 * !B2 * !C1 * Y)	0.00174	0.00173	0.00172
	(!A1 * !B1 * !C1 * Y)	-0.00105	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * Y)	0.00174	0.00173	0.00172

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT						OUTPUT
A1	A2	B1	B2	C1	C2	X
0	x	0	x	0	x	0
0	x	0	x	1	0	0
0	x	x	x	1	1	1
0	x	1	0	0	x	0
0	x	1	0	1	0	0
x	x	1	1	x	x	1
1	0	0	x	0	x	0
1	0	0	x	1	0	0
1	0	x	x	1	1	1
1	0	1	0	0	x	0
1	0	1	0	1	0	0
1	1	x	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222o_1	15.98400
sky130_fd_sc_hs__a222o_2	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	X
sky130_fd_sc_hs__a222o_1	0.00236	0.00240	0.00245	0.00234	0.00243	0.00249	0.44049
sky130_fd_sc_hs__a222o_2	0.00239	0.00224	0.00239	0.00233	0.00240	0.00254	0.80305

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.02239	0.05372
sky130_fd_sc_hs__a222o_2	0.00000	0.02856	0.05648

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (RR)	0.21704	1.24283	8.91153
	A2->X (RR)	0.22465	1.24103	9.07366
	B1->X (RR)	0.20690	1.21743	8.80438
	B2->X (RR)	0.21291	1.21599	8.95726
	C1->X (RR)	0.19225	1.18236	8.64861
	C2->X (RR)	0.19869	1.18384	8.79219
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.24261	1.17392	9.07121
	A2->X (RR)	0.25242	1.16226	9.20962
	B1->X (RR)	0.22694	1.13966	8.98518
	B2->X (RR)	0.23348	1.13402	9.10720
	C1->X (RR)	0.21178	1.11211	8.87381
	C2->X (RR)	0.21946	1.10767	8.98860

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.98127	1.81563	7.31222
	A2->X (FF)	1.05557	1.89761	7.44311
	B1->X (FF)	0.92196	1.72726	7.24113
	B2->X (FF)	0.98010	1.79882	7.39396
	C1->X (FF)	0.72183	1.46190	6.40826
	C2->X (FF)	0.78491	1.53716	6.55593
sky130_fd_sc_hs__a222o_2	A1->X (FF)	1.15514	1.99416	7.54342
	A2->X (FF)	1.21035	2.06257	7.68000
	B1->X (FF)	1.10294	1.91360	7.57385
	B2->X (FF)	1.14068	1.95995	7.65619
	C1->X (FF)	0.91341	1.65453	6.84067
	C2->X (FF)	0.99636	1.74409	6.99399

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00705	0.00697	0.00692
	A1	0.00358	0.00351	0.00348
	A2	0.00747	0.00740	0.00729
	A2	0.00360	0.00352	0.00343
	B1	0.00601	0.00599	0.00600
	B1	0.00275	0.00273	0.00276
	B2	0.00635	0.00638	0.00632
	B2	0.00280	0.00281	0.00278
	C1	0.00460	0.00454	0.00465
	C1	0.00159	0.00154	0.00174
	C2	0.00497	0.00495	0.00495
	C2	0.00162	0.00160	0.00161
sky130_fd_sc_hs__a222o_2	A1	0.00827	0.00838	0.00841
	A1	0.00492	0.00504	0.00511
	A2	0.00868	0.00885	0.00886
	A2	0.00489	0.00506	0.00514
	B1	0.00716	0.00728	0.00734
	B1	0.00399	0.00411	0.00421
	B2	0.00752	0.00770	0.00770
	B2	0.00399	0.00416	0.00420
	C1	0.00602	0.00606	0.00616
	C1	0.00308	0.00313	0.00321
	C2	0.00643	0.00650	0.00649
	C2	0.00306	0.00314	0.00316

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00257	0.00259	0.00275
	A1	0.00635	0.00637	0.00635
	A2	0.00271	0.00272	0.00303
	A2	0.00687	0.00688	0.00682
	B1	0.00255	0.00254	0.00306
	B1	0.00592	0.00590	0.00588
	B2	0.00272	0.00276	0.00305
	B2	0.00635	0.00639	0.00635
	C1	0.00230	0.00229	0.00275
	C1	0.00545	0.00543	0.00560
	C2	0.00269	0.00271	0.00314
	C2	0.00593	0.00595	0.00610
sky130_fd_sc_hs__a222o_2	A1	0.00328	0.00337	0.00398
	A1	0.00714	0.00723	0.00720
	A2	0.00362	0.00388	0.00473
	A2	0.00788	0.00810	0.00814
	B1	0.00348	0.00367	0.00444
	B1	0.00695	0.00712	0.00718
	B2	0.00385	0.00408	0.00415
	B2	0.00744	0.00767	0.00771
	C1	0.00365	0.00380	0.00501
	C1	0.00650	0.00664	0.00687
	C2	0.00361	0.00380	0.00526
	C2	0.00706	0.00723	0.00743

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a222o_1	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00061	0.00061	0.00061
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00072	-0.00073	-0.00074
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00061	0.00061	0.00061
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00071	-0.00074	-0.00074
	(A2 * B1 * B2 * !C1 * X)	0.00061	0.00061	0.00061
	(A2 * B1 * B2 * !C1 * X)	-0.00071	-0.00074	-0.00074
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00062	0.00061	0.00061
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00070	-0.00072	-0.00071
	(A2 * !B1 * C1 * C2 * X)	0.00062	0.00061	0.00061
	(A2 * !B1 * C1 * C2 * X)	-0.00070	-0.00072	-0.00071
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00057	0.00057	0.00057
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00077	-0.00077	-0.00077
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00057	0.00057	0.00057
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00076	-0.00077	-0.00077
	(!A2 * B1 * B2 * !C1 * X)	0.00057	0.00057	0.00057
	(!A2 * B1 * B2 * !C1 * X)	-0.00076	-0.00077	-0.00077
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00057	0.00057	0.00057
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00076	-0.00077	-0.00076
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00023	0.00023	0.00022
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00089	-0.00089	-0.00091
	(!A2 * B1 * !B2 * !C1 * !X)	0.00023	0.00023	0.00022
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00089	-0.00089	-0.00091
	(!A2 * !B1 * C1 * C2 * X)	0.00057	0.00057	0.00057
	(!A2 * !B1 * C1 * C2 * X)	-0.00076	-0.00077	-0.00076
	(!A2 * !B1 * C1 * !C2 * !X)	0.00023	0.00023	0.00022
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00089	-0.00089	-0.00091
	(!A2 * !B1 * !C1 * !X)	0.00023	0.00023	0.00022
	(!A2 * !B1 * !C1 * !X)	-0.00089	-0.00089	-0.00091

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00066	0.00066	0.00066
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00072	-0.00073	-0.00073
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00066	0.00066	0.00066
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00072	-0.00073	-0.00073
	(A2 * B1 * B2 * !C1 * X)	0.00066	0.00066	0.00066
	(A2 * B1 * B2 * !C1 * X)	-0.00072	-0.00073	-0.00073
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00066	0.00066	0.00066
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00069	-0.00072	-0.00071
	(A2 * !B1 * C1 * C2 * X)	0.00066	0.00066	0.00066
	(A2 * !B1 * C1 * C2 * X)	-0.00069	-0.00071	-0.00071
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00062	0.00063	0.00062
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00075	-0.00076	-0.00075
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00062	0.00063	0.00062
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00075	-0.00075	-0.00075
	(!A2 * B1 * B2 * !C1 * X)	0.00062	0.00063	0.00062
	(!A2 * B1 * B2 * !C1 * X)	-0.00075	-0.00075	-0.00075
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00062	0.00062	0.00062
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00076	-0.00076	-0.00076
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00027	0.00027	0.00025
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00090	-0.00090	-0.00094
	(!A2 * B1 * !B2 * !C1 * !X)	0.00027	0.00027	0.00025
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00090	-0.00090	-0.00094
	(!A2 * !B1 * C1 * C2 * X)	0.00062	0.00062	0.00062
	(!A2 * !B1 * C1 * C2 * X)	-0.00075	-0.00076	-0.00076
	(!A2 * !B1 * C1 * !C2 * !X)	0.00027	0.00027	0.00025
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00090	-0.00091	-0.00094
	(!A2 * !B1 * !C1 * !X)	0.00027	0.00027	0.00025
	(!A2 * !B1 * !C1 * !X)	-0.00090	-0.00091	-0.00094

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A2 * B1 * B2 * C1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A2 * B1 * B2 * C1 * C2 * X)	0.00074	0.00073	0.00074
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00074	0.00074	0.00074
	(A2 * B1 * B2 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A2 * B1 * B2 * !C1 * X)	0.00074	0.00074	0.00074
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00072	0.00072	0.00071
	(A2 * !B1 * C1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A2 * !B1 * C1 * C2 * X)	0.00072	0.00072	0.00071
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00055	-0.00057	-0.00057
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00077	0.00077	0.00077
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00055	-0.00057	-0.00057
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00076	0.00077	0.00077
	(!A2 * B1 * B2 * !C1 * X)	-0.00056	-0.00057	-0.00057
	(!A2 * B1 * B2 * !C1 * X)	0.00077	0.00077	0.00077
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00056	-0.00057	-0.00057
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00077	0.00077	0.00077
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00022	-0.00022	-0.00022
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00091	0.00092	0.00091
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00022	-0.00022	-0.00022
	(!A2 * B1 * !B2 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A2 * !B1 * C1 * C2 * X)	-0.00055	-0.00057	-0.00057
	(!A2 * !B1 * C1 * C2 * X)	0.00077	0.00077	0.00077
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00022	-0.00022	-0.00022
	(!A2 * !B1 * C1 * !C2 * !X)	0.00091	0.00092	0.00091
	(!A2 * !B1 * !C1 * !X)	-0.00022	-0.00022	-0.00022
	(!A2 * !B1 * !C1 * !X)	0.00091	0.00092	0.00091

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00066	-0.00065	-0.00066
	(A2 * B1 * B2 * C1 * C2 * X)	0.00074	0.00073	0.00073
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00066	-0.00066	-0.00066
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00074	0.00073	0.00073
	(A2 * B1 * B2 * !C1 * X)	-0.00066	-0.00066	-0.00066
	(A2 * B1 * B2 * !C1 * X)	0.00074	0.00073	0.00073
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00066	-0.00066	-0.00066
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00071	0.00072	0.00071
	(A2 * !B1 * C1 * C2 * X)	-0.00066	-0.00066	-0.00066
	(A2 * !B1 * C1 * C2 * X)	0.00071	0.00071	0.00071
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00060	-0.00063	-0.00062
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00075	0.00076	0.00075
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00060	-0.00063	-0.00062
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00075	0.00076	0.00075
	(!A2 * B1 * B2 * !C1 * X)	-0.00060	-0.00063	-0.00062
	(!A2 * B1 * B2 * !C1 * X)	0.00075	0.00076	0.00075
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00060	-0.00062	-0.00062
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00076	0.00076	0.00076
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00094	0.00096	0.00094
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * B1 * !B2 * !C1 * !X)	0.00094	0.00096	0.00094
	(!A2 * !B1 * C1 * C2 * X)	-0.00060	-0.00062	-0.00062
	(!A2 * !B1 * C1 * C2 * X)	0.00076	0.00076	0.00076
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * C1 * !C2 * !X)	0.00094	0.00096	0.00094
	(!A2 * !B1 * !C1 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * !C1 * !X)	0.00094	0.00096	0.00094

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * B1 * B2 * C1 * C2 * X)	0.00068	0.00069	0.00068
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00069	-0.00071	-0.00071
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00069	0.00069	0.00068
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00069	-0.00072	-0.00071
	(A1 * B1 * B2 * !C1 * X)	0.00069	0.00069	0.00068
	(A1 * B1 * B2 * !C1 * X)	-0.00069	-0.00071	-0.00071
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00069	0.00069	0.00069
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00067	-0.00070	-0.00069
	(A1 * !B1 * C1 * C2 * X)	0.00069	0.00069	0.00069
	(A1 * !B1 * C1 * C2 * X)	-0.00067	-0.00070	-0.00069
	(!A1 * B1 * B2 * X)	0.00065	0.00065	0.00064
	(!A1 * B1 * B2 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00065	0.00065	0.00065
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00054	0.00055	0.00054
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * B1 * !B2 * !C1 * !X)	0.00054	0.00055	0.00054
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * !B1 * C1 * !C2 * !X)	0.00054	0.00055	0.00054
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * !B1 * !C1 * !X)	0.00054	0.00055	0.00054
	(!A1 * !B1 * !C1 * !X)	-0.00084	-0.00084	-0.00084

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00064	0.00064	0.00064
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00072	-0.00073	-0.00074
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00064	0.00064	0.00064
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00072	-0.00073	-0.00074
	(A1 * B1 * B2 * !C1 * X)	0.00064	0.00064	0.00064
	(A1 * B1 * B2 * !C1 * X)	-0.00072	-0.00073	-0.00074
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00065	0.00065	0.00064
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00069	-0.00072	-0.00071
	(A1 * !B1 * C1 * C2 * X)	0.00065	0.00065	0.00064
	(A1 * !B1 * C1 * C2 * X)	-0.00069	-0.00072	-0.00071
	(!A1 * B1 * B2 * X)	0.00060	0.00060	0.00060
	(!A1 * B1 * B2 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00060	0.00060	0.00060
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00059	0.00060	0.00060
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * B1 * !B2 * !C1 * !X)	0.00059	0.00060	0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * !B1 * C1 * !C2 * !X)	0.00059	0.00060	0.00060
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * !B1 * !C1 * !X)	0.00059	0.00060	0.00060
	(!A1 * !B1 * !C1 * !X)	-0.00075	-0.00076	-0.00076

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00068	-0.00068	-0.00068
	(A1 * B1 * B2 * C1 * C2 * X)	0.00071	0.00071	0.00071
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00068	-0.00069	-0.00068
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00071	0.00072	0.00071
	(A1 * B1 * B2 * !C1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * B1 * B2 * !C1 * X)	0.00071	0.00071	0.00071
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00069	-0.00069	-0.00068
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00069	0.00070	0.00069
	(A1 * !B1 * C1 * C2 * X)	-0.00069	-0.00069	-0.00068
	(A1 * !B1 * C1 * C2 * X)	0.00069	0.00070	0.00069
	(!A1 * B1 * B2 * X)	-0.00063	-0.00065	-0.00064
	(!A1 * B1 * B2 * X)	0.00074	0.00074	0.00074
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00063	-0.00065	-0.00065
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00074	0.00074	0.00074
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00052	-0.00055	-0.00054
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00086	0.00085	0.00084
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00052	-0.00055	-0.00054
	(!A1 * B1 * !B2 * !C1 * !X)	0.00086	0.00085	0.00084
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00052	-0.00055	-0.00054
	(!A1 * !B1 * C1 * !C2 * !X)	0.00086	0.00085	0.00084
	(!A1 * !B1 * !C1 * !X)	-0.00052	-0.00055	-0.00054
	(!A1 * !B1 * !C1 * !X)	0.00086	0.00085	0.00084

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00064	-0.00064	-0.00064
	(A1 * B1 * B2 * C1 * C2 * X)	0.00074	0.00073	0.00074
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00074	0.00073	0.00074
	(A1 * B1 * B2 * !C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * B2 * !C1 * X)	0.00074	0.00073	0.00074
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00071	0.00072	0.00071
	(A1 * !B1 * C1 * C2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !B1 * C1 * C2 * X)	0.00071	0.00072	0.00071
	(!A1 * B1 * B2 * X)	-0.00058	-0.00060	-0.00060
	(!A1 * B1 * B2 * X)	0.00076	0.00076	0.00076
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00058	-0.00060	-0.00060
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00076	0.00076	0.00076
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00057	-0.00060	-0.00060
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00077	0.00076	0.00076
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00057	-0.00060	-0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	0.00077	0.00076	0.00076
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00057	-0.00060	-0.00060
	(!A1 * !B1 * C1 * !C2 * !X)	0.00077	0.00076	0.00076
	(!A1 * !B1 * !C1 * !X)	-0.00057	-0.00060	-0.00060
	(!A1 * !B1 * !C1 * !X)	0.00077	0.00076	0.00076

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00064	0.00065	0.00064
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00060	-0.00060	-0.00059
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00064	0.00064	0.00063
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00052	-0.00053	-0.00052
	(A1 * A2 * B2 * !C1 * X)	0.00063	0.00064	0.00063
	(A1 * A2 * B2 * !C1 * X)	-0.00052	-0.00053	-0.00052
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00060	0.00060	0.00060
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00057	-0.00058	-0.00057
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00059	0.00060	0.00059
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00051	-0.00052	-0.00052
	(A1 * A2 * !B2 * !C1 * X)	0.00059	0.00060	0.00059
	(A1 * A2 * !B2 * !C1 * X)	-0.00052	-0.00052	-0.00052
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00065	0.00064	0.00063
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00073	-0.00077	-0.00076
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00059	0.00059	0.00059
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00024	0.00024	0.00023
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00093	-0.00093	-0.00095
	(A1 * !A2 * !B2 * !C1 * !X)	0.00024	0.00024	0.00023
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00093	-0.00093	-0.00095
	(!A1 * B2 * C1 * C2 * X)	0.00065	0.00064	0.00063
	(!A1 * B2 * C1 * C2 * X)	-0.00074	-0.00076	-0.00076
	(!A1 * !B2 * C1 * C2 * X)	0.00059	0.00059	0.00059
	(!A1 * !B2 * C1 * C2 * X)	-0.00079	-0.00079	-0.00079
	(!A1 * !B2 * C1 * !C2 * !X)	0.00024	0.00024	0.00023
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00093	-0.00093	-0.00095
	(!A1 * !B2 * !C1 * !X)	0.00024	0.00024	0.00023
	(!A1 * !B2 * !C1 * !X)	-0.00093	-0.00093	-0.00095

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00062	0.00063	0.00062
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00061	0.00062	0.00061
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00047	-0.00048	-0.00048
	(A1 * A2 * B2 * !C1 * X)	0.00061	0.00062	0.00061
	(A1 * A2 * B2 * !C1 * X)	-0.00047	-0.00048	-0.00048
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00057	0.00058	0.00057
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00053	-0.00054	-0.00053
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00057	0.00057	0.00057
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00047	-0.00048	-0.00048
	(A1 * A2 * !B2 * !C1 * X)	0.00057	0.00057	0.00057
	(A1 * A2 * !B2 * !C1 * X)	-0.00047	-0.00048	-0.00048
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00065	0.00062	0.00061
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00066	-0.00071	-0.00071
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00056	0.00057	0.00057
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00023	0.00023	0.00022
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00086	-0.00086	-0.00088
	(A1 * !A2 * !B2 * !C1 * !X)	0.00023	0.00023	0.00022
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00086	-0.00086	-0.00088
	(!A1 * B2 * C1 * C2 * X)	0.00064	0.00062	0.00061
	(!A1 * B2 * C1 * C2 * X)	-0.00066	-0.00071	-0.00071
	(!A1 * !B2 * C1 * C2 * X)	0.00056	0.00057	0.00056
	(!A1 * !B2 * C1 * C2 * X)	-0.00074	-0.00075	-0.00074
	(!A1 * !B2 * C1 * !C2 * !X)	0.00024	0.00024	0.00023
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00086	-0.00086	-0.00088
	(!A1 * !B2 * !C1 * !X)	0.00024	0.00024	0.00023
	(!A1 * !B2 * !C1 * !X)	-0.00086	-0.00086	-0.00088

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * A2 * B2 * C1 * C2 * X)	-0.00064	-0.00064	-0.00063
	(A1 * A2 * B2 * C1 * C2 * X)	0.00060	0.00060	0.00059
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * B2 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B2 * !C1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00058	-0.00060	-0.00060
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00057	0.00058	0.00057
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00058	-0.00060	-0.00059
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00051	0.00052	0.00052
	(A1 * A2 * !B2 * !C1 * X)	-0.00058	-0.00060	-0.00059
	(A1 * A2 * !B2 * !C1 * X)	0.00052	0.00052	0.00052
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00063	-0.00064	-0.00063
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00076	0.00077	0.00076
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00058	-0.00059	-0.00059
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00080	0.00080	0.00079
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00023	-0.00023	-0.00023
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00023	-0.00023	-0.00023
	(A1 * !A2 * !B2 * !C1 * !X)	0.00095	0.00096	0.00095
	(!A1 * B2 * C1 * C2 * X)	-0.00063	-0.00063	-0.00063
	(!A1 * B2 * C1 * C2 * X)	0.00076	0.00076	0.00076
	(!A1 * !B2 * C1 * C2 * X)	-0.00058	-0.00059	-0.00059
	(!A1 * !B2 * C1 * C2 * X)	0.00080	0.00080	0.00079
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00023	-0.00023	-0.00023
	(!A1 * !B2 * C1 * !C2 * !X)	0.00095	0.00096	0.00095
	(!A1 * !B2 * !C1 * !X)	-0.00023	-0.00023	-0.00023
	(!A1 * !B2 * !C1 * !X)	0.00095	0.00096	0.00095

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B2 * C1 * C2 * X)	0.00056	0.00056	0.00056
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00056	-0.00056	-0.00057
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00054	0.00054	0.00052
	(A1 * A2 * B2 * !C1 * X)	-0.00056	-0.00056	-0.00057
	(A1 * A2 * B2 * !C1 * X)	0.00054	0.00054	0.00052
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00056	-0.00058	-0.00057
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00053	0.00054	0.00053
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00056	-0.00057	-0.00057
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00048	0.00048	0.00048
	(A1 * A2 * !B2 * !C1 * X)	-0.00056	-0.00057	-0.00057
	(A1 * A2 * !B2 * !C1 * X)	0.00048	0.00048	0.00048
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00071	0.00071	0.00071
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00055	-0.00057	-0.00057
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00074	0.00075	0.00075
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00021	-0.00022	-0.00022
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00088	0.00089	0.00088
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00021	-0.00022	-0.00022
	(A1 * !A2 * !B2 * !C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * B2 * C1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * B2 * C1 * C2 * X)	0.00071	0.00071	0.00071
	(!A1 * !B2 * C1 * C2 * X)	-0.00055	-0.00057	-0.00056
	(!A1 * !B2 * C1 * C2 * X)	0.00074	0.00075	0.00074
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00022	-0.00022	-0.00022
	(!A1 * !B2 * C1 * !C2 * !X)	0.00088	0.00089	0.00088
	(!A1 * !B2 * !C1 * !X)	-0.00022	-0.00022	-0.00022
	(!A1 * !B2 * !C1 * !X)	0.00088	0.00089	0.00088

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * A2 * B1 * C1 * C2 * X)	0.00061	0.00062	0.00061
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00056	-0.00057	-0.00056
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00062	0.00062	0.00061
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00049	-0.00049	-0.00049
	(A1 * A2 * B1 * !C1 * X)	0.00062	0.00062	0.00061
	(A1 * A2 * B1 * !C1 * X)	-0.00049	-0.00049	-0.00049
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00057	0.00057	0.00057
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00057	0.00057	0.00057
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00048	-0.00048	-0.00049
	(A1 * A2 * !B1 * !C1 * X)	0.00057	0.00058	0.00057
	(A1 * A2 * !B1 * !C1 * X)	-0.00049	-0.00049	-0.00049
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00063	0.00062	0.00061
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00069	-0.00073	-0.00072
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00057	0.00057	0.00057
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00054	0.00054	0.00054
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * !B1 * !C1 * !X)	0.00054	0.00054	0.00054
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * B1 * C1 * C2 * X)	0.00063	0.00062	0.00061
	(!A1 * B1 * C1 * C2 * X)	-0.00069	-0.00073	-0.00072
	(!A1 * !B1 * C1 * !C2 * !X)	0.00054	0.00054	0.00054
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * !B1 * !C1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !B1 * !C1 * !X)	-0.00078	-0.00078	-0.00078

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	0.00063	0.00064	0.00063
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00063	0.00063	0.00062
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00049	-0.00048	-0.00048
	(A1 * A2 * B1 * !C1 * X)	0.00063	0.00063	0.00062
	(A1 * A2 * B1 * !C1 * X)	-0.00049	-0.00048	-0.00048
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00058	0.00059	0.00058
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00053	-0.00054	-0.00053
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00058	0.00058	0.00058
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00047	-0.00048	-0.00048
	(A1 * A2 * !B1 * !C1 * X)	0.00058	0.00058	0.00058
	(A1 * A2 * !B1 * !C1 * X)	-0.00047	-0.00048	-0.00048
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00065	0.00063	0.00062
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00066	-0.00071	-0.00071
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00058	0.00058	0.00057
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00056	0.00057	0.00056
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * !B1 * !C1 * !X)	0.00056	0.00057	0.00056
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * B1 * C1 * C2 * X)	0.00065	0.00063	0.00062
	(!A1 * B1 * C1 * C2 * X)	-0.00066	-0.00071	-0.00071
	(!A1 * !B1 * C1 * !C2 * !X)	0.00058	0.00058	0.00058
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * !C1 * !X)	0.00058	0.00058	0.00058
	(!A1 * !B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * A2 * B1 * C1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B1 * C1 * C2 * X)	0.00056	0.00057	0.00056
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00057	-0.00058	-0.00058
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00052	0.00052	0.00052
	(A1 * A2 * B1 * !C1 * X)	-0.00057	-0.00058	-0.00058
	(A1 * A2 * B1 * !C1 * X)	0.00052	0.00052	0.00052
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00056	-0.00057	-0.00057
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00056	-0.00057	-0.00057
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00049	0.00049	0.00049
	(A1 * A2 * !B1 * !C1 * X)	-0.00056	-0.00057	-0.00057
	(A1 * A2 * !B1 * !C1 * X)	0.00049	0.00049	0.00049
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00072	0.00073	0.00072
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00055	-0.00057	-0.00057
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00075	0.00076	0.00075
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00051	-0.00054	-0.00054
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00080	0.00079	0.00078
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00051	-0.00054	-0.00054
	(A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00079	0.00078
	(!A1 * B1 * C1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * B1 * C1 * C2 * X)	0.00072	0.00073	0.00072
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00051	-0.00054	-0.00054
	(!A1 * !B1 * C1 * !C2 * !X)	0.00080	0.00079	0.00078
	(!A1 * !B1 * !C1 * !X)	-0.00051	-0.00054	-0.00054
	(!A1 * !B1 * !C1 * !X)	0.00080	0.00079	0.00078

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00062	-0.00063	-0.00062
	(A1 * A2 * B1 * C1 * C2 * X)	0.00056	0.00056	0.00056
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00056	-0.00057	-0.00058
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00054	0.00054	0.00052
	(A1 * A2 * B1 * !C1 * X)	-0.00056	-0.00057	-0.00058
	(A1 * A2 * B1 * !C1 * X)	0.00054	0.00054	0.00052
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00057	-0.00059	-0.00058
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00053	0.00054	0.00053
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00057	-0.00058	-0.00058
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00048	0.00048	0.00048
	(A1 * A2 * !B1 * !C1 * X)	-0.00057	-0.00058	-0.00058
	(A1 * A2 * !B1 * !C1 * X)	0.00048	0.00048	0.00048
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00071	0.00071	0.00071
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00056	-0.00058	-0.00057
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00074	0.00075	0.00074
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00053	-0.00056	-0.00056
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00076	0.00075	0.00074
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00053	-0.00056	-0.00056
	(A1 * !A2 * !B1 * !C1 * !X)	0.00076	0.00075	0.00074
	(!A1 * B1 * C1 * C2 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * B1 * C1 * C2 * X)	0.00071	0.00071	0.00071
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00055	-0.00058	-0.00058
	(!A1 * !B1 * C1 * !C2 * !X)	0.00076	0.00075	0.00074
	(!A1 * !B1 * !C1 * !X)	-0.00055	-0.00058	-0.00058
	(!A1 * !B1 * !C1 * !X)	0.00076	0.00075	0.00074

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * B1 * B2 * C2 * X)	0.00074	0.00075	0.00074
	(A1 * B1 * B2 * C2 * X)	-0.00046	-0.00046	-0.00046
	(A1 * B1 * B2 * !C2 * X)	0.00070	0.00070	0.00070
	(A1 * B1 * B2 * !C2 * X)	-0.00046	-0.00046	-0.00046
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00074	0.00075	0.00074
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00046	-0.00046	-0.00046
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00045	-0.00046	-0.00046
	(A1 * A2 * !B1 * C2 * X)	0.00074	0.00075	0.00074
	(A1 * A2 * !B1 * C2 * X)	-0.00046	-0.00046	-0.00046
	(A1 * A2 * !B1 * !C2 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !B1 * !C2 * X)	-0.00045	-0.00046	-0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00026	0.00025	0.00025
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00094	-0.00094	-0.00096
	(A1 * !A2 * !B1 * !C2 * !X)	0.00026	0.00025	0.00025
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00094	-0.00094	-0.00096
	(!A1 * B1 * B2 * C2 * X)	0.00074	0.00075	0.00074
	(!A1 * B1 * B2 * C2 * X)	-0.00046	-0.00047	-0.00046
	(!A1 * B1 * B2 * !C2 * X)	0.00070	0.00070	0.00070
	(!A1 * B1 * B2 * !C2 * X)	-0.00046	-0.00046	-0.00046
	(!A1 * B1 * !B2 * !C2 * !X)	0.00026	0.00025	0.00025
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00094	-0.00094	-0.00096
	(!A1 * !B1 * !C2 * !X)	0.00026	0.00025	0.00025
	(!A1 * !B1 * !C2 * !X)	-0.00094	-0.00094	-0.00096

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00072	0.00073	0.00072
	(A1 * B1 * B2 * C2 * X)	-0.00043	-0.00044	-0.00043
	(A1 * B1 * B2 * !C2 * X)	0.00068	0.00068	0.00068
	(A1 * B1 * B2 * !C2 * X)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00072	0.00073	0.00072
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00043	-0.00044	-0.00043
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00068	0.00068	0.00068
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * !B1 * C2 * X)	0.00072	0.00073	0.00072
	(A1 * A2 * !B1 * C2 * X)	-0.00043	-0.00044	-0.00043
	(A1 * A2 * !B1 * !C2 * X)	0.00068	0.00068	0.00068
	(A1 * A2 * !B1 * !C2 * X)	-0.00043	-0.00043	-0.00043
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00025	0.00025	0.00024
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00089	-0.00090	-0.00091
	(A1 * !A2 * !B1 * !C2 * !X)	0.00025	0.00025	0.00024
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00089	-0.00090	-0.00091
	(!A1 * B1 * B2 * C2 * X)	0.00072	0.00073	0.00072
	(!A1 * B1 * B2 * C2 * X)	-0.00043	-0.00044	-0.00043
	(!A1 * B1 * B2 * !C2 * X)	0.00068	0.00068	0.00068
	(!A1 * B1 * B2 * !C2 * X)	-0.00043	-0.00043	-0.00043
	(!A1 * B1 * !B2 * !C2 * !X)	0.00025	0.00025	0.00024
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00089	-0.00090	-0.00091
	(!A1 * !B1 * !C2 * !X)	0.00025	0.00025	0.00024
	(!A1 * !B1 * !C2 * !X)	-0.00089	-0.00090	-0.00091

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C2 * X)**	-0.00062	-0.00063	-0.00072
	(A1 * B1 * B2 * C2 * X)	0.00057	0.00057	0.00048
	(A1 * B1 * B2 * !C2 * X)	-0.00068	-0.00070	-0.00070
	(A1 * B1 * B2 * !C2 * X)	0.00046	0.00046	0.00046
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00050	-0.00052	-0.00069
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00065	0.00064	0.00050
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00068	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00045	0.00046	0.00046
	(A1 * A2 * !B1 * C2 * X)	-0.00050	-0.00052	-0.00069
	(A1 * A2 * !B1 * C2 * X)	0.00065	0.00064	0.00050
	(A1 * A2 * !B1 * !C2 * X)	-0.00068	-0.00070	-0.00070
	(A1 * A2 * !B1 * !C2 * X)	0.00045	0.00046	0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(A1 * !A2 * !B1 * !C2 * !X)	0.00096	0.00097	0.00096
	(!A1 * B1 * B2 * C2 * X)	-0.00062	-0.00063	-0.00072
	(!A1 * B1 * B2 * C2 * X)	0.00057	0.00057	0.00049
	(!A1 * B1 * B2 * !C2 * X)	-0.00068	-0.00070	-0.00070
	(!A1 * B1 * B2 * !C2 * X)	0.00046	0.00046	0.00046
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(!A1 * B1 * !B2 * !C2 * !X)	0.00096	0.00097	0.00096
	(!A1 * !B1 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(!A1 * !B1 * !C2 * !X)	0.00096	0.00097	0.00096

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00063	-0.00064	-0.00071
	(A1 * B1 * B2 * C2 * X)	0.00051	0.00051	0.00045
	(A1 * B1 * B2 * !C2 * X)	-0.00066	-0.00068	-0.00068
	(A1 * B1 * B2 * !C2 * X)	0.00043	0.00043	0.00043
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00050	-0.00051	-0.00068
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00061	0.00060	0.00048
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00066	-0.00068	-0.00068
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00043	0.00043	0.00043
	(A1 * A2 * !B1 * C2 * X)	-0.00050	-0.00051	-0.00068
	(A1 * A2 * !B1 * C2 * X)	0.00061	0.00060	0.00048
	(A1 * A2 * !B1 * !C2 * X)	-0.00066	-0.00068	-0.00068
	(A1 * A2 * !B1 * !C2 * X)	0.00043	0.00043	0.00043
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00091	0.00092	0.00091
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(A1 * !A2 * !B1 * !C2 * !X)	0.00091	0.00092	0.00091
	(!A1 * B1 * B2 * C2 * X)	-0.00063	-0.00063	-0.00071
	(!A1 * B1 * B2 * C2 * X)	0.00051	0.00051	0.00045
	(!A1 * B1 * B2 * !C2 * X)	-0.00066	-0.00068	-0.00068
	(!A1 * B1 * B2 * !C2 * X)	0.00043	0.00043	0.00043
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(!A1 * B1 * !B2 * !C2 * !X)	0.00091	0.00092	0.00091
	(!A1 * !B1 * !C2 * !X)	-0.00024	-0.00024	-0.00024
	(!A1 * !B1 * !C2 * !X)	0.00091	0.00092	0.00091

Passive power(pJ) for C2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * X)**	0.00074	0.00075	0.00074
	(A1 * B1 * B2 * C1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * B1 * B2 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * B1 * B2 * !C1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00075	0.00075	0.00074
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00043	-0.00044	-0.00044
	(A1 * A2 * !B1 * C1 * X)	0.00075	0.00075	0.00074
	(A1 * A2 * !B1 * C1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * A2 * !B1 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !B1 * !C1 * X)	-0.00043	-0.00044	-0.00044
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00055	0.00056	0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !B1 * !C1 * !X)	0.00055	0.00056	0.00055
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * B2 * C1 * X)	0.00075	0.00075	0.00074
	(!A1 * B1 * B2 * C1 * X)	-0.00044	-0.00045	-0.00044
	(!A1 * B1 * B2 * !C1 * X)	0.00070	0.00070	0.00070
	(!A1 * B1 * B2 * !C1 * X)	-0.00044	-0.00044	-0.00044
	(!A1 * B1 * !B2 * !C1 * !X)	0.00055	0.00056	0.00055
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * !B1 * !C1 * !X)	0.00055	0.00056	0.00055
	(!A1 * !B1 * !C1 * !X)	-0.00083	-0.00084	-0.00083

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00076	0.00078	0.00076
	(A1 * B1 * B2 * C1 * X)	-0.00044	-0.00045	-0.00044
	(A1 * B1 * B2 * !C1 * X)	0.00073	0.00074	0.00072
	(A1 * B1 * B2 * !C1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00077	0.00078	0.00076
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00044	-0.00045	-0.00044
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00073	0.00074	0.00072
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * A2 * !B1 * C1 * X)	0.00076	0.00078	0.00076
	(A1 * A2 * !B1 * C1 * X)	-0.00044	-0.00045	-0.00044
	(A1 * A2 * !B1 * !C1 * X)	0.00073	0.00074	0.00073
	(A1 * A2 * !B1 * !C1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00054	0.00054	0.00054
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * !B1 * !C1 * !X)	0.00054	0.00054	0.00054
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * B1 * B2 * C1 * X)	0.00076	0.00078	0.00076
	(!A1 * B1 * B2 * C1 * X)	-0.00044	-0.00045	-0.00044
	(!A1 * B1 * B2 * !C1 * X)	0.00073	0.00074	0.00073
	(!A1 * B1 * B2 * !C1 * X)	-0.00044	-0.00044	-0.00044
	(!A1 * B1 * !B2 * !C1 * !X)	0.00054	0.00054	0.00054
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !B1 * !C1 * !X)	0.00054	0.00055	0.00054
	(!A1 * !B1 * !C1 * !X)	-0.00087	-0.00088	-0.00087

Passive power(pJ) for C2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * X)**	-0.00062	-0.00063	-0.00072
	(A1 * B1 * B2 * C1 * X)	0.00055	0.00055	0.00047
	(A1 * B1 * B2 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * B1 * B2 * !C1 * X)	0.00044	0.00044	0.00044
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00050	-0.00052	-0.00069
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00063	0.00062	0.00048
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00044	0.00044	0.00044
	(A1 * A2 * !B1 * C1 * X)	-0.00050	-0.00052	-0.00069
	(A1 * A2 * !B1 * C1 * X)	0.00063	0.00062	0.00048
	(A1 * A2 * !B1 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * !B1 * !C1 * X)	0.00044	0.00044	0.00044
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00052	-0.00056	-0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00085	0.00084	0.00084
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00052	-0.00056	-0.00055
	(A1 * !A2 * !B1 * !C1 * !X)	0.00085	0.00084	0.00084
	(!A1 * B1 * B2 * C1 * X)	-0.00062	-0.00063	-0.00072
	(!A1 * B1 * B2 * C1 * X)	0.00055	0.00055	0.00047
	(!A1 * B1 * B2 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(!A1 * B1 * B2 * !C1 * X)	0.00044	0.00044	0.00044
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00052	-0.00056	-0.00055
	(!A1 * B1 * !B2 * !C1 * !X)	0.00085	0.00084	0.00084
	(!A1 * !B1 * !C1 * !X)	-0.00052	-0.00056	-0.00055
	(!A1 * !B1 * !C1 * !X)	0.00085	0.00084	0.00084

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00067	-0.00068	-0.00075
	(A1 * B1 * B2 * C1 * X)	0.00052	0.00052	0.00046
	(A1 * B1 * B2 * !C1 * X)	-0.00071	-0.00073	-0.00072
	(A1 * B1 * B2 * !C1 * X)	0.00044	0.00044	0.00044
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00055	-0.00056	-0.00072
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00062	0.00061	0.00049
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00071	-0.00073	-0.00072
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00044	0.00044	0.00044
	(A1 * A2 * !B1 * C1 * X)	-0.00055	-0.00056	-0.00072
	(A1 * A2 * !B1 * C1 * X)	0.00062	0.00061	0.00049
	(A1 * A2 * !B1 * !C1 * X)	-0.00071	-0.00073	-0.00073
	(A1 * A2 * !B1 * !C1 * X)	0.00044	0.00044	0.00044
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00051	-0.00054	-0.00054
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00089	0.00088	0.00087
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00051	-0.00054	-0.00054
	(A1 * !A2 * !B1 * !C1 * !X)	0.00089	0.00088	0.00087
	(!A1 * B1 * B2 * C1 * X)	-0.00067	-0.00068	-0.00075
	(!A1 * B1 * B2 * C1 * X)	0.00052	0.00052	0.00046
	(!A1 * B1 * B2 * !C1 * X)	-0.00071	-0.00073	-0.00073
	(!A1 * B1 * B2 * !C1 * X)	0.00044	0.00044	0.00044
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00051	-0.00054	-0.00054
	(!A1 * B1 * !B2 * !C1 * !X)	0.00089	0.00088	0.00087
	(!A1 * !B1 * !C1 * !X)	-0.00051	-0.00055	-0.00054
	(!A1 * !B1 * !C1 * !X)	0.00089	0.00088	0.00087

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	B2	Y
0	x	0	x	1
0	x	1	0	1
x	x	1	1	0
1	0	0	x	1
1	0	1	0	1
1	1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22oi_1	9.59040
sky130_fd_sc_hs__a22oi_2	15.98400
sky130_fd_sc_hs__a22oi_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__a22oi_1	0.00255	0.00250	0.00265	0.00266	0.19028
sky130_fd_sc_hs__a22oi_2	0.00561	0.00484	0.00535	0.00483	0.35675
sky130_fd_sc_hs__a22oi_4	0.00973	0.00950	0.00986	0.00966	0.68930

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22oi_1	0.00000	0.00821	0.02167
sky130_fd_sc_hs__a22oi_2	0.00000	0.01642	0.04335
sky130_fd_sc_hs__a22oi_4	0.00000	0.03284	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (FR)	0.29811	1.75776	12.86100
	A2->Y (FR)	0.34778	1.81697	12.95530
	B1->Y (FR)	0.22225	1.61566	12.43050
	B2->Y (FR)	0.27048	1.67719	12.54950
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.30596	1.55731	12.70810
	A2->Y (FR)	0.35700	1.62729	12.91050
	B1->Y (FR)	0.22236	1.40680	12.34260
	B2->Y (FR)	0.27913	1.49300	12.55160
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.27477	1.36782	12.65760
	A2->Y (FR)	0.33733	1.44711	12.87080
	B1->Y (FR)	0.20014	1.23943	12.30360
	B2->Y (FR)	0.26355	1.31737	12.53830

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.06071	0.66522	5.36181
	A2->Y (RF)	0.06798	0.64486	5.14397
	B1->Y (RF)	0.04830	0.64014	5.35347
	B2->Y (RF)	0.05512	0.62388	5.15279
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.06292	0.61537	5.34025
	A2->Y (RF)	0.06932	0.60346	5.16429
	B1->Y (RF)	0.04770	0.58193	5.30012
	B2->Y (RF)	0.05611	0.57528	5.12463
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.06044	0.58152	5.51798
	A2->Y (RF)	0.06902	0.55901	5.15700
	B1->Y (RF)	0.04496	0.54349	5.49140
	B2->Y (RF)	0.05377	0.52505	5.11210

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00025	0.00017	0.00015
	A1	0.00317	0.00309	0.00293
	A2	0.00047	0.00042	0.00040
	A2	0.00387	0.00382	0.00373
	B1	0.00031	0.00021	0.00022
	B1	0.00274	0.00265	0.00267
	B2	0.00045	0.00037	0.00038
	B2	0.00336	0.00329	0.00329
sky130_fd_sc_hs__a22oi_2	A1	0.00090	0.00070	0.00068
	A1	0.00714	0.00693	0.00660
	A2	0.00144	0.00129	0.00126
	A2	0.00819	0.00805	0.00788
	B1	0.00072	0.00049	0.00055
	B1	0.00577	0.00542	0.00562
	B2	0.00142	0.00125	0.00129
	B2	0.00711	0.00694	0.00698
sky130_fd_sc_hs__a22oi_4	A1	0.00101	0.00061	0.00062
	A1	0.01269	0.01233	0.01231
	A2	0.00216	0.00189	0.00185
	A2	0.01560	0.01533	0.01523
	B1	0.00090	0.00046	0.00061
	B1	0.01056	0.01013	0.01030
	B2	0.00211	0.00176	0.00186
	B2	0.01344	0.01310	0.01320

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00385	0.00379	0.00371
	A1	0.00113	0.00105	0.00100
	A2	0.00433	0.00427	0.00421
	A2	0.00111	0.00105	0.00098
	B1	0.00245	0.00245	0.00248
	B1	-0.00002	-0.00004	-0.00004
	B2	0.00297	0.00296	0.00300
	B2	-0.00001	-0.00003	-0.00004
sky130_fd_sc_hs__a22oi_2	A1	0.00780	0.00762	0.00750
	A1	0.00201	0.00182	0.00175
	A2	0.00845	0.00831	0.00825
	A2	0.00205	0.00192	0.00182
	B1	0.00518	0.00511	0.00518
	B1	0.00006	-0.00002	0.00001
	B2	0.00595	0.00591	0.00596
	B2	0.00008	0.00003	0.00003
sky130_fd_sc_hs__a22oi_4	A1	0.01471	0.01432	0.01417
	A1	0.00387	0.00348	0.00336
	A2	0.01659	0.01634	0.01611
	A2	0.00382	0.00353	0.00338
	B1	0.00972	0.00955	0.00990
	B1	-0.00010	-0.00028	-0.00015
	B2	0.01169	0.01154	0.01176
	B2	-0.00003	-0.00017	-0.00010

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A2 * B1 * B2 * !Y)	0.00069	0.00068	0.00067
	(A2 * B1 * B2 * !Y)	-0.00076	-0.00079	-0.00079
	(!A2 * B1 * B2 * !Y)	0.00063	0.00063	0.00063
	(!A2 * B1 * B2 * !Y)	-0.00081	-0.00082	-0.00081
	(!A2 * B1 * !B2 * Y)	0.00027	0.00027	0.00026
	(!A2 * B1 * !B2 * Y)	-0.00093	-0.00093	-0.00096
	(!A2 * !B1 * Y)	0.00027	0.00027	0.00026
	(!A2 * !B1 * Y)	-0.00093	-0.00093	-0.00096
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00154	0.00150	0.00148
	(A2 * B1 * B2 * !Y)	-0.00160	-0.00168	-0.00168
	(!A2 * B1 * B2 * !Y)	0.00138	0.00139	0.00138
	(!A2 * B1 * B2 * !Y)	-0.00175	-0.00176	-0.00175
	(!A2 * B1 * !B2 * Y)	0.00054	0.00054	0.00051
	(!A2 * B1 * !B2 * Y)	-0.00213	-0.00212	-0.00216
	(!A2 * !B1 * Y)	0.00054	0.00054	0.00051
	(!A2 * !B1 * Y)	-0.00213	-0.00212	-0.00216
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00281	0.00277	0.00273
	(A2 * B1 * B2 * !Y)	-0.00301	-0.00320	-0.00318
	(!A2 * B1 * B2 * !Y)	0.00253	0.00254	0.00254
	(!A2 * B1 * B2 * !Y)	-0.00330	-0.00332	-0.00331
	(!A2 * B1 * !B2 * Y)	0.00104	0.00103	0.00097
	(!A2 * B1 * !B2 * Y)	-0.00384	-0.00385	-0.00395
	(!A2 * !B1 * Y)	0.00104	0.00103	0.00097
	(!A2 * !B1 * Y)	-0.00384	-0.00385	-0.00395

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A2 * B1 * B2 * !Y)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * !Y)	0.00078	0.00079	0.00079
	(!A2 * B1 * B2 * !Y)	-0.00061	-0.00063	-0.00063
	(!A2 * B1 * B2 * !Y)	0.00081	0.00082	0.00082
	(!A2 * B1 * !B2 * Y)	-0.00025	-0.00025	-0.00025
	(!A2 * B1 * !B2 * Y)	0.00097	0.00096	0.00096
	(!A2 * !B1 * Y)	-0.00025	-0.00025	-0.00025
	(!A2 * !B1 * Y)	0.00097	0.00096	0.00096
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00148	-0.00148	-0.00148
	(A2 * B1 * B2 * !Y)	0.00167	0.00168	0.00168
	(!A2 * B1 * B2 * !Y)	-0.00133	-0.00139	-0.00138
	(!A2 * B1 * B2 * !Y)	0.00175	0.00178	0.00176
	(!A2 * B1 * !B2 * Y)	-0.00049	-0.00050	-0.00049
	(!A2 * B1 * !B2 * Y)	0.00216	0.00218	0.00217
	(!A2 * !B1 * Y)	-0.00049	-0.00050	-0.00049
	(!A2 * !B1 * Y)	0.00216	0.00218	0.00217
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00273	-0.00274	-0.00273
	(A2 * B1 * B2 * !Y)	0.00317	0.00320	0.00318
	(!A2 * B1 * B2 * !Y)	-0.00243	-0.00254	-0.00254
	(!A2 * B1 * B2 * !Y)	0.00334	0.00335	0.00332
	(!A2 * B1 * !B2 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * B1 * !B2 * Y)	0.00395	0.00397	0.00396
	(!A2 * !B1 * Y)	-0.00093	-0.00094	-0.00093
	(!A2 * !B1 * Y)	0.00395	0.00397	0.00396

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * B1 * B2 * !Y)	0.00073	0.00072	0.00072
	(A1 * B1 * B2 * !Y)	-0.00079	-0.00082	-0.00082
	(!A1 * B1 * B2 * !Y)	0.00067	0.00068	0.00067
	(!A1 * B1 * B2 * !Y)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * !B2 * Y)	0.00067	0.00068	0.00067
	(!A1 * B1 * !B2 * Y)	-0.00085	-0.00085	-0.00085
	(!A1 * !B1 * Y)	0.00067	0.00068	0.00067
	(!A1 * !B1 * Y)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00139	0.00137	0.00135
	(A1 * B1 * B2 * !Y)	-0.00148	-0.00155	-0.00155
	(!A1 * B1 * B2 * !Y)	0.00126	0.00126	0.00125
	(!A1 * B1 * B2 * !Y)	-0.00161	-0.00161	-0.00161
	(!A1 * B1 * !B2 * Y)	0.00121	0.00122	0.00121
	(!A1 * B1 * !B2 * Y)	-0.00166	-0.00166	-0.00165
	(!A1 * !B1 * Y)	0.00121	0.00122	0.00121
	(!A1 * !B1 * Y)	-0.00166	-0.00166	-0.00165
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00285	0.00279	0.00275
	(A1 * B1 * B2 * !Y)	-0.00304	-0.00318	-0.00319
	(!A1 * B1 * B2 * !Y)	0.00254	0.00256	0.00254
	(!A1 * B1 * B2 * !Y)	-0.00332	-0.00333	-0.00332
	(!A1 * B1 * !B2 * Y)	0.00252	0.00255	0.00254
	(!A1 * B1 * !B2 * Y)	-0.00330	-0.00333	-0.00331
	(!A1 * !B1 * Y)	0.00255	0.00255	0.00254
	(!A1 * !B1 * Y)	-0.00332	-0.00333	-0.00331

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * B1 * B2 * !Y)	-0.00072	-0.00071	-0.00071
	(A1 * B1 * B2 * !Y)	0.00082	0.00082	0.00082
	(!A1 * B1 * B2 * !Y)	-0.00065	-0.00068	-0.00067
	(!A1 * B1 * B2 * !Y)	0.00085	0.00086	0.00085
	(!A1 * B1 * !B2 * Y)	-0.00065	-0.00068	-0.00067
	(!A1 * B1 * !B2 * Y)	0.00086	0.00086	0.00085
	(!A1 * !B1 * Y)	-0.00065	-0.00068	-0.00067
	(!A1 * !B1 * Y)	0.00086	0.00086	0.00085
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * B2 * !Y)	0.00154	0.00155	0.00155
	(!A1 * B1 * B2 * !Y)	-0.00122	-0.00126	-0.00125
	(!A1 * B1 * B2 * !Y)	0.00161	0.00162	0.00161
	(!A1 * B1 * !B2 * Y)	-0.00115	-0.00122	-0.00121
	(!A1 * B1 * !B2 * Y)	0.00169	0.00167	0.00166
	(!A1 * !B1 * Y)	-0.00115	-0.00122	-0.00121
	(!A1 * !B1 * Y)	0.00169	0.00167	0.00166
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00275	-0.00275	-0.00275
	(A1 * B1 * B2 * !Y)	0.00318	0.00318	0.00319
	(!A1 * B1 * B2 * !Y)	-0.00246	-0.00256	-0.00254
	(!A1 * B1 * B2 * !Y)	0.00333	0.00334	0.00333
	(!A1 * B1 * !B2 * Y)	-0.00242	-0.00255	-0.00254
	(!A1 * B1 * !B2 * Y)	0.00339	0.00335	0.00333
	(!A1 * !B1 * Y)	-0.00242	-0.00255	-0.00254
	(!A1 * !B1 * Y)	0.00339	0.00335	0.00333

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * A2 * B2 * !Y)	0.00078	0.00079	0.00078
	(A1 * A2 * B2 * !Y)	-0.00047	-0.00047	-0.00047
	(A1 * A2 * !B2 * !Y)	0.00073	0.00073	0.00073
	(A1 * A2 * !B2 * !Y)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * !B2 * Y)	0.00025	0.00025	0.00024
	(A1 * !A2 * !B2 * Y)	-0.00098	-0.00098	-0.00100
	(!A1 * !B2 * Y)	0.00025	0.00025	0.00024
	(!A1 * !B2 * Y)	-0.00098	-0.00098	-0.00100
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00168	0.00170	0.00167
	(A1 * A2 * B2 * !Y)	-0.00092	-0.00092	-0.00090
	(A1 * A2 * !B2 * !Y)	0.00156	0.00158	0.00157
	(A1 * A2 * !B2 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * !B2 * Y)	0.00058	0.00058	0.00055
	(A1 * !A2 * !B2 * Y)	-0.00194	-0.00196	-0.00200
	(!A1 * !B2 * Y)	0.00058	0.00058	0.00055
	(!A1 * !B2 * Y)	-0.00194	-0.00196	-0.00200
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00310	0.00314	0.00309
	(A1 * A2 * B2 * !Y)	-0.00185	-0.00185	-0.00183
	(A1 * A2 * !B2 * !Y)	0.00289	0.00290	0.00291
	(A1 * A2 * !B2 * !Y)	-0.00182	-0.00182	-0.00182
	(A1 * !A2 * !B2 * Y)	0.00103	0.00102	0.00096
	(A1 * !A2 * !B2 * Y)	-0.00386	-0.00387	-0.00397
	(!A1 * !B2 * Y)	0.00103	0.00103	0.00096
	(!A1 * !B2 * Y)	-0.00386	-0.00387	-0.00397

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * A2 * B2 * !Y)	-0.00065	-0.00066	-0.00076
	(A1 * A2 * B2 * !Y)	0.00058	0.00057	0.00049
	(A1 * A2 * !B2 * !Y)	-0.00071	-0.00073	-0.00073
	(A1 * A2 * !B2 * !Y)	0.00046	0.00047	0.00046
	(A1 * !A2 * !B2 * Y)	-0.00023	-0.00023	-0.00023
	(A1 * !A2 * !B2 * Y)	0.00100	0.00101	0.00100
	(!A1 * !B2 * Y)	-0.00023	-0.00023	-0.00023
	(!A1 * !B2 * Y)	0.00100	0.00101	0.00100
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00145	-0.00146	-0.00164
	(A1 * A2 * B2 * !Y)	0.00109	0.00109	0.00095
	(A1 * A2 * !B2 * !Y)	-0.00153	-0.00158	-0.00157
	(A1 * A2 * !B2 * !Y)	0.00091	0.00091	0.00090
	(A1 * !A2 * !B2 * Y)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * !B2 * Y)	0.00200	0.00201	0.00200
	(!A1 * !B2 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !B2 * Y)	0.00200	0.00201	0.00200
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00266	-0.00269	-0.00303
	(A1 * A2 * B2 * !Y)	0.00219	0.00218	0.00192
	(A1 * A2 * !B2 * !Y)	-0.00280	-0.00290	-0.00291
	(A1 * A2 * !B2 * !Y)	0.00184	0.00184	0.00182
	(A1 * !A2 * !B2 * Y)	-0.00092	-0.00092	-0.00092
	(A1 * !A2 * !B2 * Y)	0.00397	0.00398	0.00397
	(!A1 * !B2 * Y)	-0.00093	-0.00093	-0.00092
	(!A1 * !B2 * Y)	0.00397	0.00398	0.00397

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * A2 * B1 * !Y)	0.00085	0.00087	0.00085
	(A1 * A2 * B1 * !Y)	-0.00047	-0.00048	-0.00047
	(A1 * A2 * !B1 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !B1 * !Y)	-0.00047	-0.00047	-0.00047
	(A1 * !A2 * !B1 * Y)	0.00067	0.00068	0.00067
	(A1 * !A2 * !B1 * Y)	-0.00088	-0.00088	-0.00088
	(!A1 * !B1 * Y)	0.00067	0.00068	0.00067
	(!A1 * !B1 * Y)	-0.00088	-0.00088	-0.00088
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00146	0.00149	0.00147
	(A1 * A2 * B1 * !Y)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * !B1 * !Y)	0.00137	0.00139	0.00138
	(A1 * A2 * !B1 * !Y)	-0.00090	-0.00091	-0.00091
	(A1 * !A2 * !B1 * Y)	0.00120	0.00121	0.00120
	(A1 * !A2 * !B1 * Y)	-0.00164	-0.00164	-0.00164
	(!A1 * !B1 * Y)	0.00120	0.00121	0.00120
	(!A1 * !B1 * Y)	-0.00164	-0.00164	-0.00164
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00307	0.00308	0.00309
	(A1 * A2 * B1 * !Y)	-0.00182	-0.00183	-0.00183
	(A1 * A2 * !B1 * !Y)	0.00289	0.00291	0.00289
	(A1 * A2 * !B1 * !Y)	-0.00183	-0.00183	-0.00182
	(A1 * !A2 * !B1 * Y)	0.00254	0.00256	0.00254
	(A1 * !A2 * !B1 * Y)	-0.00330	-0.00331	-0.00330
	(!A1 * !B1 * Y)	0.00254	0.00256	0.00254
	(!A1 * !B1 * Y)	-0.00330	-0.00331	-0.00330

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * A2 * B1 * !Y)	-0.00073	-0.00074	-0.00083
	(A1 * A2 * B1 * !Y)	0.00058	0.00058	0.00050
	(A1 * A2 * !B1 * !Y)	-0.00079	-0.00081	-0.00081
	(A1 * A2 * !B1 * !Y)	0.00047	0.00047	0.00047
	(A1 * !A2 * !B1 * Y)	-0.00064	-0.00068	-0.00067
	(A1 * !A2 * !B1 * Y)	0.00090	0.00089	0.00088
	(!A1 * !B1 * Y)	-0.00064	-0.00068	-0.00067
	(!A1 * !B1 * Y)	0.00090	0.00089	0.00088
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00124	-0.00126	-0.00144
	(A1 * A2 * B1 * !Y)	0.00110	0.00110	0.00096
	(A1 * A2 * !B1 * !Y)	-0.00134	-0.00139	-0.00138
	(A1 * A2 * !B1 * !Y)	0.00091	0.00091	0.00091
	(A1 * !A2 * !B1 * Y)	-0.00115	-0.00121	-0.00120
	(A1 * !A2 * !B1 * Y)	0.00166	0.00165	0.00164
	(!A1 * !B1 * Y)	-0.00115	-0.00121	-0.00120
	(!A1 * !B1 * Y)	0.00166	0.00165	0.00164
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00266	-0.00270	-0.00303
	(A1 * A2 * B1 * !Y)	0.00219	0.00219	0.00192
	(A1 * A2 * !B1 * !Y)	-0.00282	-0.00291	-0.00289
	(A1 * A2 * !B1 * !Y)	0.00183	0.00183	0.00182
	(A1 * !A2 * !B1 * Y)	-0.00242	-0.00256	-0.00254
	(A1 * !A2 * !B1 * Y)	0.00335	0.00332	0.00331
	(!A1 * !B1 * Y)	-0.00242	-0.00256	-0.00254
	(!A1 * !B1 * Y)	0.00335	0.00332	0.00331

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	B2	X
0	x	0	x	0
0	x	1	0	0
x	x	1	1	1
1	0	0	x	0
1	0	1	0	0
1	1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22o_1	11.18880
sky130_fd_sc_hs__a22o_2	12.78720
sky130_fd_sc_hs__a22o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__a22o_1	0.00250	0.00228	0.00244	0.00251	0.43637
sky130_fd_sc_hs__a22o_2	0.00261	0.00238	0.00257	0.00250	0.85809
sky130_fd_sc_hs__a22o_4	0.00440	0.00463	0.00442	0.00487	1.72275

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22o_1	0.00000	0.02371	0.05372
sky130_fd_sc_hs__a22o_2	0.00000	0.03047	0.05648
sky130_fd_sc_hs__a22o_4	0.00000	0.06203	0.11297

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (RR)	0.18822	1.17876	8.58075
	A2->X (RR)	0.19707	1.18370	8.80053
	B1->X (RR)	0.17161	1.14061	8.47511
	B2->X (RR)	0.17904	1.15024	8.64773
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.18776	1.06049	8.75502
	A2->X (RR)	0.19722	1.05736	8.91661
	B1->X (RR)	0.17090	1.02693	8.65911
	B2->X (RR)	0.17739	1.02633	8.78910
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.18453	0.94457	8.75993
	A2->X (RR)	0.19228	0.94920	8.93506
	B1->X (RR)	0.16813	0.91065	8.61786
	B2->X (RR)	0.17637	0.91732	8.78610

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.43724	1.20096	6.25735
	A2->X (FF)	0.48147	1.25550	6.46458
	B1->X (FF)	0.38467	1.09775	5.62527
	B2->X (FF)	0.42113	1.13765	5.76581
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.55649	1.31472	6.65394
	A2->X (FF)	0.61401	1.38387	6.85295
	B1->X (FF)	0.50994	1.21280	6.10020
	B2->X (FF)	0.54759	1.25472	6.23282
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.53356	1.27192	6.73827
	A2->X (FF)	0.57212	1.31669	6.87300
	B1->X (FF)	0.47574	1.15792	6.12711
	B2->X (FF)	0.50568	1.18893	6.23367

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00509	0.00503	0.00509
	A1	0.00252	0.00248	0.00254
	A2	0.00556	0.00557	0.00557
	A2	0.00253	0.00254	0.00256
	B1	0.00399	0.00391	0.00407
	B1	0.00165	0.00157	0.00174
	B2	0.00439	0.00437	0.00441
	B2	0.00162	0.00159	0.00163
sky130_fd_sc_hs__a22o_2	A1	0.00633	0.00639	0.00647
	A1	0.00365	0.00371	0.00380
	A2	0.00679	0.00694	0.00696
	A2	0.00361	0.00376	0.00381
	B1	0.00523	0.00526	0.00541
	B1	0.00274	0.00277	0.00293
	B2	0.00564	0.00576	0.00582
	B2	0.00273	0.00294	0.00290
sky130_fd_sc_hs__a22o_4	A1	0.01234	0.01248	0.01272
	A1	0.00742	0.00757	0.00784
	A2	0.01333	0.01358	0.01368
	A2	0.00742	0.00767	0.00786
	B1	0.00991	0.00997	0.01032
	B1	0.00564	0.00570	0.00608
	B2	0.01078	0.01091	0.01104
	B2	0.00553	0.00566	0.00582

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00175	0.00167	0.00181
	A1	0.00445	0.00440	0.00437
	A2	0.00200	0.00207	0.00209
	A2	0.00510	0.00517	0.00513
	B1	0.00194	0.00192	0.00229
	B1	0.00420	0.00418	0.00442
	B2	0.00209	0.00211	0.00240
	B2	0.00476	0.00477	0.00497
sky130_fd_sc_hs__a22o_2	A1	0.00289	0.00299	0.00399
	A1	0.00575	0.00585	0.00583
	A2	0.00331	0.00354	0.00435
	A2	0.00658	0.00681	0.00680
	B1	0.00314	0.00321	0.00379
	B1	0.00556	0.00567	0.00592
	B2	0.00333	0.00349	0.00420
	B2	0.00613	0.00632	0.00654
sky130_fd_sc_hs__a22o_4	A1	0.00557	0.00596	0.00701
	A1	0.01076	0.01115	0.01124
	A2	0.00520	0.00567	0.00766
	A2	0.01177	0.01225	0.01232
	B1	0.00505	0.00534	0.00684
	B1	0.00971	0.00999	0.01056
	B2	0.00546	0.00576	0.00709
	B2	0.01097	0.01131	0.01182

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A2 * B1 * B2 * X)	0.00074	0.00073	0.00072
	(A2 * B1 * B2 * X)	-0.00067	-0.00071	-0.00071
	(!A2 * B1 * B2 * X)	0.00067	0.00068	0.00068
	(!A2 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(!A2 * B1 * !B2 * !X)	0.00027	0.00027	0.00025
	(!A2 * B1 * !B2 * !X)	-0.00093	-0.00093	-0.00097
	(!A2 * !B1 * !X)	0.00027	0.00027	0.00025
	(!A2 * !B1 * !X)	-0.00093	-0.00093	-0.00097
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00081	0.00080	0.00079
	(A2 * B1 * B2 * X)	-0.00066	-0.00070	-0.00070
	(!A2 * B1 * B2 * X)	0.00074	0.00075	0.00075
	(!A2 * B1 * B2 * X)	-0.00072	-0.00072	-0.00072
	(!A2 * B1 * !B2 * !X)	0.00029	0.00029	0.00027
	(!A2 * B1 * !B2 * !X)	-0.00093	-0.00093	-0.00097
	(!A2 * !B1 * !X)	0.00029	0.00029	0.00027
	(!A2 * !B1 * !X)	-0.00093	-0.00093	-0.00097
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00121	0.00117	0.00115
	(A2 * B1 * B2 * X)	-0.00138	-0.00146	-0.00146
	(!A2 * B1 * B2 * X)	0.00106	0.00107	0.00106
	(!A2 * B1 * B2 * X)	-0.00152	-0.00153	-0.00152
	(!A2 * B1 * !B2 * !X)	0.00041	0.00041	0.00039
	(!A2 * B1 * !B2 * !X)	-0.00176	-0.00176	-0.00180
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00039
	(!A2 * !B1 * !X)	-0.00176	-0.00176	-0.00180

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A2 * B1 * B2 * X)	-0.00072	-0.00072	-0.00072
	(A2 * B1 * B2 * X)	0.00071	0.00071	0.00071
	(!A2 * B1 * B2 * X)	-0.00065	-0.00068	-0.00068
	(!A2 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A2 * B1 * !B2 * !X)	-0.00024	-0.00023	-0.00024
	(!A2 * B1 * !B2 * !X)	0.00098	0.00097	0.00097
	(!A2 * !B1 * !X)	-0.00024	-0.00023	-0.00024
	(!A2 * !B1 * !X)	0.00098	0.00097	0.00097
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00079	-0.00079	-0.00078
	(A2 * B1 * B2 * X)	0.00071	0.00070	0.00070
	(!A2 * B1 * B2 * X)	-0.00072	-0.00075	-0.00075
	(!A2 * B1 * B2 * X)	0.00072	0.00073	0.00072
	(!A2 * B1 * !B2 * !X)	-0.00026	-0.00026	-0.00025
	(!A2 * B1 * !B2 * !X)	0.00099	0.00099	0.00098
	(!A2 * !B1 * !X)	-0.00026	-0.00026	-0.00025
	(!A2 * !B1 * !X)	0.00099	0.00099	0.00098
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00115	-0.00115	-0.00114
	(A2 * B1 * B2 * X)	0.00148	0.00146	0.00146
	(!A2 * B1 * B2 * X)	-0.00103	-0.00107	-0.00106
	(!A2 * B1 * B2 * X)	0.00152	0.00154	0.00153
	(!A2 * B1 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * B1 * !B2 * !X)	0.00180	0.00183	0.00180
	(!A2 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !X)	0.00180	0.00183	0.00180

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * B1 * B2 * X)	0.00073	0.00072	0.00071
	(A1 * B1 * B2 * X)	-0.00067	-0.00071	-0.00071
	(!A1 * B1 * B2 * X)	0.00066	0.00067	0.00066
	(!A1 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * B1 * !B2 * !X)	0.00066	0.00066	0.00066
	(!A1 * B1 * !B2 * !X)	-0.00073	-0.00073	-0.00073
	(!A1 * !B1 * !X)	0.00066	0.00067	0.00066
	(!A1 * !B1 * !X)	-0.00073	-0.00074	-0.00073
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00074	0.00073	0.00072
	(A1 * B1 * B2 * X)	-0.00070	-0.00074	-0.00074
	(!A1 * B1 * B2 * X)	0.00068	0.00068	0.00068
	(!A1 * B1 * B2 * X)	-0.00075	-0.00076	-0.00076
	(!A1 * B1 * !B2 * !X)	0.00067	0.00068	0.00067
	(!A1 * B1 * !B2 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !B1 * !X)	0.00067	0.00068	0.00067
	(!A1 * !B1 * !X)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00146	0.00142	0.00142
	(A1 * B1 * B2 * X)	-0.00135	-0.00143	-0.00144
	(!A1 * B1 * B2 * X)	0.00133	0.00135	0.00133
	(!A1 * B1 * B2 * X)	-0.00149	-0.00150	-0.00149
	(!A1 * B1 * !B2 * !X)	0.00130	0.00131	0.00130
	(!A1 * B1 * !B2 * !X)	-0.00152	-0.00152	-0.00152
	(!A1 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !B1 * !X)	-0.00152	-0.00152	-0.00152

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * B1 * B2 * X)	-0.00070	-0.00071	-0.00070
	(A1 * B1 * B2 * X)	0.00070	0.00071	0.00071
	(!A1 * B1 * B2 * X)	-0.00064	-0.00067	-0.00066
	(!A1 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A1 * B1 * !B2 * !X)	-0.00063	-0.00066	-0.00066
	(!A1 * B1 * !B2 * !X)	0.00074	0.00074	0.00074
	(!A1 * !B1 * !X)	-0.00063	-0.00066	-0.00066
	(!A1 * !B1 * !X)	0.00074	0.00074	0.00074
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * B2 * X)	0.00074	0.00074	0.00074
	(!A1 * B1 * B2 * X)	-0.00065	-0.00068	-0.00068
	(!A1 * B1 * B2 * X)	0.00075	0.00076	0.00076
	(!A1 * B1 * !B2 * !X)	-0.00065	-0.00068	-0.00067
	(!A1 * B1 * !B2 * !X)	0.00076	0.00077	0.00076
	(!A1 * !B1 * !X)	-0.00065	-0.00068	-0.00067
	(!A1 * !B1 * !X)	0.00076	0.00077	0.00076
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00141	-0.00141	-0.00141
	(A1 * B1 * B2 * X)	0.00143	0.00143	0.00144
	(!A1 * B1 * B2 * X)	-0.00130	-0.00135	-0.00133
	(!A1 * B1 * B2 * X)	0.00149	0.00151	0.00150
	(!A1 * B1 * !B2 * !X)	-0.00125	-0.00131	-0.00130
	(!A1 * B1 * !B2 * !X)	0.00155	0.00154	0.00153
	(!A1 * !B1 * !X)	-0.00125	-0.00131	-0.00130
	(!A1 * !B1 * !X)	0.00155	0.00154	0.00153

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B2 * X)	0.00068	0.00070	0.00069
	(A1 * A2 * B2 * X)	-0.00042	-0.00043	-0.00042
	(A1 * A2 * !B2 * X)	0.00064	0.00065	0.00064
	(A1 * A2 * !B2 * X)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * !B2 * !X)	0.00023	0.00023	0.00022
	(A1 * !A2 * !B2 * !X)	-0.00086	-0.00087	-0.00088
	(!A1 * !B2 * !X)	0.00024	0.00024	0.00023
	(!A1 * !B2 * !X)	-0.00086	-0.00087	-0.00088
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00077	0.00078	0.00077
	(A1 * A2 * B2 * X)	-0.00042	-0.00043	-0.00042
	(A1 * A2 * !B2 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * !B2 * X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * !B2 * !X)	0.00025	0.00025	0.00024
	(A1 * !A2 * !B2 * !X)	-0.00088	-0.00088	-0.00090
	(!A1 * !B2 * !X)	0.00025	0.00025	0.00024
	(!A1 * !B2 * !X)	-0.00088	-0.00088	-0.00090
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00127	0.00129	0.00127
	(A1 * A2 * B2 * X)	-0.00083	-0.00085	-0.00083
	(A1 * A2 * !B2 * X)	0.00119	0.00120	0.00119
	(A1 * A2 * !B2 * X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !B2 * !X)	0.00043	0.00043	0.00041
	(A1 * !A2 * !B2 * !X)	-0.00168	-0.00168	-0.00171
	(!A1 * !B2 * !X)	0.00043	0.00043	0.00041
	(!A1 * !B2 * !X)	-0.00168	-0.00167	-0.00171

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B2 * X)	-0.00060	-0.00060	-0.00067
	(A1 * A2 * B2 * X)	0.00051	0.00050	0.00044
	(A1 * A2 * !B2 * X)	-0.00063	-0.00065	-0.00064
	(A1 * A2 * !B2 * X)	0.00042	0.00043	0.00042
	(A1 * !A2 * !B2 * !X)	-0.00021	-0.00022	-0.00021
	(A1 * !A2 * !B2 * !X)	0.00088	0.00089	0.00088
	(!A1 * !B2 * !X)	-0.00022	-0.00023	-0.00022
	(!A1 * !B2 * !X)	0.00088	0.00089	0.00088
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00067	-0.00068	-0.00075
	(A1 * A2 * B2 * X)	0.00050	0.00050	0.00044
	(A1 * A2 * !B2 * X)	-0.00070	-0.00072	-0.00072
	(A1 * A2 * !B2 * X)	0.00042	0.00042	0.00042
	(A1 * !A2 * !B2 * !X)	-0.00023	-0.00024	-0.00023
	(A1 * !A2 * !B2 * !X)	0.00090	0.00092	0.00091
	(!A1 * !B2 * !X)	-0.00023	-0.00024	-0.00024
	(!A1 * !B2 * !X)	0.00090	0.00091	0.00091
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00108	-0.00109	-0.00124
	(A1 * A2 * B2 * X)	0.00100	0.00100	0.00087
	(A1 * A2 * !B2 * X)	-0.00115	-0.00120	-0.00119
	(A1 * A2 * !B2 * X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B2 * !X)	-0.00039	-0.00040	-0.00039
	(A1 * !A2 * !B2 * !X)	0.00171	0.00173	0.00172
	(!A1 * !B2 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * !B2 * !X)	0.00171	0.00173	0.00172

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B1 * X)	0.00073	0.00073	0.00072
	(A1 * A2 * B1 * X)	-0.00047	-0.00047	-0.00046
	(A1 * A2 * !B1 * X)	0.00068	0.00068	0.00068
	(A1 * A2 * !B1 * X)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * !B1 * !X)	0.00058	0.00058	0.00058
	(A1 * !A2 * !B1 * !X)	-0.00078	-0.00078	-0.00077
	(!A1 * !B1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !B1 * !X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00076	0.00076	0.00075
	(A1 * A2 * B1 * X)	-0.00045	-0.00044	-0.00044
	(A1 * A2 * !B1 * X)	0.00071	0.00071	0.00070
	(A1 * A2 * !B1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * !A2 * !B1 * !X)	0.00064	0.00064	0.00064
	(A1 * !A2 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * !X)	0.00065	0.00066	0.00065
	(!A1 * !B1 * !X)	-0.00074	-0.00074	-0.00074
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00139	0.00141	0.00139
	(A1 * A2 * B1 * X)	-0.00092	-0.00093	-0.00091
	(A1 * A2 * !B1 * X)	0.00132	0.00133	0.00132
	(A1 * A2 * !B1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !A2 * !B1 * !X)	0.00105	0.00105	0.00104
	(A1 * !A2 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !B1 * !X)	0.00104	0.00105	0.00104
	(!A1 * !B1 * !X)	-0.00170	-0.00171	-0.00170

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B1 * X)	-0.00063	-0.00064	-0.00071
	(A1 * A2 * B1 * X)	0.00054	0.00054	0.00048
	(A1 * A2 * !B1 * X)	-0.00067	-0.00068	-0.00068
	(A1 * A2 * !B1 * X)	0.00046	0.00046	0.00046
	(A1 * !A2 * !B1 * !X)	-0.00055	-0.00058	-0.00058
	(A1 * !A2 * !B1 * !X)	0.00080	0.00078	0.00078
	(!A1 * !B1 * !X)	-0.00059	-0.00062	-0.00062
	(!A1 * !B1 * !X)	0.00079	0.00078	0.00077
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00066	-0.00067	-0.00074
	(A1 * A2 * B1 * X)	0.00052	0.00052	0.00046
	(A1 * A2 * !B1 * X)	-0.00069	-0.00071	-0.00070
	(A1 * A2 * !B1 * X)	0.00044	0.00044	0.00044
	(A1 * !A2 * !B1 * !X)	-0.00061	-0.00064	-0.00064
	(A1 * !A2 * !B1 * !X)	0.00076	0.00075	0.00074
	(!A1 * !B1 * !X)	-0.00062	-0.00066	-0.00065
	(!A1 * !B1 * !X)	0.00076	0.00075	0.00074
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00119	-0.00121	-0.00136
	(A1 * A2 * B1 * X)	0.00108	0.00108	0.00096
	(A1 * A2 * !B1 * X)	-0.00129	-0.00133	-0.00132
	(A1 * A2 * !B1 * X)	0.00091	0.00091	0.00091
	(A1 * !A2 * !B1 * !X)	-0.00099	-0.00105	-0.00104
	(A1 * !A2 * !B1 * !X)	0.00172	0.00171	0.00170
	(!A1 * !B1 * !X)	-0.00099	-0.00105	-0.00104
	(!A1 * !B1 * !X)	0.00172	0.00171	0.00170

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1_N	A2_N	B1	B2	Y
0	0	x	x	0
x	1	0	x	1
x	1	1	0	1
x	1	1	1	0
1	x	0	x	1
1	x	1	0	1
1	x	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2oi_1	11.18880
sky130_fd_sc_hs__a2bb2oi_2	17.58240
sky130_fd_sc_hs__a2bb2oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__a2bb2oi_1	0.00215	0.00235	0.00247	0.00267	0.18531
sky130_fd_sc_hs__a2bb2oi_2	0.00236	0.00247	0.00479	0.00488	0.37270
sky130_fd_sc_hs__a2bb2oi_4	0.00369	0.00390	0.00951	0.00980	0.71335

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.01686	0.03583
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.02447	0.04619
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.04673	0.09237

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2bb2oi_1	A1_N->Y (RR)	0.27675	1.51801	8.94927
	A2_N->Y (RR)	0.27016	1.49275	8.80159
	B1->Y (FR)	0.27655	1.75016	12.88230
	B2->Y (FR)	0.22401	1.65831	12.60120
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.24335	1.28394	8.94604
	A2_N->Y (RR)	0.23853	1.26854	8.86328
	B1->Y (FR)	0.25291	1.51461	12.89090
	B2->Y (FR)	0.19192	1.44003	12.71290
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.27052	1.21209	9.44383
	A2_N->Y (RR)	0.25766	1.18066	9.29761
	B1->Y (FR)	0.24513	1.34690	12.85690
	B2->Y (FR)	0.18360	1.26897	12.62000

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2bb2oi_1	A1_N->Y (FF)	0.32776	1.00354	4.84228
	A2_N->Y (FF)	0.30291	0.92887	4.26592
	B1->Y (RF)	0.05712	0.62498	5.06835
	B2->Y (RF)	0.05134	0.64396	5.27737
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.43437	1.11799	5.35664
	A2_N->Y (FF)	0.40848	1.03775	4.82826
	B1->Y (RF)	0.05686	0.59330	5.26101
	B2->Y (RF)	0.04712	0.60561	5.50609
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.42007	1.08016	5.27906
	A2_N->Y (FF)	0.36889	0.97949	4.66303
	B1->Y (RF)	0.05569	0.54221	5.20626
	B2->Y (RF)	0.04722	0.56180	5.57371

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00429	0.00418	0.00423
	A1_N	0.00285	0.00273	0.00278
	A2_N	0.00367	0.00348	0.00358
	A2_N	0.00250	0.00230	0.00241
	B1	0.00073	0.00068	0.00067
	B1	0.00296	0.00292	0.00275
	B2	0.00044	0.00038	0.00037
	B2	0.00234	0.00228	0.00227
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00641	0.00632	0.00639
	A1_N	0.00539	0.00529	0.00537
	A2_N	0.00566	0.00549	0.00562
	A2_N	0.00499	0.00483	0.00495
	B1	0.00165	0.00153	0.00152
	B1	0.00611	0.00599	0.00584
	B2	0.00088	0.00079	0.00079
	B2	0.00448	0.00439	0.00406
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01156	0.01137	0.01144
	A1_N	0.01038	0.01020	0.01028
	A2_N	0.01010	0.00986	0.01006
	A2_N	0.00943	0.00918	0.00938
	B1	0.00305	0.00281	0.00280
	B1	0.01205	0.01181	0.01178
	B2	0.00170	0.00151	0.00155
	B2	0.00902	0.00881	0.00887

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00226	0.00232	0.00232
	A1_N	0.00368	0.00374	0.00374
	A2_N	0.00227	0.00224	0.00253
	A2_N	0.00340	0.00340	0.00366
	B1	0.00282	0.00276	0.00272
	B1	0.00059	0.00052	0.00048
	B2	0.00244	0.00236	0.00234
	B2	0.00058	0.00051	0.00047
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00370	0.00390	0.00397
	A1_N	0.00464	0.00487	0.00490
	A2_N	0.00383	0.00364	0.00427
	A2_N	0.00440	0.00453	0.00484
	B1	0.00535	0.00521	0.00527
	B1	0.00087	0.00073	0.00066
	B2	0.00441	0.00427	0.00419
	B2	0.00089	0.00071	0.00067
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.00774	0.00817	0.00837
	A1_N	0.00877	0.00926	0.00938
	A2_N	0.00754	0.00790	0.00843
	A2_N	0.00802	0.00837	0.00892
	B1	0.01060	0.01032	0.01034
	B1	0.00157	0.00126	0.00115
	B2	0.00874	0.00834	0.00828
	B2	0.00158	0.00120	0.00115

Passive power(pJ) for A1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00061	0.00056	0.00055
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00068	-0.00075	-0.00075
	(!A2_N * B1 * B2 * !Y)	0.00278	0.00266	0.00266
	(!A2_N * B1 * B2 * !Y)	0.00076	0.00064	0.00064
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00080	0.00074	0.00073
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00066	-0.00072	-0.00073
	(!A2_N * B1 * B2 * !Y)	0.00360	0.00350	0.00346
	(!A2_N * B1 * B2 * !Y)	0.00138	0.00126	0.00126
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00086	0.00078	0.00077
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00135	-0.00148	-0.00148
	(!A2_N * B1 * B2 * !Y)	0.00618	0.00593	0.00574
	(!A2_N * B1 * B2 * !Y)	0.00257	0.00232	0.00219

Passive power(pJ) for A1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00055	-0.00054	-0.00054
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00075	0.00075	0.00075
	(!A2_N * B1 * B2 * !Y)	0.00078	0.00072	0.00074
	(!A2_N * B1 * B2 * !Y)	0.00279	0.00273	0.00275
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00073	-0.00073	-0.00072
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00072	0.00073	0.00073
	(!A2_N * B1 * B2 * !Y)	0.00132	0.00124	0.00126
	(!A2_N * B1 * B2 * !Y)	0.00351	0.00344	0.00345
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00077	-0.00077	-0.00076
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00148	0.00148	0.00148
	(!A2_N * B1 * B2 * !Y)	0.00299	0.00287	0.00289
	(!A2_N * B1 * B2 * !Y)	0.00652	0.00640	0.00643

Passive power(pJ) for A2_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00065	0.00066	0.00065
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00044	-0.00044	-0.00044
	(!A1_N * B1 * B2 * !Y)	0.00219	0.00201	0.00209
	(!A1_N * B1 * B2 * !Y)	0.00043	0.00025	0.00033
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00073	0.00075	0.00074
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00043	-0.00044	-0.00043
	(!A1_N * B1 * B2 * !Y)	0.00292	0.00275	0.00279
	(!A1_N * B1 * B2 * !Y)	0.00103	0.00087	0.00092
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00107	0.00108	0.00106
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00089	-0.00090	-0.00088
	(!A1_N * B1 * B2 * !Y)	0.00472	0.00444	0.00443
	(!A1_N * B1 * B2 * !Y)	0.00160	0.00131	0.00133

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00062	-0.00062	-0.00065
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00047	0.00047	0.00045
	(!A1_N * B1 * B2 * !Y)	0.00079	0.00069	0.00095
	(!A1_N * B1 * B2 * !Y)	0.00254	0.00244	0.00270
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00070	-0.00070	-0.00073
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00047	0.00047	0.00044
	(!A1_N * B1 * B2 * !Y)	0.00144	0.00133	0.00158
	(!A1_N * B1 * B2 * !Y)	0.00330	0.00319	0.00343
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00094	-0.00095	-0.00105
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00100	0.00100	0.00092
	(!A1_N * B1 * B2 * !Y)	0.00278	0.00264	0.00303
	(!A1_N * B1 * B2 * !Y)	0.00585	0.00572	0.00609

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00068	0.00068	0.00067
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00082	-0.00082	-0.00082
	(!A1_N * !A2_N * B2 * !Y)	0.00074	0.00073	0.00072
	(!A1_N * !A2_N * B2 * !Y)	-0.00076	-0.00080	-0.00080
	(!A1_N * !A2_N * !B2 * !Y)	0.00068	0.00068	0.00067
	(!A1_N * !A2_N * !B2 * !Y)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00127	0.00129	0.00128
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00165	-0.00166	-0.00166
	(!A1_N * !A2_N * B2 * !Y)	0.00142	0.00140	0.00138
	(!A1_N * !A2_N * B2 * !Y)	-0.00155	-0.00163	-0.00162
	(!A1_N * !A2_N * !B2 * !Y)	0.00129	0.00129	0.00128
	(!A1_N * !A2_N * !B2 * !Y)	-0.00166	-0.00166	-0.00166
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00254	0.00257	0.00256
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00331	-0.00333	-0.00332
	(!A1_N * !A2_N * B2 * !Y)	0.00285	0.00280	0.00277
	(!A1_N * !A2_N * B2 * !Y)	-0.00309	-0.00325	-0.00324
	(!A1_N * !A2_N * !B2 * !Y)	0.00256	0.00258	0.00255
	(!A1_N * !A2_N * !B2 * !Y)	-0.00333	-0.00334	-0.00332

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00065	-0.00068	-0.00067
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00083	0.00082	0.00082
	(!A1_N * !A2_N * B2 * !Y)	-0.00072	-0.00072	-0.00072
	(!A1_N * !A2_N * B2 * !Y)	0.00080	0.00080	0.00080
	(!A1_N * !A2_N * !B2 * !Y)	-0.00066	-0.00068	-0.00067
	(!A1_N * !A2_N * !B2 * !Y)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00123	-0.00129	-0.00128
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00168	0.00167	0.00166
	(!A1_N * !A2_N * B2 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1_N * !A2_N * B2 * !Y)	0.00161	0.00163	0.00162
	(!A1_N * !A2_N * !B2 * !Y)	-0.00125	-0.00129	-0.00128
	(!A1_N * !A2_N * !B2 * !Y)	0.00166	0.00167	0.00166
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00244	-0.00257	-0.00256
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00339	0.00336	0.00333
	(!A1_N * !A2_N * B2 * !Y)	-0.00276	-0.00277	-0.00276
	(!A1_N * !A2_N * B2 * !Y)	0.00323	0.00325	0.00324
	(!A1_N * !A2_N * !B2 * !Y)	-0.00248	-0.00258	-0.00255
	(!A1_N * !A2_N * !B2 * !Y)	0.00333	0.00335	0.00333

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00033	0.00033	0.00032
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00098	-0.00098	-0.00100
	(!A1_N * !A2_N * B1 * !Y)	0.00073	0.00072	0.00071
	(!A1_N * !A2_N * B1 * !Y)	-0.00082	-0.00086	-0.00086
	(!A1_N * !A2_N * !B1 * !Y)	0.00066	0.00067	0.00067
	(!A1_N * !A2_N * !B1 * !Y)	-0.00087	-0.00088	-0.00088
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00056	0.00056	0.00052
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00189	-0.00190	-0.00195
	(!A1_N * !A2_N * B1 * !Y)	0.00141	0.00140	0.00138
	(!A1_N * !A2_N * B1 * !Y)	-0.00154	-0.00161	-0.00161
	(!A1_N * !A2_N * !B1 * !Y)	0.00128	0.00129	0.00129
	(!A1_N * !A2_N * !B1 * !Y)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00106	0.00105	0.00099
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00389	-0.00389	-0.00398
	(!A1_N * !A2_N * B1 * !Y)	0.00283	0.00278	0.00275
	(!A1_N * !A2_N * B1 * !Y)	-0.00311	-0.00328	-0.00326
	(!A1_N * !A2_N * !B1 * !Y)	0.00255	0.00257	0.00255
	(!A1_N * !A2_N * !B1 * !Y)	-0.00333	-0.00335	-0.00334

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00031	-0.00031	-0.00031
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00100	0.00100	0.00100
	(!A1_N * !A2_N * B1 * !Y)	-0.00071	-0.00072	-0.00071
	(!A1_N * !A2_N * B1 * !Y)	0.00086	0.00086	0.00086
	(!A1_N * !A2_N * !B1 * !Y)	-0.00065	-0.00067	-0.00067
	(!A1_N * !A2_N * !B1 * !Y)	0.00088	0.00088	0.00088
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00050	-0.00050	-0.00050
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00195	0.00196	0.00196
	(!A1_N * !A2_N * B1 * !Y)	-0.00138	-0.00138	-0.00138
	(!A1_N * !A2_N * B1 * !Y)	0.00160	0.00161	0.00161
	(!A1_N * !A2_N * !B1 * !Y)	-0.00124	-0.00129	-0.00129
	(!A1_N * !A2_N * !B1 * !Y)	0.00164	0.00166	0.00165
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00095	-0.00096	-0.00095
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00399	0.00401	0.00399
	(!A1_N * !A2_N * B1 * !Y)	-0.00275	-0.00276	-0.00274
	(!A1_N * !A2_N * B1 * !Y)	0.00325	0.00328	0.00326
	(!A1_N * !A2_N * !B1 * !Y)	-0.00245	-0.00257	-0.00255
	(!A1_N * !A2_N * !B1 * !Y)	0.00334	0.00337	0.00335

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1_N	A2_N	B1	B2	X
0	0	x	x	1
x	1	0	x	0
x	1	1	0	0
x	1	1	1	1
1	x	0	x	0
1	x	1	0	0
1	x	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2o_1	14.38560
sky130_fd_sc_hs__a2bb2o_2	15.98400
sky130_fd_sc_hs__a2bb2o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__a2bb2o_1	0.00211	0.00220	0.00232	0.00225	0.43282
sky130_fd_sc_hs__a2bb2o_2	0.00223	0.00230	0.00243	0.00263	0.81184
sky130_fd_sc_hs__a2bb2o_4	0.00243	0.00260	0.00436	0.00443	1.66454

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.02976	0.04968
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.03633	0.05268
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.05717	0.06918

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2bb2o_1	A1_N->X (FR)	0.44640	1.61021	10.82700
	A2_N->X (FR)	0.41488	1.53010	10.17030
	B1->X (RR)	0.17316	1.14485	8.58988
	B2->X (RR)	0.16568	1.12768	8.32935
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.45107	1.48454	10.85830
	A2_N->X (FR)	0.42110	1.40629	10.21670
	B1->X (RR)	0.16954	1.02598	8.75871
	B2->X (RR)	0.16453	1.02247	8.58147
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.55634	1.48804	11.29960
	A2_N->X (FR)	0.52809	1.41963	10.75720
	B1->X (RR)	0.18557	0.93453	8.79931
	B2->X (RR)	0.17606	0.92118	8.56558

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2bb2o_1	A1_N->X (RF)	0.42917	0.95208	3.51930
	A2_N->X (RF)	0.42045	0.92729	3.38484
	B1->X (FF)	0.42770	1.19094	6.17638
	B2->X (FF)	0.37154	1.12767	5.97046
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.54406	1.06839	3.62717
	A2_N->X (RF)	0.53554	1.04117	3.48893
	B1->X (FF)	0.54214	1.30779	6.56300
	B2->X (FF)	0.48726	1.24386	6.39355
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.50695	1.00485	3.67634
	A2_N->X (RF)	0.49727	0.97771	3.55682
	B1->X (FF)	0.52666	1.25744	6.62044
	B2->X (FF)	0.46237	1.18603	6.42408

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00399	0.00403	0.00393
	A1_N	0.00528	0.00531	0.00526
	A2_N	0.00397	0.00395	0.00413
	A2_N	0.00495	0.00492	0.00512
	B1	0.00447	0.00447	0.00447
	B1	0.00223	0.00223	0.00223
	B2	0.00401	0.00396	0.00404
	B2	0.00223	0.00219	0.00227
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00522	0.00541	0.00536
	A1_N	0.00662	0.00681	0.00683
	A2_N	0.00526	0.00540	0.00561
	A2_N	0.00628	0.00641	0.00663
	B1	0.00577	0.00590	0.00593
	B1	0.00352	0.00364	0.00370
	B2	0.00538	0.00543	0.00553
	B2	0.00352	0.00358	0.00368
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.00851	0.00896	0.00899
	A1_N	0.00954	0.01000	0.01008
	A2_N	0.00848	0.00884	0.00911
	A2_N	0.00917	0.00955	0.00996
	B1	0.01053	0.01079	0.01091
	B1	0.00632	0.00659	0.00679
	B2	0.00968	0.00982	0.01012
	B2	0.00632	0.00647	0.00681

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00565	0.00552	0.00557
	A1_N	0.00435	0.00427	0.00425
	A2_N	0.00498	0.00487	0.00497
	A2_N	0.00396	0.00385	0.00392
	B1	0.00218	0.00220	0.00239
	B1	0.00440	0.00447	0.00445
	B2	0.00206	0.00209	0.00211
	B2	0.00386	0.00388	0.00387
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00677	0.00684	0.00697
	A1_N	0.00535	0.00547	0.00550
	A2_N	0.00610	0.00615	0.00630
	A2_N	0.00502	0.00509	0.00520
	B1	0.00325	0.00349	0.00352
	B1	0.00548	0.00573	0.00574
	B2	0.00309	0.00324	0.00331
	B2	0.00497	0.00516	0.00517
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01142	0.01185	0.01200
	A1_N	0.01030	0.01074	0.01085
	A2_N	0.01067	0.01110	0.01142
	A2_N	0.00986	0.01030	0.01051
	B1	0.00687	0.00734	0.00834
	B1	0.01102	0.01150	0.01156
	B2	0.00635	0.00672	0.00728
	B2	0.00975	0.01018	0.01025

Passive power(pJ) for A1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00065	0.00060	0.00059
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00063	-0.00070	-0.00071
	(!A2_N * B1 * B2 * X)	0.00268	0.00256	0.00255
	(!A2_N * B1 * B2 * X)	0.00073	0.00062	0.00063
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00067	0.00062	0.00061
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00068	-0.00075	-0.00075
	(!A2_N * B1 * B2 * X)	0.00274	0.00262	0.00261
	(!A2_N * B1 * B2 * X)	0.00069	0.00056	0.00057
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00074	0.00070	0.00069
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00073	-0.00080	-0.00080
	(!A2_N * B1 * B2 * X)	0.00362	0.00349	0.00347
	(!A2_N * B1 * B2 * X)	0.00132	0.00118	0.00119

Passive power(pJ) for A1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00059	-0.00058	-0.00058
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00071	0.00070	0.00071
	(!A2_N * B1 * B2 * X)	0.00078	0.00072	0.00074
	(!A2_N * B1 * B2 * X)	0.00270	0.00265	0.00267
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00061	-0.00061	-0.00060
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00075	0.00075	0.00075
	(!A2_N * B1 * B2 * X)	0.00072	0.00066	0.00068
	(!A2_N * B1 * B2 * X)	0.00276	0.00270	0.00272
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00069	-0.00068	-0.00068
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00080	0.00080	0.00080
	(!A2_N * B1 * B2 * X)	0.00067	0.00059	0.00060
	(!A2_N * B1 * B2 * X)	0.00294	0.00286	0.00287

Passive power(pJ) for A2_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00065	0.00066	0.00065
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(!A1_N * B1 * B2 * X)	0.00204	0.00188	0.00197
	(!A1_N * B1 * B2 * X)	0.00039	0.00022	0.00031
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00066	0.00067	0.00066
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00042	-0.00042	-0.00041
	(!A1_N * B1 * B2 * X)	0.00209	0.00191	0.00199
	(!A1_N * B1 * B2 * X)	0.00038	0.00020	0.00029
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00078	0.00079	0.00078
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(!A1_N * B1 * B2 * X)	0.00295	0.00276	0.00282
	(!A1_N * B1 * B2 * X)	0.00096	0.00076	0.00084

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00061	-0.00062	-0.00064
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00045	0.00045	0.00043
	(!A1_N * B1 * B2 * X)	0.00078	0.00070	0.00096
	(!A1_N * B1 * B2 * X)	0.00242	0.00235	0.00260
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00062	-0.00063	-0.00065
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00045	0.00045	0.00042
	(!A1_N * B1 * B2 * X)	0.00077	0.00068	0.00094
	(!A1_N * B1 * B2 * X)	0.00246	0.00237	0.00263
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00074	-0.00074	-0.00077
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00050	0.00050	0.00047
	(!A1_N * B1 * B2 * X)	0.00068	0.00057	0.00078
	(!A1_N * B1 * B2 * X)	0.00264	0.00254	0.00275

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00072	0.00072	0.00072
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00075	-0.00075	-0.00075
	(!A1_N * !A2_N * B2 * X)	0.00077	0.00076	0.00075
	(!A1_N * !A2_N * B2 * X)	-0.00070	-0.00074	-0.00074
	(!A1_N * !A2_N * !B2 * X)	0.00071	0.00072	0.00071
	(!A1_N * !A2_N * !B2 * X)	-0.00075	-0.00075	-0.00075
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00067	0.00068	0.00068
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00076	-0.00076	-0.00076
	(!A1_N * !A2_N * B2 * X)	0.00076	0.00073	0.00073
	(!A1_N * !A2_N * B2 * X)	-0.00071	-0.00074	-0.00074
	(!A1_N * !A2_N * !B2 * X)	0.00067	0.00068	0.00067
	(!A1_N * !A2_N * !B2 * X)	-0.00076	-0.00077	-0.00076
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00112	0.00114	0.00113
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00152	-0.00154	-0.00153
	(!A1_N * !A2_N * B2 * X)	0.00127	0.00124	0.00122
	(!A1_N * !A2_N * B2 * X)	-0.00142	-0.00150	-0.00150
	(!A1_N * !A2_N * !B2 * X)	0.00114	0.00114	0.00114
	(!A1_N * !A2_N * !B2 * X)	-0.00153	-0.00153	-0.00153

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00069	-0.00072	-0.00072
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00076	0.00075	0.00075
	(!A1_N * !A2_N * B2 * X)	-0.00075	-0.00075	-0.00075
	(!A1_N * !A2_N * B2 * X)	0.00074	0.00074	0.00074
	(!A1_N * !A2_N * !B2 * X)	-0.00070	-0.00072	-0.00071
	(!A1_N * !A2_N * !B2 * X)	0.00075	0.00076	0.00075
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00065	-0.00068	-0.00068
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00078	0.00077	0.00077
	(!A1_N * !A2_N * B2 * X)	-0.00073	-0.00072	-0.00072
	(!A1_N * !A2_N * B2 * X)	0.00074	0.00074	0.00074
	(!A1_N * !A2_N * !B2 * X)	-0.00066	-0.00068	-0.00067
	(!A1_N * !A2_N * !B2 * X)	0.00076	0.00077	0.00077
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00108	-0.00114	-0.00113
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00156	0.00154	0.00154
	(!A1_N * !A2_N * B2 * X)	-0.00121	-0.00122	-0.00122
	(!A1_N * !A2_N * B2 * X)	0.00148	0.00150	0.00150
	(!A1_N * !A2_N * !B2 * X)	-0.00110	-0.00114	-0.00114
	(!A1_N * !A2_N * !B2 * X)	0.00153	0.00154	0.00153

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00030	0.00030	0.00029
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00085	-0.00085	-0.00087
	(!A1_N * !A2_N * B1 * X)	0.00060	0.00058	0.00057
	(!A1_N * !A2_N * B1 * X)	-0.00077	-0.00081	-0.00081
	(!A1_N * !A2_N * !B1 * X)	0.00054	0.00054	0.00054
	(!A1_N * !A2_N * !B1 * X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00030	0.00030	0.00029
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00093	-0.00093	-0.00095
	(!A1_N * !A2_N * B1 * X)	0.00075	0.00072	0.00071
	(!A1_N * !A2_N * B1 * X)	-0.00076	-0.00079	-0.00080
	(!A1_N * !A2_N * !B1 * X)	0.00066	0.00066	0.00066
	(!A1_N * !A2_N * !B1 * X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00051	0.00051	0.00048
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00172	-0.00172	-0.00177
	(!A1_N * !A2_N * B1 * X)	0.00127	0.00124	0.00123
	(!A1_N * !A2_N * B1 * X)	-0.00142	-0.00150	-0.00150
	(!A1_N * !A2_N * !B1 * X)	0.00113	0.00114	0.00113
	(!A1_N * !A2_N * !B1 * X)	-0.00152	-0.00153	-0.00153

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00028	-0.00029	-0.00028
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00087	0.00089	0.00087
	(!A1_N * !A2_N * B1 * X)	-0.00058	-0.00057	-0.00057
	(!A1_N * !A2_N * B1 * X)	0.00081	0.00081	0.00081
	(!A1_N * !A2_N * !B1 * X)	-0.00052	-0.00054	-0.00054
	(!A1_N * !A2_N * !B1 * X)	0.00082	0.00083	0.00082
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00028	-0.00028	-0.00028
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00095	0.00097	0.00096
	(!A1_N * !A2_N * B1 * X)	-0.00072	-0.00071	-0.00071
	(!A1_N * !A2_N * B1 * X)	0.00080	0.00079	0.00080
	(!A1_N * !A2_N * !B1 * X)	-0.00064	-0.00066	-0.00066
	(!A1_N * !A2_N * !B1 * X)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00178	0.00181	0.00178
	(!A1_N * !A2_N * B1 * X)	-0.00123	-0.00122	-0.00122
	(!A1_N * !A2_N * B1 * X)	0.00151	0.00150	0.00150
	(!A1_N * !A2_N * !B1 * X)	-0.00109	-0.00114	-0.00113
	(!A1_N * !A2_N * !B1 * X)	0.00152	0.00154	0.00153

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	C1	Y
0	x	x	0	0	1
0	x	x	x	1	0
x	x	x	1	x	0
1	0	x	0	0	1
1	0	x	x	1	0
1	1	0	0	0	1
1	1	0	x	1	0
1	1	1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311oi_1	11.18880
sky130_fd_sc_hs__a311oi_2	19.18080
sky130_fd_sc_hs__a311oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__a311oi_1	0.00267	0.00271	0.00262	0.00280	0.00266	0.11771
sky130_fd_sc_hs__a311oi_2	0.00505	0.00480	0.00462	0.00401	0.00391	0.23054
sky130_fd_sc_hs__a311oi_4	0.00975	0.00935	0.00936	0.00749	0.00763	0.43377

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311oi_1	0.00000	0.00568	0.01377
sky130_fd_sc_hs__a311oi_2	0.00000	0.01015	0.02754
sky130_fd_sc_hs__a311oi_4	0.00000	0.02031	0.05508

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (FR)	0.46607	2.05650	12.45630
	A2->Y (FR)	0.56721	2.18616	12.71550
	A3->Y (FR)	0.61665	2.23264	12.68150
	B1->Y (FR)	0.50305	2.09845	12.90630
	C1->Y (FR)	0.40270	1.93808	12.30710
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.38540	1.76678	12.49770
	A2->Y (FR)	0.47314	1.86264	12.62920
	A3->Y (FR)	0.55244	1.95418	12.73280
	B1->Y (FR)	0.47757	1.85488	12.91500
	C1->Y (FR)	0.35479	1.67098	12.32040
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.35489	1.53687	12.25310
	A2->Y (FR)	0.45022	1.64359	12.45210
	A3->Y (FR)	0.53907	1.75263	12.64910
	B1->Y (FR)	0.45785	1.64965	12.87980
	C1->Y (FR)	0.34206	1.47512	12.28770

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.08182	0.69404	4.97335
	A2->Y (RF)	0.09644	0.69411	4.91961
	A3->Y (RF)	0.10145	0.65951	4.54981
	B1->Y (RF)	0.04308	0.51091	3.87547
	C1->Y (RF)	0.03990	0.50103	3.86204
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.06780	0.66056	5.23449
	A2->Y (RF)	0.08244	0.64427	5.01050
	A3->Y (RF)	0.09061	0.61739	4.63134
	B1->Y (RF)	0.05071	0.59131	4.92677
	C1->Y (RF)	0.04362	0.57143	4.89508
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.06497	0.61226	5.26384
	A2->Y (RF)	0.08078	0.60095	5.01833
	A3->Y (RF)	0.08886	0.56850	4.56407
	B1->Y (RF)	0.04672	0.53807	4.83438
	C1->Y (RF)	0.04211	0.53258	4.95670

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00036	0.00026	0.00023
	A1	0.00352	0.00342	0.00341
	A2	0.00066	0.00056	0.00053
	A2	0.00425	0.00415	0.00412
	A3	0.00079	0.00071	0.00068
	A3	0.00479	0.00472	0.00469
	B1	0.00086	0.00076	0.00074
	B1	0.00437	0.00428	0.00424
	C1	0.00082	0.00072	0.00074
	C1	0.00398	0.00389	0.00390
sky130_fd_sc_hs__a311oi_2	A1	0.00014	-0.00002	-0.00004
	A1	0.00593	0.00577	0.00577
	A2	0.00074	0.00058	0.00054
	A2	0.00729	0.00712	0.00710
	A3	0.00138	0.00125	0.00120
	A3	0.00865	0.00852	0.00847
	B1	0.00183	0.00174	0.00170
	B1	0.00751	0.00742	0.00717
	C1	0.00180	0.00168	0.00170
	C1	0.00669	0.00657	0.00658

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00002	-0.00033	-0.00034
	A1	0.01125	0.01096	0.01099
	A2	0.00117	0.00080	0.00077
	A2	0.01404	0.01369	0.01365
	A3	0.00232	0.00204	0.00197
	A3	0.01682	0.01653	0.01644
	B1	0.00322	0.00305	0.00300
	B1	0.01437	0.01420	0.01411
	C1	0.00317	0.00293	0.00299
	C1	0.01283	0.01257	0.01263

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00412	0.00402	0.00396
	A1	0.00106	0.00096	0.00090
	A2	0.00458	0.00449	0.00440
	A2	0.00105	0.00097	0.00089
	A3	0.00503	0.00496	0.00486
	A3	0.00103	0.00095	0.00087
	B1	0.00401	0.00395	0.00390
	B1	0.00044	0.00037	0.00033
	C1	0.00323	0.00322	0.00320
	C1	-0.00001	-0.00004	-0.00006

sky130_fd_sc_hs__a311oi_2	**A1**	0.00753	0.00733	0.00724
	A1	0.00203	0.00182	0.00168
	A2	0.00839	0.00825	0.00805
	A2	0.00203	0.00186	0.00170
	A3	0.00922	0.00907	0.00887
	A3	0.00203	0.00186	0.00169
	B1	0.00643	0.00630	0.00624
	B1	0.00062	0.00049	0.00041
	C1	0.00456	0.00453	0.00453
	C1	-0.00053	-0.00057	-0.00057
sky130_fd_sc_hs__a311oi_4	**A1**	0.01452	0.01410	0.01389
	A1	0.00377	0.00332	0.00309
	A2	0.01626	0.01590	0.01555
	A2	0.00374	0.00341	0.00311
	A3	0.01810	0.01776	0.01740
	A3	0.00373	0.00339	0.00307
	B1	0.01243	0.01213	0.01206
	B1	0.00099	0.00070	0.00060
	C1	0.00897	0.00886	0.00898
	C1	-0.00111	-0.00123	-0.00116

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A2 * A3 * B1 * C1 * !Y)**	0.00073	0.00073	0.00072
	(A2 * A3 * B1 * C1 * !Y)	-0.00075	-0.00077	-0.00077
	(A2 * A3 * B1 * !C1 * !Y)	0.00073	0.00073	0.00072
	(A2 * A3 * B1 * !C1 * !Y)	-0.00075	-0.00078	-0.00077
	(A2 * A3 * !B1 * C1 * !Y)	0.00072	0.00072	0.00072
	(A2 * A3 * !B1 * C1 * !Y)	-0.00072	-0.00076	-0.00075
	(A2 * !A3 * B1 * C1 * !Y)	0.00065	0.00066	0.00065
	(A2 * !A3 * B1 * C1 * !Y)	-0.00080	-0.00081	-0.00080
	(A2 * !A3 * B1 * !C1 * !Y)	0.00065	0.00066	0.00065
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00081	-0.00081	-0.00080
	(A2 * !A3 * !B1 * C1 * !Y)	0.00065	0.00066	0.00065
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00081	-0.00081	-0.00080
	(A2 * !A3 * !B1 * !C1 * Y)	0.00026	0.00026	0.00023
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00094	-0.00095	-0.00099
	(!A2 * B1 * C1 * !Y)	0.00067	0.00067	0.00067
	(!A2 * B1 * C1 * !Y)	-0.00081	-0.00080	-0.00080
	(!A2 * B1 * !C1 * !Y)	0.00067	0.00067	0.00067
	(!A2 * B1 * !C1 * !Y)	-0.00080	-0.00081	-0.00080
	(!A2 * !B1 * C1 * !Y)	0.00067	0.00068	0.00067
	(!A2 * !B1 * C1 * !Y)	-0.00080	-0.00081	-0.00080
	(!A2 * !B1 * !C1 * Y)	0.00026	0.00026	0.00025
	(!A2 * !B1 * !C1 * Y)	-0.00098	-0.00098	-0.00100

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00140	0.00141	0.00140
	(A2 * A3 * B1 * C1 * !Y)	-0.00157	-0.00162	-0.00161
	(A2 * A3 * B1 * !C1 * !Y)	0.00140	0.00141	0.00140
	(A2 * A3 * B1 * !C1 * !Y)	-0.00157	-0.00163	-0.00161
	(A2 * A3 * !B1 * C1 * !Y)	0.00141	0.00141	0.00140
	(A2 * A3 * !B1 * C1 * !Y)	-0.00151	-0.00156	-0.00156
	(A2 * !A3 * B1 * C1 * !Y)	0.00127	0.00128	0.00127
	(A2 * !A3 * B1 * C1 * !Y)	-0.00169	-0.00169	-0.00169
	(A2 * !A3 * B1 * !C1 * !Y)	0.00127	0.00128	0.00127
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00168	-0.00169	-0.00169
	(A2 * !A3 * !B1 * C1 * !Y)	0.00127	0.00128	0.00127
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00168	-0.00169	-0.00169
	(A2 * !A3 * !B1 * !C1 * Y)	0.00057	0.00057	0.00051
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00188	-0.00188	-0.00200
	(!A2 * B1 * C1 * !Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * C1 * !Y)	-0.00169	-0.00169	-0.00169
	(!A2 * B1 * !C1 * !Y)	0.00131	0.00131	0.00131
	(!A2 * B1 * !C1 * !Y)	-0.00168	-0.00169	-0.00169
	(!A2 * !B1 * C1 * !Y)	0.00131	0.00131	0.00131
	(!A2 * !B1 * C1 * !Y)	-0.00168	-0.00169	-0.00169
	(!A2 * !B1 * !C1 * Y)	0.00055	0.00054	0.00052
	(!A2 * !B1 * !C1 * Y)	-0.00197	-0.00197	-0.00202

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00273	0.00276	0.00273
	(A2 * A3 * B1 * C1 * !Y)	-0.00310	-0.00320	-0.00320
	(A2 * A3 * B1 * !C1 * !Y)	0.00273	0.00276	0.00273
	(A2 * A3 * B1 * !C1 * !Y)	-0.00310	-0.00321	-0.00320
	(A2 * A3 * !B1 * C1 * !Y)	0.00275	0.00276	0.00274
	(A2 * A3 * !B1 * C1 * !Y)	-0.00297	-0.00310	-0.00308
	(A2 * !A3 * B1 * C1 * !Y)	0.00247	0.00247	0.00247
	(A2 * !A3 * B1 * C1 * !Y)	-0.00334	-0.00334	-0.00333
	(A2 * !A3 * B1 * !C1 * !Y)	0.00246	0.00247	0.00246
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00333	-0.00334	-0.00333
	(A2 * !A3 * !B1 * C1 * !Y)	0.00245	0.00246	0.00245
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00334	-0.00334	-0.00333
	(A2 * !A3 * !B1 * !C1 * Y)	0.00107	0.00107	0.00096
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00369	-0.00372	-0.00395
	(!A2 * B1 * C1 * !Y)	0.00256	0.00258	0.00256
	(!A2 * B1 * C1 * !Y)	-0.00334	-0.00335	-0.00333
	(!A2 * B1 * !C1 * !Y)	0.00255	0.00257	0.00255
	(!A2 * B1 * !C1 * !Y)	-0.00334	-0.00335	-0.00333
	(!A2 * !B1 * C1 * !Y)	0.00255	0.00256	0.00255
	(!A2 * !B1 * C1 * !Y)	-0.00333	-0.00335	-0.00333
	(!A2 * !B1 * !C1 * Y)	0.00104	0.00104	0.00099
	(!A2 * !B1 * !C1 * Y)	-0.00386	-0.00389	-0.00398

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A2 * A3 * B1 * C1 * !Y)**	-0.00072	-0.00072	-0.00072
	(A2 * A3 * B1 * C1 * !Y)	0.00077	0.00077	0.00077
	(A2 * A3 * B1 * !C1 * !Y)	-0.00072	-0.00072	-0.00072
	(A2 * A3 * B1 * !C1 * !Y)	0.00077	0.00078	0.00077
	(A2 * A3 * !B1 * C1 * !Y)	-0.00072	-0.00072	-0.00072
	(A2 * A3 * !B1 * C1 * !Y)	0.00075	0.00076	0.00075
	(A2 * !A3 * B1 * C1 * !Y)	-0.00061	-0.00066	-0.00065
	(A2 * !A3 * B1 * C1 * !Y)	0.00080	0.00081	0.00081
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00061	-0.00066	-0.00065
	(A2 * !A3 * B1 * !C1 * !Y)	0.00081	0.00081	0.00081
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00061	-0.00066	-0.00065
	(A2 * !A3 * !B1 * C1 * !Y)	0.00081	0.00081	0.00081
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00023	-0.00023	-0.00023
	(A2 * !A3 * !B1 * !C1 * Y)	0.00100	0.00102	0.00100
	(!A2 * B1 * C1 * !Y)	-0.00065	-0.00067	-0.00067
	(!A2 * B1 * C1 * !Y)	0.00081	0.00081	0.00081
	(!A2 * B1 * !C1 * !Y)	-0.00065	-0.00067	-0.00067
	(!A2 * B1 * !C1 * !Y)	0.00080	0.00081	0.00081
	(!A2 * !B1 * C1 * !Y)	-0.00065	-0.00068	-0.00067
	(!A2 * !B1 * C1 * !Y)	0.00080	0.00081	0.00081
	(!A2 * !B1 * !C1 * Y)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * !C1 * Y)	0.00100	0.00102	0.00100

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00139	-0.00140	-0.00140
	(A2 * A3 * B1 * C1 * !Y)	0.00161	0.00162	0.00161
	(A2 * A3 * B1 * !C1 * !Y)	-0.00140	-0.00140	-0.00140
	(A2 * A3 * B1 * !C1 * !Y)	0.00161	0.00163	0.00161
	(A2 * A3 * !B1 * C1 * !Y)	-0.00140	-0.00140	-0.00140
	(A2 * A3 * !B1 * C1 * !Y)	0.00155	0.00156	0.00156
	(A2 * !A3 * B1 * C1 * !Y)	-0.00119	-0.00128	-0.00127
	(A2 * !A3 * B1 * C1 * !Y)	0.00169	0.00170	0.00169
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00117	-0.00128	-0.00127
	(A2 * !A3 * B1 * !C1 * !Y)	0.00168	0.00170	0.00169
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00117	-0.00128	-0.00127
	(A2 * !A3 * !B1 * C1 * !Y)	0.00168	0.00170	0.00169
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00049	-0.00049	-0.00048
	(A2 * !A3 * !B1 * !C1 * Y)	0.00203	0.00205	0.00202
	(!A2 * B1 * C1 * !Y)	-0.00127	-0.00132	-0.00131
	(!A2 * B1 * C1 * !Y)	0.00169	0.00170	0.00169
	(!A2 * B1 * !C1 * !Y)	-0.00126	-0.00131	-0.00131
	(!A2 * B1 * !C1 * !Y)	0.00168	0.00171	0.00169
	(!A2 * !B1 * C1 * !Y)	-0.00126	-0.00131	-0.00131
	(!A2 * !B1 * C1 * !Y)	0.00168	0.00171	0.00169
	(!A2 * !B1 * !C1 * Y)	-0.00050	-0.00051	-0.00050
	(!A2 * !B1 * !C1 * Y)	0.00202	0.00205	0.00202

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00273	-0.00273	-0.00273
	(A2 * A3 * B1 * C1 * !Y)	0.00321	0.00320	0.00320
	(A2 * A3 * B1 * !C1 * !Y)	-0.00273	-0.00273	-0.00273
	(A2 * A3 * B1 * !C1 * !Y)	0.00319	0.00321	0.00320
	(A2 * A3 * !B1 * C1 * !Y)	-0.00273	-0.00275	-0.00273
	(A2 * A3 * !B1 * C1 * !Y)	0.00307	0.00310	0.00308
	(A2 * !A3 * B1 * C1 * !Y)	-0.00230	-0.00247	-0.00247
	(A2 * !A3 * B1 * C1 * !Y)	0.00336	0.00337	0.00334
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00227	-0.00247	-0.00246
	(A2 * !A3 * B1 * !C1 * !Y)	0.00336	0.00337	0.00334
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00225	-0.00246	-0.00245
	(A2 * !A3 * !B1 * C1 * !Y)	0.00336	0.00337	0.00334
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00093	-0.00092	-0.00092
	(A2 * !A3 * !B1 * !C1 * Y)	0.00401	0.00396	0.00398
	(!A2 * B1 * C1 * !Y)	-0.00247	-0.00258	-0.00256
	(!A2 * B1 * C1 * !Y)	0.00334	0.00337	0.00334
	(!A2 * B1 * !C1 * !Y)	-0.00246	-0.00257	-0.00255
	(!A2 * B1 * !C1 * !Y)	0.00334	0.00339	0.00334
	(!A2 * !B1 * C1 * !Y)	-0.00245	-0.00256	-0.00255
	(!A2 * !B1 * C1 * !Y)	0.00333	0.00339	0.00334
	(!A2 * !B1 * !C1 * Y)	-0.00096	-0.00095	-0.00095
	(!A2 * !B1 * !C1 * Y)	0.00400	0.00397	0.00398

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A3 * B1 * C1 * !Y)**	0.00076	0.00076	0.00075
	(A1 * A3 * B1 * C1 * !Y)	-0.00075	-0.00078	-0.00077
	(A1 * A3 * B1 * !C1 * !Y)	0.00076	0.00076	0.00075
	(A1 * A3 * B1 * !C1 * !Y)	-0.00075	-0.00078	-0.00077
	(A1 * A3 * !B1 * C1 * !Y)	0.00075	0.00076	0.00075
	(A1 * A3 * !B1 * C1 * !Y)	-0.00072	-0.00076	-0.00075
	(A1 * !A3 * B1 * C1 * !Y)	0.00070	0.00070	0.00070
	(A1 * !A3 * B1 * C1 * !Y)	-0.00080	-0.00081	-0.00080
	(A1 * !A3 * B1 * !C1 * !Y)	0.00070	0.00070	0.00070
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00080	-0.00081	-0.00080
	(A1 * !A3 * !B1 * C1 * !Y)	0.00069	0.00070	0.00070
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00080	-0.00081	-0.00080
	(A1 * !A3 * !B1 * !C1 * Y)	0.00030	0.00030	0.00030
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * B1 * !Y)	0.00070	0.00071	0.00070
	(!A1 * A3 * B1 * !Y)	-0.00080	-0.00081	-0.00080
	(!A1 * A3 * !B1 * C1 * !Y)	0.00071	0.00071	0.00070
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00081	-0.00081	-0.00080
	(!A1 * A3 * !B1 * !C1 * Y)	0.00061	0.00061	0.00061
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * B1 * !Y)	0.00046	0.00046	0.00046
	(!A1 * !A3 * B1 * !Y)	-0.00081	-0.00081	-0.00080
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00046	0.00046	0.00046
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00081	-0.00081	-0.00080
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00034	0.00034	0.00034
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00091	-0.00091	-0.00090

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00138	0.00139	0.00138
	(A1 * A3 * B1 * C1 * !Y)	-0.00155	-0.00160	-0.00159
	(A1 * A3 * B1 * !C1 * !Y)	0.00138	0.00139	0.00138
	(A1 * A3 * B1 * !C1 * !Y)	-0.00155	-0.00160	-0.00159
	(A1 * A3 * !B1 * C1 * !Y)	0.00139	0.00139	0.00138
	(A1 * A3 * !B1 * C1 * !Y)	-0.00149	-0.00155	-0.00153
	(A1 * !A3 * B1 * C1 * !Y)	0.00127	0.00128	0.00128
	(A1 * !A3 * B1 * C1 * !Y)	-0.00167	-0.00167	-0.00167
	(A1 * !A3 * B1 * !C1 * !Y)	0.00127	0.00128	0.00127
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00166	-0.00167	-0.00167
	(A1 * !A3 * !B1 * C1 * !Y)	0.00127	0.00128	0.00127
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00166	-0.00167	-0.00167
	(A1 * !A3 * !B1 * !C1 * Y)	0.00067	0.00067	0.00067
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00167	-0.00167	-0.00166
	(!A1 * A3 * B1 * !Y)	0.00128	0.00130	0.00129
	(!A1 * A3 * B1 * !Y)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * !B1 * C1 * !Y)	0.00129	0.00130	0.00129
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * !B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00167	-0.00168	-0.00167
	(!A1 * !A3 * B1 * !Y)	0.00081	0.00081	0.00080
	(!A1 * !A3 * B1 * !Y)	-0.00167	-0.00167	-0.00167
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00081	0.00081	0.00080
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00167	-0.00167	-0.00167
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00075	0.00075	0.00075
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00169	-0.00168	-0.00168

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00273	0.00276	0.00274
	(A1 * A3 * B1 * C1 * !Y)	-0.00307	-0.00316	-0.00317
	(A1 * A3 * B1 * !C1 * !Y)	0.00273	0.00276	0.00274
	(A1 * A3 * B1 * !C1 * !Y)	-0.00306	-0.00320	-0.00317
	(A1 * A3 * !B1 * C1 * !Y)	0.00275	0.00277	0.00275
	(A1 * A3 * !B1 * C1 * !Y)	-0.00294	-0.00306	-0.00305
	(A1 * !A3 * B1 * C1 * !Y)	0.00251	0.00253	0.00252
	(A1 * !A3 * B1 * C1 * !Y)	-0.00330	-0.00332	-0.00331
	(A1 * !A3 * B1 * !C1 * !Y)	0.00251	0.00253	0.00252
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00330	-0.00332	-0.00331
	(A1 * !A3 * !B1 * C1 * !Y)	0.00250	0.00252	0.00251
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00330	-0.00332	-0.00331
	(A1 * !A3 * !B1 * !C1 * Y)	0.00129	0.00129	0.00129
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00332	-0.00331	-0.00329
	(!A1 * A3 * B1 * !Y)	0.00256	0.00257	0.00256
	(!A1 * A3 * B1 * !Y)	-0.00331	-0.00331	-0.00331
	(!A1 * A3 * !B1 * C1 * !Y)	0.00256	0.00257	0.00256
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00331	-0.00331	-0.00330
	(!A1 * A3 * !B1 * !C1 * Y)	0.00256	0.00258	0.00256
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00331	-0.00332	-0.00330
	(!A1 * !A3 * B1 * !Y)	0.00155	0.00155	0.00154
	(!A1 * !A3 * B1 * !Y)	-0.00333	-0.00332	-0.00331
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00155	0.00154	0.00154
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00332	-0.00331	-0.00331
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00145	0.00144	0.00144
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00334	-0.00333	-0.00333

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A3 * B1 * C1 * !Y)**	-0.00075	-0.00075	-0.00075
	(A1 * A3 * B1 * C1 * !Y)	0.00077	0.00078	0.00077
	(A1 * A3 * B1 * !C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * A3 * B1 * !C1 * !Y)	0.00077	0.00078	0.00077
	(A1 * A3 * !B1 * C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * A3 * !B1 * C1 * !Y)	0.00074	0.00076	0.00075
	(A1 * !A3 * B1 * C1 * !Y)	-0.00068	-0.00070	-0.00070
	(A1 * !A3 * B1 * C1 * !Y)	0.00080	0.00082	0.00081
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00068	-0.00070	-0.00070
	(A1 * !A3 * B1 * !C1 * !Y)	0.00080	0.00082	0.00081
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00068	-0.00070	-0.00070
	(A1 * !A3 * !B1 * C1 * !Y)	0.00080	0.00082	0.00081
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00028	-0.00029	-0.00029
	(A1 * !A3 * !B1 * !C1 * Y)	0.00092	0.00094	0.00091
	(!A1 * A3 * B1 * !Y)	-0.00069	-0.00071	-0.00070
	(!A1 * A3 * B1 * !Y)	0.00081	0.00081	0.00081
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00069	-0.00071	-0.00070
	(!A1 * A3 * !B1 * C1 * !Y)	0.00081	0.00081	0.00081
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00058	-0.00061	-0.00061
	(!A1 * A3 * !B1 * !C1 * Y)	0.00092	0.00091	0.00090
	(!A1 * !A3 * B1 * !Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A3 * B1 * !Y)	0.00081	0.00082	0.00081
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00081	0.00082	0.00081
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00034	-0.00034	-0.00034
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00093	0.00095	0.00091

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00137	-0.00137	-0.00137
	(A1 * A3 * B1 * C1 * !Y)	0.00159	0.00160	0.00159
	(A1 * A3 * B1 * !C1 * !Y)	-0.00137	-0.00138	-0.00137
	(A1 * A3 * B1 * !C1 * !Y)	0.00159	0.00160	0.00159
	(A1 * A3 * !B1 * C1 * !Y)	-0.00137	-0.00139	-0.00138
	(A1 * A3 * !B1 * C1 * !Y)	0.00153	0.00155	0.00153
	(A1 * !A3 * B1 * C1 * !Y)	-0.00122	-0.00128	-0.00128
	(A1 * !A3 * B1 * C1 * !Y)	0.00167	0.00170	0.00167
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00122	-0.00128	-0.00127
	(A1 * !A3 * B1 * !C1 * !Y)	0.00168	0.00170	0.00167
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00122	-0.00128	-0.00127
	(A1 * !A3 * !B1 * C1 * !Y)	0.00168	0.00170	0.00167
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00062	-0.00063	-0.00064
	(A1 * !A3 * !B1 * !C1 * Y)	0.00172	0.00175	0.00169
	(!A1 * A3 * B1 * !Y)	-0.00124	-0.00130	-0.00129
	(!A1 * A3 * B1 * !Y)	0.00167	0.00168	0.00167
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00124	-0.00130	-0.00129
	(!A1 * A3 * !B1 * C1 * !Y)	0.00167	0.00168	0.00167
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00122	-0.00129	-0.00128
	(!A1 * A3 * !B1 * !C1 * Y)	0.00171	0.00169	0.00167
	(!A1 * !A3 * B1 * !Y)	-0.00081	-0.00081	-0.00080
	(!A1 * !A3 * B1 * !Y)	0.00169	0.00169	0.00167
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00081	-0.00081	-0.00080
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00169	0.00169	0.00167
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00075	-0.00075	-0.00075
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00173	0.00175	0.00169

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00273	-0.00273	-0.00274
	(A1 * A3 * B1 * C1 * !Y)	0.00317	0.00316	0.00317
	(A1 * A3 * B1 * !C1 * !Y)	-0.00273	-0.00275	-0.00274
	(A1 * A3 * B1 * !C1 * !Y)	0.00317	0.00320	0.00317
	(A1 * A3 * !B1 * C1 * !Y)	-0.00274	-0.00275	-0.00274
	(A1 * A3 * !B1 * C1 * !Y)	0.00305	0.00306	0.00305
	(A1 * !A3 * B1 * C1 * !Y)	-0.00240	-0.00253	-0.00252
	(A1 * !A3 * B1 * C1 * !Y)	0.00330	0.00337	0.00332
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00241	-0.00253	-0.00252
	(A1 * !A3 * B1 * !C1 * !Y)	0.00334	0.00337	0.00332
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00241	-0.00252	-0.00251
	(A1 * !A3 * !B1 * C1 * !Y)	0.00333	0.00337	0.00332
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00120	-0.00122	-0.00123
	(A1 * !A3 * !B1 * !C1 * Y)	0.00340	0.00346	0.00334
	(!A1 * A3 * B1 * !Y)	-0.00247	-0.00257	-0.00256
	(!A1 * A3 * B1 * !Y)	0.00331	0.00334	0.00331
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00247	-0.00257	-0.00256
	(!A1 * A3 * !B1 * C1 * !Y)	0.00331	0.00334	0.00331
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00241	-0.00258	-0.00256
	(!A1 * A3 * !B1 * !C1 * Y)	0.00339	0.00334	0.00332
	(!A1 * !A3 * B1 * !Y)	-0.00155	-0.00155	-0.00154
	(!A1 * !A3 * B1 * !Y)	0.00334	0.00335	0.00332
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00155	-0.00154	-0.00154
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00334	0.00335	0.00332
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00145	-0.00144	-0.00144
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00342	0.00348	0.00334

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A2 * B1 * C1 * !Y)**	0.00081	0.00081	0.00080
	(A1 * A2 * B1 * C1 * !Y)	-0.00076	-0.00078	-0.00078
	(A1 * A2 * B1 * !C1 * !Y)	0.00081	0.00081	0.00080
	(A1 * A2 * B1 * !C1 * !Y)	-0.00076	-0.00078	-0.00078
	(A1 * A2 * !B1 * C1 * !Y)	0.00080	0.00080	0.00080
	(A1 * A2 * !B1 * C1 * !Y)	-0.00072	-0.00076	-0.00075
	(A1 * !A2 * !B1 * !C1 * Y)	0.00067	0.00067	0.00067
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00089	-0.00088	-0.00088
	(!A2 * B1 * !Y)	0.00075	0.00075	0.00075
	(!A2 * B1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A2 * !B1 * C1 * !Y)	0.00074	0.00075	0.00075
	(!A2 * !B1 * C1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * B1 * !Y)	0.00073	0.00074	0.00073
	(!A1 * A2 * B1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * !B1 * C1 * !Y)	0.00073	0.00074	0.00073
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * !B1 * !C1 * Y)	0.00066	0.00066	0.00066
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00067	0.00067	0.00067
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00089	-0.00089	-0.00088

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00135	0.00136	0.00135
	(A1 * A2 * B1 * C1 * !Y)	-0.00152	-0.00156	-0.00156
	(A1 * A2 * B1 * !C1 * !Y)	0.00134	0.00136	0.00135
	(A1 * A2 * B1 * !C1 * !Y)	-0.00150	-0.00156	-0.00156
	(A1 * A2 * !B1 * C1 * !Y)	0.00135	0.00136	0.00135
	(A1 * A2 * !B1 * C1 * !Y)	-0.00145	-0.00152	-0.00151
	(A1 * !A2 * !B1 * !C1 * Y)	0.00126	0.00126	0.00125
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00163	-0.00163	-0.00163
	(!A2 * B1 * !Y)	0.00126	0.00125	0.00125
	(!A2 * B1 * !Y)	-0.00163	-0.00162	-0.00163
	(!A2 * !B1 * C1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * !Y)	-0.00163	-0.00163	-0.00162
	(!A1 * A2 * B1 * !Y)	0.00122	0.00123	0.00122
	(!A1 * A2 * B1 * !Y)	-0.00162	-0.00163	-0.00163
	(!A1 * A2 * !B1 * C1 * !Y)	0.00122	0.00123	0.00122
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00162	-0.00163	-0.00162
	(!A1 * A2 * !B1 * !C1 * Y)	0.00122	0.00122	0.00122
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00162	-0.00163	-0.00163
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00126	0.00126	0.00125
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00163	-0.00163	-0.00163

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00274	0.00276	0.00273
	(A1 * A2 * B1 * C1 * !Y)	-0.00307	-0.00317	-0.00316
	(A1 * A2 * B1 * !C1 * !Y)	0.00275	0.00276	0.00273
	(A1 * A2 * B1 * !C1 * !Y)	-0.00307	-0.00316	-0.00316
	(A1 * A2 * !B1 * C1 * !Y)	0.00275	0.00276	0.00274
	(A1 * A2 * !B1 * C1 * !Y)	-0.00294	-0.00308	-0.00304
	(A1 * !A2 * !B1 * !C1 * Y)	0.00253	0.00254	0.00252
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00330	-0.00330	-0.00329
	(!A2 * B1 * !Y)	0.00252	0.00254	0.00252
	(!A2 * B1 * !Y)	-0.00329	-0.00330	-0.00329
	(!A2 * !B1 * C1 * !Y)	0.00253	0.00254	0.00252
	(!A2 * !B1 * C1 * !Y)	-0.00330	-0.00330	-0.00329
	(!A1 * A2 * B1 * !Y)	0.00245	0.00248	0.00246
	(!A1 * A2 * B1 * !Y)	-0.00328	-0.00331	-0.00329
	(!A1 * A2 * !B1 * C1 * !Y)	0.00245	0.00248	0.00246
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00329	-0.00331	-0.00329
	(!A1 * A2 * !B1 * !C1 * Y)	0.00245	0.00246	0.00245
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00328	-0.00330	-0.00329
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00251	0.00253	0.00252
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00328	-0.00330	-0.00329

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A2 * B1 * C1 * !Y)**	-0.00080	-0.00080	-0.00080
	(A1 * A2 * B1 * C1 * !Y)	0.00078	0.00078	0.00078
	(A1 * A2 * B1 * !C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * B1 * !C1 * !Y)	0.00078	0.00078	0.00078
	(A1 * A2 * !B1 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * !B1 * C1 * !Y)	0.00076	0.00076	0.00075
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00065	-0.00067	-0.00067
	(A1 * !A2 * !B1 * !C1 * Y)	0.00089	0.00089	0.00089
	(!A2 * B1 * !Y)	-0.00073	-0.00075	-0.00075
	(!A2 * B1 * !Y)	0.00081	0.00081	0.00081
	(!A2 * !B1 * C1 * !Y)	-0.00073	-0.00075	-0.00075
	(!A2 * !B1 * C1 * !Y)	0.00081	0.00081	0.00081
	(!A1 * A2 * B1 * !Y)	-0.00070	-0.00074	-0.00073
	(!A1 * A2 * B1 * !Y)	0.00081	0.00082	0.00081
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00070	-0.00074	-0.00073
	(!A1 * A2 * !B1 * C1 * !Y)	0.00081	0.00082	0.00081
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00063	-0.00066	-0.00066
	(!A1 * A2 * !B1 * !C1 * Y)	0.00088	0.00090	0.00089
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00065	-0.00067	-0.00067
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00089	0.00089	0.00089

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00134	-0.00134	-0.00134
	(A1 * A2 * B1 * C1 * !Y)	0.00156	0.00156	0.00156
	(A1 * A2 * B1 * !C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A1 * A2 * B1 * !C1 * !Y)	0.00156	0.00156	0.00156
	(A1 * A2 * !B1 * C1 * !Y)	-0.00134	-0.00135	-0.00135
	(A1 * A2 * !B1 * C1 * !Y)	0.00150	0.00152	0.00151
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00121	-0.00126	-0.00125
	(A1 * !A2 * !B1 * !C1 * Y)	0.00163	0.00164	0.00163
	(!A2 * B1 * !Y)	-0.00122	-0.00125	-0.00125
	(!A2 * B1 * !Y)	0.00163	0.00164	0.00163
	(!A2 * !B1 * C1 * !Y)	-0.00122	-0.00127	-0.00126
	(!A2 * !B1 * C1 * !Y)	0.00163	0.00164	0.00163
	(!A1 * A2 * B1 * !Y)	-0.00115	-0.00123	-0.00122
	(!A1 * A2 * B1 * !Y)	0.00163	0.00165	0.00163
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00115	-0.00123	-0.00122
	(!A1 * A2 * !B1 * C1 * !Y)	0.00163	0.00165	0.00163
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00115	-0.00122	-0.00122
	(!A1 * A2 * !B1 * !C1 * Y)	0.00163	0.00165	0.00163
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00121	-0.00126	-0.00125
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00163	0.00164	0.00163

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00272	-0.00273	-0.00273
	(A1 * A2 * B1 * C1 * !Y)	0.00315	0.00317	0.00316
	(A1 * A2 * B1 * !C1 * !Y)	-0.00272	-0.00273	-0.00273
	(A1 * A2 * B1 * !C1 * !Y)	0.00315	0.00316	0.00316
	(A1 * A2 * !B1 * C1 * !Y)	-0.00273	-0.00275	-0.00273
	(A1 * A2 * !B1 * C1 * !Y)	0.00304	0.00308	0.00304
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00243	-0.00254	-0.00252
	(A1 * !A2 * !B1 * !C1 * Y)	0.00330	0.00331	0.00330
	(!A2 * B1 * !Y)	-0.00244	-0.00254	-0.00252
	(!A2 * B1 * !Y)	0.00330	0.00331	0.00330
	(!A2 * !B1 * C1 * !Y)	-0.00244	-0.00254	-0.00252
	(!A2 * !B1 * C1 * !Y)	0.00330	0.00331	0.00330
	(!A1 * A2 * B1 * !Y)	-0.00232	-0.00248	-0.00246
	(!A1 * A2 * B1 * !Y)	0.00330	0.00334	0.00330
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00232	-0.00248	-0.00246
	(!A1 * A2 * !B1 * C1 * !Y)	0.00329	0.00334	0.00330
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00231	-0.00246	-0.00245
	(!A1 * A2 * !B1 * !C1 * Y)	0.00330	0.00334	0.00330
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00243	-0.00253	-0.00252
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00330	0.00331	0.00330

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A2 * A3 * C1 * !Y)**	0.00081	0.00080	0.00078
	(A1 * A2 * A3 * C1 * !Y)	-0.00059	-0.00060	-0.00059
	(A1 * A2 * A3 * !C1 * !Y)	0.00078	0.00078	0.00077
	(A1 * A2 * A3 * !C1 * !Y)	-0.00051	-0.00051	-0.00050
	(A1 * A2 * !A3 * C1 * !Y)	0.00083	0.00077	0.00076
	(A1 * A2 * !A3 * C1 * !Y)	-0.00071	-0.00078	-0.00078
	(A1 * !A2 * C1 * !Y)	0.00083	0.00077	0.00076
	(A1 * !A2 * C1 * !Y)	-0.00071	-0.00078	-0.00078
	(!A1 * C1 * !Y)	0.00083	0.00077	0.00076
	(!A1 * C1 * !Y)	-0.00071	-0.00078	-0.00078
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00081	0.00081	0.00078
	(A1 * A2 * A3 * C1 * !Y)	-0.00124	-0.00125	-0.00123
	(A1 * A2 * A3 * !C1 * !Y)	0.00079	0.00079	0.00078
	(A1 * A2 * A3 * !C1 * !Y)	-0.00107	-0.00107	-0.00106
	(A1 * A2 * !A3 * C1 * !Y)	0.00088	0.00078	0.00077
	(A1 * A2 * !A3 * C1 * !Y)	-0.00150	-0.00161	-0.00161
	(A1 * !A2 * C1 * !Y)	0.00088	0.00078	0.00077
	(A1 * !A2 * C1 * !Y)	-0.00150	-0.00161	-0.00161
	(!A1 * C1 * !Y)	0.00088	0.00078	0.00077
	(!A1 * C1 * !Y)	-0.00150	-0.00161	-0.00161
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00156	0.00155	0.00150
	(A1 * A2 * A3 * C1 * !Y)	-0.00242	-0.00243	-0.00241
	(A1 * A2 * A3 * !C1 * !Y)	0.00151	0.00151	0.00149
	(A1 * A2 * A3 * !C1 * !Y)	-0.00209	-0.00209	-0.00206
	(A1 * A2 * !A3 * C1 * !Y)	0.00172	0.00150	0.00148
	(A1 * A2 * !A3 * C1 * !Y)	-0.00292	-0.00318	-0.00318
	(A1 * !A2 * C1 * !Y)	0.00172	0.00150	0.00148
	(A1 * !A2 * C1 * !Y)	-0.00292	-0.00318	-0.00318
	(!A1 * C1 * !Y)	0.00172	0.00150	0.00148
	(!A1 * C1 * !Y)	-0.00293	-0.00318	-0.00318

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	(A1 * A2 * A3 * C1 * !Y)	-0.00077	-0.00078	-0.00077
	(A1 * A2 * A3 * C1 * !Y)	0.00059	0.00060	0.00059
	(A1 * A2 * A3 * !C1 * !Y)	-0.00072	-0.00073	-0.00075
	(A1 * A2 * A3 * !C1 * !Y)	0.00055	0.00055	0.00053
	(A1 * A2 * !A3 * C1 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * A2 * !A3 * C1 * !Y)	0.00078	0.00078	0.00078
	(A1 * !A2 * C1 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * C1 * !Y)	0.00078	0.00078	0.00078
	(!A1 * C1 * !Y)	-0.00076	-0.00076	-0.00076
	(!A1 * C1 * !Y)	0.00079	0.00078	0.00078
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * A3 * C1 * !Y)	0.00124	0.00125	0.00123
	(A1 * A2 * A3 * !C1 * !Y)	-0.00068	-0.00069	-0.00072
	(A1 * A2 * A3 * !C1 * !Y)	0.00114	0.00115	0.00112
	(A1 * A2 * !A3 * C1 * !Y)	-0.00078	-0.00077	-0.00077
	(A1 * A2 * !A3 * C1 * !Y)	0.00162	0.00161	0.00161
	(A1 * !A2 * C1 * !Y)	-0.00078	-0.00077	-0.00077
	(A1 * !A2 * C1 * !Y)	0.00162	0.00161	0.00161
	(!A1 * C1 * !Y)	-0.00078	-0.00077	-0.00077
	(!A1 * C1 * !Y)	0.00162	0.00161	0.00161

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00150	-0.00150	-0.00149
	(A1 * A2 * A3 * C1 * !Y)	0.00242	0.00243	0.00241
	(A1 * A2 * A3 * !C1 * !Y)	-0.00128	-0.00131	-0.00138
	(A1 * A2 * A3 * !C1 * !Y)	0.00225	0.00225	0.00219
	(A1 * A2 * !A3 * C1 * !Y)	-0.00148	-0.00148	-0.00147
	(A1 * A2 * !A3 * C1 * !Y)	0.00317	0.00318	0.00318
	(A1 * !A2 * C1 * !Y)	-0.00148	-0.00148	-0.00147
	(A1 * !A2 * C1 * !Y)	0.00317	0.00318	0.00318
	(!A1 * C1 * !Y)	-0.00148	-0.00148	-0.00147
	(!A1 * C1 * !Y)	0.00318	0.00318	0.00318

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	(A1 * A2 * B1 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * B1 * !Y)	-0.00047	-0.00048	-0.00047
	(A1 * A2 * A3 * !B1 * !Y)	0.00082	0.00083	0.00081
	(A1 * A2 * A3 * !B1 * !Y)	-0.00048	-0.00048	-0.00047
	(A1 * !A2 * B1 * !Y)	0.00081	0.00082	0.00081
	(A1 * !A2 * B1 * !Y)	-0.00047	-0.00048	-0.00047
	(!A1 * B1 * !Y)	0.00081	0.00082	0.00081
	(!A1 * B1 * !Y)	-0.00047	-0.00048	-0.00047
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00092	0.00093	0.00092
	(A1 * A2 * B1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * A3 * !B1 * !Y)	0.00092	0.00093	0.00092
	(A1 * A2 * A3 * !B1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * B1 * !Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * B1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * B1 * !Y)	0.00092	0.00093	0.00092
	(!A1 * B1 * !Y)	-0.00093	-0.00093	-0.00092
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00183	0.00185	0.00183
	(A1 * A2 * B1 * !Y)	-0.00183	-0.00185	-0.00183
	(A1 * A2 * A3 * !B1 * !Y)	0.00182	0.00185	0.00183
	(A1 * A2 * A3 * !B1 * !Y)	-0.00183	-0.00185	-0.00182
	(A1 * !A2 * B1 * !Y)	0.00182	0.00185	0.00183
	(A1 * !A2 * B1 * !Y)	-0.00183	-0.00185	-0.00183
	(!A1 * B1 * !Y)	0.00183	0.00185	0.00183
	(!A1 * B1 * !Y)	-0.00184	-0.00185	-0.00183

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	(A1 * A2 * B1 * !Y)	-0.00077	-0.00078	-0.00081
	(A1 * A2 * B1 * !Y)	0.00051	0.00051	0.00048
	(A1 * A2 * A3 * !B1 * !Y)	-0.00065	-0.00066	-0.00078
	(A1 * A2 * A3 * !B1 * !Y)	0.00059	0.00059	0.00050
	(A1 * !A2 * B1 * !Y)	-0.00077	-0.00078	-0.00081
	(A1 * !A2 * B1 * !Y)	0.00052	0.00051	0.00048
	(!A1 * B1 * !Y)	-0.00076	-0.00078	-0.00081
	(!A1 * B1 * !Y)	0.00051	0.00051	0.00048
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00079	-0.00080	-0.00090
	(A1 * A2 * B1 * !Y)	0.00104	0.00104	0.00095
	(A1 * A2 * A3 * !B1 * !Y)	-0.00053	-0.00055	-0.00084
	(A1 * A2 * A3 * !B1 * !Y)	0.00121	0.00121	0.00099
	(A1 * !A2 * B1 * !Y)	-0.00079	-0.00080	-0.00090
	(A1 * !A2 * B1 * !Y)	0.00105	0.00105	0.00096
	(!A1 * B1 * !Y)	-0.00078	-0.00080	-0.00090
	(!A1 * B1 * !Y)	0.00104	0.00105	0.00096
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00160	-0.00162	-0.00180
	(A1 * A2 * B1 * !Y)	0.00205	0.00204	0.00189
	(A1 * A2 * A3 * !B1 * !Y)	-0.00109	-0.00113	-0.00167
	(A1 * A2 * A3 * !B1 * !Y)	0.00236	0.00236	0.00196
	(A1 * !A2 * B1 * !Y)	-0.00160	-0.00162	-0.00180
	(A1 * !A2 * B1 * !Y)	0.00205	0.00205	0.00189
	(!A1 * B1 * !Y)	-0.00159	-0.00162	-0.00180
	(!A1 * B1 * !Y)	0.00204	0.00205	0.00189

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	C1	X
0	x	x	0	0	0
0	x	x	x	1	1
x	x	x	1	x	1
1	0	x	0	0	0
1	0	x	x	1	1
1	1	0	0	0	0
1	1	0	x	1	1
1	1	1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311o_1	12.78720
sky130_fd_sc_hs__a311o_2	14.38560
sky130_fd_sc_hs__a311o_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__a311o_1	0.00244	0.00228	0.00230	0.00240	0.00249	0.43668
sky130_fd_sc_hs__a311o_2	0.00252	0.00250	0.00265	0.00271	0.00256	0.81200
sky130_fd_sc_hs__a311o_4	0.00459	0.00422	0.00449	0.00437	0.00441	1.50366

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311o_1	0.00000	0.01569	0.03051
sky130_fd_sc_hs__a311o_2	0.00000	0.01979	0.03327
sky130_fd_sc_hs__a311o_4	0.00000	0.04043	0.06654

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (RR)	0.21562	1.20115	8.51677
	A2->X (RR)	0.22893	1.22660	8.78690
	A3->X (RR)	0.23613	1.20956	8.80810
	B1->X (RR)	0.13944	1.10588	8.46179
	C1->X (RR)	0.13550	1.08954	8.38196
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.23402	1.13192	8.86319
	A2->X (RR)	0.24749	1.14495	9.07174
	A3->X (RR)	0.25578	1.12393	9.05748
	B1->X (RR)	0.14118	1.01332	8.75314
	C1->X (RR)	0.13720	1.00014	8.69058
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.26890	1.07212	8.82351
	A2->X (RR)	0.28888	1.10046	9.10659
	A3->X (RR)	0.29683	1.05979	9.02961
	B1->X (RR)	0.14121	0.90317	8.63935
	C1->X (RR)	0.13560	0.88541	8.55340

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.62294	1.41169	6.49339
	A2->X (FF)	0.71085	1.50732	6.69933
	A3->X (FF)	0.77841	1.58154	6.84722
	B1->X (FF)	0.71445	1.49143	6.74474
	C1->X (FF)	0.63418	1.34906	6.08802
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.86060	1.66156	6.96057
	A2->X (FF)	0.97370	1.78583	7.16440
	A3->X (FF)	1.05927	1.87837	7.30960
	B1->X (FF)	1.00008	1.79318	7.33365
	C1->X (FF)	0.90448	1.63017	6.72273
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.84557	1.59228	6.80317
	A2->X (FF)	0.95754	1.71315	7.01467
	A3->X (FF)	1.04657	1.81095	7.17169
	B1->X (FF)	0.98235	1.71915	7.19318
	C1->X (FF)	0.85267	1.52430	6.51268

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.00520	0.00512	0.00514
	A1	0.00250	0.00243	0.00245
	A2	0.00550	0.00544	0.00537
	A2	0.00250	0.00243	0.00241
	A3	0.00589	0.00582	0.00574
	A3	0.00249	0.00241	0.00235
	B1	0.00494	0.00488	0.00495
	B1	0.00192	0.00185	0.00193
	C1	0.00437	0.00427	0.00440
	C1	0.00154	0.00144	0.00157
sky130_fd_sc_hs__a311o_2	A1	0.00672	0.00676	0.00679
	A1	0.00380	0.00384	0.00391
	A2	0.00715	0.00722	0.00720
	A2	0.00380	0.00387	0.00389
	A3	0.00767	0.00773	0.00767
	A3	0.00380	0.00386	0.00384
	B1	0.00675	0.00681	0.00687
	B1	0.00327	0.00334	0.00339
	C1	0.00605	0.00609	0.00619
	C1	0.00287	0.00290	0.00303

sky130_fd_sc_hs__a311o_4	**A1**	0.01307	0.01321	0.01338
	A1	0.00798	0.00814	0.00839
	A2	0.01376	0.01402	0.01408
	A2	0.00795	0.00820	0.00835
	A3	0.01470	0.01496	0.01497
	A3	0.00800	0.00827	0.00836
	B1	0.01264	0.01269	0.01284
	B1	0.00675	0.00679	0.00695
	C1	0.01082	0.01086	0.01118
	C1	0.00554	0.00556	0.00593

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00160	0.00162	0.00177
	A1	0.00438	0.00440	0.00439
	A2	0.00191	0.00195	0.00289
	A2	0.00495	0.00499	0.00498
	A3	0.00208	0.00210	0.00261
	A3	0.00547	0.00548	0.00545
	B1	0.00203	0.00206	0.00243
	B1	0.00498	0.00501	0.00499
	C1	0.00194	0.00195	0.00237
	C1	0.00467	0.00469	0.00489

sky130_fd_sc_hs__a311o_2	**A1**	0.00290	0.00307	0.00419
	A1	0.00590	0.00607	0.00611
	A2	0.00318	0.00335	0.00342
	A2	0.00655	0.00672	0.00677
	A3	0.00333	0.00341	0.00361
	A3	0.00716	0.00724	0.00722
	B1	0.00313	0.00329	0.00427
	B1	0.00672	0.00684	0.00683
	C1	0.00331	0.00342	0.00424
	C1	0.00638	0.00649	0.00671
sky130_fd_sc_hs__a311o_4	**A1**	0.00583	0.00621	0.00733
	A1	0.01106	0.01146	0.01163
	A2	0.00672	0.00708	0.00916
	A2	0.01259	0.01297	0.01315
	A3	0.00689	0.00724	0.00742
	A3	0.01352	0.01389	0.01399
	B1	0.00662	0.00702	0.00897
	B1	0.01269	0.01303	0.01309
	C1	0.00695	0.00723	0.00886
	C1	0.01202	0.01231	0.01276

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A2 * A3 * B1 * C1 * X)**	0.00068	0.00068	0.00068
	(A2 * A3 * B1 * C1 * X)	-0.00069	-0.00071	-0.00071
	(A2 * A3 * B1 * !C1 * X)	0.00068	0.00068	0.00068
	(A2 * A3 * B1 * !C1 * X)	-0.00069	-0.00071	-0.00071
	(A2 * A3 * !B1 * C1 * X)	0.00068	0.00068	0.00068
	(A2 * A3 * !B1 * C1 * X)	-0.00066	-0.00068	-0.00068
	(A2 * !A3 * B1 * C1 * X)	0.00062	0.00063	0.00062
	(A2 * !A3 * B1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A2 * !A3 * B1 * !C1 * X)	0.00062	0.00062	0.00062
	(A2 * !A3 * B1 * !C1 * X)	-0.00074	-0.00074	-0.00074
	(A2 * !A3 * !B1 * C1 * X)	0.00062	0.00062	0.00062
	(A2 * !A3 * !B1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A2 * !A3 * !B1 * !C1 * !X)	0.00030	0.00031	0.00028
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00083	-0.00084	-0.00088
	(!A2 * B1 * C1 * X)	0.00063	0.00064	0.00064
	(!A2 * B1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(!A2 * B1 * !C1 * X)	0.00063	0.00064	0.00064
	(!A2 * B1 * !C1 * X)	-0.00074	-0.00074	-0.00074
	(!A2 * !B1 * C1 * X)	0.00063	0.00064	0.00064
	(!A2 * !B1 * C1 * X)	-0.00073	-0.00074	-0.00074
	(!A2 * !B1 * !C1 * !X)	0.00030	0.00030	0.00029
	(!A2 * !B1 * !C1 * !X)	-0.00086	-0.00087	-0.00088

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00072	0.00072	0.00071
	(A2 * A3 * B1 * C1 * X)	-0.00069	-0.00070	-0.00070
	(A2 * A3 * B1 * !C1 * X)	0.00072	0.00072	0.00071
	(A2 * A3 * B1 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A2 * A3 * !B1 * C1 * X)	0.00071	0.00072	0.00071
	(A2 * A3 * !B1 * C1 * X)	-0.00065	-0.00069	-0.00068
	(A2 * !A3 * B1 * C1 * X)	0.00065	0.00065	0.00065
	(A2 * !A3 * B1 * C1 * X)	-0.00073	-0.00074	-0.00073
	(A2 * !A3 * B1 * !C1 * X)	0.00065	0.00065	0.00065
	(A2 * !A3 * B1 * !C1 * X)	-0.00073	-0.00074	-0.00073
	(A2 * !A3 * !B1 * C1 * X)	0.00064	0.00065	0.00065
	(A2 * !A3 * !B1 * C1 * X)	-0.00073	-0.00074	-0.00073
	(A2 * !A3 * !B1 * !C1 * !X)	0.00026	0.00026	0.00024
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00086	-0.00086	-0.00091
	(!A2 * B1 * C1 * X)	0.00067	0.00067	0.00067
	(!A2 * B1 * C1 * X)	-0.00073	-0.00074	-0.00073
	(!A2 * B1 * !C1 * X)	0.00066	0.00066	0.00067
	(!A2 * B1 * !C1 * X)	-0.00073	-0.00073	-0.00073
	(!A2 * !B1 * C1 * X)	0.00066	0.00067	0.00067
	(!A2 * !B1 * C1 * X)	-0.00073	-0.00073	-0.00073
	(!A2 * !B1 * !C1 * !X)	0.00027	0.00026	0.00025
	(!A2 * !B1 * !C1 * !X)	-0.00090	-0.00089	-0.00092

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00124	0.00124	0.00122
	(A2 * A3 * B1 * C1 * X)	-0.00144	-0.00148	-0.00147
	(A2 * A3 * B1 * !C1 * X)	0.00124	0.00124	0.00122
	(A2 * A3 * B1 * !C1 * X)	-0.00144	-0.00148	-0.00147
	(A2 * A3 * !B1 * C1 * X)	0.00123	0.00123	0.00122
	(A2 * A3 * !B1 * C1 * X)	-0.00138	-0.00144	-0.00143
	(A2 * !A3 * B1 * C1 * X)	0.00111	0.00111	0.00110
	(A2 * !A3 * B1 * C1 * X)	-0.00154	-0.00154	-0.00154
	(A2 * !A3 * B1 * !C1 * X)	0.00110	0.00110	0.00110
	(A2 * !A3 * B1 * !C1 * X)	-0.00154	-0.00154	-0.00154
	(A2 * !A3 * !B1 * C1 * X)	0.00110	0.00110	0.00110
	(A2 * !A3 * !B1 * C1 * X)	-0.00153	-0.00154	-0.00154
	(A2 * !A3 * !B1 * !C1 * !X)	0.00051	0.00051	0.00044
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00181
	(!A2 * B1 * C1 * X)	0.00115	0.00116	0.00115
	(!A2 * B1 * C1 * X)	-0.00154	-0.00154	-0.00154
	(!A2 * B1 * !C1 * X)	0.00115	0.00115	0.00115
	(!A2 * B1 * !C1 * X)	-0.00153	-0.00154	-0.00154
	(!A2 * !B1 * C1 * X)	0.00115	0.00116	0.00115
	(!A2 * !B1 * C1 * X)	-0.00154	-0.00155	-0.00154
	(!A2 * !B1 * !C1 * !X)	0.00053	0.00053	0.00048
	(!A2 * !B1 * !C1 * !X)	-0.00175	-0.00175	-0.00182

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A2 * A3 * B1 * C1 * X)**	-0.00068	-0.00068	-0.00068
	(A2 * A3 * B1 * C1 * X)	0.00071	0.00071	0.00071
	(A2 * A3 * B1 * !C1 * X)	-0.00068	-0.00068	-0.00068
	(A2 * A3 * B1 * !C1 * X)	0.00071	0.00071	0.00071
	(A2 * A3 * !B1 * C1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * A3 * !B1 * C1 * X)	0.00068	0.00068	0.00068
	(A2 * !A3 * B1 * C1 * X)	-0.00059	-0.00063	-0.00062
	(A2 * !A3 * B1 * C1 * X)	0.00074	0.00074	0.00074
	(A2 * !A3 * B1 * !C1 * X)	-0.00059	-0.00062	-0.00062
	(A2 * !A3 * B1 * !C1 * X)	0.00074	0.00074	0.00074
	(A2 * !A3 * !B1 * C1 * X)	-0.00058	-0.00062	-0.00062
	(A2 * !A3 * !B1 * C1 * X)	0.00074	0.00074	0.00074
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00028	-0.00028	-0.00028
	(A2 * !A3 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A2 * B1 * C1 * X)	-0.00062	-0.00064	-0.00064
	(!A2 * B1 * C1 * X)	0.00074	0.00074	0.00074
	(!A2 * B1 * !C1 * X)	-0.00062	-0.00064	-0.00064
	(!A2 * B1 * !C1 * X)	0.00074	0.00074	0.00074
	(!A2 * !B1 * C1 * X)	-0.00062	-0.00064	-0.00064
	(!A2 * !B1 * C1 * X)	0.00074	0.00074	0.00074
	(!A2 * !B1 * !C1 * !X)	-0.00028	-0.00029	-0.00028
	(!A2 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00072	-0.00071	-0.00071
	(A2 * A3 * B1 * C1 * X)	0.00071	0.00070	0.00070
	(A2 * A3 * B1 * !C1 * X)	-0.00072	-0.00071	-0.00071
	(A2 * A3 * B1 * !C1 * X)	0.00071	0.00070	0.00070
	(A2 * A3 * !B1 * C1 * X)	-0.00071	-0.00071	-0.00071
	(A2 * A3 * !B1 * C1 * X)	0.00069	0.00069	0.00068
	(A2 * !A3 * B1 * C1 * X)	-0.00061	-0.00065	-0.00065
	(A2 * !A3 * B1 * C1 * X)	0.00073	0.00074	0.00073
	(A2 * !A3 * B1 * !C1 * X)	-0.00060	-0.00065	-0.00065
	(A2 * !A3 * B1 * !C1 * X)	0.00073	0.00074	0.00073
	(A2 * !A3 * !B1 * C1 * X)	-0.00061	-0.00065	-0.00065
	(A2 * !A3 * !B1 * C1 * X)	0.00074	0.00074	0.00073
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00023	-0.00024	-0.00023
	(A2 * !A3 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092
	(!A2 * B1 * C1 * X)	-0.00065	-0.00067	-0.00067
	(!A2 * B1 * C1 * X)	0.00073	0.00074	0.00073
	(!A2 * B1 * !C1 * X)	-0.00065	-0.00066	-0.00067
	(!A2 * B1 * !C1 * X)	0.00073	0.00074	0.00073
	(!A2 * !B1 * C1 * X)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * C1 * X)	0.00073	0.00074	0.00073
	(!A2 * !B1 * !C1 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00122	-0.00123	-0.00122
	(A2 * A3 * B1 * C1 * X)	0.00147	0.00148	0.00147
	(A2 * A3 * B1 * !C1 * X)	-0.00122	-0.00123	-0.00122
	(A2 * A3 * B1 * !C1 * X)	0.00147	0.00148	0.00147
	(A2 * A3 * !B1 * C1 * X)	-0.00122	-0.00123	-0.00122
	(A2 * A3 * !B1 * C1 * X)	0.00142	0.00144	0.00143
	(A2 * !A3 * B1 * C1 * X)	-0.00103	-0.00111	-0.00110
	(A2 * !A3 * B1 * C1 * X)	0.00154	0.00155	0.00154
	(A2 * !A3 * B1 * !C1 * X)	-0.00102	-0.00110	-0.00110
	(A2 * !A3 * B1 * !C1 * X)	0.00154	0.00155	0.00154
	(A2 * !A3 * !B1 * C1 * X)	-0.00102	-0.00110	-0.00110
	(A2 * !A3 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00044	-0.00044	-0.00043
	(A2 * !A3 * !B1 * !C1 * !X)	0.00184	0.00185	0.00183
	(!A2 * B1 * C1 * X)	-0.00111	-0.00116	-0.00115
	(!A2 * B1 * C1 * X)	0.00154	0.00155	0.00154
	(!A2 * B1 * !C1 * X)	-0.00111	-0.00115	-0.00115
	(!A2 * B1 * !C1 * X)	0.00154	0.00155	0.00154
	(!A2 * !B1 * C1 * X)	-0.00111	-0.00116	-0.00115
	(!A2 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(!A2 * !B1 * !C1 * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !C1 * !X)	0.00182	0.00185	0.00183

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A3 * B1 * C1 * X)**	0.00059	0.00059	0.00058
	(A1 * A3 * B1 * C1 * X)	-0.00071	-0.00073	-0.00073
	(A1 * A3 * B1 * !C1 * X)	0.00059	0.00059	0.00058
	(A1 * A3 * B1 * !C1 * X)	-0.00070	-0.00073	-0.00073
	(A1 * A3 * !B1 * C1 * X)	0.00059	0.00059	0.00058
	(A1 * A3 * !B1 * C1 * X)	-0.00068	-0.00071	-0.00070
	(A1 * !A3 * B1 * C1 * X)	0.00054	0.00055	0.00054
	(A1 * !A3 * B1 * C1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A3 * B1 * !C1 * X)	0.00054	0.00055	0.00054
	(A1 * !A3 * B1 * !C1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A3 * !B1 * C1 * X)	0.00054	0.00055	0.00054
	(A1 * !A3 * !B1 * C1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A3 * !B1 * !C1 * !X)	0.00025	0.00025	0.00025
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00080	-0.00079	-0.00079
	(!A1 * A3 * B1 * X)	0.00054	0.00055	0.00054
	(!A1 * A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * !B1 * C1 * X)	0.00054	0.00055	0.00054
	(!A1 * A3 * !B1 * C1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * !B1 * !C1 * !X)	0.00051	0.00051	0.00051
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00080	-0.00080	-0.00079
	(!A1 * !A3 * B1 * X)	0.00034	0.00034	0.00034
	(!A1 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A3 * !B1 * C1 * X)	0.00034	0.00034	0.00034
	(!A1 * !A3 * !B1 * C1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00029	0.00029	0.00028
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00080	-0.00080	-0.00080

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00071	0.00071	0.00071
	(A1 * A3 * B1 * C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A3 * B1 * !C1 * X)	0.00071	0.00071	0.00071
	(A1 * A3 * B1 * !C1 * X)	-0.00068	-0.00070	-0.00070
	(A1 * A3 * !B1 * C1 * X)	0.00071	0.00071	0.00070
	(A1 * A3 * !B1 * C1 * X)	-0.00065	-0.00069	-0.00068
	(A1 * !A3 * B1 * C1 * X)	0.00065	0.00066	0.00065
	(A1 * !A3 * B1 * C1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * !A3 * B1 * !C1 * X)	0.00065	0.00065	0.00065
	(A1 * !A3 * B1 * !C1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * !A3 * !B1 * C1 * X)	0.00065	0.00065	0.00065
	(A1 * !A3 * !B1 * C1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * !A3 * !B1 * !C1 * !X)	0.00030	0.00030	0.00030
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * A3 * B1 * X)	0.00066	0.00066	0.00066
	(!A1 * A3 * B1 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * A3 * !B1 * C1 * X)	0.00066	0.00066	0.00066
	(!A1 * A3 * !B1 * C1 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * A3 * !B1 * !C1 * !X)	0.00061	0.00061	0.00061
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A3 * B1 * X)	0.00042	0.00042	0.00042
	(!A1 * !A3 * B1 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A3 * !B1 * C1 * X)	0.00042	0.00042	0.00042
	(!A1 * !A3 * !B1 * C1 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00034	0.00034	0.00034
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00079	-0.00079	-0.00079

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00117	0.00118	0.00117
	(A1 * A3 * B1 * C1 * X)	-0.00141	-0.00147	-0.00146
	(A1 * A3 * B1 * !C1 * X)	0.00117	0.00118	0.00117
	(A1 * A3 * B1 * !C1 * X)	-0.00141	-0.00147	-0.00146
	(A1 * A3 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(A1 * A3 * !B1 * C1 * X)	-0.00137	-0.00144	-0.00142
	(A1 * !A3 * B1 * C1 * X)	0.00108	0.00110	0.00109
	(A1 * !A3 * B1 * C1 * X)	-0.00150	-0.00152	-0.00151
	(A1 * !A3 * B1 * !C1 * X)	0.00109	0.00109	0.00109
	(A1 * !A3 * B1 * !C1 * X)	-0.00151	-0.00150	-0.00151
	(A1 * !A3 * !B1 * C1 * X)	0.00109	0.00110	0.00109
	(A1 * !A3 * !B1 * C1 * X)	-0.00150	-0.00152	-0.00151
	(A1 * !A3 * !B1 * !C1 * !X)	0.00058	0.00058	0.00059
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00152	-0.00151	-0.00150
	(!A1 * A3 * B1 * X)	0.00109	0.00111	0.00110
	(!A1 * A3 * B1 * X)	-0.00151	-0.00152	-0.00151
	(!A1 * A3 * !B1 * C1 * X)	0.00109	0.00110	0.00110
	(!A1 * A3 * !B1 * C1 * X)	-0.00151	-0.00151	-0.00151
	(!A1 * A3 * !B1 * !C1 * !X)	0.00110	0.00110	0.00110
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00151	-0.00151	-0.00151
	(!A1 * !A3 * B1 * X)	0.00072	0.00072	0.00071
	(!A1 * !A3 * B1 * X)	-0.00152	-0.00151	-0.00151
	(!A1 * !A3 * !B1 * C1 * X)	0.00072	0.00072	0.00071
	(!A1 * !A3 * !B1 * C1 * X)	-0.00152	-0.00151	-0.00151
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00066	0.00066	0.00066
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00152	-0.00151	-0.00152

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A3 * B1 * C1 * X)**	-0.00058	-0.00058	-0.00058
	(A1 * A3 * B1 * C1 * X)	0.00072	0.00073	0.00073
	(A1 * A3 * B1 * !C1 * X)	-0.00059	-0.00058	-0.00058
	(A1 * A3 * B1 * !C1 * X)	0.00074	0.00073	0.00073
	(A1 * A3 * !B1 * C1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A3 * !B1 * C1 * X)	0.00071	0.00071	0.00070
	(A1 * !A3 * B1 * C1 * X)	-0.00053	-0.00055	-0.00054
	(A1 * !A3 * B1 * C1 * X)	0.00076	0.00077	0.00076
	(A1 * !A3 * B1 * !C1 * X)	-0.00052	-0.00055	-0.00054
	(A1 * !A3 * B1 * !C1 * X)	0.00076	0.00077	0.00076
	(A1 * !A3 * !B1 * C1 * X)	-0.00052	-0.00055	-0.00054
	(A1 * !A3 * !B1 * C1 * X)	0.00076	0.00077	0.00076
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00023	-0.00024	-0.00024
	(A1 * !A3 * !B1 * !C1 * !X)	0.00081	0.00083	0.00080
	(!A1 * A3 * B1 * X)	-0.00053	-0.00055	-0.00054
	(!A1 * A3 * B1 * X)	0.00076	0.00077	0.00076
	(!A1 * A3 * !B1 * C1 * X)	-0.00053	-0.00055	-0.00054
	(!A1 * A3 * !B1 * C1 * X)	0.00076	0.00077	0.00076
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00048	-0.00051	-0.00051
	(!A1 * A3 * !B1 * !C1 * !X)	0.00082	0.00080	0.00080
	(!A1 * !A3 * B1 * X)	-0.00034	-0.00034	-0.00034
	(!A1 * !A3 * B1 * X)	0.00076	0.00077	0.00076
	(!A1 * !A3 * !B1 * C1 * X)	-0.00034	-0.00034	-0.00034
	(!A1 * !A3 * !B1 * C1 * X)	0.00076	0.00077	0.00076
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00028
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00082	0.00084	0.00080

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00071	-0.00071	-0.00071
	(A1 * A3 * B1 * C1 * X)	0.00070	0.00070	0.00070
	(A1 * A3 * B1 * !C1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * A3 * B1 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * A3 * !B1 * C1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A3 * !B1 * C1 * X)	0.00068	0.00069	0.00068
	(A1 * !A3 * B1 * C1 * X)	-0.00064	-0.00066	-0.00065
	(A1 * !A3 * B1 * C1 * X)	0.00073	0.00074	0.00073
	(A1 * !A3 * B1 * !C1 * X)	-0.00063	-0.00065	-0.00065
	(A1 * !A3 * B1 * !C1 * X)	0.00073	0.00074	0.00073
	(A1 * !A3 * !B1 * C1 * X)	-0.00063	-0.00065	-0.00065
	(A1 * !A3 * !B1 * C1 * X)	0.00073	0.00074	0.00073
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00028	-0.00029	-0.00029
	(A1 * !A3 * !B1 * !C1 * !X)	0.00080	0.00082	0.00079
	(!A1 * A3 * B1 * X)	-0.00064	-0.00066	-0.00066
	(!A1 * A3 * B1 * X)	0.00073	0.00074	0.00073
	(!A1 * A3 * !B1 * C1 * X)	-0.00064	-0.00066	-0.00066
	(!A1 * A3 * !B1 * C1 * X)	0.00073	0.00074	0.00073
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00058	-0.00061	-0.00061
	(!A1 * A3 * !B1 * !C1 * !X)	0.00080	0.00079	0.00078
	(!A1 * !A3 * B1 * X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A3 * B1 * X)	0.00073	0.00074	0.00073
	(!A1 * !A3 * !B1 * C1 * X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A3 * !B1 * C1 * X)	0.00073	0.00074	0.00073
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00081	0.00083	0.00079

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00117	-0.00117	-0.00117
	(A1 * A3 * B1 * C1 * X)	0.00146	0.00147	0.00146
	(A1 * A3 * B1 * !C1 * X)	-0.00117	-0.00117	-0.00117
	(A1 * A3 * B1 * !C1 * X)	0.00146	0.00147	0.00146
	(A1 * A3 * !B1 * C1 * X)	-0.00116	-0.00117	-0.00117
	(A1 * A3 * !B1 * C1 * X)	0.00142	0.00144	0.00142
	(A1 * !A3 * B1 * C1 * X)	-0.00105	-0.00110	-0.00109
	(A1 * !A3 * B1 * C1 * X)	0.00151	0.00153	0.00151
	(A1 * !A3 * B1 * !C1 * X)	-0.00105	-0.00109	-0.00109
	(A1 * !A3 * B1 * !C1 * X)	0.00151	0.00153	0.00151
	(A1 * !A3 * !B1 * C1 * X)	-0.00105	-0.00110	-0.00109
	(A1 * !A3 * !B1 * C1 * X)	0.00151	0.00153	0.00151
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00054	-0.00055	-0.00056
	(A1 * !A3 * !B1 * !C1 * !X)	0.00155	0.00157	0.00152
	(!A1 * A3 * B1 * X)	-0.00105	-0.00111	-0.00110
	(!A1 * A3 * B1 * X)	0.00151	0.00153	0.00151
	(!A1 * A3 * !B1 * C1 * X)	-0.00105	-0.00110	-0.00110
	(!A1 * A3 * !B1 * C1 * X)	0.00151	0.00153	0.00151
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00103	-0.00110	-0.00110
	(!A1 * A3 * !B1 * !C1 * !X)	0.00153	0.00153	0.00151
	(!A1 * !A3 * B1 * X)	-0.00072	-0.00072	-0.00071
	(!A1 * !A3 * B1 * X)	0.00153	0.00153	0.00151
	(!A1 * !A3 * !B1 * C1 * X)	-0.00072	-0.00072	-0.00071
	(!A1 * !A3 * !B1 * C1 * X)	0.00153	0.00153	0.00152
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00066	-0.00066	-0.00066
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00154	0.00156	0.00152

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A2 * B1 * C1 * X)**	0.00065	0.00065	0.00064
	(A1 * A2 * B1 * C1 * X)	-0.00069	-0.00071	-0.00072
	(A1 * A2 * B1 * !C1 * X)	0.00065	0.00065	0.00064
	(A1 * A2 * B1 * !C1 * X)	-0.00070	-0.00071	-0.00072
	(A1 * A2 * !B1 * C1 * X)	0.00065	0.00065	0.00064
	(A1 * A2 * !B1 * C1 * X)	-0.00066	-0.00070	-0.00069
	(A1 * !A2 * !B1 * !C1 * !X)	0.00052	0.00052	0.00052
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00083	-0.00083
	(!A2 * B1 * X)	0.00061	0.00061	0.00061
	(!A2 * B1 * X)	-0.00075	-0.00075	-0.00074
	(!A2 * !B1 * C1 * X)	0.00061	0.00061	0.00061
	(!A2 * !B1 * C1 * X)	-0.00074	-0.00075	-0.00074
	(!A1 * A2 * B1 * X)	0.00059	0.00060	0.00059
	(!A1 * A2 * B1 * X)	-0.00074	-0.00075	-0.00074
	(!A1 * A2 * !B1 * C1 * X)	0.00059	0.00060	0.00059
	(!A1 * A2 * !B1 * C1 * X)	-0.00074	-0.00075	-0.00074
	(!A1 * A2 * !B1 * !C1 * !X)	0.00050	0.00051	0.00051
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00052	0.00052	0.00052
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00082	0.00082	0.00081
	(A1 * A2 * B1 * C1 * X)	-0.00068	-0.00070	-0.00070
	(A1 * A2 * B1 * !C1 * X)	0.00082	0.00082	0.00081
	(A1 * A2 * B1 * !C1 * X)	-0.00068	-0.00070	-0.00070
	(A1 * A2 * !B1 * C1 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * C1 * X)	-0.00065	-0.00068	-0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	0.00062	0.00062	0.00061
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00088	-0.00087
	(!A2 * B1 * X)	0.00076	0.00077	0.00076
	(!A2 * B1 * X)	-0.00073	-0.00073	-0.00073
	(!A2 * !B1 * C1 * X)	0.00076	0.00077	0.00076
	(!A2 * !B1 * C1 * X)	-0.00072	-0.00073	-0.00073
	(!A1 * A2 * B1 * X)	0.00075	0.00074	0.00075
	(!A1 * A2 * B1 * X)	-0.00073	-0.00072	-0.00073
	(!A1 * A2 * !B1 * C1 * X)	0.00075	0.00075	0.00075
	(!A1 * A2 * !B1 * C1 * X)	-0.00072	-0.00073	-0.00073
	(!A1 * A2 * !B1 * !C1 * !X)	0.00060	0.00060	0.00060
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00062	0.00062	0.00061
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00136	0.00136	0.00135
	(A1 * A2 * B1 * C1 * X)	-0.00137	-0.00141	-0.00141
	(A1 * A2 * B1 * !C1 * X)	0.00136	0.00136	0.00135
	(A1 * A2 * B1 * !C1 * X)	-0.00137	-0.00141	-0.00141
	(A1 * A2 * !B1 * C1 * X)	0.00135	0.00136	0.00135
	(A1 * A2 * !B1 * C1 * X)	-0.00132	-0.00138	-0.00137
	(A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00111	0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00162	-0.00162	-0.00161
	(!A2 * B1 * X)	0.00127	0.00128	0.00127
	(!A2 * B1 * X)	-0.00146	-0.00147	-0.00146
	(!A2 * !B1 * C1 * X)	0.00127	0.00128	0.00127
	(!A2 * !B1 * C1 * X)	-0.00146	-0.00147	-0.00146
	(!A1 * A2 * B1 * X)	0.00124	0.00125	0.00124
	(!A1 * A2 * B1 * X)	-0.00146	-0.00147	-0.00146
	(!A1 * A2 * !B1 * C1 * X)	0.00124	0.00125	0.00124
	(!A1 * A2 * !B1 * C1 * X)	-0.00146	-0.00147	-0.00146
	(!A1 * A2 * !B1 * !C1 * !X)	0.00109	0.00111	0.00109
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00162	-0.00162	-0.00161

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A2 * B1 * C1 * X)**	-0.00065	-0.00064	-0.00064
	(A1 * A2 * B1 * C1 * X)	0.00072	0.00071	0.00072
	(A1 * A2 * B1 * !C1 * X)	-0.00065	-0.00064	-0.00064
	(A1 * A2 * B1 * !C1 * X)	0.00072	0.00071	0.00072
	(A1 * A2 * !B1 * C1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !B1 * C1 * X)	0.00070	0.00070	0.00069
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00050	-0.00052	-0.00052
	(A1 * !A2 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A2 * B1 * X)	-0.00059	-0.00061	-0.00061
	(!A2 * B1 * X)	0.00075	0.00075	0.00075
	(!A2 * !B1 * C1 * X)	-0.00059	-0.00061	-0.00061
	(!A2 * !B1 * C1 * X)	0.00075	0.00075	0.00075
	(!A1 * A2 * B1 * X)	-0.00057	-0.00060	-0.00059
	(!A1 * A2 * B1 * X)	0.00075	0.00075	0.00075
	(!A1 * A2 * !B1 * C1 * X)	-0.00057	-0.00060	-0.00059
	(!A1 * A2 * !B1 * C1 * X)	0.00075	0.00075	0.00075
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00048	-0.00051	-0.00051
	(!A1 * A2 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00050	-0.00052	-0.00052
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * B1 * !C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * C1 * X)	0.00068	0.00068	0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00059	-0.00062	-0.00061
	(A1 * !A2 * !B1 * !C1 * !X)	0.00087	0.00088	0.00087
	(!A2 * B1 * X)	-0.00074	-0.00077	-0.00076
	(!A2 * B1 * X)	0.00073	0.00073	0.00073
	(!A2 * !B1 * C1 * X)	-0.00074	-0.00077	-0.00076
	(!A2 * !B1 * C1 * X)	0.00073	0.00073	0.00073
	(!A1 * A2 * B1 * X)	-0.00072	-0.00074	-0.00075
	(!A1 * A2 * B1 * X)	0.00073	0.00074	0.00073
	(!A1 * A2 * !B1 * C1 * X)	-0.00072	-0.00075	-0.00075
	(!A1 * A2 * !B1 * C1 * X)	0.00073	0.00074	0.00073
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00057	-0.00060	-0.00060
	(!A1 * A2 * !B1 * !C1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00060	-0.00062	-0.00061
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00087	0.00088	0.00087

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00135	-0.00135	-0.00135
	(A1 * A2 * B1 * C1 * X)	0.00141	0.00141	0.00141
	(A1 * A2 * B1 * !C1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * A2 * B1 * !C1 * X)	0.00141	0.00141	0.00141
	(A1 * A2 * !B1 * C1 * X)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * !B1 * C1 * X)	0.00136	0.00138	0.00137
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00108	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	0.00162	0.00162	0.00162
	(!A2 * B1 * X)	-0.00124	-0.00128	-0.00127
	(!A2 * B1 * X)	0.00146	0.00147	0.00147
	(!A2 * !B1 * C1 * X)	-0.00124	-0.00128	-0.00127
	(!A2 * !B1 * C1 * X)	0.00147	0.00147	0.00147
	(!A1 * A2 * B1 * X)	-0.00120	-0.00125	-0.00124
	(!A1 * A2 * B1 * X)	0.00146	0.00148	0.00147
	(!A1 * A2 * !B1 * C1 * X)	-0.00120	-0.00125	-0.00124
	(!A1 * A2 * !B1 * C1 * X)	0.00146	0.00148	0.00147
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00104	-0.00111	-0.00109
	(!A1 * A2 * !B1 * !C1 * !X)	0.00162	0.00163	0.00162
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00108	-0.00112	-0.00111
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00162	0.00162	0.00162

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A2 * A3 * C1 * X)**	0.00070	0.00068	0.00067
	(A1 * A2 * A3 * C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * A3 * !C1 * X)	0.00066	0.00067	0.00066
	(A1 * A2 * A3 * !C1 * X)	-0.00046	-0.00047	-0.00046
	(A1 * A2 * !A3 * C1 * X)	0.00073	0.00067	0.00066
	(A1 * A2 * !A3 * C1 * X)	-0.00063	-0.00071	-0.00071
	(A1 * !A2 * C1 * X)	0.00073	0.00067	0.00066
	(A1 * !A2 * C1 * X)	-0.00063	-0.00071	-0.00071
	(!A1 * C1 * X)	0.00073	0.00067	0.00066
	(!A1 * C1 * X)	-0.00063	-0.00071	-0.00071
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00082	0.00081	0.00078
	(A1 * A2 * A3 * C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * A3 * !C1 * X)	0.00078	0.00079	0.00077
	(A1 * A2 * A3 * !C1 * X)	-0.00047	-0.00047	-0.00046
	(A1 * A2 * !A3 * C1 * X)	0.00085	0.00078	0.00077
	(A1 * A2 * !A3 * C1 * X)	-0.00064	-0.00071	-0.00071
	(A1 * !A2 * C1 * X)	0.00085	0.00078	0.00077
	(A1 * !A2 * C1 * X)	-0.00064	-0.00071	-0.00071
	(!A1 * C1 * X)	0.00085	0.00078	0.00077
	(!A1 * C1 * X)	-0.00064	-0.00071	-0.00071
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00125	0.00126	0.00123
	(A1 * A2 * A3 * C1 * X)	-0.00117	-0.00119	-0.00118
	(A1 * A2 * A3 * !C1 * X)	0.00122	0.00124	0.00122
	(A1 * A2 * A3 * !C1 * X)	-0.00099	-0.00101	-0.00100
	(A1 * A2 * !A3 * C1 * X)	0.00133	0.00123	0.00122
	(A1 * A2 * !A3 * C1 * X)	-0.00137	-0.00149	-0.00149
	(A1 * !A2 * C1 * X)	0.00133	0.00123	0.00122
	(A1 * !A2 * C1 * X)	-0.00137	-0.00149	-0.00149
	(!A1 * C1 * X)	0.00133	0.00123	0.00122
	(!A1 * C1 * X)	-0.00137	-0.00149	-0.00149

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	(A1 * A2 * A3 * C1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * A3 * C1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * A3 * !C1 * X)	-0.00062	-0.00062	-0.00065
	(A1 * A2 * A3 * !C1 * X)	0.00051	0.00051	0.00049
	(A1 * A2 * !A3 * C1 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !A3 * C1 * X)	0.00071	0.00071	0.00071
	(A1 * !A2 * C1 * X)	-0.00065	-0.00066	-0.00065
	(A1 * !A2 * C1 * X)	0.00071	0.00071	0.00071
	(!A1 * C1 * X)	-0.00065	-0.00066	-0.00065
	(!A1 * C1 * X)	0.00071	0.00071	0.00071
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * A3 * C1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * A3 * !C1 * X)	-0.00073	-0.00074	-0.00076
	(A1 * A2 * A3 * !C1 * X)	0.00051	0.00051	0.00049
	(A1 * A2 * !A3 * C1 * X)	-0.00077	-0.00076	-0.00076
	(A1 * A2 * !A3 * C1 * X)	0.00071	0.00071	0.00071
	(A1 * !A2 * C1 * X)	-0.00077	-0.00076	-0.00076
	(A1 * !A2 * C1 * X)	0.00071	0.00071	0.00071
	(!A1 * C1 * X)	-0.00077	-0.00076	-0.00076
	(!A1 * C1 * X)	0.00071	0.00071	0.00071

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00122	-0.00123	-0.00122
	(A1 * A2 * A3 * C1 * X)	0.00117	0.00119	0.00118
	(A1 * A2 * A3 * !C1 * X)	-0.00113	-0.00114	-0.00117
	(A1 * A2 * A3 * !C1 * X)	0.00109	0.00109	0.00106
	(A1 * A2 * !A3 * C1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * A2 * !A3 * C1 * X)	0.00150	0.00150	0.00149
	(A1 * !A2 * C1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * !A2 * C1 * X)	0.00150	0.00150	0.00149
	(!A1 * C1 * X)	-0.00121	-0.00121	-0.00120
	(!A1 * C1 * X)	0.00150	0.00150	0.00149

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	(A1 * A2 * B1 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * B1 * X)	-0.00042	-0.00043	-0.00042
	(A1 * A2 * A3 * !B1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * A3 * !B1 * X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * B1 * X)	0.00081	0.00082	0.00081
	(A1 * !A2 * B1 * X)	-0.00042	-0.00043	-0.00042
	(!A1 * B1 * X)	0.00081	0.00082	0.00081
	(!A1 * B1 * X)	-0.00043	-0.00043	-0.00042
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00079	0.00081	0.00079
	(A1 * A2 * B1 * X)	-0.00045	-0.00045	-0.00045
	(A1 * A2 * A3 * !B1 * X)	0.00079	0.00081	0.00079
	(A1 * A2 * A3 * !B1 * X)	-0.00044	-0.00045	-0.00045
	(A1 * !A2 * B1 * X)	0.00079	0.00081	0.00079
	(A1 * !A2 * B1 * X)	-0.00045	-0.00045	-0.00045
	(!A1 * B1 * X)	0.00079	0.00081	0.00079
	(!A1 * B1 * X)	-0.00045	-0.00045	-0.00045
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00130	0.00132	0.00130
	(A1 * A2 * B1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * A2 * A3 * !B1 * X)	0.00130	0.00132	0.00130
	(A1 * A2 * A3 * !B1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * !A2 * B1 * X)	0.00130	0.00132	0.00130
	(A1 * !A2 * B1 * X)	-0.00095	-0.00096	-0.00095
	(!A1 * B1 * X)	0.00130	0.00132	0.00130
	(!A1 * B1 * X)	-0.00095	-0.00096	-0.00095

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	(A1 * A2 * B1 * X)	-0.00078	-0.00078	-0.00080
	(A1 * A2 * B1 * X)	0.00046	0.00046	0.00043
	(A1 * A2 * A3 * !B1 * X)	-0.00066	-0.00067	-0.00078
	(A1 * A2 * A3 * !B1 * X)	0.00053	0.00053	0.00045
	(A1 * !A2 * B1 * X)	-0.00078	-0.00078	-0.00080
	(A1 * !A2 * B1 * X)	0.00046	0.00046	0.00043
	(!A1 * B1 * X)	-0.00078	-0.00078	-0.00080
	(!A1 * B1 * X)	0.00046	0.00046	0.00043
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00076	-0.00076	-0.00079
	(A1 * A2 * B1 * X)	0.00048	0.00048	0.00046
	(A1 * A2 * A3 * !B1 * X)	-0.00065	-0.00066	-0.00076
	(A1 * A2 * A3 * !B1 * X)	0.00056	0.00056	0.00048
	(A1 * !A2 * B1 * X)	-0.00076	-0.00076	-0.00079
	(A1 * !A2 * B1 * X)	0.00048	0.00048	0.00046
	(!A1 * B1 * X)	-0.00076	-0.00076	-0.00079
	(!A1 * B1 * X)	0.00048	0.00048	0.00046
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00119	-0.00120	-0.00129
	(A1 * A2 * B1 * X)	0.00107	0.00106	0.00098
	(A1 * A2 * A3 * !B1 * X)	-0.00096	-0.00098	-0.00123
	(A1 * A2 * A3 * !B1 * X)	0.00122	0.00122	0.00102
	(A1 * !A2 * B1 * X)	-0.00119	-0.00120	-0.00129
	(A1 * !A2 * B1 * X)	0.00107	0.00107	0.00098
	(!A1 * B1 * X)	-0.00119	-0.00120	-0.00129
	(!A1 * B1 * X)	0.00107	0.00107	0.00098

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	A3	B1	Y
0	x	x	0	1
x	x	x	1	0
1	0	x	0	1
1	1	0	0	1
1	1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31oi_1	9.59040
sky130_fd_sc_hs__a31oi_2	14.38560
sky130_fd_sc_hs__a31oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__a31oi_1	0.00262	0.00269	0.00258	0.00267	0.19236
sky130_fd_sc_hs__a31oi_2	0.00499	0.00481	0.00515	0.00395	0.37088
sky130_fd_sc_hs__a31oi_4	0.01012	0.00947	0.00944	0.00798	0.69311

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31oi_1	0.00000	0.00755	0.01503
sky130_fd_sc_hs__a31oi_2	0.00000	0.01388	0.03007
sky130_fd_sc_hs__a31oi_4	0.00000	0.02777	0.06014

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (FR)	0.24332	1.68018	12.70540
	A2->Y (FR)	0.30407	1.76093	12.92110
	A3->Y (FR)	0.33423	1.79300	12.88820
	B1->Y (FR)	0.23148	1.63357	12.52150
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.21427	1.46264	12.70380
	A2->Y (FR)	0.25931	1.51026	12.72630
	A3->Y (FR)	0.29909	1.54338	12.66370
	B1->Y (FR)	0.17461	1.36784	12.34790
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.20696	1.30726	12.70120
	A2->Y (FR)	0.25905	1.35648	12.69130
	A3->Y (FR)	0.31055	1.42513	12.86420
	B1->Y (FR)	0.22705	1.29010	12.52250

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.07298	0.74958	6.07439
	A2->Y (RF)	0.08803	0.74730	5.92912
	A3->Y (RF)	0.09241	0.71127	5.50050
	B1->Y (RF)	0.03646	0.53955	4.57145
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.06604	0.70420	6.32272
	A2->Y (RF)	0.07791	0.67755	5.92946
	A3->Y (RF)	0.08549	0.65285	5.54393
	B1->Y (RF)	0.04268	0.63519	5.94037
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.06712	0.66219	6.50500
	A2->Y (RF)	0.08317	0.64542	6.11137
	A3->Y (RF)	0.09075	0.61110	5.59725
	B1->Y (RF)	0.03967	0.56392	5.73379

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00008	0.00001	-0.00001
	A1	0.00263	0.00256	0.00237
	A2	0.00040	0.00031	0.00029
	A2	0.00339	0.00330	0.00322
	A3	0.00053	0.00047	0.00045
	A3	0.00395	0.00389	0.00365
	B1	0.00052	0.00044	0.00045
	B1	0.00345	0.00337	0.00338
sky130_fd_sc_hs__a31oi_2	A1	0.00016	0.00004	0.00003
	A1	0.00493	0.00481	0.00450
	A2	0.00073	0.00060	0.00058
	A2	0.00626	0.00614	0.00577
	A3	0.00120	0.00108	0.00104
	A3	0.00763	0.00750	0.00744
	B1	0.00170	0.00159	0.00160
	B1	0.00638	0.00620	0.00629
sky130_fd_sc_hs__a31oi_4	A1	-0.00045	-0.00069	-0.00064
	A1	0.00938	0.00913	0.00859
	A2	0.00107	0.00073	0.00071
	A2	0.01242	0.01207	0.01207
	A3	0.00219	0.00193	0.00188
	A3	0.01520	0.01494	0.01483
	B1	0.00304	0.00281	0.00285
	B1	0.01279	0.01257	0.01261

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00327	0.00319	0.00333
	A1	0.00078	0.00070	0.00067
	A2	0.00375	0.00368	0.00363
	A2	0.00078	0.00071	0.00066
	A3	0.00419	0.00413	0.00413
	A3	0.00074	0.00067	0.00063
	B1	0.00306	0.00304	0.00303
	B1	0.00004	0.00001	0.00001
sky130_fd_sc_hs__a31oi_2	A1	0.00588	0.00572	0.00582
	A1	0.00125	0.00106	0.00100
	A2	0.00673	0.00661	0.00665
	A2	0.00124	0.00110	0.00101
	A3	0.00774	0.00764	0.00749
	A3	0.00125	0.00110	0.00102
	B1	0.00433	0.00435	0.00434
	B1	-0.00056	-0.00060	-0.00058
sky130_fd_sc_hs__a31oi_4	A1	0.01192	0.01148	0.01140
	A1	0.00238	0.00195	0.00187
	A2	0.01362	0.01332	0.01365
	A2	0.00235	0.00202	0.00188
	A3	0.01547	0.01516	0.01500
	A3	0.00233	0.00201	0.00187
	B1	0.00905	0.00893	0.00905
	B1	-0.00115	-0.00127	-0.00115

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a31oi_1	**(A2 * A3 * B1 * !Y)**	0.00072	0.00071	0.00071
	(A2 * A3 * B1 * !Y)	-0.00075	-0.00078	-0.00078
	(A2 * !A3 * B1 * !Y)	0.00064	0.00065	0.00064
	(A2 * !A3 * B1 * !Y)	-0.00080	-0.00081	-0.00080
	(A2 * !A3 * !B1 * Y)	0.00027	0.00027	0.00024
	(A2 * !A3 * !B1 * Y)	-0.00092	-0.00093	-0.00098
	(!A2 * B1 * !Y)	0.00066	0.00066	0.00066
	(!A2 * B1 * !Y)	-0.00080	-0.00081	-0.00080
	(!A2 * !B1 * Y)	0.00027	0.00027	0.00025
	(!A2 * !B1 * Y)	-0.00096	-0.00096	-0.00098
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00143	0.00144	0.00142
	(A2 * A3 * B1 * !Y)	-0.00153	-0.00160	-0.00159
	(A2 * !A3 * B1 * !Y)	0.00129	0.00129	0.00128
	(A2 * !A3 * B1 * !Y)	-0.00165	-0.00165	-0.00164
	(A2 * !A3 * !B1 * Y)	0.00053	0.00053	0.00047
	(A2 * !A3 * !B1 * Y)	-0.00190	-0.00191	-0.00201
	(!A2 * B1 * !Y)	0.00132	0.00133	0.00132
	(!A2 * B1 * !Y)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * Y)	0.00050	0.00050	0.00047
	(!A2 * !B1 * Y)	-0.00198	-0.00199	-0.00203
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00299	0.00298	0.00295
	(A2 * A3 * B1 * !Y)	-0.00302	-0.00315	-0.00313
	(A2 * !A3 * B1 * !Y)	0.00267	0.00267	0.00267
	(A2 * !A3 * B1 * !Y)	-0.00326	-0.00325	-0.00324
	(A2 * !A3 * !B1 * Y)	0.00111	0.00112	0.00099
	(A2 * !A3 * !B1 * Y)	-0.00376	-0.00380	-0.00403
	(!A2 * B1 * !Y)	0.00277	0.00276	0.00277
	(!A2 * B1 * !Y)	-0.00324	-0.00324	-0.00324
	(!A2 * !B1 * Y)	0.00110	0.00111	0.00103
	(!A2 * !B1 * Y)	-0.00393	-0.00397	-0.00406

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	(A2 * A3 * B1 * !Y)	-0.00071	-0.00071	-0.00071
	(A2 * A3 * B1 * !Y)	0.00077	0.00078	0.00078
	(A2 * !A3 * B1 * !Y)	-0.00060	-0.00065	-0.00064
	(A2 * !A3 * B1 * !Y)	0.00080	0.00081	0.00081
	(A2 * !A3 * !B1 * Y)	-0.00024	-0.00024	-0.00024
	(A2 * !A3 * !B1 * Y)	0.00098	0.00099	0.00098
	(!A2 * B1 * !Y)	-0.00064	-0.00066	-0.00066
	(!A2 * B1 * !Y)	0.00080	0.00081	0.00081
	(!A2 * !B1 * Y)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * Y)	0.00098	0.00099	0.00098
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00142	-0.00142	-0.00142
	(A2 * A3 * B1 * !Y)	0.00158	0.00160	0.00159
	(A2 * !A3 * B1 * !Y)	-0.00118	-0.00129	-0.00128
	(A2 * !A3 * B1 * !Y)	0.00165	0.00166	0.00165
	(A2 * !A3 * !B1 * Y)	-0.00045	-0.00045	-0.00044
	(A2 * !A3 * !B1 * Y)	0.00205	0.00204	0.00204
	(!A2 * B1 * !Y)	-0.00127	-0.00133	-0.00132
	(!A2 * B1 * !Y)	0.00164	0.00167	0.00165
	(!A2 * !B1 * Y)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * Y)	0.00203	0.00205	0.00204

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00295	-0.00296	-0.00294
	(A2 * A3 * B1 * !Y)	0.00314	0.00315	0.00313
	(A2 * !A3 * B1 * !Y)	-0.00247	-0.00267	-0.00267
	(A2 * !A3 * B1 * !Y)	0.00327	0.00328	0.00325
	(A2 * !A3 * !B1 * Y)	-0.00096	-0.00096	-0.00096
	(A2 * !A3 * !B1 * Y)	0.00405	0.00409	0.00407
	(!A2 * B1 * !Y)	-0.00266	-0.00276	-0.00277
	(!A2 * B1 * !Y)	0.00324	0.00328	0.00325
	(!A2 * !B1 * Y)	-0.00100	-0.00100	-0.00099
	(!A2 * !B1 * Y)	0.00409	0.00408	0.00407

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a31oi_1	**(A1 * A3 * B1 * !Y)**	0.00077	0.00076	0.00075
	(A1 * A3 * B1 * !Y)	-0.00075	-0.00078	-0.00077
	(A1 * !A3 * B1 * !Y)	0.00070	0.00071	0.00070
	(A1 * !A3 * B1 * !Y)	-0.00080	-0.00081	-0.00080
	(A1 * !A3 * !B1 * Y)	0.00031	0.00031	0.00031
	(A1 * !A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * B1 * !Y)	0.00071	0.00071	0.00071
	(!A1 * A3 * B1 * !Y)	-0.00080	-0.00081	-0.00080
	(!A1 * A3 * !B1 * Y)	0.00061	0.00061	0.00061
	(!A1 * A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * B1 * !Y)	0.00047	0.00047	0.00047
	(!A1 * !A3 * B1 * !Y)	-0.00080	-0.00081	-0.00080
	(!A1 * !A3 * !B1 * Y)	0.00035	0.00035	0.00035
	(!A1 * !A3 * !B1 * Y)	-0.00091	-0.00091	-0.00090

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00133	0.00132	0.00131
	(A1 * A3 * B1 * !Y)	-0.00155	-0.00160	-0.00160
	(A1 * !A3 * B1 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * B1 * !Y)	-0.00165	-0.00166	-0.00166
	(A1 * !A3 * !B1 * Y)	0.00061	0.00061	0.00061
	(A1 * !A3 * !B1 * Y)	-0.00167	-0.00166	-0.00165
	(!A1 * A3 * B1 * !Y)	0.00121	0.00122	0.00121
	(!A1 * A3 * B1 * !Y)	-0.00165	-0.00166	-0.00166
	(!A1 * A3 * !B1 * Y)	0.00120	0.00121	0.00121
	(!A1 * A3 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(!A1 * !A3 * B1 * !Y)	0.00074	0.00074	0.00074
	(!A1 * !A3 * B1 * !Y)	-0.00166	-0.00166	-0.00166
	(!A1 * !A3 * !B1 * Y)	0.00068	0.00068	0.00068
	(!A1 * !A3 * !B1 * Y)	-0.00168	-0.00168	-0.00168
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00283	0.00282	0.00279
	(A1 * A3 * B1 * !Y)	-0.00307	-0.00322	-0.00320
	(A1 * !A3 * B1 * !Y)	0.00254	0.00256	0.00255
	(A1 * !A3 * B1 * !Y)	-0.00332	-0.00334	-0.00332
	(A1 * !A3 * !B1 * Y)	0.00130	0.00131	0.00133
	(A1 * !A3 * !B1 * Y)	-0.00334	-0.00336	-0.00333
	(!A1 * A3 * B1 * !Y)	0.00261	0.00262	0.00262
	(!A1 * A3 * B1 * !Y)	-0.00332	-0.00333	-0.00332
	(!A1 * A3 * !B1 * Y)	0.00259	0.00258	0.00259
	(!A1 * A3 * !B1 * Y)	-0.00335	-0.00334	-0.00335
	(!A1 * !A3 * B1 * !Y)	0.00163	0.00163	0.00162
	(!A1 * !A3 * B1 * !Y)	-0.00334	-0.00334	-0.00333
	(!A1 * !A3 * !B1 * Y)	0.00149	0.00149	0.00148
	(!A1 * !A3 * !B1 * Y)	-0.00339	-0.00338	-0.00338

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	(A1 * A3 * B1 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A3 * B1 * !Y)	0.00077	0.00078	0.00077
	(A1 * !A3 * B1 * !Y)	-0.00068	-0.00071	-0.00070
	(A1 * !A3 * B1 * !Y)	0.00080	0.00082	0.00081
	(A1 * !A3 * !B1 * Y)	-0.00029	-0.00029	-0.00030
	(A1 * !A3 * !B1 * Y)	0.00092	0.00094	0.00091
	(!A1 * A3 * B1 * !Y)	-0.00069	-0.00071	-0.00071
	(!A1 * A3 * B1 * !Y)	0.00081	0.00081	0.00081
	(!A1 * A3 * !B1 * Y)	-0.00058	-0.00061	-0.00061
	(!A1 * A3 * !B1 * Y)	0.00091	0.00091	0.00090
	(!A1 * !A3 * B1 * !Y)	-0.00047	-0.00047	-0.00047
	(!A1 * !A3 * B1 * !Y)	0.00080	0.00081	0.00081
	(!A1 * !A3 * !B1 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !A3 * !B1 * Y)	0.00093	0.00094	0.00091
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * A3 * B1 * !Y)	0.00159	0.00160	0.00160
	(A1 * !A3 * B1 * !Y)	-0.00117	-0.00122	-0.00121
	(A1 * !A3 * B1 * !Y)	0.00167	0.00169	0.00166
	(A1 * !A3 * !B1 * Y)	-0.00056	-0.00057	-0.00058
	(A1 * !A3 * !B1 * Y)	0.00170	0.00173	0.00168
	(!A1 * A3 * B1 * !Y)	-0.00117	-0.00122	-0.00121
	(!A1 * A3 * B1 * !Y)	0.00166	0.00167	0.00166
	(!A1 * A3 * !B1 * Y)	-0.00114	-0.00121	-0.00121
	(!A1 * A3 * !B1 * Y)	0.00169	0.00168	0.00167
	(!A1 * !A3 * B1 * !Y)	-0.00074	-0.00074	-0.00074
	(!A1 * !A3 * B1 * !Y)	0.00168	0.00168	0.00166
	(!A1 * !A3 * !B1 * Y)	-0.00068	-0.00068	-0.00068
	(!A1 * !A3 * !B1 * Y)	0.00171	0.00174	0.00168

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00279	-0.00280	-0.00279
	(A1 * A3 * B1 * !Y)	0.00319	0.00322	0.00320
	(A1 * !A3 * B1 * !Y)	-0.00245	-0.00256	-0.00255
	(A1 * !A3 * B1 * !Y)	0.00335	0.00339	0.00333
	(A1 * !A3 * !B1 * Y)	-0.00123	-0.00126	-0.00127
	(A1 * !A3 * !B1 * Y)	0.00343	0.00349	0.00338
	(!A1 * A3 * B1 * !Y)	-0.00252	-0.00262	-0.00262
	(!A1 * A3 * B1 * !Y)	0.00333	0.00336	0.00333
	(!A1 * A3 * !B1 * Y)	-0.00245	-0.00258	-0.00259
	(!A1 * A3 * !B1 * Y)	0.00341	0.00339	0.00336
	(!A1 * !A3 * B1 * !Y)	-0.00163	-0.00163	-0.00162
	(!A1 * !A3 * B1 * !Y)	0.00337	0.00337	0.00334
	(!A1 * !A3 * !B1 * Y)	-0.00149	-0.00149	-0.00148
	(!A1 * !A3 * !B1 * Y)	0.00344	0.00350	0.00339

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	**(A1 * A2 * B1 * !Y)**	0.00080	0.00079	0.00078
	(A1 * A2 * B1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * !A2 * !B1 * Y)	0.00068	0.00068	0.00068
	(A1 * !A2 * !B1 * Y)	-0.00089	-0.00089	-0.00089
	(!A2 * B1 * !Y)	0.00074	0.00074	0.00073
	(!A2 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * A2 * B1 * !Y)	0.00072	0.00073	0.00072
	(!A1 * A2 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * A2 * !B1 * Y)	0.00066	0.00067	0.00066
	(!A1 * A2 * !B1 * Y)	-0.00089	-0.00089	-0.00089
	(!A1 * !A2 * !B1 * Y)	0.00068	0.00067	0.00067
	(!A1 * !A2 * !B1 * Y)	-0.00089	-0.00089	-0.00089

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00148	0.00147	0.00145
	(A1 * A2 * B1 * !Y)	-0.00153	-0.00160	-0.00158
	(A1 * !A2 * !B1 * Y)	0.00133	0.00134	0.00133
	(A1 * !A2 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * !Y)	0.00136	0.00137	0.00136
	(!A2 * B1 * !Y)	-0.00164	-0.00165	-0.00164
	(!A1 * A2 * B1 * !Y)	0.00130	0.00132	0.00131
	(!A1 * A2 * B1 * !Y)	-0.00163	-0.00165	-0.00164
	(!A1 * A2 * !B1 * Y)	0.00130	0.00132	0.00130
	(!A1 * A2 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * !B1 * Y)	0.00134	0.00134	0.00133
	(!A1 * !A2 * !B1 * Y)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00281	0.00280	0.00277
	(A1 * A2 * B1 * !Y)	-0.00307	-0.00318	-0.00319
	(A1 * !A2 * !B1 * Y)	0.00255	0.00256	0.00254
	(A1 * !A2 * !B1 * Y)	-0.00332	-0.00332	-0.00331
	(!A2 * B1 * !Y)	0.00255	0.00256	0.00254
	(!A2 * B1 * !Y)	-0.00331	-0.00332	-0.00331
	(!A1 * A2 * B1 * !Y)	0.00249	0.00251	0.00249
	(!A1 * A2 * B1 * !Y)	-0.00331	-0.00333	-0.00331
	(!A1 * A2 * !B1 * Y)	0.00248	0.00250	0.00248
	(!A1 * A2 * !B1 * Y)	-0.00331	-0.00333	-0.00331
	(!A1 * !A2 * !B1 * Y)	0.00255	0.00256	0.00254
	(!A1 * !A2 * !B1 * Y)	-0.00332	-0.00333	-0.00331

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a31oi_1	**(A1 * A2 * B1 * !Y)**	-0.00079	-0.00078	-0.00078
	(A1 * A2 * B1 * !Y)	0.00081	0.00080	0.00080
	(A1 * !A2 * !B1 * Y)	-0.00066	-0.00068	-0.00068
	(A1 * !A2 * !B1 * Y)	0.00089	0.00090	0.00089
	(!A2 * B1 * !Y)	-0.00072	-0.00074	-0.00073
	(!A2 * B1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * A2 * B1 * !Y)	-0.00069	-0.00073	-0.00072
	(!A1 * A2 * B1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * A2 * !B1 * Y)	-0.00063	-0.00067	-0.00066
	(!A1 * A2 * !B1 * Y)	0.00089	0.00090	0.00089
	(!A1 * !A2 * !B1 * Y)	-0.00066	-0.00067	-0.00067
	(!A1 * !A2 * !B1 * Y)	0.00089	0.00090	0.00089
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00145	-0.00146	-0.00145
	(A1 * A2 * B1 * !Y)	0.00158	0.00160	0.00158
	(A1 * !A2 * !B1 * Y)	-0.00129	-0.00134	-0.00133
	(A1 * !A2 * !B1 * Y)	0.00164	0.00165	0.00164
	(!A2 * B1 * !Y)	-0.00132	-0.00137	-0.00136
	(!A2 * B1 * !Y)	0.00164	0.00165	0.00164
	(!A1 * A2 * B1 * !Y)	-0.00124	-0.00132	-0.00131
	(!A1 * A2 * B1 * !Y)	0.00164	0.00166	0.00164
	(!A1 * A2 * !B1 * Y)	-0.00123	-0.00132	-0.00130
	(!A1 * A2 * !B1 * Y)	0.00164	0.00166	0.00165
	(!A1 * !A2 * !B1 * Y)	-0.00129	-0.00134	-0.00133
	(!A1 * !A2 * !B1 * Y)	0.00164	0.00165	0.00165

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00276	-0.00276	-0.00276
	(A1 * A2 * B1 * !Y)	0.00318	0.00318	0.00319
	(A1 * !A2 * !B1 * Y)	-0.00245	-0.00256	-0.00254
	(A1 * !A2 * !B1 * Y)	0.00333	0.00333	0.00332
	(!A2 * B1 * !Y)	-0.00246	-0.00256	-0.00254
	(!A2 * B1 * !Y)	0.00332	0.00333	0.00332
	(!A1 * A2 * B1 * !Y)	-0.00235	-0.00251	-0.00249
	(!A1 * A2 * B1 * !Y)	0.00332	0.00336	0.00332
	(!A1 * A2 * !B1 * Y)	-0.00234	-0.00250	-0.00248
	(!A1 * A2 * !B1 * Y)	0.00333	0.00336	0.00332
	(!A1 * !A2 * !B1 * Y)	-0.00245	-0.00256	-0.00254
	(!A1 * !A2 * !B1 * Y)	0.00333	0.00334	0.00332

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a31oi_1	**(A1 * A2 * A3 * !Y)**	0.00088	0.00088	0.00086
	(A1 * A2 * A3 * !Y)	-0.00046	-0.00046	-0.00045
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00093	0.00094	0.00092
	(A1 * A2 * A3 * !Y)	-0.00091	-0.00091	-0.00090
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00192	0.00195	0.00192
	(A1 * A2 * A3 * !Y)	-0.00184	-0.00187	-0.00184

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	**(A1 * A2 * A3 * !Y)**	-0.00076	-0.00078	-0.00085
	(A1 * A2 * A3 * !Y)	0.00054	0.00054	0.00047
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	-0.00069	-0.00071	-0.00089
	(A1 * A2 * A3 * !Y)	0.00110	0.00110	0.00095
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	-0.00147	-0.00151	-0.00186
	(A1 * A2 * A3 * !Y)	0.00221	0.00221	0.00193

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	A3	B1	X
0	x	x	0	0
x	x	x	1	1
1	0	x	0	0
1	1	0	0	0
1	1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31o_1	11.18880
sky130_fd_sc_hs__a31o_2	12.78720
sky130_fd_sc_hs__a31o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__a31o_1	0.00234	0.00230	0.00231	0.00253	0.44224
sky130_fd_sc_hs__a31o_2	0.00261	0.00251	0.00252	0.00246	0.87763
sky130_fd_sc_hs__a31o_4	0.00460	0.00442	0.00440	0.00460	1.69964

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31o_1	0.00000	0.02178	0.03372
sky130_fd_sc_hs__a31o_2	0.00000	0.02758	0.03648
sky130_fd_sc_hs__a31o_4	0.00000	0.05615	0.07295

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (RR)	0.19864	1.16963	8.43818
	A2->X (RR)	0.21163	1.19679	8.72185
	A3->X (RR)	0.21795	1.18203	8.75941
	B1->X (RR)	0.13081	1.08310	8.42103
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.20712	1.06952	8.72357
	A2->X (RR)	0.21990	1.08658	8.93547
	A3->X (RR)	0.22635	1.06687	8.93823
	B1->X (RR)	0.12269	0.96132	8.63409
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.22844	0.99465	8.68777
	A2->X (RR)	0.24248	1.00844	8.91121
	A3->X (RR)	0.25059	0.99045	8.92303
	B1->X (RR)	0.12281	0.85515	8.54568

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.36845	1.12542	5.99351
	A2->X (FF)	0.42394	1.18694	6.20856
	A3->X (FF)	0.45980	1.22792	6.34994
	B1->X (FF)	0.39852	1.10821	5.65417
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.50045	1.25900	6.50822
	A2->X (FF)	0.57097	1.33586	6.70698
	A3->X (FF)	0.60208	1.37257	6.81941
	B1->X (FF)	0.53684	1.24891	6.22966
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.48247	1.21015	6.50347
	A2->X (FF)	0.53943	1.27342	6.67737
	A3->X (FF)	0.59172	1.33131	6.82907
	B1->X (FF)	0.51308	1.18835	6.15816

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00437	0.00430	0.00437
	A1	0.00214	0.00207	0.00215
	A2	0.00473	0.00469	0.00467
	A2	0.00214	0.00210	0.00209
	A3	0.00513	0.00509	0.00504
	A3	0.00214	0.00209	0.00205
	B1	0.00426	0.00414	0.00430
	B1	0.00152	0.00140	0.00157
sky130_fd_sc_hs__a31o_2	A1	0.00579	0.00582	0.00588
	A1	0.00335	0.00337	0.00345
	A2	0.00620	0.00627	0.00628
	A2	0.00335	0.00343	0.00348
	A3	0.00666	0.00674	0.00672
	A3	0.00335	0.00343	0.00345
	B1	0.00567	0.00567	0.00580
	B1	0.00275	0.00275	0.00290
sky130_fd_sc_hs__a31o_4	A1	0.01106	0.01118	0.01144
	A1	0.00661	0.00673	0.00702
	A2	0.01184	0.01208	0.01219
	A2	0.00660	0.00684	0.00705
	A3	0.01267	0.01295	0.01304
	A3	0.00660	0.00687	0.00705
	B1	0.01016	0.01018	0.01055
	B1	0.00494	0.00496	0.00535

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00160	0.00160	0.00159
	A1	0.00387	0.00387	0.00386
	A2	0.00184	0.00182	0.00213
	A2	0.00443	0.00446	0.00444
	A3	0.00196	0.00198	0.00235
	A3	0.00492	0.00493	0.00489
	B1	0.00179	0.00156	0.00214
	B1	0.00445	0.00443	0.00465
sky130_fd_sc_hs__a31o_2	A1	0.00266	0.00280	0.00316
	A1	0.00515	0.00529	0.00530
	A2	0.00294	0.00311	0.00372
	A2	0.00578	0.00596	0.00596
	A3	0.00310	0.00327	0.00407
	A3	0.00635	0.00652	0.00650
	B1	0.00284	0.00295	0.00374
	B1	0.00588	0.00602	0.00625
sky130_fd_sc_hs__a31o_4	A1	0.00544	0.00576	0.00751
	A1	0.01002	0.01037	0.01042
	A2	0.00587	0.00629	0.00770
	A2	0.01115	0.01157	0.01162
	A3	0.00638	0.00686	0.00810
	A3	0.01236	0.01284	0.01287
	B1	0.00642	0.00664	0.00766
	B1	0.01140	0.01171	0.01222

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a31o_1	**(A2 * A3 * B1 * X)**	0.00061	0.00060	0.00059
	(A2 * A3 * B1 * X)	-0.00069	-0.00073	-0.00073
	(A2 * !A3 * B1 * X)	0.00053	0.00054	0.00053
	(A2 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A2 * !A3 * !B1 * !X)	0.00021	0.00021	0.00019
	(A2 * !A3 * !B1 * !X)	-0.00086	-0.00086	-0.00091
	(!A2 * B1 * X)	0.00055	0.00055	0.00055
	(!A2 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A2 * !B1 * !X)	0.00021	0.00021	0.00020
	(!A2 * !B1 * !X)	-0.00089	-0.00089	-0.00091
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00077	0.00075	0.00075
	(A2 * A3 * B1 * X)	-0.00067	-0.00070	-0.00070
	(A2 * !A3 * B1 * X)	0.00068	0.00069	0.00068
	(A2 * !A3 * B1 * X)	-0.00073	-0.00073	-0.00073
	(A2 * !A3 * !B1 * !X)	0.00027	0.00027	0.00025
	(A2 * !A3 * !B1 * !X)	-0.00089	-0.00089	-0.00094
	(!A2 * B1 * X)	0.00070	0.00071	0.00070
	(!A2 * B1 * X)	-0.00073	-0.00073	-0.00073
	(!A2 * !B1 * !X)	0.00027	0.00027	0.00026
	(!A2 * !B1 * !X)	-0.00092	-0.00092	-0.00094
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00129	0.00127	0.00126
	(A2 * A3 * B1 * X)	-0.00141	-0.00146	-0.00147
	(A2 * !A3 * B1 * X)	0.00115	0.00116	0.00115
	(A2 * !A3 * B1 * X)	-0.00153	-0.00154	-0.00153
	(A2 * !A3 * !B1 * !X)	0.00051	0.00051	0.00045
	(A2 * !A3 * !B1 * !X)	-0.00173	-0.00173	-0.00184
	(!A2 * B1 * X)	0.00118	0.00119	0.00118
	(!A2 * B1 * X)	-0.00153	-0.00153	-0.00153
	(!A2 * !B1 * !X)	0.00049	0.00049	0.00046
	(!A2 * !B1 * !X)	-0.00181	-0.00181	-0.00186

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	(A2 * A3 * B1 * X)	-0.00059	-0.00059	-0.00059
	(A2 * A3 * B1 * X)	0.00074	0.00073	0.00073
	(A2 * !A3 * B1 * X)	-0.00050	-0.00054	-0.00053
	(A2 * !A3 * B1 * X)	0.00077	0.00077	0.00076
	(A2 * !A3 * !B1 * !X)	-0.00019	-0.00019	-0.00019
	(A2 * !A3 * !B1 * !X)	0.00091	0.00093	0.00091
	(!A2 * B1 * X)	-0.00053	-0.00055	-0.00055
	(!A2 * B1 * X)	0.00076	0.00077	0.00076
	(!A2 * !B1 * !X)	-0.00020	-0.00020	-0.00019
	(!A2 * !B1 * !X)	0.00092	0.00093	0.00091
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00075	-0.00075	-0.00075
	(A2 * A3 * B1 * X)	0.00071	0.00070	0.00070
	(A2 * !A3 * B1 * X)	-0.00065	-0.00069	-0.00068
	(A2 * !A3 * B1 * X)	0.00074	0.00074	0.00073
	(A2 * !A3 * !B1 * !X)	-0.00024	-0.00025	-0.00024
	(A2 * !A3 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A2 * B1 * X)	-0.00068	-0.00071	-0.00070
	(!A2 * B1 * X)	0.00073	0.00074	0.00073
	(!A2 * !B1 * !X)	-0.00025	-0.00025	-0.00025
	(!A2 * !B1 * !X)	0.00094	0.00096	0.00095

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00126	-0.00126	-0.00126
	(A2 * A3 * B1 * X)	0.00148	0.00146	0.00147
	(A2 * !A3 * B1 * X)	-0.00109	-0.00116	-0.00115
	(A2 * !A3 * B1 * X)	0.00155	0.00154	0.00153
	(A2 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00043
	(A2 * !A3 * !B1 * !X)	0.00188	0.00189	0.00186
	(!A2 * B1 * X)	-0.00115	-0.00119	-0.00118
	(!A2 * B1 * X)	0.00153	0.00154	0.00153
	(!A2 * !B1 * !X)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * !X)	0.00185	0.00189	0.00186

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a31o_1	**(A1 * A3 * B1 * X)**	0.00060	0.00059	0.00058
	(A1 * A3 * B1 * X)	-0.00069	-0.00073	-0.00073
	(A1 * !A3 * B1 * X)	0.00053	0.00054	0.00053
	(A1 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A3 * !B1 * !X)	0.00025	0.00025	0.00025
	(A1 * !A3 * !B1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * A3 * B1 * X)	0.00054	0.00054	0.00054
	(!A1 * A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * !B1 * !X)	0.00051	0.00052	0.00051
	(!A1 * A3 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A3 * B1 * X)	0.00033	0.00033	0.00033
	(!A1 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A3 * !B1 * !X)	0.00028	0.00028	0.00028
	(!A1 * !A3 * !B1 * !X)	-0.00079	-0.00079	-0.00079

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00074	0.00073	0.00072
	(A1 * A3 * B1 * X)	-0.00067	-0.00070	-0.00070
	(A1 * !A3 * B1 * X)	0.00067	0.00067	0.00067
	(A1 * !A3 * B1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * !A3 * !B1 * !X)	0.00031	0.00031	0.00031
	(A1 * !A3 * !B1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * A3 * B1 * X)	0.00067	0.00068	0.00067
	(!A1 * A3 * B1 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * A3 * !B1 * !X)	0.00061	0.00062	0.00061
	(!A1 * A3 * !B1 * !X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A3 * B1 * X)	0.00044	0.00043	0.00043
	(!A1 * !A3 * B1 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A3 * !B1 * !X)	0.00035	0.00035	0.00035
	(!A1 * !A3 * !B1 * !X)	-0.00080	-0.00079	-0.00079
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00128	0.00126	0.00125
	(A1 * A3 * B1 * X)	-0.00142	-0.00148	-0.00148
	(A1 * !A3 * B1 * X)	0.00115	0.00115	0.00115
	(A1 * !A3 * B1 * X)	-0.00154	-0.00154	-0.00154
	(A1 * !A3 * !B1 * !X)	0.00062	0.00062	0.00062
	(A1 * !A3 * !B1 * !X)	-0.00156	-0.00155	-0.00154
	(!A1 * A3 * B1 * X)	0.00117	0.00118	0.00117
	(!A1 * A3 * B1 * X)	-0.00154	-0.00155	-0.00154
	(!A1 * A3 * !B1 * !X)	0.00117	0.00117	0.00117
	(!A1 * A3 * !B1 * !X)	-0.00154	-0.00154	-0.00154
	(!A1 * !A3 * B1 * X)	0.00075	0.00075	0.00075
	(!A1 * !A3 * B1 * X)	-0.00155	-0.00155	-0.00154
	(!A1 * !A3 * !B1 * !X)	0.00070	0.00070	0.00069
	(!A1 * !A3 * !B1 * !X)	-0.00157	-0.00157	-0.00156

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	(A1 * A3 * B1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A3 * B1 * X)	0.00072	0.00073	0.00073
	(A1 * !A3 * B1 * X)	-0.00052	-0.00054	-0.00053
	(A1 * !A3 * B1 * X)	0.00076	0.00077	0.00076
	(A1 * !A3 * !B1 * !X)	-0.00023	-0.00024	-0.00024
	(A1 * !A3 * !B1 * !X)	0.00080	0.00082	0.00079
	(!A1 * A3 * B1 * X)	-0.00052	-0.00054	-0.00054
	(!A1 * A3 * B1 * X)	0.00076	0.00076	0.00076
	(!A1 * A3 * !B1 * !X)	-0.00048	-0.00052	-0.00051
	(!A1 * A3 * !B1 * !X)	0.00080	0.00079	0.00079
	(!A1 * !A3 * B1 * X)	-0.00033	-0.00033	-0.00033
	(!A1 * !A3 * B1 * X)	0.00076	0.00077	0.00076
	(!A1 * !A3 * !B1 * !X)	-0.00028	-0.00028	-0.00028
	(!A1 * !A3 * !B1 * !X)	0.00081	0.00083	0.00079
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00071	-0.00072	-0.00072
	(A1 * A3 * B1 * X)	0.00070	0.00070	0.00070
	(A1 * !A3 * B1 * X)	-0.00065	-0.00067	-0.00067
	(A1 * !A3 * B1 * X)	0.00073	0.00074	0.00073
	(A1 * !A3 * !B1 * !X)	-0.00029	-0.00030	-0.00030
	(A1 * !A3 * !B1 * !X)	0.00081	0.00082	0.00079
	(!A1 * A3 * B1 * X)	-0.00065	-0.00068	-0.00067
	(!A1 * A3 * B1 * X)	0.00073	0.00074	0.00073
	(!A1 * A3 * !B1 * !X)	-0.00058	-0.00062	-0.00061
	(!A1 * A3 * !B1 * !X)	0.00080	0.00079	0.00079
	(!A1 * !A3 * B1 * X)	-0.00044	-0.00043	-0.00043
	(!A1 * !A3 * B1 * X)	0.00073	0.00074	0.00073
	(!A1 * !A3 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A3 * !B1 * !X)	0.00081	0.00083	0.00080

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00124	-0.00124	-0.00124
	(A1 * A3 * B1 * X)	0.00147	0.00148	0.00148
	(A1 * !A3 * B1 * X)	-0.00110	-0.00115	-0.00115
	(A1 * !A3 * B1 * X)	0.00155	0.00156	0.00155
	(A1 * !A3 * !B1 * !X)	-0.00058	-0.00059	-0.00059
	(A1 * !A3 * !B1 * !X)	0.00159	0.00162	0.00157
	(!A1 * A3 * B1 * X)	-0.00113	-0.00118	-0.00117
	(!A1 * A3 * B1 * X)	0.00155	0.00156	0.00155
	(!A1 * A3 * !B1 * !X)	-0.00110	-0.00117	-0.00117
	(!A1 * A3 * !B1 * !X)	0.00158	0.00156	0.00155
	(!A1 * !A3 * B1 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * !A3 * B1 * X)	0.00155	0.00157	0.00155
	(!A1 * !A3 * !B1 * !X)	-0.00070	-0.00070	-0.00069
	(!A1 * !A3 * !B1 * !X)	0.00160	0.00162	0.00157

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	**(A1 * A2 * B1 * X)**	0.00066	0.00065	0.00064
	(A1 * A2 * B1 * X)	-0.00069	-0.00072	-0.00072
	(A1 * !A2 * !B1 * !X)	0.00052	0.00052	0.00052
	(A1 * !A2 * !B1 * !X)	-0.00082	-0.00083	-0.00082
	(!A2 * B1 * X)	0.00059	0.00060	0.00060
	(!A2 * B1 * X)	-0.00074	-0.00075	-0.00074
	(!A1 * A2 * B1 * X)	0.00059	0.00059	0.00059
	(!A1 * A2 * B1 * X)	-0.00074	-0.00075	-0.00074
	(!A1 * A2 * !B1 * !X)	0.00051	0.00051	0.00051
	(!A1 * A2 * !B1 * !X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * !B1 * !X)	0.00052	0.00052	0.00052
	(!A1 * !A2 * !B1 * !X)	-0.00082	-0.00083	-0.00082

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00079	0.00078	0.00077
	(A1 * A2 * B1 * X)	-0.00066	-0.00069	-0.00069
	(A1 * !A2 * !B1 * !X)	0.00062	0.00062	0.00061
	(A1 * !A2 * !B1 * !X)	-0.00083	-0.00083	-0.00083
	(!A2 * B1 * X)	0.00072	0.00073	0.00072
	(!A2 * B1 * X)	-0.00071	-0.00072	-0.00072
	(!A1 * A2 * B1 * X)	0.00071	0.00071	0.00071
	(!A1 * A2 * B1 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * A2 * !B1 * !X)	0.00060	0.00061	0.00060
	(!A1 * A2 * !B1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * !B1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A2 * !B1 * !X)	-0.00082	-0.00083	-0.00083
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00127	0.00125	0.00123
	(A1 * A2 * B1 * X)	-0.00142	-0.00148	-0.00149
	(A1 * !A2 * !B1 * !X)	0.00114	0.00114	0.00114
	(A1 * !A2 * !B1 * !X)	-0.00155	-0.00155	-0.00155
	(!A2 * B1 * X)	0.00114	0.00115	0.00114
	(!A2 * B1 * X)	-0.00155	-0.00155	-0.00155
	(!A1 * A2 * B1 * X)	0.00111	0.00112	0.00111
	(!A1 * A2 * B1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(!A1 * A2 * !B1 * !X)	-0.00155	-0.00156	-0.00155
	(!A1 * !A2 * !B1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !A2 * !B1 * !X)	-0.00155	-0.00156	-0.00155

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a31o_1	**(A1 * A2 * B1 * X)**	-0.00064	-0.00064	-0.00064
	(A1 * A2 * B1 * X)	0.00072	0.00072	0.00072
	(A1 * !A2 * !B1 * !X)	-0.00050	-0.00052	-0.00052
	(A1 * !A2 * !B1 * !X)	0.00082	0.00083	0.00082
	(!A2 * B1 * X)	-0.00058	-0.00060	-0.00060
	(!A2 * B1 * X)	0.00075	0.00075	0.00075
	(!A1 * A2 * B1 * X)	-0.00056	-0.00059	-0.00059
	(!A1 * A2 * B1 * X)	0.00075	0.00075	0.00075
	(!A1 * A2 * !B1 * !X)	-0.00048	-0.00051	-0.00051
	(!A1 * A2 * !B1 * !X)	0.00082	0.00083	0.00082
	(!A1 * !A2 * !B1 * !X)	-0.00050	-0.00052	-0.00052
	(!A1 * !A2 * !B1 * !X)	0.00082	0.00083	0.00082
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00077	-0.00077	-0.00077
	(A1 * A2 * B1 * X)	0.00070	0.00069	0.00069
	(A1 * !A2 * !B1 * !X)	-0.00059	-0.00062	-0.00061
	(A1 * !A2 * !B1 * !X)	0.00083	0.00083	0.00083
	(!A2 * B1 * X)	-0.00070	-0.00073	-0.00072
	(!A2 * B1 * X)	0.00072	0.00072	0.00072
	(!A1 * A2 * B1 * X)	-0.00068	-0.00071	-0.00071
	(!A1 * A2 * B1 * X)	0.00072	0.00073	0.00072
	(!A1 * A2 * !B1 * !X)	-0.00057	-0.00061	-0.00060
	(!A1 * A2 * !B1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !B1 * !X)	-0.00059	-0.00062	-0.00061
	(!A1 * !A2 * !B1 * !X)	0.00083	0.00083	0.00083

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00123	-0.00123	-0.00123
	(A1 * A2 * B1 * X)	0.00148	0.00148	0.00149
	(A1 * !A2 * !B1 * !X)	-0.00109	-0.00114	-0.00114
	(A1 * !A2 * !B1 * !X)	0.00156	0.00156	0.00156
	(!A2 * B1 * X)	-0.00110	-0.00115	-0.00114
	(!A2 * B1 * X)	0.00155	0.00156	0.00155
	(!A1 * A2 * B1 * X)	-0.00105	-0.00112	-0.00111
	(!A1 * A2 * B1 * X)	0.00155	0.00157	0.00155
	(!A1 * A2 * !B1 * !X)	-0.00105	-0.00112	-0.00111
	(!A1 * A2 * !B1 * !X)	0.00156	0.00157	0.00156
	(!A1 * !A2 * !B1 * !X)	-0.00109	-0.00115	-0.00114
	(!A1 * !A2 * !B1 * !X)	0.00156	0.00156	0.00156

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a31o_1	**(A1 * A2 * A3 * X)**	0.00086	0.00086	0.00086
	(A1 * A2 * A3 * X)	-0.00042	-0.00042	-0.00042
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00082	0.00082	0.00081
	(A1 * A2 * A3 * X)	-0.00042	-0.00042	-0.00041
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00142	0.00143	0.00141
	(A1 * A2 * A3 * X)	-0.00092	-0.00091	-0.00090

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	**(A1 * A2 * A3 * X)**	-0.00078	-0.00078	-0.00085
	(A1 * A2 * A3 * X)	0.00050	0.00049	0.00044
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	-0.00072	-0.00073	-0.00080
	(A1 * A2 * A3 * X)	0.00049	0.00049	0.00043
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	-0.00119	-0.00120	-0.00137
	(A1 * A2 * A3 * X)	0.00109	0.00108	0.00094

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	B2	Y
0	x	x	0	x	1
0	x	x	1	0	1
x	x	x	1	1	0
1	0	x	0	x	1
1	0	x	1	0	1
1	1	0	0	x	1
1	1	0	1	0	1
1	1	1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32oi_1	11.18880
sky130_fd_sc_hs__a32oi_2	20.77920
sky130_fd_sc_hs__a32oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__a32oi_1	0.00268	0.00266	0.00239	0.00274	0.00252	0.19182
sky130_fd_sc_hs__a32oi_2	0.00503	0.00483	0.00474	0.00508	0.00492	0.36359
sky130_fd_sc_hs__a32oi_4	0.00993	0.00953	0.00947	0.01014	0.00975	0.65339

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32oi_1	0.00000	0.00832	0.02167
sky130_fd_sc_hs__a32oi_2	0.00000	0.01665	0.04335
sky130_fd_sc_hs__a32oi_4	0.00000	0.03329	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (FR)	0.33759	1.80170	12.95640
	A2->Y (FR)	0.38419	1.84973	13.00020
	A3->Y (FR)	0.41826	1.88873	12.99610
	B1->Y (FR)	0.29087	1.69022	12.55300
	B2->Y (FR)	0.33003	1.73507	12.59010
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.30042	1.54232	12.62140
	A2->Y (FR)	0.37283	1.63963	12.91300
	A3->Y (FR)	0.40778	1.67776	12.89640
	B1->Y (FR)	0.20850	1.39811	12.37490
	B2->Y (FR)	0.27018	1.47531	12.49650
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.31730	1.41926	12.66100
	A2->Y (FR)	0.37147	1.47563	12.67680
	A3->Y (FR)	0.41546	1.52908	12.72710
	B1->Y (FR)	0.25933	1.29824	12.16450
	B2->Y (FR)	0.32711	1.37822	12.40460

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.09085	0.77155	6.08571
	A2->Y (RF)	0.10270	0.76556	5.94620
	A3->Y (RF)	0.10770	0.72948	5.50708
	B1->Y (RF)	0.05203	0.64248	5.33806
	B2->Y (RF)	0.05727	0.62317	5.12621
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.08622	0.72748	6.30928
	A2->Y (RF)	0.10528	0.73027	6.15201
	A3->Y (RF)	0.11089	0.67923	5.54098
	B1->Y (RF)	0.04549	0.59006	5.43360
	B2->Y (RF)	0.05561	0.57866	5.18613
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.08855	0.67483	6.25737
	A2->Y (RF)	0.10551	0.67175	6.03552
	A3->Y (RF)	0.11167	0.62088	5.40144
	B1->Y (RF)	0.04624	0.54052	5.37989
	B2->Y (RF)	0.05520	0.52231	5.00788

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00054	0.00044	0.00042
	A1	0.00364	0.00354	0.00344
	A2	0.00074	0.00066	0.00063
	A2	0.00427	0.00417	0.00401
	A3	0.00101	0.00096	0.00094
	A3	0.00486	0.00481	0.00458
	B1	0.00082	0.00070	0.00071
	B1	0.00377	0.00365	0.00365
	B2	0.00101	0.00093	0.00094
	B2	0.00433	0.00427	0.00427
sky130_fd_sc_hs__a32oi_2	A1	0.00064	0.00046	0.00043
	A1	0.00674	0.00654	0.00651
	A2	0.00147	0.00128	0.00123
	A2	0.00840	0.00819	0.00790
	A3	0.00185	0.00174	0.00169
	A3	0.00957	0.00944	0.00925
	B1	0.00121	0.00099	0.00102
	B1	0.00689	0.00666	0.00671
	B2	0.00191	0.00174	0.00175
	B2	0.00846	0.00829	0.00829

sky130_fd_sc_hs__a32oi_4	**A1**	0.00121	0.00076	0.00075
	A1	0.01343	0.01300	0.01297
	A2	0.00243	0.00201	0.00197
	A2	0.01628	0.01589	0.01580
	A3	0.00329	0.00305	0.00298
	A3	0.01880	0.01854	0.01841
	B1	0.00206	0.00157	0.00168
	B1	0.01361	0.01312	0.01323
	B2	0.00332	0.00295	0.00302
	B2	0.01651	0.01604	0.01619

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00423	0.00416	0.00421
	A1	0.00135	0.00127	0.00121
	A2	0.00469	0.00464	0.00455
	A2	0.00135	0.00128	0.00122
	A3	0.00505	0.00500	0.00496
	A3	0.00133	0.00127	0.00120
	B1	0.00311	0.00310	0.00312
	B1	0.00007	0.00005	0.00004
	B2	0.00352	0.00353	0.00355
	B2	0.00006	0.00004	0.00003

sky130_fd_sc_hs__a32oi_2	**A1**	0.00821	0.00803	0.00827
	A1	0.00260	0.00242	0.00232
	A2	0.00913	0.00902	0.00886
	A2	0.00259	0.00244	0.00233
	A3	0.01004	0.00990	0.00990
	A3	0.00259	0.00245	0.00232
	B1	0.00592	0.00588	0.00601
	B1	0.00003	-0.00003	-0.00000
	B2	0.00690	0.00688	0.00700
	B2	0.00004	-0.00001	-0.00000
sky130_fd_sc_hs__a32oi_4	**A1**	0.01608	0.01570	0.01616
	A1	0.00478	0.00437	0.00422
	A2	0.01787	0.01756	0.01754
	A2	0.00474	0.00443	0.00423
	A3	0.01969	0.01942	0.01931
	A3	0.00470	0.00440	0.00419
	B1	0.01193	0.01178	0.01210
	B1	-0.00002	-0.00022	-0.00009
	B2	0.01386	0.01373	0.01378
	B2	0.00003	-0.00011	-0.00003

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A2 * A3 * B1 * B2 * !Y)**	0.00075	0.00074	0.00074
	(A2 * A3 * B1 * B2 * !Y)	-0.00075	-0.00077	-0.00077
	(A2 * !A3 * B1 * B2 * !Y)	0.00067	0.00067	0.00067
	(A2 * !A3 * B1 * B2 * !Y)	-0.00081	-0.00081	-0.00080
	(A2 * !A3 * B1 * !B2 * Y)	0.00028	0.00028	0.00025
	(A2 * !A3 * B1 * !B2 * Y)	-0.00094	-0.00094	-0.00099
	(A2 * !A3 * !B1 * Y)	0.00028	0.00028	0.00025
	(A2 * !A3 * !B1 * Y)	-0.00093	-0.00094	-0.00099
	(!A2 * B1 * B2 * !Y)	0.00068	0.00069	0.00068
	(!A2 * B1 * B2 * !Y)	-0.00080	-0.00081	-0.00080
	(!A2 * B1 * !B2 * Y)	0.00026	0.00027	0.00025
	(!A2 * B1 * !B2 * Y)	-0.00097	-0.00098	-0.00100
	(!A2 * !B1 * Y)	0.00026	0.00027	0.00025
	(!A2 * !B1 * Y)	-0.00097	-0.00098	-0.00100
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00147	0.00147	0.00145
	(A2 * A3 * B1 * B2 * !Y)	-0.00150	-0.00155	-0.00155
	(A2 * !A3 * B1 * B2 * !Y)	0.00131	0.00132	0.00131
	(A2 * !A3 * B1 * B2 * !Y)	-0.00160	-0.00161	-0.00161
	(A2 * !A3 * B1 * !B2 * Y)	0.00059	0.00059	0.00052
	(A2 * !A3 * B1 * !B2 * Y)	-0.00183	-0.00184	-0.00196
	(A2 * !A3 * !B1 * Y)	0.00059	0.00059	0.00052
	(A2 * !A3 * !B1 * Y)	-0.00183	-0.00184	-0.00196
	(!A2 * B1 * B2 * !Y)	0.00136	0.00137	0.00137
	(!A2 * B1 * B2 * !Y)	-0.00160	-0.00160	-0.00160
	(!A2 * B1 * !B2 * Y)	0.00059	0.00058	0.00054
	(!A2 * B1 * !B2 * Y)	-0.00191	-0.00192	-0.00197
	(!A2 * !B1 * Y)	0.00059	0.00059	0.00055
	(!A2 * !B1 * Y)	-0.00191	-0.00192	-0.00197

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00291	0.00290	0.00287
	(A2 * A3 * B1 * B2 * !Y)	-0.00297	-0.00312	-0.00310
	(A2 * !A3 * B1 * B2 * !Y)	0.00257	0.00258	0.00258
	(A2 * !A3 * B1 * B2 * !Y)	-0.00321	-0.00323	-0.00322
	(A2 * !A3 * B1 * !B2 * Y)	0.00105	0.00106	0.00094
	(A2 * !A3 * B1 * !B2 * Y)	-0.00371	-0.00375	-0.00398
	(A2 * !A3 * !B1 * Y)	0.00105	0.00106	0.00094
	(A2 * !A3 * !B1 * Y)	-0.00370	-0.00375	-0.00398
	(!A2 * B1 * B2 * !Y)	0.00268	0.00270	0.00269
	(!A2 * B1 * B2 * !Y)	-0.00322	-0.00323	-0.00322
	(!A2 * B1 * !B2 * Y)	0.00105	0.00105	0.00099
	(!A2 * B1 * !B2 * Y)	-0.00387	-0.00391	-0.00401
	(!A2 * !B1 * Y)	0.00104	0.00105	0.00099
	(!A2 * !B1 * Y)	-0.00387	-0.00391	-0.00400

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A2 * A3 * B1 * B2 * !Y)**	-0.00074	-0.00073	-0.00074
	(A2 * A3 * B1 * B2 * !Y)	0.00078	0.00077	0.00077
	(A2 * !A3 * B1 * B2 * !Y)	-0.00062	-0.00067	-0.00067
	(A2 * !A3 * B1 * B2 * !Y)	0.00081	0.00081	0.00081
	(A2 * !A3 * B1 * !B2 * Y)	-0.00024	-0.00024	-0.00024
	(A2 * !A3 * B1 * !B2 * Y)	0.00100	0.00100	0.00100
	(A2 * !A3 * !B1 * Y)	-0.00024	-0.00024	-0.00024
	(A2 * !A3 * !B1 * Y)	0.00100	0.00100	0.00100
	(!A2 * B1 * B2 * !Y)	-0.00066	-0.00069	-0.00068
	(!A2 * B1 * B2 * !Y)	0.00080	0.00082	0.00081
	(!A2 * B1 * !B2 * Y)	-0.00025	-0.00025	-0.00025
	(!A2 * B1 * !B2 * Y)	0.00101	0.00100	0.00100
	(!A2 * !B1 * Y)	-0.00025	-0.00025	-0.00025
	(!A2 * !B1 * Y)	0.00101	0.00100	0.00100
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00145	-0.00145	-0.00145
	(A2 * A3 * B1 * B2 * !Y)	0.00154	0.00155	0.00155
	(A2 * !A3 * B1 * B2 * !Y)	-0.00122	-0.00132	-0.00131
	(A2 * !A3 * B1 * B2 * !Y)	0.00163	0.00162	0.00161
	(A2 * !A3 * B1 * !B2 * Y)	-0.00050	-0.00051	-0.00051
	(A2 * !A3 * B1 * !B2 * Y)	0.00197	0.00198	0.00198
	(A2 * !A3 * !B1 * Y)	-0.00051	-0.00051	-0.00051
	(A2 * !A3 * !B1 * Y)	0.00197	0.00198	0.00198
	(!A2 * B1 * B2 * !Y)	-0.00132	-0.00137	-0.00137
	(!A2 * B1 * B2 * !Y)	0.00162	0.00162	0.00161
	(!A2 * B1 * !B2 * Y)	-0.00052	-0.00052	-0.00052
	(!A2 * B1 * !B2 * Y)	0.00197	0.00198	0.00198
	(!A2 * !B1 * Y)	-0.00052	-0.00052	-0.00052
	(!A2 * !B1 * Y)	0.00197	0.00198	0.00198

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00286	-0.00288	-0.00287
	(A2 * A3 * B1 * B2 * !Y)	0.00307	0.00312	0.00310
	(A2 * !A3 * B1 * B2 * !Y)	-0.00238	-0.00258	-0.00258
	(A2 * !A3 * B1 * B2 * !Y)	0.00326	0.00326	0.00323
	(A2 * !A3 * B1 * !B2 * Y)	-0.00093	-0.00092	-0.00092
	(A2 * !A3 * B1 * !B2 * Y)	0.00404	0.00403	0.00401
	(A2 * !A3 * !B1 * Y)	-0.00093	-0.00092	-0.00092
	(A2 * !A3 * !B1 * Y)	0.00404	0.00403	0.00401
	(!A2 * B1 * B2 * !Y)	-0.00259	-0.00270	-0.00269
	(!A2 * B1 * B2 * !Y)	0.00325	0.00326	0.00323
	(!A2 * B1 * !B2 * Y)	-0.00095	-0.00095	-0.00095
	(!A2 * B1 * !B2 * Y)	0.00400	0.00402	0.00401
	(!A2 * !B1 * Y)	-0.00095	-0.00095	-0.00095
	(!A2 * !B1 * Y)	0.00400	0.00402	0.00401

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A3 * B1 * B2 * !Y)**	0.00077	0.00077	0.00076
	(A1 * A3 * B1 * B2 * !Y)	-0.00075	-0.00079	-0.00078
	(A1 * !A3 * B1 * B2 * !Y)	0.00071	0.00071	0.00071
	(A1 * !A3 * B1 * B2 * !Y)	-0.00080	-0.00081	-0.00081
	(A1 * !A3 * B1 * !B2 * Y)	0.00036	0.00036	0.00036
	(A1 * !A3 * B1 * !B2 * Y)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * !B1 * Y)	0.00036	0.00036	0.00036
	(A1 * !A3 * !B1 * Y)	-0.00085	-0.00085	-0.00085
	(!A1 * A3 * B1 * B2 * !Y)	0.00071	0.00071	0.00071
	(!A1 * A3 * B1 * B2 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * A3 * B1 * !B2 * Y)	0.00066	0.00066	0.00066
	(!A1 * A3 * B1 * !B2 * Y)	-0.00085	-0.00085	-0.00085
	(!A1 * A3 * !B1 * Y)	0.00066	0.00066	0.00066
	(!A1 * A3 * !B1 * Y)	-0.00085	-0.00085	-0.00085
	(!A1 * !A3 * B1 * B2 * !Y)	0.00047	0.00047	0.00046
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * !A3 * B1 * !B2 * Y)	0.00040	0.00040	0.00040
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00086	-0.00086	-0.00085
	(!A1 * !A3 * !B1 * Y)	0.00040	0.00040	0.00040
	(!A1 * !A3 * !B1 * Y)	-0.00086	-0.00086	-0.00085

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00142	0.00141	0.00139
	(A1 * A3 * B1 * B2 * !Y)	-0.00155	-0.00160	-0.00161
	(A1 * !A3 * B1 * B2 * !Y)	0.00128	0.00129	0.00128
	(A1 * !A3 * B1 * B2 * !Y)	-0.00167	-0.00168	-0.00167
	(A1 * !A3 * B1 * !B2 * Y)	0.00066	0.00066	0.00067
	(A1 * !A3 * B1 * !B2 * Y)	-0.00170	-0.00170	-0.00169
	(A1 * !A3 * !B1 * Y)	0.00067	0.00067	0.00067
	(A1 * !A3 * !B1 * Y)	-0.00170	-0.00170	-0.00169
	(!A1 * A3 * B1 * B2 * !Y)	0.00130	0.00131	0.00131
	(!A1 * A3 * B1 * B2 * !Y)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * B1 * !B2 * Y)	0.00128	0.00129	0.00128
	(!A1 * A3 * B1 * !B2 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * A3 * !B1 * Y)	0.00128	0.00129	0.00128
	(!A1 * A3 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * B1 * B2 * !Y)	0.00084	0.00084	0.00083
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00169	-0.00168	-0.00168
	(!A1 * !A3 * B1 * !B2 * Y)	0.00076	0.00076	0.00075
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00171	-0.00171	-0.00171
	(!A1 * !A3 * !B1 * Y)	0.00076	0.00076	0.00076
	(!A1 * !A3 * !B1 * Y)	-0.00171	-0.00171	-0.00171

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00284	0.00282	0.00279
	(A1 * A3 * B1 * B2 * !Y)	-0.00305	-0.00319	-0.00318
	(A1 * !A3 * B1 * B2 * !Y)	0.00253	0.00256	0.00254
	(A1 * !A3 * B1 * B2 * !Y)	-0.00331	-0.00334	-0.00332
	(A1 * !A3 * B1 * !B2 * Y)	0.00127	0.00128	0.00129
	(A1 * !A3 * B1 * !B2 * Y)	-0.00334	-0.00336	-0.00334
	(A1 * !A3 * !B1 * Y)	0.00127	0.00128	0.00129
	(A1 * !A3 * !B1 * Y)	-0.00334	-0.00336	-0.00334
	(!A1 * A3 * B1 * B2 * !Y)	0.00262	0.00263	0.00262
	(!A1 * A3 * B1 * B2 * !Y)	-0.00332	-0.00333	-0.00332
	(!A1 * A3 * B1 * !B2 * Y)	0.00258	0.00257	0.00258
	(!A1 * A3 * B1 * !B2 * Y)	-0.00335	-0.00334	-0.00335
	(!A1 * A3 * !B1 * Y)	0.00258	0.00257	0.00258
	(!A1 * A3 * !B1 * Y)	-0.00335	-0.00334	-0.00335
	(!A1 * !A3 * B1 * B2 * !Y)	0.00157	0.00158	0.00158
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00330	-0.00332	-0.00332
	(!A1 * !A3 * B1 * !B2 * Y)	0.00143	0.00144	0.00143
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00337	-0.00338	-0.00338
	(!A1 * !A3 * !B1 * Y)	0.00143	0.00144	0.00143
	(!A1 * !A3 * !B1 * Y)	-0.00337	-0.00338	-0.00338

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A3 * B1 * B2 * !Y)**	-0.00076	-0.00076	-0.00076
	(A1 * A3 * B1 * B2 * !Y)	0.00077	0.00079	0.00078
	(A1 * !A3 * B1 * B2 * !Y)	-0.00069	-0.00071	-0.00071
	(A1 * !A3 * B1 * B2 * !Y)	0.00080	0.00082	0.00081
	(A1 * !A3 * B1 * !B2 * Y)	-0.00034	-0.00034	-0.00034
	(A1 * !A3 * B1 * !B2 * Y)	0.00087	0.00089	0.00086
	(A1 * !A3 * !B1 * Y)	-0.00034	-0.00034	-0.00034
	(A1 * !A3 * !B1 * Y)	0.00087	0.00089	0.00086
	(!A1 * A3 * B1 * B2 * !Y)	-0.00069	-0.00071	-0.00071
	(!A1 * A3 * B1 * B2 * !Y)	0.00081	0.00081	0.00081
	(!A1 * A3 * B1 * !B2 * Y)	-0.00062	-0.00066	-0.00066
	(!A1 * A3 * B1 * !B2 * Y)	0.00088	0.00086	0.00086
	(!A1 * A3 * !B1 * Y)	-0.00062	-0.00066	-0.00066
	(!A1 * A3 * !B1 * Y)	0.00088	0.00086	0.00086
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00047	-0.00047	-0.00046
	(!A1 * !A3 * B1 * B2 * !Y)	0.00081	0.00082	0.00081
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A3 * B1 * !B2 * Y)	0.00088	0.00090	0.00086
	(!A1 * !A3 * !B1 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A3 * !B1 * Y)	0.00089	0.00090	0.00086

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00139	-0.00139	-0.00139
	(A1 * A3 * B1 * B2 * !Y)	0.00160	0.00160	0.00161
	(A1 * !A3 * B1 * B2 * !Y)	-0.00124	-0.00129	-0.00128
	(A1 * !A3 * B1 * B2 * !Y)	0.00169	0.00170	0.00168
	(A1 * !A3 * B1 * !B2 * Y)	-0.00063	-0.00064	-0.00064
	(A1 * !A3 * B1 * !B2 * Y)	0.00173	0.00176	0.00171
	(A1 * !A3 * !B1 * Y)	-0.00063	-0.00064	-0.00064
	(A1 * !A3 * !B1 * Y)	0.00173	0.00176	0.00171
	(!A1 * A3 * B1 * B2 * !Y)	-0.00126	-0.00131	-0.00131
	(!A1 * A3 * B1 * B2 * !Y)	0.00167	0.00169	0.00168
	(!A1 * A3 * B1 * !B2 * Y)	-0.00121	-0.00129	-0.00128
	(!A1 * A3 * B1 * !B2 * Y)	0.00172	0.00171	0.00170
	(!A1 * A3 * !B1 * Y)	-0.00122	-0.00129	-0.00128
	(!A1 * A3 * !B1 * Y)	0.00172	0.00171	0.00170
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00084	-0.00084	-0.00083
	(!A1 * !A3 * B1 * B2 * !Y)	0.00169	0.00170	0.00168
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00076	-0.00076	-0.00075
	(!A1 * !A3 * B1 * !B2 * Y)	0.00173	0.00176	0.00171
	(!A1 * !A3 * !B1 * Y)	-0.00076	-0.00076	-0.00076
	(!A1 * !A3 * !B1 * Y)	0.00173	0.00176	0.00171

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00279	-0.00279	-0.00279
	(A1 * A3 * B1 * B2 * !Y)	0.00317	0.00319	0.00318
	(A1 * !A3 * B1 * B2 * !Y)	-0.00246	-0.00256	-0.00254
	(A1 * !A3 * B1 * B2 * !Y)	0.00335	0.00338	0.00333
	(A1 * !A3 * B1 * !B2 * Y)	-0.00120	-0.00122	-0.00123
	(A1 * !A3 * B1 * !B2 * Y)	0.00343	0.00349	0.00338
	(A1 * !A3 * !B1 * Y)	-0.00120	-0.00122	-0.00123
	(A1 * !A3 * !B1 * Y)	0.00344	0.00349	0.00338
	(!A1 * A3 * B1 * B2 * !Y)	-0.00252	-0.00263	-0.00262
	(!A1 * A3 * B1 * B2 * !Y)	0.00332	0.00335	0.00333
	(!A1 * A3 * B1 * !B2 * Y)	-0.00243	-0.00257	-0.00258
	(!A1 * A3 * B1 * !B2 * Y)	0.00342	0.00339	0.00336
	(!A1 * A3 * !B1 * Y)	-0.00243	-0.00257	-0.00258
	(!A1 * A3 * !B1 * Y)	0.00342	0.00339	0.00336
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00157	-0.00158	-0.00158
	(!A1 * !A3 * B1 * B2 * !Y)	0.00335	0.00336	0.00333
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * !A3 * B1 * !B2 * Y)	0.00345	0.00352	0.00339
	(!A1 * !A3 * !B1 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * !A3 * !B1 * Y)	0.00345	0.00352	0.00339

Passive power(pJ) for A3 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * B1 * B2 * !Y)**	0.00072	0.00072	0.00071
	(A1 * A2 * B1 * B2 * !Y)	-0.00076	-0.00079	-0.00079
	(A1 * !A2 * B1 * !B2 * Y)	0.00067	0.00067	0.00067
	(A1 * !A2 * B1 * !B2 * Y)	-0.00081	-0.00081	-0.00081
	(A1 * !A2 * !B1 * Y)	0.00067	0.00067	0.00067
	(A1 * !A2 * !B1 * Y)	-0.00081	-0.00081	-0.00081
	(!A2 * B1 * B2 * !Y)	0.00067	0.00067	0.00067
	(!A2 * B1 * B2 * !Y)	-0.00081	-0.00082	-0.00081
	(!A1 * A2 * B1 * B2 * !Y)	0.00064	0.00065	0.00064
	(!A1 * A2 * B1 * B2 * !Y)	-0.00081	-0.00082	-0.00081
	(!A1 * A2 * B1 * !B2 * Y)	0.00064	0.00065	0.00065
	(!A1 * A2 * B1 * !B2 * Y)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * !B1 * Y)	0.00064	0.00065	0.00065
	(!A1 * A2 * !B1 * Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * B1 * !B2 * Y)	0.00067	0.00067	0.00066
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !B1 * Y)	0.00067	0.00067	0.00066
	(!A1 * !A2 * !B1 * Y)	-0.00081	-0.00082	-0.00081

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00144	0.00144	0.00143
	(A1 * A2 * B1 * B2 * !Y)	-0.00153	-0.00158	-0.00159
	(A1 * !A2 * B1 * !B2 * Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * !B2 * Y)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !B1 * Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * !B1 * Y)	-0.00165	-0.00166	-0.00165
	(!A2 * B1 * B2 * !Y)	0.00132	0.00133	0.00132
	(!A2 * B1 * B2 * !Y)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * B1 * B2 * !Y)	0.00130	0.00131	0.00130
	(!A1 * A2 * B1 * B2 * !Y)	-0.00165	-0.00165	-0.00165
	(!A1 * A2 * B1 * !B2 * Y)	0.00129	0.00131	0.00130
	(!A1 * A2 * B1 * !B2 * Y)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * !B1 * Y)	0.00129	0.00131	0.00130
	(!A1 * A2 * !B1 * Y)	-0.00165	-0.00166	-0.00165
	(!A1 * !A2 * B1 * !B2 * Y)	0.00132	0.00133	0.00132
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00165	-0.00166	-0.00165
	(!A1 * !A2 * !B1 * Y)	0.00132	0.00133	0.00132
	(!A1 * !A2 * !B1 * Y)	-0.00165	-0.00166	-0.00165

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00281	0.00280	0.00276
	(A1 * A2 * B1 * B2 * !Y)	-0.00307	-0.00320	-0.00320
	(A1 * !A2 * B1 * !B2 * Y)	0.00253	0.00255	0.00253
	(A1 * !A2 * B1 * !B2 * Y)	-0.00334	-0.00335	-0.00334
	(A1 * !A2 * !B1 * Y)	0.00253	0.00255	0.00253
	(A1 * !A2 * !B1 * Y)	-0.00334	-0.00335	-0.00334
	(!A2 * B1 * B2 * !Y)	0.00253	0.00254	0.00253
	(!A2 * B1 * B2 * !Y)	-0.00333	-0.00334	-0.00334
	(!A1 * A2 * B1 * B2 * !Y)	0.00249	0.00247	0.00249
	(!A1 * A2 * B1 * B2 * !Y)	-0.00334	-0.00332	-0.00334
	(!A1 * A2 * B1 * !B2 * Y)	0.00248	0.00250	0.00248
	(!A1 * A2 * B1 * !B2 * Y)	-0.00334	-0.00336	-0.00334
	(!A1 * A2 * !B1 * Y)	0.00248	0.00250	0.00248
	(!A1 * A2 * !B1 * Y)	-0.00334	-0.00336	-0.00334
	(!A1 * !A2 * B1 * !B2 * Y)	0.00253	0.00255	0.00253
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00334	-0.00336	-0.00334
	(!A1 * !A2 * !B1 * Y)	0.00253	0.00255	0.00253
	(!A1 * !A2 * !B1 * Y)	-0.00334	-0.00336	-0.00334

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * B1 * B2 * !Y)**	-0.00071	-0.00071	-0.00071
	(A1 * A2 * B1 * B2 * !Y)	0.00079	0.00079	0.00079
	(A1 * !A2 * B1 * !B2 * Y)	-0.00065	-0.00067	-0.00067
	(A1 * !A2 * B1 * !B2 * Y)	0.00081	0.00082	0.00082
	(A1 * !A2 * !B1 * Y)	-0.00065	-0.00067	-0.00067
	(A1 * !A2 * !B1 * Y)	0.00081	0.00082	0.00082
	(!A2 * B1 * B2 * !Y)	-0.00065	-0.00067	-0.00067
	(!A2 * B1 * B2 * !Y)	0.00081	0.00082	0.00082
	(!A1 * A2 * B1 * B2 * !Y)	-0.00062	-0.00065	-0.00064
	(!A1 * A2 * B1 * B2 * !Y)	0.00082	0.00083	0.00082
	(!A1 * A2 * B1 * !B2 * Y)	-0.00062	-0.00065	-0.00065
	(!A1 * A2 * B1 * !B2 * Y)	0.00081	0.00082	0.00082
	(!A1 * A2 * !B1 * Y)	-0.00062	-0.00065	-0.00065
	(!A1 * A2 * !B1 * Y)	0.00081	0.00082	0.00082
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00065	-0.00067	-0.00066
	(!A1 * !A2 * B1 * !B2 * Y)	0.00082	0.00082	0.00082
	(!A1 * !A2 * !B1 * Y)	-0.00065	-0.00067	-0.00066
	(!A1 * !A2 * !B1 * Y)	0.00082	0.00082	0.00082

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00142	-0.00142	-0.00142
	(A1 * A2 * B1 * B2 * !Y)	0.00158	0.00158	0.00159
	(A1 * !A2 * B1 * !B2 * Y)	-0.00128	-0.00133	-0.00132
	(A1 * !A2 * B1 * !B2 * Y)	0.00166	0.00166	0.00166
	(A1 * !A2 * !B1 * Y)	-0.00128	-0.00133	-0.00132
	(A1 * !A2 * !B1 * Y)	0.00166	0.00166	0.00166
	(!A2 * B1 * B2 * !Y)	-0.00129	-0.00133	-0.00132
	(!A2 * B1 * B2 * !Y)	0.00166	0.00166	0.00166
	(!A1 * A2 * B1 * B2 * !Y)	-0.00124	-0.00131	-0.00130
	(!A1 * A2 * B1 * B2 * !Y)	0.00165	0.00167	0.00165
	(!A1 * A2 * B1 * !B2 * Y)	-0.00124	-0.00131	-0.00130
	(!A1 * A2 * B1 * !B2 * Y)	0.00165	0.00167	0.00165
	(!A1 * A2 * !B1 * Y)	-0.00124	-0.00131	-0.00130
	(!A1 * A2 * !B1 * Y)	0.00165	0.00167	0.00165
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00128	-0.00133	-0.00132
	(!A1 * !A2 * B1 * !B2 * Y)	0.00166	0.00166	0.00166
	(!A1 * !A2 * !B1 * Y)	-0.00128	-0.00133	-0.00132
	(!A1 * !A2 * !B1 * Y)	0.00166	0.00166	0.00166

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00276	-0.00276	-0.00276
	(A1 * A2 * B1 * B2 * !Y)	0.00319	0.00320	0.00320
	(A1 * !A2 * B1 * !B2 * Y)	-0.00245	-0.00255	-0.00253
	(A1 * !A2 * B1 * !B2 * Y)	0.00335	0.00337	0.00335
	(A1 * !A2 * !B1 * Y)	-0.00245	-0.00255	-0.00253
	(A1 * !A2 * !B1 * Y)	0.00335	0.00337	0.00335
	(!A2 * B1 * B2 * !Y)	-0.00246	-0.00254	-0.00253
	(!A2 * B1 * B2 * !Y)	0.00335	0.00337	0.00335
	(!A1 * A2 * B1 * B2 * !Y)	-0.00236	-0.00247	-0.00249
	(!A1 * A2 * B1 * B2 * !Y)	0.00335	0.00339	0.00335
	(!A1 * A2 * B1 * !B2 * Y)	-0.00235	-0.00250	-0.00248
	(!A1 * A2 * B1 * !B2 * Y)	0.00335	0.00339	0.00335
	(!A1 * A2 * !B1 * Y)	-0.00235	-0.00250	-0.00248
	(!A1 * A2 * !B1 * Y)	0.00335	0.00339	0.00335
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00245	-0.00255	-0.00253
	(!A1 * !A2 * B1 * !B2 * Y)	0.00335	0.00337	0.00335
	(!A1 * !A2 * !B1 * Y)	-0.00245	-0.00255	-0.00253
	(!A1 * !A2 * !B1 * Y)	0.00335	0.00337	0.00335

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * A3 * B2 * !Y)**	0.00083	0.00083	0.00083
	(A1 * A2 * A3 * B2 * !Y)	-0.00045	-0.00045	-0.00045
	(A1 * A2 * A3 * !B2 * !Y)	0.00078	0.00079	0.00078
	(A1 * A2 * A3 * !B2 * !Y)	-0.00045	-0.00045	-0.00045
	(A1 * A2 * !A3 * !B2 * Y)	0.00026	0.00026	0.00025
	(A1 * A2 * !A3 * !B2 * Y)	-0.00100	-0.00101	-0.00102
	(A1 * !A2 * !B2 * Y)	0.00026	0.00026	0.00025
	(A1 * !A2 * !B2 * Y)	-0.00100	-0.00101	-0.00102
	(!A1 * !B2 * Y)	0.00026	0.00026	0.00025
	(!A1 * !B2 * Y)	-0.00100	-0.00101	-0.00102
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00158	0.00158	0.00158
	(A1 * A2 * A3 * B2 * !Y)	-0.00091	-0.00090	-0.00090
	(A1 * A2 * A3 * !B2 * !Y)	0.00148	0.00149	0.00149
	(A1 * A2 * A3 * !B2 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * !A3 * !B2 * Y)	0.00056	0.00056	0.00052
	(A1 * A2 * !A3 * !B2 * Y)	-0.00191	-0.00192	-0.00198
	(A1 * !A2 * !B2 * Y)	0.00056	0.00056	0.00052
	(A1 * !A2 * !B2 * Y)	-0.00191	-0.00192	-0.00198
	(!A1 * !B2 * Y)	0.00056	0.00056	0.00052
	(!A1 * !B2 * Y)	-0.00191	-0.00192	-0.00198
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00320	0.00320	0.00319
	(A1 * A2 * A3 * B2 * !Y)	-0.00186	-0.00184	-0.00183
	(A1 * A2 * A3 * !B2 * !Y)	0.00298	0.00300	0.00299
	(A1 * A2 * A3 * !B2 * !Y)	-0.00183	-0.00183	-0.00183
	(A1 * A2 * !A3 * !B2 * Y)	0.00107	0.00106	0.00099
	(A1 * A2 * !A3 * !B2 * Y)	-0.00392	-0.00393	-0.00403
	(A1 * !A2 * !B2 * Y)	0.00107	0.00106	0.00099
	(A1 * !A2 * !B2 * Y)	-0.00392	-0.00393	-0.00403
	(!A1 * !B2 * Y)	0.00107	0.00106	0.00099
	(!A1 * !B2 * Y)	-0.00392	-0.00393	-0.00403

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	(A1 * A2 * A3 * B2 * !Y)	-0.00068	-0.00069	-0.00081
	(A1 * A2 * A3 * B2 * !Y)	0.00058	0.00057	0.00048
	(A1 * A2 * A3 * !B2 * !Y)	-0.00077	-0.00079	-0.00078
	(A1 * A2 * A3 * !B2 * !Y)	0.00045	0.00045	0.00045
	(A1 * A2 * !A3 * !B2 * Y)	-0.00025	-0.00025	-0.00024
	(A1 * A2 * !A3 * !B2 * Y)	0.00102	0.00103	0.00102
	(A1 * !A2 * !B2 * Y)	-0.00025	-0.00025	-0.00024
	(A1 * !A2 * !B2 * Y)	0.00102	0.00103	0.00102
	(!A1 * !B2 * Y)	-0.00025	-0.00025	-0.00024
	(!A1 * !B2 * Y)	0.00102	0.00103	0.00102
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00128	-0.00130	-0.00153
	(A1 * A2 * A3 * B2 * !Y)	0.00115	0.00114	0.00097
	(A1 * A2 * A3 * !B2 * !Y)	-0.00144	-0.00149	-0.00149
	(A1 * A2 * A3 * !B2 * !Y)	0.00091	0.00091	0.00090
	(A1 * A2 * !A3 * !B2 * Y)	-0.00050	-0.00050	-0.00049
	(A1 * A2 * !A3 * !B2 * Y)	0.00198	0.00199	0.00198
	(A1 * !A2 * !B2 * Y)	-0.00050	-0.00050	-0.00049
	(A1 * !A2 * !B2 * Y)	0.00198	0.00199	0.00198
	(!A1 * !B2 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !B2 * Y)	0.00198	0.00198	0.00198

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00265	-0.00268	-0.00311
	(A1 * A2 * A3 * B2 * !Y)	0.00229	0.00227	0.00195
	(A1 * A2 * A3 * !B2 * !Y)	-0.00288	-0.00300	-0.00299
	(A1 * A2 * A3 * !B2 * !Y)	0.00184	0.00183	0.00183
	(A1 * A2 * !A3 * !B2 * Y)	-0.00096	-0.00095	-0.00095
	(A1 * A2 * !A3 * !B2 * Y)	0.00405	0.00404	0.00403
	(A1 * !A2 * !B2 * Y)	-0.00096	-0.00095	-0.00095
	(A1 * !A2 * !B2 * Y)	0.00405	0.00404	0.00403
	(!A1 * !B2 * Y)	-0.00097	-0.00096	-0.00095
	(!A1 * !B2 * Y)	0.00405	0.00404	0.00403

Passive power(pJ) for B2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * A3 * B1 * !Y)**	0.00080	0.00081	0.00080
	(A1 * A2 * A3 * B1 * !Y)	-0.00047	-0.00048	-0.00048
	(A1 * A2 * A3 * !B1 * !Y)	0.00075	0.00075	0.00075
	(A1 * A2 * A3 * !B1 * !Y)	-0.00047	-0.00048	-0.00047
	(A1 * A2 * !A3 * !B1 * Y)	0.00066	0.00067	0.00066
	(A1 * A2 * !A3 * !B1 * Y)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * !B1 * Y)	0.00066	0.00067	0.00066
	(A1 * !A2 * !B1 * Y)	-0.00084	-0.00085	-0.00084
	(!A1 * !B1 * Y)	0.00066	0.00067	0.00066
	(!A1 * !B1 * Y)	-0.00084	-0.00085	-0.00084

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00156	0.00157	0.00157
	(A1 * A2 * A3 * B1 * !Y)	-0.00092	-0.00093	-0.00093
	(A1 * A2 * A3 * !B1 * !Y)	0.00147	0.00149	0.00148
	(A1 * A2 * A3 * !B1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * !A3 * !B1 * Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !A3 * !B1 * Y)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !B1 * Y)	0.00131	0.00132	0.00131
	(A1 * !A2 * !B1 * Y)	-0.00165	-0.00166	-0.00165
	(!A1 * !B1 * Y)	0.00131	0.00133	0.00131
	(!A1 * !B1 * Y)	-0.00165	-0.00166	-0.00165
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00311	0.00313	0.00312
	(A1 * A2 * A3 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(A1 * A2 * A3 * !B1 * !Y)	0.00291	0.00294	0.00292
	(A1 * A2 * A3 * !B1 * !Y)	-0.00184	-0.00185	-0.00184
	(A1 * A2 * !A3 * !B1 * Y)	0.00257	0.00259	0.00257
	(A1 * A2 * !A3 * !B1 * Y)	-0.00331	-0.00332	-0.00330
	(A1 * !A2 * !B1 * Y)	0.00257	0.00259	0.00257
	(A1 * !A2 * !B1 * Y)	-0.00331	-0.00332	-0.00330
	(!A1 * !B1 * Y)	0.00257	0.00259	0.00257
	(!A1 * !B1 * Y)	-0.00331	-0.00332	-0.00330

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * A3 * B1 * !Y)**	-0.00065	-0.00066	-0.00078
	(A1 * A2 * A3 * B1 * !Y)	0.00061	0.00060	0.00051
	(A1 * A2 * A3 * !B1 * !Y)	-0.00073	-0.00075	-0.00075
	(A1 * A2 * A3 * !B1 * !Y)	0.00047	0.00048	0.00047
	(A1 * A2 * !A3 * !B1 * Y)	-0.00063	-0.00067	-0.00066
	(A1 * A2 * !A3 * !B1 * Y)	0.00086	0.00085	0.00085
	(A1 * !A2 * !B1 * Y)	-0.00063	-0.00067	-0.00066
	(A1 * !A2 * !B1 * Y)	0.00086	0.00085	0.00085
	(!A1 * !B1 * Y)	-0.00063	-0.00067	-0.00066
	(!A1 * !B1 * Y)	0.00086	0.00085	0.00085
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00128	-0.00130	-0.00153
	(A1 * A2 * A3 * B1 * !Y)	0.00118	0.00117	0.00099
	(A1 * A2 * A3 * !B1 * !Y)	-0.00144	-0.00149	-0.00148
	(A1 * A2 * A3 * !B1 * !Y)	0.00093	0.00093	0.00092
	(A1 * A2 * !A3 * !B1 * Y)	-0.00126	-0.00132	-0.00131
	(A1 * A2 * !A3 * !B1 * Y)	0.00167	0.00166	0.00166
	(A1 * !A2 * !B1 * Y)	-0.00126	-0.00132	-0.00131
	(A1 * !A2 * !B1 * Y)	0.00167	0.00166	0.00166
	(!A1 * !B1 * Y)	-0.00126	-0.00132	-0.00131
	(!A1 * !B1 * Y)	0.00167	0.00166	0.00166
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00258	-0.00262	-0.00303
	(A1 * A2 * A3 * B1 * !Y)	0.00230	0.00229	0.00196
	(A1 * A2 * A3 * !B1 * !Y)	-0.00284	-0.00294	-0.00292
	(A1 * A2 * A3 * !B1 * !Y)	0.00184	0.00185	0.00184
	(A1 * A2 * !A3 * !B1 * Y)	-0.00245	-0.00259	-0.00257
	(A1 * A2 * !A3 * !B1 * Y)	0.00336	0.00333	0.00331
	(A1 * !A2 * !B1 * Y)	-0.00245	-0.00259	-0.00257
	(A1 * !A2 * !B1 * Y)	0.00336	0.00333	0.00331
	(!A1 * !B1 * Y)	-0.00245	-0.00259	-0.00257
	(!A1 * !B1 * Y)	0.00336	0.00333	0.00331

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	B2	X
0	x	x	0	x	0
0	x	x	1	0	0
x	x	x	1	1	1
1	0	x	0	x	0
1	0	x	1	0	0
1	1	0	0	x	0
1	1	0	1	0	0
1	1	1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32o_1	12.78720
sky130_fd_sc_hs__a32o_2	14.38560
sky130_fd_sc_hs__a32o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__a32o_1	0.00239	0.00235	0.00243	0.00239	0.00220	0.43701
sky130_fd_sc_hs__a32o_2	0.00256	0.00250	0.00258	0.00251	0.00237	0.81094
sky130_fd_sc_hs__a32o_4	0.00436	0.00490	0.00435	0.00456	0.00523	1.66482

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32o_1	0.00000	0.02486	0.05372
sky130_fd_sc_hs__a32o_2	0.00000	0.03241	0.05648
sky130_fd_sc_hs__a32o_4	0.00000	0.06583	0.11297

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (RR)	0.23886	1.24485	8.76878
	A2->X (RR)	0.25206	1.26425	8.98973
	A3->X (RR)	0.25963	1.24572	8.99647
	B1->X (RR)	0.18110	1.16492	8.61051
	B2->X (RR)	0.18618	1.16706	8.75339
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.24149	1.14273	8.92270
	A2->X (RR)	0.25516	1.15338	9.09076
	A3->X (RR)	0.26282	1.13228	9.07233
	B1->X (RR)	0.17964	1.05700	8.75347
	B2->X (RR)	0.18624	1.05460	8.87081
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.25463	1.04324	8.88825
	A2->X (RR)	0.27226	1.06489	9.09955
	A3->X (RR)	0.28023	1.04402	9.09183
	B1->X (RR)	0.17995	0.94416	8.71217
	B2->X (RR)	0.18742	0.94687	8.84630

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.49331	1.27202	6.46171
	A2->X (FF)	0.54553	1.33023	6.62286
	A3->X (FF)	0.57511	1.36378	6.73050
	B1->X (FF)	0.43878	1.16186	5.85195
	B2->X (FF)	0.47855	1.20776	5.99924
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.61363	1.38255	6.73921
	A2->X (FF)	0.67589	1.45067	6.89671
	A3->X (FF)	0.72529	1.50546	7.01959
	B1->X (FF)	0.56717	1.27843	6.21428
	B2->X (FF)	0.62619	1.34570	6.38075
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.56810	1.30592	6.73583
	A2->X (FF)	0.61147	1.35349	6.87972
	A3->X (FF)	0.67406	1.42280	7.02951
	B1->X (FF)	0.53947	1.21631	6.22441
	B2->X (FF)	0.58037	1.26289	6.34219

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.00545	0.00537	0.00538
	A1	0.00279	0.00270	0.00273
	A2	0.00581	0.00574	0.00568
	A2	0.00279	0.00272	0.00269
	A3	0.00623	0.00615	0.00607
	A3	0.00279	0.00270	0.00264
	B1	0.00440	0.00432	0.00446
	B1	0.00169	0.00163	0.00176
	B2	0.00476	0.00474	0.00476
	B2	0.00168	0.00165	0.00170
sky130_fd_sc_hs__a32o_2	A1	0.00678	0.00681	0.00685
	A1	0.00401	0.00404	0.00410
	A2	0.00720	0.00727	0.00725
	A2	0.00401	0.00408	0.00409
	A3	0.00769	0.00776	0.00771
	A3	0.00401	0.00406	0.00404
	B1	0.00587	0.00592	0.00605
	B1	0.00294	0.00300	0.00314
	B2	0.00631	0.00645	0.00649
	B2	0.00292	0.00306	0.00314

sky130_fd_sc_hs__a32o_4	**A1**	0.01283	0.01301	0.01325
	A1	0.00778	0.00797	0.00829
	A2	0.01379	0.01401	0.01409
	A2	0.00776	0.00798	0.00810
	A3	0.01455	0.01483	0.01491
	A3	0.00778	0.00806	0.00824
	B1	0.01075	0.01081	0.01117
	B1	0.00546	0.00549	0.00690
	B2	0.01197	0.01215	0.01229
	B2	0.00544	0.00562	0.00584

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00199	0.00198	0.00201
	A1	0.00480	0.00480	0.00477
	A2	0.00222	0.00225	0.00251
	A2	0.00536	0.00538	0.00535
	A3	0.00236	0.00234	0.00259
	A3	0.00586	0.00584	0.00579
	B1	0.00219	0.00208	0.00238
	B1	0.00481	0.00476	0.00495
	B2	0.00231	0.00226	0.00279
	B2	0.00527	0.00530	0.00546

sky130_fd_sc_hs__a32o_2	**A1**	0.00299	0.00315	0.00357
	A1	0.00594	0.00611	0.00611
	A2	0.00326	0.00345	0.00444
	A2	0.00660	0.00679	0.00679
	A3	0.00341	0.00352	0.00412
	A3	0.00718	0.00729	0.00724
	B1	0.00293	0.00304	0.00392
	B1	0.00597	0.00606	0.00626
	B2	0.00337	0.00351	0.00416
	B2	0.00660	0.00676	0.00692
sky130_fd_sc_hs__a32o_4	**A1**	0.00521	0.00556	0.00749
	A1	0.01103	0.01142	0.01148
	A2	0.00562	0.00603	0.00773
	A2	0.01236	0.01277	0.01280
	A3	0.00622	0.00668	0.00844
	A3	0.01354	0.01401	0.01403
	B1	0.00562	0.00554	0.00735
	B1	0.01133	0.01160	0.01209
	B2	0.00557	0.00586	0.00721
	B2	0.01245	0.01281	0.01325

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A2 * A3 * B1 * B2 * X)**	0.00065	0.00064	0.00064
	(A2 * A3 * B1 * B2 * X)	-0.00068	-0.00070	-0.00070
	(A2 * !A3 * B1 * B2 * X)	0.00058	0.00058	0.00058
	(A2 * !A3 * B1 * B2 * X)	-0.00073	-0.00074	-0.00073
	(A2 * !A3 * B1 * !B2 * !X)	0.00024	0.00024	0.00022
	(A2 * !A3 * B1 * !B2 * !X)	-0.00085	-0.00086	-0.00090
	(A2 * !A3 * !B1 * !X)	0.00024	0.00024	0.00022
	(A2 * !A3 * !B1 * !X)	-0.00085	-0.00086	-0.00090
	(!A2 * B1 * B2 * X)	0.00059	0.00060	0.00060
	(!A2 * B1 * B2 * X)	-0.00073	-0.00074	-0.00073
	(!A2 * B1 * !B2 * !X)	0.00024	0.00024	0.00023
	(!A2 * B1 * !B2 * !X)	-0.00088	-0.00088	-0.00090
	(!A2 * !B1 * !X)	0.00024	0.00024	0.00023
	(!A2 * !B1 * !X)	-0.00088	-0.00088	-0.00090
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00074	0.00073	0.00072
	(A2 * A3 * B1 * B2 * X)	-0.00068	-0.00070	-0.00070
	(A2 * !A3 * B1 * B2 * X)	0.00066	0.00066	0.00066
	(A2 * !A3 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(A2 * !A3 * B1 * !B2 * !X)	0.00027	0.00027	0.00024
	(A2 * !A3 * B1 * !B2 * !X)	-0.00087	-0.00087	-0.00092
	(A2 * !A3 * !B1 * !X)	0.00027	0.00027	0.00024
	(A2 * !A3 * !B1 * !X)	-0.00087	-0.00087	-0.00092
	(!A2 * B1 * B2 * X)	0.00068	0.00068	0.00068
	(!A2 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(!A2 * B1 * !B2 * !X)	0.00027	0.00027	0.00025
	(!A2 * B1 * !B2 * !X)	-0.00090	-0.00090	-0.00093
	(!A2 * !B1 * !X)	0.00027	0.00027	0.00025
	(!A2 * !B1 * !X)	-0.00090	-0.00090	-0.00093

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00117	0.00116	0.00115
	(A2 * A3 * B1 * B2 * X)	-0.00136	-0.00140	-0.00141
	(A2 * !A3 * B1 * B2 * X)	0.00103	0.00104	0.00103
	(A2 * !A3 * B1 * B2 * X)	-0.00147	-0.00147	-0.00146
	(A2 * !A3 * B1 * !B2 * !X)	0.00046	0.00046	0.00040
	(A2 * !A3 * B1 * !B2 * !X)	-0.00160	-0.00160	-0.00171
	(A2 * !A3 * !B1 * !X)	0.00046	0.00046	0.00040
	(A2 * !A3 * !B1 * !X)	-0.00160	-0.00160	-0.00171
	(!A2 * B1 * B2 * X)	0.00106	0.00107	0.00107
	(!A2 * B1 * B2 * X)	-0.00146	-0.00147	-0.00146
	(!A2 * B1 * !B2 * !X)	0.00043	0.00043	0.00040
	(!A2 * B1 * !B2 * !X)	-0.00169	-0.00169	-0.00173
	(!A2 * !B1 * !X)	0.00043	0.00043	0.00040
	(!A2 * !B1 * !X)	-0.00169	-0.00169	-0.00173

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A2 * A3 * B1 * B2 * X)**	-0.00064	-0.00063	-0.00063
	(A2 * A3 * B1 * B2 * X)	0.00071	0.00070	0.00070
	(A2 * !A3 * B1 * B2 * X)	-0.00054	-0.00058	-0.00058
	(A2 * !A3 * B1 * B2 * X)	0.00074	0.00074	0.00073
	(A2 * !A3 * B1 * !B2 * !X)	-0.00021	-0.00022	-0.00021
	(A2 * !A3 * B1 * !B2 * !X)	0.00090	0.00092	0.00091
	(A2 * !A3 * !B1 * !X)	-0.00021	-0.00022	-0.00021
	(A2 * !A3 * !B1 * !X)	0.00090	0.00092	0.00091
	(!A2 * B1 * B2 * X)	-0.00058	-0.00060	-0.00060
	(!A2 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A2 * B1 * !B2 * !X)	-0.00022	-0.00022	-0.00022
	(!A2 * B1 * !B2 * !X)	0.00092	0.00092	0.00091
	(!A2 * !B1 * !X)	-0.00022	-0.00022	-0.00022
	(!A2 * !B1 * !X)	0.00092	0.00092	0.00091
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00073	-0.00072	-0.00072
	(A2 * A3 * B1 * B2 * X)	0.00071	0.00070	0.00070
	(A2 * !A3 * B1 * B2 * X)	-0.00062	-0.00066	-0.00066
	(A2 * !A3 * B1 * B2 * X)	0.00074	0.00074	0.00073
	(A2 * !A3 * B1 * !B2 * !X)	-0.00024	-0.00024	-0.00024
	(A2 * !A3 * B1 * !B2 * !X)	0.00093	0.00094	0.00093
	(A2 * !A3 * !B1 * !X)	-0.00024	-0.00024	-0.00024
	(A2 * !A3 * !B1 * !X)	0.00093	0.00094	0.00093
	(!A2 * B1 * B2 * X)	-0.00066	-0.00068	-0.00068
	(!A2 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A2 * B1 * !B2 * !X)	-0.00024	-0.00025	-0.00024
	(!A2 * B1 * !B2 * !X)	0.00092	0.00094	0.00093
	(!A2 * !B1 * !X)	-0.00025	-0.00025	-0.00024
	(!A2 * !B1 * !X)	0.00094	0.00094	0.00093

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00115	-0.00114	-0.00114
	(A2 * A3 * B1 * B2 * X)	0.00142	0.00140	0.00141
	(A2 * !A3 * B1 * B2 * X)	-0.00096	-0.00104	-0.00103
	(A2 * !A3 * B1 * B2 * X)	0.00148	0.00147	0.00147
	(A2 * !A3 * B1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !A3 * B1 * !B2 * !X)	0.00173	0.00176	0.00173
	(A2 * !A3 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !A3 * !B1 * !X)	0.00173	0.00176	0.00173
	(!A2 * B1 * B2 * X)	-0.00103	-0.00107	-0.00107
	(!A2 * B1 * B2 * X)	0.00146	0.00148	0.00147
	(!A2 * B1 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * B1 * !B2 * !X)	0.00173	0.00176	0.00173
	(!A2 * !B1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !X)	0.00173	0.00176	0.00173

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A3 * B1 * B2 * X)**	0.00064	0.00063	0.00062
	(A1 * A3 * B1 * B2 * X)	-0.00067	-0.00071	-0.00071
	(A1 * !A3 * B1 * B2 * X)	0.00058	0.00058	0.00058
	(A1 * !A3 * B1 * B2 * X)	-0.00073	-0.00074	-0.00073
	(A1 * !A3 * B1 * !B2 * !X)	0.00027	0.00027	0.00027
	(A1 * !A3 * B1 * !B2 * !X)	-0.00079	-0.00079	-0.00078
	(A1 * !A3 * !B1 * !X)	0.00027	0.00027	0.00027
	(A1 * !A3 * !B1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * A3 * B1 * B2 * X)	0.00058	0.00059	0.00058
	(!A1 * A3 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * A3 * B1 * !B2 * !X)	0.00053	0.00053	0.00053
	(!A1 * A3 * B1 * !B2 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * A3 * !B1 * !X)	0.00053	0.00053	0.00053
	(!A1 * A3 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A3 * B1 * B2 * X)	0.00038	0.00038	0.00038
	(!A1 * !A3 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A3 * B1 * !B2 * !X)	0.00031	0.00030	0.00030
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A3 * !B1 * !X)	0.00031	0.00030	0.00030
	(!A1 * !A3 * !B1 * !X)	-0.00079	-0.00079	-0.00079

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00072	0.00072	0.00071
	(A1 * A3 * B1 * B2 * X)	-0.00067	-0.00071	-0.00070
	(A1 * !A3 * B1 * B2 * X)	0.00066	0.00066	0.00066
	(A1 * !A3 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(A1 * !A3 * B1 * !B2 * !X)	0.00031	0.00030	0.00031
	(A1 * !A3 * B1 * !B2 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A3 * !B1 * !X)	0.00031	0.00030	0.00031
	(A1 * !A3 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * A3 * B1 * B2 * X)	0.00066	0.00067	0.00067
	(!A1 * A3 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * A3 * B1 * !B2 * !X)	0.00061	0.00062	0.00061
	(!A1 * A3 * B1 * !B2 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * A3 * !B1 * !X)	0.00061	0.00062	0.00061
	(!A1 * A3 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A3 * B1 * B2 * X)	0.00043	0.00043	0.00043
	(!A1 * !A3 * B1 * B2 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A3 * B1 * !B2 * !X)	0.00035	0.00034	0.00034
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A3 * !B1 * !X)	0.00035	0.00035	0.00034
	(!A1 * !A3 * !B1 * !X)	-0.00079	-0.00079	-0.00079

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00126	0.00124	0.00122
	(A1 * A3 * B1 * B2 * X)	-0.00147	-0.00153	-0.00154
	(A1 * !A3 * B1 * B2 * X)	0.00114	0.00115	0.00114
	(A1 * !A3 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * B1 * !B2 * !X)	0.00057	0.00057	0.00056
	(A1 * !A3 * B1 * !B2 * !X)	-0.00170	-0.00169	-0.00168
	(A1 * !A3 * !B1 * !X)	0.00057	0.00057	0.00056
	(A1 * !A3 * !B1 * !X)	-0.00170	-0.00169	-0.00168
	(!A1 * A3 * B1 * B2 * X)	0.00114	0.00115	0.00114
	(!A1 * A3 * B1 * B2 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * A3 * B1 * !B2 * !X)	0.00106	0.00107	0.00106
	(!A1 * A3 * B1 * !B2 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * A3 * !B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * A3 * !B1 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * !A3 * B1 * B2 * X)	0.00077	0.00077	0.00077
	(!A1 * !A3 * B1 * B2 * X)	-0.00162	-0.00161	-0.00161
	(!A1 * !A3 * B1 * !B2 * !X)	0.00065	0.00064	0.00064
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00171	-0.00170	-0.00170
	(!A1 * !A3 * !B1 * !X)	0.00065	0.00064	0.00064
	(!A1 * !A3 * !B1 * !X)	-0.00171	-0.00170	-0.00170

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A3 * B1 * B2 * X)**	-0.00062	-0.00062	-0.00062
	(A1 * A3 * B1 * B2 * X)	0.00071	0.00071	0.00071
	(A1 * !A3 * B1 * B2 * X)	-0.00056	-0.00058	-0.00058
	(A1 * !A3 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(A1 * !A3 * B1 * !B2 * !X)	-0.00025	-0.00026	-0.00026
	(A1 * !A3 * B1 * !B2 * !X)	0.00080	0.00082	0.00079
	(A1 * !A3 * !B1 * !X)	-0.00025	-0.00026	-0.00026
	(A1 * !A3 * !B1 * !X)	0.00080	0.00082	0.00079
	(!A1 * A3 * B1 * B2 * X)	-0.00057	-0.00059	-0.00058
	(!A1 * A3 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A1 * A3 * B1 * !B2 * !X)	-0.00050	-0.00053	-0.00053
	(!A1 * A3 * B1 * !B2 * !X)	0.00080	0.00079	0.00079
	(!A1 * A3 * !B1 * !X)	-0.00050	-0.00053	-0.00053
	(!A1 * A3 * !B1 * !X)	0.00080	0.00079	0.00079
	(!A1 * !A3 * B1 * B2 * X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A3 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00031	-0.00030	-0.00030
	(!A1 * !A3 * B1 * !B2 * !X)	0.00081	0.00083	0.00080
	(!A1 * !A3 * !B1 * !X)	-0.00031	-0.00030	-0.00030
	(!A1 * !A3 * !B1 * !X)	0.00081	0.00083	0.00080

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00071	-0.00071	-0.00071
	(A1 * A3 * B1 * B2 * X)	0.00070	0.00071	0.00070
	(A1 * !A3 * B1 * B2 * X)	-0.00064	-0.00066	-0.00066
	(A1 * !A3 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(A1 * !A3 * B1 * !B2 * !X)	-0.00029	-0.00029	-0.00030
	(A1 * !A3 * B1 * !B2 * !X)	0.00081	0.00082	0.00079
	(A1 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00030
	(A1 * !A3 * !B1 * !X)	0.00081	0.00082	0.00079
	(!A1 * A3 * B1 * B2 * X)	-0.00064	-0.00067	-0.00067
	(!A1 * A3 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A1 * A3 * B1 * !B2 * !X)	-0.00058	-0.00062	-0.00061
	(!A1 * A3 * B1 * !B2 * !X)	0.00080	0.00079	0.00079
	(!A1 * A3 * !B1 * !X)	-0.00058	-0.00062	-0.00061
	(!A1 * A3 * !B1 * !X)	0.00080	0.00079	0.00079
	(!A1 * !A3 * B1 * B2 * X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A3 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00035	-0.00034	-0.00034
	(!A1 * !A3 * B1 * !B2 * !X)	0.00081	0.00083	0.00079
	(!A1 * !A3 * !B1 * !X)	-0.00035	-0.00035	-0.00034
	(!A1 * !A3 * !B1 * !X)	0.00081	0.00083	0.00079

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00121	-0.00121	-0.00121
	(A1 * A3 * B1 * B2 * X)	0.00154	0.00153	0.00154
	(A1 * !A3 * B1 * B2 * X)	-0.00110	-0.00115	-0.00114
	(A1 * !A3 * B1 * B2 * X)	0.00163	0.00163	0.00162
	(A1 * !A3 * B1 * !B2 * !X)	-0.00051	-0.00053	-0.00053
	(A1 * !A3 * B1 * !B2 * !X)	0.00173	0.00176	0.00171
	(A1 * !A3 * !B1 * !X)	-0.00052	-0.00053	-0.00053
	(A1 * !A3 * !B1 * !X)	0.00174	0.00176	0.00171
	(!A1 * A3 * B1 * B2 * X)	-0.00110	-0.00115	-0.00114
	(!A1 * A3 * B1 * B2 * X)	0.00161	0.00162	0.00162
	(!A1 * A3 * B1 * !B2 * !X)	-0.00100	-0.00107	-0.00106
	(!A1 * A3 * B1 * !B2 * !X)	0.00173	0.00170	0.00169
	(!A1 * A3 * !B1 * !X)	-0.00100	-0.00107	-0.00106
	(!A1 * A3 * !B1 * !X)	0.00173	0.00170	0.00169
	(!A1 * !A3 * B1 * B2 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * B1 * B2 * X)	0.00162	0.00164	0.00162
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00065	-0.00064	-0.00064
	(!A1 * !A3 * B1 * !B2 * !X)	0.00174	0.00176	0.00171
	(!A1 * !A3 * !B1 * !X)	-0.00065	-0.00064	-0.00064
	(!A1 * !A3 * !B1 * !X)	0.00174	0.00176	0.00171

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * B1 * B2 * X)**	0.00072	0.00071	0.00070
	(A1 * A2 * B1 * B2 * X)	-0.00067	-0.00070	-0.00069
	(A1 * !A2 * B1 * !B2 * !X)	0.00054	0.00054	0.00054
	(A1 * !A2 * B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * !B1 * !X)	0.00054	0.00054	0.00054
	(A1 * !A2 * !B1 * !X)	-0.00085	-0.00085	-0.00085
	(!A2 * B1 * B2 * X)	0.00066	0.00067	0.00066
	(!A2 * B1 * B2 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * A2 * B1 * B2 * X)	0.00065	0.00065	0.00065
	(!A1 * A2 * B1 * B2 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * A2 * B1 * !B2 * !X)	0.00052	0.00053	0.00052
	(!A1 * A2 * B1 * !B2 * !X)	-0.00084	-0.00085	-0.00085
	(!A1 * A2 * !B1 * !X)	0.00052	0.00053	0.00052
	(!A1 * A2 * !B1 * !X)	-0.00084	-0.00085	-0.00085
	(!A1 * !A2 * B1 * !B2 * !X)	0.00054	0.00054	0.00053
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * !B1 * !X)	0.00054	0.00054	0.00053
	(!A1 * !A2 * !B1 * !X)	-0.00085	-0.00085	-0.00085

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00081	0.00080	0.00079
	(A1 * A2 * B1 * B2 * X)	-0.00067	-0.00070	-0.00070
	(A1 * !A2 * B1 * !B2 * !X)	0.00062	0.00062	0.00062
	(A1 * !A2 * B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * !B1 * !X)	0.00062	0.00062	0.00062
	(A1 * !A2 * !B1 * !X)	-0.00085	-0.00085	-0.00085
	(!A2 * B1 * B2 * X)	0.00074	0.00075	0.00074
	(!A2 * B1 * B2 * X)	-0.00072	-0.00073	-0.00072
	(!A1 * A2 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A1 * A2 * B1 * B2 * X)	-0.00072	-0.00073	-0.00072
	(!A1 * A2 * B1 * !B2 * !X)	0.00061	0.00061	0.00061
	(!A1 * A2 * B1 * !B2 * !X)	-0.00084	-0.00085	-0.00084
	(!A1 * A2 * !B1 * !X)	0.00061	0.00061	0.00061
	(!A1 * A2 * !B1 * !X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A2 * B1 * !B2 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * !B1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * !B1 * !X)	-0.00085	-0.00085	-0.00085

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00125	0.00122	0.00121
	(A1 * A2 * B1 * B2 * X)	-0.00142	-0.00150	-0.00148
	(A1 * !A2 * B1 * !B2 * !X)	0.00112	0.00113	0.00112
	(A1 * !A2 * B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * !B1 * !X)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B1 * !X)	-0.00155	-0.00156	-0.00155
	(!A2 * B1 * B2 * X)	0.00113	0.00114	0.00113
	(!A2 * B1 * B2 * X)	-0.00154	-0.00155	-0.00155
	(!A1 * A2 * B1 * B2 * X)	0.00109	0.00110	0.00109
	(!A1 * A2 * B1 * B2 * X)	-0.00154	-0.00155	-0.00155
	(!A1 * A2 * B1 * !B2 * !X)	0.00109	0.00109	0.00109
	(!A1 * A2 * B1 * !B2 * !X)	-0.00155	-0.00155	-0.00155
	(!A1 * A2 * !B1 * !X)	0.00109	0.00109	0.00109
	(!A1 * A2 * !B1 * !X)	-0.00155	-0.00155	-0.00155
	(!A1 * !A2 * B1 * !B2 * !X)	0.00112	0.00113	0.00112
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(!A1 * !A2 * !B1 * !X)	0.00112	0.00113	0.00112
	(!A1 * !A2 * !B1 * !X)	-0.00155	-0.00156	-0.00155

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * B1 * B2 * X)**	-0.00070	-0.00071	-0.00070
	(A1 * A2 * B1 * B2 * X)	0.00070	0.00070	0.00069
	(A1 * !A2 * B1 * !B2 * !X)	-0.00052	-0.00054	-0.00054
	(A1 * !A2 * B1 * !B2 * !X)	0.00085	0.00085	0.00085
	(A1 * !A2 * !B1 * !X)	-0.00052	-0.00054	-0.00054
	(A1 * !A2 * !B1 * !X)	0.00085	0.00085	0.00085
	(!A2 * B1 * B2 * X)	-0.00065	-0.00067	-0.00066
	(!A2 * B1 * B2 * X)	0.00072	0.00072	0.00072
	(!A1 * A2 * B1 * B2 * X)	-0.00062	-0.00065	-0.00065
	(!A1 * A2 * B1 * B2 * X)	0.00072	0.00073	0.00072
	(!A1 * A2 * B1 * !B2 * !X)	-0.00050	-0.00053	-0.00052
	(!A1 * A2 * B1 * !B2 * !X)	0.00085	0.00086	0.00085
	(!A1 * A2 * !B1 * !X)	-0.00050	-0.00053	-0.00052
	(!A1 * A2 * !B1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00052	-0.00054	-0.00053
	(!A1 * !A2 * B1 * !B2 * !X)	0.00085	0.00085	0.00085
	(!A1 * !A2 * !B1 * !X)	-0.00052	-0.00054	-0.00053
	(!A1 * !A2 * !B1 * !X)	0.00085	0.00085	0.00085

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00079	-0.00080	-0.00079
	(A1 * A2 * B1 * B2 * X)	0.00070	0.00071	0.00070
	(A1 * !A2 * B1 * !B2 * !X)	-0.00060	-0.00062	-0.00062
	(A1 * !A2 * B1 * !B2 * !X)	0.00085	0.00085	0.00085
	(A1 * !A2 * !B1 * !X)	-0.00060	-0.00062	-0.00062
	(A1 * !A2 * !B1 * !X)	0.00085	0.00085	0.00085
	(!A2 * B1 * B2 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * B1 * B2 * X)	0.00073	0.00073	0.00073
	(!A1 * A2 * B1 * B2 * X)	-0.00070	-0.00074	-0.00073
	(!A1 * A2 * B1 * B2 * X)	0.00072	0.00073	0.00073
	(!A1 * A2 * B1 * !B2 * !X)	-0.00058	-0.00061	-0.00061
	(!A1 * A2 * B1 * !B2 * !X)	0.00085	0.00086	0.00085
	(!A1 * A2 * !B1 * !X)	-0.00058	-0.00061	-0.00061
	(!A1 * A2 * !B1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00060	-0.00062	-0.00062
	(!A1 * !A2 * B1 * !B2 * !X)	0.00085	0.00085	0.00085
	(!A1 * !A2 * !B1 * !X)	-0.00060	-0.00062	-0.00062
	(!A1 * !A2 * !B1 * !X)	0.00085	0.00085	0.00085

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00120	-0.00122	-0.00120
	(A1 * A2 * B1 * B2 * X)	0.00148	0.00151	0.00148
	(A1 * !A2 * B1 * !B2 * !X)	-0.00108	-0.00113	-0.00112
	(A1 * !A2 * B1 * !B2 * !X)	0.00155	0.00156	0.00155
	(A1 * !A2 * !B1 * !X)	-0.00108	-0.00113	-0.00112
	(A1 * !A2 * !B1 * !X)	0.00155	0.00156	0.00155
	(!A2 * B1 * B2 * X)	-0.00109	-0.00114	-0.00113
	(!A2 * B1 * B2 * X)	0.00155	0.00156	0.00155
	(!A1 * A2 * B1 * B2 * X)	-0.00103	-0.00110	-0.00109
	(!A1 * A2 * B1 * B2 * X)	0.00155	0.00157	0.00155
	(!A1 * A2 * B1 * !B2 * !X)	-0.00102	-0.00109	-0.00109
	(!A1 * A2 * B1 * !B2 * !X)	0.00155	0.00157	0.00155
	(!A1 * A2 * !B1 * !X)	-0.00102	-0.00109	-0.00109
	(!A1 * A2 * !B1 * !X)	0.00155	0.00157	0.00155
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00108	-0.00113	-0.00112
	(!A1 * !A2 * B1 * !B2 * !X)	0.00155	0.00156	0.00155
	(!A1 * !A2 * !B1 * !X)	-0.00108	-0.00113	-0.00112
	(!A1 * !A2 * !B1 * !X)	0.00155	0.00156	0.00155

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * A3 * B2 * X)**	0.00069	0.00070	0.00069
	(A1 * A2 * A3 * B2 * X)	-0.00041	-0.00042	-0.00041
	(A1 * A2 * A3 * !B2 * X)	0.00065	0.00065	0.00065
	(A1 * A2 * A3 * !B2 * X)	-0.00042	-0.00042	-0.00041
	(A1 * A2 * !A3 * !B2 * !X)	0.00023	0.00023	0.00022
	(A1 * A2 * !A3 * !B2 * !X)	-0.00087	-0.00088	-0.00089
	(A1 * !A2 * !B2 * !X)	0.00023	0.00023	0.00022
	(A1 * !A2 * !B2 * !X)	-0.00087	-0.00088	-0.00089
	(!A1 * !B2 * !X)	0.00023	0.00023	0.00022
	(!A1 * !B2 * !X)	-0.00087	-0.00088	-0.00089
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00076	0.00078	0.00077
	(A1 * A2 * A3 * B2 * X)	-0.00042	-0.00043	-0.00042
	(A1 * A2 * A3 * !B2 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * A3 * !B2 * X)	-0.00042	-0.00042	-0.00042
	(A1 * A2 * !A3 * !B2 * !X)	0.00028	0.00028	0.00027
	(A1 * A2 * !A3 * !B2 * !X)	-0.00086	-0.00087	-0.00089
	(A1 * !A2 * !B2 * !X)	0.00028	0.00028	0.00027
	(A1 * !A2 * !B2 * !X)	-0.00086	-0.00087	-0.00089
	(!A1 * !B2 * !X)	0.00028	0.00028	0.00027
	(!A1 * !B2 * !X)	-0.00087	-0.00087	-0.00089
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00138	0.00140	0.00138
	(A1 * A2 * A3 * B2 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * A3 * !B2 * X)	0.00128	0.00128	0.00128
	(A1 * A2 * A3 * !B2 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * !A3 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * A2 * !A3 * !B2 * !X)	-0.00176	-0.00176	-0.00180
	(A1 * !A2 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * !A2 * !B2 * !X)	-0.00176	-0.00176	-0.00180
	(!A1 * !B2 * !X)	0.00042	0.00042	0.00040
	(!A1 * !B2 * !X)	-0.00176	-0.00176	-0.00180

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	(A1 * A2 * A3 * B2 * X)	-0.00057	-0.00058	-0.00067
	(A1 * A2 * A3 * B2 * X)	0.00052	0.00052	0.00044
	(A1 * A2 * A3 * !B2 * X)	-0.00064	-0.00065	-0.00065
	(A1 * A2 * A3 * !B2 * X)	0.00042	0.00042	0.00041
	(A1 * A2 * !A3 * !B2 * !X)	-0.00021	-0.00022	-0.00021
	(A1 * A2 * !A3 * !B2 * !X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B2 * !X)	-0.00021	-0.00022	-0.00021
	(A1 * !A2 * !B2 * !X)	0.00089	0.00090	0.00089
	(!A1 * !B2 * !X)	-0.00021	-0.00022	-0.00021
	(!A1 * !B2 * !X)	0.00089	0.00090	0.00089
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00064	-0.00065	-0.00075
	(A1 * A2 * A3 * B2 * X)	0.00053	0.00053	0.00045
	(A1 * A2 * A3 * !B2 * X)	-0.00070	-0.00072	-0.00072
	(A1 * A2 * A3 * !B2 * X)	0.00042	0.00042	0.00042
	(A1 * A2 * !A3 * !B2 * !X)	-0.00025	-0.00026	-0.00026
	(A1 * A2 * !A3 * !B2 * !X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B2 * !X)	-0.00025	-0.00026	-0.00026
	(A1 * !A2 * !B2 * !X)	0.00089	0.00090	0.00089
	(!A1 * !B2 * !X)	-0.00025	-0.00026	-0.00026
	(!A1 * !B2 * !X)	0.00089	0.00090	0.00089

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00112	-0.00113	-0.00134
	(A1 * A2 * A3 * B2 * X)	0.00107	0.00106	0.00089
	(A1 * A2 * A3 * !B2 * X)	-0.00124	-0.00128	-0.00128
	(A1 * A2 * A3 * !B2 * X)	0.00084	0.00085	0.00084
	(A1 * A2 * !A3 * !B2 * !X)	-0.00038	-0.00040	-0.00039
	(A1 * A2 * !A3 * !B2 * !X)	0.00180	0.00182	0.00181
	(A1 * !A2 * !B2 * !X)	-0.00038	-0.00040	-0.00039
	(A1 * !A2 * !B2 * !X)	0.00180	0.00182	0.00181
	(!A1 * !B2 * !X)	-0.00038	-0.00040	-0.00039
	(!A1 * !B2 * !X)	0.00180	0.00182	0.00181

Passive power(pJ) for B2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**(A1 * A2 * A3 * B1 * X)**	0.00067	0.00068	0.00067
	(A1 * A2 * A3 * B1 * X)	-0.00043	-0.00044	-0.00044
	(A1 * A2 * A3 * !B1 * X)	0.00064	0.00064	0.00063
	(A1 * A2 * A3 * !B1 * X)	-0.00043	-0.00044	-0.00043
	(A1 * A2 * !A3 * !B1 * !X)	0.00058	0.00058	0.00058
	(A1 * A2 * !A3 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * !B1 * !X)	0.00058	0.00058	0.00058
	(A1 * !A2 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * !X)	0.00058	0.00058	0.00058
	(!A1 * !B1 * !X)	-0.00074	-0.00074	-0.00074

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00078	0.00079	0.00077
	(A1 * A2 * A3 * B1 * X)	-0.00044	-0.00045	-0.00044
	(A1 * A2 * A3 * !B1 * X)	0.00074	0.00074	0.00073
	(A1 * A2 * A3 * !B1 * X)	-0.00044	-0.00044	-0.00044
	(A1 * A2 * !A3 * !B1 * !X)	0.00068	0.00068	0.00068
	(A1 * A2 * !A3 * !B1 * !X)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !B1 * !X)	0.00068	0.00068	0.00068
	(A1 * !A2 * !B1 * !X)	-0.00075	-0.00075	-0.00075
	(!A1 * !B1 * !X)	0.00068	0.00068	0.00068
	(!A1 * !B1 * !X)	-0.00074	-0.00075	-0.00075
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00176	0.00177	0.00177
	(A1 * A2 * A3 * B1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * A3 * !B1 * X)	0.00167	0.00169	0.00167
	(A1 * A2 * A3 * !B1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !A3 * !B1 * !X)	0.00145	0.00146	0.00145
	(A1 * A2 * !A3 * !B1 * !X)	-0.00158	-0.00159	-0.00158
	(A1 * !A2 * !B1 * !X)	0.00146	0.00147	0.00145
	(A1 * !A2 * !B1 * !X)	-0.00159	-0.00159	-0.00158
	(!A1 * !B1 * !X)	0.00145	0.00147	0.00145
	(!A1 * !B1 * !X)	-0.00158	-0.00159	-0.00158

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * A3 * B1 * X)**	-0.00055	-0.00056	-0.00065
	(A1 * A2 * A3 * B1 * X)	0.00054	0.00054	0.00046
	(A1 * A2 * A3 * !B1 * X)	-0.00062	-0.00064	-0.00063
	(A1 * A2 * A3 * !B1 * X)	0.00043	0.00044	0.00043
	(A1 * A2 * !A3 * !B1 * !X)	-0.00055	-0.00058	-0.00058
	(A1 * A2 * !A3 * !B1 * !X)	0.00076	0.00075	0.00074
	(A1 * !A2 * !B1 * !X)	-0.00055	-0.00058	-0.00058
	(A1 * !A2 * !B1 * !X)	0.00076	0.00075	0.00074
	(!A1 * !B1 * !X)	-0.00055	-0.00058	-0.00058
	(!A1 * !B1 * !X)	0.00076	0.00075	0.00074
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00065	-0.00066	-0.00075
	(A1 * A2 * A3 * B1 * X)	0.00055	0.00055	0.00047
	(A1 * A2 * A3 * !B1 * X)	-0.00071	-0.00074	-0.00073
	(A1 * A2 * A3 * !B1 * X)	0.00044	0.00044	0.00044
	(A1 * A2 * !A3 * !B1 * !X)	-0.00066	-0.00068	-0.00068
	(A1 * A2 * !A3 * !B1 * !X)	0.00076	0.00075	0.00075
	(A1 * !A2 * !B1 * !X)	-0.00066	-0.00068	-0.00068
	(A1 * !A2 * !B1 * !X)	0.00076	0.00075	0.00075
	(!A1 * !B1 * !X)	-0.00066	-0.00068	-0.00068
	(!A1 * !B1 * !X)	0.00076	0.00075	0.00075
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00150	-0.00152	-0.00173
	(A1 * A2 * A3 * B1 * X)	0.00109	0.00109	0.00093
	(A1 * A2 * A3 * !B1 * X)	-0.00164	-0.00169	-0.00167
	(A1 * A2 * A3 * !B1 * X)	0.00087	0.00088	0.00087
	(A1 * A2 * !A3 * !B1 * !X)	-0.00139	-0.00146	-0.00145
	(A1 * A2 * !A3 * !B1 * !X)	0.00163	0.00160	0.00159
	(A1 * !A2 * !B1 * !X)	-0.00139	-0.00147	-0.00145
	(A1 * !A2 * !B1 * !X)	0.00163	0.00160	0.00159
	(!A1 * !B1 * !X)	-0.00139	-0.00147	-0.00145
	(!A1 * !B1 * !X)	0.00163	0.00160	0.00159

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	Y
0	x	x	x	0	1
x	x	x	x	1	0
1	0	x	x	0	1
1	1	0	x	0	1
1	1	1	0	0	1
1	1	1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41oi_1	11.18880
sky130_fd_sc_hs__a41oi_2	19.18080
sky130_fd_sc_hs__a41oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__a41oi_1	0.00263	0.00265	0.00260	0.00263	0.00269	0.18466
sky130_fd_sc_hs__a41oi_2	0.00508	0.00490	0.00480	0.00479	0.00388	0.36228
sky130_fd_sc_hs__a41oi_4	0.00990	0.00947	0.00957	0.00947	0.00766	0.66508

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41oi_1	0.00000	0.00749	0.01959
sky130_fd_sc_hs__a41oi_2	0.00000	0.01368	0.03917
sky130_fd_sc_hs__a41oi_4	0.00000	0.02735	0.07834

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (FR)	0.28346	1.74567	12.80260
	A2->Y (FR)	0.34301	1.82040	12.95080
	A3->Y (FR)	0.37803	1.84415	12.86330
	A4->Y (FR)	0.39952	1.83674	12.63890
	B1->Y (FR)	0.24593	1.66177	12.55000
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.23089	1.50462	12.88280
	A2->Y (FR)	0.28351	1.54197	12.74700
	A3->Y (FR)	0.32548	1.59516	12.84890
	A4->Y (FR)	0.37053	1.65378	12.93010
	B1->Y (FR)	0.26220	1.48737	12.51170
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.21146	1.30596	12.46700
	A2->Y (FR)	0.27049	1.35583	12.39130
	A3->Y (FR)	0.32128	1.42342	12.58000
	A4->Y (FR)	0.36826	1.49193	12.77390
	B1->Y (FR)	0.26580	1.33512	12.42850

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.09477	0.83296	6.59077
	A2->Y (RF)	0.11550	0.84470	6.50957
	A3->Y (RF)	0.12739	0.82318	6.14440
	A4->Y (RF)	0.13406	0.80284	5.80404
	B1->Y (RF)	0.03698	0.53457	4.49052
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.07980	0.78519	7.00442
	A2->Y (RF)	0.10682	0.80446	6.91974
	A3->Y (RF)	0.11990	0.77132	6.41362
	A4->Y (RF)	0.12862	0.75882	6.08077
	B1->Y (RF)	0.04035	0.62276	5.81909
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.07567	0.71501	6.97922
	A2->Y (RF)	0.10603	0.73541	6.86145
	A3->Y (RF)	0.12114	0.70774	6.36748
	A4->Y (RF)	0.12802	0.68588	5.95420
	B1->Y (RF)	0.03822	0.55989	5.67802

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00022	0.00015	0.00013
	A1	0.00298	0.00291	0.00289
	A2	0.00057	0.00049	0.00046
	A2	0.00370	0.00361	0.00345
	A3	0.00086	0.00078	0.00075
	A3	0.00433	0.00425	0.00416
	A4	0.00103	0.00097	0.00094
	A4	0.00490	0.00483	0.00479
	B1	0.00099	0.00091	0.00091
	B1	0.00431	0.00422	0.00422
sky130_fd_sc_hs__a41oi_2	A1	-0.00024	-0.00033	-0.00033
	A1	0.00473	0.00466	0.00454
	A2	0.00058	0.00040	0.00037
	A2	0.00641	0.00622	0.00590
	A3	0.00110	0.00094	0.00090
	A3	0.00764	0.00746	0.00729
	A4	0.00173	0.00160	0.00155
	A4	0.00907	0.00893	0.00866
	B1	0.00212	0.00203	0.00202
	B1	0.00764	0.00755	0.00753

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00080	-0.00098	-0.00093
	A1	0.00911	0.00895	0.00901
	A2	0.00108	0.00067	0.00065
	A2	0.01260	0.01222	0.01220
	A3	0.00211	0.00172	0.00168
	A3	0.01531	0.01492	0.01483
	A4	0.00314	0.00287	0.00278
	A4	0.01784	0.01755	0.01740
	B1	0.00396	0.00378	0.00379
	B1	0.01501	0.01480	0.01479

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00362	0.00354	0.00358
	A1	0.00096	0.00087	0.00082
	A2	0.00402	0.00396	0.00389
	A2	0.00096	0.00088	0.00083
	A3	0.00442	0.00435	0.00435
	A3	0.00095	0.00088	0.00082
	A4	0.00488	0.00481	0.00487
	A4	0.00095	0.00088	0.00082
	B1	0.00338	0.00336	0.00335
	B1	-0.00008	-0.00010	-0.00011

sky130_fd_sc_hs__a41oi_2	**A1**	0.00646	0.00627	0.00615
	A1	0.00166	0.00146	0.00138
	A2	0.00739	0.00723	0.00717
	A2	0.00165	0.00151	0.00139
	A3	0.00820	0.00806	0.00802
	A3	0.00165	0.00149	0.00139
	A4	0.00914	0.00900	0.00886
	A4	0.00163	0.00147	0.00137
	B1	0.00530	0.00529	0.00530
	B1	-0.00058	-0.00060	-0.00058
sky130_fd_sc_hs__a41oi_4	**A1**	0.01255	0.01215	0.01213
	A1	0.00302	0.00257	0.00246
	A2	0.01435	0.01402	0.01404
	A2	0.00300	0.00265	0.00248
	A3	0.01621	0.01590	0.01571
	A3	0.00294	0.00261	0.00244
	A4	0.01797	0.01763	0.01764
	A4	0.00294	0.00261	0.00243
	B1	0.01055	0.01050	0.01066
	B1	-0.00118	-0.00128	-0.00116

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A2 * A3 * A4 * B1 * !Y)**	0.00074	0.00073	0.00073
	(A2 * A3 * A4 * B1 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * A3 * !A4 * B1 * !Y)	0.00066	0.00066	0.00066
	(A2 * A3 * !A4 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(A2 * A3 * !A4 * !B1 * Y)	0.00032	0.00032	0.00028
	(A2 * A3 * !A4 * !B1 * Y)	-0.00091	-0.00091	-0.00100
	(A2 * !A3 * B1 * !Y)	0.00067	0.00067	0.00067
	(A2 * !A3 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(A2 * !A3 * !B1 * Y)	0.00031	0.00030	0.00028
	(A2 * !A3 * !B1 * Y)	-0.00095	-0.00095	-0.00100
	(!A2 * B1 * !Y)	0.00068	0.00068	0.00068
	(!A2 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(!A2 * !B1 * Y)	0.00030	0.00030	0.00028
	(!A2 * !B1 * Y)	-0.00099	-0.00099	-0.00101
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00146	0.00146	0.00145
	(A2 * A3 * A4 * B1 * !Y)	-0.00151	-0.00158	-0.00156
	(A2 * A3 * !A4 * B1 * !Y)	0.00128	0.00129	0.00129
	(A2 * A3 * !A4 * B1 * !Y)	-0.00163	-0.00164	-0.00163
	(A2 * A3 * !A4 * !B1 * Y)	0.00060	0.00060	0.00050
	(A2 * A3 * !A4 * !B1 * Y)	-0.00177	-0.00180	-0.00199
	(A2 * !A3 * B1 * !Y)	0.00132	0.00132	0.00131
	(A2 * !A3 * B1 * !Y)	-0.00163	-0.00164	-0.00163
	(A2 * !A3 * !B1 * Y)	0.00055	0.00056	0.00049
	(A2 * !A3 * !B1 * Y)	-0.00187	-0.00190	-0.00201
	(!A2 * B1 * !Y)	0.00136	0.00137	0.00136
	(!A2 * B1 * !Y)	-0.00163	-0.00163	-0.00163
	(!A2 * !B1 * Y)	0.00054	0.00054	0.00051
	(!A2 * !B1 * Y)	-0.00196	-0.00198	-0.00203

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00292	0.00293	0.00290
	(A2 * A3 * A4 * B1 * !Y)	-0.00299	-0.00311	-0.00309
	(A2 * A3 * !A4 * B1 * !Y)	0.00255	0.00257	0.00255
	(A2 * A3 * !A4 * B1 * !Y)	-0.00323	-0.00324	-0.00322
	(A2 * A3 * !A4 * !B1 * Y)	0.00120	0.00120	0.00101
	(A2 * A3 * !A4 * !B1 * Y)	-0.00348	-0.00352	-0.00390
	(A2 * !A3 * B1 * !Y)	0.00261	0.00263	0.00261
	(A2 * !A3 * B1 * !Y)	-0.00323	-0.00324	-0.00322
	(A2 * !A3 * !B1 * Y)	0.00113	0.00113	0.00100
	(A2 * !A3 * !B1 * Y)	-0.00366	-0.00370	-0.00394
	(!A2 * B1 * !Y)	0.00272	0.00274	0.00272
	(!A2 * B1 * !Y)	-0.00323	-0.00324	-0.00322
	(!A2 * !B1 * Y)	0.00114	0.00114	0.00106
	(!A2 * !B1 * Y)	-0.00383	-0.00386	-0.00397

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A2 * A3 * A4 * B1 * !Y)**	-0.00073	-0.00073	-0.00073
	(A2 * A3 * A4 * B1 * !Y)	0.00081	0.00080	0.00080
	(A2 * A3 * !A4 * B1 * !Y)	-0.00060	-0.00066	-0.00066
	(A2 * A3 * !A4 * B1 * !Y)	0.00084	0.00084	0.00084
	(A2 * A3 * !A4 * !B1 * Y)	-0.00027	-0.00027	-0.00027
	(A2 * A3 * !A4 * !B1 * Y)	0.00101	0.00101	0.00101
	(A2 * !A3 * B1 * !Y)	-0.00062	-0.00067	-0.00067
	(A2 * !A3 * B1 * !Y)	0.00084	0.00084	0.00084
	(A2 * !A3 * !B1 * Y)	-0.00027	-0.00027	-0.00027
	(A2 * !A3 * !B1 * Y)	0.00101	0.00101	0.00101
	(!A2 * B1 * !Y)	-0.00066	-0.00068	-0.00068
	(!A2 * B1 * !Y)	0.00084	0.00084	0.00084
	(!A2 * !B1 * Y)	-0.00028	-0.00027	-0.00027
	(!A2 * !B1 * Y)	0.00102	0.00101	0.00101
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00144	-0.00145	-0.00144
	(A2 * A3 * A4 * B1 * !Y)	0.00156	0.00158	0.00156
	(A2 * A3 * !A4 * B1 * !Y)	-0.00117	-0.00129	-0.00129
	(A2 * A3 * !A4 * B1 * !Y)	0.00163	0.00165	0.00164
	(A2 * A3 * !A4 * !B1 * Y)	-0.00047	-0.00047	-0.00047
	(A2 * A3 * !A4 * !B1 * Y)	0.00202	0.00204	0.00203
	(A2 * !A3 * B1 * !Y)	-0.00121	-0.00132	-0.00131
	(A2 * !A3 * B1 * !Y)	0.00163	0.00165	0.00164
	(A2 * !A3 * !B1 * Y)	-0.00047	-0.00048	-0.00047
	(A2 * !A3 * !B1 * Y)	0.00202	0.00204	0.00203
	(!A2 * B1 * !Y)	-0.00130	-0.00137	-0.00136
	(!A2 * B1 * !Y)	0.00163	0.00165	0.00163
	(!A2 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(!A2 * !B1 * Y)	0.00203	0.00204	0.00203

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00289	-0.00291	-0.00289
	(A2 * A3 * A4 * B1 * !Y)	0.00308	0.00311	0.00309
	(A2 * A3 * !A4 * B1 * !Y)	-0.00231	-0.00257	-0.00255
	(A2 * A3 * !A4 * B1 * !Y)	0.00323	0.00326	0.00323
	(A2 * A3 * !A4 * !B1 * Y)	-0.00099	-0.00098	-0.00098
	(A2 * A3 * !A4 * !B1 * Y)	0.00401	0.00399	0.00398
	(A2 * !A3 * B1 * !Y)	-0.00237	-0.00263	-0.00261
	(A2 * !A3 * B1 * !Y)	0.00323	0.00326	0.00323
	(A2 * !A3 * !B1 * Y)	-0.00097	-0.00099	-0.00098
	(A2 * !A3 * !B1 * Y)	0.00395	0.00400	0.00398
	(!A2 * B1 * !Y)	-0.00261	-0.00274	-0.00272
	(!A2 * B1 * !Y)	0.00325	0.00327	0.00323
	(!A2 * !B1 * Y)	-0.00102	-0.00102	-0.00102
	(!A2 * !B1 * Y)	0.00398	0.00400	0.00398

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A3 * A4 * B1 * !Y)**	0.00071	0.00070	0.00070
	(A1 * A3 * A4 * B1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * A3 * !A4 * B1 * !Y)	0.00063	0.00064	0.00063
	(A1 * A3 * !A4 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A3 * !A4 * !B1 * Y)	0.00030	0.00030	0.00031
	(A1 * A3 * !A4 * !B1 * Y)	-0.00088	-0.00088	-0.00087
	(A1 * !A3 * B1 * !Y)	0.00065	0.00066	0.00065
	(A1 * !A3 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * !A3 * !B1 * Y)	0.00032	0.00032	0.00032
	(A1 * !A3 * !B1 * Y)	-0.00088	-0.00088	-0.00087
	(!A1 * A3 * A4 * B1 * !Y)	0.00065	0.00066	0.00065
	(!A1 * A3 * A4 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(!A1 * A3 * A4 * !B1 * Y)	0.00061	0.00062	0.00061
	(!A1 * A3 * A4 * !B1 * Y)	-0.00088	-0.00088	-0.00088
	(!A1 * A3 * !A4 * B1 * !Y)	0.00042	0.00042	0.00042
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(!A1 * A3 * !A4 * !B1 * Y)	0.00036	0.00036	0.00036
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00089	-0.00088	-0.00088
	(!A1 * !A3 * B1 * !Y)	0.00044	0.00044	0.00043
	(!A1 * !A3 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * Y)	0.00037	0.00037	0.00036
	(!A1 * !A3 * !B1 * Y)	-0.00089	-0.00089	-0.00088

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00143	0.00142	0.00141
	(A1 * A3 * A4 * B1 * !Y)	-0.00155	-0.00160	-0.00159
	(A1 * A3 * !A4 * B1 * !Y)	0.00127	0.00126	0.00126
	(A1 * A3 * !A4 * B1 * !Y)	-0.00168	-0.00166	-0.00167
	(A1 * A3 * !A4 * !B1 * Y)	0.00067	0.00067	0.00068
	(A1 * A3 * !A4 * !B1 * Y)	-0.00169	-0.00168	-0.00167
	(A1 * !A3 * B1 * !Y)	0.00131	0.00132	0.00132
	(A1 * !A3 * B1 * !Y)	-0.00166	-0.00167	-0.00167
	(A1 * !A3 * !B1 * Y)	0.00070	0.00070	0.00070
	(A1 * !A3 * !B1 * Y)	-0.00169	-0.00169	-0.00168
	(!A1 * A3 * A4 * B1 * !Y)	0.00131	0.00131	0.00132
	(!A1 * A3 * A4 * B1 * !Y)	-0.00166	-0.00166	-0.00167
	(!A1 * A3 * A4 * !B1 * Y)	0.00129	0.00129	0.00130
	(!A1 * A3 * A4 * !B1 * Y)	-0.00168	-0.00168	-0.00169
	(!A1 * A3 * !A4 * B1 * !Y)	0.00085	0.00085	0.00084
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00166	-0.00167	-0.00167
	(!A1 * A3 * !A4 * !B1 * Y)	0.00079	0.00079	0.00078
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00170	-0.00170	-0.00170
	(!A1 * !A3 * B1 * !Y)	0.00087	0.00087	0.00086
	(!A1 * !A3 * B1 * !Y)	-0.00167	-0.00167	-0.00167
	(!A1 * !A3 * !B1 * Y)	0.00079	0.00078	0.00078
	(!A1 * !A3 * !B1 * Y)	-0.00171	-0.00170	-0.00170

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00282	0.00281	0.00278
	(A1 * A3 * A4 * B1 * !Y)	-0.00306	-0.00318	-0.00316
	(A1 * A3 * !A4 * B1 * !Y)	0.00246	0.00247	0.00245
	(A1 * A3 * !A4 * B1 * !Y)	-0.00332	-0.00332	-0.00330
	(A1 * A3 * !A4 * !B1 * Y)	0.00127	0.00127	0.00131
	(A1 * A3 * !A4 * !B1 * Y)	-0.00332	-0.00332	-0.00329
	(A1 * !A3 * B1 * !Y)	0.00254	0.00256	0.00255
	(A1 * !A3 * B1 * !Y)	-0.00330	-0.00332	-0.00330
	(A1 * !A3 * !B1 * Y)	0.00132	0.00132	0.00133
	(A1 * !A3 * !B1 * Y)	-0.00333	-0.00333	-0.00331
	(!A1 * A3 * A4 * B1 * !Y)	0.00260	0.00262	0.00261
	(!A1 * A3 * A4 * B1 * !Y)	-0.00330	-0.00331	-0.00330
	(!A1 * A3 * A4 * !B1 * Y)	0.00258	0.00260	0.00259
	(!A1 * A3 * A4 * !B1 * Y)	-0.00331	-0.00333	-0.00332
	(!A1 * A3 * !A4 * B1 * !Y)	0.00162	0.00161	0.00160
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00330	-0.00332	-0.00330
	(!A1 * A3 * !A4 * !B1 * Y)	0.00153	0.00152	0.00152
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00334	-0.00334	-0.00333
	(!A1 * !A3 * B1 * !Y)	0.00163	0.00162	0.00162
	(!A1 * !A3 * B1 * !Y)	-0.00331	-0.00331	-0.00330
	(!A1 * !A3 * !B1 * Y)	0.00150	0.00149	0.00149
	(!A1 * !A3 * !B1 * Y)	-0.00335	-0.00334	-0.00334

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A3 * A4 * B1 * !Y)**	-0.00070	-0.00070	-0.00070
	(A1 * A3 * A4 * B1 * !Y)	0.00081	0.00080	0.00080
	(A1 * A3 * !A4 * B1 * !Y)	-0.00059	-0.00064	-0.00063
	(A1 * A3 * !A4 * B1 * !Y)	0.00085	0.00084	0.00084
	(A1 * A3 * !A4 * !B1 * Y)	-0.00029	-0.00030	-0.00030
	(A1 * A3 * !A4 * !B1 * Y)	0.00090	0.00092	0.00089
	(A1 * !A3 * B1 * !Y)	-0.00063	-0.00066	-0.00065
	(A1 * !A3 * B1 * !Y)	0.00084	0.00085	0.00084
	(A1 * !A3 * !B1 * Y)	-0.00030	-0.00031	-0.00031
	(A1 * !A3 * !B1 * Y)	0.00090	0.00091	0.00089
	(!A1 * A3 * A4 * B1 * !Y)	-0.00063	-0.00066	-0.00065
	(!A1 * A3 * A4 * B1 * !Y)	0.00084	0.00085	0.00084
	(!A1 * A3 * A4 * !B1 * Y)	-0.00058	-0.00062	-0.00061
	(!A1 * A3 * A4 * !B1 * Y)	0.00090	0.00089	0.00088
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00042	-0.00042	-0.00042
	(!A1 * A3 * !A4 * B1 * !Y)	0.00085	0.00085	0.00084
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00036	-0.00036	-0.00036
	(!A1 * A3 * !A4 * !B1 * Y)	0.00090	0.00090	0.00088
	(!A1 * !A3 * B1 * !Y)	-0.00044	-0.00044	-0.00043
	(!A1 * !A3 * B1 * !Y)	0.00084	0.00085	0.00084
	(!A1 * !A3 * !B1 * Y)	-0.00037	-0.00037	-0.00036
	(!A1 * !A3 * !B1 * Y)	0.00090	0.00092	0.00089

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00142	-0.00141	-0.00141
	(A1 * A3 * A4 * B1 * !Y)	0.00161	0.00160	0.00159
	(A1 * A3 * !A4 * B1 * !Y)	-0.00117	-0.00126	-0.00126
	(A1 * A3 * !A4 * B1 * !Y)	0.00169	0.00168	0.00167
	(A1 * A3 * !A4 * !B1 * Y)	-0.00063	-0.00064	-0.00065
	(A1 * A3 * !A4 * !B1 * Y)	0.00174	0.00176	0.00170
	(A1 * !A3 * B1 * !Y)	-0.00127	-0.00132	-0.00132
	(A1 * !A3 * B1 * !Y)	0.00168	0.00170	0.00167
	(A1 * !A3 * !B1 * Y)	-0.00065	-0.00067	-0.00067
	(A1 * !A3 * !B1 * Y)	0.00173	0.00176	0.00170
	(!A1 * A3 * A4 * B1 * !Y)	-0.00126	-0.00131	-0.00132
	(!A1 * A3 * A4 * B1 * !Y)	0.00166	0.00169	0.00167
	(!A1 * A3 * A4 * !B1 * Y)	-0.00120	-0.00129	-0.00130
	(!A1 * A3 * A4 * !B1 * Y)	0.00172	0.00171	0.00169
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00085	-0.00085	-0.00084
	(!A1 * A3 * !A4 * B1 * !Y)	0.00166	0.00170	0.00167
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00079	-0.00079	-0.00078
	(!A1 * A3 * !A4 * !B1 * Y)	0.00170	0.00173	0.00170
	(!A1 * !A3 * B1 * !Y)	-0.00087	-0.00087	-0.00086
	(!A1 * !A3 * B1 * !Y)	0.00167	0.00169	0.00167
	(!A1 * !A3 * !B1 * Y)	-0.00079	-0.00078	-0.00078
	(!A1 * !A3 * !B1 * Y)	0.00173	0.00176	0.00170

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00279	-0.00279	-0.00278
	(A1 * A3 * A4 * B1 * !Y)	0.00319	0.00318	0.00316
	(A1 * A3 * !A4 * B1 * !Y)	-0.00225	-0.00247	-0.00245
	(A1 * A3 * !A4 * B1 * !Y)	0.00334	0.00334	0.00331
	(A1 * A3 * !A4 * !B1 * Y)	-0.00122	-0.00124	-0.00124
	(A1 * A3 * !A4 * !B1 * Y)	0.00339	0.00345	0.00335
	(A1 * !A3 * B1 * !Y)	-0.00246	-0.00256	-0.00255
	(A1 * !A3 * B1 * !Y)	0.00333	0.00336	0.00331
	(A1 * !A3 * !B1 * Y)	-0.00124	-0.00127	-0.00128
	(A1 * !A3 * !B1 * Y)	0.00339	0.00345	0.00335
	(!A1 * A3 * A4 * B1 * !Y)	-0.00250	-0.00262	-0.00261
	(!A1 * A3 * A4 * B1 * !Y)	0.00333	0.00335	0.00331
	(!A1 * A3 * A4 * !B1 * Y)	-0.00243	-0.00260	-0.00259
	(!A1 * A3 * A4 * !B1 * Y)	0.00342	0.00337	0.00333
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00162	-0.00161	-0.00160
	(!A1 * A3 * !A4 * B1 * !Y)	0.00330	0.00337	0.00331
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00153	-0.00152	-0.00152
	(!A1 * A3 * !A4 * !B1 * Y)	0.00334	0.00340	0.00334
	(!A1 * !A3 * B1 * !Y)	-0.00163	-0.00162	-0.00162
	(!A1 * !A3 * B1 * !Y)	0.00334	0.00335	0.00331
	(!A1 * !A3 * !B1 * Y)	-0.00150	-0.00149	-0.00149
	(!A1 * !A3 * !B1 * Y)	0.00339	0.00345	0.00335

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A2 * A4 * B1 * !Y)**	0.00069	0.00069	0.00068
	(A1 * A2 * A4 * B1 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * A2 * !A4 * B1 * !Y)	0.00063	0.00064	0.00063
	(A1 * A2 * !A4 * B1 * !Y)	-0.00083	-0.00084	-0.00084
	(A1 * A2 * !A4 * !B1 * Y)	0.00031	0.00031	0.00031
	(A1 * A2 * !A4 * !B1 * Y)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * A4 * !B1 * Y)	0.00061	0.00062	0.00061
	(A1 * !A2 * A4 * !B1 * Y)	-0.00086	-0.00087	-0.00087
	(A1 * !A2 * !A4 * !B1 * Y)	0.00035	0.00035	0.00035
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00087	-0.00087	-0.00087
	(!A2 * A4 * B1 * !Y)	0.00064	0.00065	0.00064
	(!A2 * A4 * B1 * !Y)	-0.00083	-0.00084	-0.00084
	(!A2 * !A4 * B1 * !Y)	0.00040	0.00040	0.00040
	(!A2 * !A4 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(!A1 * A2 * A4 * B1 * !Y)	0.00063	0.00063	0.00063
	(!A1 * A2 * A4 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(!A1 * A2 * A4 * !B1 * Y)	0.00060	0.00060	0.00059
	(!A1 * A2 * A4 * !B1 * Y)	-0.00087	-0.00087	-0.00086
	(!A1 * A2 * !A4 * B1 * !Y)	0.00040	0.00040	0.00040
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00083	-0.00084	-0.00084
	(!A1 * A2 * !A4 * !B1 * Y)	0.00035	0.00035	0.00035
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * A4 * !B1 * Y)	0.00061	0.00062	0.00061
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00086	-0.00087	-0.00087
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00036	0.00036	0.00036
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00139	0.00140	0.00138
	(A1 * A2 * A4 * B1 * !Y)	-0.00153	-0.00158	-0.00159
	(A1 * A2 * !A4 * B1 * !Y)	0.00127	0.00128	0.00127
	(A1 * A2 * !A4 * B1 * !Y)	-0.00166	-0.00166	-0.00165
	(A1 * A2 * !A4 * !B1 * Y)	0.00067	0.00068	0.00068
	(A1 * A2 * !A4 * !B1 * Y)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * A4 * !B1 * Y)	0.00129	0.00130	0.00129
	(A1 * !A2 * A4 * !B1 * Y)	-0.00166	-0.00166	-0.00165
	(A1 * !A2 * !A4 * !B1 * Y)	0.00076	0.00077	0.00077
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00165	-0.00166	-0.00166
	(!A2 * A4 * B1 * !Y)	0.00129	0.00130	0.00129
	(!A2 * A4 * B1 * !Y)	-0.00166	-0.00166	-0.00165
	(!A2 * !A4 * B1 * !Y)	0.00081	0.00081	0.00081
	(!A2 * !A4 * B1 * !Y)	-0.00166	-0.00166	-0.00165
	(!A1 * A2 * A4 * B1 * !Y)	0.00125	0.00126	0.00126
	(!A1 * A2 * A4 * B1 * !Y)	-0.00166	-0.00166	-0.00165
	(!A1 * A2 * A4 * !B1 * Y)	0.00125	0.00126	0.00125
	(!A1 * A2 * A4 * !B1 * Y)	-0.00165	-0.00166	-0.00166
	(!A1 * A2 * !A4 * B1 * !Y)	0.00081	0.00081	0.00081
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00166	-0.00166	-0.00165
	(!A1 * A2 * !A4 * !B1 * Y)	0.00076	0.00077	0.00076
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(!A1 * !A2 * A4 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00166	-0.00166	-0.00165
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00079	0.00079	0.00079
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00166	-0.00166	-0.00166

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00277	0.00278	0.00275
	(A1 * A2 * A4 * B1 * !Y)	-0.00307	-0.00320	-0.00320
	(A1 * A2 * !A4 * B1 * !Y)	0.00254	0.00255	0.00255
	(A1 * A2 * !A4 * B1 * !Y)	-0.00334	-0.00335	-0.00334
	(A1 * A2 * !A4 * !B1 * Y)	0.00128	0.00128	0.00127
	(A1 * A2 * !A4 * !B1 * Y)	-0.00335	-0.00335	-0.00334
	(A1 * !A2 * A4 * !B1 * Y)	0.00251	0.00251	0.00252
	(A1 * !A2 * A4 * !B1 * Y)	-0.00335	-0.00334	-0.00334
	(A1 * !A2 * !A4 * !B1 * Y)	0.00145	0.00144	0.00144
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00335	-0.00335	-0.00334
	(!A2 * A4 * B1 * !Y)	0.00252	0.00253	0.00252
	(!A2 * A4 * B1 * !Y)	-0.00335	-0.00336	-0.00334
	(!A2 * !A4 * B1 * !Y)	0.00153	0.00152	0.00152
	(!A2 * !A4 * B1 * !Y)	-0.00336	-0.00335	-0.00334
	(!A1 * A2 * A4 * B1 * !Y)	0.00247	0.00246	0.00246
	(!A1 * A2 * A4 * B1 * !Y)	-0.00336	-0.00335	-0.00334
	(!A1 * A2 * A4 * !B1 * Y)	0.00244	0.00245	0.00246
	(!A1 * A2 * A4 * !B1 * Y)	-0.00333	-0.00334	-0.00334
	(!A1 * A2 * !A4 * B1 * !Y)	0.00157	0.00156	0.00156
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00335	-0.00335	-0.00334
	(!A1 * A2 * !A4 * !B1 * Y)	0.00147	0.00149	0.00148
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00334	-0.00338	-0.00335
	(!A1 * !A2 * A4 * !B1 * Y)	0.00251	0.00253	0.00251
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00335	-0.00336	-0.00334
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00149	0.00148	0.00148
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00335	-0.00335	-0.00335

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A2 * A4 * B1 * !Y)**	-0.00068	-0.00068	-0.00068
	(A1 * A2 * A4 * B1 * !Y)	0.00080	0.00080	0.00080
	(A1 * A2 * !A4 * B1 * !Y)	-0.00061	-0.00064	-0.00063
	(A1 * A2 * !A4 * B1 * !Y)	0.00083	0.00085	0.00084
	(A1 * A2 * !A4 * !B1 * Y)	-0.00030	-0.00030	-0.00030
	(A1 * A2 * !A4 * !B1 * Y)	0.00088	0.00088	0.00087
	(A1 * !A2 * A4 * !B1 * Y)	-0.00059	-0.00062	-0.00061
	(A1 * !A2 * A4 * !B1 * Y)	0.00087	0.00087	0.00087
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !A4 * !B1 * Y)	0.00087	0.00088	0.00087
	(!A2 * A4 * B1 * !Y)	-0.00062	-0.00065	-0.00064
	(!A2 * A4 * B1 * !Y)	0.00084	0.00084	0.00084
	(!A2 * !A4 * B1 * !Y)	-0.00040	-0.00040	-0.00040
	(!A2 * !A4 * B1 * !Y)	0.00084	0.00085	0.00084
	(!A1 * A2 * A4 * B1 * !Y)	-0.00058	-0.00063	-0.00063
	(!A1 * A2 * A4 * B1 * !Y)	0.00084	0.00084	0.00084
	(!A1 * A2 * A4 * !B1 * Y)	-0.00055	-0.00060	-0.00059
	(!A1 * A2 * A4 * !B1 * Y)	0.00087	0.00087	0.00087
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00040	-0.00040	-0.00040
	(!A1 * A2 * !A4 * B1 * !Y)	0.00083	0.00085	0.00084
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * A2 * !A4 * !B1 * Y)	0.00087	0.00088	0.00087
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00059	-0.00062	-0.00061
	(!A1 * !A2 * A4 * !B1 * Y)	0.00087	0.00087	0.00087
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00087	0.00088	0.00087

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00138	-0.00138	-0.00138
	(A1 * A2 * A4 * B1 * !Y)	0.00158	0.00158	0.00159
	(A1 * A2 * !A4 * B1 * !Y)	-0.00122	-0.00128	-0.00127
	(A1 * A2 * !A4 * B1 * !Y)	0.00167	0.00166	0.00166
	(A1 * A2 * !A4 * !B1 * Y)	-0.00066	-0.00066	-0.00065
	(A1 * A2 * !A4 * !B1 * Y)	0.00168	0.00169	0.00166
	(A1 * !A2 * A4 * !B1 * Y)	-0.00124	-0.00130	-0.00129
	(A1 * !A2 * A4 * !B1 * Y)	0.00166	0.00167	0.00166
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !A4 * !B1 * Y)	0.00166	0.00169	0.00166
	(!A2 * A4 * B1 * !Y)	-0.00125	-0.00130	-0.00129
	(!A2 * A4 * B1 * !Y)	0.00166	0.00167	0.00166
	(!A2 * !A4 * B1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A2 * !A4 * B1 * !Y)	0.00168	0.00168	0.00166
	(!A1 * A2 * A4 * B1 * !Y)	-0.00118	-0.00126	-0.00126
	(!A1 * A2 * A4 * B1 * !Y)	0.00167	0.00167	0.00166
	(!A1 * A2 * A4 * !B1 * Y)	-0.00117	-0.00126	-0.00125
	(!A1 * A2 * A4 * !B1 * Y)	0.00167	0.00167	0.00166
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * !A4 * B1 * !Y)	0.00166	0.00169	0.00166
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00076	-0.00077	-0.00076
	(!A1 * A2 * !A4 * !B1 * Y)	0.00167	0.00169	0.00167
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00124	-0.00130	-0.00129
	(!A1 * !A2 * A4 * !B1 * Y)	0.00166	0.00167	0.00166
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00166	0.00168	0.00166

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00275	-0.00275	-0.00275
	(A1 * A2 * A4 * B1 * !Y)	0.00319	0.00320	0.00320
	(A1 * A2 * !A4 * B1 * !Y)	-0.00245	-0.00255	-0.00255
	(A1 * A2 * !A4 * B1 * !Y)	0.00337	0.00336	0.00336
	(A1 * A2 * !A4 * !B1 * Y)	-0.00124	-0.00126	-0.00123
	(A1 * A2 * !A4 * !B1 * Y)	0.00335	0.00341	0.00336
	(A1 * !A2 * A4 * !B1 * Y)	-0.00240	-0.00251	-0.00252
	(A1 * !A2 * A4 * !B1 * Y)	0.00335	0.00340	0.00335
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00145	-0.00144	-0.00144
	(A1 * !A2 * !A4 * !B1 * Y)	0.00335	0.00341	0.00336
	(!A2 * A4 * B1 * !Y)	-0.00243	-0.00253	-0.00252
	(!A2 * A4 * B1 * !Y)	0.00335	0.00340	0.00335
	(!A2 * !A4 * B1 * !Y)	-0.00153	-0.00152	-0.00152
	(!A2 * !A4 * B1 * !Y)	0.00339	0.00339	0.00336
	(!A1 * A2 * A4 * B1 * !Y)	-0.00227	-0.00246	-0.00246
	(!A1 * A2 * A4 * B1 * !Y)	0.00336	0.00338	0.00335
	(!A1 * A2 * A4 * !B1 * Y)	-0.00227	-0.00245	-0.00246
	(!A1 * A2 * A4 * !B1 * Y)	0.00336	0.00338	0.00335
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00157	-0.00156	-0.00156
	(!A1 * A2 * !A4 * B1 * !Y)	0.00335	0.00341	0.00335
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00147	-0.00149	-0.00148
	(!A1 * A2 * !A4 * !B1 * Y)	0.00336	0.00342	0.00336
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00241	-0.00253	-0.00251
	(!A1 * !A2 * A4 * !B1 * Y)	0.00335	0.00340	0.00335
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00149	-0.00148	-0.00148
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00335	0.00339	0.00336

Passive power(pJ) for A4 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A2 * A3 * B1 * !Y)**	0.00074	0.00074	0.00073
	(A1 * A2 * A3 * B1 * !Y)	-0.00077	-0.00081	-0.00080
	(A1 * A2 * !A3 * !B1 * Y)	0.00062	0.00063	0.00062
	(A1 * A2 * !A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * A3 * !B1 * Y)	0.00061	0.00061	0.00061
	(A1 * !A2 * A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !A3 * !B1 * Y)	0.00062	0.00062	0.00062
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00090	-0.00089	-0.00090
	(!A3 * B1 * !Y)	0.00069	0.00069	0.00068
	(!A3 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A2 * A3 * B1 * !Y)	0.00067	0.00068	0.00067
	(!A2 * A3 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * A2 * A3 * B1 * !Y)	0.00067	0.00067	0.00067
	(!A1 * A2 * A3 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * A2 * A3 * !B1 * Y)	0.00060	0.00061	0.00060
	(!A1 * A2 * A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * !B1 * Y)	0.00062	0.00062	0.00062
	(!A1 * !A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * A3 * !B1 * Y)	0.00061	0.00061	0.00061
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00140	0.00141	0.00139
	(A1 * A2 * A3 * B1 * !Y)	-0.00153	-0.00159	-0.00159
	(A1 * A2 * !A3 * !B1 * Y)	0.00129	0.00130	0.00129
	(A1 * A2 * !A3 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * A3 * !B1 * Y)	0.00124	0.00125	0.00125
	(A1 * !A2 * A3 * !B1 * Y)	-0.00166	-0.00166	-0.00166
	(A1 * !A2 * !A3 * !B1 * Y)	0.00129	0.00130	0.00129
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(!A3 * B1 * !Y)	0.00129	0.00130	0.00129
	(!A3 * B1 * !Y)	-0.00166	-0.00167	-0.00166
	(!A2 * A3 * B1 * !Y)	0.00126	0.00125	0.00125
	(!A2 * A3 * B1 * !Y)	-0.00166	-0.00166	-0.00166
	(!A1 * A2 * A3 * B1 * !Y)	0.00124	0.00125	0.00124
	(!A1 * A2 * A3 * B1 * !Y)	-0.00166	-0.00167	-0.00166
	(!A1 * A2 * A3 * !B1 * Y)	0.00123	0.00125	0.00124
	(!A1 * A2 * A3 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(!A1 * !A3 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A1 * !A3 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(!A1 * !A2 * A3 * !B1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00166	-0.00166	-0.00166

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00278	0.00279	0.00276
	(A1 * A2 * A3 * B1 * !Y)	-0.00306	-0.00317	-0.00318
	(A1 * A2 * !A3 * !B1 * Y)	0.00256	0.00257	0.00255
	(A1 * A2 * !A3 * !B1 * Y)	-0.00333	-0.00333	-0.00332
	(A1 * !A2 * A3 * !B1 * Y)	0.00246	0.00249	0.00247
	(A1 * !A2 * A3 * !B1 * Y)	-0.00332	-0.00334	-0.00332
	(A1 * !A2 * !A3 * !B1 * Y)	0.00254	0.00257	0.00255
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00331	-0.00333	-0.00332
	(!A3 * B1 * !Y)	0.00256	0.00257	0.00255
	(!A3 * B1 * !Y)	-0.00332	-0.00333	-0.00332
	(!A2 * A3 * B1 * !Y)	0.00247	0.00249	0.00247
	(!A2 * A3 * B1 * !Y)	-0.00332	-0.00334	-0.00332
	(!A1 * A2 * A3 * B1 * !Y)	0.00245	0.00247	0.00245
	(!A1 * A2 * A3 * B1 * !Y)	-0.00331	-0.00334	-0.00332
	(!A1 * A2 * A3 * !B1 * Y)	0.00245	0.00247	0.00245
	(!A1 * A2 * A3 * !B1 * Y)	-0.00332	-0.00334	-0.00332
	(!A1 * !A3 * !B1 * Y)	0.00254	0.00257	0.00255
	(!A1 * !A3 * !B1 * Y)	-0.00331	-0.00333	-0.00332
	(!A1 * !A2 * A3 * !B1 * Y)	0.00246	0.00249	0.00247
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00332	-0.00334	-0.00332

Passive power(pJ) for A4 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A2 * A3 * B1 * !Y)**	-0.00073	-0.00074	-0.00073
	(A1 * A2 * A3 * B1 * !Y)	0.00080	0.00081	0.00080
	(A1 * A2 * !A3 * !B1 * Y)	-0.00060	-0.00063	-0.00062
	(A1 * A2 * !A3 * !B1 * Y)	0.00090	0.00090	0.00090
	(A1 * !A2 * A3 * !B1 * Y)	-0.00058	-0.00061	-0.00061
	(A1 * !A2 * A3 * !B1 * Y)	0.00090	0.00091	0.00090
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00060	-0.00062	-0.00062
	(A1 * !A2 * !A3 * !B1 * Y)	0.00090	0.00090	0.00090
	(!A3 * B1 * !Y)	-0.00067	-0.00069	-0.00068
	(!A3 * B1 * !Y)	0.00083	0.00084	0.00083
	(!A2 * A3 * B1 * !Y)	-0.00064	-0.00068	-0.00067
	(!A2 * A3 * B1 * !Y)	0.00083	0.00085	0.00083
	(!A1 * A2 * A3 * B1 * !Y)	-0.00063	-0.00067	-0.00067
	(!A1 * A2 * A3 * B1 * !Y)	0.00083	0.00085	0.00083
	(!A1 * A2 * A3 * !B1 * Y)	-0.00057	-0.00061	-0.00060
	(!A1 * A2 * A3 * !B1 * Y)	0.00090	0.00091	0.00090
	(!A1 * !A3 * !B1 * Y)	-0.00060	-0.00062	-0.00062
	(!A1 * !A3 * !B1 * Y)	0.00090	0.00090	0.00090
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00058	-0.00061	-0.00061
	(!A1 * !A2 * A3 * !B1 * Y)	0.00090	0.00091	0.00090

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00139	-0.00139	-0.00139
	(A1 * A2 * A3 * B1 * !Y)	0.00159	0.00159	0.00159
	(A1 * A2 * !A3 * !B1 * Y)	-0.00124	-0.00130	-0.00129
	(A1 * A2 * !A3 * !B1 * Y)	0.00166	0.00167	0.00166
	(A1 * !A2 * A3 * !B1 * Y)	-0.00118	-0.00125	-0.00125
	(A1 * !A2 * A3 * !B1 * Y)	0.00166	0.00166	0.00166
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00124	-0.00130	-0.00129
	(A1 * !A2 * !A3 * !B1 * Y)	0.00166	0.00167	0.00166
	(!A3 * B1 * !Y)	-0.00125	-0.00130	-0.00129
	(!A3 * B1 * !Y)	0.00166	0.00167	0.00166
	(!A2 * A3 * B1 * !Y)	-0.00118	-0.00125	-0.00125
	(!A2 * A3 * B1 * !Y)	0.00166	0.00166	0.00166
	(!A1 * A2 * A3 * B1 * !Y)	-0.00116	-0.00125	-0.00124
	(!A1 * A2 * A3 * B1 * !Y)	0.00166	0.00168	0.00166
	(!A1 * A2 * A3 * !B1 * Y)	-0.00116	-0.00125	-0.00124
	(!A1 * A2 * A3 * !B1 * Y)	0.00166	0.00169	0.00167
	(!A1 * !A3 * !B1 * Y)	-0.00124	-0.00130	-0.00129
	(!A1 * !A3 * !B1 * Y)	0.00166	0.00167	0.00166
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00118	-0.00126	-0.00125
	(!A1 * !A2 * A3 * !B1 * Y)	0.00166	0.00166	0.00166

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00275	-0.00275	-0.00275
	(A1 * A2 * A3 * B1 * !Y)	0.00317	0.00317	0.00318
	(A1 * A2 * !A3 * !B1 * Y)	-0.00246	-0.00257	-0.00255
	(A1 * A2 * !A3 * !B1 * Y)	0.00333	0.00334	0.00333
	(A1 * !A2 * A3 * !B1 * Y)	-0.00232	-0.00249	-0.00247
	(A1 * !A2 * A3 * !B1 * Y)	0.00333	0.00337	0.00333
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00247	-0.00257	-0.00255
	(A1 * !A2 * !A3 * !B1 * Y)	0.00333	0.00334	0.00333
	(!A3 * B1 * !Y)	-0.00248	-0.00257	-0.00255
	(!A3 * B1 * !Y)	0.00333	0.00334	0.00333
	(!A2 * A3 * B1 * !Y)	-0.00233	-0.00249	-0.00247
	(!A2 * A3 * B1 * !Y)	0.00333	0.00337	0.00333
	(!A1 * A2 * A3 * B1 * !Y)	-0.00231	-0.00247	-0.00245
	(!A1 * A2 * A3 * B1 * !Y)	0.00333	0.00337	0.00333
	(!A1 * A2 * A3 * !B1 * Y)	-0.00230	-0.00247	-0.00245
	(!A1 * A2 * A3 * !B1 * Y)	0.00333	0.00337	0.00333
	(!A1 * !A3 * !B1 * Y)	-0.00247	-0.00257	-0.00255
	(!A1 * !A3 * !B1 * Y)	0.00333	0.00334	0.00333
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00232	-0.00249	-0.00247
	(!A1 * !A2 * A3 * !B1 * Y)	0.00333	0.00337	0.00333

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	(A1 * A2 * A3 * A4 * !Y)	0.00086	0.00086	0.00086
	(A1 * A2 * A3 * A4 * !Y)	-0.00046	-0.00046	-0.00046
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00094	0.00094	0.00092
	(A1 * A2 * A3 * A4 * !Y)	-0.00095	-0.00095	-0.00094
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00182	0.00185	0.00183
	(A1 * A2 * A3 * A4 * !Y)	-0.00185	-0.00188	-0.00185

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	(A1 * A2 * A3 * A4 * !Y)	-0.00072	-0.00074	-0.00084
	(A1 * A2 * A3 * A4 * !Y)	0.00057	0.00057	0.00049
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00064	-0.00066	-0.00088
	(A1 * A2 * A3 * A4 * !Y)	0.00118	0.00117	0.00100
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00127	-0.00132	-0.00174
	(A1 * A2 * A3 * A4 * !Y)	0.00229	0.00229	0.00196

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	X
0	x	x	x	0	0
x	x	x	x	1	1
1	0	x	x	0	0
1	1	0	x	0	0
1	1	1	0	0	0
1	1	1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41o_1	14.38560
sky130_fd_sc_hs__a41o_2	15.98400
sky130_fd_sc_hs__a41o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__a41o_1	0.00248	0.00243	0.00245	0.00239	0.00255	0.44473
sky130_fd_sc_hs__a41o_2	0.00243	0.00249	0.00254	0.00238	0.00258	0.86205
sky130_fd_sc_hs__a41o_4	0.00478	0.00459	0.00474	0.00456	0.00473	1.56999

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41o_1	0.00000	0.02157	0.04291
sky130_fd_sc_hs__a41o_2	0.00000	0.02812	0.04567
sky130_fd_sc_hs__a41o_4	0.00000	0.05623	0.09133

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (RR)	0.24346	1.21945	8.55477
	A2->X (RR)	0.26213	1.25567	8.83261
	A3->X (RR)	0.27543	1.25470	8.89941
	A4->X (RR)	0.28154	1.24395	8.91644
	B1->X (RR)	0.14423	1.10191	8.55641
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.25613	1.13315	8.76728
	A2->X (RR)	0.27769	1.16299	9.00897
	A3->X (RR)	0.29056	1.15493	9.03571
	A4->X (RR)	0.29566	1.13857	9.01041
	B1->X (RR)	0.12667	0.97360	8.64155
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.27051	1.06971	8.91988
	A2->X (RR)	0.29603	1.10658	9.19510
	A3->X (RR)	0.30920	1.08253	9.17323
	A4->X (RR)	0.31588	1.07304	9.16193
	B1->X (RR)	0.11825	0.87714	8.76359

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.40470	1.16438	6.11842
	A2->X (FF)	0.46965	1.23303	6.34847
	A3->X (FF)	0.51751	1.28602	6.52100
	A4->X (FF)	0.56186	1.33920	6.66831
	B1->X (FF)	0.48053	1.18796	5.90826
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.49986	1.25862	6.50780
	A2->X (FF)	0.57219	1.33552	6.70448
	A3->X (FF)	0.61845	1.38754	6.84243
	A4->X (FF)	0.65845	1.43541	6.95851
	B1->X (FF)	0.57905	1.28249	6.28257
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.49961	1.22831	6.45969
	A2->X (FF)	0.56725	1.29924	6.66622
	A3->X (FF)	0.62060	1.35987	6.81553
	A4->X (FF)	0.67298	1.41889	6.95529
	B1->X (FF)	0.58282	1.25915	6.28462

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.00539	0.00534	0.00540
	A1	0.00304	0.00299	0.00306
	A2	0.00584	0.00584	0.00582
	A2	0.00305	0.00305	0.00306
	A3	0.00627	0.00628	0.00624
	A3	0.00305	0.00305	0.00305
	A4	0.00672	0.00674	0.00670
	A4	0.00305	0.00306	0.00305
	B1	0.00526	0.00512	0.00525
	B1	0.00207	0.00192	0.00207
sky130_fd_sc_hs__a41o_2	A1	0.00613	0.00621	0.00631
	A1	0.00378	0.00386	0.00402
	A2	0.00660	0.00673	0.00676
	A2	0.00378	0.00392	0.00400
	A3	0.00704	0.00719	0.00721
	A3	0.00379	0.00394	0.00401
	A4	0.00746	0.00763	0.00764
	A4	0.00378	0.00394	0.00401
	B1	0.00607	0.00604	0.00616
	B1	0.00285	0.00282	0.00296

sky130_fd_sc_hs__a41o_4	**A1**	0.01167	0.01182	0.01205
	A1	0.00696	0.00712	0.00742
	A2	0.01253	0.01280	0.01293
	A2	0.00697	0.00724	0.00748
	A3	0.01351	0.01382	0.01391
	A3	0.00697	0.00727	0.00749
	A4	0.01435	0.01470	0.01480
	A4	0.00696	0.00730	0.00751
	B1	0.01145	0.01145	0.01178
	B1	0.00498	0.00499	0.00536

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00165	0.00157	0.00182
	A1	0.00407	0.00405	0.00403
	A2	0.00189	0.00189	0.00219
	A2	0.00471	0.00470	0.00467
	A3	0.00217	0.00220	0.00217
	A3	0.00535	0.00537	0.00532
	A4	0.00236	0.00243	0.00282
	A4	0.00591	0.00599	0.00592
	B1	0.00241	0.00232	0.00262
	B1	0.00541	0.00541	0.00559

sky130_fd_sc_hs__a41o_2	**A1**	0.00269	0.00285	0.00291
	A1	0.00511	0.00529	0.00528
	A2	0.00298	0.00317	0.00354
	A2	0.00582	0.00600	0.00600
	A3	0.00323	0.00344	0.00428
	A3	0.00645	0.00665	0.00664
	A4	0.00339	0.00364	0.00473
	A4	0.00695	0.00720	0.00718
	B1	0.00344	0.00358	0.00405
	B1	0.00648	0.00662	0.00683
sky130_fd_sc_hs__a41o_4	**A1**	0.00516	0.00545	0.00577
	A1	0.01001	0.01031	0.01032
	A2	0.00588	0.00625	0.00718
	A2	0.01147	0.01185	0.01189
	A3	0.00628	0.00671	0.00687
	A3	0.01272	0.01314	0.01317
	A4	0.00687	0.00734	0.00747
	A4	0.01398	0.01446	0.01447
	B1	0.00688	0.00719	0.00780
	B1	0.01290	0.01325	0.01370

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A2 * A3 * A4 * B1 * X)**	0.00068	0.00068	0.00067
	(A2 * A3 * A4 * B1 * X)	-0.00070	-0.00073	-0.00073
	(A2 * A3 * !A4 * B1 * X)	0.00060	0.00061	0.00060
	(A2 * A3 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00076
	(A2 * A3 * !A4 * !B1 * !X)	0.00029	0.00029	0.00025
	(A2 * A3 * !A4 * !B1 * !X)	-0.00080	-0.00081	-0.00090
	(A2 * !A3 * B1 * X)	0.00061	0.00061	0.00061
	(A2 * !A3 * B1 * X)	-0.00076	-0.00077	-0.00076
	(A2 * !A3 * !B1 * !X)	0.00027	0.00027	0.00024
	(A2 * !A3 * !B1 * !X)	-0.00085	-0.00085	-0.00091
	(!A2 * B1 * X)	0.00062	0.00063	0.00063
	(!A2 * B1 * X)	-0.00077	-0.00077	-0.00076
	(!A2 * !B1 * !X)	0.00026	0.00026	0.00025
	(!A2 * !B1 * !X)	-0.00088	-0.00089	-0.00091
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00067	0.00067	0.00067
	(A2 * A3 * A4 * B1 * X)	-0.00071	-0.00074	-0.00073
	(A2 * A3 * !A4 * B1 * X)	0.00060	0.00060	0.00060
	(A2 * A3 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(A2 * A3 * !A4 * !B1 * !X)	0.00029	0.00029	0.00025
	(A2 * A3 * !A4 * !B1 * !X)	-0.00080	-0.00081	-0.00089
	(A2 * !A3 * B1 * X)	0.00061	0.00061	0.00061
	(A2 * !A3 * B1 * X)	-0.00077	-0.00077	-0.00077
	(A2 * !A3 * !B1 * !X)	0.00028	0.00028	0.00025
	(A2 * !A3 * !B1 * !X)	-0.00084	-0.00084	-0.00090
	(!A2 * B1 * X)	0.00062	0.00063	0.00062
	(!A2 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A2 * !B1 * !X)	0.00027	0.00027	0.00026
	(!A2 * !B1 * !X)	-0.00087	-0.00088	-0.00091

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00143	0.00143	0.00141
	(A2 * A3 * A4 * B1 * X)	-0.00145	-0.00149	-0.00149
	(A2 * A3 * !A4 * B1 * X)	0.00125	0.00125	0.00125
	(A2 * A3 * !A4 * B1 * X)	-0.00156	-0.00157	-0.00156
	(A2 * A3 * !A4 * !B1 * !X)	0.00063	0.00063	0.00053
	(A2 * A3 * !A4 * !B1 * !X)	-0.00162	-0.00163	-0.00183
	(A2 * !A3 * B1 * X)	0.00127	0.00127	0.00127
	(A2 * !A3 * B1 * X)	-0.00156	-0.00156	-0.00156
	(A2 * !A3 * !B1 * !X)	0.00059	0.00059	0.00052
	(A2 * !A3 * !B1 * !X)	-0.00172	-0.00173	-0.00185
	(!A2 * B1 * X)	0.00131	0.00132	0.00132
	(!A2 * B1 * X)	-0.00156	-0.00156	-0.00156
	(!A2 * !B1 * !X)	0.00059	0.00059	0.00055
	(!A2 * !B1 * !X)	-0.00180	-0.00181	-0.00186

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A2 * A3 * A4 * B1 * X)**	-0.00067	-0.00067	-0.00067
	(A2 * A3 * A4 * B1 * X)	0.00074	0.00073	0.00073
	(A2 * A3 * !A4 * B1 * X)	-0.00056	-0.00061	-0.00060
	(A2 * A3 * !A4 * B1 * X)	0.00078	0.00077	0.00077
	(A2 * A3 * !A4 * !B1 * !X)	-0.00023	-0.00024	-0.00023
	(A2 * A3 * !A4 * !B1 * !X)	0.00091	0.00093	0.00091
	(A2 * !A3 * B1 * X)	-0.00057	-0.00061	-0.00061
	(A2 * !A3 * B1 * X)	0.00078	0.00077	0.00077
	(A2 * !A3 * !B1 * !X)	-0.00023	-0.00024	-0.00023
	(A2 * !A3 * !B1 * !X)	0.00091	0.00093	0.00091
	(!A2 * B1 * X)	-0.00061	-0.00063	-0.00063
	(!A2 * B1 * X)	0.00077	0.00077	0.00077
	(!A2 * !B1 * !X)	-0.00023	-0.00024	-0.00024
	(!A2 * !B1 * !X)	0.00091	0.00093	0.00091
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00067	-0.00067	-0.00066
	(A2 * A3 * A4 * B1 * X)	0.00074	0.00075	0.00073
	(A2 * A3 * !A4 * B1 * X)	-0.00055	-0.00060	-0.00060
	(A2 * A3 * !A4 * B1 * X)	0.00077	0.00077	0.00077
	(A2 * A3 * !A4 * !B1 * !X)	-0.00024	-0.00024	-0.00024
	(A2 * A3 * !A4 * !B1 * !X)	0.00091	0.00092	0.00091
	(A2 * !A3 * B1 * X)	-0.00057	-0.00061	-0.00061
	(A2 * !A3 * B1 * X)	0.00078	0.00077	0.00077
	(A2 * !A3 * !B1 * !X)	-0.00024	-0.00025	-0.00024
	(A2 * !A3 * !B1 * !X)	0.00092	0.00092	0.00091
	(!A2 * B1 * X)	-0.00060	-0.00063	-0.00062
	(!A2 * B1 * X)	0.00077	0.00077	0.00077
	(!A2 * !B1 * !X)	-0.00024	-0.00025	-0.00025
	(!A2 * !B1 * !X)	0.00090	0.00092	0.00091

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00141	-0.00141	-0.00141
	(A2 * A3 * A4 * B1 * X)	0.00149	0.00149	0.00149
	(A2 * A3 * !A4 * B1 * X)	-0.00115	-0.00125	-0.00125
	(A2 * A3 * !A4 * B1 * X)	0.00156	0.00158	0.00157
	(A2 * A3 * !A4 * !B1 * !X)	-0.00051	-0.00052	-0.00051
	(A2 * A3 * !A4 * !B1 * !X)	0.00187	0.00189	0.00187
	(A2 * !A3 * B1 * X)	-0.00117	-0.00127	-0.00127
	(A2 * !A3 * B1 * X)	0.00156	0.00158	0.00157
	(A2 * !A3 * !B1 * !X)	-0.00052	-0.00052	-0.00052
	(A2 * !A3 * !B1 * !X)	0.00188	0.00189	0.00187
	(!A2 * B1 * X)	-0.00127	-0.00132	-0.00132
	(!A2 * B1 * X)	0.00156	0.00158	0.00157
	(!A2 * !B1 * !X)	-0.00053	-0.00054	-0.00053
	(!A2 * !B1 * !X)	0.00186	0.00190	0.00187

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A3 * A4 * B1 * X)**	0.00069	0.00069	0.00068
	(A1 * A3 * A4 * B1 * X)	-0.00070	-0.00072	-0.00073
	(A1 * A3 * !A4 * B1 * X)	0.00062	0.00062	0.00062
	(A1 * A3 * !A4 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * A3 * !A4 * !B1 * !X)	0.00033	0.00033	0.00033
	(A1 * A3 * !A4 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(A1 * !A3 * B1 * X)	0.00064	0.00064	0.00064
	(A1 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A3 * !B1 * !X)	0.00034	0.00034	0.00034
	(A1 * !A3 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * A4 * B1 * X)	0.00064	0.00064	0.00064
	(!A1 * A3 * A4 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * A4 * !B1 * !X)	0.00063	0.00064	0.00063
	(!A1 * A3 * A4 * !B1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * A3 * !A4 * B1 * X)	0.00040	0.00040	0.00040
	(!A1 * A3 * !A4 * B1 * X)	-0.00075	-0.00076	-0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	0.00039	0.00038	0.00038
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00076
	(!A1 * !A3 * B1 * X)	0.00040	0.00040	0.00040
	(!A1 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A3 * !B1 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A3 * !B1 * !X)	-0.00077	-0.00076	-0.00076

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00070	0.00070	0.00069
	(A1 * A3 * A4 * B1 * X)	-0.00070	-0.00073	-0.00073
	(A1 * A3 * !A4 * B1 * X)	0.00063	0.00063	0.00063
	(A1 * A3 * !A4 * B1 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A3 * !A4 * !B1 * !X)	0.00033	0.00033	0.00034
	(A1 * A3 * !A4 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(A1 * !A3 * B1 * X)	0.00064	0.00065	0.00065
	(A1 * !A3 * B1 * X)	-0.00076	-0.00077	-0.00076
	(A1 * !A3 * !B1 * !X)	0.00035	0.00035	0.00035
	(A1 * !A3 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * A4 * B1 * X)	0.00064	0.00065	0.00065
	(!A1 * A3 * A4 * B1 * X)	-0.00076	-0.00077	-0.00076
	(!A1 * A3 * A4 * !B1 * !X)	0.00064	0.00065	0.00064
	(!A1 * A3 * A4 * !B1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * A3 * !A4 * B1 * X)	0.00041	0.00041	0.00041
	(!A1 * A3 * !A4 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	0.00040	0.00039	0.00039
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * B1 * X)	0.00042	0.00042	0.00042
	(!A1 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A3 * !B1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00140	0.00139	0.00137
	(A1 * A3 * A4 * B1 * X)	-0.00142	-0.00146	-0.00147
	(A1 * A3 * !A4 * B1 * X)	0.00122	0.00122	0.00122
	(A1 * A3 * !A4 * B1 * X)	-0.00154	-0.00154	-0.00153
	(A1 * A3 * !A4 * !B1 * !X)	0.00064	0.00064	0.00065
	(A1 * A3 * !A4 * !B1 * !X)	-0.00154	-0.00153	-0.00152
	(A1 * !A3 * B1 * X)	0.00125	0.00126	0.00126
	(A1 * !A3 * B1 * X)	-0.00153	-0.00154	-0.00153
	(A1 * !A3 * !B1 * !X)	0.00065	0.00064	0.00065
	(A1 * !A3 * !B1 * !X)	-0.00154	-0.00154	-0.00153
	(!A1 * A3 * A4 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * A3 * A4 * B1 * X)	-0.00153	-0.00154	-0.00153
	(!A1 * A3 * A4 * !B1 * !X)	0.00128	0.00129	0.00128
	(!A1 * A3 * A4 * !B1 * !X)	-0.00153	-0.00154	-0.00153
	(!A1 * A3 * !A4 * B1 * X)	0.00079	0.00079	0.00078
	(!A1 * A3 * !A4 * B1 * X)	-0.00154	-0.00154	-0.00154
	(!A1 * A3 * !A4 * !B1 * !X)	0.00076	0.00075	0.00075
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00155	-0.00155	-0.00154
	(!A1 * !A3 * B1 * X)	0.00078	0.00078	0.00078
	(!A1 * !A3 * B1 * X)	-0.00154	-0.00154	-0.00154
	(!A1 * !A3 * !B1 * !X)	0.00073	0.00073	0.00072
	(!A1 * !A3 * !B1 * !X)	-0.00155	-0.00155	-0.00155

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A3 * A4 * B1 * X)**	-0.00068	-0.00068	-0.00068
	(A1 * A3 * A4 * B1 * X)	0.00072	0.00072	0.00073
	(A1 * A3 * !A4 * B1 * X)	-0.00058	-0.00062	-0.00062
	(A1 * A3 * !A4 * B1 * X)	0.00077	0.00077	0.00076
	(A1 * A3 * !A4 * !B1 * !X)	-0.00031	-0.00031	-0.00032
	(A1 * A3 * !A4 * !B1 * !X)	0.00078	0.00080	0.00077
	(A1 * !A3 * B1 * X)	-0.00062	-0.00064	-0.00064
	(A1 * !A3 * B1 * X)	0.00076	0.00077	0.00076
	(A1 * !A3 * !B1 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * !A3 * !B1 * !X)	0.00078	0.00080	0.00077
	(!A1 * A3 * A4 * B1 * X)	-0.00062	-0.00064	-0.00064
	(!A1 * A3 * A4 * B1 * X)	0.00076	0.00077	0.00076
	(!A1 * A3 * A4 * !B1 * !X)	-0.00059	-0.00064	-0.00063
	(!A1 * A3 * A4 * !B1 * !X)	0.00079	0.00077	0.00077
	(!A1 * A3 * !A4 * B1 * X)	-0.00040	-0.00040	-0.00040
	(!A1 * A3 * !A4 * B1 * X)	0.00077	0.00077	0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00039	-0.00038	-0.00038
	(!A1 * A3 * !A4 * !B1 * !X)	0.00078	0.00078	0.00076
	(!A1 * !A3 * B1 * X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A3 * B1 * X)	0.00076	0.00077	0.00076
	(!A1 * !A3 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A3 * !B1 * !X)	0.00079	0.00080	0.00077

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00069	-0.00069	-0.00069
	(A1 * A3 * A4 * B1 * X)	0.00072	0.00073	0.00073
	(A1 * A3 * !A4 * B1 * X)	-0.00058	-0.00063	-0.00063
	(A1 * A3 * !A4 * B1 * X)	0.00077	0.00077	0.00076
	(A1 * A3 * !A4 * !B1 * !X)	-0.00032	-0.00033	-0.00033
	(A1 * A3 * !A4 * !B1 * !X)	0.00079	0.00080	0.00077
	(A1 * !A3 * B1 * X)	-0.00062	-0.00065	-0.00065
	(A1 * !A3 * B1 * X)	0.00076	0.00077	0.00076
	(A1 * !A3 * !B1 * !X)	-0.00033	-0.00033	-0.00034
	(A1 * !A3 * !B1 * !X)	0.00079	0.00080	0.00077
	(!A1 * A3 * A4 * B1 * X)	-0.00062	-0.00065	-0.00065
	(!A1 * A3 * A4 * B1 * X)	0.00076	0.00077	0.00076
	(!A1 * A3 * A4 * !B1 * !X)	-0.00061	-0.00065	-0.00064
	(!A1 * A3 * A4 * !B1 * !X)	0.00078	0.00077	0.00077
	(!A1 * A3 * !A4 * B1 * X)	-0.00041	-0.00041	-0.00041
	(!A1 * A3 * !A4 * B1 * X)	0.00077	0.00078	0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00040	-0.00039	-0.00039
	(!A1 * A3 * !A4 * !B1 * !X)	0.00078	0.00078	0.00077
	(!A1 * !A3 * B1 * X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A3 * B1 * X)	0.00076	0.00077	0.00076
	(!A1 * !A3 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A3 * !B1 * !X)	0.00078	0.00080	0.00077

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00137	-0.00137	-0.00137
	(A1 * A3 * A4 * B1 * X)	0.00146	0.00146	0.00147
	(A1 * A3 * !A4 * B1 * X)	-0.00112	-0.00122	-0.00122
	(A1 * A3 * !A4 * B1 * X)	0.00154	0.00155	0.00154
	(A1 * A3 * !A4 * !B1 * !X)	-0.00059	-0.00060	-0.00060
	(A1 * A3 * !A4 * !B1 * !X)	0.00158	0.00160	0.00155
	(A1 * !A3 * B1 * X)	-0.00121	-0.00126	-0.00126
	(A1 * !A3 * B1 * X)	0.00154	0.00156	0.00154
	(A1 * !A3 * !B1 * !X)	-0.00061	-0.00062	-0.00062
	(A1 * !A3 * !B1 * !X)	0.00157	0.00160	0.00155
	(!A1 * A3 * A4 * B1 * X)	-0.00122	-0.00129	-0.00128
	(!A1 * A3 * A4 * B1 * X)	0.00153	0.00156	0.00154
	(!A1 * A3 * A4 * !B1 * !X)	-0.00119	-0.00129	-0.00128
	(!A1 * A3 * A4 * !B1 * !X)	0.00157	0.00156	0.00154
	(!A1 * A3 * !A4 * B1 * X)	-0.00079	-0.00079	-0.00078
	(!A1 * A3 * !A4 * B1 * X)	0.00154	0.00157	0.00154
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00076	-0.00075	-0.00075
	(!A1 * A3 * !A4 * !B1 * !X)	0.00156	0.00157	0.00154
	(!A1 * !A3 * B1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A3 * B1 * X)	0.00154	0.00156	0.00154
	(!A1 * !A3 * !B1 * !X)	-0.00073	-0.00073	-0.00072
	(!A1 * !A3 * !B1 * !X)	0.00158	0.00161	0.00155

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A4 * B1 * X)**	0.00068	0.00068	0.00067
	(A1 * A2 * A4 * B1 * X)	-0.00071	-0.00074	-0.00074
	(A1 * A2 * !A4 * B1 * X)	0.00062	0.00063	0.00063
	(A1 * A2 * !A4 * B1 * X)	-0.00077	-0.00078	-0.00078
	(A1 * A2 * !A4 * !B1 * !X)	0.00034	0.00034	0.00034
	(A1 * A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00077
	(A1 * !A2 * A4 * !B1 * !X)	0.00063	0.00063	0.00063
	(A1 * !A2 * A4 * !B1 * !X)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	0.00039	0.00038	0.00038
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00077	-0.00078	-0.00078
	(!A2 * A4 * B1 * X)	0.00062	0.00063	0.00063
	(!A2 * A4 * B1 * X)	-0.00077	-0.00078	-0.00078
	(!A2 * !A4 * B1 * X)	0.00040	0.00040	0.00040
	(!A2 * !A4 * B1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * A2 * A4 * B1 * X)	0.00061	0.00061	0.00061
	(!A1 * A2 * A4 * B1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * A2 * A4 * !B1 * !X)	0.00061	0.00061	0.00061
	(!A1 * A2 * A4 * !B1 * !X)	-0.00078	-0.00078	-0.00077
	(!A1 * A2 * !A4 * B1 * X)	0.00040	0.00040	0.00039
	(!A1 * A2 * !A4 * B1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * A2 * !A4 * !B1 * !X)	0.00038	0.00038	0.00038
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00077	-0.00078	-0.00078
	(!A1 * !A2 * A4 * !B1 * !X)	0.00063	0.00063	0.00063
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00077	-0.00078	-0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00071	0.00071	0.00070
	(A1 * A2 * A4 * B1 * X)	-0.00071	-0.00073	-0.00073
	(A1 * A2 * !A4 * B1 * X)	0.00065	0.00066	0.00065
	(A1 * A2 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * !A4 * !B1 * !X)	0.00035	0.00035	0.00035
	(A1 * A2 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * A4 * !B1 * !X)	0.00066	0.00066	0.00066
	(A1 * !A2 * A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !A4 * !B1 * !X)	0.00040	0.00040	0.00039
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A2 * A4 * B1 * X)	0.00065	0.00066	0.00066
	(!A2 * A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A2 * !A4 * B1 * X)	0.00041	0.00041	0.00041
	(!A2 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * A2 * A4 * B1 * X)	0.00064	0.00065	0.00064
	(!A1 * A2 * A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * A2 * A4 * !B1 * !X)	0.00064	0.00064	0.00064
	(!A1 * A2 * A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * A2 * !A4 * B1 * X)	0.00041	0.00042	0.00041
	(!A1 * A2 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * A2 * !A4 * !B1 * !X)	0.00040	0.00040	0.00040
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * A4 * !B1 * !X)	0.00066	0.00066	0.00066
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00041	0.00041	0.00040
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00143	0.00142	0.00140
	(A1 * A2 * A4 * B1 * X)	-0.00143	-0.00148	-0.00149
	(A1 * A2 * !A4 * B1 * X)	0.00130	0.00131	0.00130
	(A1 * A2 * !A4 * B1 * X)	-0.00155	-0.00157	-0.00156
	(A1 * A2 * !A4 * !B1 * !X)	0.00068	0.00067	0.00067
	(A1 * A2 * !A4 * !B1 * !X)	-0.00155	-0.00155	-0.00155
	(A1 * !A2 * A4 * !B1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * A4 * !B1 * !X)	-0.00156	-0.00157	-0.00156
	(A1 * !A2 * !A4 * !B1 * !X)	0.00075	0.00076	0.00075
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00156	-0.00157	-0.00156
	(!A2 * A4 * B1 * X)	0.00128	0.00129	0.00128
	(!A2 * A4 * B1 * X)	-0.00156	-0.00156	-0.00156
	(!A2 * !A4 * B1 * X)	0.00080	0.00080	0.00079
	(!A2 * !A4 * B1 * X)	-0.00157	-0.00156	-0.00156
	(!A1 * A2 * A4 * B1 * X)	0.00126	0.00126	0.00126
	(!A1 * A2 * A4 * B1 * X)	-0.00156	-0.00157	-0.00156
	(!A1 * A2 * A4 * !B1 * !X)	0.00126	0.00126	0.00125
	(!A1 * A2 * A4 * !B1 * !X)	-0.00157	-0.00156	-0.00156
	(!A1 * A2 * !A4 * B1 * X)	0.00080	0.00080	0.00080
	(!A1 * A2 * !A4 * B1 * X)	-0.00156	-0.00156	-0.00156
	(!A1 * A2 * !A4 * !B1 * !X)	0.00076	0.00077	0.00076
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00157	-0.00157	-0.00156
	(!A1 * !A2 * A4 * !B1 * !X)	0.00128	0.00129	0.00128
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00156	-0.00157	-0.00156
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00078	0.00078	0.00077
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00156	-0.00157	-0.00156

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A4 * B1 * X)**	-0.00067	-0.00067	-0.00067
	(A1 * A2 * A4 * B1 * X)	0.00074	0.00074	0.00074
	(A1 * A2 * !A4 * B1 * X)	-0.00060	-0.00063	-0.00063
	(A1 * A2 * !A4 * B1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !A4 * !B1 * !X)	-0.00033	-0.00033	-0.00033
	(A1 * A2 * !A4 * !B1 * !X)	0.00079	0.00079	0.00078
	(A1 * !A2 * A4 * !B1 * !X)	-0.00060	-0.00063	-0.00063
	(A1 * !A2 * A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00039	-0.00038	-0.00038
	(A1 * !A2 * !A4 * !B1 * !X)	0.00077	0.00079	0.00078
	(!A2 * A4 * B1 * X)	-0.00061	-0.00063	-0.00063
	(!A2 * A4 * B1 * X)	0.00078	0.00078	0.00078
	(!A2 * !A4 * B1 * X)	-0.00040	-0.00040	-0.00040
	(!A2 * !A4 * B1 * X)	0.00078	0.00079	0.00078
	(!A1 * A2 * A4 * B1 * X)	-0.00057	-0.00061	-0.00061
	(!A1 * A2 * A4 * B1 * X)	0.00078	0.00078	0.00078
	(!A1 * A2 * A4 * !B1 * !X)	-0.00057	-0.00061	-0.00061
	(!A1 * A2 * A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(!A1 * A2 * !A4 * B1 * X)	-0.00040	-0.00040	-0.00039
	(!A1 * A2 * !A4 * B1 * X)	0.00079	0.00079	0.00078
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * A2 * !A4 * !B1 * !X)	0.00077	0.00079	0.00078
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00061	-0.00063	-0.00063
	(!A1 * !A2 * A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00078	0.00079	0.00078

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00070	-0.00070	-0.00070
	(A1 * A2 * A4 * B1 * X)	0.00073	0.00073	0.00073
	(A1 * A2 * !A4 * B1 * X)	-0.00063	-0.00066	-0.00065
	(A1 * A2 * !A4 * B1 * X)	0.00077	0.00078	0.00077
	(A1 * A2 * !A4 * !B1 * !X)	-0.00034	-0.00035	-0.00034
	(A1 * A2 * !A4 * !B1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * A4 * !B1 * !X)	-0.00063	-0.00066	-0.00066
	(A1 * !A2 * A4 * !B1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00040	-0.00040	-0.00039
	(A1 * !A2 * !A4 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A2 * A4 * B1 * X)	-0.00064	-0.00066	-0.00066
	(!A2 * A4 * B1 * X)	0.00077	0.00078	0.00077
	(!A2 * !A4 * B1 * X)	-0.00041	-0.00041	-0.00041
	(!A2 * !A4 * B1 * X)	0.00077	0.00078	0.00077
	(!A1 * A2 * A4 * B1 * X)	-0.00060	-0.00065	-0.00064
	(!A1 * A2 * A4 * B1 * X)	0.00077	0.00078	0.00077
	(!A1 * A2 * A4 * !B1 * !X)	-0.00060	-0.00064	-0.00064
	(!A1 * A2 * A4 * !B1 * !X)	0.00077	0.00077	0.00077
	(!A1 * A2 * !A4 * B1 * X)	-0.00041	-0.00042	-0.00041
	(!A1 * A2 * !A4 * B1 * X)	0.00077	0.00078	0.00077
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * A2 * !A4 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00064	-0.00066	-0.00066
	(!A1 * !A2 * A4 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00041	-0.00041	-0.00040
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00077	0.00078	0.00077

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00140	-0.00140	-0.00140
	(A1 * A2 * A4 * B1 * X)	0.00148	0.00148	0.00149
	(A1 * A2 * !A4 * B1 * X)	-0.00125	-0.00131	-0.00130
	(A1 * A2 * !A4 * B1 * X)	0.00157	0.00158	0.00156
	(A1 * A2 * !A4 * !B1 * !X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !A4 * !B1 * !X)	0.00156	0.00159	0.00157
	(A1 * !A2 * A4 * !B1 * !X)	-0.00123	-0.00129	-0.00128
	(A1 * !A2 * A4 * !B1 * !X)	0.00156	0.00157	0.00156
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * !A4 * !B1 * !X)	0.00156	0.00159	0.00157
	(!A2 * A4 * B1 * X)	-0.00124	-0.00129	-0.00128
	(!A2 * A4 * B1 * X)	0.00156	0.00157	0.00156
	(!A2 * !A4 * B1 * X)	-0.00080	-0.00080	-0.00079
	(!A2 * !A4 * B1 * X)	0.00158	0.00158	0.00157
	(!A1 * A2 * A4 * B1 * X)	-0.00117	-0.00126	-0.00126
	(!A1 * A2 * A4 * B1 * X)	0.00156	0.00157	0.00156
	(!A1 * A2 * A4 * !B1 * !X)	-0.00116	-0.00126	-0.00125
	(!A1 * A2 * A4 * !B1 * !X)	0.00157	0.00157	0.00156
	(!A1 * A2 * !A4 * B1 * X)	-0.00080	-0.00080	-0.00080
	(!A1 * A2 * !A4 * B1 * X)	0.00156	0.00159	0.00157
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * A2 * !A4 * !B1 * !X)	0.00157	0.00159	0.00157
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00123	-0.00129	-0.00128
	(!A1 * !A2 * A4 * !B1 * !X)	0.00156	0.00157	0.00156
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00157	0.00159	0.00157

Passive power(pJ) for A4 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A3 * B1 * X)**	0.00073	0.00072	0.00072
	(A1 * A2 * A3 * B1 * X)	-0.00071	-0.00075	-0.00074
	(A1 * A2 * !A3 * !B1 * !X)	0.00068	0.00068	0.00068
	(A1 * A2 * !A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * A3 * !B1 * !X)	0.00066	0.00067	0.00066
	(A1 * !A2 * A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * !A3 * !B1 * !X)	0.00068	0.00068	0.00068
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A3 * B1 * X)	0.00068	0.00068	0.00068
	(!A3 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A2 * A3 * B1 * X)	0.00066	0.00067	0.00066
	(!A2 * A3 * B1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * A2 * A3 * B1 * X)	0.00065	0.00066	0.00065
	(!A1 * A2 * A3 * B1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * A2 * A3 * !B1 * !X)	0.00065	0.00066	0.00065
	(!A1 * A2 * A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * !B1 * !X)	0.00068	0.00068	0.00068
	(!A1 * !A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * A3 * !B1 * !X)	0.00066	0.00066	0.00066
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00073	0.00072	0.00071
	(A1 * A2 * A3 * B1 * X)	-0.00071	-0.00075	-0.00074
	(A1 * A2 * !A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(A1 * A2 * !A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * A3 * !B1 * !X)	0.00065	0.00066	0.00065
	(A1 * !A2 * A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * !A3 * !B1 * !X)	0.00067	0.00067	0.00066
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(!A3 * B1 * X)	0.00067	0.00067	0.00066
	(!A3 * B1 * X)	-0.00077	-0.00078	-0.00077
	(!A2 * A3 * B1 * X)	0.00065	0.00066	0.00065
	(!A2 * A3 * B1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * A2 * A3 * B1 * X)	0.00065	0.00065	0.00065
	(!A1 * A2 * A3 * B1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * A2 * A3 * !B1 * !X)	0.00065	0.00065	0.00065
	(!A1 * A2 * A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * !B1 * !X)	0.00067	0.00067	0.00066
	(!A1 * !A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * A3 * !B1 * !X)	0.00065	0.00065	0.00065
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00141	0.00140	0.00139
	(A1 * A2 * A3 * B1 * X)	-0.00141	-0.00144	-0.00145
	(A1 * A2 * !A3 * !B1 * !X)	0.00128	0.00130	0.00128
	(A1 * A2 * !A3 * !B1 * !X)	-0.00151	-0.00152	-0.00152
	(A1 * !A2 * A3 * !B1 * !X)	0.00124	0.00125	0.00124
	(A1 * !A2 * A3 * !B1 * !X)	-0.00151	-0.00152	-0.00152
	(A1 * !A2 * !A3 * !B1 * !X)	0.00128	0.00130	0.00128
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00151	-0.00153	-0.00152
	(!A3 * B1 * X)	0.00128	0.00129	0.00129
	(!A3 * B1 * X)	-0.00151	-0.00152	-0.00152
	(!A2 * A3 * B1 * X)	0.00124	0.00125	0.00124
	(!A2 * A3 * B1 * X)	-0.00151	-0.00152	-0.00152
	(!A1 * A2 * A3 * B1 * X)	0.00123	0.00124	0.00123
	(!A1 * A2 * A3 * B1 * X)	-0.00152	-0.00152	-0.00152
	(!A1 * A2 * A3 * !B1 * !X)	0.00124	0.00124	0.00123
	(!A1 * A2 * A3 * !B1 * !X)	-0.00152	-0.00152	-0.00152
	(!A1 * !A3 * !B1 * !X)	0.00128	0.00130	0.00128
	(!A1 * !A3 * !B1 * !X)	-0.00151	-0.00152	-0.00152
	(!A1 * !A2 * A3 * !B1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00151	-0.00152	-0.00152

Passive power(pJ) for A4 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A3 * B1 * X)**	-0.00072	-0.00072	-0.00071
	(A1 * A2 * A3 * B1 * X)	0.00074	0.00075	0.00074
	(A1 * A2 * !A3 * !B1 * !X)	-0.00066	-0.00068	-0.00068
	(A1 * A2 * !A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * A3 * !B1 * !X)	-0.00063	-0.00067	-0.00066
	(A1 * !A2 * A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00066	-0.00068	-0.00068
	(A1 * !A2 * !A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A3 * B1 * X)	-0.00066	-0.00068	-0.00068
	(!A3 * B1 * X)	0.00077	0.00078	0.00077
	(!A2 * A3 * B1 * X)	-0.00063	-0.00067	-0.00066
	(!A2 * A3 * B1 * X)	0.00077	0.00078	0.00078
	(!A1 * A2 * A3 * B1 * X)	-0.00061	-0.00066	-0.00065
	(!A1 * A2 * A3 * B1 * X)	0.00077	0.00078	0.00078
	(!A1 * A2 * A3 * !B1 * !X)	-0.00062	-0.00066	-0.00065
	(!A1 * A2 * A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A3 * !B1 * !X)	-0.00066	-0.00068	-0.00068
	(!A1 * !A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00063	-0.00066	-0.00066
	(!A1 * !A2 * A3 * !B1 * !X)	0.00077	0.00078	0.00077

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00071	-0.00071	-0.00071
	(A1 * A2 * A3 * B1 * X)	0.00074	0.00075	0.00074
	(A1 * A2 * !A3 * !B1 * !X)	-0.00065	-0.00067	-0.00067
	(A1 * A2 * !A3 * !B1 * !X)	0.00077	0.00078	0.00078
	(A1 * !A2 * A3 * !B1 * !X)	-0.00062	-0.00066	-0.00065
	(A1 * !A2 * A3 * !B1 * !X)	0.00077	0.00078	0.00078
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00065	-0.00067	-0.00066
	(A1 * !A2 * !A3 * !B1 * !X)	0.00077	0.00078	0.00078
	(!A3 * B1 * X)	-0.00065	-0.00067	-0.00066
	(!A3 * B1 * X)	0.00077	0.00078	0.00078
	(!A2 * A3 * B1 * X)	-0.00062	-0.00066	-0.00065
	(!A2 * A3 * B1 * X)	0.00077	0.00078	0.00078
	(!A1 * A2 * A3 * B1 * X)	-0.00061	-0.00065	-0.00065
	(!A1 * A2 * A3 * B1 * X)	0.00077	0.00078	0.00078
	(!A1 * A2 * A3 * !B1 * !X)	-0.00061	-0.00065	-0.00065
	(!A1 * A2 * A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A3 * !B1 * !X)	-0.00065	-0.00067	-0.00066
	(!A1 * !A3 * !B1 * !X)	0.00077	0.00078	0.00078
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00062	-0.00065	-0.00065
	(!A1 * !A2 * A3 * !B1 * !X)	0.00077	0.00078	0.00078

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00138	-0.00138	-0.00138
	(A1 * A2 * A3 * B1 * X)	0.00145	0.00144	0.00145
	(A1 * A2 * !A3 * !B1 * !X)	-0.00124	-0.00130	-0.00128
	(A1 * A2 * !A3 * !B1 * !X)	0.00152	0.00153	0.00152
	(A1 * !A2 * A3 * !B1 * !X)	-0.00117	-0.00125	-0.00124
	(A1 * !A2 * A3 * !B1 * !X)	0.00152	0.00154	0.00152
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00124	-0.00130	-0.00128
	(A1 * !A2 * !A3 * !B1 * !X)	0.00152	0.00153	0.00152
	(!A3 * B1 * X)	-0.00125	-0.00129	-0.00129
	(!A3 * B1 * X)	0.00152	0.00153	0.00152
	(!A2 * A3 * B1 * X)	-0.00117	-0.00125	-0.00124
	(!A2 * A3 * B1 * X)	0.00152	0.00154	0.00152
	(!A1 * A2 * A3 * B1 * X)	-0.00116	-0.00124	-0.00123
	(!A1 * A2 * A3 * B1 * X)	0.00152	0.00154	0.00152
	(!A1 * A2 * A3 * !B1 * !X)	-0.00116	-0.00124	-0.00123
	(!A1 * A2 * A3 * !B1 * !X)	0.00152	0.00154	0.00152
	(!A1 * !A3 * !B1 * !X)	-0.00124	-0.00130	-0.00128
	(!A1 * !A3 * !B1 * !X)	0.00152	0.00153	0.00152
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00117	-0.00125	-0.00124
	(!A1 * !A2 * A3 * !B1 * !X)	0.00152	0.00154	0.00152

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A3 * A4 * X)**	0.00082	0.00081	0.00081
	(A1 * A2 * A3 * A4 * X)	-0.00044	-0.00043	-0.00043
sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * A4 * X)**	0.00083	0.00083	0.00082
	(A1 * A2 * A3 * A4 * X)	-0.00045	-0.00044	-0.00044
sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * A4 * X)**	0.00154	0.00156	0.00154
	(A1 * A2 * A3 * A4 * X)	-0.00090	-0.00091	-0.00090

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	(A1 * A2 * A3 * A4 * X)	-0.00068	-0.00069	-0.00079
	(A1 * A2 * A3 * A4 * X)	0.00054	0.00054	0.00046
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00069	-0.00070	-0.00080
	(A1 * A2 * A3 * A4 * X)	0.00055	0.00055	0.00046
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00125	-0.00128	-0.00150
	(A1 * A2 * A3 * A4 * X)	0.00112	0.00113	0.00095

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A_N	B	X
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2b_1	11.18880
sky130_fd_sc_hs__and2b_2	11.18880
sky130_fd_sc_hs__and2b_4	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	X
sky130_fd_sc_hs__and2b_1	0.00241	0.00226	0.44111
sky130_fd_sc_hs__and2b_2	0.00215	0.00261	0.80263
sky130_fd_sc_hs__and2b_4	0.00240	0.00474	1.67919

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.05623	0.09405
sky130_fd_sc_hs__and2b_2	0.00000	0.05501	0.06926
sky130_fd_sc_hs__and2b_4	0.00000	0.09817	0.19394

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2b_1	A_N->X (FR)	0.29394	1.41548	9.78144
	B->X (RR)	0.15656	1.08899	8.34868
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.30915	1.31155	9.84919
	B->X (RR)	0.16216	0.98789	8.51701
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.31934	1.23789	10.32550
	B->X (RR)	0.16563	0.88128	8.60399

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2b_1	A_N->X (RF)	0.22267	0.71287	3.28779
	B->X (FF)	0.19129	0.89684	5.08607
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.26643	0.73625	3.23362
	B->X (FF)	0.23443	0.94659	5.51161
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.25843	0.70963	3.35585
	B->X (FF)	0.23397	0.91194	5.47896

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00302	0.00293	0.00324
	A_N	0.00465	0.00455	0.00488
	B	0.00364	0.00356	0.00363
	B	0.00201	0.00194	0.00209
sky130_fd_sc_hs__and2b_2	A_N	0.00451	0.00455	0.00483
	A_N	0.00597	0.00600	0.00628
	B	0.00502	0.00507	0.00512
	B	0.00312	0.00316	0.00324
sky130_fd_sc_hs__and2b_4	A_N	0.00837	0.00867	0.00901
	A_N	0.00990	0.01020	0.01061
	B	0.00953	0.00965	0.00988
	B	0.00617	0.00630	0.00655

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00509	0.00490	0.00501
	A_N	0.00347	0.00328	0.00337
	B	0.00172	0.00168	0.00203
	B	0.00333	0.00329	0.00363
sky130_fd_sc_hs__and2b_2	A_N	0.00611	0.00611	0.00614
	A_N	0.00466	0.00461	0.00468
	B	0.00271	0.00278	0.00303
	B	0.00460	0.00466	0.00491
sky130_fd_sc_hs__and2b_4	A_N	0.00947	0.00975	0.01003
	A_N	0.00793	0.00819	0.00837
	B	0.00528	0.00550	0.00626
	B	0.00860	0.00882	0.00956

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00284	0.00267	0.00282
	(!B * !X)	0.00102	0.00085	0.00100
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00269	0.00255	0.00270
	(!B * !X)	0.00100	0.00086	0.00101
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00333	0.00318	0.00333
	(!B * !X)	0.00140	0.00125	0.00141

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00009	-0.00003	0.00031
	(!B * !X)	0.00191	0.00180	0.00213
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00020	0.00011	0.00045
	(!B * !X)	0.00190	0.00181	0.00214
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00036	0.00025	0.00050
	(!B * !X)	0.00230	0.00219	0.00243

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00061	0.00062	0.00061
	(A_N * !X)	-0.00073	-0.00074	-0.00074
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00075	0.00075	0.00075
	(A_N * !X)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00133	0.00133	0.00132
	(A_N * !X)	-0.00149	-0.00149	-0.00149

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00059	-0.00061	-0.00061
	(A_N * !X)	0.00076	0.00074	0.00074
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00073	-0.00075	-0.00075
	(A_N * !X)	0.00085	0.00084	0.00083
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00129	-0.00132	-0.00132
	(A_N * !X)	0.00151	0.00150	0.00149

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	X
0	x	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2_1	7.99200
sky130_fd_sc_hs__and2_2	7.99200
sky130_fd_sc_hs__and2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__and2_1	0.00232	0.00226	0.43616
sky130_fd_sc_hs__and2_2	0.00250	0.00277	0.84881
sky130_fd_sc_hs__and2_4	0.00407	0.00453	1.70088

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.03300	0.09241
sky130_fd_sc_hs__and2_2	0.00000	0.03178	0.05648
sky130_fd_sc_hs__and2_4	0.00000	0.08363	0.19035

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (RR)	0.14402	1.07291	8.13346
	B->X (RR)	0.15290	1.09920	8.40151
sky130_fd_sc_hs__and2_2	A->X (RR)	0.14725	0.96966	8.32367
	B->X (RR)	0.15630	0.98158	8.52920
sky130_fd_sc_hs__and2_4	A->X (RR)	0.14487	0.86352	8.44583
	B->X (RR)	0.15561	0.88179	8.68776

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.17112	0.86291	4.92983
	B->X (FF)	0.19469	0.90165	5.10395
sky130_fd_sc_hs__and2_2	A->X (FF)	0.20213	0.91045	5.48610
	B->X (FF)	0.22908	0.94694	5.63360
sky130_fd_sc_hs__and2_4	A->X (FF)	0.21233	0.87996	5.31816
	B->X (FF)	0.23207	0.90727	5.45048

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00342	0.00332	0.00354
	A	0.00164	0.00154	0.00178
	B	0.00371	0.00363	0.00368
	B	0.00165	0.00156	0.00162
sky130_fd_sc_hs__and2_2	A	0.00464	0.00463	0.00479
	A	0.00272	0.00270	0.00287
	B	0.00519	0.00520	0.00523
	B	0.00275	0.00277	0.00280
sky130_fd_sc_hs__and2_4	A	0.00852	0.00860	0.00910
	A	0.00550	0.00557	0.00608
	B	0.00959	0.00975	0.01000
	B	0.00548	0.00564	0.00592

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00134	0.00128	0.00170
	A	0.00311	0.00305	0.00344
	B	0.00170	0.00165	0.00199
	B	0.00372	0.00367	0.00399
sky130_fd_sc_hs__and2_2	A	0.00258	0.00265	0.00316
	A	0.00452	0.00457	0.00487
	B	0.00277	0.00282	0.00311
	B	0.00516	0.00521	0.00546
sky130_fd_sc_hs__and2_4	A	0.00490	0.00509	0.00655
	A	0.00793	0.00812	0.00896
	B	0.00514	0.00541	0.00641
	B	0.00918	0.00943	0.01015

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00039	0.00038	0.00037
	(!B * !X)	-0.00077	-0.00077	-0.00079
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00028	0.00028	0.00027
	(!B * !X)	-0.00091	-0.00091	-0.00093
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00043	0.00043	0.00040
	(!B * !X)	-0.00149	-0.00149	-0.00154

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00036	-0.00036	-0.00036
	(!B * !X)	0.00079	0.00080	0.00080
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00026	-0.00027	-0.00026
	(!B * !X)	0.00093	0.00095	0.00093
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00038	-0.00039	-0.00038
	(!B * !X)	0.00154	0.00157	0.00154

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00054	0.00054	0.00053
	(!A * !X)	-0.00074	-0.00074	-0.00074
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00062	0.00062	0.00062
	(!A * !X)	-0.00090	-0.00090	-0.00090
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00126	0.00127	0.00126
	(!A * !X)	-0.00137	-0.00137	-0.00137

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00051	-0.00054	-0.00053
	(!A * !X)	0.00075	0.00075	0.00074
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00059	-0.00062	-0.00062
	(!A * !X)	0.00092	0.00091	0.00090
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00121	-0.00127	-0.00126
	(!A * !X)	0.00140	0.00140	0.00137

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A_N	B	C	X
x	0	x	0
x	1	0	0
0	1	1	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3b_1	12.78720
sky130_fd_sc_hs__and3b_2	14.38560
sky130_fd_sc_hs__and3b_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	X
sky130_fd_sc_hs__and3b_1	0.00210	0.00221	0.00220	0.43645
sky130_fd_sc_hs__and3b_2	0.00218	0.00265	0.00253	0.81235
sky130_fd_sc_hs__and3b_4	0.00243	0.00450	0.00463	1.69396

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	0.05129	0.13888
sky130_fd_sc_hs__and3b_2	0.00000	0.05361	0.08360
sky130_fd_sc_hs__and3b_4	0.00000	0.07580	0.16752

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3b_1	A_N->X (FR)	0.32382	1.44939	9.85459
	B->X (RR)	0.20913	1.17699	8.61769
	C->X (RR)	0.21722	1.16941	8.68146
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.35279	1.36024	9.95052
	B->X (RR)	0.22136	1.08242	8.80173
	C->X (RR)	0.22928	1.06736	8.82698
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.39361	1.33000	10.55100
	B->X (RR)	0.24928	1.00828	8.94806
	C->X (RR)	0.25679	0.98108	8.93913

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3b_1	A_N->X (RF)	0.24350	0.72149	3.17969
	B->X (FF)	0.21833	0.93188	5.19205
	C->X (FF)	0.23143	0.95340	5.30260
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.27409	0.74190	3.20587
	B->X (FF)	0.24639	0.96449	5.61724
	C->X (FF)	0.27426	0.99657	5.74696
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.25821	0.71336	3.38568
	B->X (FF)	0.23050	0.92277	5.69425
	C->X (FF)	0.24673	0.94373	5.79280

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00365	0.00358	0.00389
	A_N	0.00498	0.00490	0.00521
	B	0.00408	0.00404	0.00411
	B	0.00242	0.00238	0.00246
	C	0.00447	0.00443	0.00446
	C	0.00248	0.00244	0.00248
sky130_fd_sc_hs__and3b_2	A_N	0.00512	0.00516	0.00549
	A_N	0.00651	0.00655	0.00689
	B	0.00567	0.00574	0.00579
	B	0.00373	0.00380	0.00388
	C	0.00610	0.00618	0.00619
	C	0.00381	0.00388	0.00393
sky130_fd_sc_hs__and3b_4	A_N	0.00922	0.00951	0.00982
	A_N	0.01057	0.01081	0.01128
	B	0.01034	0.01051	0.01072
	B	0.00692	0.00708	0.00738
	C	0.01121	0.01143	0.01157
	C	0.00696	0.00717	0.00739

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00472	0.00458	0.00466
	A_N	0.00340	0.00322	0.00333
	B	0.00174	0.00169	0.00205
	B	0.00338	0.00334	0.00368
	C	0.00192	0.00188	0.00224
	C	0.00384	0.00380	0.00409
sky130_fd_sc_hs__and3b_2	A_N	0.00596	0.00601	0.00606
	A_N	0.00456	0.00457	0.00464
	B	0.00269	0.00271	0.00319
	B	0.00461	0.00469	0.00494
	C	0.00293	0.00292	0.00354
	C	0.00516	0.00521	0.00540
sky130_fd_sc_hs__and3b_4	A_N	0.00987	0.01021	0.01035
	A_N	0.00852	0.00879	0.00885
	B	0.00566	0.00575	0.00688
	B	0.00905	0.00924	0.00977
	C	0.00598	0.00612	0.00728
	C	0.01007	0.01033	0.01079

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(B * !C * !X)	0.00241	0.00228	0.00245
	(B * !C * !X)	0.00078	0.00065	0.00082
	(!B * !X)	0.00240	0.00227	0.00244
	(!B * !X)	0.00078	0.00065	0.00083
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00261	0.00247	0.00262
	(B * !C * !X)	0.00092	0.00077	0.00093
	(!B * !X)	0.00260	0.00246	0.00261
	(!B * !X)	0.00092	0.00077	0.00093
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00355	0.00339	0.00353
	(B * !C * !X)	0.00168	0.00152	0.00167
	(!B * !X)	0.00353	0.00337	0.00351
	(!B * !X)	0.00169	0.00152	0.00167

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(B * !C * !X)	0.00010	0.00003	0.00037
	(B * !C * !X)	0.00176	0.00168	0.00202
	(!B * !X)	0.00009	0.00001	0.00037
	(!B * !X)	0.00171	0.00164	0.00198
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00017	0.00007	0.00041
	(B * !C * !X)	0.00190	0.00181	0.00213
	(!B * !X)	0.00016	0.00006	0.00040
	(!B * !X)	0.00184	0.00175	0.00209
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00032	0.00020	0.00042
	(B * !C * !X)	0.00227	0.00215	0.00234
	(!B * !X)	0.00032	0.00020	0.00043
	(!B * !X)	0.00218	0.00206	0.00229

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * C * !X)	0.00062	0.00062	0.00062
	(A_N * C * !X)	-0.00068	-0.00067	-0.00067
	(A_N * !C * !X)	0.00041	0.00041	0.00041
	(A_N * !C * !X)	-0.00068	-0.00068	-0.00068
	(!A_N * !C * !X)	0.00027	0.00027	0.00027
	(!A_N * !C * !X)	-0.00078	-0.00078	-0.00078
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00076	0.00077	0.00076
	(A_N * C * !X)	-0.00080	-0.00080	-0.00080
	(A_N * !C * !X)	0.00052	0.00052	0.00052
	(A_N * !C * !X)	-0.00081	-0.00080	-0.00080
	(!A_N * !C * !X)	0.00036	0.00036	0.00036
	(!A_N * !C * !X)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00120	0.00120	0.00120
	(A_N * C * !X)	-0.00153	-0.00153	-0.00153
	(A_N * !C * !X)	0.00077	0.00077	0.00076
	(A_N * !C * !X)	-0.00155	-0.00155	-0.00154
	(!A_N * !C * !X)	0.00057	0.00058	0.00058
	(!A_N * !C * !X)	-0.00164	-0.00164	-0.00164

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * C * !X)	-0.00059	-0.00062	-0.00062
	(A_N * C * !X)	0.00070	0.00068	0.00068
	(A_N * !C * !X)	-0.00041	-0.00041	-0.00041
	(A_N * !C * !X)	0.00071	0.00072	0.00069
	(!A_N * !C * !X)	-0.00025	-0.00025	-0.00026
	(!A_N * !C * !X)	0.00081	0.00081	0.00079
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00073	-0.00077	-0.00076
	(A_N * C * !X)	0.00083	0.00081	0.00081
	(A_N * !C * !X)	-0.00052	-0.00052	-0.00052
	(A_N * !C * !X)	0.00084	0.00085	0.00081
	(!A_N * !C * !X)	-0.00034	-0.00034	-0.00034
	(!A_N * !C * !X)	0.00095	0.00096	0.00093
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00115	-0.00120	-0.00120
	(A_N * C * !X)	0.00156	0.00155	0.00153
	(A_N * !C * !X)	-0.00077	-0.00077	-0.00076
	(A_N * !C * !X)	0.00157	0.00160	0.00155
	(!A_N * !C * !X)	-0.00054	-0.00055	-0.00056
	(!A_N * !C * !X)	0.00168	0.00171	0.00166

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * B * !X)	0.00053	0.00053	0.00053
	(A_N * B * !X)	-0.00071	-0.00071	-0.00071
	(A_N * !B * !X)	0.00054	0.00054	0.00054
	(A_N * !B * !X)	-0.00071	-0.00071	-0.00071
	(!A_N * !B * !X)	0.00054	0.00054	0.00054
	(!A_N * !B * !X)	-0.00071	-0.00071	-0.00071
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00066	0.00067	0.00066
	(A_N * B * !X)	-0.00080	-0.00081	-0.00080
	(A_N * !B * !X)	0.00067	0.00067	0.00067
	(A_N * !B * !X)	-0.00080	-0.00080	-0.00080
	(!A_N * !B * !X)	0.00067	0.00068	0.00067
	(!A_N * !B * !X)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00112	0.00113	0.00112
	(A_N * B * !X)	-0.00159	-0.00160	-0.00159
	(A_N * !B * !X)	0.00112	0.00113	0.00112
	(A_N * !B * !X)	-0.00159	-0.00160	-0.00159
	(!A_N * !B * !X)	0.00112	0.00113	0.00112
	(!A_N * !B * !X)	-0.00159	-0.00159	-0.00159

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * B * !X)	-0.00051	-0.00053	-0.00053
	(A_N * B * !X)	0.00071	0.00072	0.00071
	(A_N * !B * !X)	-0.00052	-0.00054	-0.00054
	(A_N * !B * !X)	0.00071	0.00071	0.00071
	(!A_N * !B * !X)	-0.00052	-0.00054	-0.00054
	(!A_N * !B * !X)	0.00071	0.00071	0.00071
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00064	-0.00067	-0.00066
	(A_N * B * !X)	0.00080	0.00081	0.00081
	(A_N * !B * !X)	-0.00065	-0.00067	-0.00067
	(A_N * !B * !X)	0.00080	0.00081	0.00081
	(!A_N * !B * !X)	-0.00065	-0.00068	-0.00067
	(!A_N * !B * !X)	0.00080	0.00081	0.00081
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00107	-0.00113	-0.00112
	(A_N * B * !X)	0.00159	0.00161	0.00159
	(A_N * !B * !X)	-0.00109	-0.00113	-0.00112
	(A_N * !B * !X)	0.00159	0.00160	0.00159
	(!A_N * !B * !X)	-0.00108	-0.00113	-0.00112
	(!A_N * !B * !X)	0.00160	0.00160	0.00159

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	x	x	0
1	0	x	0
1	1	0	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3_1	9.59040
sky130_fd_sc_hs__and3_2	11.18880
sky130_fd_sc_hs__and3_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__and3_1	0.00239	0.00219	0.00215	0.44523
sky130_fd_sc_hs__and3_2	0.00237	0.00216	0.00218	0.87673
sky130_fd_sc_hs__and3_4	0.00428	0.00414	0.00428	1.66161

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.02806	0.13724
sky130_fd_sc_hs__and3_2	0.00000	0.03789	0.14000
sky130_fd_sc_hs__and3_4	0.00000	0.07577	0.28000

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (RR)	0.18376	1.12787	8.25557
	B->X (RR)	0.19713	1.15909	8.51967
	C->X (RR)	0.20372	1.14945	8.58786
sky130_fd_sc_hs__and3_2	A->X (RR)	0.20670	1.05966	8.64110
	B->X (RR)	0.21987	1.08263	8.88923
	C->X (RR)	0.22644	1.06614	8.90676
sky130_fd_sc_hs__and3_4	A->X (RR)	0.21637	0.97110	8.51970
	B->X (RR)	0.23462	0.99936	8.80080
	C->X (RR)	0.24252	0.97068	8.79256

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.19031	0.89300	5.04453
	B->X (FF)	0.21421	0.92736	5.20507
	C->X (FF)	0.22131	0.94433	5.30693
sky130_fd_sc_hs__and3_2	A->X (FF)	0.23863	0.94534	5.45140
	B->X (FF)	0.26265	0.97359	5.57752
	C->X (FF)	0.27455	0.99058	5.66298
sky130_fd_sc_hs__and3_4	A->X (FF)	0.22418	0.90065	5.39060
	B->X (FF)	0.24845	0.93076	5.53336
	C->X (FF)	0.26794	0.95500	5.64205

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00382	0.00375	0.00395
	A	0.00194	0.00187	0.00208
	B	0.00400	0.00396	0.00402
	B	0.00195	0.00192	0.00199
	C	0.00439	0.00435	0.00438
	C	0.00194	0.00189	0.00194
sky130_fd_sc_hs__and3_2	A	0.00500	0.00503	0.00524
	A	0.00313	0.00316	0.00339
	B	0.00516	0.00524	0.00535
	B	0.00313	0.00321	0.00337
	C	0.00557	0.00568	0.00572
	C	0.00313	0.00324	0.00332
sky130_fd_sc_hs__and3_4	A	0.00931	0.00943	0.00990
	A	0.00588	0.00601	0.00647
	B	0.01008	0.01031	0.01057
	B	0.00590	0.00613	0.00645
	C	0.01096	0.01122	0.01140
	C	0.00590	0.00616	0.00641

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00126	0.00119	0.00156
	A	0.00314	0.00307	0.00343
	B	0.00170	0.00166	0.00208
	B	0.00372	0.00366	0.00400
	C	0.00187	0.00182	0.00218
	C	0.00423	0.00420	0.00449
sky130_fd_sc_hs__and3_2	A	0.00234	0.00242	0.00303
	A	0.00420	0.00429	0.00466
	B	0.00279	0.00290	0.00343
	B	0.00478	0.00489	0.00523
	C	0.00292	0.00298	0.00360
	C	0.00527	0.00538	0.00567
sky130_fd_sc_hs__and3_4	A	0.00500	0.00517	0.00641
	A	0.00843	0.00860	0.00939
	B	0.00567	0.00588	0.00728
	B	0.00975	0.00996	0.01068
	C	0.00601	0.00612	0.00721
	C	0.01086	0.01111	0.01174

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00042	0.00042	0.00039
	(B * !C * !X)	-0.00074	-0.00074	-0.00079
	(!B * !X)	0.00042	0.00041	0.00040
	(!B * !X)	-0.00077	-0.00077	-0.00079
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00042	0.00042	0.00040
	(B * !C * !X)	-0.00073	-0.00073	-0.00077
	(!B * !X)	0.00042	0.00042	0.00041
	(!B * !X)	-0.00076	-0.00076	-0.00078
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00051	0.00051	0.00045
	(B * !C * !X)	-0.00150	-0.00150	-0.00161
	(!B * !X)	0.00051	0.00051	0.00047
	(!B * !X)	-0.00157	-0.00157	-0.00163

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00039	-0.00039	-0.00039
	(B * !C * !X)	0.00080	0.00079	0.00079
	(!B * !X)	-0.00039	-0.00039	-0.00039
	(!B * !X)	0.00079	0.00079	0.00079
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00040	-0.00040	-0.00040
	(B * !C * !X)	0.00078	0.00079	0.00078
	(!B * !X)	-0.00040	-0.00041	-0.00040
	(!B * !X)	0.00078	0.00079	0.00078
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00044	-0.00044	-0.00044
	(B * !C * !X)	0.00163	0.00166	0.00163
	(!B * !X)	-0.00046	-0.00046	-0.00045
	(!B * !X)	0.00165	0.00166	0.00163

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00026	0.00026	0.00026
	(A * !C * !X)	-0.00067	-0.00067	-0.00067
	(!A * C * !X)	0.00051	0.00052	0.00052
	(!A * C * !X)	-0.00067	-0.00068	-0.00067
	(!A * !C * !X)	0.00030	0.00030	0.00030
	(!A * !C * !X)	-0.00068	-0.00068	-0.00067
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00025	0.00025	0.00025
	(A * !C * !X)	-0.00066	-0.00066	-0.00066
	(!A * C * !X)	0.00051	0.00052	0.00051
	(!A * C * !X)	-0.00066	-0.00066	-0.00066
	(!A * !C * !X)	0.00029	0.00029	0.00029
	(!A * !C * !X)	-0.00066	-0.00066	-0.00066
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00060	0.00060	0.00061
	(A * !C * !X)	-0.00131	-0.00131	-0.00130
	(!A * C * !X)	0.00113	0.00114	0.00114
	(!A * C * !X)	-0.00131	-0.00131	-0.00131
	(!A * !C * !X)	0.00068	0.00068	0.00068
	(!A * !C * !X)	-0.00132	-0.00133	-0.00132

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00025	-0.00025	-0.00025
	(A * !C * !X)	0.00070	0.00070	0.00068
	(!A * C * !X)	-0.00049	-0.00052	-0.00052
	(!A * C * !X)	0.00069	0.00068	0.00068
	(!A * !C * !X)	-0.00030	-0.00030	-0.00030
	(!A * !C * !X)	0.00071	0.00071	0.00068
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00024	-0.00024	-0.00024
	(A * !C * !X)	0.00068	0.00069	0.00067
	(!A * C * !X)	-0.00049	-0.00052	-0.00051
	(!A * C * !X)	0.00068	0.00067	0.00066
	(!A * !C * !X)	-0.00029	-0.00029	-0.00029
	(!A * !C * !X)	0.00069	0.00070	0.00067
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00056	-0.00058	-0.00058
	(A * !C * !X)	0.00133	0.00136	0.00132
	(!A * C * !X)	-0.00107	-0.00114	-0.00114
	(!A * C * !X)	0.00133	0.00132	0.00131
	(!A * !C * !X)	-0.00068	-0.00068	-0.00068
	(!A * !C * !X)	0.00134	0.00137	0.00132

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00053	0.00054	0.00053
	(A * !B * !X)	-0.00070	-0.00070	-0.00070
	(!A * B * !X)	0.00052	0.00052	0.00052
	(!A * B * !X)	-0.00069	-0.00070	-0.00069
	(!A * !B * !X)	0.00053	0.00054	0.00053
	(!A * !B * !X)	-0.00070	-0.00070	-0.00070
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00052	0.00052	0.00052
	(A * !B * !X)	-0.00070	-0.00070	-0.00070
	(!A * B * !X)	0.00051	0.00052	0.00051
	(!A * B * !X)	-0.00070	-0.00070	-0.00070
	(!A * !B * !X)	0.00052	0.00053	0.00052
	(!A * !B * !X)	-0.00070	-0.00070	-0.00070
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00111	0.00112	0.00111
	(A * !B * !X)	-0.00139	-0.00139	-0.00139
	(!A * B * !X)	0.00109	0.00110	0.00109
	(!A * B * !X)	-0.00139	-0.00139	-0.00139
	(!A * !B * !X)	0.00111	0.00112	0.00111
	(!A * !B * !X)	-0.00139	-0.00139	-0.00139

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00052	-0.00054	-0.00053
	(A * !B * !X)	0.00070	0.00070	0.00070
	(!A * B * !X)	-0.00050	-0.00052	-0.00052
	(!A * B * !X)	0.00070	0.00070	0.00070
	(!A * !B * !X)	-0.00052	-0.00054	-0.00053
	(!A * !B * !X)	0.00070	0.00070	0.00070
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00051	-0.00052	-0.00052
	(A * !B * !X)	0.00070	0.00070	0.00070
	(!A * B * !X)	-0.00049	-0.00052	-0.00051
	(!A * B * !X)	0.00070	0.00071	0.00070
	(!A * !B * !X)	-0.00051	-0.00053	-0.00052
	(!A * !B * !X)	0.00070	0.00070	0.00070
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00108	-0.00112	-0.00111
	(A * !B * !X)	0.00139	0.00139	0.00139
	(!A * B * !X)	-0.00104	-0.00110	-0.00109
	(!A * B * !X)	0.00139	0.00141	0.00139
	(!A * !B * !X)	-0.00108	-0.00112	-0.00111
	(!A * !B * !X)	0.00139	0.00139	0.00139

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A_N	B_N	C	D	X
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4bb_1	15.98400
sky130_fd_sc_hs__and4bb_2	17.58240
sky130_fd_sc_hs__and4bb_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	X
sky130_fd_sc_hs__and4bb_1	0.00215	0.00218	0.00229	0.00224	0.41054
sky130_fd_sc_hs__and4bb_2	0.00218	0.00207	0.00250	0.00255	0.85879
sky130_fd_sc_hs__and4bb_4	0.00234	0.00250	0.00462	0.00447	1.66281

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	0.06907	0.18534
sky130_fd_sc_hs__and4bb_2	0.00000	0.07440	0.11188
sky130_fd_sc_hs__and4bb_4	0.00000	0.08528	0.22208

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4bb_1	A_N->X (FR)	0.39019	1.53395	9.93529
	B_N->X (FR)	0.40855	1.55485	9.95456
	C->X (RR)	0.28634	1.26736	8.78057
	D->X (RR)	0.29241	1.25874	8.80745
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.38776	1.39390	9.98189
	B_N->X (FR)	0.42517	1.43857	10.12290
	C->X (RR)	0.29440	1.14679	9.02443
	D->X (RR)	0.30356	1.13666	9.02114
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.46952	1.42690	10.63400
	B_N->X (FR)	0.52253	1.48680	10.77220
	C->X (RR)	0.35068	1.10151	9.08527
	D->X (RR)	0.35777	1.08885	9.05831

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4bb_1	A_N->X (RF)	0.25884	0.74636	3.20193
	B_N->X (RF)	0.27184	0.76212	3.21790
	C->X (FF)	0.24453	0.96867	5.33399
	D->X (FF)	0.25966	0.98953	5.43010
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.27959	0.75822	3.37251
	B_N->X (RF)	0.30725	0.79883	3.47368
	C->X (FF)	0.27457	1.01111	5.97022
	D->X (FF)	0.29375	1.03094	6.06671
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.28685	0.75201	3.44183
	B_N->X (RF)	0.30125	0.77462	3.50868
	C->X (FF)	0.25506	0.95782	5.84870
	D->X (FF)	0.27309	0.97962	5.94609

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00391	0.00387	0.00413
	A_N	0.00528	0.00521	0.00573
	B_N	0.00420	0.00421	0.00454
	B_N	0.00575	0.00575	0.00609
	C	0.00462	0.00465	0.00470
	C	0.00298	0.00301	0.00309
	D	0.00496	0.00501	0.00505
	D	0.00303	0.00308	0.00314
sky130_fd_sc_hs__and4bb_2	A_N	0.00523	0.00528	0.00559
	A_N	0.00653	0.00656	0.00689
	B_N	0.00587	0.00591	0.00616
	B_N	0.00722	0.00722	0.00752
	C	0.00621	0.00628	0.00630
	C	0.00432	0.00438	0.00444
	D	0.00669	0.00674	0.00674
	D	0.00439	0.00443	0.00448
sky130_fd_sc_hs__and4bb_4	A_N	0.01039	0.01069	0.01105
	A_N	0.01151	0.01179	0.01233
	B_N	0.01132	0.01163	0.01198
	B_N	0.01268	0.01299	0.01337
	C	0.01213	0.01236	0.01253
	C	0.00861	0.00881	0.00908
	D	0.01286	0.01312	0.01326
	D	0.00863	0.00888	0.00912

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00507	0.00484	0.00490
	A_N	0.00372	0.00348	0.00353
	B_N	0.00521	0.00510	0.00519
	B_N	0.00366	0.00354	0.00364
	C	0.00220	0.00217	0.00257
	C	0.00382	0.00380	0.00412
	D	0.00238	0.00241	0.00276
	D	0.00423	0.00426	0.00454
sky130_fd_sc_hs__and4bb_2	A_N	0.00591	0.00596	0.00607
	A_N	0.00462	0.00464	0.00471
	B_N	0.00619	0.00626	0.00630
	B_N	0.00484	0.00486	0.00489
	C	0.00306	0.00316	0.00393
	C	0.00495	0.00505	0.00529
	D	0.00325	0.00335	0.00388
	D	0.00548	0.00556	0.00576
sky130_fd_sc_hs__and4bb_4	A_N	0.00985	0.01021	0.01021
	A_N	0.00873	0.00904	0.00907
	B_N	0.01058	0.01096	0.01101
	B_N	0.00922	0.00954	0.00957
	C	0.00583	0.00607	0.00741
	C	0.00933	0.00956	0.01005
	D	0.00635	0.00647	0.00760
	D	0.01041	0.01069	0.01109

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(B_N * !X)	0.00240	0.00226	0.00242
	(B_N * !X)	0.00085	0.00071	0.00087
	(!B_N * C * !D * !X)	0.00252	0.00238	0.00254
	(!B_N * C * !D * !X)	0.00096	0.00082	0.00098
	(!B_N * !C * !X)	0.00252	0.00238	0.00254
	(!B_N * !C * !X)	0.00096	0.00082	0.00098
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00244	0.00230	0.00246
	(B_N * !X)	0.00087	0.00072	0.00089
	(!B_N * C * !D * !X)	0.00255	0.00240	0.00256
	(!B_N * C * !D * !X)	0.00097	0.00083	0.00099
	(!B_N * !C * !X)	0.00255	0.00240	0.00256
	(!B_N * !C * !X)	0.00097	0.00083	0.00099
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00335	0.00321	0.00336
	(B_N * !X)	0.00174	0.00160	0.00175
	(!B_N * C * !D * !X)	0.00356	0.00343	0.00358
	(!B_N * C * !D * !X)	0.00194	0.00180	0.00196
	(!B_N * !C * !X)	0.00356	0.00342	0.00357
	(!B_N * !C * !X)	0.00194	0.00180	0.00196

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(B_N * !X)	0.00027	0.00019	0.00053
	(B_N * !X)	0.00183	0.00174	0.00208
	(!B_N * C * !D * !X)	0.00019	0.00010	0.00043
	(!B_N * C * !D * !X)	0.00179	0.00170	0.00201
	(!B_N * !C * !X)	0.00017	0.00009	0.00043
	(!B_N * !C * !X)	0.00174	0.00165	0.00198
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00022	0.00013	0.00047
	(B_N * !X)	0.00180	0.00170	0.00204
	(!B_N * C * !D * !X)	0.00014	0.00005	0.00038
	(!B_N * C * !D * !X)	0.00178	0.00168	0.00199
	(!B_N * !C * !X)	0.00013	0.00004	0.00037
	(!B_N * !C * !X)	0.00172	0.00162	0.00195
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00070	0.00062	0.00084
	(B_N * !X)	0.00232	0.00223	0.00246
	(!B_N * C * !D * !X)	0.00054	0.00045	0.00065
	(!B_N * C * !D * !X)	0.00226	0.00218	0.00235
	(!B_N * !C * !X)	0.00051	0.00042	0.00064
	(!B_N * !C * !X)	0.00215	0.00206	0.00227

Passive power(pJ) for B_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00242	0.00226	0.00239
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00068	0.00051	0.00065
	(!C * !X)	0.00245	0.00231	0.00246
	(!C * !X)	0.00068	0.00053	0.00067
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00243	0.00227	0.00240
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00081	0.00064	0.00077
	(!C * !X)	0.00247	0.00234	0.00247
	(!C * !X)	0.00080	0.00066	0.00080
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00331	0.00310	0.00320
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00146	0.00125	0.00136
	(!C * !X)	0.00338	0.00323	0.00334
	(!C * !X)	0.00146	0.00129	0.00140

Passive power(pJ) for B_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00052	0.00043	0.00078
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00226	0.00217	0.00253
	(!C * !X)	0.00031	0.00022	0.00058
	(!C * !X)	0.00209	0.00200	0.00234
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00073	0.00065	0.00099
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00236	0.00227	0.00262
	(!C * !X)	0.00049	0.00040	0.00074
	(!C * !X)	0.00215	0.00206	0.00240
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00146	0.00135	0.00160
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00330	0.00319	0.00344
	(!C * !X)	0.00102	0.00091	0.00115
	(!C * !X)	0.00293	0.00282	0.00306

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__and4bb_1	**(A_N * B_N * D * !X)**	0.00069	0.00070	0.00070
	(A_N * B_N * D * !X)	-0.00066	-0.00066	-0.00066
	(A_N * B_N * !D * !X)	0.00051	0.00052	0.00051
	(A_N * B_N * !D * !X)	-0.00066	-0.00066	-0.00066
	(A_N * !B_N * D * !X)	0.00052	0.00053	0.00053
	(A_N * !B_N * D * !X)	-0.00083	-0.00084	-0.00083
	(A_N * !B_N * !D * !X)	0.00033	0.00033	0.00033
	(A_N * !B_N * !D * !X)	-0.00088	-0.00088	-0.00088
	(!A_N * B_N * D * !X)	0.00069	0.00070	0.00070
	(!A_N * B_N * D * !X)	-0.00066	-0.00066	-0.00066
	(!A_N * B_N * !D * !X)	0.00050	0.00050	0.00050
	(!A_N * B_N * !D * !X)	-0.00066	-0.00066	-0.00066
	(!A_N * !B_N * !D * !X)	0.00028	0.00028	0.00028
	(!A_N * !B_N * !D * !X)	-0.00082	-0.00083	-0.00083
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00073	0.00074	0.00073
	(A_N * B_N * D * !X)	-0.00077	-0.00077	-0.00077
	(A_N * B_N * !D * !X)	0.00052	0.00052	0.00052
	(A_N * B_N * !D * !X)	-0.00077	-0.00078	-0.00077
	(A_N * !B_N * D * !X)	0.00060	0.00060	0.00060
	(A_N * !B_N * D * !X)	-0.00092	-0.00092	-0.00091
	(A_N * !B_N * !D * !X)	0.00036	0.00036	0.00036
	(A_N * !B_N * !D * !X)	-0.00097	-0.00097	-0.00097
	(!A_N * B_N * D * !X)	0.00073	0.00074	0.00073
	(!A_N * B_N * D * !X)	-0.00077	-0.00078	-0.00077
	(!A_N * B_N * !D * !X)	0.00050	0.00051	0.00050
	(!A_N * B_N * !D * !X)	-0.00077	-0.00078	-0.00077
	(!A_N * !B_N * !D * !X)	0.00031	0.00031	0.00031
	(!A_N * !B_N * !D * !X)	-0.00091	-0.00091	-0.00092

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00124	0.00124	0.00123
	(A_N * B_N * D * !X)	-0.00161	-0.00161	-0.00160
	(A_N * B_N * !D * !X)	0.00083	0.00082	0.00082
	(A_N * B_N * !D * !X)	-0.00162	-0.00160	-0.00161
	(A_N * !B_N * D * !X)	0.00114	0.00115	0.00115
	(A_N * !B_N * D * !X)	-0.00171	-0.00171	-0.00169
	(A_N * !B_N * !D * !X)	0.00072	0.00073	0.00072
	(A_N * !B_N * !D * !X)	-0.00181	-0.00181	-0.00181
	(!A_N * B_N * D * !X)	0.00124	0.00124	0.00123
	(!A_N * B_N * D * !X)	-0.00161	-0.00161	-0.00160
	(!A_N * B_N * !D * !X)	0.00080	0.00080	0.00080
	(!A_N * B_N * !D * !X)	-0.00162	-0.00162	-0.00161
	(!A_N * !B_N * !D * !X)	0.00063	0.00063	0.00062
	(!A_N * !B_N * !D * !X)	-0.00170	-0.00170	-0.00171

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__and4bb_1	**(A_N * B_N * D * !X)**	-0.00068	-0.00070	-0.00070
	(A_N * B_N * D * !X)	0.00066	0.00066	0.00066
	(A_N * B_N * !D * !X)	-0.00051	-0.00052	-0.00051
	(A_N * B_N * !D * !X)	0.00066	0.00067	0.00066
	(A_N * !B_N * D * !X)	-0.00050	-0.00053	-0.00053
	(A_N * !B_N * D * !X)	0.00086	0.00084	0.00083
	(A_N * !B_N * !D * !X)	-0.00033	-0.00033	-0.00033
	(A_N * !B_N * !D * !X)	0.00089	0.00090	0.00090
	(!A_N * B_N * D * !X)	-0.00068	-0.00070	-0.00070
	(!A_N * B_N * D * !X)	0.00066	0.00066	0.00066
	(!A_N * B_N * !D * !X)	-0.00050	-0.00050	-0.00050
	(!A_N * B_N * !D * !X)	0.00066	0.00068	0.00066
	(!A_N * !B_N * !D * !X)	-0.00027	-0.00027	-0.00027
	(!A_N * !B_N * !D * !X)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00072	-0.00074	-0.00073
	(A_N * B_N * D * !X)	0.00078	0.00078	0.00078
	(A_N * B_N * !D * !X)	-0.00052	-0.00052	-0.00052
	(A_N * B_N * !D * !X)	0.00077	0.00078	0.00078
	(A_N * !B_N * D * !X)	-0.00057	-0.00060	-0.00060
	(A_N * !B_N * D * !X)	0.00095	0.00092	0.00091
	(A_N * !B_N * !D * !X)	-0.00036	-0.00036	-0.00036
	(A_N * !B_N * !D * !X)	0.00098	0.00100	0.00100
	(!A_N * B_N * D * !X)	-0.00072	-0.00074	-0.00073
	(!A_N * B_N * D * !X)	0.00078	0.00078	0.00078
	(!A_N * B_N * !D * !X)	-0.00050	-0.00051	-0.00050
	(!A_N * B_N * !D * !X)	0.00078	0.00080	0.00078
	(!A_N * !B_N * !D * !X)	-0.00030	-0.00030	-0.00030
	(!A_N * !B_N * !D * !X)	0.00093	0.00094	0.00092

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	-0.00121	-0.00124	-0.00123
	(A_N * B_N * D * !X)	0.00161	0.00162	0.00161
	(A_N * B_N * !D * !X)	-0.00083	-0.00082	-0.00082
	(A_N * B_N * !D * !X)	0.00162	0.00164	0.00162
	(A_N * !B_N * D * !X)	-0.00109	-0.00115	-0.00115
	(A_N * !B_N * D * !X)	0.00177	0.00171	0.00169
	(A_N * !B_N * !D * !X)	-0.00072	-0.00073	-0.00072
	(A_N * !B_N * !D * !X)	0.00183	0.00186	0.00186
	(!A_N * B_N * D * !X)	-0.00121	-0.00124	-0.00123
	(!A_N * B_N * D * !X)	0.00162	0.00162	0.00161
	(!A_N * B_N * !D * !X)	-0.00080	-0.00080	-0.00080
	(!A_N * B_N * !D * !X)	0.00163	0.00166	0.00162
	(!A_N * !B_N * !D * !X)	-0.00060	-0.00061	-0.00060
	(!A_N * !B_N * !D * !X)	0.00173	0.00175	0.00172

Passive power(pJ) for D rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__and4bb_1	**(A_N * B_N * C * !X)**	0.00062	0.00062	0.00062
	(A_N * B_N * C * !X)	-0.00064	-0.00064	-0.00064
	(A_N * !C * !X)	0.00062	0.00063	0.00062
	(A_N * !C * !X)	-0.00064	-0.00064	-0.00064
	(A_N * !B_N * C * !X)	0.00053	0.00053	0.00053
	(A_N * !B_N * C * !X)	-0.00074	-0.00074	-0.00074
	(!A_N * B_N * C * !X)	0.00062	0.00062	0.00062
	(!A_N * B_N * C * !X)	-0.00064	-0.00064	-0.00064
	(!A_N * B_N * !C * !X)	0.00062	0.00062	0.00062
	(!A_N * B_N * !C * !X)	-0.00064	-0.00064	-0.00064
	(!A_N * !B_N * !C * !X)	0.00054	0.00054	0.00054
	(!A_N * !B_N * !C * !X)	-0.00072	-0.00072	-0.00072

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00064	0.00065	0.00064
	(A_N * B_N * C * !X)	-0.00082	-0.00083	-0.00082
	(A_N * !C * !X)	0.00065	0.00066	0.00065
	(A_N * !C * !X)	-0.00082	-0.00083	-0.00082
	(A_N * !B_N * C * !X)	0.00060	0.00061	0.00060
	(A_N * !B_N * C * !X)	-0.00088	-0.00088	-0.00088
	(!A_N * B_N * C * !X)	0.00064	0.00065	0.00064
	(!A_N * B_N * C * !X)	-0.00082	-0.00083	-0.00082
	(!A_N * B_N * !C * !X)	0.00065	0.00065	0.00065
	(!A_N * B_N * !C * !X)	-0.00083	-0.00083	-0.00082
	(!A_N * !B_N * !C * !X)	0.00062	0.00063	0.00062
	(!A_N * !B_N * !C * !X)	-0.00086	-0.00086	-0.00085
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00108	0.00109	0.00108
	(A_N * B_N * C * !X)	-0.00158	-0.00160	-0.00159
	(A_N * !C * !X)	0.00109	0.00110	0.00109
	(A_N * !C * !X)	-0.00159	-0.00160	-0.00159
	(A_N * !B_N * C * !X)	0.00107	0.00107	0.00106
	(A_N * !B_N * C * !X)	-0.00165	-0.00165	-0.00163
	(!A_N * B_N * C * !X)	0.00108	0.00109	0.00108
	(!A_N * B_N * C * !X)	-0.00159	-0.00159	-0.00159
	(!A_N * B_N * !C * !X)	0.00109	0.00110	0.00109
	(!A_N * B_N * !C * !X)	-0.00159	-0.00160	-0.00159
	(!A_N * !B_N * !C * !X)	0.00109	0.00110	0.00109
	(!A_N * !B_N * !C * !X)	-0.00159	-0.00160	-0.00159

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__and4bb_1	**(A_N * B_N * C * !X)**	-0.00060	-0.00062	-0.00062
	(A_N * B_N * C * !X)	0.00064	0.00065	0.00064
	(A_N * !C * !X)	-0.00061	-0.00063	-0.00062
	(A_N * !C * !X)	0.00064	0.00064	0.00064
	(A_N * !B_N * C * !X)	-0.00050	-0.00053	-0.00053
	(A_N * !B_N * C * !X)	0.00075	0.00075	0.00074
	(!A_N * B_N * C * !X)	-0.00060	-0.00062	-0.00062
	(!A_N * B_N * C * !X)	0.00064	0.00065	0.00064
	(!A_N * B_N * !C * !X)	-0.00061	-0.00062	-0.00062
	(!A_N * B_N * !C * !X)	0.00064	0.00064	0.00064
	(!A_N * !B_N * !C * !X)	-0.00052	-0.00054	-0.00054
	(!A_N * !B_N * !C * !X)	0.00072	0.00073	0.00072
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00062	-0.00065	-0.00064
	(A_N * B_N * C * !X)	0.00083	0.00084	0.00083
	(A_N * !C * !X)	-0.00063	-0.00066	-0.00065
	(A_N * !C * !X)	0.00083	0.00083	0.00083
	(A_N * !B_N * C * !X)	-0.00057	-0.00061	-0.00060
	(A_N * !B_N * C * !X)	0.00090	0.00089	0.00088
	(!A_N * B_N * C * !X)	-0.00062	-0.00065	-0.00064
	(!A_N * B_N * C * !X)	0.00083	0.00084	0.00083
	(!A_N * B_N * !C * !X)	-0.00063	-0.00065	-0.00065
	(!A_N * B_N * !C * !X)	0.00083	0.00083	0.00083
	(!A_N * !B_N * !C * !X)	-0.00060	-0.00063	-0.00062
	(!A_N * !B_N * !C * !X)	0.00086	0.00086	0.00086

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00103	-0.00109	-0.00108
	(A_N * B_N * C * !X)	0.00159	0.00161	0.00159
	(A_N * !C * !X)	-0.00106	-0.00110	-0.00109
	(A_N * !C * !X)	0.00159	0.00160	0.00159
	(A_N * !B_N * C * !X)	-0.00101	-0.00107	-0.00106
	(A_N * !B_N * C * !X)	0.00167	0.00165	0.00163
	(!A_N * B_N * C * !X)	-0.00103	-0.00109	-0.00108
	(!A_N * B_N * C * !X)	0.00159	0.00161	0.00159
	(!A_N * B_N * !C * !X)	-0.00106	-0.00110	-0.00109
	(!A_N * B_N * !C * !X)	0.00159	0.00160	0.00159
	(!A_N * !B_N * !C * !X)	-0.00105	-0.00110	-0.00109
	(!A_N * !B_N * !C * !X)	0.00160	0.00160	0.00159

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A_N	B	C	D	X
x	0	x	x	0
x	1	0	x	0
x	1	1	0	0
0	1	1	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4b_1	14.38560
sky130_fd_sc_hs__and4b_2	14.38560
sky130_fd_sc_hs__and4b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	X
sky130_fd_sc_hs__and4b_1	0.00229	0.00241	0.00231	0.00222	0.43231
sky130_fd_sc_hs__and4b_2	0.00211	0.00255	0.00254	0.00262	0.81121
sky130_fd_sc_hs__and4b_4	0.00230	0.00469	0.00507	0.00467	1.56191

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	0.04584	0.18371
sky130_fd_sc_hs__and4b_2	0.00000	0.05117	0.10908
sky130_fd_sc_hs__and4b_4	0.00000	0.07075	0.21849

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4b_1	A_N->X (FR)	0.36588	1.49349	9.84979
	B->X (RR)	0.26193	1.24929	8.73093
	C->X (RR)	0.27193	1.24459	8.79405
	D->X (RR)	0.28129	1.23801	8.82924
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.40392	1.42363	10.06700
	B->X (RR)	0.27180	1.15124	8.92615
	C->X (RR)	0.28497	1.14520	8.96264
	D->X (RR)	0.29286	1.13375	8.95356
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.49259	1.46009	10.85390
	B->X (RR)	0.30611	1.09643	9.08285
	C->X (RR)	0.33202	1.10017	9.13818
	D->X (RR)	0.33586	1.08762	9.13235

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4b_1	A_N->X (RF)	0.24345	0.73194	3.23384
	B->X (FF)	0.22347	0.94719	5.30318
	C->X (FF)	0.23991	0.96903	5.40694
	D->X (FF)	0.25976	0.99494	5.51919
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.29139	0.77215	3.29166
	B->X (FF)	0.26176	0.98330	5.68787
	C->X (FF)	0.28315	1.00789	5.79960
	D->X (FF)	0.29938	1.02754	5.89020
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.31289	0.78994	3.45443
	B->X (FF)	0.25058	0.94322	5.63687
	C->X (FF)	0.27494	0.97024	5.76045
	D->X (FF)	0.31078	1.00693	5.87733

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00377	0.00368	0.00399
	A_N	0.00505	0.00496	0.00527
	B	0.00434	0.00428	0.00432
	B	0.00240	0.00234	0.00238
	C	0.00473	0.00468	0.00471
	C	0.00249	0.00244	0.00248
	D	0.00503	0.00495	0.00495
	D	0.00248	0.00240	0.00242
sky130_fd_sc_hs__and4b_2	A_N	0.00519	0.00524	0.00552
	A_N	0.00641	0.00642	0.00675
	B	0.00562	0.00571	0.00576
	B	0.00358	0.00366	0.00375
	C	0.00604	0.00613	0.00617
	C	0.00366	0.00375	0.00383
	D	0.00652	0.00660	0.00662
	D	0.00366	0.00374	0.00379
sky130_fd_sc_hs__and4b_4	A_N	0.01040	0.01069	0.01102
	A_N	0.01176	0.01205	0.01251
	B	0.01119	0.01142	0.01167
	B	0.00743	0.00766	0.00798
	C	0.01233	0.01257	0.01278
	C	0.00766	0.00790	0.00820
	D	0.01280	0.01307	0.01326
	D	0.00766	0.00792	0.00819

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00468	0.00452	0.00461
	A_N	0.00340	0.00323	0.00332
	B	0.00175	0.00167	0.00200
	B	0.00367	0.00359	0.00391
	C	0.00183	0.00178	0.00222
	C	0.00401	0.00398	0.00427
	D	0.00216	0.00211	0.00246
	D	0.00458	0.00453	0.00478
sky130_fd_sc_hs__and4b_2	A_N	0.00619	0.00617	0.00622
	A_N	0.00497	0.00496	0.00498
	B	0.00285	0.00291	0.00341
	B	0.00488	0.00496	0.00521
	C	0.00310	0.00321	0.00348
	C	0.00539	0.00550	0.00572
	D	0.00324	0.00325	0.00352
	D	0.00596	0.00602	0.00618
sky130_fd_sc_hs__and4b_4	A_N	0.01061	0.01086	0.01090
	A_N	0.00925	0.00950	0.00948
	B	0.00531	0.00541	0.00673
	B	0.00903	0.00927	0.00981
	C	0.00576	0.00587	0.00689
	C	0.01025	0.01044	0.01087
	D	0.00639	0.00659	0.00743
	D	0.01124	0.01154	0.01194

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(B * C * !D * !X)	0.00248	0.00232	0.00248
	(B * C * !D * !X)	0.00071	0.00055	0.00072
	(B * !C * !X)	0.00248	0.00232	0.00248
	(B * !C * !X)	0.00071	0.00055	0.00072
	(!B * !X)	0.00247	0.00231	0.00247
	(!B * !X)	0.00071	0.00055	0.00072
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00274	0.00260	0.00274
	(B * C * !D * !X)	0.00106	0.00092	0.00107
	(B * !C * !X)	0.00274	0.00260	0.00274
	(B * !C * !X)	0.00106	0.00092	0.00107
	(!B * !X)	0.00273	0.00259	0.00274
	(!B * !X)	0.00106	0.00092	0.00107
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00420	0.00407	0.00420
	(B * C * !D * !X)	0.00219	0.00204	0.00217
	(B * !C * !X)	0.00420	0.00406	0.00419
	(B * !C * !X)	0.00219	0.00204	0.00217
	(!B * !X)	0.00417	0.00403	0.00416
	(!B * !X)	0.00219	0.00204	0.00217

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(B * C * !D * !X)	0.00016	0.00006	0.00039
	(B * C * !D * !X)	0.00198	0.00188	0.00219
	(B * !C * !X)	0.00014	0.00004	0.00038
	(B * !C * !X)	0.00194	0.00184	0.00217
	(!B * !X)	0.00014	0.00004	0.00039
	(!B * !X)	0.00190	0.00180	0.00214
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00020	0.00012	0.00043
	(B * C * !D * !X)	0.00195	0.00185	0.00215
	(B * !C * !X)	0.00019	0.00011	0.00043
	(B * !C * !X)	0.00191	0.00182	0.00213
	(!B * !X)	0.00019	0.00010	0.00043
	(!B * !X)	0.00185	0.00177	0.00210
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00042	0.00032	0.00050
	(B * C * !D * !X)	0.00257	0.00247	0.00261
	(B * !C * !X)	0.00040	0.00030	0.00050
	(B * !C * !X)	0.00250	0.00240	0.00257
	(!B * !X)	0.00038	0.00028	0.00051
	(!B * !X)	0.00238	0.00228	0.00250

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__and4b_1	**(A_N * C * D * !X)**	0.00064	0.00065	0.00064
	(A_N * C * D * !X)	-0.00075	-0.00075	-0.00075
	(A_N * C * !D * !X)	0.00044	0.00044	0.00044
	(A_N * C * !D * !X)	-0.00076	-0.00076	-0.00075
	(A_N * !C * !X)	0.00042	0.00042	0.00042
	(A_N * !C * !X)	-0.00076	-0.00076	-0.00075
	(!A_N * C * !D * !X)	0.00028	0.00028	0.00029
	(!A_N * C * !D * !X)	-0.00084	-0.00084	-0.00086
	(!A_N * !C * !X)	0.00028	0.00028	0.00028
	(!A_N * !C * !X)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00073	0.00074	0.00073
	(A_N * C * D * !X)	-0.00078	-0.00078	-0.00078
	(A_N * C * !D * !X)	0.00049	0.00049	0.00049
	(A_N * C * !D * !X)	-0.00079	-0.00078	-0.00078
	(A_N * !C * !X)	0.00049	0.00049	0.00049
	(A_N * !C * !X)	-0.00078	-0.00078	-0.00078
	(!A_N * C * !D * !X)	0.00030	0.00030	0.00031
	(!A_N * C * !D * !X)	-0.00089	-0.00089	-0.00090
	(!A_N * !C * !X)	0.00032	0.00032	0.00032
	(!A_N * !C * !X)	-0.00091	-0.00091	-0.00091
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00150	0.00151	0.00151
	(A_N * C * D * !X)	-0.00146	-0.00147	-0.00147
	(A_N * C * !D * !X)	0.00109	0.00109	0.00109
	(A_N * C * !D * !X)	-0.00148	-0.00148	-0.00147
	(A_N * !C * !X)	0.00111	0.00112	0.00111
	(A_N * !C * !X)	-0.00148	-0.00149	-0.00148
	(!A_N * C * !D * !X)	0.00069	0.00069	0.00069
	(!A_N * C * !D * !X)	-0.00173	-0.00174	-0.00177
	(!A_N * !C * !X)	0.00071	0.00072	0.00071
	(!A_N * !C * !X)	-0.00177	-0.00178	-0.00178

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(A_N * C * D * !X)	-0.00061	-0.00064	-0.00064
	(A_N * C * D * !X)	0.00078	0.00076	0.00075
	(A_N * C * !D * !X)	-0.00044	-0.00044	-0.00044
	(A_N * C * !D * !X)	0.00076	0.00077	0.00076
	(A_N * !C * !X)	-0.00042	-0.00042	-0.00042
	(A_N * !C * !X)	0.00078	0.00080	0.00076
	(!A_N * C * !D * !X)	-0.00027	-0.00027	-0.00027
	(!A_N * C * !D * !X)	0.00089	0.00089	0.00087
	(!A_N * !C * !X)	-0.00027	-0.00027	-0.00027
	(!A_N * !C * !X)	0.00089	0.00089	0.00087
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00070	-0.00073	-0.00073
	(A_N * C * D * !X)	0.00080	0.00079	0.00078
	(A_N * C * !D * !X)	-0.00049	-0.00049	-0.00049
	(A_N * C * !D * !X)	0.00080	0.00080	0.00078
	(A_N * !C * !X)	-0.00049	-0.00049	-0.00049
	(A_N * !C * !X)	0.00080	0.00082	0.00079
	(!A_N * C * !D * !X)	-0.00029	-0.00030	-0.00030
	(!A_N * C * !D * !X)	0.00093	0.00094	0.00092
	(!A_N * !C * !X)	-0.00030	-0.00030	-0.00030
	(!A_N * !C * !X)	0.00093	0.00094	0.00092

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00146	-0.00150	-0.00151
	(A_N * C * D * !X)	0.00151	0.00147	0.00147
	(A_N * C * !D * !X)	-0.00109	-0.00109	-0.00109
	(A_N * C * !D * !X)	0.00150	0.00150	0.00148
	(A_N * !C * !X)	-0.00111	-0.00112	-0.00111
	(A_N * !C * !X)	0.00151	0.00151	0.00148
	(!A_N * C * !D * !X)	-0.00066	-0.00067	-0.00067
	(!A_N * C * !D * !X)	0.00182	0.00184	0.00180
	(!A_N * !C * !X)	-0.00067	-0.00068	-0.00068
	(!A_N * !C * !X)	0.00182	0.00184	0.00180

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__and4b_1	**(A_N * B * D * !X)**	0.00064	0.00064	0.00064
	(A_N * B * D * !X)	-0.00067	-0.00067	-0.00067
	(A_N * B * !D * !X)	0.00045	0.00045	0.00045
	(A_N * B * !D * !X)	-0.00067	-0.00068	-0.00067
	(A_N * !B * D * !X)	0.00064	0.00065	0.00064
	(A_N * !B * D * !X)	-0.00067	-0.00067	-0.00067
	(A_N * !B * !D * !X)	0.00044	0.00045	0.00045
	(A_N * !B * !D * !X)	-0.00067	-0.00068	-0.00067
	(!A_N * B * !D * !X)	0.00040	0.00040	0.00040
	(!A_N * B * !D * !X)	-0.00067	-0.00068	-0.00067
	(!A_N * !B * D * !X)	0.00064	0.00064	0.00064
	(!A_N * !B * D * !X)	-0.00068	-0.00068	-0.00068
	(!A_N * !B * !D * !X)	0.00043	0.00043	0.00043
	(!A_N * !B * !D * !X)	-0.00068	-0.00068	-0.00068

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00062	0.00062	0.00061
	(A_N * B * D * !X)	-0.00077	-0.00077	-0.00077
	(A_N * B * !D * !X)	0.00038	0.00038	0.00037
	(A_N * B * !D * !X)	-0.00077	-0.00077	-0.00077
	(A_N * !B * D * !X)	0.00062	0.00062	0.00062
	(A_N * !B * D * !X)	-0.00077	-0.00077	-0.00077
	(A_N * !B * !D * !X)	0.00037	0.00037	0.00037
	(A_N * !B * !D * !X)	-0.00077	-0.00078	-0.00077
	(!A_N * B * !D * !X)	0.00030	0.00031	0.00031
	(!A_N * B * !D * !X)	-0.00078	-0.00078	-0.00078
	(!A_N * !B * D * !X)	0.00061	0.00062	0.00061
	(!A_N * !B * D * !X)	-0.00078	-0.00078	-0.00078
	(!A_N * !B * !D * !X)	0.00035	0.00035	0.00035
	(!A_N * !B * !D * !X)	-0.00078	-0.00078	-0.00078
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00138	0.00138	0.00139
	(A_N * B * D * !X)	-0.00157	-0.00157	-0.00157
	(A_N * B * !D * !X)	0.00099	0.00099	0.00099
	(A_N * B * !D * !X)	-0.00157	-0.00158	-0.00158
	(A_N * !B * D * !X)	0.00140	0.00141	0.00140
	(A_N * !B * D * !X)	-0.00157	-0.00158	-0.00157
	(A_N * !B * !D * !X)	0.00100	0.00101	0.00100
	(A_N * !B * !D * !X)	-0.00158	-0.00158	-0.00158
	(!A_N * B * !D * !X)	0.00086	0.00087	0.00086
	(!A_N * B * !D * !X)	-0.00160	-0.00161	-0.00160
	(!A_N * !B * D * !X)	0.00137	0.00139	0.00138
	(!A_N * !B * D * !X)	-0.00159	-0.00160	-0.00160
	(!A_N * !B * !D * !X)	0.00095	0.00095	0.00095
	(!A_N * !B * !D * !X)	-0.00160	-0.00161	-0.00160

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(A_N * B * D * !X)	-0.00061	-0.00064	-0.00064
	(A_N * B * D * !X)	0.00067	0.00068	0.00067
	(A_N * B * !D * !X)	-0.00045	-0.00045	-0.00045
	(A_N * B * !D * !X)	0.00067	0.00069	0.00068
	(A_N * !B * D * !X)	-0.00063	-0.00065	-0.00064
	(A_N * !B * D * !X)	0.00067	0.00068	0.00067
	(A_N * !B * !D * !X)	-0.00044	-0.00045	-0.00045
	(A_N * !B * !D * !X)	0.00068	0.00069	0.00068
	(!A_N * B * !D * !X)	-0.00038	-0.00039	-0.00038
	(!A_N * B * !D * !X)	0.00069	0.00070	0.00068
	(!A_N * !B * D * !X)	-0.00062	-0.00064	-0.00064
	(!A_N * !B * D * !X)	0.00068	0.00068	0.00068
	(!A_N * !B * !D * !X)	-0.00043	-0.00043	-0.00043
	(!A_N * !B * !D * !X)	0.00069	0.00070	0.00068
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00058	-0.00062	-0.00061
	(A_N * B * D * !X)	0.00077	0.00078	0.00077
	(A_N * B * !D * !X)	-0.00038	-0.00038	-0.00037
	(A_N * B * !D * !X)	0.00077	0.00079	0.00077
	(A_N * !B * D * !X)	-0.00060	-0.00062	-0.00062
	(A_N * !B * D * !X)	0.00077	0.00078	0.00077
	(A_N * !B * !D * !X)	-0.00037	-0.00037	-0.00037
	(A_N * !B * !D * !X)	0.00077	0.00079	0.00078
	(!A_N * B * !D * !X)	-0.00030	-0.00030	-0.00030
	(!A_N * B * !D * !X)	0.00080	0.00080	0.00078
	(!A_N * !B * D * !X)	-0.00059	-0.00062	-0.00061
	(!A_N * !B * D * !X)	0.00078	0.00078	0.00078
	(!A_N * !B * !D * !X)	-0.00035	-0.00035	-0.00035
	(!A_N * !B * !D * !X)	0.00079	0.00080	0.00078

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00133	-0.00138	-0.00139
	(A_N * B * D * !X)	0.00158	0.00159	0.00158
	(A_N * B * !D * !X)	-0.00099	-0.00099	-0.00099
	(A_N * B * !D * !X)	0.00157	0.00160	0.00158
	(A_N * !B * D * !X)	-0.00135	-0.00141	-0.00140
	(A_N * !B * D * !X)	0.00157	0.00159	0.00158
	(A_N * !B * !D * !X)	-0.00100	-0.00101	-0.00100
	(A_N * !B * !D * !X)	0.00159	0.00159	0.00158
	(!A_N * B * !D * !X)	-0.00085	-0.00086	-0.00085
	(!A_N * B * !D * !X)	0.00162	0.00163	0.00161
	(!A_N * !B * D * !X)	-0.00132	-0.00139	-0.00138
	(!A_N * !B * D * !X)	0.00160	0.00161	0.00160
	(!A_N * !B * !D * !X)	-0.00095	-0.00095	-0.00095
	(!A_N * !B * !D * !X)	0.00162	0.00164	0.00161

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(A_N * B * C * !X)	0.00052	0.00052	0.00052
	(A_N * B * C * !X)	-0.00073	-0.00074	-0.00073
	(A_N * !C * !X)	0.00054	0.00054	0.00054
	(A_N * !C * !X)	-0.00074	-0.00074	-0.00074
	(A_N * !B * C * !X)	0.00052	0.00053	0.00052
	(A_N * !B * C * !X)	-0.00073	-0.00074	-0.00074
	(!A_N * B * !C * !X)	0.00054	0.00054	0.00054
	(!A_N * B * !C * !X)	-0.00073	-0.00074	-0.00074
	(!A_N * !B * C * !X)	0.00052	0.00052	0.00052
	(!A_N * !B * C * !X)	-0.00073	-0.00074	-0.00074
	(!A_N * !B * !C * !X)	0.00054	0.00054	0.00054
	(!A_N * !B * !C * !X)	-0.00074	-0.00074	-0.00074

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00061	0.00062	0.00061
	(A_N * B * C * !X)	-0.00084	-0.00084	-0.00084
	(A_N * !C * !X)	0.00063	0.00063	0.00062
	(A_N * !C * !X)	-0.00084	-0.00084	-0.00084
	(A_N * !B * C * !X)	0.00061	0.00061	0.00061
	(A_N * !B * C * !X)	-0.00084	-0.00084	-0.00084
	(!A_N * B * !C * !X)	0.00062	0.00062	0.00062
	(!A_N * B * !C * !X)	-0.00085	-0.00085	-0.00085
	(!A_N * !B * C * !X)	0.00060	0.00060	0.00060
	(!A_N * !B * C * !X)	-0.00085	-0.00085	-0.00085
	(!A_N * !B * !C * !X)	0.00062	0.00062	0.00061
	(!A_N * !B * !C * !X)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00111	0.00112	0.00111
	(A_N * B * C * !X)	-0.00156	-0.00157	-0.00156
	(A_N * !C * !X)	0.00112	0.00113	0.00112
	(A_N * !C * !X)	-0.00156	-0.00157	-0.00156
	(A_N * !B * C * !X)	0.00111	0.00112	0.00111
	(A_N * !B * C * !X)	-0.00156	-0.00157	-0.00156
	(!A_N * B * !C * !X)	0.00110	0.00111	0.00110
	(!A_N * B * !C * !X)	-0.00158	-0.00159	-0.00159
	(!A_N * !B * C * !X)	0.00109	0.00110	0.00109
	(!A_N * !B * C * !X)	-0.00158	-0.00159	-0.00159
	(!A_N * !B * !C * !X)	0.00110	0.00111	0.00111
	(!A_N * !B * !C * !X)	-0.00158	-0.00159	-0.00158

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__and4b_1	**(A_N * B * C * !X)**	-0.00049	-0.00052	-0.00052
	(A_N * B * C * !X)	0.00073	0.00074	0.00074
	(A_N * !C * !X)	-0.00052	-0.00054	-0.00054
	(A_N * !C * !X)	0.00074	0.00074	0.00074
	(A_N * !B * C * !X)	-0.00049	-0.00053	-0.00052
	(A_N * !B * C * !X)	0.00074	0.00075	0.00074
	(!A_N * B * !C * !X)	-0.00052	-0.00054	-0.00054
	(!A_N * B * !C * !X)	0.00074	0.00074	0.00074
	(!A_N * !B * C * !X)	-0.00049	-0.00052	-0.00052
	(!A_N * !B * C * !X)	0.00074	0.00075	0.00074
	(!A_N * !B * !C * !X)	-0.00052	-0.00054	-0.00054
	(!A_N * !B * !C * !X)	0.00074	0.00074	0.00074
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00058	-0.00062	-0.00061
	(A_N * B * C * !X)	0.00084	0.00085	0.00084
	(A_N * !C * !X)	-0.00061	-0.00063	-0.00062
	(A_N * !C * !X)	0.00084	0.00084	0.00084
	(A_N * !B * C * !X)	-0.00058	-0.00061	-0.00061
	(A_N * !B * C * !X)	0.00084	0.00085	0.00084
	(!A_N * B * !C * !X)	-0.00060	-0.00062	-0.00062
	(!A_N * B * !C * !X)	0.00085	0.00085	0.00085
	(!A_N * !B * C * !X)	-0.00057	-0.00060	-0.00060
	(!A_N * !B * C * !X)	0.00085	0.00086	0.00085
	(!A_N * !B * !C * !X)	-0.00060	-0.00062	-0.00061
	(!A_N * !B * !C * !X)	0.00085	0.00085	0.00085

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00105	-0.00112	-0.00111
	(A_N * B * C * !X)	0.00156	0.00158	0.00157
	(A_N * !C * !X)	-0.00109	-0.00113	-0.00112
	(A_N * !C * !X)	0.00157	0.00158	0.00157
	(A_N * !B * C * !X)	-0.00105	-0.00112	-0.00111
	(A_N * !B * C * !X)	0.00157	0.00159	0.00157
	(!A_N * B * !C * !X)	-0.00107	-0.00111	-0.00110
	(!A_N * B * !C * !X)	0.00159	0.00160	0.00159
	(!A_N * !B * C * !X)	-0.00103	-0.00110	-0.00109
	(!A_N * !B * C * !X)	0.00159	0.00161	0.00159
	(!A_N * !B * !C * !X)	-0.00108	-0.00111	-0.00111
	(!A_N * !B * !C * !X)	0.00159	0.00160	0.00159

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D	X
0	x	x	x	0
1	0	x	x	0
1	1	0	x	0
1	1	1	0	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4_1	11.18880
sky130_fd_sc_hs__and4_2	12.78720
sky130_fd_sc_hs__and4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__and4_1	0.00243	0.00239	0.00230	0.00232	0.43643
sky130_fd_sc_hs__and4_2	0.00260	0.00267	0.00252	0.00248	0.80293
sky130_fd_sc_hs__and4_4	0.00446	0.00461	0.00508	0.00449	1.65529

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.02261	0.18207
sky130_fd_sc_hs__and4_2	0.00000	0.02794	0.10745
sky130_fd_sc_hs__and4_4	0.00000	0.05621	0.21489

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (RR)	0.23864	1.21423	8.45466
	B->X (RR)	0.25476	1.24652	8.75775
	C->X (RR)	0.26441	1.24129	8.81447
	D->X (RR)	0.27461	1.23456	8.85062
sky130_fd_sc_hs__and4_2	A->X (RR)	0.25205	1.13249	8.68658
	B->X (RR)	0.27083	1.15697	8.90332
	C->X (RR)	0.28186	1.14957	8.93769
	D->X (RR)	0.28963	1.13739	8.93394
sky130_fd_sc_hs__and4_4	A->X (RR)	0.26498	1.03483	8.66409
	B->X (RR)	0.28643	1.06721	8.92210
	C->X (RR)	0.30771	1.06792	8.97524
	D->X (RR)	0.31073	1.05193	8.96780

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.20299	0.91495	5.13105
	B->X (FF)	0.22355	0.94292	5.26486
	C->X (FF)	0.23987	0.96591	5.36641
	D->X (FF)	0.25893	0.99137	5.47876
sky130_fd_sc_hs__and4_2	A->X (FF)	0.23060	0.94787	5.55422
	B->X (FF)	0.25752	0.97962	5.67861
	C->X (FF)	0.27575	1.00190	5.78569
	D->X (FF)	0.30253	1.03124	5.89602
sky130_fd_sc_hs__and4_4	A->X (FF)	0.22469	0.91382	5.61499
	B->X (FF)	0.23418	0.93056	5.71049
	C->X (FF)	0.25616	0.95615	5.82718
	D->X (FF)	0.26846	0.97226	5.90785

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00409	0.00401	0.00419
	A	0.00213	0.00205	0.00223
	B	0.00439	0.00437	0.00443
	B	0.00213	0.00211	0.00217
	C	0.00475	0.00473	0.00478
	C	0.00214	0.00212	0.00218
	D	0.00518	0.00514	0.00514
	D	0.00215	0.00210	0.00213
sky130_fd_sc_hs__and4_2	A	0.00547	0.00548	0.00564
	A	0.00331	0.00332	0.00349
	B	0.00590	0.00596	0.00602
	B	0.00336	0.00341	0.00351
	C	0.00627	0.00637	0.00641
	C	0.00336	0.00346	0.00353
	D	0.00674	0.00683	0.00685
	D	0.00337	0.00345	0.00351
sky130_fd_sc_hs__and4_4	A	0.01009	0.01020	0.01062
	A	0.00639	0.00652	0.00697
	B	0.01097	0.01121	0.01145
	B	0.00637	0.00661	0.00692
	C	0.01206	0.01231	0.01249
	C	0.00640	0.00665	0.00691
	D	0.01245	0.01273	0.01291
	D	0.00640	0.00667	0.00694

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00154	0.00145	0.00190
	A	0.00349	0.00341	0.00376
	B	0.00175	0.00170	0.00203
	B	0.00398	0.00392	0.00424
	C	0.00191	0.00188	0.00228
	C	0.00443	0.00440	0.00470
	D	0.00211	0.00207	0.00257
	D	0.00499	0.00494	0.00519
sky130_fd_sc_hs__and4_2	A	0.00252	0.00257	0.00305
	A	0.00469	0.00472	0.00500
	B	0.00276	0.00279	0.00346
	B	0.00526	0.00533	0.00557
	C	0.00303	0.00314	0.00341
	C	0.00584	0.00594	0.00615
	D	0.00325	0.00331	0.00365
	D	0.00643	0.00650	0.00665
sky130_fd_sc_hs__and4_4	A	0.00503	0.00518	0.00578
	A	0.00873	0.00886	0.00945
	B	0.00528	0.00548	0.00602
	B	0.00980	0.00999	0.01052
	C	0.00567	0.00585	0.00716
	C	0.01110	0.01128	0.01173
	D	0.00634	0.00653	0.00758
	D	0.01203	0.01232	0.01273

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(B * C * !D * !X)	0.00026	0.00026	0.00023
	(B * C * !D * !X)	-0.00078	-0.00079	-0.00085
	(B * !C * !X)	0.00024	0.00024	0.00023
	(B * !C * !X)	-0.00082	-0.00082	-0.00086
	(!B * !X)	0.00024	0.00024	0.00023
	(!B * !X)	-0.00084	-0.00085	-0.00087
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00032	0.00032	0.00028
	(B * C * !D * !X)	-0.00088	-0.00088	-0.00097
	(B * !C * !X)	0.00030	0.00030	0.00028
	(B * !C * !X)	-0.00092	-0.00092	-0.00097
	(!B * !X)	0.00029	0.00029	0.00028
	(!B * !X)	-0.00096	-0.00096	-0.00098
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00047	0.00047	0.00039
	(B * C * !D * !X)	-0.00161	-0.00161	-0.00177
	(B * !C * !X)	0.00045	0.00044	0.00039
	(B * !C * !X)	-0.00168	-0.00168	-0.00178
	(!B * !X)	0.00041	0.00041	0.00039
	(!B * !X)	-0.00176	-0.00176	-0.00180

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(B * C * !D * !X)	-0.00023	-0.00022	-0.00022
	(B * C * !D * !X)	0.00088	0.00087	0.00087
	(B * !C * !X)	-0.00023	-0.00022	-0.00022
	(B * !C * !X)	0.00088	0.00087	0.00087
	(!B * !X)	-0.00023	-0.00023	-0.00022
	(!B * !X)	0.00087	0.00087	0.00087
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00026	-0.00027	-0.00026
	(B * C * !D * !X)	0.00098	0.00100	0.00098
	(B * !C * !X)	-0.00027	-0.00027	-0.00026
	(B * !C * !X)	0.00098	0.00100	0.00098
	(!B * !X)	-0.00027	-0.00027	-0.00027
	(!B * !X)	0.00098	0.00100	0.00098
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00037	-0.00037	-0.00036
	(B * C * !D * !X)	0.00181	0.00183	0.00180
	(B * !C * !X)	-0.00037	-0.00037	-0.00036
	(B * !C * !X)	0.00181	0.00183	0.00180
	(!B * !X)	-0.00038	-0.00038	-0.00038
	(!B * !X)	0.00180	0.00183	0.00180

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__and4_1	**(A * C * !D * !X)**	0.00027	0.00028	0.00027
	(A * C * !D * !X)	-0.00068	-0.00069	-0.00068
	(A * !C * !X)	0.00027	0.00028	0.00028
	(A * !C * !X)	-0.00068	-0.00069	-0.00068
	(!A * C * D * !X)	0.00054	0.00054	0.00054
	(!A * C * D * !X)	-0.00068	-0.00069	-0.00068
	(!A * C * !D * !X)	0.00032	0.00032	0.00032
	(!A * C * !D * !X)	-0.00069	-0.00069	-0.00069
	(!A * !C * !X)	0.00030	0.00030	0.00030
	(!A * !C * !X)	-0.00069	-0.00069	-0.00069
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00032	0.00033	0.00032
	(A * C * !D * !X)	-0.00082	-0.00082	-0.00081
	(A * !C * !X)	0.00033	0.00033	0.00033
	(A * !C * !X)	-0.00082	-0.00082	-0.00081
	(!A * C * D * !X)	0.00063	0.00063	0.00063
	(!A * C * D * !X)	-0.00082	-0.00082	-0.00082
	(!A * C * !D * !X)	0.00038	0.00038	0.00037
	(!A * C * !D * !X)	-0.00082	-0.00082	-0.00082
	(!A * !C * !X)	0.00037	0.00037	0.00037
	(!A * !C * !X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00068	0.00068	0.00068
	(A * C * !D * !X)	-0.00153	-0.00154	-0.00152
	(A * !C * !X)	0.00070	0.00071	0.00070
	(A * !C * !X)	-0.00154	-0.00154	-0.00153
	(!A * C * D * !X)	0.00122	0.00123	0.00123
	(!A * C * D * !X)	-0.00152	-0.00153	-0.00153
	(!A * C * !D * !X)	0.00076	0.00076	0.00076
	(!A * C * !D * !X)	-0.00154	-0.00154	-0.00154
	(!A * !C * !X)	0.00077	0.00078	0.00077
	(!A * !C * !X)	-0.00155	-0.00156	-0.00155

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(A * C * !D * !X)	-0.00026	-0.00026	-0.00026
	(A * C * !D * !X)	0.00072	0.00072	0.00069
	(A * !C * !X)	-0.00026	-0.00026	-0.00027
	(A * !C * !X)	0.00071	0.00072	0.00069
	(!A * C * D * !X)	-0.00050	-0.00054	-0.00054
	(!A * C * D * !X)	0.00072	0.00070	0.00069
	(!A * C * !D * !X)	-0.00032	-0.00032	-0.00032
	(!A * C * !D * !X)	0.00071	0.00071	0.00069
	(!A * !C * !X)	-0.00030	-0.00030	-0.00030
	(!A * !C * !X)	0.00072	0.00073	0.00070
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00030	-0.00031	-0.00031
	(A * C * !D * !X)	0.00084	0.00085	0.00082
	(A * !C * !X)	-0.00031	-0.00031	-0.00032
	(A * !C * !X)	0.00084	0.00085	0.00082
	(!A * C * D * !X)	-0.00059	-0.00063	-0.00063
	(!A * C * D * !X)	0.00085	0.00083	0.00082
	(!A * C * !D * !X)	-0.00038	-0.00038	-0.00037
	(!A * C * !D * !X)	0.00084	0.00084	0.00082
	(!A * !C * !X)	-0.00037	-0.00037	-0.00037
	(!A * !C * !X)	0.00086	0.00086	0.00083

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00065	-0.00065	-0.00066
	(A * C * !D * !X)	0.00159	0.00159	0.00155
	(A * !C * !X)	-0.00066	-0.00066	-0.00067
	(A * !C * !X)	0.00158	0.00159	0.00155
	(!A * C * D * !X)	-0.00116	-0.00123	-0.00123
	(!A * C * D * !X)	0.00159	0.00153	0.00153
	(!A * C * !D * !X)	-0.00076	-0.00076	-0.00076
	(!A * C * !D * !X)	0.00157	0.00156	0.00154
	(!A * !C * !X)	-0.00077	-0.00078	-0.00077
	(!A * !C * !X)	0.00159	0.00160	0.00155

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__and4_1	**(A * B * !D * !X)**	0.00032	0.00031	0.00031
	(A * B * !D * !X)	-0.00066	-0.00066	-0.00065
	(A * !B * D * !X)	0.00057	0.00057	0.00057
	(A * !B * D * !X)	-0.00066	-0.00066	-0.00066
	(A * !B * !D * !X)	0.00035	0.00035	0.00035
	(A * !B * !D * !X)	-0.00066	-0.00066	-0.00066
	(!A * B * D * !X)	0.00055	0.00055	0.00055
	(!A * B * D * !X)	-0.00066	-0.00066	-0.00066
	(!A * B * !D * !X)	0.00034	0.00034	0.00034
	(!A * B * !D * !X)	-0.00066	-0.00066	-0.00066
	(!A * !B * D * !X)	0.00057	0.00057	0.00056
	(!A * !B * D * !X)	-0.00066	-0.00066	-0.00066
	(!A * !B * !D * !X)	0.00036	0.00036	0.00035
	(!A * !B * !D * !X)	-0.00066	-0.00067	-0.00066

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00034	0.00034	0.00034
	(A * B * !D * !X)	-0.00076	-0.00077	-0.00076
	(A * !B * D * !X)	0.00063	0.00064	0.00063
	(A * !B * D * !X)	-0.00076	-0.00077	-0.00077
	(A * !B * !D * !X)	0.00039	0.00038	0.00038
	(A * !B * !D * !X)	-0.00077	-0.00076	-0.00077
	(!A * B * D * !X)	0.00061	0.00061	0.00061
	(!A * B * D * !X)	-0.00077	-0.00077	-0.00076
	(!A * B * !D * !X)	0.00038	0.00037	0.00037
	(!A * B * !D * !X)	-0.00076	-0.00076	-0.00076
	(!A * !B * D * !X)	0.00063	0.00064	0.00063
	(!A * !B * D * !X)	-0.00076	-0.00077	-0.00077
	(!A * !B * !D * !X)	0.00040	0.00040	0.00040
	(!A * !B * !D * !X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00086	0.00086	0.00086
	(A * B * !D * !X)	-0.00160	-0.00161	-0.00160
	(A * !B * D * !X)	0.00138	0.00140	0.00138
	(A * !B * D * !X)	-0.00159	-0.00160	-0.00159
	(A * !B * !D * !X)	0.00094	0.00095	0.00094
	(A * !B * !D * !X)	-0.00160	-0.00161	-0.00160
	(!A * B * D * !X)	0.00135	0.00135	0.00135
	(!A * B * D * !X)	-0.00159	-0.00159	-0.00159
	(!A * B * !D * !X)	0.00092	0.00092	0.00092
	(!A * B * !D * !X)	-0.00160	-0.00160	-0.00160
	(!A * !B * D * !X)	0.00138	0.00138	0.00138
	(!A * !B * D * !X)	-0.00159	-0.00159	-0.00159
	(!A * !B * !D * !X)	0.00096	0.00097	0.00096
	(!A * !B * !D * !X)	-0.00160	-0.00161	-0.00160

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(A * B * !D * !X)	-0.00030	-0.00031	-0.00030
	(A * B * !D * !X)	0.00067	0.00067	0.00066
	(A * !B * D * !X)	-0.00055	-0.00057	-0.00057
	(A * !B * D * !X)	0.00066	0.00067	0.00066
	(A * !B * !D * !X)	-0.00035	-0.00035	-0.00035
	(A * !B * !D * !X)	0.00067	0.00067	0.00066
	(!A * B * D * !X)	-0.00051	-0.00055	-0.00055
	(!A * B * D * !X)	0.00066	0.00067	0.00066
	(!A * B * !D * !X)	-0.00034	-0.00034	-0.00034
	(!A * B * !D * !X)	0.00066	0.00067	0.00066
	(!A * !B * D * !X)	-0.00055	-0.00057	-0.00056
	(!A * !B * D * !X)	0.00066	0.00067	0.00066
	(!A * !B * !D * !X)	-0.00036	-0.00036	-0.00035
	(!A * !B * !D * !X)	0.00066	0.00067	0.00066
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00033	-0.00033	-0.00033
	(A * B * !D * !X)	0.00077	0.00078	0.00077
	(A * !B * D * !X)	-0.00061	-0.00064	-0.00063
	(A * !B * D * !X)	0.00077	0.00077	0.00077
	(A * !B * !D * !X)	-0.00039	-0.00038	-0.00038
	(A * !B * !D * !X)	0.00078	0.00078	0.00077
	(!A * B * D * !X)	-0.00057	-0.00061	-0.00061
	(!A * B * D * !X)	0.00077	0.00077	0.00077
	(!A * B * !D * !X)	-0.00038	-0.00037	-0.00037
	(!A * B * !D * !X)	0.00076	0.00078	0.00077
	(!A * !B * D * !X)	-0.00061	-0.00064	-0.00063
	(!A * !B * D * !X)	0.00077	0.00077	0.00077
	(!A * !B * !D * !X)	-0.00040	-0.00040	-0.00040
	(!A * !B * !D * !X)	0.00078	0.00078	0.00077

sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	-0.00085	-0.00085	-0.00084
	(A * B * !D * !X)	0.00161	0.00163	0.00160
	(A * !B * D * !X)	-0.00133	-0.00140	-0.00138
	(A * !B * D * !X)	0.00159	0.00162	0.00160
	(A * !B * !D * !X)	-0.00094	-0.00095	-0.00094
	(A * !B * !D * !X)	0.00161	0.00163	0.00161
	(!A * B * D * !X)	-0.00128	-0.00135	-0.00135
	(!A * B * D * !X)	0.00161	0.00162	0.00160
	(!A * B * !D * !X)	-0.00092	-0.00092	-0.00092
	(!A * B * !D * !X)	0.00161	0.00163	0.00160
	(!A * !B * D * !X)	-0.00133	-0.00138	-0.00138
	(!A * !B * D * !X)	0.00159	0.00162	0.00160
	(!A * !B * !D * !X)	-0.00096	-0.00097	-0.00096
	(!A * !B * !D * !X)	0.00161	0.00162	0.00161

Passive power(pJ) for D rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__and4_1	**(A * B * !C * !X)**	0.00055	0.00056	0.00055
	(A * B * !C * !X)	-0.00074	-0.00074	-0.00074
	(A * !B * C * !X)	0.00054	0.00054	0.00054
	(A * !B * C * !X)	-0.00074	-0.00074	-0.00074
	(A * !B * !C * !X)	0.00055	0.00056	0.00055
	(A * !B * !C * !X)	-0.00074	-0.00074	-0.00074
	(!A * B * C * !X)	0.00053	0.00053	0.00053
	(!A * B * C * !X)	-0.00073	-0.00074	-0.00074
	(!A * !C * !X)	0.00055	0.00056	0.00055
	(!A * !C * !X)	-0.00074	-0.00074	-0.00074
	(!A * !B * C * !X)	0.00054	0.00054	0.00054
	(!A * !B * C * !X)	-0.00074	-0.00074	-0.00074

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00065	0.00065	0.00065
	(A * B * !C * !X)	-0.00079	-0.00080	-0.00079
	(A * !B * C * !X)	0.00063	0.00064	0.00063
	(A * !B * C * !X)	-0.00079	-0.00080	-0.00079
	(A * !B * !C * !X)	0.00065	0.00065	0.00065
	(A * !B * !C * !X)	-0.00079	-0.00080	-0.00079
	(!A * B * C * !X)	0.00062	0.00063	0.00062
	(!A * B * C * !X)	-0.00079	-0.00080	-0.00079
	(!A * !C * !X)	0.00065	0.00065	0.00065
	(!A * !C * !X)	-0.00079	-0.00080	-0.00079
	(!A * !B * C * !X)	0.00063	0.00063	0.00063
	(!A * !B * C * !X)	-0.00079	-0.00080	-0.00079
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00106	0.00107	0.00106
	(A * B * !C * !X)	-0.00155	-0.00156	-0.00155
	(A * !B * C * !X)	0.00104	0.00106	0.00105
	(A * !B * C * !X)	-0.00155	-0.00156	-0.00155
	(A * !B * !C * !X)	0.00107	0.00108	0.00107
	(A * !B * !C * !X)	-0.00155	-0.00156	-0.00155
	(!A * B * C * !X)	0.00103	0.00104	0.00103
	(!A * B * C * !X)	-0.00155	-0.00156	-0.00155
	(!A * !C * !X)	0.00106	0.00107	0.00106
	(!A * !C * !X)	-0.00155	-0.00156	-0.00155
	(!A * !B * C * !X)	0.00104	0.00105	0.00105
	(!A * !B * C * !X)	-0.00155	-0.00156	-0.00155

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__and4_1	**(A * B * !C * !X)**	-0.00054	-0.00056	-0.00055
	(A * B * !C * !X)	0.00074	0.00075	0.00074
	(A * !B * C * !X)	-0.00051	-0.00054	-0.00054
	(A * !B * C * !X)	0.00074	0.00075	0.00074
	(A * !B * !C * !X)	-0.00054	-0.00056	-0.00055
	(A * !B * !C * !X)	0.00074	0.00074	0.00074
	(!A * B * C * !X)	-0.00050	-0.00053	-0.00053
	(!A * B * C * !X)	0.00074	0.00075	0.00074
	(!A * !C * !X)	-0.00054	-0.00056	-0.00055
	(!A * !C * !X)	0.00074	0.00074	0.00074
	(!A * !B * C * !X)	-0.00051	-0.00054	-0.00054
	(!A * !B * C * !X)	0.00074	0.00075	0.00074
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00063	-0.00065	-0.00065
	(A * B * !C * !X)	0.00079	0.00080	0.00080
	(A * !B * C * !X)	-0.00060	-0.00064	-0.00063
	(A * !B * C * !X)	0.00079	0.00080	0.00080
	(A * !B * !C * !X)	-0.00063	-0.00065	-0.00065
	(A * !B * !C * !X)	0.00079	0.00080	0.00080
	(!A * B * C * !X)	-0.00059	-0.00063	-0.00062
	(!A * B * C * !X)	0.00079	0.00080	0.00080
	(!A * !C * !X)	-0.00063	-0.00065	-0.00065
	(!A * !C * !X)	0.00079	0.00080	0.00080
	(!A * !B * C * !X)	-0.00060	-0.00063	-0.00063
	(!A * !B * C * !X)	0.00079	0.00080	0.00080

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00103	-0.00107	-0.00106
	(A * B * !C * !X)	0.00156	0.00156	0.00156
	(A * !B * C * !X)	-0.00099	-0.00106	-0.00105
	(A * !B * C * !X)	0.00156	0.00157	0.00156
	(A * !B * !C * !X)	-0.00104	-0.00108	-0.00107
	(A * !B * !C * !X)	0.00156	0.00156	0.00156
	(!A * B * C * !X)	-0.00096	-0.00104	-0.00103
	(!A * B * C * !X)	0.00155	0.00157	0.00156
	(!A * !C * !X)	-0.00103	-0.00107	-0.00106
	(!A * !C * !X)	0.00156	0.00156	0.00156
	(!A * !B * C * !X)	-0.00099	-0.00105	-0.00105
	(!A * !B * C * !X)	0.00156	0.00157	0.00156

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__buf_1	6.39360
sky130_fd_sc_hs__buf_16	35.16480
sky130_fd_sc_hs__buf_2	7.99200
sky130_fd_sc_hs__buf_4	11.18880
sky130_fd_sc_hs__buf_8	19.18080
sky130_fd_sc_hs__bufbuf_16	43.15680
sky130_fd_sc_hs__bufbuf_8	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__buf_1	0.00233	0.42741
sky130_fd_sc_hs__buf_16	0.01492	6.78589
sky130_fd_sc_hs__buf_2	0.00248	0.83950
sky130_fd_sc_hs__buf_4	0.00338	1.69270
sky130_fd_sc_hs__buf_8	0.00765	3.26298
sky130_fd_sc_hs__bufbuf_16	0.00276	6.67618
sky130_fd_sc_hs__bufbuf_8	0.00217	3.29612

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.03003	0.04759
sky130_fd_sc_hs__buf_16	0.00000	0.14956	0.18994
sky130_fd_sc_hs__buf_2	0.00000	0.02813	0.03100
sky130_fd_sc_hs__buf_4	0.00000	0.07340	0.10069
sky130_fd_sc_hs__buf_8	0.00000	0.07478	0.09497
sky130_fd_sc_hs__bufbuf_16	0.00000	0.17675	0.22521
sky130_fd_sc_hs__bufbuf_8	0.00000	0.10481	0.10745

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	**A->X (RR)**	0.11993	1.04921	8.14427
sky130_fd_sc_hs__buf_16	**A->X (RR)**	0.11553	0.67290	8.46442
sky130_fd_sc_hs__buf_2	**A->X (RR)**	0.11789	0.93655	8.32054
sky130_fd_sc_hs__buf_4	**A->X (RR)**	0.13745	0.88868	8.72622
sky130_fd_sc_hs__buf_8	**A->X (RR)**	0.11539	0.74456	8.38598
sky130_fd_sc_hs__bufbuf_16	**A->X (RR)**	0.37621	0.95475	8.80972
sky130_fd_sc_hs__bufbuf_8	**A->X (RR)**	0.42788	1.02708	8.54217

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	**A->X (FF)**	0.16630	0.84891	4.78070
sky130_fd_sc_hs__buf_16	**A->X (FF)**	0.21623	0.87154	5.73633
sky130_fd_sc_hs__buf_2	**A->X (FF)**	0.21052	0.91989	5.44444
sky130_fd_sc_hs__buf_4	**A->X (FF)**	0.19586	0.85899	5.22525
sky130_fd_sc_hs__buf_8	**A->X (FF)**	0.21916	0.89964	5.80753
sky130_fd_sc_hs__bufbuf_16	**A->X (FF)**	0.52319	1.18454	5.99190
sky130_fd_sc_hs__bufbuf_8	**A->X (FF)**	0.43961	1.05970	4.96066

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00317	0.00303	0.00318
	A	0.00149	0.00136	0.00152
sky130_fd_sc_hs__buf_16	A	0.03122	0.03130	0.03298
	A	0.02049	0.02066	0.02235
sky130_fd_sc_hs__buf_2	A	0.00462	0.00458	0.00472
	A	0.00284	0.00279	0.00294
sky130_fd_sc_hs__buf_4	A	0.00739	0.00742	0.00776
	A	0.00495	0.00500	0.00534
sky130_fd_sc_hs__buf_8	A	0.01590	0.01592	0.01655
	A	0.01038	0.01043	0.01107
sky130_fd_sc_hs__bufbuf_16	A	0.03721	0.03914	0.03970
	A	0.03522	0.03719	0.03802
sky130_fd_sc_hs__bufbuf_8	A	0.01858	0.01950	0.01975
	A	0.01702	0.01795	0.01822

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	**A**	0.00153	0.00147	0.00185
	A	0.00321	0.00314	0.00349
sky130_fd_sc_hs__buf_16	**A**	0.02030	0.02103	0.02358
	A	0.03102	0.03192	0.03404
sky130_fd_sc_hs__buf_2	**A**	0.00260	0.00266	0.00299
	A	0.00438	0.00444	0.00470
sky130_fd_sc_hs__buf_4	**A**	0.00525	0.00549	0.00666
	A	0.00768	0.00792	0.00858
sky130_fd_sc_hs__buf_8	**A**	0.01010	0.01057	0.01162
	A	0.01560	0.01606	0.01697
sky130_fd_sc_hs__bufbuf_16	**A**	0.03525	0.03754	0.04050
	A	0.03723	0.03949	0.03957
sky130_fd_sc_hs__bufbuf_8	**A**	0.01667	0.01766	0.01898
	A	0.01823	0.01933	0.01955

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkbuf_1	6.39360
sky130_fd_sc_hs__clkbuf_16	31.96800
sky130_fd_sc_hs__clkbuf_2	6.39360
sky130_fd_sc_hs__clkbuf_4	9.59040
sky130_fd_sc_hs__clkbuf_8	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__clkbuf_1	0.00246	0.43302
sky130_fd_sc_hs__clkbuf_16	0.00819	6.78987
sky130_fd_sc_hs__clkbuf_2	0.00246	0.81177
sky130_fd_sc_hs__clkbuf_4	0.00225	1.67507
sky130_fd_sc_hs__clkbuf_8	0.00421	3.31283

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkbuf_1	0.00000	0.01160	0.01160
sky130_fd_sc_hs__clkbuf_16	0.00000	0.11596	0.17642
sky130_fd_sc_hs__clkbuf_2	0.00000	0.01739	0.02243
sky130_fd_sc_hs__clkbuf_4	0.00000	0.02899	0.04411
sky130_fd_sc_hs__clkbuf_8	0.00000	0.05798	0.08821

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (RR)**	0.12472	1.07219	8.36715
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.15678	0.79632	9.04474
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.13116	0.99321	8.67570
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.16553	0.95962	9.04642
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.15656	0.85982	8.97893

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.15346	0.95980	6.25810
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.24889	0.96143	7.31201
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.18891	0.97335	6.56152
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.25439	1.03821	7.29127
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.24218	0.98331	7.24007

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00305	0.00289	0.00296
	A	0.00128	0.00112	0.00127
sky130_fd_sc_hs__clkbuf_16	A	0.02331	0.02378	0.02457
	A	0.01743	0.01796	0.01908
sky130_fd_sc_hs__clkbuf_2	A	0.00408	0.00397	0.00402
	A	0.00237	0.00237	0.00233
sky130_fd_sc_hs__clkbuf_4	A	0.00626	0.00635	0.00645
	A	0.00464	0.00474	0.00494
sky130_fd_sc_hs__clkbuf_8	A	0.01192	0.01215	0.01245
	A	0.00889	0.00914	0.00961

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00126	0.00118	0.00135
	A	0.00302	0.00294	0.00310
sky130_fd_sc_hs__clkbuf_16	A	0.01547	0.01665	0.01802
	A	0.02136	0.02253	0.02389
sky130_fd_sc_hs__clkbuf_2	A	0.00195	0.00195	0.00236
	A	0.00367	0.00366	0.00381
sky130_fd_sc_hs__clkbuf_4	A	0.00400	0.00425	0.00454
	A	0.00562	0.00593	0.00615
sky130_fd_sc_hs__clkbuf_8	A	0.00776	0.00833	0.00913
	A	0.01077	0.01139	0.01194

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkdlyinv3sd1_1	9.59040
sky130_fd_sc_hs__clkdlyinv3sd2_1	9.59040
sky130_fd_sc_hs__clkdlyinv3sd3_1	9.59040
sky130_fd_sc_hs__clkdlyinv5sd1_1	17.58240
sky130_fd_sc_hs__clkdlyinv5sd2_1	17.58240
sky130_fd_sc_hs__clkdlyinv5sd3_1	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00232	0.43705
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00236	0.43978
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00238	0.44093
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00231	0.43477
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00235	0.44168
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00238	0.43952

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.02472	0.02700
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.01180	0.02205
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.01180	0.02205
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.05096	0.05324
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.01221	0.02246
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.01221	0.02246

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (FR)**	0.23044	1.35905	9.85716
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.24749	1.38500	9.97203
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.27421	1.42894	10.18650
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.40751	1.53344	10.00780
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.65153	1.79245	10.43590
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	1.41705	2.57388	11.35970

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.20162	0.81197	4.65960
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.38157	1.02965	5.01105
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.86699	1.60815	5.75070
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.38635	0.99816	4.82491
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.82257	1.47818	5.47792
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	2.08987	2.84279	6.98019

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00252	0.00240	0.00254
	A	0.00419	0.00408	0.00421
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00264	0.00251	0.00258
	A	0.00433	0.00420	0.00429
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00281	0.00268	0.00268
	A	0.00452	0.00439	0.00439
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.00554	0.00537	0.00542
	A	0.00720	0.00703	0.00708
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.00586	0.00569	0.00569
	A	0.00754	0.00739	0.00741
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.00650	0.00637	0.00631
	A	0.00821	0.00808	0.00803

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00417	0.00400	0.00415
	A	0.00250	0.00233	0.00238
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00430	0.00418	0.00428
	A	0.00260	0.00248	0.00251
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00484	0.00475	0.00510
	A	0.00312	0.00304	0.00308
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.00710	0.00690	0.00687
	A	0.00544	0.00524	0.00520
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.00744	0.00730	0.00742
	A	0.00575	0.00561	0.00559
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.00863	0.00854	0.00855
	A	0.00692	0.00682	0.00683

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkinv_1	4.79520
sky130_fd_sc_hs__clkinv_16	38.36160
sky130_fd_sc_hs__clkinv_2	6.39360
sky130_fd_sc_hs__clkinv_4	11.18880
sky130_fd_sc_hs__clkinv_8	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkinv_1	0.00296	0.67814
sky130_fd_sc_hs__clkinv_16	0.04342	10.10934
sky130_fd_sc_hs__clkinv_2	0.00560	1.21739
sky130_fd_sc_hs__clkinv_4	0.01109	2.43259
sky130_fd_sc_hs__clkinv_8	0.02222	4.81113

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkinv_1	0.00000	0.04521	0.08965
sky130_fd_sc_hs__clkinv_16	0.00000	0.13611	0.26008
sky130_fd_sc_hs__clkinv_2	0.00000	0.01701	0.03251
sky130_fd_sc_hs__clkinv_4	0.00000	0.03403	0.06502
sky130_fd_sc_hs__clkinv_8	0.00000	0.06806	0.13004

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	**A->Y (FR)**	0.05420	1.09719	11.95280
sky130_fd_sc_hs__clkinv_16	**A->Y (FR)**	0.04202	0.79159	12.49000
sky130_fd_sc_hs__clkinv_2	**A->Y (FR)**	0.05305	1.02840	12.36730
sky130_fd_sc_hs__clkinv_4	**A->Y (FR)**	0.04719	0.93196	12.38650
sky130_fd_sc_hs__clkinv_8	**A->Y (FR)**	0.04695	0.86034	12.42350

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	**A->Y (RF)**	0.04605	0.90532	9.71353
sky130_fd_sc_hs__clkinv_16	**A->Y (RF)**	0.03538	0.59481	9.58743
sky130_fd_sc_hs__clkinv_2	**A->Y (RF)**	0.04167	0.79061	9.21970
sky130_fd_sc_hs__clkinv_4	**A->Y (RF)**	0.03805	0.71792	9.30770
sky130_fd_sc_hs__clkinv_8	**A->Y (RF)**	0.03824	0.65289	9.36570

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00008	-0.00007	-0.00004
	A	0.00204	0.00205	0.00216
sky130_fd_sc_hs__clkinv_16	A	-0.00476	-0.00456	-0.00351
	A	0.02632	0.02679	0.02802
sky130_fd_sc_hs__clkinv_2	A	-0.00033	-0.00032	-0.00025
	A	0.00369	0.00348	0.00383
sky130_fd_sc_hs__clkinv_4	A	-0.00081	-0.00073	-0.00055
	A	0.00717	0.00725	0.00752
sky130_fd_sc_hs__clkinv_8	A	-0.00152	-0.00145	-0.00096
	A	0.01444	0.01453	0.01518

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00164	0.00163	0.00169
	A	-0.00048	-0.00050	-0.00047
sky130_fd_sc_hs__clkinv_16	A	0.02290	0.02257	0.02451
	A	-0.00818	-0.00877	-0.00690
sky130_fd_sc_hs__clkinv_2	A	0.00328	0.00327	0.00335
	A	-0.00073	-0.00077	-0.00067
sky130_fd_sc_hs__clkinv_4	A	0.00594	0.00605	0.00618
	A	-0.00202	-0.00207	-0.00177
sky130_fd_sc_hs__clkinv_8	A	0.01175	0.01157	0.01231
	A	-0.00416	-0.00436	-0.00364

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__conb_1	4.79520

Pin Capacitance Information

Cell Name	Max Cap(pf)	
	HI	**LO**
sky130_fd_sc_hs__conb_1	-	-

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__conb_1	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DELAYx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlymetal6s2s_1	15.98400
sky130_fd_sc_hs__dlymetal6s4s_1	15.98400
sky130_fd_sc_hs__dlymetal6s6s_1	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlymetal6s2s_1	0.00150	0.43619
sky130_fd_sc_hs__dlymetal6s4s_1	0.00150	0.43456
sky130_fd_sc_hs__dlymetal6s6s_1	0.00150	0.43710

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.02575	0.03479
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.02575	0.03479
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.02575	0.03479

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (RR)**	0.14714	1.08895	8.34178
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.30296	1.24190	8.47087
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.44064	1.38160	8.64586

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.26079	1.02777	5.91393
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.52858	1.29341	6.00972
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.78517	1.55484	6.27661

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.00811	0.00785	0.00783
	A	0.00704	0.00678	0.00676
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.00812	0.00784	0.00782
	A	0.00705	0.00676	0.00675
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.00815	0.00801	0.00792
	A	0.00707	0.00694	0.00685

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.00687	0.00673	0.00669
	A	0.00795	0.00783	0.00776
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.00689	0.00672	0.00685
	A	0.00797	0.00779	0.00768
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.00691	0.00682	0.00685
	A	0.00799	0.00790	0.00782

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT	
D	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
0	**1**	**1**	**F**	**0**	**1**
1	**1**	**1**	**F**	**1**	**0**
x	**x**	**0**	**x**	**1**	**0**
x	**0**	**1**	**x**	**0**	**1**
x	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbn_1	44.75520
sky130_fd_sc_hs__dfbbn_2	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
sky130_fd_sc_hs__dfbbn_1	0.00164	0.00160	0.00504	0.00276	0.43304	0.41632
sky130_fd_sc_hs__dfbbn_2	0.00165	0.00162	0.00502	0.00276	0.85536	0.84455

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfbbn_1	0.00000	0.14634	0.26976
sky130_fd_sc_hs__dfbbn_2	0.00000	0.14946	0.26400

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q (FR)	1.07079	2.22885	11.41770
	SET_B->Q (FR)	0.47602	1.63848	11.05340
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	1.22849	2.22476	11.58980
	SET_B->Q (FR)	0.55560	1.56595	11.31020

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q (FF)	1.02383	1.76497	6.30932
	RESET_B->Q (FF)	0.58591	1.31423	5.82846
	SET_B->Q (RF)	0.31256	0.85136	3.89044
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	1.11476	1.82268	6.37185
	RESET_B->Q (FF)	0.67866	1.37396	5.93856
	SET_B->Q (RF)	0.40194	0.92330	4.14983

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q_N (FR)	0.94573	2.15737	11.38040
	RESET_B->Q_N (FR)	0.50946	1.71390	10.93310
	SET_B->Q_N (RR)	0.23573	1.25550	9.05544
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.95447	2.03025	11.38810
	RESET_B->Q_N (FR)	0.52044	1.58384	10.97510
	SET_B->Q_N (RR)	0.24446	1.13873	9.22385

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q_N (FF)	0.88955	1.74972	6.38686
	SET_B->Q_N (FF)	0.32514	1.12296	6.27297
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.99209	1.85946	6.53855
	SET_B->Q_N (FF)	0.36750	1.14753	6.51386

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	hold	CLK_N (F)	0.08674	0.16791	1.75719
	setup	CLK_N (F)	0.27100	0.14075	-1.66729
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.08831	0.17098	1.76561
	setup	CLK_N (F)	0.25214	0.12309	-1.68083

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	hold	CLK_N (F)	-0.43212	-0.52716	-2.42138
	setup	CLK_N (F)	0.51540	0.59546	2.56793
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.43342	-0.52625	-2.41704
	setup	CLK_N (F)	0.51159	0.59500	2.56328

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	hold	CLK_N (F)	0.08674	0.16791	1.75719
	setup	CLK_N (F)	0.27100	0.14075	-1.66729
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.08831	0.17098	1.76561
	setup	CLK_N (F)	0.25214	0.12309	-1.68083

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	hold	CLK_N (F)	-0.43212	-0.52716	-2.42138
	setup	CLK_N (F)	0.51540	0.59546	2.56793
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.43342	-0.52625	-2.41704
	setup	CLK_N (F)	0.51159	0.59500	2.56328

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	recovery	CLK_N (F)	0.25906	0.14067	-1.83125
	removal	CLK_N (F)	0.12454	0.20983	1.96507
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.24311	0.12330	-1.83953
	removal	CLK_N (F)	0.12541	0.20756	1.96590

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	recovery	CLK_N (F)	0.25906	0.14067	-1.83125
	removal	CLK_N (F)	0.12454	0.20983	1.96507
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.24311	0.12330	-1.83953
	removal	CLK_N (F)	0.12541	0.20756	1.96590

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	min_pulse_width	RESET_B ()	0.55246	0.98145	16.50020
	min_pulse_width	RESET_B ()	0.47316	0.98145	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.57049	0.98145	16.50020
	min_pulse_width	RESET_B ()	0.48216	0.98537	16.50020

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	recovery	CLK_N (F)	-0.10832	-0.23084	-1.97374
	removal	CLK_N (F)	0.14472	0.27157	2.21702
	hold	RESET_B (R)	-0.12448	-0.23113	-1.14972
	setup	RESET_B (R)	0.31000	0.35480	1.46437
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.11112	-0.23328	-1.89523
	removal	CLK_N (F)	0.14599	0.27157	2.22404
	hold	RESET_B (R)	-0.16506	-0.27796	-1.33539
	setup	RESET_B (R)	0.32043	0.38839	1.77132

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	recovery	CLK_N (F)	-0.10832	-0.23084	-1.97374
	removal	CLK_N (F)	0.14472	0.27157	2.21702
	hold	RESET_B (R)	-0.12448	-0.23113	-1.15407
	hold	RESET_B (R)	-0.12468	-0.23144	-1.14972
	setup	RESET_B (R)	0.31000	0.35480	1.46437
	setup	RESET_B (R)	0.21328	0.29491	1.45371
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.11112	-0.23328	-1.89523
	removal	CLK_N (F)	0.14599	0.27157	2.22404
	hold	RESET_B (R)	-0.17428	-0.30005	-1.46679
	hold	RESET_B (R)	-0.16506	-0.27796	-1.33539
	setup	RESET_B (R)	0.32043	0.38839	1.77132
	setup	RESET_B (R)	0.21413	0.36571	1.71930

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	min_pulse_width	SET_B ()	0.36289	0.99714	16.50020
	min_pulse_width	SET_B ()	0.34207	1.00107	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.43704	1.06778	16.50020
	min_pulse_width	SET_B ()	0.39989	1.04031	16.50020

Constraints(ns) for CLK_N rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	min_pulse_width	CLK_N ()	0.46234	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.39745	0.98145	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.44432	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.39745	0.98145	16.50020

Constraints(ns) for CLK_N falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	min_pulse_width	CLK_N ()	0.51281	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.60293	0.98145	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.61014	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.62456	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00624	0.00624	0.00623
	CLK_N	0.00721	0.00722	0.00721
	SET_B	0.00639	0.00628	0.00654
	SET_B	0.00820	0.00811	0.00822
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00746	0.00762	0.00808
	CLK_N	0.00845	0.00861	0.00868
	SET_B	0.00760	0.00766	0.00782
	SET_B	0.00942	0.00947	0.00961

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00689	0.00688	0.00698
	CLK_N	0.00777	0.00777	0.00771
	RESET_B	0.00807	0.00809	0.00788
	RESET_B	0.00858	0.00861	0.00838
	SET_B	0.00839	0.00830	0.00811
	SET_B	0.00656	0.00646	0.00625
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00814	0.00830	0.00824
	CLK_N	0.00901	0.00918	0.00911
	RESET_B	0.00935	0.00954	0.00944
	RESET_B	0.00987	0.01006	0.00982
	SET_B	0.00966	0.00973	0.00950
	SET_B	0.00783	0.00790	0.00765

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00690	0.00689	0.00695
	CLK_N	0.00778	0.00778	0.00782
	RESET_B	0.00807	0.00810	0.00801
	RESET_B	0.00859	0.00862	0.00852
	SET_B	0.00840	0.00832	0.00824
	SET_B	0.00657	0.00647	0.00639
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00815	0.00831	0.00848
	CLK_N	0.00902	0.00919	0.00928
	RESET_B	0.00936	0.00955	0.00992
	RESET_B	0.00988	0.01007	0.01004
	SET_B	0.00967	0.00974	0.00973
	SET_B	0.00784	0.00791	0.00785

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00622	0.00623	0.00628
	CLK_N	0.00720	0.00720	0.00711
	SET_B	0.00636	0.00625	0.00630
	SET_B	0.00817	0.00807	0.00807
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00745	0.00760	0.00753
	CLK_N	0.00843	0.00859	0.00850
	SET_B	0.00757	0.00762	0.00762
	SET_B	0.00938	0.00944	0.00940

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00482	0.00469	0.00464
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00388	0.00374	0.00371
	(CLK_N * !SET_B * Q * !Q_N)	0.00312	0.00305	0.00306
	(CLK_N * !SET_B * Q * !Q_N)	0.00192	0.00185	0.00186
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00272	0.00265	0.00266
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00154	0.00147	0.00147
	!CLK_N	0.00170	0.00162	0.00165
	!CLK_N	0.00051	0.00043	0.00047
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00484	0.00470	0.00466
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00389	0.00375	0.00371
	(CLK_N * !SET_B * Q * !Q_N)	0.00312	0.00306	0.00307
	(CLK_N * !SET_B * Q * !Q_N)	0.00192	0.00185	0.00187
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00271	0.00264	0.00264
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00153	0.00146	0.00146
	!CLK_N	0.00169	0.00161	0.00165
	!CLK_N	0.00051	0.00042	0.00046

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00462	0.00450	0.00445
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00556	0.00545	0.00540
	(CLK_N * !SET_B * Q * !Q_N)	0.00135	0.00126	0.00128
	(CLK_N * !SET_B * Q * !Q_N)	0.00255	0.00247	0.00249
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00171	0.00162	0.00167
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00289	0.00281	0.00285
	!CLK_N	0.00074	0.00066	0.00072
	!CLK_N	0.00192	0.00185	0.00190
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00460	0.00449	0.00444
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00556	0.00544	0.00539
	(CLK_N * !SET_B * Q * !Q_N)	0.00132	0.00123	0.00125
	(CLK_N * !SET_B * Q * !Q_N)	0.00252	0.00244	0.00245
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00170	0.00161	0.00165
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00288	0.00280	0.00284
	!CLK_N	0.00073	0.00064	0.00070
	!CLK_N	0.00191	0.00183	0.00189

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * D * SET_B * !Q * Q_N)	0.00520	0.00505	0.00508
	(CLK_N * D * SET_B * !Q * Q_N)	0.00408	0.00391	0.00394
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00307	0.00299	0.00306
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00171	0.00161	0.00169
	(!SET_B * Q * !Q_N)	0.00309	0.00299	0.00306
	(!SET_B * Q * !Q_N)	0.00168	0.00159	0.00166
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00522	0.00507	0.00509
	(CLK_N * D * SET_B * !Q * Q_N)	0.00407	0.00391	0.00394
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00307	0.00298	0.00305
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00168	0.00159	0.00166
	(!SET_B * Q * !Q_N)	0.00309	0.00299	0.00306
	(!SET_B * Q * !Q_N)	0.00167	0.00157	0.00164

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * D * SET_B * !Q * Q_N)	0.00464	0.00451	0.00458
	(CLK_N * D * SET_B * !Q * Q_N)	0.00577	0.00564	0.00571
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00153	0.00144	0.00159
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00290	0.00282	0.00296
	(!SET_B * Q * !Q_N)	0.00115	0.00107	0.00121
	(!SET_B * Q * !Q_N)	0.00257	0.00249	0.00261
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00466	0.00453	0.00460
	(CLK_N * D * SET_B * !Q * Q_N)	0.00581	0.00568	0.00575
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00154	0.00145	0.00160
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00293	0.00285	0.00299
	(!SET_B * Q * !Q_N)	0.00115	0.00108	0.00121
	(!SET_B * Q * !Q_N)	0.00259	0.00251	0.00263

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00150	0.00151	0.00150
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00164	-0.00164	-0.00164
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00483	0.00473	0.00475
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00140	0.00127	0.00131
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00149	0.00150	0.00149
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00163	-0.00163	-0.00163
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00484	0.00473	0.00475
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00142	0.00130	0.00134

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00148	-0.00150	-0.00150
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00165	0.00164	0.00165
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00052	0.00039	0.00061
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00397	0.00385	0.00407
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00147	-0.00148	-0.00149
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00165	0.00163	0.00164
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00049	0.00037	0.00060
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00392	0.00379	0.00402

Passive power(pJ) for CLK_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__dfbbn_1	**(D * RESET_B * SET_B * !Q * Q_N)**	0.00913	0.00889	0.00900
	(D * RESET_B * SET_B * !Q * Q_N)	0.00750	0.00726	0.00737
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00590	0.00565	0.00567
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00403	0.00378	0.00380
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00701	0.00677	0.00687
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00515	0.00490	0.00500
	(!D * SET_B * !Q * Q_N)	0.00554	0.00526	0.00530
	(!D * SET_B * !Q * Q_N)	0.00367	0.00340	0.00343
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00965	0.00933	0.00927
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00755	0.00723	0.00716
	(!D * !SET_B * Q * !Q_N)	0.00625	0.00593	0.00592
	(!D * !SET_B * Q * !Q_N)	0.00440	0.00408	0.00407

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.00916	0.00892	0.00903
	(D * RESET_B * SET_B * !Q * Q_N)	0.00753	0.00728	0.00740
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00589	0.00564	0.00567
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00403	0.00377	0.00380
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00702	0.00678	0.00687
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00515	0.00491	0.00501
	(!D * SET_B * !Q * Q_N)	0.00554	0.00527	0.00530
	(!D * SET_B * !Q * Q_N)	0.00368	0.00340	0.00343
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00966	0.00934	0.00928
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00756	0.00724	0.00717
	(!D * !SET_B * Q * !Q_N)	0.00623	0.00591	0.00590
	(!D * !SET_B * Q * !Q_N)	0.00438	0.00405	0.00405

Passive power(pJ) for CLK_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00456	0.00434	0.00443
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00643	0.00620	0.00629
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00632	0.00609	0.00609
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00819	0.00795	0.00796
	(!D * SET_B * !Q * Q_N)	0.00488	0.00465	0.00475
	(!D * SET_B * !Q * Q_N)	0.00674	0.00652	0.00662
	(!D * !SET_B * Q * !Q_N)	0.00621	0.00595	0.00600
	(!D * !SET_B * Q * !Q_N)	0.00806	0.00780	0.00786
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00457	0.00434	0.00443
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00643	0.00621	0.00629
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00630	0.00607	0.00607
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00817	0.00793	0.00794
	(!D * SET_B * !Q * Q_N)	0.00487	0.00465	0.00474
	(!D * SET_B * !Q * Q_N)	0.00673	0.00651	0.00661
	(!D * !SET_B * Q * !Q_N)	0.00623	0.00597	0.00602
	(!D * !SET_B * Q * !Q_N)	0.00808	0.00782	0.00788

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT	
D	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
0	**1**	**1**	**R**	**0**	**1**
1	**1**	**1**	**R**	**1**	**0**
x	**x**	**0**	**x**	**1**	**0**
x	**0**	**1**	**x**	**0**	**1**
x	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__dfbbp_1	0.00143	0.00176	0.00586	0.00272	0.43914	0.41504

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfbbp_1	0.00000	0.14634	0.26975

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RR)	0.99788	1.94778	9.35981
	SET_B->Q (FR)	0.44230	1.61525	11.04960

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.70685	1.21921	4.00256
	RESET_B->Q (FF)	0.56310	1.29216	5.78529
	SET_B->Q (RF)	0.31847	0.84309	3.87931

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q_N (RR)	0.63212	1.61053	9.04185
	RESET_B->Q_N (FR)	0.48876	1.69336	10.85510
	SET_B->Q_N (RR)	0.24407	1.24798	9.01104

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q_N (RF)	0.82233	1.45840	4.20573
	SET_B->Q_N (FF)	0.30106	1.08982	6.15526

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	hold	CLK (R)	-0.07220	-0.14208	-0.82477
	setup	CLK (R)	0.22775	0.23156	0.97464

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	hold	CLK (R)	-0.32398	-0.43456	-3.10934
	setup	CLK (R)	0.52066	0.59914	3.27152

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	hold	CLK (R)	-0.07220	-0.14208	-0.82477
	setup	CLK (R)	0.22775	0.23156	0.97464

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	hold	CLK (R)	-0.32398	-0.43456	-3.10934
	setup	CLK (R)	0.52066	0.59914	3.27152

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	recovery	CLK (R)	0.24194	0.25452	0.51428
	removal	CLK (R)	-0.08065	-0.11008	-0.32098

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	recovery	CLK (R)	0.24194	0.25452	0.51428
	removal	CLK (R)	-0.08065	-0.11008	-0.32098

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	min_pulse_width	RESET_B ()	0.47676	0.98145	16.50020
	min_pulse_width	RESET_B ()	0.49118	0.98145	16.50020

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	recovery	CLK (R)	0.03938	0.00606	0.67855
	removal	CLK (R)	0.16437	0.20053	0.51201
	hold	RESET_B (R)	-0.13180	-0.25940	-1.26029
	setup	RESET_B (R)	0.26328	0.35777	1.64842

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	recovery	CLK (R)	0.03938	0.00606	0.67855
	removal	CLK (R)	0.16437	0.20053	0.51201
	hold	RESET_B (R)	-0.13251	-0.25971	-1.26419
	hold	RESET_B (R)	-0.13180	-0.25940	-1.26029
	setup	RESET_B (R)	0.24938	0.33977	1.61113
	setup	RESET_B (R)	0.26328	0.35777	1.64842

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	min_pulse_width	SET_B ()	0.30733	0.98145	16.50020
	min_pulse_width	SET_B ()	0.32175	0.98145	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	min_pulse_width	CLK ()	0.23163	0.98145	16.50020
	min_pulse_width	CLK ()	0.33617	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	min_pulse_width	CLK ()	0.46955	0.98145	16.50020
	min_pulse_width	CLK ()	0.70387	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00729	0.00733	0.00738
	CLK	0.00635	0.00639	0.00644
	SET_B	0.00635	0.00624	0.00646
	SET_B	0.00835	0.00825	0.00835

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00734	0.00729	0.00718
	CLK	0.00630	0.00625	0.00612
	RESET_B	0.00738	0.00740	0.00716
	RESET_B	0.00792	0.00794	0.00769
	SET_B	0.00796	0.00783	0.00763
	SET_B	0.00595	0.00582	0.00559

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00735	0.00730	0.00731
	CLK	0.00631	0.00626	0.00625
	RESET_B	0.00739	0.00741	0.00737
	RESET_B	0.00793	0.00795	0.00784
	SET_B	0.00797	0.00786	0.00775
	SET_B	0.00596	0.00583	0.00572

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00728	0.00731	0.00727
	CLK	0.00634	0.00637	0.00632
	SET_B	0.00632	0.00621	0.00638
	SET_B	0.00831	0.00820	0.00820

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00112	0.00105	0.00113
	CLK	0.00009	0.00001	0.00010
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00456	0.00443	0.00441
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00365	0.00352	0.00349
	(!CLK * !SET_B * Q * !Q_N)	0.00262	0.00257	0.00260
	(!CLK * !SET_B * Q * !Q_N)	0.00147	0.00141	0.00145
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00217	0.00212	0.00214
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00102	0.00097	0.00099

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00002	-0.00006	0.00002
	CLK	0.00101	0.00096	0.00105
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00343	0.00331	0.00329
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00434	0.00423	0.00420
	(!CLK * !SET_B * Q * !Q_N)	0.00089	0.00083	0.00086
	(!CLK * !SET_B * Q * !Q_N)	0.00205	0.00199	0.00202
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00128	0.00122	0.00128
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00243	0.00237	0.00243

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00279	0.00269	0.00276
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00150	0.00139	0.00147
	(!SET_B * Q * !Q_N)	0.00303	0.00292	0.00299
	(!SET_B * Q * !Q_N)	0.00171	0.00160	0.00167
	(!CLK * D * SET_B * !Q * Q_N)	0.00524	0.00506	0.00508
	(!CLK * D * SET_B * !Q * Q_N)	0.00419	0.00400	0.00403

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00147	0.00137	0.00152
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00277	0.00266	0.00281
	(!SET_B * Q * !Q_N)	0.00087	0.00078	0.00091
	(!SET_B * Q * !Q_N)	0.00220	0.00211	0.00224
	(!CLK * D * SET_B * !Q * Q_N)	0.00391	0.00376	0.00383
	(!CLK * D * SET_B * !Q * Q_N)	0.00496	0.00481	0.00488

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00151	0.00153	0.00151
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00211	-0.00212	-0.00211
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00400	0.00387	0.00390
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00009	-0.00005	-0.00002

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00149	-0.00152	-0.00151
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00211	0.00212	0.00211
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00094	0.00080	0.00102
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00485	0.00472	0.00494

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00677	0.00653	0.00654
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00479	0.00454	0.00455
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00810	0.00779	0.00779
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00624	0.00592	0.00593
	(!D * SET_B * !Q * Q_N)	0.00680	0.00654	0.00656
	(!D * SET_B * !Q * Q_N)	0.00482	0.00456	0.00458
	(!D * !SET_B * Q * !Q_N)	0.00848	0.00826	0.00831
	(!D * !SET_B * Q * !Q_N)	0.00638	0.00616	0.00621

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(D * RESET_B * SET_B * !Q * Q_N)	0.00713	0.00687	0.00683
	(D * RESET_B * SET_B * !Q * Q_N)	0.00922	0.00896	0.00893
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00365	0.00343	0.00354
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00563	0.00541	0.00552
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00458	0.00434	0.00439
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00644	0.00619	0.00626
	(!D * SET_B * !Q * Q_N)	0.00356	0.00335	0.00346
	(!D * SET_B * !Q * Q_N)	0.00554	0.00532	0.00544
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00742	0.00722	0.00751
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00929	0.00908	0.00939
	(!D * !SET_B * Q * !Q_N)	0.00485	0.00465	0.00493
	(!D * !SET_B * Q * !Q_N)	0.00696	0.00675	0.00703

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	**RESET_B**	**CLK**	**Q**	**Q_N**
0	**1**	**R**	**0**	**1**
1	**1**	**R**	**1**	**0**
x	**0**	**x**	**0**	**1**
x	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrbp_1	38.36160
sky130_fd_sc_hs__dfrbp_2	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	**RESET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__dfrbp_1	0.00171	0.00538	0.00278	0.43749	0.43769
sky130_fd_sc_hs__dfrbp_2	0.00156	0.00517	0.00279	0.87424	0.87553

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrbp_1	0.00000	0.07406	0.13383
sky130_fd_sc_hs__dfrbp_2	0.00000	0.08209	0.12725

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RR)	0.64155	1.57987	8.91272
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.80763	1.59536	9.40832

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.50832	1.02389	3.71339
	RESET_B->Q (FF)	0.73784	1.49148	6.77249
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.57845	1.06844	3.80049
	RESET_B->Q (FF)	0.85942	1.59243	7.04396

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q_N (RR)	0.43271	1.41815	8.84988
	RESET_B->Q_N (FR)	0.66187	1.87707	11.89640
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.41517	1.26469	8.78916
	RESET_B->Q_N (FR)	0.69740	1.78575	12.02750

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q_N (RF)	0.49066	1.13534	3.87684
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.56369	1.21168	4.03719

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	hold	CLK (R)	-0.11057	-0.21937	-1.26321
	setup	CLK (R)	0.30065	0.35533	1.50847
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.10896	-0.22846	-1.36305
	setup	CLK (R)	0.32354	0.36778	1.60589

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	hold	CLK (R)	-0.09605	-0.29020	-3.28759
	setup	CLK (R)	0.59149	0.66299	3.73726
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.15070	-0.35701	-3.55453
	setup	CLK (R)	0.64200	0.72088	3.90984

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	hold	CLK (R)	-0.11057	-0.21937	-1.26321
	setup	CLK (R)	0.30065	0.35533	1.50847
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.10896	-0.22846	-1.36305
	setup	CLK (R)	0.32354	0.36778	1.60589

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	hold	CLK (R)	-0.09605	-0.29020	-3.28759
	setup	CLK (R)	0.59149	0.66299	3.73726
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.15070	-0.35701	-3.55453
	setup	CLK (R)	0.64200	0.72088	3.90984

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	recovery	CLK (R)	0.32192	0.35504	1.64849
	removal	CLK (R)	-0.20879	-0.29725	-1.58758
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.34071	0.36731	1.72785
	removal	CLK (R)	-0.22087	-0.30890	-1.67312

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	recovery	CLK (R)	0.32192	0.35504	1.64849
	removal	CLK (R)	-0.20879	-0.29725	-1.58758
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.34071	0.36731	1.72785
	removal	CLK (R)	-0.22087	-0.30890	-1.67312

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	min_pulse_width	RESET_B ()	0.41477	1.07171	16.50020
	min_pulse_width	RESET_B ()	0.30733	0.98145	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.44544	1.07955	16.50020
	min_pulse_width	RESET_B ()	0.31454	0.98145	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	min_pulse_width	CLK ()	0.40106	0.98145	16.50020
	min_pulse_width	CLK ()	0.18837	0.98145	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.57049	0.98145	16.50020
	min_pulse_width	CLK ()	0.21721	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	min_pulse_width	CLK ()	0.47676	0.98145	16.50020
	min_pulse_width	CLK ()	0.68945	0.98145	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.49118	0.98145	16.50020
	min_pulse_width	CLK ()	0.69305	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00680	0.00675	0.00677
	CLK	0.00580	0.00575	0.00576
sky130_fd_sc_hs__dfrbp_2	CLK	0.00739	0.00752	0.00765
	CLK	0.00641	0.00655	0.00665

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00694	0.00692	0.00699
	CLK	0.00592	0.00590	0.00596
	RESET_B	0.00530	0.00523	0.00540
	RESET_B	0.00730	0.00722	0.00706
sky130_fd_sc_hs__dfrbp_2	CLK	0.00766	0.00781	0.00788
	CLK	0.00668	0.00683	0.00688
	RESET_B	0.00665	0.00678	0.00716
	RESET_B	0.00850	0.00863	0.00845

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00695	0.00693	0.00710
	CLK	0.00593	0.00591	0.00607
	RESET_B	0.00531	0.00523	0.00524
	RESET_B	0.00731	0.00723	0.00716
sky130_fd_sc_hs__dfrbp_2	CLK	0.00767	0.00782	0.00805
	CLK	0.00669	0.00685	0.00706
	RESET_B	0.00666	0.00679	0.00760
	RESET_B	0.00851	0.00864	0.00863

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00679	0.00674	0.00664
	CLK	0.00579	0.00575	0.00564
sky130_fd_sc_hs__dfrbp_2	CLK	0.00738	0.00753	0.00750
	CLK	0.00640	0.00655	0.00648

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00180	0.00171	0.00176
	(CLK * RESET_B)	0.00045	0.00035	0.00040
	(CLK * !RESET_B)	0.00021	0.00021	0.00020
	(CLK * !RESET_B)	-0.00057	-0.00057	-0.00058
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00510	0.00502	0.00498
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00368	0.00359	0.00356
	(!CLK * !RESET_B)	0.00021	0.00021	0.00020
	(!CLK * !RESET_B)	-0.00057	-0.00057	-0.00058
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00208	0.00200	0.00204
	(CLK * RESET_B)	0.00090	0.00081	0.00085
	(CLK * !RESET_B)	0.00024	0.00023	0.00023
	(CLK * !RESET_B)	-0.00048	-0.00049	-0.00050
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00630	0.00624	0.00622
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00520	0.00513	0.00511
	(!CLK * !RESET_B)	0.00024	0.00023	0.00023
	(!CLK * !RESET_B)	-0.00049	-0.00048	-0.00050

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00030	0.00020	0.00026
	(CLK * RESET_B)	0.00166	0.00156	0.00162
	(CLK * !RESET_B)	-0.00020	-0.00020	-0.00020
	(CLK * !RESET_B)	0.00058	0.00059	0.00059
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00305	0.00292	0.00293
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00448	0.00435	0.00436
	(!CLK * !RESET_B)	-0.00020	-0.00020	-0.00020
	(!CLK * !RESET_B)	0.00059	0.00059	0.00059
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00046	0.00036	0.00042
	(CLK * RESET_B)	0.00165	0.00155	0.00160
	(CLK * !RESET_B)	-0.00022	-0.00022	-0.00022
	(CLK * !RESET_B)	0.00050	0.00050	0.00050
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00377	0.00364	0.00362
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00488	0.00475	0.00473
	(!CLK * !RESET_B)	-0.00022	-0.00022	-0.00022
	(!CLK * !RESET_B)	0.00050	0.00050	0.00050

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * D * !Q * Q_N)	0.00331	0.00323	0.00323
	(CLK * D * !Q * Q_N)	-0.00058	-0.00069	-0.00068
	(CLK * !D * !Q * Q_N)	0.00155	0.00156	0.00155
	(CLK * !D * !Q * Q_N)	-0.00171	-0.00172	-0.00171
	(!CLK * D * !Q * Q_N)	0.00675	0.00653	0.00642
	(!CLK * D * !Q * Q_N)	0.00280	0.00257	0.00247
	(!CLK * !D * !Q * Q_N)	0.00151	0.00151	0.00151
	(!CLK * !D * !Q * Q_N)	-0.00175	-0.00175	-0.00175
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00370	0.00365	0.00364
	(CLK * D * !Q * Q_N)	-0.00001	-0.00008	-0.00008
	(CLK * !D * !Q * Q_N)	0.00169	0.00171	0.00170
	(CLK * !D * !Q * Q_N)	-0.00149	-0.00150	-0.00149
	(!CLK * D * !Q * Q_N)	0.00805	0.00784	0.00775
	(!CLK * D * !Q * Q_N)	0.00443	0.00421	0.00412
	(!CLK * !D * !Q * Q_N)	0.00166	0.00169	0.00167
	(!CLK * !D * !Q * Q_N)	-0.00151	-0.00152	-0.00152

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * D * !Q * Q_N)	-0.00084	-0.00094	-0.00091
	(CLK * D * !Q * Q_N)	0.00308	0.00296	0.00300
	(CLK * !D * !Q * Q_N)	-0.00152	-0.00156	-0.00155
	(CLK * !D * !Q * Q_N)	0.00173	0.00173	0.00172
	(!CLK * D * !Q * Q_N)	0.00241	0.00213	0.00199
	(!CLK * D * !Q * Q_N)	0.00637	0.00608	0.00595
	(!CLK * !D * !Q * Q_N)	-0.00148	-0.00151	-0.00151
	(!CLK * !D * !Q * Q_N)	0.00177	0.00176	0.00175
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00084	-0.00094	-0.00090
	(CLK * D * !Q * Q_N)	0.00287	0.00279	0.00282
	(CLK * !D * !Q * Q_N)	-0.00167	-0.00171	-0.00170
	(CLK * !D * !Q * Q_N)	0.00151	0.00151	0.00150
	(!CLK * D * !Q * Q_N)	0.00299	0.00272	0.00260
	(!CLK * D * !Q * Q_N)	0.00662	0.00634	0.00624
	(!CLK * !D * !Q * Q_N)	-0.00164	-0.00168	-0.00167
	(!CLK * !D * !Q * Q_N)	0.00153	0.00153	0.00152

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(D * RESET_B * Q * !Q_N)	0.00647	0.00622	0.00624
	(D * RESET_B * Q * !Q_N)	0.00446	0.00420	0.00422
	(D * !RESET_B * !Q * Q_N)	0.00669	0.00643	0.00645
	(D * !RESET_B * !Q * Q_N)	0.00467	0.00441	0.00443
	(!D * !Q * Q_N)	0.00669	0.00642	0.00645
	(!D * !Q * Q_N)	0.00467	0.00440	0.00443
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00588	0.00562	0.00565
	(D * RESET_B * Q * !Q_N)	0.00391	0.00365	0.00368
	(D * !RESET_B * !Q * Q_N)	0.00591	0.00566	0.00568
	(D * !RESET_B * !Q * Q_N)	0.00395	0.00369	0.00371
	(!D * !Q * Q_N)	0.00591	0.00566	0.00568
	(!D * !Q * Q_N)	0.00395	0.00369	0.00371

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(D * RESET_B * Q * !Q_N)	0.00372	0.00352	0.00362
	(D * RESET_B * Q * !Q_N)	0.00574	0.00553	0.00564
	(D * RESET_B * !Q * Q_N)	0.00675	0.00650	0.00652
	(D * RESET_B * !Q * Q_N)	0.00870	0.00845	0.00847
	(D * !RESET_B * !Q * Q_N)	0.00348	0.00327	0.00337
	(D * !RESET_B * !Q * Q_N)	0.00549	0.00528	0.00539
	(!D * RESET_B * Q * !Q_N)	0.00691	0.00672	0.00704
	(!D * RESET_B * Q * !Q_N)	0.00899	0.00880	0.00912
	(!D * !Q * Q_N)	0.00348	0.00326	0.00337
	(!D * !Q * Q_N)	0.00549	0.00528	0.00539
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00375	0.00353	0.00365
	(D * RESET_B * Q * !Q_N)	0.00571	0.00550	0.00562
	(D * RESET_B * !Q * Q_N)	0.00822	0.00796	0.00793
	(D * RESET_B * !Q * Q_N)	0.01025	0.00999	0.00996
	(D * !RESET_B * !Q * Q_N)	0.00371	0.00350	0.00361
	(D * !RESET_B * !Q * Q_N)	0.00568	0.00546	0.00558
	(!D * RESET_B * Q * !Q_N)	0.00758	0.00739	0.00769
	(!D * RESET_B * Q * !Q_N)	0.00947	0.00928	0.00958
	(!D * !Q * Q_N)	0.00371	0.00350	0.00361
	(!D * !Q * Q_N)	0.00567	0.00546	0.00558

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK_N	Q
0	1	F	0
1	1	F	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtn_1	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK_N	Q
sky130_fd_sc_hs__dfrtn_1	0.00168	0.00517	0.00266	0.43339

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.06819	0.12216

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtn_1	CLK_N->Q (FR)	0.70663	1.90054	11.16980

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtn_1	CLK_N->Q (FF)	0.49401	1.23044	5.85913
	RESET_B->Q (FF)	0.68656	1.43934	6.69255

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	hold	CLK_N (F)	0.11045	0.18608	1.69839
	setup	CLK_N (F)	0.11769	0.02019	-1.44597

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	hold	CLK_N (F)	-0.06747	-0.13746	-1.95399
	setup	CLK_N (F)	0.70013	0.73342	2.75942

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	hold	CLK_N (F)	0.11045	0.18608	1.69839
	setup	CLK_N (F)	0.11769	0.02019	-1.44597

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	hold	CLK_N (F)	-0.06747	-0.13746	-1.95399
	setup	CLK_N (F)	0.70013	0.73342	2.75942

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	recovery	CLK_N (F)	0.13803	0.02257	-1.37854
	removal	CLK_N (F)	-0.01390	0.07096	1.42924

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	recovery	CLK_N (F)	0.13803	0.02257	-1.37854
	removal	CLK_N (F)	-0.01390	0.07096	1.42924

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	min_pulse_width	RESET_B ()	0.29291	0.98145	16.50020
	min_pulse_width	RESET_B ()	0.40685	1.07171	16.50020

Constraints(ns) for CLK_N rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	min_pulse_width	CLK_N ()	0.29652	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.64980	0.98145	16.50020

Constraints(ns) for CLK_N falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	min_pulse_width	CLK_N ()	0.45513	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.32896	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01061	0.01053	0.01104
	CLK_N	0.01249	0.01241	0.01294

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.00992	0.00973	0.00979
	CLK_N	0.01175	0.01156	0.01151
	RESET_B	0.00950	0.00923	0.00938
	RESET_B	0.01322	0.01293	0.01275

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(CLK_N * RESET_B)	0.00504	0.00496	0.00493
	(CLK_N * RESET_B)	0.00380	0.00372	0.00368
	(CLK_N * !RESET_B)	0.00021	0.00021	0.00020
	(CLK_N * !RESET_B)	-0.00056	-0.00057	-0.00058
	(!CLK_N * RESET_B)	0.00175	0.00167	0.00171
	(!CLK_N * RESET_B)	0.00047	0.00038	0.00042
	(!CLK_N * !RESET_B)	0.00021	0.00021	0.00020
	(!CLK_N * !RESET_B)	-0.00057	-0.00057	-0.00058

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(CLK_N * RESET_B)	0.00352	0.00339	0.00340
	(CLK_N * RESET_B)	0.00477	0.00464	0.00464
	(CLK_N * !RESET_B)	-0.00020	-0.00020	-0.00020
	(CLK_N * !RESET_B)	0.00058	0.00058	0.00058
	(!CLK_N * RESET_B)	0.00034	0.00024	0.00030
	(!CLK_N * RESET_B)	0.00163	0.00153	0.00159
	(!CLK_N * !RESET_B)	-0.00020	-0.00020	-0.00020
	(!CLK_N * !RESET_B)	0.00058	0.00058	0.00058

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(CLK_N * D * !Q)	0.00666	0.00647	0.00638
	(CLK_N * D * !Q)	0.00301	0.00281	0.00272
	(CLK_N * !D * !Q)	0.00164	0.00164	0.00163
	(CLK_N * !D * !Q)	-0.00151	-0.00151	-0.00151
	(!CLK_N * D * !Q)	0.00316	0.00310	0.00310
	(!CLK_N * D * !Q)	-0.00055	-0.00063	-0.00062
	(!CLK_N * !D * !Q)	0.00159	0.00160	0.00159
	(!CLK_N * !D * !Q)	-0.00154	-0.00155	-0.00155

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(CLK_N * D * !Q)	0.00282	0.00257	0.00244
	(CLK_N * D * !Q)	0.00649	0.00624	0.00611
	(CLK_N * !D * !Q)	-0.00160	-0.00164	-0.00163
	(CLK_N * !D * !Q)	0.00152	0.00152	0.00151
	(!CLK_N * D * !Q)	-0.00074	-0.00083	-0.00080
	(!CLK_N * D * !Q)	0.00298	0.00289	0.00293
	(!CLK_N * !D * !Q)	-0.00156	-0.00160	-0.00159
	(!CLK_N * !D * !Q)	0.00156	0.00156	0.00155

Passive power(pJ) for CLK_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(D * RESET_B * Q)	0.00618	0.00587	0.00589
	(D * RESET_B * Q)	0.00432	0.00401	0.00403
	(D * RESET_B * !Q)	0.00955	0.00927	0.00936
	(D * RESET_B * !Q)	0.00773	0.00746	0.00754
	(D * !RESET_B * !Q)	0.00608	0.00579	0.00579
	(D * !RESET_B * !Q)	0.00423	0.00393	0.00394
	(!D * RESET_B * Q)	0.00931	0.00893	0.00887
	(!D * RESET_B * Q)	0.00741	0.00704	0.00698
	(!D * !Q)	0.00608	0.00578	0.00579
	(!D * !Q)	0.00423	0.00392	0.00394

Passive power(pJ) for CLK_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(D * RESET_B * Q)	0.00444	0.00422	0.00431
	(D * RESET_B * Q)	0.00630	0.00607	0.00617
	(D * !RESET_B * !Q)	0.00453	0.00430	0.00439
	(D * !RESET_B * !Q)	0.00638	0.00615	0.00625
	(!D * !Q)	0.00452	0.00429	0.00439
	(!D * !Q)	0.00638	0.00615	0.00625

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtp_1	36.76320
sky130_fd_sc_hs__dfrtp_2	38.36160
sky130_fd_sc_hs__dfrtp_4	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK	Q
sky130_fd_sc_hs__dfrtp_1	0.00169	0.00536	0.00280	0.44213
sky130_fd_sc_hs__dfrtp_2	0.00168	0.00526	0.00279	0.87292
sky130_fd_sc_hs__dfrtp_4	0.00170	0.00544	0.00279	1.71022

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtp_1	0.00000	0.06819	0.12216
sky130_fd_sc_hs__dfrtp_2	0.00000	0.07708	0.12492
sky130_fd_sc_hs__dfrtp_4	0.00000	0.10831	0.17527

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	**CLK->Q (RR)**	0.50456	1.46506	8.84921
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RR)**	0.50165	1.32116	8.85084
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RR)**	0.65180	1.36993	9.00227

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	**CLK->Q (RF)**	0.49146	1.00561	3.71394
	RESET_B->Q (FF)	0.70512	1.45848	6.76514
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RF)**	0.54924	1.05456	3.78563
	RESET_B->Q (FF)	0.76080	1.50311	6.83821
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RF)**	0.55084	1.03272	3.90452
	RESET_B->Q (FF)	0.78205	1.49514	6.97228

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	hold	CLK (R)	-0.11710	-0.22774	-1.29763
	setup	CLK (R)	0.34119	0.38025	1.56396
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.11607	-0.22582	-1.28464
	setup	CLK (R)	0.33366	0.37736	1.54332
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.11353	-0.22321	-1.25839
	setup	CLK (R)	0.35748	0.39526	1.53124

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	hold	CLK (R)	-0.07870	-0.26695	-3.14924
	setup	CLK (R)	0.58995	0.65760	3.74387
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.07597	-0.26232	-3.13639
	setup	CLK (R)	0.58818	0.65705	3.73924
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.09961	-0.29060	-3.22618
	setup	CLK (R)	0.63019	0.70034	3.77972

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	hold	CLK (R)	-0.11710	-0.22774	-1.29763
	setup	CLK (R)	0.34119	0.38025	1.56396
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.11607	-0.22582	-1.28464
	setup	CLK (R)	0.33366	0.37736	1.54332
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.11353	-0.22321	-1.25839
	setup	CLK (R)	0.35748	0.39526	1.53124

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	hold	CLK (R)	-0.07870	-0.26695	-3.14924
	setup	CLK (R)	0.58995	0.65760	3.74387
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.07597	-0.26232	-3.13639
	setup	CLK (R)	0.58818	0.65705	3.73924
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.09961	-0.29060	-3.22618
	setup	CLK (R)	0.63019	0.70034	3.77972

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	recovery	CLK (R)	0.35921	0.38467	1.69438
	removal	CLK (R)	-0.20667	-0.29773	-1.58918
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.35280	0.37833	1.68900
	removal	CLK (R)	-0.20708	-0.29543	-1.57946
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.37816	0.39630	1.66396
	removal	CLK (R)	-0.21884	-0.30203	-1.57691

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	recovery	CLK (R)	0.35921	0.38467	1.69438
	removal	CLK (R)	-0.20667	-0.29773	-1.58918
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.35280	0.37833	1.68900
	removal	CLK (R)	-0.20708	-0.29543	-1.57946
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.37816	0.39630	1.66396
	removal	CLK (R)	-0.21884	-0.30203	-1.57691

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	min_pulse_width	RESET_B ()	0.41081	1.07171	16.50020
	min_pulse_width	RESET_B ()	0.29652	0.98145	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.41615	1.07563	16.50020
	min_pulse_width	RESET_B ()	0.30733	0.98145	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.43175	1.09133	16.50020
	min_pulse_width	RESET_B ()	0.30012	0.98145	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	min_pulse_width	CLK ()	0.27128	0.98145	16.50020
	min_pulse_width	CLK ()	0.18116	0.98145	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.28570	0.98145	16.50020
	min_pulse_width	CLK ()	0.18837	0.98145	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.39385	0.98145	16.50020
	min_pulse_width	CLK ()	0.19918	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	min_pulse_width	CLK ()	0.51641	0.98145	16.50020
	min_pulse_width	CLK ()	0.68945	0.98145	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.51281	0.98145	16.50020
	min_pulse_width	CLK ()	0.69305	0.98145	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.55607	0.98145	16.50020
	min_pulse_width	CLK ()	0.74352	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.01224	0.01208	0.01203
	CLK	0.01025	0.01010	0.01007
sky130_fd_sc_hs__dfrtp_2	CLK	0.01340	0.01336	0.01335
	CLK	0.01142	0.01139	0.01142
sky130_fd_sc_hs__dfrtp_4	CLK	0.01678	0.01699	0.01716
	CLK	0.01472	0.01494	0.01515

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.01307	0.01294	0.01323
	CLK	0.01096	0.01084	0.01108
	RESET_B	0.00959	0.00933	0.00940
	RESET_B	0.01358	0.01330	0.01311
sky130_fd_sc_hs__dfrtp_2	CLK	0.01396	0.01401	0.01433
	CLK	0.01187	0.01193	0.01219
	RESET_B	0.01056	0.01048	0.01245
	RESET_B	0.01447	0.01439	0.01422
sky130_fd_sc_hs__dfrtp_4	CLK	0.01794	0.01831	0.01877
	CLK	0.01578	0.01616	0.01645
	RESET_B	0.01427	0.01451	0.01595
	RESET_B	0.01832	0.01853	0.01837

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00179	0.00170	0.00174
	(CLK * RESET_B)	0.00044	0.00034	0.00039
	(CLK * !RESET_B)	0.00020	0.00020	0.00020
	(CLK * !RESET_B)	-0.00056	-0.00056	-0.00057
	(!CLK * RESET_B)	0.00524	0.00516	0.00512
	(!CLK * RESET_B)	0.00381	0.00373	0.00369
	(!CLK * !RESET_B)	0.00020	0.00020	0.00020
	(!CLK * !RESET_B)	-0.00056	-0.00056	-0.00057
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00174	0.00165	0.00170
	(CLK * RESET_B)	0.00041	0.00031	0.00036
	(CLK * !RESET_B)	0.00020	0.00020	0.00020
	(CLK * !RESET_B)	-0.00056	-0.00056	-0.00057
	(!CLK * RESET_B)	0.00503	0.00494	0.00491
	(!CLK * RESET_B)	0.00363	0.00354	0.00351
	(!CLK * !RESET_B)	0.00020	0.00020	0.00020
	(!CLK * !RESET_B)	-0.00056	-0.00056	-0.00057
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00180	0.00171	0.00175
	(CLK * RESET_B)	0.00045	0.00036	0.00040
	(CLK * !RESET_B)	0.00021	0.00021	0.00020
	(CLK * !RESET_B)	-0.00057	-0.00057	-0.00058
	(!CLK * RESET_B)	0.00575	0.00567	0.00562
	(!CLK * RESET_B)	0.00433	0.00424	0.00419
	(!CLK * !RESET_B)	0.00021	0.00021	0.00020
	(!CLK * !RESET_B)	-0.00057	-0.00057	-0.00058

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00029	0.00019	0.00025
	(CLK * RESET_B)	0.00164	0.00155	0.00160
	(CLK * !RESET_B)	-0.00019	-0.00019	-0.00019
	(CLK * !RESET_B)	0.00057	0.00058	0.00057
	(!CLK * RESET_B)	0.00320	0.00307	0.00307
	(!CLK * RESET_B)	0.00463	0.00451	0.00450
	(!CLK * !RESET_B)	-0.00019	-0.00019	-0.00019
	(!CLK * !RESET_B)	0.00057	0.00058	0.00057
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00029	0.00020	0.00025
	(CLK * RESET_B)	0.00162	0.00153	0.00159
	(CLK * !RESET_B)	-0.00019	-0.00019	-0.00019
	(CLK * !RESET_B)	0.00058	0.00058	0.00058
	(!CLK * RESET_B)	0.00319	0.00307	0.00307
	(!CLK * RESET_B)	0.00460	0.00448	0.00447
	(!CLK * !RESET_B)	-0.00019	-0.00019	-0.00019
	(!CLK * !RESET_B)	0.00058	0.00058	0.00058
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00030	0.00020	0.00026
	(CLK * RESET_B)	0.00164	0.00155	0.00160
	(CLK * !RESET_B)	-0.00019	-0.00020	-0.00019
	(CLK * !RESET_B)	0.00058	0.00058	0.00058
	(!CLK * RESET_B)	0.00327	0.00314	0.00313
	(!CLK * RESET_B)	0.00470	0.00457	0.00456
	(!CLK * !RESET_B)	-0.00020	-0.00020	-0.00019
	(!CLK * !RESET_B)	0.00058	0.00058	0.00058

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * D * !Q)	0.00330	0.00322	0.00321
	(CLK * D * !Q)	-0.00058	-0.00069	-0.00068
	(CLK * !D * !Q)	0.00155	0.00155	0.00154
	(CLK * !D * !Q)	-0.00170	-0.00171	-0.00170
	(!CLK * D * !Q)	0.00691	0.00670	0.00660
	(!CLK * D * !Q)	0.00296	0.00273	0.00264
	(!CLK * !D * !Q)	0.00149	0.00150	0.00149
	(!CLK * !D * !Q)	-0.00176	-0.00176	-0.00175
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00323	0.00315	0.00315
	(CLK * D * !Q)	-0.00060	-0.00070	-0.00069
	(CLK * !D * !Q)	0.00153	0.00154	0.00153
	(CLK * !D * !Q)	-0.00168	-0.00168	-0.00167
	(!CLK * D * !Q)	0.00665	0.00645	0.00636
	(!CLK * D * !Q)	0.00278	0.00256	0.00246
	(!CLK * !D * !Q)	0.00148	0.00149	0.00148
	(!CLK * !D * !Q)	-0.00173	-0.00173	-0.00172
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00339	0.00332	0.00331
	(CLK * D * !Q)	-0.00055	-0.00065	-0.00064
	(CLK * !D * !Q)	0.00164	0.00164	0.00164
	(CLK * !D * !Q)	-0.00168	-0.00168	-0.00167
	(!CLK * D * !Q)	0.00738	0.00716	0.00704
	(!CLK * D * !Q)	0.00336	0.00314	0.00303
	(!CLK * !D * !Q)	0.00150	0.00151	0.00150
	(!CLK * !D * !Q)	-0.00181	-0.00182	-0.00181

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * D * !Q)	-0.00085	-0.00095	-0.00092
	(CLK * D * !Q)	0.00307	0.00295	0.00298
	(CLK * !D * !Q)	-0.00152	-0.00155	-0.00154
	(CLK * !D * !Q)	0.00172	0.00172	0.00170
	(!CLK * D * !Q)	0.00251	0.00222	0.00208
	(!CLK * D * !Q)	0.00647	0.00619	0.00606
	(!CLK * !D * !Q)	-0.00146	-0.00150	-0.00149
	(!CLK * !D * !Q)	0.00177	0.00177	0.00176
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00083	-0.00093	-0.00090
	(CLK * D * !Q)	0.00302	0.00291	0.00294
	(CLK * !D * !Q)	-0.00150	-0.00154	-0.00153
	(CLK * !D * !Q)	0.00169	0.00169	0.00168
	(!CLK * D * !Q)	0.00251	0.00224	0.00211
	(!CLK * D * !Q)	0.00642	0.00614	0.00601
	(!CLK * !D * !Q)	-0.00145	-0.00149	-0.00148
	(!CLK * !D * !Q)	0.00174	0.00174	0.00173
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00093	-0.00103	-0.00100
	(CLK * D * !Q)	0.00303	0.00292	0.00295
	(CLK * !D * !Q)	-0.00161	-0.00164	-0.00164
	(CLK * !D * !Q)	0.00169	0.00169	0.00168
	(!CLK * D * !Q)	0.00264	0.00236	0.00221
	(!CLK * D * !Q)	0.00668	0.00638	0.00624
	(!CLK * !D * !Q)	-0.00147	-0.00151	-0.00150
	(!CLK * !D * !Q)	0.00183	0.00183	0.00182

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(D * RESET_B * Q)	0.00670	0.00643	0.00645
	(D * RESET_B * Q)	0.00466	0.00439	0.00440
	(D * !RESET_B * !Q)	0.00699	0.00672	0.00674
	(D * !RESET_B * !Q)	0.00494	0.00467	0.00469
	(!D * !Q)	0.00699	0.00671	0.00674
	(!D * !Q)	0.00494	0.00466	0.00469
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.00666	0.00639	0.00641
	(D * RESET_B * Q)	0.00463	0.00436	0.00437
	(D * !RESET_B * !Q)	0.00694	0.00667	0.00670
	(D * !RESET_B * !Q)	0.00491	0.00464	0.00466
	(!D * !Q)	0.00695	0.00667	0.00670
	(!D * !Q)	0.00491	0.00463	0.00466
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.00703	0.00677	0.00679
	(D * RESET_B * Q)	0.00492	0.00465	0.00467
	(D * !RESET_B * !Q)	0.00727	0.00701	0.00702
	(D * !RESET_B * !Q)	0.00515	0.00489	0.00491
	(!D * !Q)	0.00727	0.00701	0.00702
	(!D * !Q)	0.00515	0.00489	0.00490

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__dfrtp_1	**(D * RESET_B * Q)**	0.00375	0.00354	0.00364
	(D * RESET_B * Q)	0.00579	0.00558	0.00569
	(D * RESET_B * !Q)	0.00694	0.00669	0.00669
	(D * RESET_B * !Q)	0.00890	0.00865	0.00866
	(D * !RESET_B * !Q)	0.00346	0.00325	0.00335
	(D * !RESET_B * !Q)	0.00551	0.00529	0.00540
	(!D * RESET_B * Q)	0.00709	0.00690	0.00722
	(!D * RESET_B * Q)	0.00922	0.00902	0.00935
	(!D * !Q)	0.00346	0.00325	0.00335
	(!D * !Q)	0.00551	0.00529	0.00540
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00376	0.00355	0.00365
	(D * RESET_B * Q)	0.00579	0.00558	0.00569
	(D * RESET_B * !Q)	0.00677	0.00652	0.00653
	(D * RESET_B * !Q)	0.00873	0.00848	0.00849
	(D * !RESET_B * !Q)	0.00348	0.00326	0.00336
	(D * !RESET_B * !Q)	0.00551	0.00529	0.00540
	(!D * RESET_B * Q)	0.00711	0.00690	0.00722
	(!D * RESET_B * Q)	0.00921	0.00900	0.00933
	(!D * !Q)	0.00348	0.00326	0.00336
	(!D * !Q)	0.00551	0.00529	0.00540
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00390	0.00369	0.00379
	(D * RESET_B * Q)	0.00601	0.00580	0.00591
	(D * RESET_B * !Q)	0.00765	0.00740	0.00737
	(D * RESET_B * !Q)	0.00968	0.00943	0.00941
	(D * !RESET_B * !Q)	0.00367	0.00346	0.00355
	(D * !RESET_B * !Q)	0.00578	0.00557	0.00566
	(!D * RESET_B * Q)	0.00727	0.00709	0.00741
	(!D * RESET_B * Q)	0.00947	0.00928	0.00961
	(!D * !Q)	0.00366	0.00345	0.00354
	(!D * !Q)	0.00577	0.00557	0.00567

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	**SET_B**	**CLK**	**Q**	**Q_N**
0	**1**	**R**	**0**	**1**
1	**1**	**R**	**1**	**0**
x	**0**	**x**	**1**	**0**
x	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfsbp_1	39.96000
sky130_fd_sc_hs__dfsbp_2	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__dfsbp_1	0.00167	0.00312	0.00276	0.42623	0.41052
sky130_fd_sc_hs__dfsbp_2	0.00167	0.00307	0.00276	0.88117	0.84610

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfsbp_1	0.00000	0.07314	0.08567
sky130_fd_sc_hs__dfsbp_2	0.00000	0.07449	0.07992

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RR)	0.73700	1.67640	8.96701
	SET_B->Q (FR)	0.74385	1.92755	12.24900
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.89078	1.66671	9.20591
	SET_B->Q (FR)	0.90643	1.92643	12.70680

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.56873	1.08021	3.74877
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.64994	1.13612	3.89234

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q_N (RR)	0.48881	1.48387	8.81708
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.48847	1.34181	8.83634

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q_N (RF)	0.56663	1.23172	3.92306
	SET_B->Q_N (FF)	0.56600	1.47588	7.30251
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.64075	1.30665	4.08437
	SET_B->Q_N (FF)	0.64670	1.56040	7.64798

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	hold	CLK (R)	-0.09437	-0.21349	-1.43016
	setup	CLK (R)	0.20797	0.29401	1.51522
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.09088	-0.20905	-1.41430
	setup	CLK (R)	0.18935	0.28015	1.49329

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	hold	CLK (R)	-0.09494	-0.28505	-3.12843
	setup	CLK (R)	0.65535	0.71878	3.84654
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.10979	-0.30140	-3.18395
	setup	CLK (R)	0.64002	0.70467	3.82664

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	hold	CLK (R)	-0.09437	-0.21349	-1.43016
	setup	CLK (R)	0.20797	0.29401	1.51522
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.09088	-0.20905	-1.41430
	setup	CLK (R)	0.18935	0.28015	1.49329

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	hold	CLK (R)	-0.09494	-0.28505	-3.12843
	setup	CLK (R)	0.65535	0.71878	3.84654
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.10979	-0.30140	-3.18395
	setup	CLK (R)	0.64002	0.70467	3.82664

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	recovery	CLK (R)	-0.23438	-0.30269	-0.90681
	removal	CLK (R)	0.27391	0.33815	0.94380
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.23539	-0.29975	-0.90864
	removal	CLK (R)	0.27559	0.33616	0.94191

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	recovery	CLK (R)	-0.23438	-0.30269	-0.90681
	removal	CLK (R)	0.27391	0.33815	0.94380
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.23539	-0.29975	-0.90864
	removal	CLK (R)	0.27559	0.33616	0.94191

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	min_pulse_width	SET_B ()	0.57667	1.21691	16.50020
	min_pulse_width	SET_B ()	0.59586	1.27577	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.63205	1.27185	16.50020
	min_pulse_width	SET_B ()	0.74511	1.42097	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	min_pulse_width	CLK ()	0.49118	0.98145	16.50020
	min_pulse_width	CLK ()	0.23163	0.98145	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.63538	0.98145	16.50020
	min_pulse_width	CLK ()	0.25686	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	min_pulse_width	CLK ()	0.41548	0.98145	16.50020
	min_pulse_width	CLK ()	0.81562	0.98145	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.40106	0.98145	16.50020
	min_pulse_width	CLK ()	0.79399	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00697	0.00694	0.00696
	CLK	0.00598	0.00596	0.00595
	SET_B	0.00653	0.00658	0.00665
	SET_B	0.00751	0.00757	0.00741
sky130_fd_sc_hs__dfsbp_2	CLK	0.00806	0.00818	0.00825
	CLK	0.00706	0.00719	0.00724
	SET_B	0.00755	0.00778	0.00847
	SET_B	0.00851	0.00873	0.00868

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00735	0.00729	0.00729
	CLK	0.00642	0.00639	0.00635
sky130_fd_sc_hs__dfsbp_2	CLK	0.00851	0.00865	0.00861
	CLK	0.00756	0.00769	0.00763

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00737	0.00731	0.00743
	CLK	0.00644	0.00641	0.00649
sky130_fd_sc_hs__dfsbp_2	CLK	0.00853	0.00866	0.00880
	CLK	0.00757	0.00770	0.00783

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00696	0.00693	0.00683
	CLK	0.00597	0.00595	0.00584
	SET_B	0.00651	0.00657	0.00631
	SET_B	0.00749	0.00755	0.00729
sky130_fd_sc_hs__dfsbp_2	CLK	0.00805	0.00817	0.00812
	CLK	0.00705	0.00718	0.00709
	SET_B	0.00753	0.00776	0.00778
	SET_B	0.00849	0.00871	0.00849

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00161	0.00152	0.00156
	CLK	0.00040	0.00031	0.00036
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00467	0.00457	0.00452
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00333	0.00324	0.00319
	(!CLK * !SET_B * Q * !Q_N)	0.00361	0.00355	0.00355
	(!CLK * !SET_B * Q * !Q_N)	0.00223	0.00216	0.00216
sky130_fd_sc_hs__dfsbp_2	CLK	0.00160	0.00151	0.00156
	CLK	0.00039	0.00030	0.00036
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00461	0.00452	0.00448
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00323	0.00314	0.00310
	(!CLK * !SET_B * Q * !Q_N)	0.00361	0.00354	0.00354
	(!CLK * !SET_B * Q * !Q_N)	0.00218	0.00212	0.00212

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00019	0.00011	0.00019
	CLK	0.00139	0.00132	0.00138
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00336	0.00327	0.00327
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00469	0.00460	0.00460
	(!CLK * !SET_B * Q * !Q_N)	0.00197	0.00189	0.00192
	(!CLK * !SET_B * Q * !Q_N)	0.00336	0.00328	0.00330
sky130_fd_sc_hs__dfsbp_2	CLK	0.00019	0.00011	0.00018
	CLK	0.00139	0.00132	0.00139
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00322	0.00313	0.00313
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00459	0.00451	0.00451
	(!CLK * !SET_B * Q * !Q_N)	0.00190	0.00182	0.00185
	(!CLK * !SET_B * Q * !Q_N)	0.00332	0.00324	0.00327

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(CLK * Q * !Q_N)	0.00117	0.00118	0.00117
	(CLK * Q * !Q_N)	-0.00096	-0.00096	-0.00096
	(!CLK * D * Q * !Q_N)	0.00129	0.00129	0.00129
	(!CLK * D * Q * !Q_N)	-0.00084	-0.00085	-0.00084
	(!CLK * !D * Q * !Q_N)	0.00240	0.00237	0.00237
	(!CLK * !D * Q * !Q_N)	0.00019	0.00013	0.00015
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00118	0.00118	0.00118
	(CLK * Q * !Q_N)	-0.00093	-0.00093	-0.00093
	(!CLK * D * Q * !Q_N)	0.00127	0.00128	0.00127
	(!CLK * D * Q * !Q_N)	-0.00084	-0.00084	-0.00084
	(!CLK * !D * Q * !Q_N)	0.00231	0.00226	0.00228
	(!CLK * !D * Q * !Q_N)	0.00012	0.00006	0.00008

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(CLK * Q * !Q_N)	-0.00115	-0.00117	-0.00117
	(CLK * Q * !Q_N)	0.00097	0.00097	0.00096
	(!CLK * D * Q * !Q_N)	-0.00127	-0.00129	-0.00129
	(!CLK * D * Q * !Q_N)	0.00085	0.00085	0.00085
	(!CLK * !D * Q * !Q_N)	-0.00010	-0.00016	-0.00010
	(!CLK * !D * Q * !Q_N)	0.00212	0.00206	0.00212
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00117	-0.00118	-0.00118
	(CLK * Q * !Q_N)	0.00094	0.00094	0.00093
	(!CLK * D * Q * !Q_N)	-0.00126	-0.00128	-0.00127
	(!CLK * D * Q * !Q_N)	0.00085	0.00085	0.00084
	(!CLK * !D * Q * !Q_N)	-0.00008	-0.00013	-0.00008
	(!CLK * !D * Q * !Q_N)	0.00211	0.00206	0.00212

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(D * Q * !Q_N)	0.00691	0.00664	0.00665
	(D * Q * !Q_N)	0.00499	0.00471	0.00473
	(!D * SET_B * !Q * Q_N)	0.00683	0.00654	0.00656
	(!D * SET_B * !Q * Q_N)	0.00490	0.00462	0.00463
	(!D * !SET_B * Q * !Q_N)	0.01163	0.01146	0.01168
	(!D * !SET_B * Q * !Q_N)	0.00953	0.00935	0.00958
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.00683	0.00656	0.00657
	(D * Q * !Q_N)	0.00487	0.00460	0.00461
	(!D * SET_B * !Q * Q_N)	0.00679	0.00651	0.00652
	(!D * SET_B * !Q * Q_N)	0.00483	0.00455	0.00456
	(!D * !SET_B * Q * !Q_N)	0.01147	0.01129	0.01151
	(!D * !SET_B * Q * !Q_N)	0.00930	0.00911	0.00934

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(D * SET_B * !Q * Q_N)	0.00703	0.00680	0.00681
	(D * SET_B * !Q * Q_N)	0.00883	0.00859	0.00861
	(D * Q * !Q_N)	0.00411	0.00392	0.00403
	(D * Q * !Q_N)	0.00604	0.00584	0.00596
	(!D * SET_B * Q * !Q_N)	0.00800	0.00783	0.00811
	(!D * SET_B * Q * !Q_N)	0.01005	0.00987	0.01017
	(!D * SET_B * !Q * Q_N)	0.00420	0.00400	0.00411
	(!D * SET_B * !Q * Q_N)	0.00612	0.00592	0.00604
	(!D * !SET_B * Q * !Q_N)	0.00659	0.00643	0.00671
	(!D * !SET_B * Q * !Q_N)	0.00870	0.00853	0.00882
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.00690	0.00667	0.00668
	(D * SET_B * !Q * Q_N)	0.00870	0.00846	0.00847
	(D * Q * !Q_N)	0.00405	0.00386	0.00397
	(D * Q * !Q_N)	0.00601	0.00582	0.00593
	(!D * SET_B * Q * !Q_N)	0.00778	0.00760	0.00788
	(!D * SET_B * Q * !Q_N)	0.00990	0.00973	0.01001
	(!D * SET_B * !Q * Q_N)	0.00410	0.00390	0.00401
	(!D * SET_B * !Q * Q_N)	0.00606	0.00586	0.00596
	(!D * !SET_B * Q * !Q_N)	0.00644	0.00627	0.00655
	(!D * !SET_B * Q * !Q_N)	0.00862	0.00844	0.00872

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
D	SET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	1
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfstp_1	36.76320
sky130_fd_sc_hs__dfstp_2	39.96000
sky130_fd_sc_hs__dfstp_4	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	SET_B	CLK	Q
sky130_fd_sc_hs__dfstp_1	0.00166	0.00326	0.00274	0.43600
sky130_fd_sc_hs__dfstp_2	0.00166	0.00306	0.00276	0.87495
sky130_fd_sc_hs__dfstp_4	0.00166	0.00309	0.00277	1.67948

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	0.06500	0.07484
sky130_fd_sc_hs__dfstp_2	0.00000	0.05820	0.07438
sky130_fd_sc_hs__dfstp_4	0.00000	0.11161	0.12794

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RR)	0.57477	1.52708	8.82499
	SET_B->Q (FR)	0.59581	1.79238	11.85930
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.59658	1.41453	8.95035
	SET_B->Q (FR)	0.61938	1.68405	12.05310
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.69956	1.41617	9.03496
	SET_B->Q (FR)	0.71510	1.67573	12.24430

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.53184	1.04211	3.74902
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.57758	1.07192	3.83081
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.58544	1.05577	3.83239

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	hold	CLK (R)	-0.09310	-0.21122	-1.41200
	setup	CLK (R)	0.20972	0.29031	1.49293
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.09509	-0.21407	-1.42805
	setup	CLK (R)	0.21115	0.29472	1.51307
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.09098	-0.20800	-1.40176
	setup	CLK (R)	0.19540	0.28162	1.47727

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	hold	CLK (R)	-0.08183	-0.27042	-3.08981
	setup	CLK (R)	0.63860	0.70100	3.82462
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08374	-0.27395	-3.11204
	setup	CLK (R)	0.64224	0.70459	3.84336
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.09274	-0.28809	-3.14942
	setup	CLK (R)	0.62679	0.69329	3.81049

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	hold	CLK (R)	-0.09310	-0.21122	-1.41200
	setup	CLK (R)	0.20972	0.29031	1.49293
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.09509	-0.21407	-1.42805
	setup	CLK (R)	0.21115	0.29472	1.51307
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.09098	-0.20800	-1.40176
	setup	CLK (R)	0.19540	0.28162	1.47727

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	hold	CLK (R)	-0.08183	-0.27042	-3.08981
	setup	CLK (R)	0.63860	0.70100	3.82462
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08374	-0.27395	-3.11204
	setup	CLK (R)	0.64224	0.70459	3.84336
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.09274	-0.28809	-3.14942
	setup	CLK (R)	0.62679	0.69329	3.81049

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	recovery	CLK (R)	-0.23331	-0.30403	-0.91109
	removal	CLK (R)	0.26925	0.33089	0.97530
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.23819	-0.30778	-0.91222
	removal	CLK (R)	0.27369	0.33353	0.96359
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.23107	-0.29942	-0.88964
	removal	CLK (R)	0.26699	0.32822	0.92688

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	recovery	CLK (R)	-0.23331	-0.30403	-0.91109
	removal	CLK (R)	0.26925	0.33089	0.97530
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.23819	-0.30778	-0.91222
	removal	CLK (R)	0.27369	0.33353	0.96359
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.23107	-0.29942	-0.88964
	removal	CLK (R)	0.26699	0.32822	0.92688

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	min_pulse_width	SET_B ()	0.50046	1.14627	16.50020
	min_pulse_width	SET_B ()	0.45298	1.13842	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.52192	1.16197	16.50020
	min_pulse_width	SET_B ()	0.48681	1.16589	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.54502	1.18551	16.50020
	min_pulse_width	SET_B ()	0.55057	1.22476	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	min_pulse_width	CLK ()	0.34338	0.98145	16.50020
	min_pulse_width	CLK ()	0.21000	0.98145	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.36861	0.98145	16.50020
	min_pulse_width	CLK ()	0.22081	0.98145	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.44792	0.98145	16.50020
	min_pulse_width	CLK ()	0.22081	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	min_pulse_width	CLK ()	0.41908	0.98145	16.50020
	min_pulse_width	CLK ()	0.78678	0.98145	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.41908	0.98145	16.50020
	min_pulse_width	CLK ()	0.79039	0.98145	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.40466	0.98145	16.50020
	min_pulse_width	CLK ()	0.77236	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.01206	0.01182	0.01175
	CLK	0.01017	0.00993	0.00988
	SET_B	0.01103	0.01098	0.01061
	SET_B	0.01314	0.01309	0.01272
sky130_fd_sc_hs__dfstp_2	CLK	0.01359	0.01347	0.01346
	CLK	0.01161	0.01149	0.01152
	SET_B	0.01259	0.01271	0.01236
	SET_B	0.01452	0.01463	0.01430
sky130_fd_sc_hs__dfstp_4	CLK	0.01666	0.01679	0.01692
	CLK	0.01466	0.01479	0.01495
	SET_B	0.01557	0.01597	0.01577
	SET_B	0.01751	0.01791	0.01770

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.01321	0.01302	0.01310
	CLK	0.01123	0.01104	0.01108
sky130_fd_sc_hs__dfstp_2	CLK	0.01450	0.01448	0.01464
	CLK	0.01258	0.01257	0.01261
sky130_fd_sc_hs__dfstp_4	CLK	0.01779	0.01812	0.01839
	CLK	0.01586	0.01621	0.01630

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00161	0.00152	0.00157
	CLK	0.00041	0.00032	0.00037
	(!CLK * SET_B)	0.00461	0.00452	0.00447
	(!CLK * SET_B)	0.00328	0.00319	0.00315
	(!CLK * !SET_B * Q)	0.00359	0.00352	0.00352
	(!CLK * !SET_B * Q)	0.00220	0.00213	0.00214
sky130_fd_sc_hs__dfstp_2	CLK	0.00162	0.00153	0.00158
	CLK	0.00042	0.00032	0.00038
	(!CLK * SET_B)	0.00460	0.00451	0.00447
	(!CLK * SET_B)	0.00327	0.00318	0.00314
	(!CLK * !SET_B * Q)	0.00359	0.00352	0.00352
	(!CLK * !SET_B * Q)	0.00219	0.00212	0.00212
sky130_fd_sc_hs__dfstp_4	CLK	0.00162	0.00153	0.00158
	CLK	0.00042	0.00032	0.00038
	(!CLK * SET_B)	0.00459	0.00449	0.00445
	(!CLK * SET_B)	0.00324	0.00316	0.00311
	(!CLK * !SET_B * Q)	0.00355	0.00348	0.00348
	(!CLK * !SET_B * Q)	0.00215	0.00209	0.00209

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00023	0.00016	0.00023
	CLK	0.00143	0.00136	0.00143
	(!CLK * SET_B)	0.00322	0.00313	0.00314
	(!CLK * SET_B)	0.00454	0.00446	0.00446
	(!CLK * !SET_B * Q)	0.00191	0.00182	0.00185
	(!CLK * !SET_B * Q)	0.00330	0.00322	0.00324
sky130_fd_sc_hs__dfstp_2	CLK	0.00023	0.00015	0.00022
	CLK	0.00143	0.00135	0.00142
	(!CLK * SET_B)	0.00332	0.00323	0.00324
	(!CLK * SET_B)	0.00465	0.00457	0.00457
	(!CLK * !SET_B * Q)	0.00201	0.00193	0.00196
	(!CLK * !SET_B * Q)	0.00341	0.00333	0.00335
sky130_fd_sc_hs__dfstp_4	CLK	0.00024	0.00016	0.00023
	CLK	0.00143	0.00136	0.00143
	(!CLK * SET_B)	0.00318	0.00309	0.00310
	(!CLK * SET_B)	0.00451	0.00443	0.00443
	(!CLK * !SET_B * Q)	0.00190	0.00181	0.00184
	(!CLK * !SET_B * Q)	0.00329	0.00321	0.00324

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00111	0.00113	0.00112
	(CLK * Q)	-0.00105	-0.00106	-0.00105
	(!CLK * D * Q)	0.00121	0.00122	0.00121
	(!CLK * D * Q)	-0.00095	-0.00096	-0.00095
	(!CLK * !D * Q)	0.00229	0.00224	0.00225
	(!CLK * !D * Q)	0.00002	-0.00004	-0.00002
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00109	0.00109	0.00109
	(CLK * Q)	-0.00096	-0.00096	-0.00096
	(!CLK * D * Q)	0.00118	0.00119	0.00119
	(!CLK * D * Q)	-0.00086	-0.00087	-0.00087
	(!CLK * !D * Q)	0.00227	0.00221	0.00223
	(!CLK * !D * Q)	0.00011	0.00005	0.00007
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00115	0.00117	0.00116
	(CLK * Q)	-0.00093	-0.00094	-0.00093
	(!CLK * D * Q)	0.00124	0.00125	0.00124
	(!CLK * D * Q)	-0.00085	-0.00086	-0.00085
	(!CLK * !D * Q)	0.00228	0.00224	0.00225
	(!CLK * !D * Q)	0.00010	0.00004	0.00006

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00110	-0.00112	-0.00112
	(CLK * Q)	0.00106	0.00106	0.00105
	(!CLK * D * Q)	-0.00120	-0.00121	-0.00121
	(!CLK * D * Q)	0.00097	0.00096	0.00096
	(!CLK * !D * Q)	-0.00004	-0.00010	-0.00004
	(!CLK * !D * Q)	0.00223	0.00218	0.00223
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00108	-0.00109	-0.00109
	(CLK * Q)	0.00097	0.00097	0.00097
	(!CLK * D * Q)	-0.00117	-0.00119	-0.00119
	(!CLK * D * Q)	0.00088	0.00087	0.00087
	(!CLK * !D * Q)	-0.00000	-0.00006	-0.00001
	(!CLK * !D * Q)	0.00216	0.00210	0.00216
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00114	-0.00116	-0.00116
	(CLK * Q)	0.00095	0.00094	0.00094
	(!CLK * D * Q)	-0.00122	-0.00125	-0.00124
	(!CLK * D * Q)	0.00086	0.00086	0.00086
	(!CLK * !D * Q)	-0.00002	-0.00008	-0.00002
	(!CLK * !D * Q)	0.00216	0.00211	0.00216

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.00684	0.00657	0.00657
	(D * Q)	0.00490	0.00463	0.00463
	(!D * SET_B * !Q)	0.00682	0.00654	0.00654
	(!D * SET_B * !Q)	0.00488	0.00459	0.00460
	(!D * !SET_B * Q)	0.01135	0.01116	0.01139
	(!D * !SET_B * Q)	0.00922	0.00904	0.00926
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.00694	0.00666	0.00667
	(D * Q)	0.00498	0.00470	0.00471
	(!D * SET_B * !Q)	0.00685	0.00656	0.00657
	(!D * SET_B * !Q)	0.00489	0.00460	0.00461
	(!D * !SET_B * Q)	0.01150	0.01131	0.01153
	(!D * !SET_B * Q)	0.00936	0.00916	0.00938
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.00686	0.00658	0.00659
	(D * Q)	0.00489	0.00461	0.00462
	(!D * SET_B * !Q)	0.00685	0.00656	0.00657
	(!D * SET_B * !Q)	0.00488	0.00459	0.00460
	(!D * !SET_B * Q)	0.01128	0.01110	0.01134
	(!D * !SET_B * Q)	0.00912	0.00893	0.00917

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__dfstp_1	**(D * SET_B * !Q)**	0.00700	0.00676	0.00676
	(D * SET_B * !Q)	0.00882	0.00858	0.00859
	(D * Q)	0.00414	0.00394	0.00404
	(D * Q)	0.00607	0.00587	0.00598
	(!D * SET_B * Q)	0.00778	0.00759	0.00789
	(!D * SET_B * Q)	0.00984	0.00965	0.00995
	(!D * SET_B * !Q)	0.00415	0.00395	0.00406
	(!D * SET_B * !Q)	0.00609	0.00589	0.00600
	(!D * !SET_B * Q)	0.00645	0.00628	0.00655
	(!D * !SET_B * Q)	0.00858	0.00840	0.00868
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.00695	0.00671	0.00672
	(D * SET_B * !Q)	0.00878	0.00854	0.00856
	(D * Q)	0.00407	0.00387	0.00397
	(D * Q)	0.00602	0.00582	0.00593
	(!D * SET_B * Q)	0.00784	0.00767	0.00795
	(!D * SET_B * Q)	0.00992	0.00974	0.01003
	(!D * SET_B * !Q)	0.00415	0.00395	0.00406
	(!D * SET_B * !Q)	0.00611	0.00590	0.00602
	(!D * !SET_B * Q)	0.00652	0.00635	0.00663
	(!D * !SET_B * Q)	0.00867	0.00849	0.00877
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.00692	0.00669	0.00669
	(D * SET_B * !Q)	0.00876	0.00852	0.00853
	(D * Q)	0.00409	0.00390	0.00400
	(D * Q)	0.00606	0.00586	0.00597
	(!D * SET_B * Q)	0.00767	0.00750	0.00779
	(!D * SET_B * Q)	0.00978	0.00960	0.00990
	(!D * SET_B * !Q)	0.00410	0.00390	0.00400
	(!D * SET_B * !Q)	0.00607	0.00586	0.00597
	(!D * !SET_B * Q)	0.00638	0.00621	0.00649
	(!D * !SET_B * Q)	0.00855	0.00838	0.00866

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT	
D	CLK	Q	Q_N
0	R	0	1
1	R	1	0
x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxbp_1	31.96800
sky130_fd_sc_hs__dfxbp_2	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CLK	Q	Q_N
sky130_fd_sc_hs__dfxbp_1	0.00170	0.00276	0.43306	0.42993
sky130_fd_sc_hs__dfxbp_2	0.00165	0.00277	0.81249	0.87398

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.10537	0.14919
sky130_fd_sc_hs__dfxbp_2	0.00000	0.14096	0.22696

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	**CLK->Q (RR)**	0.48113	1.44670	8.85210
sky130_fd_sc_hs__dfxbp_2	**CLK->Q (RR)**	0.58776	1.43082	8.99669

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	**CLK->Q (RF)**	0.55732	1.11126	3.86917
sky130_fd_sc_hs__dfxbp_2	**CLK->Q (RF)**	0.52711	1.03841	3.71312

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	**CLK->Q_N (RR)**	0.65794	1.62001	8.99364
sky130_fd_sc_hs__dfxbp_2	**CLK->Q_N (RR)**	0.65614	1.47219	9.04553

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	**CLK->Q_N (RF)**	0.56148	1.07291	3.75537
sky130_fd_sc_hs__dfxbp_2	**CLK->Q_N (RF)**	0.73547	1.22329	4.00821

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxbp_1	hold	CLK (R)	-0.04452	-0.10887	-0.75915
	setup	CLK (R)	0.19749	0.22898	1.07963
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.03961	-0.09667	-0.67979
	setup	CLK (R)	0.17472	0.21060	0.97018

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxbp_1	hold	CLK (R)	-0.06978	-0.22427	-2.70357
	setup	CLK (R)	0.45722	0.53833	3.32442
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.07035	-0.22135	-2.70507
	setup	CLK (R)	0.44949	0.52864	3.26377

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxbp_1	min_pulse_width	CLK ()	0.23884	0.98145	16.50020
	min_pulse_width	CLK ()	0.19198	0.98145	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.33256	0.98145	16.50020
	min_pulse_width	CLK ()	0.18837	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxbp_1	**min_pulse_width**	**CLK** ()	0.42269	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.62817	0.98145	16.50020
sky130_fd_sc_hs__dfxbp_2	**min_pulse_width**	**CLK** ()	0.41187	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.63177	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00679	0.00665	0.00663
	CLK	0.00587	0.00577	0.00571
sky130_fd_sc_hs__dfxbp_2	CLK	0.00825	0.00831	0.00833
	CLK	0.00732	0.00738	0.00738

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00697	0.00697	0.00703
	CLK	0.00606	0.00606	0.00611
sky130_fd_sc_hs__dfxbp_2	CLK	0.00860	0.00875	0.00878
	CLK	0.00768	0.00783	0.00785

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00698	0.00697	0.00714
	CLK	0.00607	0.00606	0.00623
sky130_fd_sc_hs__dfxbp_2	CLK	0.00861	0.00875	0.00898
	CLK	0.00768	0.00784	0.00803

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00678	0.00664	0.00654
	CLK	0.00587	0.00576	0.00562
sky130_fd_sc_hs__dfxbp_2	CLK	0.00824	0.00831	0.00815
	CLK	0.00732	0.00738	0.00719

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00117	0.00109	0.00116
	CLK	-0.00005	-0.00014	-0.00006
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00421	0.00411	0.00411
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00298	0.00288	0.00288
sky130_fd_sc_hs__dfxbp_2	CLK	0.00109	0.00102	0.00109
	CLK	-0.00009	-0.00017	-0.00009
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00413	0.00403	0.00403
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00294	0.00284	0.00284

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00002	-0.00007	0.00001
	CLK	0.00120	0.00115	0.00123
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00240	0.00230	0.00231
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00362	0.00352	0.00353
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00002	-0.00007	0.00001
	CLK	0.00116	0.00111	0.00120
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00221	0.00211	0.00212
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00340	0.00330	0.00331

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	(D * Q * !Q_N)	0.00616	0.00591	0.00593
	(D * Q * !Q_N)	0.00434	0.00408	0.00410
	(!D * !Q * Q_N)	0.00630	0.00604	0.00607
	(!D * !Q * Q_N)	0.00447	0.00421	0.00424
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00620	0.00595	0.00597
	(D * Q * !Q_N)	0.00435	0.00409	0.00412
	(!D * !Q * Q_N)	0.00627	0.00602	0.00604
	(!D * !Q * Q_N)	0.00442	0.00416	0.00419

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	(D * Q * !Q_N)	0.00475	0.00452	0.00461
	(D * Q * !Q_N)	0.00657	0.00634	0.00643
	(D * !Q * Q_N)	0.00758	0.00728	0.00725
	(D * !Q * Q_N)	0.00940	0.00910	0.00907
	(!D * Q * !Q_N)	0.00778	0.00756	0.00787
	(!D * Q * !Q_N)	0.00960	0.00938	0.00970
	(!D * !Q * Q_N)	0.00457	0.00433	0.00443
	(!D * !Q * Q_N)	0.00639	0.00615	0.00625
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00474	0.00450	0.00460
	(D * Q * !Q_N)	0.00659	0.00635	0.00644
	(D * !Q * Q_N)	0.00763	0.00733	0.00729
	(D * !Q * Q_N)	0.00948	0.00918	0.00915
	(!D * Q * !Q_N)	0.00755	0.00732	0.00762
	(!D * Q * !Q_N)	0.00939	0.00917	0.00948
	(!D * !Q * Q_N)	0.00463	0.00439	0.00448
	(!D * !Q * Q_N)	0.00648	0.00624	0.00634

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
D	CLK	Q
0	R	0
1	R	1
x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxtp_1	27.17280
sky130_fd_sc_hs__dfxtp_2	28.77120
sky130_fd_sc_hs__dfxtp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	CLK	Q
sky130_fd_sc_hs__dfxtp_1	0.00166	0.00276	0.42869
sky130_fd_sc_hs__dfxtp_2	0.00170	0.00276	0.87186
sky130_fd_sc_hs__dfxtp_4	0.00169	0.00276	1.66495

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.08403	0.15411
sky130_fd_sc_hs__dfxtp_2	0.00000	0.08115	0.13752
sky130_fd_sc_hs__dfxtp_4	0.00000	0.12642	0.20721

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RR)**	0.43926	1.40298	8.75716
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.46472	1.28925	8.84937
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.55774	1.28158	8.92823

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.51994	1.05863	3.82208
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.54949	1.06906	3.88330
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.55286	1.04423	3.90477

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxtp_1	hold	CLK (R)	-0.04321	-0.11066	-0.74912
	setup	CLK (R)	0.20253	0.22940	1.07102
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.04286	-0.10662	-0.72481
	setup	CLK (R)	0.19833	0.22270	1.03695
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.04018	-0.10081	-0.69526
	setup	CLK (R)	0.18928	0.21784	1.01323

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxtp_1	hold	CLK (R)	-0.07041	-0.23261	-2.74542
	setup	CLK (R)	0.47719	0.55593	3.35168
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.06701	-0.21667	-2.66152
	setup	CLK (R)	0.44843	0.52513	3.27346
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.06679	-0.21491	-2.64813
	setup	CLK (R)	0.44670	0.52423	3.25660

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxtp_1	min_pulse_width	CLK ()	0.22081	0.98145	16.50020
	min_pulse_width	CLK ()	0.18477	0.98145	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.23884	0.98145	16.50020
	min_pulse_width	CLK ()	0.18837	0.98145	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.30733	0.98145	16.50020
	min_pulse_width	CLK ()	0.19558	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxtp_1	**min_pulse_width**	**CLK** ()	0.44071	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.64619	0.98145	16.50020
sky130_fd_sc_hs__dfxtp_2	**min_pulse_width**	**CLK** ()	0.42990	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.62456	0.98145	16.50020
sky130_fd_sc_hs__dfxtp_4	**min_pulse_width**	**CLK** ()	0.42269	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.63538	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01052	0.01024	0.01016
	CLK	0.00867	0.00839	0.00832
sky130_fd_sc_hs__dfxtp_2	CLK	0.01183	0.01170	0.01163
	CLK	0.00997	0.00984	0.00980
sky130_fd_sc_hs__dfxtp_4	CLK	0.01470	0.01484	0.01485
	CLK	0.01286	0.01299	0.01308

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01100	0.01088	0.01119
	CLK	0.00915	0.00904	0.00932
sky130_fd_sc_hs__dfxtp_2	CLK	0.01219	0.01224	0.01265
	CLK	0.01032	0.01040	0.01069
sky130_fd_sc_hs__dfxtp_4	CLK	0.01547	0.01587	0.01624
	CLK	0.01363	0.01405	0.01440

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00108	0.00100	0.00107
	CLK	-0.00011	-0.00020	-0.00012
	!CLK	0.00414	0.00403	0.00403
	!CLK	0.00294	0.00284	0.00284
sky130_fd_sc_hs__dfxtp_2	CLK	0.00115	0.00107	0.00114
	CLK	-0.00007	-0.00016	-0.00008
	!CLK	0.00410	0.00400	0.00399
	!CLK	0.00287	0.00277	0.00277
sky130_fd_sc_hs__dfxtp_4	CLK	0.00109	0.00101	0.00108
	CLK	-0.00013	-0.00021	-0.00013
	!CLK	0.00410	0.00399	0.00399
	!CLK	0.00288	0.00278	0.00277

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00015	0.00010	0.00018
	CLK	0.00135	0.00129	0.00137
	!CLK	0.00257	0.00247	0.00248
	!CLK	0.00376	0.00367	0.00368
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00005	-0.00009	-0.00001
	CLK	0.00118	0.00113	0.00121
	!CLK	0.00244	0.00234	0.00234
	!CLK	0.00366	0.00356	0.00357
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00002	-0.00006	0.00002
	CLK	0.00120	0.00115	0.00124
	!CLK	0.00240	0.00230	0.00231
	!CLK	0.00361	0.00351	0.00353

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00620	0.00594	0.00596
	(D * Q)	0.00435	0.00409	0.00410
	(!D * !Q)	0.00643	0.00617	0.00619
	(!D * !Q)	0.00458	0.00431	0.00434
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00622	0.00596	0.00598
	(D * Q)	0.00436	0.00409	0.00411
	(!D * !Q)	0.00640	0.00614	0.00616
	(!D * !Q)	0.00454	0.00427	0.00429
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00617	0.00592	0.00594
	(D * Q)	0.00434	0.00408	0.00409
	(!D * !Q)	0.00636	0.00610	0.00613
	(!D * !Q)	0.00452	0.00426	0.00428

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00494	0.00471	0.00480
	(D * Q)	0.00679	0.00656	0.00665
	(D * !Q)	0.00774	0.00744	0.00738
	(D * !Q)	0.00958	0.00929	0.00923
	(!D * Q)	0.00796	0.00773	0.00804
	(!D * Q)	0.00981	0.00957	0.00989
	(!D * !Q)	0.00468	0.00444	0.00452
	(!D * !Q)	0.00652	0.00628	0.00637
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00485	0.00461	0.00469
	(D * Q)	0.00670	0.00647	0.00656
	(D * !Q)	0.00756	0.00727	0.00722
	(D * !Q)	0.00942	0.00913	0.00908
	(!D * Q)	0.00789	0.00767	0.00798
	(!D * Q)	0.00975	0.00953	0.00985
	(!D * !Q)	0.00463	0.00439	0.00447
	(!D * !Q)	0.00649	0.00625	0.00633
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00503	0.00479	0.00488
	(D * Q)	0.00687	0.00663	0.00672
	(D * !Q)	0.00777	0.00747	0.00742
	(D * !Q)	0.00960	0.00931	0.00926
	(!D * Q)	0.00808	0.00784	0.00817
	(!D * Q)	0.00991	0.00967	0.01001
	(!D * !Q)	0.00480	0.00456	0.00465
	(!D * !Q)	0.00664	0.00640	0.00649

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__diode_2	0.00000

Pin Capacitance Information

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__diode_2	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DLCLKPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
GATE	CLK	GCLK
x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlclkp_1	22.37760
sky130_fd_sc_hs__dlclkp_2	25.57440
sky130_fd_sc_hs__dlclkp_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	GATE	CLK	GCLK
sky130_fd_sc_hs__dlclkp_1	0.00240	0.00412	0.44320
sky130_fd_sc_hs__dlclkp_2	0.00239	0.00443	0.88453
sky130_fd_sc_hs__dlclkp_4	0.00238	0.00462	1.71049

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.10275	0.17050
sky130_fd_sc_hs__dlclkp_2	0.00000	0.09762	0.13456
sky130_fd_sc_hs__dlclkp_4	0.00000	0.10414	0.11079

Delay Information

Delay(ns) to GCLK rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (RR)**	0.15656	1.08887	8.35429
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.15867	0.97200	8.57808
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.21477	0.96778	8.95807

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.19245	0.89123	5.00854
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.22757	0.94301	5.62340
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.31632	1.04532	6.31837

Constraint Information

Constraints(ns) for GATE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlclkp_1	hold	CLK (R)	-0.06891	-0.16407	-1.04797
	setup	CLK (R)	0.29104	0.30604	1.75888
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.06875	-0.16103	-1.02906
	setup	CLK (R)	0.30339	0.30745	1.47972
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.06540	-0.16103	-1.02509
	setup	CLK (R)	0.29593	0.28866	1.25577

Constraints(ns) for GATE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlclkp_1	hold	CLK (R)	-0.21382	-0.31865	-2.76679
	setup	CLK (R)	0.32912	0.44653	3.08332
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.20910	-0.31267	-2.74958
	setup	CLK (R)	0.32100	0.42624	2.91379
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.21267	-0.31398	-2.75686
	setup	CLK (R)	0.28798	0.37129	2.87178

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlclkp_1	min_pulse_width	CLK ()	0.11627	0.98145	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.12709	0.98145	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.18116	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlclkp_1	**min_pulse_width**	**CLK** ()	0.46234	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.47316	0.98145	16.50020
sky130_fd_sc_hs__dlclkp_2	**min_pulse_width**	**CLK** ()	0.48758	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.48037	0.98145	16.50020
sky130_fd_sc_hs__dlclkp_4	**min_pulse_width**	**CLK** ()	0.48037	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.46234	0.98145	16.50020

Power Information

Internal switching power(pJ) to GCLK rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00769	0.00745	0.00767
	CLK	0.00472	0.00446	0.00470
sky130_fd_sc_hs__dlclkp_2	CLK	0.00918	0.00905	0.00925
	CLK	0.00600	0.00585	0.00607
sky130_fd_sc_hs__dlclkp_4	CLK	0.01185	0.01192	0.01226
	CLK	0.00858	0.00866	0.00908

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00858	0.00837	0.00904
	CLK	0.01161	0.01139	0.01201
sky130_fd_sc_hs__dlclkp_2	CLK	0.01000	0.00992	0.01069
	CLK	0.01324	0.01313	0.01368
sky130_fd_sc_hs__dlclkp_4	CLK	0.01291	0.01315	0.01446
	CLK	0.01616	0.01637	0.01693

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00078	0.00073	0.00072
	CLK	-0.00073	-0.00079	-0.00079
	(!CLK * !GCLK)	0.00546	0.00532	0.00524
	(!CLK * !GCLK)	0.00384	0.00369	0.00361
sky130_fd_sc_hs__dlclkp_2	CLK	0.00063	0.00063	0.00063
	CLK	-0.00088	-0.00088	-0.00088
	(!CLK * !GCLK)	0.00553	0.00539	0.00530
	(!CLK * !GCLK)	0.00392	0.00377	0.00369
sky130_fd_sc_hs__dlclkp_4	CLK	0.00061	0.00061	0.00061
	CLK	-0.00087	-0.00088	-0.00088
	(!CLK * !GCLK)	0.00540	0.00527	0.00519
	(!CLK * !GCLK)	0.00389	0.00374	0.00366

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00071	-0.00072	-0.00072
	CLK	0.00079	0.00080	0.00080
	(!CLK * !GCLK)	0.00359	0.00345	0.00337
	(!CLK * !GCLK)	0.00521	0.00508	0.00500
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00060	-0.00062	-0.00063
	CLK	0.00090	0.00088	0.00088
	(!CLK * !GCLK)	0.00374	0.00361	0.00354
	(!CLK * !GCLK)	0.00536	0.00523	0.00515
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00058	-0.00060	-0.00061
	CLK	0.00090	0.00088	0.00088
	(!CLK * !GCLK)	0.00401	0.00388	0.00381
	(!CLK * !GCLK)	0.00554	0.00541	0.00534

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00481	0.00456	0.00471
	(!GATE * !GCLK)	0.00199	0.00172	0.00187
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00507	0.00482	0.00495
	(!GATE * !GCLK)	0.00205	0.00178	0.00193
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00502	0.00476	0.00492
	(!GATE * !GCLK)	0.00191	0.00163	0.00179

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.00672	0.00644	0.00663
	(GATE * !GCLK)	0.00953	0.00926	0.00945
	(!GATE * !GCLK)	0.00226	0.00207	0.00238
	(!GATE * !GCLK)	0.00509	0.00490	0.00522
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.00692	0.00663	0.00681
	(GATE * !GCLK)	0.00996	0.00967	0.00986
	(!GATE * !GCLK)	0.00239	0.00218	0.00248
	(!GATE * !GCLK)	0.00542	0.00521	0.00552
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.00670	0.00643	0.00662
	(GATE * !GCLK)	0.00992	0.00964	0.00983
	(!GATE * !GCLK)	0.00223	0.00204	0.00234
	(!GATE * !GCLK)	0.00537	0.00517	0.00549

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	**GATE_N**	**RESET_B**	**Q**	**Q_N**
0	**0**	**x**	**0**	**1**
x	**1**	**0**	**0**	**1**
x	**1**	**1**	**1**	**1**
1	**x**	**0**	**0**	**1**
1	**0**	**1**	**1**	**0**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbn_1	28.77120
sky130_fd_sc_hs__dlrbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	**GATE_N**	**RESET_B**	**Q**	**Q_N**
sky130_fd_sc_hs__dlrbn_1	0.00218	0.00240	0.00262	0.43316	0.44178
sky130_fd_sc_hs__dlrbn_2	0.00218	0.00239	0.00272	0.80587	0.87381

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrbn_1	0.00000	0.13379	0.18133
sky130_fd_sc_hs__dlrbn_2	0.00000	0.13443	0.17558

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (RR)	0.66446	1.60442	8.80833
	GATE_N->Q (-R)	0.81037	1.96644	10.65820
	RESET_B->Q (RR)	0.19838	1.16955	8.73857
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.67208	1.49779	8.79345
	GATE_N->Q (-R)	0.82278	1.86506	10.65280
	RESET_B->Q (RR)	0.21088	1.08569	8.91871

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.48777	1.19383	4.93633
	GATE_N->Q (-F)	0.55254	1.28801	5.49418
	RESET_B->Q (FF)	0.24892	1.01777	5.91486
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.54249	1.23622	4.91177
	GATE_N->Q (-F)	0.60799	1.33136	5.47208
	RESET_B->Q (FF)	0.29717	1.05450	6.14322

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q_N (FR)	0.59750	1.71851	10.17390
	GATE_N->Q_N (-R)	0.66258	1.81246	10.73270
	RESET_B->Q_N (FR)	0.36182	1.54417	10.85950
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.69156	1.67160	10.43530
	GATE_N->Q_N (-R)	0.75774	1.76686	10.99410
	RESET_B->Q_N (FR)	0.45065	1.49615	11.39470

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q_N (RF)	0.74395	1.23042	3.76744
	GATE_N->Q_N (-F)	0.88995	1.59241	5.61038
	RESET_B->Q_N (RF)	0.27806	0.79321	3.62759
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.83674	1.31409	3.96994
	GATE_N->Q_N (-F)	0.98789	1.68146	5.82922
	RESET_B->Q_N (RF)	0.37469	0.90125	4.05404

Constraint Information

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlrbn_1	**min_pulse_width**	**RESET_B ()**	0.28931	0.98145	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.36861	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00561	0.00560	0.00566
	D	0.00480	0.00479	0.00485
	GATE_N	0.00587	0.00585	0.00612
	GATE_N	0.00664	0.00662	0.00674
	RESET_B	0.00372	0.00371	0.00370
	RESET_B	0.00278	0.00276	0.00275
sky130_fd_sc_hs__dlrbn_2	D	0.00671	0.00687	0.00700
	D	0.00591	0.00607	0.00617
	GATE_N	0.00698	0.00713	0.00762
	GATE_N	0.00775	0.00790	0.00806
	RESET_B	0.00493	0.00507	0.00513
	RESET_B	0.00396	0.00411	0.00413

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00442	0.00446	0.00451
	D	0.00523	0.00528	0.00528
	GATE_N	0.00543	0.00542	0.00549
	GATE_N	0.00630	0.00629	0.00627
	RESET_B	0.00390	0.00386	0.00378
	RESET_B	0.00478	0.00473	0.00461
sky130_fd_sc_hs__dlrbn_2	D	0.00564	0.00587	0.00586
	D	0.00644	0.00667	0.00666
	GATE_N	0.00664	0.00682	0.00690
	GATE_N	0.00751	0.00768	0.00765
	RESET_B	0.00509	0.00517	0.00509
	RESET_B	0.00599	0.00609	0.00592

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00443	0.00447	0.00461
	D	0.00524	0.00529	0.00539
	GATE_N	0.00544	0.00543	0.00572
	GATE_N	0.00631	0.00630	0.00639
	RESET_B	0.00391	0.00387	0.00413
	RESET_B	0.00479	0.00474	0.00473
sky130_fd_sc_hs__dlrbn_2	D	0.00565	0.00588	0.00624
	D	0.00645	0.00669	0.00685
	GATE_N	0.00666	0.00683	0.00731
	GATE_N	0.00752	0.00769	0.00782
	RESET_B	0.00510	0.00519	0.00526
	RESET_B	0.00599	0.00610	0.00608

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00560	0.00560	0.00555
	D	0.00479	0.00478	0.00473
	GATE_N	0.00587	0.00584	0.00591
	GATE_N	0.00663	0.00661	0.00661
	RESET_B	0.00372	0.00370	0.00361
	RESET_B	0.00278	0.00276	0.00266
sky130_fd_sc_hs__dlrbn_2	D	0.00670	0.00687	0.00684
	D	0.00590	0.00606	0.00599
	GATE_N	0.00697	0.00713	0.00721
	GATE_N	0.00774	0.00789	0.00785
	RESET_B	0.00493	0.00506	0.00497
	RESET_B	0.00396	0.00411	0.00394

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00242	0.00227	0.00240
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00090	0.00074	0.00087
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00452	0.00434	0.00445
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00310	0.00292	0.00303
sky130_fd_sc_hs__dlrbn_2	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00240	0.00224	0.00238
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00089	0.00073	0.00087
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00426	0.00407	0.00419
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00285	0.00266	0.00277

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00074	0.00066	0.00100
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00226	0.00218	0.00252
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00328	0.00314	0.00342
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00470	0.00457	0.00485
sky130_fd_sc_hs__dlrbn_2	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00070	0.00062	0.00096
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00221	0.00213	0.00247
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00337	0.00324	0.00352
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00479	0.00466	0.00493

Passive power(pJ) for GATE_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(D * RESET_B * Q * !Q_N)	0.00445	0.00419	0.00432
	(D * RESET_B * Q * !Q_N)	0.00282	0.00255	0.00268
	(D * !RESET_B * !Q * Q_N)	0.00684	0.00659	0.00664
	(D * !RESET_B * !Q * Q_N)	0.00511	0.00485	0.00490
	(!D * !Q * Q_N)	0.00474	0.00450	0.00461
	(!D * !Q * Q_N)	0.00310	0.00286	0.00297
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00446	0.00419	0.00433
	(D * RESET_B * Q * !Q_N)	0.00283	0.00256	0.00270
	(D * !RESET_B * !Q * Q_N)	0.00693	0.00666	0.00672
	(D * !RESET_B * !Q * Q_N)	0.00520	0.00494	0.00500
	(!D * !Q * Q_N)	0.00469	0.00444	0.00456
	(!D * !Q * Q_N)	0.00306	0.00282	0.00293

Passive power(pJ) for GATE_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(D * RESET_B * Q * !Q_N)	0.00347	0.00328	0.00357
	(D * RESET_B * Q * !Q_N)	0.00510	0.00491	0.00522
	(D * !RESET_B * !Q * Q_N)	0.00503	0.00482	0.00505
	(D * !RESET_B * !Q * Q_N)	0.00677	0.00656	0.00679
	(!D * !Q * Q_N)	0.00321	0.00302	0.00331
	(!D * !Q * Q_N)	0.00485	0.00465	0.00495
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00341	0.00323	0.00352
	(D * RESET_B * Q * !Q_N)	0.00504	0.00486	0.00515
	(D * !RESET_B * !Q * Q_N)	0.00478	0.00458	0.00480
	(D * !RESET_B * !Q * Q_N)	0.00651	0.00631	0.00652
	(!D * !Q * Q_N)	0.00320	0.00302	0.00331
	(!D * !Q * Q_N)	0.00483	0.00465	0.00494

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00070	0.00071	0.00071
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00089	-0.00089	-0.00089
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00075	0.00076	0.00076
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00090	-0.00090	-0.00090

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00068	-0.00071	-0.00071
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00091	0.00090	0.00090
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00073	-0.00076	-0.00076
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00092	0.00091	0.00091

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	GATE	RESET_B	Q	Q_N
x	x	0	0	1
x	0	1	1	1
0	1	1	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbp_1	27.17280
sky130_fd_sc_hs__dlrbp_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbp_1	0.00201	0.00229	0.00271	0.43148	0.42827
sky130_fd_sc_hs__dlrbp_2	0.00202	0.00229	0.00272	0.86883	0.88697

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	0.13379	0.18133
sky130_fd_sc_hs__dlrbp_2	0.00000	0.13443	0.17558

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (RR)	0.64092	1.57265	8.71997
	GATE->Q (-R)	0.56151	1.49086	8.70533
	RESET_B->Q (RR)	0.20201	1.17486	8.75379
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.65732	1.45700	8.76958
	GATE->Q (-R)	0.57239	1.36747	8.73099
	RESET_B->Q (RR)	0.21113	1.06790	8.96425

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.48383	1.18299	4.85567
	GATE->Q (-F)	0.51302	1.02297	3.51050
	RESET_B->Q (FF)	0.25398	1.02681	5.94338
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.53950	1.23542	5.01731
	GATE->Q (-F)	0.56724	1.07150	3.65112
	RESET_B->Q (FF)	0.28908	1.05279	6.29186

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q_N (FR)	0.59775	1.70963	10.00780
	GATE->Q_N (-R)	0.62721	1.54920	8.65961
	RESET_B->Q_N (FR)	0.37131	1.55345	10.80180
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.68777	1.64700	10.22940
	GATE->Q_N (-R)	0.71610	1.48289	8.86096
	RESET_B->Q_N (FR)	0.43783	1.47179	11.23140

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q_N (RF)	0.72257	1.19816	3.63233
	GATE->Q_N (-F)	0.64328	1.11670	3.61835
	RESET_B->Q_N (RF)	0.28393	0.79762	3.59572
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.80874	1.26112	3.81845
	GATE->Q_N (-F)	0.72408	1.17182	3.77912
	RESET_B->Q_N (RF)	0.36157	0.87105	3.96739

Constraint Information

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlrbp_1	**min_pulse_width**	**RESET_B ()**	0.29291	0.98145	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.35419	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00530	0.00530	0.00535
	D	0.00454	0.00453	0.00459
	GATE	0.00616	0.00608	0.00611
	GATE	0.00531	0.00522	0.00526
	RESET_B	0.00375	0.00374	0.00371
	RESET_B	0.00277	0.00275	0.00274
sky130_fd_sc_hs__dlrbp_2	D	0.00659	0.00676	0.00688
	D	0.00583	0.00599	0.00610
	GATE	0.00742	0.00751	0.00760
	GATE	0.00657	0.00666	0.00673
	RESET_B	0.00500	0.00516	0.00519
	RESET_B	0.00402	0.00416	0.00419

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00459	0.00464	0.00467
	D	0.00535	0.00540	0.00540
	GATE	0.00633	0.00633	0.00630
	GATE	0.00560	0.00560	0.00557
	RESET_B	0.00396	0.00392	0.00381
	RESET_B	0.00487	0.00482	0.00468
sky130_fd_sc_hs__dlrbp_2	D	0.00582	0.00605	0.00605
	D	0.00658	0.00681	0.00679
	GATE	0.00755	0.00772	0.00770
	GATE	0.00681	0.00699	0.00694
	RESET_B	0.00517	0.00529	0.00525
	RESET_B	0.00607	0.00619	0.00603

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00460	0.00465	0.00479
	D	0.00536	0.00542	0.00553
	GATE	0.00634	0.00634	0.00643
	GATE	0.00561	0.00561	0.00570
	RESET_B	0.00397	0.00392	0.00407
	RESET_B	0.00488	0.00482	0.00480
sky130_fd_sc_hs__dlrbp_2	D	0.00583	0.00606	0.00632
	D	0.00659	0.00682	0.00697
	GATE	0.00756	0.00774	0.00789
	GATE	0.00682	0.00700	0.00713
	RESET_B	0.00518	0.00529	0.00549
	RESET_B	0.00608	0.00619	0.00618

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00529	0.00529	0.00525
	D	0.00453	0.00452	0.00448
	GATE	0.00616	0.00607	0.00599
	GATE	0.00530	0.00522	0.00513
	RESET_B	0.00374	0.00372	0.00362
	RESET_B	0.00277	0.00275	0.00264
sky130_fd_sc_hs__dlrbp_2	D	0.00659	0.00675	0.00671
	D	0.00583	0.00599	0.00593
	GATE	0.00742	0.00751	0.00744
	GATE	0.00656	0.00665	0.00656
	RESET_B	0.00499	0.00513	0.00502
	RESET_B	0.00402	0.00416	0.00401

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(GATE * !RESET_B * !Q * Q_N)	0.00387	0.00369	0.00382
	(GATE * !RESET_B * !Q * Q_N)	0.00258	0.00240	0.00252
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00233	0.00219	0.00233
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00094	0.00079	0.00093
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00391	0.00373	0.00385
	(GATE * !RESET_B * !Q * Q_N)	0.00261	0.00244	0.00256
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00233	0.00219	0.00233
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00093	0.00078	0.00092

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(GATE * !RESET_B * !Q * Q_N)	0.00343	0.00331	0.00360
	(GATE * !RESET_B * !Q * Q_N)	0.00473	0.00461	0.00490
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00057	0.00050	0.00085
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00197	0.00189	0.00225
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00347	0.00335	0.00364
	(GATE * !RESET_B * !Q * Q_N)	0.00478	0.00466	0.00494
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00062	0.00054	0.00089
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00203	0.00196	0.00230

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(D * RESET_B * Q * !Q_N)	0.00456	0.00431	0.00446
	(D * RESET_B * Q * !Q_N)	0.00298	0.00272	0.00287
	(D * !RESET_B * !Q * Q_N)	0.00542	0.00509	0.00519
	(D * !RESET_B * !Q * Q_N)	0.00394	0.00361	0.00371
	(!D * !Q * Q_N)	0.00461	0.00438	0.00451
	(!D * !Q * Q_N)	0.00303	0.00278	0.00292
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00457	0.00432	0.00446
	(D * RESET_B * Q * !Q_N)	0.00297	0.00271	0.00287
	(D * !RESET_B * !Q * Q_N)	0.00540	0.00508	0.00518
	(D * !RESET_B * !Q * Q_N)	0.00392	0.00360	0.00370
	(!D * !Q * Q_N)	0.00460	0.00436	0.00449
	(!D * !Q * Q_N)	0.00300	0.00276	0.00290

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(D * RESET_B * Q * !Q_N)	0.00289	0.00272	0.00303
	(D * RESET_B * Q * !Q_N)	0.00447	0.00430	0.00461
	(D * !RESET_B * !Q * Q_N)	0.00480	0.00456	0.00481
	(D * !RESET_B * !Q * Q_N)	0.00629	0.00605	0.00630
	(!D * !Q * Q_N)	0.00288	0.00270	0.00301
	(!D * !Q * Q_N)	0.00446	0.00429	0.00460
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00286	0.00269	0.00301
	(D * RESET_B * Q * !Q_N)	0.00446	0.00429	0.00460
	(D * !RESET_B * !Q * Q_N)	0.00477	0.00452	0.00478
	(D * !RESET_B * !Q * Q_N)	0.00625	0.00601	0.00627
	(!D * !Q * Q_N)	0.00288	0.00270	0.00301
	(!D * !Q * Q_N)	0.00447	0.00429	0.00461

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00072	0.00072	0.00072
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00092	-0.00091	-0.00091
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00073	0.00074	0.00073
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00091	-0.00092	-0.00091

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00070	-0.00072	-0.00072
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00093	0.00093	0.00092
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00070	-0.00073	-0.00073
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00093	0.00092	0.00092

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
D	**GATE_N**	**RESET_B**	**Q**
0	**0**	**x**	**0**
x	**1**	**0**	**0**
x	**1**	**1**	**1**
1	**x**	**0**	**0**
1	**x**	**1**	**1**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtn_1	23.97600
sky130_fd_sc_hs__dlrtn_2	27.17280
sky130_fd_sc_hs__dlrtn_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	**GATE_N**	**RESET_B**	**Q**
sky130_fd_sc_hs__dlrtn_1	0.00199	0.00232	0.00259	0.44162
sky130_fd_sc_hs__dlrtn_2	0.00202	0.00230	0.00267	0.85584
sky130_fd_sc_hs__dlrtn_4	0.00201	0.00231	0.00436	1.67764

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtn_1	0.00000	0.10552	0.14922
sky130_fd_sc_hs__dlrtn_2	0.00000	0.10515	0.14458
sky130_fd_sc_hs__dlrtn_4	0.00000	0.17112	0.28584

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (RR)	0.62049	1.55131	8.74995
	GATE_N->Q (-R)	0.74194	1.88773	10.50340
	RESET_B->Q (RR)	0.17647	1.12445	8.55963
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.63670	1.43091	8.68229
	GATE_N->Q (-R)	0.75831	1.76607	10.43540
	RESET_B->Q (RR)	0.18489	1.01456	8.67556
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.71678	1.41375	8.88647
	GATE_N->Q (-R)	0.84013	1.75320	10.65780
	RESET_B->Q (RR)	0.19775	0.92519	8.77338

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.44928	1.13921	4.87679
	GATE_N->Q (-F)	0.49800	1.21753	5.35218
	RESET_B->Q (FF)	0.22056	0.96261	5.54132
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.48155	1.14999	4.86920
	GATE_N->Q (-F)	0.52931	1.22721	5.34508
	RESET_B->Q (FF)	0.25041	0.98707	5.90647
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.49362	1.14274	4.99210
	GATE_N->Q (-F)	0.54859	1.22876	5.51647
	RESET_B->Q (FF)	0.25548	0.94227	5.60200

Constraint Information

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlrtn_1	**min_pulse_width**	**RESET_B** ()	0.25326	0.98145	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B** ()	0.30733	0.98145	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B** ()	0.33617	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.00779	0.00770	0.00781
	D	0.00629	0.00620	0.00631
	GATE_N	0.00823	0.00811	0.00834
	GATE_N	0.00971	0.00959	0.00986
	RESET_B	0.00469	0.00461	0.00462
	RESET_B	0.00283	0.00274	0.00276
sky130_fd_sc_hs__dlrtn_2	D	0.00890	0.00899	0.00916
	D	0.00741	0.00749	0.00769
	GATE_N	0.00937	0.00942	0.00971
	GATE_N	0.01087	0.01091	0.01126
	RESET_B	0.00577	0.00582	0.00585
	RESET_B	0.00386	0.00391	0.00396
sky130_fd_sc_hs__dlrtn_4	D	0.01267	0.01305	0.01345
	D	0.01108	0.01147	0.01197
	GATE_N	0.01316	0.01354	0.01405
	GATE_N	0.01455	0.01493	0.01558
	RESET_B	0.01011	0.01035	0.01059
	RESET_B	0.00698	0.00722	0.00758

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.00644	0.00642	0.00673
	D	0.00794	0.00791	0.00812
	GATE_N	0.00785	0.00770	0.00795
	GATE_N	0.00957	0.00942	0.00960
	RESET_B	0.00511	0.00494	0.00502
	RESET_B	0.00684	0.00667	0.00669
sky130_fd_sc_hs__dlrtn_2	D	0.00769	0.00787	0.00830
	D	0.00919	0.00937	0.00957
	GATE_N	0.00916	0.00921	0.00967
	GATE_N	0.01084	0.01089	0.01107
	RESET_B	0.00634	0.00630	0.00646
	RESET_B	0.00812	0.00811	0.00809
sky130_fd_sc_hs__dlrtn_4	D	0.01092	0.01146	0.01186
	D	0.01252	0.01305	0.01325
	GATE_N	0.01241	0.01282	0.01361
	GATE_N	0.01420	0.01460	0.01479
	RESET_B	0.00983	0.00977	0.01075
	RESET_B	0.01279	0.01286	0.01322

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00225	0.00211	0.00225
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00087	0.00072	0.00086
	(!GATE_N * !RESET_B * !Q)	0.00379	0.00363	0.00374
	(!GATE_N * !RESET_B * !Q)	0.00251	0.00234	0.00246
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00227	0.00213	0.00227
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00087	0.00072	0.00087
	(!GATE_N * !RESET_B * !Q)	0.00381	0.00364	0.00376
	(!GATE_N * !RESET_B * !Q)	0.00252	0.00235	0.00247
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00226	0.00212	0.00226
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00088	0.00072	0.00087
	(!GATE_N * !RESET_B * !Q)	0.00404	0.00387	0.00398
	(!GATE_N * !RESET_B * !Q)	0.00277	0.00259	0.00270

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00077	0.00069	0.00104
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00215	0.00208	0.00242
	(!GATE_N * !RESET_B * !Q)	0.00365	0.00353	0.00382
	(!GATE_N * !RESET_B * !Q)	0.00494	0.00482	0.00510
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00076	0.00068	0.00103
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00216	0.00208	0.00243
	(!GATE_N * !RESET_B * !Q)	0.00367	0.00355	0.00383
	(!GATE_N * !RESET_B * !Q)	0.00497	0.00485	0.00513
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00074	0.00066	0.00101
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00213	0.00205	0.00240
	(!GATE_N * !RESET_B * !Q)	0.00420	0.00408	0.00437
	(!GATE_N * !RESET_B * !Q)	0.00549	0.00537	0.00566

Passive power(pJ) for GATE_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * RESET_B * Q)	0.00436	0.00409	0.00425
	(D * RESET_B * Q)	0.00276	0.00250	0.00265
	(D * !RESET_B * !Q)	0.00675	0.00651	0.00659
	(D * !RESET_B * !Q)	0.00506	0.00480	0.00489
	(!D * !Q)	0.00435	0.00412	0.00426
	(!D * !Q)	0.00275	0.00251	0.00265
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00434	0.00409	0.00425
	(D * RESET_B * Q)	0.00276	0.00250	0.00266
	(D * !RESET_B * !Q)	0.00676	0.00651	0.00660
	(D * !RESET_B * !Q)	0.00508	0.00483	0.00492
	(!D * !Q)	0.00433	0.00410	0.00423
	(!D * !Q)	0.00274	0.00251	0.00265
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00438	0.00412	0.00427
	(D * RESET_B * Q)	0.00279	0.00252	0.00268
	(D * !RESET_B * !Q)	0.00732	0.00707	0.00717
	(D * !RESET_B * !Q)	0.00563	0.00538	0.00548
	(!D * !Q)	0.00434	0.00411	0.00424
	(!D * !Q)	0.00275	0.00251	0.00265

Passive power(pJ) for GATE_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * RESET_B * Q)	0.00291	0.00272	0.00304
	(D * RESET_B * Q)	0.00451	0.00433	0.00464
	(D * !RESET_B * !Q)	0.00421	0.00400	0.00426
	(D * !RESET_B * !Q)	0.00591	0.00571	0.00597
	(!D * !Q)	0.00293	0.00274	0.00306
	(!D * !Q)	0.00454	0.00434	0.00466
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00294	0.00276	0.00308
	(D * RESET_B * Q)	0.00453	0.00435	0.00466
	(D * !RESET_B * !Q)	0.00425	0.00406	0.00431
	(D * !RESET_B * !Q)	0.00594	0.00575	0.00600
	(!D * !Q)	0.00298	0.00280	0.00311
	(!D * !Q)	0.00457	0.00438	0.00469
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00296	0.00278	0.00309
	(D * RESET_B * Q)	0.00455	0.00437	0.00468
	(D * !RESET_B * !Q)	0.00450	0.00431	0.00457
	(D * !RESET_B * !Q)	0.00621	0.00602	0.00627
	(!D * !Q)	0.00302	0.00283	0.00314
	(!D * !Q)	0.00461	0.00442	0.00473

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * GATE_N * !Q) + (!D * !Q)	0.00072	0.00072	0.00072
	(D * GATE_N * !Q) + (!D * !Q)	-0.00084	-0.00085	-0.00084
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00074	0.00073	0.00074
	(D * GATE_N * !Q) + (!D * !Q)	-0.00090	-0.00090	-0.00090
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00123	0.00124	0.00124
	(D * GATE_N * !Q) + (!D * !Q)	-0.00138	-0.00139	-0.00139

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * GATE_N * !Q) + (!D * !Q)	-0.00069	-0.00072	-0.00072
	(D * GATE_N * !Q) + (!D * !Q)	0.00086	0.00085	0.00085
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00071	-0.00073	-0.00074
	(D * GATE_N * !Q) + (!D * !Q)	0.00092	0.00091	0.00091
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00120	-0.00124	-0.00124
	(D * GATE_N * !Q) + (!D * !Q)	0.00141	0.00140	0.00139

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
D	**GATE**	**RESET_B**	**Q**
x	**x**	**0**	**0**
x	**0**	**1**	**1**
0	**1**	**1**	**0**
1	**1**	**1**	**1**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtp_1	22.37760
sky130_fd_sc_hs__dlrtp_2	23.97600
sky130_fd_sc_hs__dlrtp_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	**GATE**	**RESET_B**	**Q**
sky130_fd_sc_hs__dlrtp_1	0.00216	0.00234	0.00265	0.43916
sky130_fd_sc_hs__dlrtp_2	0.00213	0.00229	0.00273	0.87484
sky130_fd_sc_hs__dlrtp_4	0.00212	0.00228	0.00414	1.67955

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	0.10553	0.14922
sky130_fd_sc_hs__dlrtp_2	0.00000	0.10515	0.14458
sky130_fd_sc_hs__dlrtp_4	0.00000	0.17112	0.28584

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (RR)	0.61395	1.54082	8.69634
	GATE->Q (-R)	0.53456	1.45826	8.67980
	RESET_B->Q (RR)	0.17669	1.12242	8.51374
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.63643	1.43360	8.80384
	GATE->Q (-R)	0.55643	1.34645	8.76333
	RESET_B->Q (RR)	0.18441	1.01884	8.79200
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.71028	1.40657	8.86358
	GATE->Q (-R)	0.63699	1.32773	8.84679
	RESET_B->Q (RR)	0.19737	0.92400	8.75562

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.46144	1.15617	4.94016
	GATE->Q (-F)	0.48950	0.99583	3.59161
	RESET_B->Q (FF)	0.21988	0.96484	5.57821
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.49863	1.17351	4.97873
	GATE->Q (-F)	0.52178	1.00379	3.59277
	RESET_B->Q (FF)	0.24522	0.98596	5.96492
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.50709	1.15658	5.01098
	GATE->Q (-F)	0.52745	0.98691	3.61636
	RESET_B->Q (FF)	0.25414	0.94158	5.60421

Constraint Information

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlrtp_1	**min_pulse_width**	**RESET_B** ()	0.24965	0.98145	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B** ()	0.30012	0.98145	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B** ()	0.33256	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.00784	0.00771	0.00780
	D	0.00617	0.00604	0.00614
	GATE	0.00964	0.00936	0.00940
	GATE	0.00788	0.00761	0.00766
	RESET_B	0.00451	0.00441	0.00443
	RESET_B	0.00262	0.00251	0.00253
sky130_fd_sc_hs__dlrtp_2	D	0.00918	0.00923	0.00939
	D	0.00751	0.00755	0.00777
	GATE	0.01083	0.01074	0.01083
	GATE	0.00909	0.00900	0.00910
	RESET_B	0.00580	0.00584	0.00586
	RESET_B	0.00384	0.00388	0.00393
sky130_fd_sc_hs__dlrtp_4	D	0.01284	0.01319	0.01358
	D	0.01113	0.01151	0.01198
	GATE	0.01447	0.01472	0.01502
	GATE	0.01269	0.01294	0.01334
	RESET_B	0.00999	0.01025	0.01048
	RESET_B	0.00701	0.00727	0.00751

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.00626	0.00622	0.00651
	D	0.00793	0.00790	0.00810
	GATE	0.00991	0.00981	0.00998
	GATE	0.00839	0.00829	0.00843
	RESET_B	0.00509	0.00493	0.00509
	RESET_B	0.00685	0.00668	0.00672
sky130_fd_sc_hs__dlrtp_2	D	0.00740	0.00758	0.00781
	D	0.00908	0.00926	0.00946
	GATE	0.01089	0.01099	0.01121
	GATE	0.00941	0.00951	0.00967
	RESET_B	0.00619	0.00616	0.00643
	RESET_B	0.00802	0.00802	0.00800
sky130_fd_sc_hs__dlrtp_4	D	0.01079	0.01132	0.01186
	D	0.01250	0.01302	0.01324
	GATE	0.01417	0.01463	0.01495
	GATE	0.01273	0.01320	0.01343
	RESET_B	0.00982	0.00988	0.01065
	RESET_B	0.01264	0.01273	0.01312

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(GATE * !RESET_B * !Q)	0.00404	0.00386	0.00398
	(GATE * !RESET_B * !Q)	0.00261	0.00242	0.00254
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00246	0.00230	0.00244
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00091	0.00074	0.00088
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00410	0.00391	0.00403
	(GATE * !RESET_B * !Q)	0.00266	0.00248	0.00259
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00248	0.00232	0.00245
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00093	0.00077	0.00091
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00425	0.00406	0.00417
	(GATE * !RESET_B * !Q)	0.00282	0.00264	0.00274
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00247	0.00231	0.00244
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00093	0.00076	0.00090

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(GATE * !RESET_B * !Q)	0.00339	0.00325	0.00354
	(GATE * !RESET_B * !Q)	0.00483	0.00469	0.00498
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00056	0.00047	0.00082
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00212	0.00203	0.00238
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00347	0.00334	0.00362
	(GATE * !RESET_B * !Q)	0.00491	0.00478	0.00506
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00059	0.00050	0.00085
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00214	0.00205	0.00239
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00397	0.00384	0.00412
	(GATE * !RESET_B * !Q)	0.00542	0.00528	0.00557
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00057	0.00048	0.00083
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00211	0.00202	0.00237

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(D * RESET_B * Q)	0.00478	0.00454	0.00467
	(D * RESET_B * Q)	0.00314	0.00289	0.00304
	(D * !RESET_B * !Q)	0.00567	0.00536	0.00544
	(D * !RESET_B * !Q)	0.00415	0.00384	0.00391
	(!D * !Q)	0.00476	0.00454	0.00466
	(!D * !Q)	0.00313	0.00290	0.00302
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00466	0.00441	0.00456
	(D * RESET_B * Q)	0.00305	0.00280	0.00295
	(D * !RESET_B * !Q)	0.00558	0.00527	0.00534
	(D * !RESET_B * !Q)	0.00408	0.00376	0.00384
	(!D * !Q)	0.00464	0.00440	0.00453
	(!D * !Q)	0.00302	0.00279	0.00292
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00459	0.00435	0.00449
	(D * RESET_B * Q)	0.00298	0.00273	0.00288
	(D * !RESET_B * !Q)	0.00573	0.00541	0.00548
	(D * !RESET_B * !Q)	0.00423	0.00391	0.00397
	(!D * !Q)	0.00459	0.00436	0.00449
	(!D * !Q)	0.00298	0.00275	0.00289

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(D * RESET_B * Q)	0.00286	0.00269	0.00300
	(D * RESET_B * Q)	0.00450	0.00433	0.00464
	(D * !RESET_B * !Q)	0.00481	0.00455	0.00481
	(D * !RESET_B * !Q)	0.00634	0.00607	0.00634
	(!D * !Q)	0.00292	0.00275	0.00305
	(!D * !Q)	0.00456	0.00438	0.00469
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00289	0.00271	0.00303
	(D * RESET_B * Q)	0.00449	0.00431	0.00464
	(D * !RESET_B * !Q)	0.00490	0.00464	0.00490
	(D * !RESET_B * !Q)	0.00641	0.00615	0.00640
	(!D * !Q)	0.00296	0.00278	0.00309
	(!D * !Q)	0.00457	0.00439	0.00470
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00285	0.00268	0.00299
	(D * RESET_B * Q)	0.00445	0.00428	0.00460
	(D * !RESET_B * !Q)	0.00541	0.00515	0.00539
	(D * !RESET_B * !Q)	0.00692	0.00666	0.00690
	(!D * !Q)	0.00289	0.00271	0.00302
	(!D * !Q)	0.00449	0.00432	0.00463

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(D * !GATE * !Q) + (!D * !Q)	0.00071	0.00072	0.00072
	(D * !GATE * !Q) + (!D * !Q)	-0.00086	-0.00087	-0.00087
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00073	0.00072	0.00072
	(D * !GATE * !Q) + (!D * !Q)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00120	0.00119	0.00120
	(D * !GATE * !Q) + (!D * !Q)	-0.00132	-0.00131	-0.00132

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(D * !GATE * !Q) + (!D * !Q)	-0.00069	-0.00072	-0.00072
	(D * !GATE * !Q) + (!D * !Q)	0.00089	0.00088	0.00087
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00070	-0.00072	-0.00072
	(D * !GATE * !Q) + (!D * !Q)	0.00094	0.00093	0.00093
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00116	-0.00119	-0.00120
	(D * !GATE * !Q) + (!D * !Q)	0.00134	0.00133	0.00132

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT		OUTPUT	
D	**GATE_N**	**Q**	**Q_N**
0	**0**	**0**	**1**
x	**1**	**1**	**1**
1	**0**	**1**	**0**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbn_1	27.17280
sky130_fd_sc_hs__dlxbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	**GATE_N**	**Q**	**Q_N**
sky130_fd_sc_hs__dlxbn_1	0.00215	0.00234	0.42741	0.43325
sky130_fd_sc_hs__dlxbn_2	0.00203	0.00232	0.81634	0.85961

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlxbn_1	0.00000	0.12301	0.18133
sky130_fd_sc_hs__dlxbn_2	0.00000	0.12791	0.17558

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (RR)	0.61511	1.55466	8.66957
	GATE_N->Q (-R)	0.73839	1.89137	10.43000
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.62344	1.44287	8.80641
	GATE_N->Q (-R)	0.74537	1.78076	10.56390

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.47862	1.18282	4.94065
	GATE_N->Q (-F)	0.52873	1.26174	5.42294
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.51351	1.20008	4.89558
	GATE_N->Q (-F)	0.56437	1.28041	5.38279

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q_N (FR)	0.59108	1.73910	10.42900
	GATE_N->Q_N (-R)	0.64144	1.81787	10.91230
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.65971	1.63135	10.28710
	GATE_N->Q_N (-R)	0.71114	1.71179	10.77430

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q_N (RF)	0.69613	1.18047	3.71231
	GATE_N->Q_N (-F)	0.81954	1.51710	5.46806
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.77928	1.25353	3.86476
	GATE_N->Q_N (-F)	0.90164	1.59152	5.61692

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00529	0.00534	0.00542
	D	0.00455	0.00460	0.00468
	GATE_N	0.00549	0.00552	0.00578
	GATE_N	0.00630	0.00633	0.00649
sky130_fd_sc_hs__dlxbn_2	D	0.00652	0.00674	0.00689
	D	0.00581	0.00603	0.00617
	GATE_N	0.00672	0.00693	0.00745
	GATE_N	0.00753	0.00774	0.00795

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00465	0.00473	0.00480
	D	0.00540	0.00547	0.00550
	GATE_N	0.00545	0.00546	0.00551
	GATE_N	0.00626	0.00627	0.00628
sky130_fd_sc_hs__dlxbn_2	D	0.00583	0.00608	0.00615
	D	0.00654	0.00678	0.00680
	GATE_N	0.00661	0.00680	0.00687
	GATE_N	0.00742	0.00761	0.00759

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00466	0.00474	0.00491
	D	0.00541	0.00548	0.00561
	GATE_N	0.00546	0.00548	0.00564
	GATE_N	0.00627	0.00629	0.00639
sky130_fd_sc_hs__dlxbn_2	D	0.00584	0.00609	0.00633
	D	0.00655	0.00680	0.00697
	GATE_N	0.00663	0.00681	0.00720
	GATE_N	0.00743	0.00762	0.00777

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00529	0.00534	0.00530
	D	0.00454	0.00459	0.00455
	GATE_N	0.00548	0.00552	0.00558
	GATE_N	0.00629	0.00633	0.00636
sky130_fd_sc_hs__dlxbn_2	D	0.00651	0.00674	0.00670
	D	0.00580	0.00602	0.00596
	GATE_N	0.00672	0.00693	0.00710
	GATE_N	0.00753	0.00774	0.00774

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00239	0.00224	0.00238
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00091	0.00075	0.00089
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00233	0.00219	0.00233
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00092	0.00077	0.00092

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00066	0.00058	0.00092
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00215	0.00206	0.00241
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00069	0.00061	0.00095
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00210	0.00202	0.00237

Passive power(pJ) for GATE_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	(D * Q * !Q_N)	0.00452	0.00425	0.00441
	(D * Q * !Q_N)	0.00290	0.00263	0.00278
	(!D * !Q * Q_N)	0.00447	0.00423	0.00436
	(!D * !Q * Q_N)	0.00284	0.00260	0.00274
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00450	0.00423	0.00439
	(D * Q * !Q_N)	0.00288	0.00262	0.00277
	(!D * !Q * Q_N)	0.00445	0.00421	0.00435
	(!D * !Q * Q_N)	0.00284	0.00259	0.00273

Passive power(pJ) for GATE_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	(D * Q * !Q_N)	0.00296	0.00278	0.00309
	(D * Q * !Q_N)	0.00459	0.00440	0.00471
	(!D * !Q * Q_N)	0.00303	0.00284	0.00315
	(!D * !Q * Q_N)	0.00465	0.00446	0.00477
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00295	0.00276	0.00307
	(D * Q * !Q_N)	0.00456	0.00438	0.00469
	(!D * !Q * Q_N)	0.00301	0.00282	0.00313
	(!D * !Q * Q_N)	0.00463	0.00444	0.00475

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT	
D	GATE	Q	Q_N
x	0	1	1
0	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbp_1	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE	Q	Q_N
sky130_fd_sc_hs__dlxbp_1	0.00213	0.00235	0.43553	0.44133

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.12301	0.18133

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (RR)	0.59996	1.54508	8.77750
	GATE->Q (-R)	0.51947	1.45898	8.73462

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.49148	1.19948	4.98295
	GATE->Q (-F)	0.50717	1.02296	3.58646

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q_N (FR)	0.60496	1.75925	10.57130
	GATE->Q_N (-R)	0.62087	1.58251	9.17074

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q_N (RF)	0.68111	1.16588	3.72432
	GATE->Q_N (-F)	0.60086	1.07922	3.68213

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00529	0.00534	0.00542
	D	0.00455	0.00460	0.00468
	GATE	0.00608	0.00604	0.00612
	GATE	0.00527	0.00525	0.00530

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00457	0.00465	0.00471
	D	0.00531	0.00539	0.00541
	GATE	0.00627	0.00630	0.00630
	GATE	0.00545	0.00549	0.00548

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00458	0.00466	0.00491
	D	0.00532	0.00540	0.00554
	GATE	0.00628	0.00631	0.00642
	GATE	0.00547	0.00550	0.00560

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00528	0.00533	0.00529
	D	0.00454	0.00460	0.00455
	GATE	0.00607	0.00602	0.00597
	GATE	0.00526	0.00524	0.00516

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00244	0.00229	0.00243
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00098	0.00082	0.00096

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00060	0.00051	0.00086
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00207	0.00199	0.00233

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	(D * Q * !Q_N)	0.00451	0.00427	0.00442
	(D * Q * !Q_N)	0.00288	0.00263	0.00279
	(!D * !Q * Q_N)	0.00458	0.00435	0.00449
	(!D * !Q * Q_N)	0.00296	0.00272	0.00286

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	(D * Q * !Q_N)	0.00281	0.00265	0.00296
	(D * Q * !Q_N)	0.00444	0.00427	0.00459
	(!D * !Q * Q_N)	0.00278	0.00260	0.00292
	(!D * !Q * Q_N)	0.00440	0.00422	0.00454

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
D	GATE_N	Q
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtn_1	22.37760
sky130_fd_sc_hs__dlxtn_2	23.97600
sky130_fd_sc_hs__dlxtn_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE_N	Q
sky130_fd_sc_hs__dlxtn_1	0.00213	0.00237	0.43881
sky130_fd_sc_hs__dlxtn_2	0.00218	0.00237	0.86124
sky130_fd_sc_hs__dlxtn_4	0.00217	0.00236	1.68346

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.10071	0.13458
sky130_fd_sc_hs__dlxtn_2	0.00000	0.09977	0.14458
sky130_fd_sc_hs__dlxtn_4	0.00000	0.15499	0.19619

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (RR)	0.57956	1.51386	8.71020
	GATE_N->Q (-R)	0.70735	1.85541	10.49880
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.58141	1.37588	8.69498
	GATE_N->Q (-R)	0.70448	1.71031	10.45290
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.67210	1.36541	8.87578
	GATE_N->Q (-R)	0.79421	1.69929	10.63800

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.43944	1.12773	4.88205
	GATE_N->Q (-F)	0.49621	1.21345	5.39130
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.47182	1.14149	4.91905
	GATE_N->Q (-F)	0.52361	1.22163	5.41074
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.49161	1.14294	5.07437
	GATE_N->Q (-F)	0.54907	1.22846	5.60326

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.00746	0.00741	0.00754
	D	0.00592	0.00588	0.00602
	GATE_N	0.00779	0.00773	0.00798
	GATE_N	0.00946	0.00939	0.00968
sky130_fd_sc_hs__dlxtn_2	D	0.00870	0.00880	0.00896
	D	0.00713	0.00722	0.00743
	GATE_N	0.00900	0.00908	0.00938
	GATE_N	0.01065	0.01074	0.01110
sky130_fd_sc_hs__dlxtn_4	D	0.01233	0.01265	0.01292
	D	0.01076	0.01109	0.01146
	GATE_N	0.01263	0.01296	0.01338
	GATE_N	0.01428	0.01461	0.01518

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.00635	0.00631	0.00660
	D	0.00790	0.00785	0.00808
	GATE_N	0.00790	0.00774	0.00805
	GATE_N	0.00956	0.00940	0.00959
sky130_fd_sc_hs__dlxtn_2	D	0.00746	0.00760	0.00798
	D	0.00904	0.00917	0.00940
	GATE_N	0.00899	0.00901	0.00925
	GATE_N	0.01064	0.01066	0.01086
sky130_fd_sc_hs__dlxtn_4	D	0.01091	0.01138	0.01202
	D	0.01248	0.01295	0.01318
	GATE_N	0.01245	0.01280	0.01301
	GATE_N	0.01410	0.01444	0.01464

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00239	0.00224	0.00237
	GATE_N	0.00086	0.00069	0.00083
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00240	0.00225	0.00238
	GATE_N	0.00084	0.00067	0.00081
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00241	0.00226	0.00238
	GATE_N	0.00085	0.00068	0.00081

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00081	0.00072	0.00106
	GATE_N	0.00235	0.00226	0.00260
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00080	0.00071	0.00105
	GATE_N	0.00237	0.00228	0.00262
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00081	0.00072	0.00106
	GATE_N	0.00238	0.00229	0.00263

Passive power(pJ) for GATE_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00471	0.00445	0.00459
	(D * Q)	0.00304	0.00278	0.00292
	(!D * !Q)	0.00464	0.00441	0.00453
	(!D * !Q)	0.00298	0.00274	0.00286
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00459	0.00434	0.00449
	(D * Q)	0.00294	0.00268	0.00284
	(!D * !Q)	0.00451	0.00429	0.00441
	(!D * !Q)	0.00286	0.00263	0.00276
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00463	0.00437	0.00452
	(D * Q)	0.00298	0.00271	0.00286
	(!D * !Q)	0.00455	0.00431	0.00444
	(!D * !Q)	0.00290	0.00266	0.00278

Passive power(pJ) for GATE_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00297	0.00278	0.00309
	(D * Q)	0.00464	0.00445	0.00475
	(!D * !Q)	0.00305	0.00286	0.00317
	(!D * !Q)	0.00472	0.00453	0.00483
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00294	0.00274	0.00306
	(D * Q)	0.00459	0.00440	0.00472
	(!D * !Q)	0.00304	0.00285	0.00315
	(!D * !Q)	0.00469	0.00451	0.00481
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00296	0.00277	0.00308
	(D * Q)	0.00462	0.00443	0.00474
	(!D * !Q)	0.00306	0.00287	0.00318
	(!D * !Q)	0.00472	0.00453	0.00483

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
D	GATE	Q
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtp_1	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE	Q
sky130_fd_sc_hs__dlxtp_1	0.00209	0.00242	0.43318

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.09274	0.13375

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (RR)	0.67747	1.60604	8.79081
	GATE->Q (-R)	0.54464	1.47464	8.74059

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.46455	1.15690	4.94014
	GATE->Q (-F)	0.48551	0.98851	3.55409

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.00809	0.00801	0.00811
	D	0.00650	0.00642	0.00654
	GATE	0.00994	0.00975	0.00965
	GATE	0.00820	0.00802	0.00792

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.00713	0.00710	0.00736
	D	0.00872	0.00869	0.00890
	GATE	0.01056	0.01044	0.01059
	GATE	0.00899	0.00888	0.00900

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00225	0.00212	0.00227
	!GATE	0.00075	0.00061	0.00077

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00060	0.00049	0.00083
	!GATE	0.00210	0.00199	0.00233

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00494	0.00470	0.00483
	(D * Q)	0.00329	0.00304	0.00318
	(!D * !Q)	0.00482	0.00459	0.00469
	(!D * !Q)	0.00316	0.00294	0.00304

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00248	0.00230	0.00261
	(D * Q)	0.00413	0.00396	0.00427
	(!D * !Q)	0.00271	0.00252	0.00282
	(!D * !Q)	0.00436	0.00418	0.00447

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlygate4sd1_1	12.78720
sky130_fd_sc_hs__dlygate4sd2_1	12.78720
sky130_fd_sc_hs__dlygate4sd3_1	12.78720

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlygate4sd1_1	0.00171	0.43677
sky130_fd_sc_hs__dlygate4sd2_1	0.00172	0.43561
sky130_fd_sc_hs__dlygate4sd3_1	0.00174	0.43189

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.00976	0.01278
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.00899	0.01201
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.00899	0.01201

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (RR)**	0.37810	1.31857	8.60138
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.54918	1.49683	8.81327
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	1.30995	2.27148	9.68238

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.52443	1.28656	6.04995
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.69641	1.48308	6.29381
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	1.31322	2.18544	7.22468

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00585	0.00573	0.00565
	A	0.00462	0.00450	0.00443
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00597	0.00588	0.00579
	A	0.00473	0.00463	0.00456
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00648	0.00642	0.00639
	A	0.00523	0.00517	0.00515

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00445	0.00437	0.00464
	A	0.00568	0.00559	0.00552
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00460	0.00454	0.00475
	A	0.00585	0.00578	0.00568
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00533	0.00529	0.00539
	A	0.00658	0.00654	0.00638

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	0
1	0	1
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__ebufn_1	12.78720
sky130_fd_sc_hs__ebufn_2	14.38560
sky130_fd_sc_hs__ebufn_4	19.18080
sky130_fd_sc_hs__ebufn_8	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__ebufn_1	0.00217	0.00403	0.19583
sky130_fd_sc_hs__ebufn_2	0.00236	0.00520	0.35478
sky130_fd_sc_hs__ebufn_4	0.00258	0.00791	0.69917
sky130_fd_sc_hs__ebufn_8	0.00495	0.01311	1.31256

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	0.05626	0.09019
sky130_fd_sc_hs__ebufn_2	0.00000	0.03792	0.05203
sky130_fd_sc_hs__ebufn_4	0.00000	0.02533	0.04887
sky130_fd_sc_hs__ebufn_8	0.00000	0.04252	0.09497

Delay Information

Delay(ns) to Z rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (RR)	0.19836	1.38151	8.59219
	TE_B->Z (RR)	0.04589	0.36435	3.47329
	TE_B->Z (FR)	0.16711	1.60084	12.68900
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.16873	1.21057	8.73681
	TE_B->Z (RR)	0.04769	0.36562	3.47406
	TE_B->Z (FR)	0.15427	1.41445	12.70420
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.17352	1.09097	9.02547
	TE_B->Z (RR)	0.05755	0.36860	3.47602
	TE_B->Z (FR)	0.14013	1.22726	12.58970
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.17995	0.98083	9.07864
	TE_B->Z (RR)	0.08665	0.44194	3.48028
	TE_B->Z (FR)	0.14794	1.11362	12.60490

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.18611	0.87391	4.46980
	TE_B->Z (RF)	0.04558	0.36435	3.47331
	TE_B->Z (FF)	0.15396	0.81091	4.15787
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.22486	0.93322	5.08418
	TE_B->Z (RF)	0.04737	0.36553	3.47407
	TE_B->Z (FF)	0.17215	0.84298	4.61478
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.31035	1.03604	5.86834
	TE_B->Z (RF)	0.05702	0.36865	3.47606
	TE_B->Z (FF)	0.21683	0.91565	5.24991
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.29577	1.00562	5.93271
	TE_B->Z (RF)	0.08545	0.43856	3.48039
	TE_B->Z (FF)	0.31986	1.02956	6.01056

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00329	0.00318	0.00334
	A	0.00168	0.00157	0.00173
	TE_B	0.00144	0.00138	0.00177
	TE_B	0.00430	0.00424	0.00448
sky130_fd_sc_hs__ebufn_2	A	0.00467	0.00466	0.00484
	A	0.00296	0.00299	0.00313
	TE_B	0.00273	0.00264	0.00296
	TE_B	0.00642	0.00633	0.00665
sky130_fd_sc_hs__ebufn_4	A	0.00742	0.00762	0.00783
	A	0.00554	0.00575	0.00597
	TE_B	0.00545	0.00532	0.00554
	TE_B	0.01108	0.01096	0.01120
sky130_fd_sc_hs__ebufn_8	A	0.01433	0.01476	0.01534
	A	0.01071	0.01121	0.01175
	TE_B	0.01111	0.01092	0.01110
	TE_B	0.02048	0.02030	0.02046

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00160	0.00160	0.00195
	A	0.00321	0.00319	0.00354
	TE_B	0.00172	0.00166	0.00204
	TE_B	0.00452	0.00446	0.00485
sky130_fd_sc_hs__ebufn_2	A	0.00278	0.00291	0.00329
	A	0.00449	0.00462	0.00491
	TE_B	0.00330	0.00321	0.00355
	TE_B	0.00682	0.00673	0.00705
sky130_fd_sc_hs__ebufn_4	A	0.00514	0.00521	0.00598
	A	0.00701	0.00746	0.00780
	TE_B	0.00646	0.00634	0.00656
	TE_B	0.01186	0.01173	0.01195
sky130_fd_sc_hs__ebufn_8	A	0.01011	0.01097	0.01207
	A	0.01375	0.01460	0.01540
	TE_B	0.01307	0.01288	0.01350
	TE_B	0.02200	0.02178	0.02199

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00216	0.00204	0.00220
	(TE_B * Z)	0.00054	0.00041	0.00058
	(TE_B * !Z)	0.00215	0.00202	0.00218
	(TE_B * !Z)	0.00053	0.00040	0.00056
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00297	0.00282	0.00297
	(TE_B * Z)	0.00121	0.00105	0.00121
	(TE_B * !Z)	0.00291	0.00276	0.00287
	(TE_B * !Z)	0.00115	0.00099	0.00111
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00439	0.00424	0.00431
	(TE_B * Z)	0.00246	0.00230	0.00237
	(TE_B * !Z)	0.00429	0.00414	0.00415
	(TE_B * !Z)	0.00235	0.00219	0.00221
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00817	0.00787	0.00803
	(TE_B * Z)	0.00440	0.00410	0.00427
	(TE_B * !Z)	0.00794	0.00764	0.00768
	(TE_B * !Z)	0.00418	0.00386	0.00393

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00036	0.00029	0.00065
	(TE_B * Z)	0.00200	0.00193	0.00229
	(TE_B * !Z)	0.00038	0.00032	0.00068
	(TE_B * !Z)	0.00200	0.00193	0.00230
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00074	0.00063	0.00087
	(TE_B * Z)	0.00253	0.00243	0.00266
	(TE_B * !Z)	0.00081	0.00071	0.00098
	(TE_B * !Z)	0.00256	0.00247	0.00274
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00134	0.00122	0.00135
	(TE_B * Z)	0.00335	0.00323	0.00337
	(TE_B * !Z)	0.00149	0.00137	0.00156
	(TE_B * !Z)	0.00340	0.00330	0.00348
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00232	0.00208	0.00239
	(TE_B * Z)	0.00621	0.00599	0.00631
	(TE_B * !Z)	0.00262	0.00241	0.00280
	(TE_B * !Z)	0.00635	0.00614	0.00653

Passive power(pJ) for TE_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00181	0.00160	0.00175
	(A * Z)	-0.00100	-0.00122	-0.00107
	(!A * !Z)	0.00185	0.00163	0.00178
	(!A * !Z)	-0.00095	-0.00119	-0.00103
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00197	0.00169	0.00180
	(A * Z)	-0.00156	-0.00186	-0.00174
	(!A * !Z)	0.00206	0.00176	0.00188
	(!A * !Z)	-0.00146	-0.00179	-0.00166
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00246	0.00205	0.00202
	(A * Z)	-0.00292	-0.00337	-0.00339
	(!A * !Z)	0.00254	0.00213	0.00212
	(!A * !Z)	-0.00282	-0.00328	-0.00328
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00340	0.00281	0.00261
	(A * Z)	-0.00549	-0.00614	-0.00633
	(!A * !Z)	0.00342	0.00289	0.00277
	(!A * !Z)	-0.00541	-0.00602	-0.00616

Passive power(pJ) for TE_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00044	0.00037	0.00076
	(A * Z)	0.00325	0.00317	0.00356
	(!A * !Z)	0.00043	0.00036	0.00074
	(!A * !Z)	0.00323	0.00317	0.00355
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00102	0.00093	0.00123
	(A * Z)	0.00456	0.00448	0.00477
	(!A * !Z)	0.00098	0.00090	0.00119
	(!A * !Z)	0.00452	0.00444	0.00472
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00209	0.00196	0.00219
	(A * Z)	0.00748	0.00738	0.00760
	(!A * !Z)	0.00210	0.00198	0.00218
	(!A * !Z)	0.00746	0.00737	0.00758
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00426	0.00407	0.00427
	(A * Z)	0.01317	0.01302	0.01322
	(!A * !Z)	0.00442	0.00423	0.00440
	(!A * !Z)	0.01327	0.01314	0.01331

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	DE	CLK	Q	Q_N
x	0	R	IQ	IQ_N
0	1	R	0	1
1	1	R	1	0
x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxbp_1	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	DE	CLK	Q	Q_N
sky130_fd_sc_hs__edfxbp_1	0.00174	0.00340	0.00271	0.44065	0.43562

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.10406	0.16381

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RR)	0.44606	1.41779	8.81642

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.50487	1.13594	3.91861

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q_N (RR)	0.71749	1.64179	8.92993

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q_N (RF)	0.62341	1.16672	3.87675

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.19194	-0.32458	-1.70444
	setup	CLK (R)	0.26479	0.37194	1.78038

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-1.18847	-1.25789	-4.67418
	setup	CLK (R)	1.48787	1.53265	4.87512

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.19194	-0.32458	-1.70444
	setup	CLK (R)	0.26479	0.37194	1.78038

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-1.18847	-1.25789	-4.67418
	setup	CLK (R)	1.48787	1.53265	4.87512

Constraints(ns) for DE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.00761	0.00990	0.06038
	setup	CLK (R)	1.55803	1.54479	1.84232

Constraints(ns) for DE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.35857	-0.54734	-2.71068
	setup	CLK (R)	1.27072	1.36060	4.64254

Constraints(ns) for DE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.00761	0.00990	0.06038
	hold	CLK (R)	-0.45364	-0.54701	-0.90055
	setup	CLK (R)	0.26372	0.35309	1.84232
	setup	CLK (R)	1.55803	1.54479	1.48170

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-1.19789	-1.30769	-4.61175
	hold	CLK (R)	-0.35857	-0.54734	-2.71068
	setup	CLK (R)	1.27072	1.36060	4.64254
	setup	CLK (R)	0.39563	0.57357	2.74802

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	min_pulse_width	CLK ()	0.19918	0.98145	16.50020
	min_pulse_width	CLK ()	0.40106	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	min_pulse_width	CLK ()	0.40106	0.98145	16.50020
	min_pulse_width	CLK ()	0.97586	1.07955	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00742	0.00739	0.00745
	CLK	0.00650	0.00647	0.00652

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00720	0.00712	0.00701
	CLK	0.00620	0.00613	0.00601

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00721	0.00713	0.00711
	CLK	0.00621	0.00614	0.00611

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00740	0.00737	0.00734
	CLK	0.00648	0.00645	0.00641

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00281	0.00273	0.00274
	(CLK * DE)	0.00149	0.00140	0.00142
	(CLK * !DE)	0.00053	0.00054	0.00054
	(CLK * !DE)	-0.00032	-0.00033	-0.00033
	(!CLK * DE * Q * !Q_N)	0.00627	0.00620	0.00613
	(!CLK * DE * Q * !Q_N)	0.00494	0.00487	0.00480
	(!CLK * DE * !Q * Q_N)	0.00599	0.00593	0.00585
	(!CLK * DE * !Q * Q_N)	0.00466	0.00459	0.00452
	(!CLK * !DE)	0.00054	0.00054	0.00054
	(!CLK * !DE)	-0.00033	-0.00033	-0.00033

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00104	0.00092	0.00097
	(CLK * DE)	0.00238	0.00227	0.00231
	(CLK * !DE)	-0.00019	-0.00019	-0.00018
	(CLK * !DE)	0.00066	0.00066	0.00066
	(!CLK * DE * Q * !Q_N)	0.00435	0.00423	0.00424
	(!CLK * DE * Q * !Q_N)	0.00568	0.00555	0.00557
	(!CLK * DE * !Q * Q_N)	0.00457	0.00445	0.00448
	(!CLK * DE * !Q * Q_N)	0.00591	0.00579	0.00582
	(!CLK * !DE)	-0.00019	-0.00019	-0.00018
	(!CLK * !DE)	0.00067	0.00066	0.00066

Passive power(pJ) for DE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00441	0.00422	0.00430
	CLK	0.00144	0.00124	0.00133
	(!CLK * D * Q * !Q_N)	0.00242	0.00225	0.00235
	(!CLK * D * Q * !Q_N)	-0.00001	-0.00018	-0.00009
	(!CLK * D * !Q * Q_N)	0.00785	0.00766	0.00769
	(!CLK * D * !Q * Q_N)	0.00488	0.00468	0.00472
	(!CLK * !D * Q * !Q_N)	0.00736	0.00717	0.00723
	(!CLK * !D * Q * !Q_N)	0.00540	0.00521	0.00527
	(!CLK * !D * !Q * Q_N)	0.00242	0.00227	0.00236
	(!CLK * !D * !Q * Q_N)	0.00002	-0.00015	-0.00004

Passive power(pJ) for DE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00267	0.00255	0.00270
	CLK	0.00462	0.00451	0.00467
	(!CLK * D * Q * !Q_N)	-0.00000	-0.00011	0.00010
	(!CLK * D * Q * !Q_N)	0.00243	0.00232	0.00254
	(!CLK * D * !Q * Q_N)	0.00500	0.00484	0.00503
	(!CLK * D * !Q * Q_N)	0.00797	0.00782	0.00800
	(!CLK * !D * Q * !Q_N)	0.00612	0.00600	0.00613
	(!CLK * !D * Q * !Q_N)	0.00807	0.00796	0.00810
	(!CLK * !D * !Q * Q_N)	-0.00002	-0.00013	0.00007
	(!CLK * !D * !Q * Q_N)	0.00239	0.00228	0.00249

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(D * Q * !Q_N)	0.00707	0.00679	0.00680
	(D * Q * !Q_N)	0.00515	0.00487	0.00488
	(D * !DE * !Q * Q_N)	0.00681	0.00651	0.00653
	(D * !DE * !Q * Q_N)	0.00489	0.00458	0.00460
	(!D * !Q * Q_N)	0.00681	0.00651	0.00653
	(!D * !Q * Q_N)	0.00489	0.00458	0.00460
	(!D * !DE * Q * !Q_N)	0.00707	0.00679	0.00680
	(!D * !DE * Q * !Q_N)	0.00515	0.00487	0.00488

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(D * Q * !Q_N)	0.00367	0.00347	0.00355
	(D * Q * !Q_N)	0.00559	0.00539	0.00548
	(D * DE * !Q * Q_N)	0.00729	0.00703	0.00699
	(D * DE * !Q * Q_N)	0.00921	0.00895	0.00892
	(D * !DE * !Q * Q_N)	0.00383	0.00361	0.00372
	(D * !DE * !Q * Q_N)	0.00575	0.00553	0.00564
	(!D * DE * Q * !Q_N)	0.00784	0.00764	0.00795
	(!D * DE * Q * !Q_N)	0.00976	0.00956	0.00988
	(!D * !Q * Q_N)	0.00383	0.00361	0.00372
	(!D * !Q * Q_N)	0.00575	0.00553	0.00564
	(!D * !DE * Q * !Q_N)	0.00367	0.00347	0.00355
	(!D * !DE * Q * !Q_N)	0.00559	0.00539	0.00548

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
D	DE	CLK	Q
x	0	R	IQ
0	1	R	0
1	1	R	1
x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxtp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	DE	CLK	Q
sky130_fd_sc_hs__edfxtp_1	0.00178	0.00327	0.00265	0.44296

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.11036	0.19008

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RR)	0.42315	1.39057	8.79604

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.45299	1.05054	3.76926

Constraint Information

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.18384	-0.32469	-1.71751
	setup	CLK (R)	0.26169	0.37265	1.79258

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-1.18046	-1.24975	-4.66593
	setup	CLK (R)	1.48189	1.52739	4.88527

Constraints(ns) for DE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.01167	0.00447	0.03815
	setup	CLK (R)	1.54677	1.53305	1.85818

Constraints(ns) for DE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.35352	-0.54670	-2.72280
	setup	CLK (R)	1.25620	1.34280	4.63774

Constraints(ns) for DE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.01167	0.00447	0.03815
	hold	CLK (R)	-0.44722	-0.52460	-0.88110
	setup	CLK (R)	0.25923	0.35358	1.85818
	setup	CLK (R)	1.54677	1.53305	1.49091

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-1.19079	-1.29822	-4.60944
	hold	CLK (R)	-0.35352	-0.54670	-2.72280
	setup	CLK (R)	1.25620	1.34280	4.63774
	setup	CLK (R)	0.38880	0.57336	2.76660

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	min_pulse_width	CLK ()	0.18837	0.98145	16.50020
	min_pulse_width	CLK ()	0.35780	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	min_pulse_width	CLK ()	0.39024	0.98145	16.50020
	min_pulse_width	CLK ()	0.99146	1.09918	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01246	0.01233	0.01244
	CLK	0.01065	0.01052	0.01063

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01196	0.01175	0.01173
	CLK	0.01001	0.00981	0.00975

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00272	0.00263	0.00265
	(CLK * DE)	0.00138	0.00129	0.00131
	(CLK * !DE)	0.00054	0.00054	0.00054
	(CLK * !DE)	-0.00033	-0.00033	-0.00033
	(!CLK * DE * Q)	0.00616	0.00608	0.00602
	(!CLK * DE * Q)	0.00482	0.00474	0.00468
	(!CLK * DE * !Q)	0.00588	0.00581	0.00574
	(!CLK * DE * !Q)	0.00453	0.00446	0.00439
	(!CLK * !DE)	0.00054	0.00054	0.00054
	(!CLK * !DE)	-0.00033	-0.00034	-0.00033

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00100	0.00088	0.00093
	(CLK * DE)	0.00236	0.00224	0.00228
	(CLK * !DE)	-0.00018	-0.00018	-0.00018
	(CLK * !DE)	0.00068	0.00068	0.00068
	(!CLK * DE * Q)	0.00412	0.00400	0.00401
	(!CLK * DE * Q)	0.00546	0.00534	0.00535
	(!CLK * DE * !Q)	0.00437	0.00424	0.00427
	(!CLK * DE * !Q)	0.00572	0.00560	0.00562
	(!CLK * !DE)	-0.00018	-0.00018	-0.00018
	(!CLK * !DE)	0.00068	0.00068	0.00068

Passive power(pJ) for DE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00375	0.00355	0.00361
	CLK	0.00189	0.00168	0.00174
	(!CLK * D * Q)	0.00235	0.00219	0.00229
	(!CLK * D * Q)	0.00001	-0.00016	-0.00005
	(!CLK * D * !Q)	0.00766	0.00747	0.00752
	(!CLK * D * !Q)	0.00478	0.00459	0.00464
	(!CLK * !D * Q)	0.00705	0.00688	0.00694
	(!CLK * !D * Q)	0.00520	0.00501	0.00508
	(!CLK * !D * !Q)	0.00236	0.00221	0.00230
	(!CLK * !D * !Q)	0.00005	-0.00011	-0.00000

Passive power(pJ) for DE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00259	0.00246	0.00261
	CLK	0.00444	0.00432	0.00449
	(!CLK * D * Q)	0.00002	-0.00009	0.00012
	(!CLK * D * Q)	0.00234	0.00224	0.00246
	(!CLK * D * !Q)	0.00481	0.00465	0.00484
	(!CLK * D * !Q)	0.00768	0.00753	0.00771
	(!CLK * !D * Q)	0.00602	0.00589	0.00603
	(!CLK * !D * Q)	0.00787	0.00776	0.00790
	(!CLK * !D * !Q)	-0.00001	-0.00012	0.00009
	(!CLK * !D * !Q)	0.00230	0.00219	0.00241

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00678	0.00651	0.00652
	(D * Q)	0.00490	0.00463	0.00463
	(D * !DE * !Q)	0.00674	0.00643	0.00646
	(D * !DE * !Q)	0.00485	0.00455	0.00458
	(!D * !Q)	0.00674	0.00644	0.00646
	(!D * !Q)	0.00485	0.00455	0.00458
	(!D * !DE * Q)	0.00678	0.00651	0.00652
	(!D * !DE * Q)	0.00490	0.00462	0.00463

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00368	0.00346	0.00357
	(D * Q)	0.00555	0.00533	0.00545
	(D * DE * !Q)	0.00704	0.00678	0.00678
	(D * DE * !Q)	0.00891	0.00865	0.00866
	(D * !DE * !Q)	0.00360	0.00340	0.00350
	(D * !DE * !Q)	0.00548	0.00528	0.00539
	(!D * DE * Q)	0.00763	0.00742	0.00775
	(!D * DE * Q)	0.00951	0.00929	0.00963
	(!D * !Q)	0.00361	0.00340	0.00350
	(!D * !Q)	0.00548	0.00528	0.00539
	(!D * !DE * Q)	0.00367	0.00346	0.00357
	(!D * !DE * Q)	0.00555	0.00533	0.00544

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	1
1	0	0
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvn_1	7.99200
sky130_fd_sc_hs__einvn_2	11.18880
sky130_fd_sc_hs__einvn_4	17.58240
sky130_fd_sc_hs__einvn_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__einvn_1	0.00263	0.00293	0.19552
sky130_fd_sc_hs__einvn_2	0.00491	0.00441	0.37387
sky130_fd_sc_hs__einvn_4	0.00980	0.00786	0.72354
sky130_fd_sc_hs__einvn_8	0.01961	0.01305	1.37739

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvn_1	0.00000	0.03920	0.05505
sky130_fd_sc_hs__einvn_2	0.00000	0.04179	0.05558
sky130_fd_sc_hs__einvn_4	0.00000	0.01853	0.04611
sky130_fd_sc_hs__einvn_8	0.00000	0.02892	0.08945

Delay Information

Delay(ns) to Z rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (FR)	0.15007	1.53081	12.33070
	TE_B->Z (RR)	0.04766	0.36421	3.47297
	TE_B->Z (FR)	0.16505	1.59953	12.69340
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.10123	1.29925	12.32720
	TE_B->Z (RR)	0.05870	0.36616	3.47463
	TE_B->Z (FR)	0.13892	1.38783	12.71300
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.09281	1.13193	12.24840
	TE_B->Z (RR)	0.05863	0.36870	3.47606
	TE_B->Z (FR)	0.12861	1.21196	12.57240
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.09290	1.01840	12.29990
	TE_B->Z (RR)	0.08503	0.43580	3.48228
	TE_B->Z (FR)	0.13732	1.09742	12.56930

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.04290	0.63167	5.36398
	TE_B->Z (RF)	0.04706	0.36419	3.47300
	TE_B->Z (FF)	0.15880	0.82889	4.23682
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.03573	0.57613	5.46556
	TE_B->Z (RF)	0.05777	0.36605	3.47469
	TE_B->Z (FF)	0.18971	0.87009	4.68697
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.03467	0.52382	5.48876
	TE_B->Z (RF)	0.05784	0.36861	3.47612
	TE_B->Z (FF)	0.19977	0.88471	5.22846
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.03693	0.49615	5.72200
	TE_B->Z (RF)	0.08361	0.43257	3.48248
	TE_B->Z (FF)	0.28741	0.98637	5.95021

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00016	-0.00021	-0.00019
	A	0.00166	0.00162	0.00165
	TE_B	0.00105	0.00099	0.00124
	TE_B	0.00369	0.00364	0.00389
sky130_fd_sc_hs__einvn_2	A	-0.00081	-0.00084	-0.00077
	A	0.00271	0.00268	0.00278
	TE_B	0.00154	0.00148	0.00171
	TE_B	0.00583	0.00576	0.00600
sky130_fd_sc_hs__einvn_4	A	-0.00159	-0.00163	-0.00144
	A	0.00544	0.00539	0.00562
	TE_B	0.00318	0.00305	0.00328
	TE_B	0.01107	0.01095	0.01120
sky130_fd_sc_hs__einvn_8	A	-0.00302	-0.00312	-0.00264
	A	0.01109	0.01099	0.01155
	TE_B	0.00655	0.00637	0.00656
	TE_B	0.02045	0.02029	0.02053

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00173	0.00171	0.00175
	A	-0.00009	-0.00011	-0.00012
	TE_B	0.00191	0.00186	0.00210
	TE_B	0.00336	0.00329	0.00354
sky130_fd_sc_hs__einvn_2	A	0.00283	0.00284	0.00308
	A	-0.00069	-0.00069	-0.00065
	TE_B	0.00316	0.00310	0.00336
	TE_B	0.00510	0.00502	0.00525
sky130_fd_sc_hs__einvn_4	A	0.00570	0.00569	0.00588
	A	-0.00131	-0.00135	-0.00118
	TE_B	0.00653	0.00641	0.00673
	TE_B	0.00960	0.00949	0.00971
sky130_fd_sc_hs__einvn_8	A	0.01134	0.01116	0.01203
	A	-0.00271	-0.00290	-0.00242
	TE_B	0.01311	0.01293	0.01312
	TE_B	0.01725	0.01706	0.01725

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00042	0.00042	0.00041
	(TE_B * Z)	-0.00064	-0.00065	-0.00064
	(TE_B * !Z)	0.00044	0.00044	0.00044
	(TE_B * !Z)	-0.00060	-0.00060	-0.00060
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00080	0.00079	0.00076
	(TE_B * Z)	-0.00123	-0.00125	-0.00123
	(TE_B * !Z)	0.00087	0.00087	0.00087
	(TE_B * !Z)	-0.00111	-0.00111	-0.00110
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00147	0.00145	0.00139
	(TE_B * Z)	-0.00246	-0.00249	-0.00247
	(TE_B * !Z)	0.00158	0.00159	0.00158
	(TE_B * !Z)	-0.00225	-0.00227	-0.00225
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00282	0.00278	0.00268
	(TE_B * Z)	-0.00487	-0.00493	-0.00489
	(TE_B * !Z)	0.00309	0.00312	0.00309
	(TE_B * !Z)	-0.00447	-0.00451	-0.00447

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00039	-0.00040	-0.00039
	(TE_B * Z)	0.00064	0.00065	0.00064
	(TE_B * !Z)	-0.00044	-0.00044	-0.00044
	(TE_B * !Z)	0.00063	0.00063	0.00062
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00074	-0.00075	-0.00074
	(TE_B * Z)	0.00123	0.00125	0.00123
	(TE_B * !Z)	-0.00087	-0.00087	-0.00087
	(TE_B * !Z)	0.00118	0.00118	0.00111
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00135	-0.00136	-0.00135
	(TE_B * Z)	0.00246	0.00249	0.00247
	(TE_B * !Z)	-0.00158	-0.00159	-0.00158
	(TE_B * !Z)	0.00238	0.00237	0.00226
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00262	-0.00265	-0.00263
	(TE_B * Z)	0.00487	0.00493	0.00489
	(TE_B * !Z)	-0.00309	-0.00312	-0.00309
	(TE_B * !Z)	0.00470	0.00467	0.00448

Passive power(pJ) for TE_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00131	0.00115	0.00125
	(A * !Z)	-0.00074	-0.00093	-0.00081
	(!A * Z)	0.00125	0.00111	0.00122
	(!A * Z)	-0.00073	-0.00091	-0.00082
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00157	0.00136	0.00142
	(A * !Z)	-0.00159	-0.00181	-0.00175
	(!A * Z)	0.00143	0.00127	0.00134
	(!A * Z)	-0.00154	-0.00180	-0.00174
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00261	0.00223	0.00222
	(A * !Z)	-0.00296	-0.00339	-0.00334
	(!A * Z)	0.00233	0.00206	0.00208
	(!A * Z)	-0.00288	-0.00333	-0.00333
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00322	0.00272	0.00260
	(A * !Z)	-0.00588	-0.00652	-0.00660
	(!A * Z)	0.00269	0.00239	0.00232
	(!A * Z)	-0.00570	-0.00635	-0.00654

Passive power(pJ) for TE_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00063	0.00057	0.00081
	(A * !Z)	0.00270	0.00265	0.00288
	(!A * Z)	0.00065	0.00059	0.00084
	(!A * Z)	0.00266	0.00260	0.00285
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00102	0.00096	0.00116
	(A * !Z)	0.00421	0.00415	0.00435
	(!A * Z)	0.00110	0.00103	0.00125
	(!A * Z)	0.00413	0.00407	0.00428
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00204	0.00191	0.00212
	(A * !Z)	0.00764	0.00754	0.00775
	(!A * Z)	0.00219	0.00206	0.00229
	(!A * Z)	0.00748	0.00739	0.00760
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00423	0.00407	0.00423
	(A * !Z)	0.01344	0.01333	0.01344
	(!A * Z)	0.00450	0.00433	0.00453
	(!A * Z)	0.01307	0.01296	0.01311

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	TE	Z
-	0	HiZ
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvp_1	7.99200
sky130_fd_sc_hs__einvp_2	11.18880
sky130_fd_sc_hs__einvp_4	19.18080
sky130_fd_sc_hs__einvp_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE	Z
sky130_fd_sc_hs__einvp_1	0.00266	0.00266	0.17873
sky130_fd_sc_hs__einvp_2	0.00484	0.00412	0.38157
sky130_fd_sc_hs__einvp_4	0.00979	0.00740	0.73962
sky130_fd_sc_hs__einvp_8	0.01962	0.01166	1.36683

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvp_1	0.00000	0.00657	0.02829
sky130_fd_sc_hs__einvp_2	0.00000	0.02387	0.07619
sky130_fd_sc_hs__einvp_4	0.00000	0.01584	0.05418
sky130_fd_sc_hs__einvp_8	0.00000	0.02623	0.09753

Delay Information

Delay(ns) to Z rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (FR)	0.15851	1.53702	12.05850
	TE->Z (FR)	0.20318	0.77789	3.87571
	TE->Z (RR)	0.20481	1.40336	8.47193
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.09909	1.29620	12.36880
	TE->Z (FR)	0.17327	0.69702	3.47440
	TE->Z (RR)	0.19281	1.21316	8.88595
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.09242	1.13789	12.38490
	TE->Z (FR)	0.20194	0.76374	3.77419
	TE->Z (RR)	0.18458	1.05578	8.89412
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.09252	1.01980	12.30870
	TE->Z (FR)	0.32546	0.89647	4.39182
	TE->Z (RR)	0.22179	1.02319	9.23602

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.04364	0.61895	5.16988
	TE->Z (FF)	0.20428	0.78191	3.88252
	TE->Z (RF)	0.04539	0.59794	4.97084
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.03522	0.56963	5.42084
	TE->Z (FF)	0.17586	0.70125	3.47436
	TE->Z (RF)	0.04176	0.55542	5.16542
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.03501	0.52815	5.56304
	TE->Z (FF)	0.20400	0.76640	3.78587
	TE->Z (RF)	0.04312	0.50855	5.15207
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.03730	0.50184	5.79192
	TE->Z (FF)	0.33022	0.90077	4.40573
	TE->Z (RF)	0.04962	0.47064	5.09935

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00026	-0.00031	-0.00027
	A	0.00163	0.00158	0.00163
	TE	0.00315	0.00306	0.00312
	TE	0.00196	0.00187	0.00194
sky130_fd_sc_hs__einvp_2	A	-0.00079	-0.00083	-0.00075
	A	0.00267	0.00265	0.00275
	TE	0.00487	0.00474	0.00487
	TE	0.00323	0.00312	0.00324
sky130_fd_sc_hs__einvp_4	A	-0.00152	-0.00155	-0.00137
	A	0.00551	0.00546	0.00572
	TE	0.00922	0.00903	0.00915
	TE	0.00663	0.00643	0.00655
sky130_fd_sc_hs__einvp_8	A	-0.00303	-0.00312	-0.00265
	A	0.01109	0.01100	0.01155
	TE	0.01610	0.01594	0.01601
	TE	0.01318	0.01300	0.01312

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00180	0.00178	0.00181
	A	-0.00008	-0.00010	-0.00011
	TE	0.00400	0.00392	0.00400
	TE	0.00148	0.00138	0.00144
sky130_fd_sc_hs__einvp_2	A	0.00285	0.00285	0.00293
	A	-0.00061	-0.00062	-0.00058
	TE	0.00631	0.00619	0.00631
	TE	0.00223	0.00211	0.00222
sky130_fd_sc_hs__einvp_4	A	0.00562	0.00560	0.00578
	A	-0.00139	-0.00143	-0.00126
	TE	0.01209	0.01193	0.01215
	TE	0.00445	0.00425	0.00435
sky130_fd_sc_hs__einvp_8	A	0.01128	0.01111	0.01187
	A	-0.00279	-0.00299	-0.00248
	TE	0.02182	0.02165	0.02176
	TE	0.00871	0.00852	0.00856

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00036	0.00036	0.00035
	(!TE * Z)	-0.00065	-0.00066	-0.00065
	(!TE * !Z)	0.00039	0.00039	0.00039
	(!TE * !Z)	-0.00062	-0.00062	-0.00061
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00067	0.00067	0.00064
	(!TE * Z)	-0.00129	-0.00131	-0.00129
	(!TE * !Z)	0.00073	0.00074	0.00073
	(!TE * !Z)	-0.00116	-0.00117	-0.00116
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00128	0.00128	0.00122
	(!TE * Z)	-0.00256	-0.00259	-0.00257
	(!TE * !Z)	0.00143	0.00144	0.00142
	(!TE * !Z)	-0.00233	-0.00234	-0.00232
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00249	0.00249	0.00240
	(!TE * Z)	-0.00497	-0.00502	-0.00497
	(!TE * !Z)	0.00281	0.00281	0.00279
	(!TE * !Z)	-0.00453	-0.00454	-0.00449

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00034	-0.00035	-0.00034
	(!TE * Z)	0.00065	0.00066	0.00065
	(!TE * !Z)	-0.00039	-0.00039	-0.00039
	(!TE * !Z)	0.00064	0.00064	0.00062
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00063	-0.00064	-0.00063
	(!TE * Z)	0.00129	0.00131	0.00129
	(!TE * !Z)	-0.00073	-0.00074	-0.00073
	(!TE * !Z)	0.00126	0.00125	0.00118
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00121	-0.00122	-0.00121
	(!TE * Z)	0.00256	0.00259	0.00257
	(!TE * !Z)	-0.00143	-0.00144	-0.00142
	(!TE * !Z)	0.00250	0.00248	0.00234
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00239	-0.00241	-0.00238
	(!TE * Z)	0.00497	0.00502	0.00497
	(!TE * !Z)	-0.00281	-0.00281	-0.00279
	(!TE * !Z)	0.00475	0.00478	0.00452

Passive power(pJ) for TE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00274	0.00266	0.00272
	(A * !Z)	0.00101	0.00092	0.00098
	(!A * Z)	0.00274	0.00266	0.00270
	(!A * Z)	0.00095	0.00086	0.00091
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00414	0.00405	0.00415
	(A * !Z)	0.00150	0.00138	0.00150
	(!A * Z)	0.00420	0.00409	0.00419
	(!A * Z)	0.00140	0.00128	0.00139
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.00782	0.00766	0.00773
	(A * !Z)	0.00312	0.00292	0.00304
	(!A * Z)	0.00791	0.00772	0.00781
	(!A * Z)	0.00290	0.00271	0.00279
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.01337	0.01322	0.01326
	(A * !Z)	0.00620	0.00603	0.00610
	(!A * Z)	0.01354	0.01339	0.01341
	(!A * Z)	0.00583	0.00564	0.00567

Passive power(pJ) for TE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00050	-0.00064	-0.00060
	(A * !Z)	0.00120	0.00110	0.00114
	(!A * Z)	-0.00053	-0.00064	-0.00060
	(!A * Z)	0.00125	0.00114	0.00118
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00132	-0.00150	-0.00135
	(A * !Z)	0.00128	0.00115	0.00131
	(!A * Z)	-0.00141	-0.00155	-0.00138
	(!A * Z)	0.00137	0.00123	0.00137
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00240	-0.00275	-0.00266
	(A * !Z)	0.00222	0.00198	0.00209
	(!A * Z)	-0.00255	-0.00282	-0.00270
	(!A * Z)	0.00240	0.00215	0.00222
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00448	-0.00500	-0.00503
	(A * !Z)	0.00251	0.00224	0.00223
	(!A * Z)	-0.00474	-0.00516	-0.00514
	(!A * Z)	0.00283	0.00256	0.00247

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
A	**B**	**CIN**	**COUT**	**SUM**
0	**0**	**0**	**0**	**1**
0	**0**	**1**	**0**	**0**
0	**1**	**0**	**1**	**0**
0	**1**	**1**	**0**	**1**
1	**0**	**0**	**1**	**0**
1	**0**	**1**	**0**	**1**
1	**1**	**0**	**1**	**1**
1	**1**	**1**	**1**	**0**

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcin_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	**B**	**CIN**	**COUT**	**SUM**
sky130_fd_sc_hs__fahcin_1	0.00270	0.00683	0.00472	0.19138	0.43260

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fahcin_1	0.00000	0.25494	0.28487

Delay Information

Delay(ns) to COUT rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (RR)	0.39285	1.66170	7.54748
	B->COUT (RR)	0.38514	1.50636	6.93354
	CIN->COUT (FR)	0.22143	1.36113	10.50900

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.68148	1.50806	6.68907
	B->COUT (FF)	0.53846	1.29755	5.91773
	CIN->COUT (RF)	0.08358	0.68462	5.29774

Delay(ns) to SUM rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->SUM (-R)	-	0.81646	2.00301	12.12130
	B->SUM (-R)	-	0.73381	1.84025	11.08540
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.20814	1.20648	8.86507
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.36191	1.52204	10.43450

Delay(ns) to SUM falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->SUM (-F)	-	0.78652	1.58583	6.65111
	B->SUM (-F)	-	0.66679	1.43784	6.06508
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.44833	1.26984	6.57728
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.40080	0.93952	3.50213

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.00746	0.00739	0.00735
	A	0.00655	0.00651	0.00645
	B	0.00783	0.00792	0.00844
	B	0.00554	0.00564	0.00615
	CIN	0.00310	0.00304	0.00313
	CIN	0.00479	0.00473	0.00484

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.00642	0.00637	0.00641
	A	0.00732	0.00728	0.00730
	B	0.00562	0.00563	0.00650
	B	0.00795	0.00798	0.00877
	CIN	0.00510	0.00500	0.00502
	CIN	0.00341	0.00330	0.00333

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01421	0.01411	0.01436
	A	-	0.01241	0.01231	0.01257
	B	-	0.01428	0.01483	0.01642
	B	-	0.00970	0.01022	0.01184
	CIN	(A * B) + (!A * !B)	0.00476	0.00449	0.00497
	CIN	(A * B) + (!A * !B)	0.00815	0.00787	0.00841
	CIN	(A * !B) + (!A * B)	0.00511	0.00502	0.00512
	CIN	(A * !B) + (!A * B)	0.00341	0.00332	0.00338

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01170	0.01161	0.01206
	A	-	0.01351	0.01341	0.01353
	B	-	0.00985	0.01013	0.01417
	B	-	0.01444	0.01472	0.01864
	CIN	(A * B) + (!A * !B)	0.00890	0.00857	0.00892
	CIN	(A * B) + (!A * !B)	0.00551	0.00518	0.00549
	CIN	(A * !B) + (!A * B)	0.00310	0.00306	0.00303
	CIN	(A * !B) + (!A * B)	0.00479	0.00475	0.00446

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT_N	SUM
0	0	0	1	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	0
1	0	0	1	1
1	0	1	0	0
1	1	0	0	0
1	1	1	0	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcon_1	38.36160

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT_N	SUM
sky130_fd_sc_hs__fahcon_1	0.00268	0.00863	0.00475	0.19252	0.43201

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	0.25494	0.29295

Delay Information

Delay(ns) to COUT_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcon_1	A->COUT_N (FR)	0.58008	1.90268	9.71488
	B->COUT_N (FR)	0.43353	1.64447	10.62340
	CI->COUT_N (FR)	0.21312	1.37267	10.45470

Delay(ns) to COUT_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcon_1	A->COUT_N (RF)	0.52375	1.12367	3.94556
	B->COUT_N (RF)	0.37859	0.93211	5.45168
	CI->COUT_N (RF)	0.07932	0.66471	5.30942

Delay(ns) to SUM rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fahcon_1	A->SUM (-R)	-	0.71110	1.93408	11.90750
	B->SUM (-R)	-	0.57908	1.72196	10.74200
	CI->SUM (RR)	(A * B) + (!A * !B)	0.19699	1.19392	8.83340
	CI->SUM (FR)	(A * !B) + (!A * B)	0.35368	1.53221	10.56120

Delay(ns) to SUM falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fahcon_1	A->SUM (-F)	-	0.73820	1.54017	6.49112
	B->SUM (-F)	-	0.57452	1.33327	5.66990
	CI->SUM (FF)	(A * B) + (!A * !B)	0.43066	1.23593	6.49237
	CI->SUM (RF)	(A * !B) + (!A * B)	0.42378	0.95555	3.51648

Power Information

Internal switching power(pJ) to COUT_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.00578	0.00573	0.00579
	A	0.00671	0.00666	0.00674
	B	0.00436	0.00442	0.00548
	B	0.00734	0.00740	0.00852
	CI	0.00310	0.00297	0.00306
	CI	0.00480	0.00467	0.00479

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.00681	0.00659	0.00653
	A	0.00588	0.00569	0.00558
	B	0.00740	0.00743	0.00798
	B	0.00441	0.00445	0.00498
	CI	0.00514	0.00500	0.00506
	CI	0.00343	0.00329	0.00335

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01238	0.01230	0.01254
	A	-	0.01052	0.01043	0.01070
	B	-	0.01403	0.01640	0.01987
	B	-	0.00805	0.01043	0.01387
	CI	(A * B) + (!A * !B)	0.00881	0.00851	0.00876
	CI	(A * B) + (!A * !B)	0.00539	0.00509	0.00536
	CI	(A * !B) + (!A * B)	0.00310	0.00297	0.00304
	CI	(A * !B) + (!A * B)	0.00480	0.00467	0.00475

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01108	0.01099	0.01130
	A	-	0.01294	0.01287	0.01302
	B	-	0.00898	0.01159	0.01592
	B	-	0.01496	0.01759	0.02176
	CI	(A * B) + (!A * !B)	0.00538	0.00526	0.00587
	CI	(A * B) + (!A * !B)	0.00879	0.00867	0.00911
	CI	(A * !B) + (!A * B)	0.00513	0.00497	0.00509
	CI	(A * !B) + (!A * B)	0.00343	0.00329	0.00333

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fah_1	46.35360
sky130_fd_sc_hs__fah_2	47.95200
sky130_fd_sc_hs__fah_4	51.14880

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT	SUM
sky130_fd_sc_hs__fah_1	0.00448	0.00688	0.00237	0.40917	0.43392
sky130_fd_sc_hs__fah_2	0.00453	0.00788	0.00251	0.81426	0.83663
sky130_fd_sc_hs__fah_4	0.00444	0.00711	0.00239	1.54177	1.67605

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	0.25494	0.30102
sky130_fd_sc_hs__fah_2	0.00000	0.26854	0.31462
sky130_fd_sc_hs__fah_4	0.00000	0.29573	0.34181

Delay Information

Delay(ns) to COUT rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (RR)	0.70984	1.70117	9.08808
	B->COUT (RR)	0.59736	1.65145	9.38611
	CI->COUT (RR)	0.26744	1.36234	9.52846
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.74954	1.56557	8.82188
	B->COUT (RR)	0.58225	1.46370	9.33606
	CI->COUT (RR)	0.25229	1.15969	9.22468
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.70130	1.43209	9.07537
	B->COUT (RR)	0.59655	1.38875	9.60563
	CI->COUT (RR)	0.30802	1.14545	9.82917

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.67048	1.43291	5.39950
	B->COUT (FF)	0.67615	1.45485	8.98925
	CI->COUT (FF)	0.60135	1.40598	6.89672
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.76505	1.53549	5.60595
	B->COUT (FF)	0.75514	1.53595	7.16310
	CI->COUT (FF)	0.60225	1.41006	6.85266
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.94655	1.73803	5.79204
	B->COUT (FF)	0.88068	1.65720	9.31735
	CI->COUT (FF)	0.74115	1.57662	7.44219

Delay(ns) to SUM rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fah_1	A->SUM (-R)	-	0.73749	1.96568	11.92320
	B->SUM (-R)	-	0.65411	1.79646	12.30940
	CI->SUM (RR)	(A * B) + (!A * !B)	0.26544	1.29151	9.18512
	CI->SUM (FR)	(A * !B) + (!A * B)	0.56869	1.81465	11.75700
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.74464	1.79153	11.45780
	B->SUM (-R)	-	0.70700	1.69589	10.86880
	CI->SUM (RR)	(A * B) + (!A * !B)	0.24880	1.14376	9.08031
	CI->SUM (FR)	(A * !B) + (!A * B)	0.56174	1.60825	11.21140
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.76022	1.73062	11.81120
	B->SUM (-R)	-	0.69134	1.60997	12.42010
	CI->SUM (RR)	(A * B) + (!A * !B)	0.32884	1.14743	9.48873
	CI->SUM (FR)	(A * !B) + (!A * B)	0.69895	1.68596	12.07850

Delay(ns) to SUM falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fah_1	A->SUM (-F)	-	0.69482	1.47098	5.52825
	B->SUM (-F)	-	0.73211	1.52384	8.76047
	CI->SUM (FF)	(A * B) + (!A * !B)	0.56082	1.38780	6.81114
	CI->SUM (RF)	(A * !B) + (!A * B)	0.59893	1.27750	4.54624
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.79057	1.55408	5.65014
	B->SUM (-F)	-	0.79129	1.55808	8.88544
	CI->SUM (FF)	(A * B) + (!A * !B)	0.59774	1.39775	6.83061
	CI->SUM (RF)	(A * !B) + (!A * B)	0.57154	1.20170	4.43416
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.96277	1.76563	5.94317
	B->SUM (-F)	-	0.93922	1.73622	8.98776
	CI->SUM (FF)	(A * B) + (!A * !B)	0.72759	1.56558	7.41991
	CI->SUM (RF)	(A * !B) + (!A * B)	0.84773	1.57299	5.29152

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.00946	0.00927	0.00948
	A	0.00797	0.00778	0.00798
	B	0.00836	0.00849	0.00913
	B	0.00613	0.00625	0.00688
	CI	0.00587	0.00588	0.00591
	CI	0.00512	0.00513	0.00513
sky130_fd_sc_hs__fah_2	A	0.01047	0.01050	0.01076
	A	0.00882	0.00884	0.00910
	B	0.00961	0.00988	0.01056
	B	0.00694	0.00721	0.00787
	CI	0.00611	0.00626	0.00639
	CI	0.00521	0.00537	0.00545
sky130_fd_sc_hs__fah_4	A	0.01203	0.01228	0.01289
	A	0.01048	0.01071	0.01126
	B	0.01128	0.01192	0.01303
	B	0.00890	0.00948	0.01059
	CI	0.00919	0.00959	0.00978
	CI	0.00841	0.00881	0.00895

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.00783	0.00774	0.00806
	A	0.00932	0.00922	0.00952
	B	0.00629	0.00647	0.03704
	B	0.00854	0.00871	0.03927
	CI	0.00493	0.00498	0.00517
	CI	0.00568	0.00572	0.00565
sky130_fd_sc_hs__fah_2	A	0.00877	0.00886	0.00885
	A	0.01042	0.01051	0.01039
	B	0.00657	0.00690	0.00781
	B	0.00927	0.00956	0.01046
	CI	0.00523	0.00545	0.00580
	CI	0.00613	0.00635	0.00635
sky130_fd_sc_hs__fah_4	A	0.01040	0.01072	0.01086
	A	0.01195	0.01227	0.01229
	B	0.00911	0.00967	0.04126
	B	0.01150	0.01204	0.04366
	CI	0.00797	0.00845	0.00874
	CI	0.00875	0.00923	0.00923

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.01634	0.01591	0.01608
	A	-	0.01315	0.01271	0.01289
	B	-	0.00630	0.00648	0.03731
	B	-	0.00854	0.00872	0.03952
	CI	(A * B) + (!A * !B)	0.00810	0.00786	0.00788
	CI	(A * B) + (!A * !B)	0.00639	0.00616	0.00620
	CI	(A * !B) + (!A * B)	0.00494	0.00498	0.00530
	CI	(A * !B) + (!A * B)	0.00568	0.00573	0.00576
sky130_fd_sc_hs__fah_2	A	-	0.01732	0.01695	0.01720
	A	-	0.01399	0.01364	0.01389
	B	-	0.01546	0.01677	0.01948
	B	-	0.01013	0.01139	0.01417
	CI	(A * B) + (!A * !B)	0.00824	0.00829	0.00837
	CI	(A * B) + (!A * !B)	0.00643	0.00648	0.00660
	CI	(A * !B) + (!A * B)	0.00523	0.00545	0.00574
	CI	(A * !B) + (!A * B)	0.00613	0.00635	0.00649
sky130_fd_sc_hs__fah_4	A	-	0.01816	0.01813	0.01875
	A	-	0.01497	0.01493	0.01560
	B	-	0.00911	0.00968	0.04144
	B	-	0.01150	0.01205	0.04384
	CI	(A * B) + (!A * !B)	0.01160	0.01175	0.01180
	CI	(A * B) + (!A * !B)	0.00988	0.01003	0.01016
	CI	(A * !B) + (!A * B)	0.00797	0.00847	0.00965
	CI	(A * !B) + (!A * B)	0.00875	0.00925	0.00949

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.01229	0.01213	0.01250
	A	-	0.01563	0.01547	0.01582
	B	-	0.01051	0.01119	0.07490
	B	-	0.01534	0.01603	0.07965
	CI	(A * B) + (!A * !B)	0.00586	0.00579	0.00633
	CI	(A * B) + (!A * !B)	0.00757	0.00750	0.00763
	CI	(A * !B) + (!A * B)	0.00587	0.00588	0.00577
	CI	(A * !B) + (!A * B)	0.00512	0.00513	0.00497
sky130_fd_sc_hs__fah_2	A	-	0.01365	0.01369	0.01431
	A	-	0.01697	0.01701	0.01734
	B	-	0.01044	0.01133	0.07854
	B	-	0.01578	0.01666	0.08372
	CI	(A * B) + (!A * !B)	0.00652	0.00669	0.00764
	CI	(A * B) + (!A * !B)	0.00833	0.00850	0.00872
	CI	(A * !B) + (!A * B)	0.00611	0.00627	0.00623
	CI	(A * !B) + (!A * B)	0.00521	0.00537	0.00528
sky130_fd_sc_hs__fah_4	A	-	0.01463	0.01499	0.01627
	A	-	0.01791	0.01825	0.01878
	B	-	0.01379	0.01555	0.07940
	B	-	0.01879	0.02053	0.08410
	CI	(A * B) + (!A * !B)	0.00904	0.00945	0.01022
	CI	(A * B) + (!A * !B)	0.01076	0.01117	0.01145
	CI	(A * !B) + (!A * B)	0.00919	0.00960	0.00942
	CI	(A * !B) + (!A * B)	0.00841	0.00882	0.00864

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT	
A	**B**	**CIN**	**COUT**	**SUM**
0	**0**	**0**	**0**	**0**
0	**0**	**1**	**0**	**1**
0	**1**	**0**	**0**	**1**
0	**1**	**1**	**1**	**0**
1	**0**	**0**	**0**	**1**
1	**0**	**1**	**1**	**0**
1	**1**	**0**	**1**	**0**
1	**1**	**1**	**1**	**1**

Footprint

Cell Name	Area
sky130_fd_sc_hs__fa_1	28.77120
sky130_fd_sc_hs__fa_2	30.36960
sky130_fd_sc_hs__fa_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	**B**	**CIN**	**COUT**	**SUM**
sky130_fd_sc_hs__fa_1	0.00944	0.00936	0.00677	0.44092	0.44335
sky130_fd_sc_hs__fa_2	0.01005	0.00975	0.00724	0.80344	0.83866
sky130_fd_sc_hs__fa_4	0.01004	0.01004	0.00710	1.67566	1.68669

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.05326	0.07098
sky130_fd_sc_hs__fa_2	0.00000	0.06554	0.08319
sky130_fd_sc_hs__fa_4	0.00000	0.09274	0.11039

Delay Information

Delay(ns) to COUT rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (RR)	0.22084	1.22989	8.96759
	B->COUT (RR)	0.22807	1.22893	8.90700
	CIN->COUT (RR)	0.21452	1.22476	8.75737
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.22626	1.11142	9.02675
	B->COUT (RR)	0.21516	1.10032	8.96917
	CIN->COUT (RR)	0.21235	1.11349	8.86134
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.28520	1.08637	9.38779
	B->COUT (RR)	0.26609	1.07262	9.33790
	CIN->COUT (RR)	0.26624	1.09872	9.28650

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.61334	1.42597	6.88119
	B->COUT (FF)	0.54257	1.37593	6.72886
	CIN->COUT (FF)	0.48520	1.28065	6.32888
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.73735	1.55237	7.18658
	B->COUT (FF)	0.64723	1.48005	7.05510
	CIN->COUT (FF)	0.66853	1.42738	6.68264
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.98485	1.83498	7.90943
	B->COUT (FF)	0.91197	1.76003	7.82835
	CIN->COUT (FF)	0.90889	1.68733	7.45727

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.83028	1.96916	11.86820
	B->SUM (-R)	0.77389	1.92078	11.65280
	CIN->SUM (-R)	0.71712	1.80125	11.03430
sky130_fd_sc_hs__fa_2	A->SUM (-R)	1.05739	2.03879	12.22450
	B->SUM (-R)	0.96384	1.95350	12.01590
	CIN->SUM (-R)	0.98454	1.90308	11.54530
sky130_fd_sc_hs__fa_4	A->SUM (-R)	1.49439	2.34819	12.95580
	B->SUM (-R)	1.41508	2.26483	12.81420
	CIN->SUM (-R)	1.41527	2.19598	12.37710

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.75111	1.52847	6.75461
	B->SUM (-F)	0.70976	1.48496	6.72975
	CIN->SUM (-F)	0.41630	1.20737	6.20610
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.95976	1.75600	7.17201
	B->SUM (-F)	0.94650	1.73301	7.25495
	CIN->SUM (-F)	0.88289	1.57677	6.64526
sky130_fd_sc_hs__fa_4	A->SUM (-F)	1.28797	2.11634	7.94576
	B->SUM (-F)	1.22744	2.05417	8.04793
	CIN->SUM (-F)	1.18362	1.90751	7.51403

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00536	0.00533	0.00534
	A	0.00204	0.00201	0.00197
	B	0.00514	0.00509	0.00509
	B	0.00197	0.00192	0.00188
	CIN	0.00466	0.00457	0.00458
	CIN	0.00249	0.00241	0.00242
sky130_fd_sc_hs__fa_2	A	0.00679	0.00688	0.00696
	A	0.00318	0.00325	0.00321
	B	0.00655	0.00658	0.00664
	B	0.00318	0.00322	0.00321
	CIN	0.00608	0.00607	0.00606
	CIN	0.00369	0.00370	0.00370
sky130_fd_sc_hs__fa_4	A	0.00936	0.00975	0.01046
	A	0.00556	0.00593	0.00607
	B	0.00934	0.00967	0.01026
	B	0.00614	0.00646	0.00657
	CIN	0.00862	0.00893	0.00954
	CIN	0.00640	0.00671	0.00685

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00207	0.00210	0.00224
	A	0.00535	0.00541	0.00529
	B	0.00242	0.00237	0.00236
	B	0.00558	0.00555	0.00553
	CIN	0.00270	0.00266	0.00276
	CIN	0.00480	0.00478	0.00474
sky130_fd_sc_hs__fa_2	A	0.00321	0.00331	0.00316
	A	0.00680	0.00693	0.00674
	B	0.00357	0.00360	0.00389
	B	0.00690	0.00695	0.00692
	CIN	0.00385	0.00391	0.00404
	CIN	0.00623	0.00629	0.00618
sky130_fd_sc_hs__fa_4	A	0.00598	0.00632	0.00648
	A	0.00978	0.01018	0.01005
	B	0.00626	0.00651	0.00649
	B	0.00943	0.00970	0.00963
	CIN	0.00665	0.00694	0.00765
	CIN	0.00887	0.00918	0.00907

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00761	0.00758	0.00756
	A	0.00536	0.00543	0.00540
	B	0.00665	0.00655	0.00651
	B	0.00561	0.00557	0.00565
	CIN	0.00591	0.00569	0.00569
	CIN	0.00482	0.00480	0.00486
sky130_fd_sc_hs__fa_2	A	0.00908	0.00923	0.00926
	A	0.00682	0.00695	0.00695
	B	0.00823	0.00833	0.00838
	B	0.00692	0.00697	0.00711
	CIN	0.00755	0.00749	0.00751
	CIN	0.00625	0.00631	0.00635
sky130_fd_sc_hs__fa_4	A	0.01163	0.01199	0.01215
	A	0.00980	0.01020	0.01035
	B	0.01105	0.01129	0.01136
	B	0.00945	0.00972	0.00997
	CIN	0.00998	0.01012	0.01018
	CIN	0.00889	0.00919	0.00935

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00532	0.00534	0.00525
	A	0.00730	0.00733	0.00728
	B	0.00511	0.00506	0.00497
	B	0.00760	0.00765	0.00763
	CIN	0.00464	0.00457	0.00448
	CIN	0.00612	0.00599	0.00618
sky130_fd_sc_hs__fa_2	A	0.00678	0.00687	0.00678
	A	0.00867	0.00894	0.00892
	B	0.00651	0.00655	0.00647
	B	0.00864	0.00887	0.00889
	CIN	0.00607	0.00606	0.00591
	CIN	0.00752	0.00755	0.00779
sky130_fd_sc_hs__fa_4	A	0.00932	0.00972	0.00988
	A	0.01203	0.01254	0.01266
	B	0.00930	0.00963	0.00974
	B	0.01095	0.01131	0.01147
	CIN	0.00861	0.00891	0.00903
	CIN	0.00989	0.01006	0.01042

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT	
A	B	COUT	SUM
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__ha_1	15.98400
sky130_fd_sc_hs__ha_2	19.18080
sky130_fd_sc_hs__ha_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	A	B	COUT	SUM
sky130_fd_sc_hs__ha_1	0.00451	0.00425	0.43280	0.40827
sky130_fd_sc_hs__ha_2	0.00453	0.00483	0.81185	0.82902
sky130_fd_sc_hs__ha_4	0.00862	0.00792	1.56417	1.64825

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ha_1	0.00000	0.07374	0.10684
sky130_fd_sc_hs__ha_2	0.00000	0.06915	0.08092
sky130_fd_sc_hs__ha_4	0.00000	0.17871	0.24088

Delay Information

Delay(ns) to COUT rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (RR)	0.18043	1.16224	8.69664
	B->COUT (RR)	0.17453	1.15384	8.51979
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.18991	1.06855	8.91615
	B->COUT (RR)	0.18499	1.07085	8.78846
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.20779	0.97501	8.97249
	B->COUT (RR)	0.18877	0.96311	8.78971

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.24882	0.99547	5.53205
	B->COUT (FF)	0.22610	0.96479	5.42278
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.29999	1.05107	6.03873
	B->COUT (FF)	0.28149	1.02650	5.94606
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.31099	1.00822	5.79262
	B->COUT (FF)	0.27607	0.97024	5.66816

Delay(ns) to SUM rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__ha_1	A->SUM (RR)	!B	0.17838	1.15509	8.52384
	A->SUM (FR)	B	0.39583	1.55913	10.31660
	B->SUM (RR)	!A	0.16031	1.12458	8.37960
	B->SUM (FR)	A	0.38794	1.54497	10.19450
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.18930	1.03788	8.75449
	A->SUM (FR)	B	0.51295	1.53863	11.00630
	B->SUM (RR)	!A	0.17576	1.01703	8.66183
	B->SUM (FR)	A	0.50178	1.52464	10.90100
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.20515	0.95732	8.84854
	A->SUM (FR)	B	0.53012	1.42342	10.74270
	B->SUM (RR)	!A	0.18641	0.92802	8.71462
	B->SUM (FR)	A	0.50623	1.40261	10.60330

Delay(ns) to SUM falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__ha_1	A->SUM (FF)	!B	0.39687	1.14768	6.01805
	A->SUM (RF)	B	0.28194	0.79773	3.49868
	B->SUM (FF)	!A	0.36007	1.06159	5.40622
	B->SUM (RF)	A	0.27617	0.78724	3.30851
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.55118	1.31727	6.65923
	A->SUM (RF)	B	0.36606	0.88817	3.90347
	B->SUM (FF)	!A	0.51651	1.22734	6.12413
	B->SUM (RF)	A	0.36125	0.88869	3.77237
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.54280	1.27269	6.67481
	A->SUM (RF)	B	0.39995	0.89732	3.97873
	B->SUM (FF)	!A	0.49383	1.16744	6.08811
	B->SUM (RF)	A	0.38048	0.88266	3.78183

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00380	0.00386	0.00379
	A	0.00195	0.00193	0.00193
	B	0.00360	0.00354	0.00361
	B	0.00208	0.00202	0.00210
sky130_fd_sc_hs__ha_2	A	0.00514	0.00528	0.00531
	A	0.00329	0.00342	0.00342
	B	0.00504	0.00511	0.00517
	B	0.00337	0.00344	0.00348
sky130_fd_sc_hs__ha_4	A	0.00957	0.00995	0.01014
	A	0.00619	0.00656	0.00668
	B	0.00902	0.00928	0.00957
	B	0.00634	0.00662	0.00685

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00199	0.00202	0.00212
	A	0.00383	0.00386	0.00390
	B	0.00232	0.00226	0.00227
	B	0.00381	0.00376	0.00377
sky130_fd_sc_hs__ha_2	A	0.00358	0.00370	0.00367
	A	0.00542	0.00553	0.00548
	B	0.00373	0.00376	0.00376
	B	0.00538	0.00541	0.00532
sky130_fd_sc_hs__ha_4	A	0.00642	0.00673	0.00700
	A	0.00978	0.01008	0.01016
	B	0.00701	0.00725	0.00734
	B	0.00963	0.00986	0.00990

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__ha_1	A	B	0.00200	0.00202	0.00227
	A	B	0.00384	0.00386	0.00403
	A	!B	0.00538	0.00539	0.00539
	A	!B	0.00191	0.00192	0.00193
	B	A	0.00233	0.00227	0.00246
	B	A	0.00382	0.00377	0.00390
	B	!A	0.00413	0.00411	0.00414
	B	!A	0.00138	0.00133	0.00138
sky130_fd_sc_hs__ha_2	A	B	0.00359	0.00368	0.00427
	A	B	0.00543	0.00554	0.00567
	A	!B	0.00686	0.00700	0.00702
	A	!B	0.00344	0.00358	0.00361
	B	A	0.00374	0.00375	0.00400
	B	A	0.00539	0.00542	0.00549
	B	!A	0.00589	0.00598	0.00604
	B	!A	0.00286	0.00296	0.00302
sky130_fd_sc_hs__ha_4	A	B	0.00643	0.00669	0.00777
	A	B	0.00980	0.01012	0.01056
	A	!B	0.01377	0.01403	0.01415
	A	!B	0.00664	0.00690	0.00708
	B	A	0.00705	0.00725	0.00845
	B	A	0.00966	0.00990	0.01032
	B	!A	0.01116	0.01138	0.01150
	B	!A	0.00556	0.00578	0.00591

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__ha_1	A	B	0.00380	0.00378	0.00370
	A	B	0.00195	0.00192	0.00185
	A	!B	0.00113	0.00114	0.00115
	A	!B	0.00449	0.00454	0.00451
	B	A	0.00360	0.00355	0.00351
	B	A	0.00208	0.00202	0.00199
	B	!A	0.00163	0.00166	0.00190
	B	!A	0.00441	0.00443	0.00467
sky130_fd_sc_hs__ha_2	A	B	0.00514	0.00527	0.00517
	A	B	0.00330	0.00342	0.00327
	A	!B	0.00233	0.00252	0.00304
	A	!B	0.00565	0.00585	0.00586
	B	A	0.00504	0.00511	0.00501
	B	A	0.00337	0.00344	0.00332
	B	!A	0.00261	0.00276	0.00308
	B	!A	0.00567	0.00585	0.00610
sky130_fd_sc_hs__ha_4	A	B	0.00957	0.00993	0.00988
	A	B	0.00620	0.00657	0.00638
	A	!B	0.00461	0.00501	0.00638
	A	!B	0.01155	0.01201	0.01208
	B	A	0.00902	0.00930	0.00926
	B	A	0.00634	0.00661	0.00652
	B	!A	0.00568	0.00591	0.00710
	B	!A	0.01141	0.01173	0.01229

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__bufinv_16	39.96000
sky130_fd_sc_hs__bufinv_8	20.77920
sky130_fd_sc_hs__inv_1	4.79520
sky130_fd_sc_hs__inv_16	27.17280
sky130_fd_sc_hs__inv_2	4.79520
sky130_fd_sc_hs__inv_4	7.99200
sky130_fd_sc_hs__inv_8	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__bufinv_16	0.00765	6.70033
sky130_fd_sc_hs__bufinv_8	0.00266	2.98459
sky130_fd_sc_hs__inv_1	0.00267	0.43444
sky130_fd_sc_hs__inv_16	0.04030	6.79550
sky130_fd_sc_hs__inv_2	0.00487	0.85630
sky130_fd_sc_hs__inv_4	0.00984	1.64671
sky130_fd_sc_hs__inv_8	0.01947	3.29300

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.16995	0.22245
sky130_fd_sc_hs__bufinv_8	0.00000	0.08158	0.10581
sky130_fd_sc_hs__inv_1	0.00000	0.00680	0.01084
sky130_fd_sc_hs__inv_16	0.00000	0.10877	0.17339
sky130_fd_sc_hs__inv_2	0.00000	0.01360	0.02167
sky130_fd_sc_hs__inv_4	0.00000	0.02719	0.04335
sky130_fd_sc_hs__inv_8	0.00000	0.05438	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	**A->Y (FR)**	0.30384	1.07947	10.49340
sky130_fd_sc_hs__bufinv_8	**A->Y (FR)**	0.40491	1.27442	11.03630
sky130_fd_sc_hs__inv_1	**A->Y (FR)**	0.07409	1.25593	12.44790
sky130_fd_sc_hs__inv_16	**A->Y (FR)**	0.05042	0.83717	12.52540
sky130_fd_sc_hs__inv_2	**A->Y (FR)**	0.05672	1.09710	12.38570
sky130_fd_sc_hs__inv_4	**A->Y (FR)**	0.05366	0.98995	12.39220
sky130_fd_sc_hs__inv_8	**A->Y (FR)**	0.05160	0.90426	12.43050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	**A->Y (RF)**	0.27115	0.67936	3.34411
sky130_fd_sc_hs__bufinv_8	**A->Y (RF)**	0.31345	0.78717	3.63701
sky130_fd_sc_hs__inv_1	**A->Y (RF)**	0.03255	0.63449	6.22095
sky130_fd_sc_hs__inv_16	**A->Y (RF)**	0.02674	0.42895	6.27004
sky130_fd_sc_hs__inv_2	**A->Y (RF)**	0.02827	0.56791	6.18515
sky130_fd_sc_hs__inv_4	**A->Y (RF)**	0.02749	0.52192	6.24062
sky130_fd_sc_hs__inv_8	**A->Y (RF)**	0.02720	0.47316	6.26239

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.02998	0.03122	0.03241
	A	0.03548	0.03668	0.03804
sky130_fd_sc_hs__bufinv_8	A	0.01563	0.01628	0.01656
	A	0.01751	0.01820	0.01856
sky130_fd_sc_hs__inv_1	A	-0.00031	-0.00031	-0.00029
	A	0.00162	0.00161	0.00164
sky130_fd_sc_hs__inv_16	A	-0.00668	-0.00653	-0.00549
	A	0.02232	0.02247	0.02365
sky130_fd_sc_hs__inv_2	A	-0.00080	-0.00078	-0.00071
	A	0.00271	0.00272	0.00283
sky130_fd_sc_hs__inv_4	A	-0.00156	-0.00150	-0.00133
	A	0.00552	0.00558	0.00581
sky130_fd_sc_hs__inv_8	A	-0.00310	-0.00302	-0.00257
	A	0.01090	0.01100	0.01154

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	**A**	0.03597	0.03745	0.03833
	A	0.03046	0.03192	0.03250
sky130_fd_sc_hs__bufinv_8	**A**	0.01733	0.01813	0.01811
	A	0.01545	0.01614	0.01614
sky130_fd_sc_hs__inv_1	**A**	0.00176	0.00177	0.00177
	A	-0.00015	-0.00017	-0.00016
sky130_fd_sc_hs__inv_16	**A**	0.02297	0.02276	0.03123
	A	-0.00589	-0.00630	-0.00490
sky130_fd_sc_hs__inv_2	**A**	0.00282	0.00285	0.00290
	A	-0.00067	-0.00068	-0.00061
sky130_fd_sc_hs__inv_4	**A**	0.00571	0.00574	0.00770
	A	-0.00135	-0.00137	-0.00118
sky130_fd_sc_hs__inv_8	**A**	0.01114	0.01107	0.01325
	A	-0.00281	-0.00290	-0.00240

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	x	0
0	1	0	0
x	1	1	1
1	0	0	0
1	x	1	1
1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__maj3_1	12.78720
sky130_fd_sc_hs__maj3_2	15.98400
sky130_fd_sc_hs__maj3_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__maj3_1	0.00494	0.00462	0.00483	0.44291
sky130_fd_sc_hs__maj3_2	0.00525	0.00499	0.00514	0.86807
sky130_fd_sc_hs__maj3_4	0.00961	0.00904	0.00947	1.69074

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__maj3_1	0.00000	0.02406	0.05448
sky130_fd_sc_hs__maj3_2	0.00000	0.03031	0.05724
sky130_fd_sc_hs__maj3_4	0.00000	0.06172	0.11447

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (RR)	0.20158	1.19613	8.87451
	B->X (RR)	0.20134	1.19104	8.64750
	C->X (RR)	0.20380	1.18974	8.79477
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.20774	1.06946	8.90332
	B->X (RR)	0.19994	1.07281	8.73994
	C->X (RR)	0.20294	1.06258	8.85129
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.20754	0.97531	9.02505
	B->X (RR)	0.19535	0.96688	8.80619
	C->X (RR)	0.20341	0.96896	8.96212

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.52251	1.31122	6.61824
	B->X (FF)	0.42598	1.20322	6.05932
	C->X (FF)	0.44232	1.27616	6.49981
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.66627	1.44835	6.97127
	B->X (FF)	0.54590	1.29283	6.42340
	C->X (FF)	0.55581	1.36967	6.84249
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.60307	1.34909	6.90582
	B->X (FF)	0.47732	1.18598	6.32873
	C->X (FF)	0.49996	1.27266	6.76917

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00705	0.00698	0.00695
	A	0.00212	0.00203	0.00202
	B	0.00590	0.00562	0.00560
	B	0.00202	0.00173	0.00170
	C	0.00669	0.00651	0.00647
	C	0.00240	0.00222	0.00216
sky130_fd_sc_hs__maj3_2	A	0.00842	0.00847	0.00846
	A	0.00312	0.00316	0.00319
	B	0.00747	0.00737	0.00733
	B	0.00325	0.00314	0.00310
	C	0.00828	0.00823	0.00818
	C	0.00366	0.00362	0.00357
sky130_fd_sc_hs__maj3_4	A	0.01557	0.01564	0.01567
	A	0.00624	0.00631	0.00640
	B	0.01341	0.01327	0.01337
	B	0.00594	0.00582	0.00589
	C	0.01517	0.01507	0.01507
	C	0.00687	0.00678	0.00682

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00128	0.00128	0.00138
	A	0.00619	0.00621	0.00617
	B	0.00179	0.00150	0.00190
	B	0.00567	0.00546	0.00565
	C	0.00194	0.00173	0.00219
	C	0.00626	0.00610	0.00626
sky130_fd_sc_hs__maj3_2	A	0.00246	0.00259	0.00317
	A	0.00803	0.00821	0.00818
	B	0.00293	0.00277	0.00300
	B	0.00717	0.00707	0.00726
	C	0.00311	0.00305	0.00338
	C	0.00784	0.00780	0.00798
sky130_fd_sc_hs__maj3_4	A	0.00441	0.00476	0.00608
	A	0.01438	0.01476	0.01477
	B	0.00540	0.00524	0.00583
	B	0.01284	0.01280	0.01331
	C	0.00588	0.00584	0.00716
	C	0.01422	0.01427	0.01470

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00172	0.00161	0.00160
	(B * C * X)	-0.00128	-0.00140	-0.00142
	(!B * !C * !X)	0.00141	0.00142	0.00141
	(!B * !C * !X)	-0.00155	-0.00156	-0.00155
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00163	0.00154	0.00153
	(B * C * X)	-0.00152	-0.00165	-0.00166
	(!B * !C * !X)	0.00127	0.00128	0.00127
	(!B * !C * !X)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00303	0.00287	0.00284
	(B * C * X)	-0.00261	-0.00287	-0.00288
	(!B * !C * !X)	0.00244	0.00246	0.00245
	(!B * !C * !X)	-0.00316	-0.00318	-0.00317

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00159	-0.00160	-0.00159
	(B * C * X)	0.00141	0.00142	0.00142
	(!B * !C * !X)	-0.00135	-0.00142	-0.00141
	(!B * !C * !X)	0.00159	0.00158	0.00156
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00152	-0.00152	-0.00152
	(B * C * X)	0.00165	0.00165	0.00166
	(!B * !C * !X)	-0.00121	-0.00127	-0.00127
	(!B * !C * !X)	0.00188	0.00186	0.00185
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00283	-0.00283	-0.00282
	(B * C * X)	0.00287	0.00289	0.00288
	(!B * !C * !X)	-0.00236	-0.00246	-0.00245
	(!B * !C * !X)	0.00321	0.00322	0.00318

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00132	0.00132	0.00132
	(A * C * X)	-0.00086	-0.00085	-0.00084
	(!A * !C * !X)	0.00039	0.00039	0.00038
	(!A * !C * !X)	-0.00175	-0.00176	-0.00179
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00155	0.00155	0.00155
	(A * C * X)	-0.00082	-0.00081	-0.00081
	(!A * !C * !X)	0.00048	0.00048	0.00046
	(!A * !C * !X)	-0.00180	-0.00180	-0.00183
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00261	0.00259	0.00260
	(A * C * X)	-0.00172	-0.00169	-0.00169
	(!A * !C * !X)	0.00091	0.00091	0.00085
	(!A * !C * !X)	-0.00338	-0.00339	-0.00350

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00124	-0.00125	-0.00131
	(A * C * X)	0.00091	0.00091	0.00087
	(!A * !C * !X)	-0.00037	-0.00036	-0.00036
	(!A * !C * !X)	0.00180	0.00180	0.00180
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00147	-0.00148	-0.00154
	(A * C * X)	0.00089	0.00089	0.00083
	(!A * !C * !X)	-0.00044	-0.00045	-0.00044
	(!A * !C * !X)	0.00183	0.00186	0.00184
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00241	-0.00243	-0.00258
	(A * C * X)	0.00186	0.00186	0.00174
	(!A * !C * !X)	-0.00081	-0.00081	-0.00081
	(!A * !C * !X)	0.00348	0.00349	0.00350

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00143	0.00138	0.00137
	(A * B * X)	-0.00108	-0.00115	-0.00115
	(!A * !B * !X)	0.00073	0.00074	0.00072
	(!A * !B * !X)	-0.00175	-0.00175	-0.00176
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00163	0.00159	0.00157
	(A * B * X)	-0.00106	-0.00113	-0.00113
	(!A * !B * !X)	0.00089	0.00090	0.00088
	(!A * !B * !X)	-0.00172	-0.00173	-0.00174
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00280	0.00273	0.00272
	(A * B * X)	-0.00212	-0.00227	-0.00228
	(!A * !B * !X)	0.00165	0.00166	0.00162
	(!A * !B * !X)	-0.00328	-0.00330	-0.00334

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00132	-0.00133	-0.00136
	(A * B * X)	0.00118	0.00118	0.00115
	(!A * !B * !X)	-0.00069	-0.00072	-0.00072
	(!A * !B * !X)	0.00178	0.00177	0.00177
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00153	-0.00154	-0.00156
	(A * B * X)	0.00115	0.00116	0.00113
	(!A * !B * !X)	-0.00084	-0.00088	-0.00088
	(!A * !B * !X)	0.00175	0.00175	0.00175
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00263	-0.00264	-0.00269
	(A * B * X)	0.00235	0.00235	0.00229
	(!A * !B * !X)	-0.00156	-0.00163	-0.00162
	(!A * !B * !X)	0.00335	0.00339	0.00335

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A0	A1	S	Y
0	0	x	1
0	1	0	1
x	1	1	0
1	x	0	0
1	0	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2i_1	12.78720
sky130_fd_sc_hs__mux2i_2	20.77920
sky130_fd_sc_hs__mux2i_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	Y
sky130_fd_sc_hs__mux2i_1	0.00266	0.00250	0.00465	0.18788
sky130_fd_sc_hs__mux2i_2	0.00497	0.00527	0.00753	0.34096
sky130_fd_sc_hs__mux2i_4	0.00982	0.00979	0.01304	0.63818

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.03223	0.06113
sky130_fd_sc_hs__mux2i_2	0.00000	0.03253	0.05809
sky130_fd_sc_hs__mux2i_4	0.00000	0.08220	0.15486

Delay Information

Delay(ns) to Y rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__mux2i_1	A0->Y (FR)	-	0.25431	1.64571	12.41290
	A1->Y (FR)	-	0.22937	1.61956	12.39120
	S->Y (RR)	(A0 * !A1)	0.32873	1.53705	8.76750
	S->Y (FR)	(!A0 * A1)	0.28621	1.73678	12.74900
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.26699	1.47005	12.41740
	A1->Y (FR)	-	0.25202	1.43551	12.14720
	S->Y (RR)	(A0 * !A1)	0.34337	1.36510	8.60926
	S->Y (FR)	(!A0 * A1)	0.29618	1.55442	12.69770
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.23889	1.28311	12.24350
	A1->Y (FR)	-	0.23707	1.29592	12.44690
	S->Y (RR)	(A0 * !A1)	0.36242	1.31228	9.39493
	S->Y (FR)	(!A0 * A1)	0.27223	1.36298	12.49320

Delay(ns) to Y falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__mux2i_1	A0->Y (RF)	-	0.05496	0.65693	5.35562
	A1->Y (RF)	-	0.05690	0.67406	5.49729
	S->Y (FF)	(A0 * !A1)	0.20586	0.88686	4.43485
	S->Y (RF)	(!A0 * A1)	0.06609	0.64482	5.18297
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.06473	0.64439	5.62055
	A1->Y (RF)	-	0.06305	0.63345	5.54013
	S->Y (FF)	(A0 * !A1)	0.25875	0.96131	5.15291
	S->Y (RF)	(!A0 * A1)	0.07007	0.59046	5.06134
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.05908	0.58272	5.56463
	A1->Y (RF)	-	0.06503	0.61037	5.82084
	S->Y (FF)	(A0 * !A1)	0.25689	0.91210	4.90573
	S->Y (RF)	(!A0 * A1)	0.07164	0.54636	5.04604

Power Information

Internal switching power(pJ) to Y rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00063	0.00052	0.00053
	A0	-	0.00314	0.00304	0.00305
	A1	-	0.00046	0.00036	0.00037
	A1	-	0.00277	0.00268	0.00270
	S	(A0 * !A1)	0.00443	0.00424	0.00439
	S	(A0 * !A1)	0.00231	0.00211	0.00224
	S	(!A0 * A1)	0.00101	0.00085	0.00120
	S	(!A0 * A1)	0.00554	0.00539	0.00553
sky130_fd_sc_hs__mux2i_2	A0	-	0.00134	0.00108	0.00112
	A0	-	0.00621	0.00594	0.00600
	A1	-	0.00123	0.00097	0.00101
	A1	-	0.00608	0.00582	0.00589
	S	(A0 * !A1)	0.00751	0.00730	0.00738
	S	(A0 * !A1)	0.00481	0.00457	0.00466
	S	(!A0 * A1)	0.00239	0.00210	0.00233
	S	(!A0 * A1)	0.01009	0.00982	0.01002
sky130_fd_sc_hs__mux2i_4	A0	-	0.00156	0.00107	0.00120
	A0	-	0.01125	0.01074	0.01089
	A1	-	0.00160	0.00109	0.00123
	A1	-	0.01083	0.01031	0.01047
	S	(A0 * !A1)	0.01278	0.01246	0.01264
	S	(A0 * !A1)	0.00863	0.00827	0.00842
	S	(!A0 * A1)	0.00381	0.00337	0.00387
	S	(!A0 * A1)	0.01770	0.01728	0.01778

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00310	0.00308	0.00302
	A0	-	0.00071	0.00067	0.00062
	A1	-	0.00300	0.00300	0.00301
	A1	-	0.00066	0.00063	0.00059
	S	(A0 * !A1)	0.00261	0.00245	0.00274
	S	(A0 * !A1)	0.00473	0.00460	0.00489
	S	(!A0 * A1)	0.00589	0.00569	0.00576
	S	(!A0 * A1)	0.00133	0.00110	0.00122
sky130_fd_sc_hs__mux2i_2	A0	-	0.00642	0.00634	0.00625
	A0	-	0.00183	0.00172	0.00168
	A1	-	0.00623	0.00613	0.00611
	A1	-	0.00137	0.00126	0.00123
	S	(A0 * !A1)	0.00572	0.00549	0.00561
	S	(A0 * !A1)	0.00830	0.00811	0.00827
	S	(!A0 * A1)	0.01054	0.01025	0.01034
	S	(!A0 * A1)	0.00275	0.00243	0.00250
sky130_fd_sc_hs__mux2i_4	A0	-	0.01185	0.01162	0.01159
	A0	-	0.00270	0.00243	0.00242
	A1	-	0.01182	0.01158	0.01154
	A1	-	0.00252	0.00226	0.00226
	S	(A0 * !A1)	0.01072	0.01037	0.01068
	S	(A0 * !A1)	0.01465	0.01436	0.01474
	S	(!A0 * A1)	0.01936	0.01880	0.01897
	S	(!A0 * A1)	0.00532	0.00477	0.00486

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00084	0.00085	0.00085
	(A1 * S * !Y)	-0.00049	-0.00049	-0.00049
	(!A1 * S * Y)	0.00041	0.00040	0.00038
	(!A1 * S * Y)	-0.00094	-0.00097	-0.00098
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00152	0.00154	0.00153
	(A1 * S * !Y)	-0.00090	-0.00091	-0.00090
	(!A1 * S * Y)	0.00062	0.00061	0.00057
	(!A1 * S * Y)	-0.00184	-0.00188	-0.00192
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00297	0.00299	0.00298
	(A1 * S * !Y)	-0.00185	-0.00187	-0.00185
	(!A1 * S * Y)	0.00117	0.00117	0.00109
	(!A1 * S * Y)	-0.00369	-0.00381	-0.00386

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00076	-0.00078	-0.00084
	(A1 * S * !Y)	0.00056	0.00056	0.00051
	(!A1 * S * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * S * Y)	0.00097	0.00098	0.00098
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00139	-0.00145	-0.00153
	(A1 * S * !Y)	0.00100	0.00100	0.00093
	(!A1 * S * Y)	-0.00054	-0.00054	-0.00054
	(!A1 * S * Y)	0.00191	0.00192	0.00192
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00272	-0.00281	-0.00298
	(A1 * S * !Y)	0.00207	0.00207	0.00191
	(!A1 * S * Y)	-0.00105	-0.00105	-0.00105
	(!A1 * S * Y)	0.00386	0.00387	0.00386

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00076	0.00076	0.00075
	(A0 * !S * !Y)	-0.00050	-0.00050	-0.00050
	(!A0 * !S * Y)	0.00033	0.00033	0.00030
	(!A0 * !S * Y)	-0.00094	-0.00095	-0.00098
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00156	0.00157	0.00157
	(A0 * !S * !Y)	-0.00100	-0.00101	-0.00100
	(!A0 * !S * Y)	0.00067	0.00066	0.00062
	(!A0 * !S * Y)	-0.00191	-0.00193	-0.00199
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00289	0.00292	0.00290
	(A0 * !S * !Y)	-0.00185	-0.00188	-0.00186
	(!A0 * !S * Y)	0.00106	0.00106	0.00098
	(!A0 * !S * Y)	-0.00373	-0.00381	-0.00391

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00063	-0.00069	-0.00075
	(A0 * !S * !Y)	0.00058	0.00058	0.00052
	(!A0 * !S * Y)	-0.00029	-0.00030	-0.00029
	(!A0 * !S * Y)	0.00098	0.00099	0.00098
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00139	-0.00148	-0.00157
	(A0 * !S * !Y)	0.00114	0.00114	0.00104
	(!A0 * !S * Y)	-0.00060	-0.00060	-0.00060
	(!A0 * !S * Y)	0.00198	0.00198	0.00199
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00256	-0.00274	-0.00290
	(A0 * !S * !Y)	0.00211	0.00210	0.00193
	(!A0 * !S * Y)	-0.00094	-0.00095	-0.00094
	(!A0 * !S * Y)	0.00390	0.00394	0.00391

Passive power(pJ) for S rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00324	0.00308	0.00321
	(A0 * A1 * !Y)	-0.00001	-0.00021	-0.00006
	(!A0 * !A1 * Y)	0.00328	0.00311	0.00323
	(!A0 * !A1 * Y)	-0.00000	-0.00019	-0.00004
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00496	0.00470	0.00480
	(A0 * A1 * !Y)	-0.00006	-0.00039	-0.00029
	(!A0 * !A1 * Y)	0.00489	0.00467	0.00476
	(!A0 * !A1 * Y)	-0.00017	-0.00037	-0.00026
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.00865	0.00824	0.00839
	(A0 * A1 * !Y)	-0.00005	-0.00056	-0.00039
	(!A0 * !A1 * Y)	0.00857	0.00823	0.00834
	(!A0 * !A1 * Y)	-0.00016	-0.00049	-0.00034

Passive power(pJ) for S falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00015	-0.00026	0.00008
	(A0 * A1 * !Y)	0.00312	0.00300	0.00334
	(!A0 * !A1 * Y)	-0.00019	-0.00031	0.00003
	(!A0 * !A1 * Y)	0.00308	0.00298	0.00332
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00022	-0.00039	-0.00016
	(A0 * A1 * !Y)	0.00483	0.00467	0.00488
	(!A0 * !A1 * Y)	-0.00021	-0.00043	-0.00021
	(!A0 * !A1 * Y)	0.00479	0.00461	0.00487
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00012	-0.00037	0.00010
	(A0 * A1 * !Y)	0.00860	0.00837	0.00879
	(!A0 * !A1 * Y)	-0.00019	-0.00050	-0.00001
	(!A0 * !A1 * Y)	0.00848	0.00825	0.00874

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A0	A1	S	X
0	0	x	0
0	1	0	0
x	1	1	1
1	x	0	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2_1	14.38560
sky130_fd_sc_hs__mux2_2	17.58240
sky130_fd_sc_hs__mux2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	X
sky130_fd_sc_hs__mux2_1	0.00257	0.00304	0.00428	0.44240
sky130_fd_sc_hs__mux2_2	0.00237	0.00270	0.00509	0.81749
sky130_fd_sc_hs__mux2_4	0.00455	0.00458	0.00768	1.53499

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2_1	0.00000	0.04791	0.08448
sky130_fd_sc_hs__mux2_2	0.00000	0.05471	0.08724
sky130_fd_sc_hs__mux2_4	0.00000	0.07862	0.11031

Delay Information

Delay(ns) to X rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__mux2_1	A0->X (RR)	-	0.16712	1.12922	8.44818
	A1->X (RR)	-	0.16960	1.13661	8.50075
	S->X (RR)	(!A0 * A1)	0.16592	1.12836	8.59051
	S->X (FR)	(A0 * !A1)	0.33801	1.46840	9.99721
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.18709	1.06426	8.73717
	A1->X (RR)	-	0.18635	1.06492	8.78681
	S->X (RR)	(!A0 * A1)	0.18421	1.05085	8.87310
	S->X (FR)	(A0 * !A1)	0.35006	1.36028	9.99674
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.23471	1.02802	8.80182
	A1->X (RR)	-	0.23259	1.02470	8.79200
	S->X (RR)	(!A0 * A1)	0.23931	1.00092	8.89446
	S->X (FR)	(A0 * !A1)	0.45196	1.40543	10.62550

Delay(ns) to X falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__mux2_1	A0->X (FF)	-	0.37368	1.13875	5.88644
	A1->X (FF)	-	0.37238	1.14098	5.92114
	S->X (FF)	(!A0 * A1)	0.46667	1.24008	6.39035
	S->X (RF)	(A0 * !A1)	0.52524	1.06939	3.72126
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.47643	1.21594	6.19548
	A1->X (FF)	-	0.48592	1.23032	6.26536
	S->X (FF)	(!A0 * A1)	0.58620	1.35459	6.67217
	S->X (RF)	(A0 * !A1)	0.65437	1.19070	3.69217
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.52333	1.23035	6.20413
	A1->X (FF)	-	0.52480	1.23428	6.23890
	S->X (FF)	(!A0 * A1)	0.61368	1.35010	6.61802
	S->X (RF)	(A0 * !A1)	0.66782	1.20469	3.77872

Power Information

Internal switching power(pJ) to X rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00460	0.00449	0.00456
	A0	-	0.00223	0.00213	0.00219
	A1	-	0.00477	0.00469	0.00475
	A1	-	0.00220	0.00211	0.00217
	S	(A0 * !A1)	0.00435	0.00419	0.00443
	S	(A0 * !A1)	0.00599	0.00585	0.00611
	S	(!A0 * A1)	0.00747	0.00732	0.00745
	S	(!A0 * A1)	0.00313	0.00298	0.00312
sky130_fd_sc_hs__mux2_2	A0	-	0.00592	0.00600	0.00610
	A0	-	0.00359	0.00367	0.00378
	A1	-	0.00618	0.00624	0.00631
	A1	-	0.00374	0.00380	0.00389
	S	(A0 * !A1)	0.00551	0.00568	0.00597
	S	(A0 * !A1)	0.00755	0.00772	0.00805
	S	(!A0 * A1)	0.00903	0.00893	0.00906
	S	(!A0 * A1)	0.00430	0.00420	0.00437
sky130_fd_sc_hs__mux2_4	A0	-	0.01106	0.01117	0.01140
	A0	-	0.00683	0.00696	0.00719
	A1	-	0.01118	0.01126	0.01149
	A1	-	0.00689	0.00698	0.00730
	S	(A0 * !A1)	0.01028	0.01061	0.01090
	S	(A0 * !A1)	0.01325	0.01358	0.01404
	S	(!A0 * A1)	0.01584	0.01572	0.01584
	S	(!A0 * A1)	0.00833	0.00820	0.00839

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00202	0.00198	0.00233
	A0	-	0.00451	0.00446	0.00471
	A1	-	0.00234	0.00226	0.00249
	A1	-	0.00494	0.00485	0.00507
	S	(A0 * !A1)	0.00652	0.00636	0.00648
	S	(A0 * !A1)	0.00481	0.00465	0.00471
	S	(!A0 * A1)	0.00252	0.00246	0.00283
	S	(!A0 * A1)	0.00682	0.00678	0.00710
sky130_fd_sc_hs__mux2_2	A0	-	0.00270	0.00272	0.00357
	A0	-	0.00541	0.00554	0.00581
	A1	-	0.00336	0.00346	0.00413
	A1	-	0.00582	0.00592	0.00616
	S	(A0 * !A1)	0.00739	0.00740	0.00760
	S	(A0 * !A1)	0.00529	0.00535	0.00542
	S	(!A0 * A1)	0.00335	0.00340	0.00476
	S	(!A0 * A1)	0.00805	0.00811	0.00843
sky130_fd_sc_hs__mux2_4	A0	-	0.00632	0.00647	0.00808
	A0	-	0.01134	0.01152	0.01199
	A1	-	0.00711	0.00733	0.00839
	A1	-	0.01132	0.01154	0.01206
	S	(A0 * !A1)	0.01346	0.01374	0.01410
	S	(A0 * !A1)	0.01041	0.01074	0.01093
	S	(!A0 * A1)	0.00776	0.00781	0.00805
	S	(!A0 * A1)	0.01517	0.01524	0.01541

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00079	0.00079	0.00079
	(A1 * S * X)	-0.00041	-0.00041	-0.00041
	(!A1 * S * !X)	0.00035	0.00034	0.00032
	(!A1 * S * !X)	-0.00085	-0.00087	-0.00090
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00075	0.00075	0.00075
	(A1 * S * X)	-0.00044	-0.00044	-0.00044
	(!A1 * S * !X)	0.00038	0.00038	0.00035
	(!A1 * S * !X)	-0.00079	-0.00081	-0.00085
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00135	0.00136	0.00135
	(A1 * S * X)	-0.00087	-0.00087	-0.00087
	(!A1 * S * !X)	0.00059	0.00057	0.00054
	(!A1 * S * !X)	-0.00169	-0.00171	-0.00175

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00072	-0.00074	-0.00079
	(A1 * S * X)	0.00047	0.00047	0.00043
	(!A1 * S * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * S * !X)	0.00089	0.00090	0.00090
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00066	-0.00068	-0.00075
	(A1 * S * X)	0.00051	0.00051	0.00046
	(!A1 * S * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * S * !X)	0.00085	0.00085	0.00085
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00123	-0.00127	-0.00135
	(A1 * S * X)	0.00096	0.00097	0.00090
	(!A1 * S * !X)	-0.00052	-0.00053	-0.00052
	(!A1 * S * !X)	0.00175	0.00176	0.00175

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00087	0.00087	0.00087
	(A0 * !S * X)	-0.00049	-0.00049	-0.00049
	(!A0 * !S * !X)	0.00030	0.00030	0.00029
	(!A0 * !S * !X)	-0.00104	-0.00105	-0.00106
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00080	0.00081	0.00080
	(A0 * !S * X)	-0.00042	-0.00043	-0.00042
	(!A0 * !S * !X)	0.00027	0.00027	0.00026
	(!A0 * !S * !X)	-0.00093	-0.00094	-0.00096
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00133	0.00134	0.00134
	(A0 * !S * X)	-0.00087	-0.00088	-0.00087
	(!A0 * !S * !X)	0.00047	0.00047	0.00044
	(!A0 * !S * !X)	-0.00177	-0.00178	-0.00183

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00081	-0.00084	-0.00087
	(A0 * !S * X)	0.00054	0.00054	0.00050
	(!A0 * !S * !X)	-0.00028	-0.00028	-0.00028
	(!A0 * !S * !X)	0.00106	0.00106	0.00106
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00072	-0.00075	-0.00080
	(A0 * !S * X)	0.00049	0.00049	0.00044
	(!A0 * !S * !X)	-0.00025	-0.00026	-0.00025
	(!A0 * !S * !X)	0.00096	0.00096	0.00096
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00120	-0.00127	-0.00134
	(A0 * !S * X)	0.00098	0.00097	0.00090
	(!A0 * !S * !X)	-0.00042	-0.00043	-0.00043
	(!A0 * !S * !X)	0.00183	0.00184	0.00183

Passive power(pJ) for S rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00324	0.00308	0.00322
	(A0 * A1 * X)	0.00030	0.00011	0.00025
	(!A0 * !A1 * !X)	0.00332	0.00317	0.00330
	(!A0 * !A1 * !X)	0.00039	0.00024	0.00038
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00330	0.00313	0.00326
	(A0 * A1 * X)	-0.00003	-0.00024	-0.00010
	(!A0 * !A1 * !X)	0.00318	0.00300	0.00312
	(!A0 * !A1 * !X)	-0.00016	-0.00034	-0.00020
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00513	0.00489	0.00499
	(A0 * A1 * X)	0.00004	-0.00026	-0.00015
	(!A0 * !A1 * !X)	0.00521	0.00497	0.00504
	(!A0 * !A1 * !X)	0.00008	-0.00016	-0.00006

Passive power(pJ) for S falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00003	-0.00008	0.00025
	(A0 * A1 * X)	0.00297	0.00288	0.00319
	(!A0 * !A1 * !X)	-0.00009	-0.00021	0.00012
	(!A0 * !A1 * !X)	0.00283	0.00273	0.00307
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00027	-0.00039	-0.00006
	(A0 * A1 * X)	0.00308	0.00296	0.00328
	(!A0 * !A1 * !X)	-0.00016	-0.00029	0.00004
	(!A0 * !A1 * !X)	0.00317	0.00305	0.00339
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00013	-0.00034	-0.00014
	(A0 * A1 * X)	0.00498	0.00476	0.00496
	(!A0 * !A1 * !X)	-0.00026	-0.00047	-0.00026
	(!A0 * !A1 * !X)	0.00485	0.00466	0.00488

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT						OUTPUT
A0	A1	A2	A3	S0	S1	X
0	0	0	0	x	x	0
0	x	0	1	0	x	0
x	0	x	1	1	0	0
x	x	x	1	1	1	1
0	0	1	x	x	0	0
0	x	1	x	0	1	1
0	x	1	0	1	1	0
0	1	0	x	0	x	0
0	1	x	x	1	0	1
0	1	x	0	1	1	0
0	1	1	x	0	0	0
1	0	0	x	0	0	1
1	x	0	0	x	1	0
1	0	x	0	1	x	0
1	x	0	1	0	1	0
1	x	1	x	0	x	1
1	1	0	x	x	0	1
1	1	1	x	1	0	1
1	1	1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux4_1	31.96800
sky130_fd_sc_hs__mux4_2	35.16480
sky130_fd_sc_hs__mux4_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A0	A1	A2	A3	S0	S1	X
sky130_fd_sc_hs__mux4_1	0.00221	0.00233	0.00231	0.00258	0.00791	0.00504	0.43311
sky130_fd_sc_hs__mux4_2	0.00252	0.00237	0.00248	0.00242	0.00900	0.00521	0.87060
sky130_fd_sc_hs__mux4_4	0.00440	0.00421	0.00440	0.00441	0.01243	0.00777	1.67470

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.07997	0.13430
sky130_fd_sc_hs__mux4_2	0.00000	0.08534	0.14288
sky130_fd_sc_hs__mux4_4	0.00000	0.12899	0.21001

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (RR)	0.29225	1.30127	9.15934
	A1->X (RR)	0.29168	1.30393	9.16838
	A2->X (RR)	0.29552	1.31210	9.21965
	A3->X (RR)	0.28752	1.30492	9.20581
	S0->X (-R)	0.50712	1.69774	10.90420
	S1->X (-R)	0.30338	1.45169	9.99949
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.31611	1.19339	9.29422
	A1->X (RR)	0.29994	1.18397	9.28502
	A2->X (RR)	0.29066	1.16611	9.23324
	A3->X (RR)	0.27546	1.15514	9.21700
	S0->X (-R)	0.49994	1.55838	10.85070
	S1->X (-R)	0.32083	1.34162	10.06080
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.35443	1.12413	9.34858
	A1->X (RR)	0.35295	1.12812	9.35429
	A2->X (RR)	0.35621	1.13034	9.35521
	A3->X (RR)	0.33616	1.11978	9.35211
	S0->X (-R)	0.63667	1.62058	11.55060
	S1->X (-R)	0.38752	1.35985	10.72400

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.79722	1.61946	7.10652
	A1->X (FF)	0.82558	1.64434	7.14351
	A2->X (FF)	0.87344	1.69834	7.25087
	A3->X (FF)	0.87580	1.69681	7.24205
	S0->X (-F)	0.80781	1.56948	6.75117
	S1->X (-F)	0.39547	1.12941	5.50541
sky130_fd_sc_hs__mux4_2	A0->X (FF)	1.04407	1.88932	7.72699
	A1->X (FF)	1.03718	1.88593	7.72062
	A2->X (FF)	1.00240	1.84262	7.62319
	A3->X (FF)	0.98333	1.82482	7.59898
	S0->X (-F)	0.98793	1.76758	7.29561
	S1->X (-F)	0.55744	1.31707	6.27762
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.97813	1.78574	7.58918
	A1->X (FF)	0.96961	1.78008	7.58608
	A2->X (FF)	1.02799	1.83928	7.63283
	A3->X (FF)	1.00332	1.81433	7.62499
	S0->X (-F)	0.95699	1.71311	7.26241
	S1->X (-F)	0.58874	1.32212	6.37150

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.00733	0.00735	0.00735
	A0	0.00461	0.00463	0.00465
	A1	0.00675	0.00677	0.00676
	A1	0.00398	0.00400	0.00402
	A2	0.00668	0.00671	0.00671
	A2	0.00397	0.00400	0.00403
	A3	0.00629	0.00631	0.00629
	A3	0.00339	0.00340	0.00341
	S0	0.01247	0.01209	0.01216
	S0	0.01285	0.01276	0.01281
	S1	0.00576	0.00551	0.00584
	S1	0.00569	0.00598	0.00686
sky130_fd_sc_hs__mux4_2	A0	0.00895	0.00911	0.00912
	A0	0.00587	0.00604	0.00611
	A1	0.00838	0.00854	0.00856
	A1	0.00527	0.00543	0.00552
	A2	0.00787	0.00802	0.00805
	A2	0.00492	0.00508	0.00517
	A3	0.00748	0.00764	0.00767
	A3	0.00453	0.00468	0.00478
	S0	0.01455	0.01414	0.01418
	S0	0.01349	0.01349	0.01399
	S1	0.00694	0.00683	0.00714
	S1	0.00701	0.00744	0.00839

sky130_fd_sc_hs__mux4_4	**A0**	0.01635	0.01667	0.01681
	A0	0.01103	0.01135	0.01162
	A1	0.01515	0.01547	0.01560
	A1	0.00982	0.01014	0.01040
	A2	0.01514	0.01548	0.01561
	A2	0.00981	0.01013	0.01040
	A3	0.01444	0.01477	0.01489
	A3	0.00894	0.00925	0.00950
	S0	0.02396	0.02363	0.02438
	S0	0.02265	0.02299	0.02281
	S1	0.01224	0.01216	0.01262
	S1	0.01247	0.01340	0.01566

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00245	0.00256	0.00256
	A0	0.00519	0.00530	0.00528
	A1	0.00310	0.00319	0.00319
	A1	0.00584	0.00594	0.00591
	A2	0.00362	0.00371	0.00397
	A2	0.00632	0.00643	0.00643
	A3	0.00404	0.00410	0.00410
	A3	0.00691	0.00699	0.00696
	S0	0.01142	0.01112	0.01125
	S0	0.01272	0.01253	0.01279
	S1	0.00564	0.00590	0.00666
	S1	0.00507	0.00494	0.00552

sky130_fd_sc_hs__mux4_2	**A0**	0.00442	0.00463	0.00518
	A0	0.00748	0.00770	0.00775
	A1	0.00497	0.00521	0.00573
	A1	0.00804	0.00829	0.00833
	A2	0.00481	0.00503	0.00508
	A2	0.00775	0.00798	0.00801
	A3	0.00517	0.00541	0.00546
	A3	0.00809	0.00833	0.00837
	S0	0.01334	0.01309	0.01322
	S0	0.01344	0.01340	0.01368
	S1	0.00712	0.00751	0.00826
	S1	0.00675	0.00677	0.00735
sky130_fd_sc_hs__mux4_4	**A0**	0.00793	0.00842	0.00861
	A0	0.01325	0.01374	0.01391
	A1	0.00928	0.00978	0.01001
	A1	0.01457	0.01508	0.01525
	A2	0.00910	0.00956	0.00977
	A2	0.01443	0.01491	0.01509
	A3	0.01013	0.01058	0.01078
	A3	0.01555	0.01603	0.01618
	S0	0.02210	0.02197	0.02241
	S0	0.02277	0.02285	0.02320
	S1	0.01265	0.01393	0.01599
	S1	0.01157	0.01169	0.01248

Passive power(pJ) for A0 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00383	0.00374	0.00371
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00164	0.00155	0.00152
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00068	0.00065	0.00064
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00068	-0.00072	-0.00073
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00431	0.00422	0.00418
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00179	0.00169	0.00166
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00076	0.00071	0.00070
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00064	-0.00071	-0.00071
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00715	0.00699	0.00692
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00288	0.00270	0.00267
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00130	0.00121	0.00119
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00138	-0.00151	-0.00151

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00073	0.00066	0.00067
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00292	0.00285	0.00285
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00063	-0.00064	-0.00064
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00072	0.00073	0.00073
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00112	0.00102	0.00100
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00364	0.00354	0.00351
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00069	-0.00070	-0.00070
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00072	0.00072	0.00071

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00163	0.00147	0.00147
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00589	0.00575	0.00572
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00116	-0.00119	-0.00119
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00150	0.00152	0.00151

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00326	0.00317	0.00315
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00105	0.00095	0.00094
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00063	0.00058	0.00058
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00075	-0.00081	-0.00082

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00374	0.00366	0.00362
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00120	0.00112	0.00108
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00064	0.00062	0.00061
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00075	-0.00078	-0.00078
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00598	0.00580	0.00574
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00175	0.00157	0.00153
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00125	0.00116	0.00114
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00135	-0.00148	-0.00148

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00135	0.00127	0.00126
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00357	0.00349	0.00346
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00056	-0.00058	-0.00058
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00165	0.00157	0.00157
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00419	0.00411	0.00409
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00059	-0.00062	-0.00061
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00078	0.00078	0.00078
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00290	0.00277	0.00277
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00713	0.00701	0.00697
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00112	-0.00115	-0.00114
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00148	0.00148	0.00148

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00073	0.00069	0.00068
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00064	-0.00070	-0.00070
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00396	0.00388	0.00385
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00175	0.00167	0.00165
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00084	0.00079	0.00078
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00064	-0.00070	-0.00071
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00406	0.00397	0.00393
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00166	0.00156	0.00154

sky130_fd_sc_hs__mux4_4	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	0.00137	0.00127	0.00125
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00129	-0.00142	-0.00142
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00729	0.00712	0.00706
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00293	0.00273	0.00271

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	-0.00067	-0.00068	-0.00068
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00070	0.00071	0.00070
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00115	0.00108	0.00108
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00335	0.00329	0.00328

sky130_fd_sc_hs__mux4_2	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	-0.00077	-0.00078	-0.00078
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00071	0.00071	0.00071
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00117	0.00107	0.00105
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00358	0.00348	0.00345
sky130_fd_sc_hs__mux4_4	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	-0.00124	-0.00126	-0.00125
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00143	0.00142	0.00142
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00155	0.00140	0.00139
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00591	0.00576	0.00574

Passive power(pJ) for A3 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00358	0.00348	0.00344
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00121	0.00109	0.00106
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00082	0.00077	0.00075
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00072	-0.00078	-0.00079
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00367	0.00359	0.00355
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00128	0.00119	0.00116
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00070	0.00067	0.00066
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00071	-0.00075	-0.00075
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00656	0.00637	0.00629
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00211	0.00190	0.00184
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00128	0.00121	0.00119
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00133	-0.00143	-0.00144

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00155	0.00144	0.00143
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00393	0.00384	0.00381
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00073	-0.00075	-0.00075
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00078	0.00079	0.00079
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00150	0.00142	0.00142
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00390	0.00383	0.00380
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00064	-0.00066	-0.00066
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00075	0.00076	0.00075

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00253	0.00236	0.00236
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00700	0.00682	0.00679
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00117	-0.00121	-0.00119
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00144	0.00144	0.00144

Passive power(pJ) for S0 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00454	0.00436	0.00442
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00045	-0.00065	-0.00057
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00675	0.00652	0.00648
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00248	0.00225	0.00217
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00653	0.00619	0.00641
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00082	0.00047	0.00070
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00464	0.00446	0.00453
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00035	-0.00055	-0.00046
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00634	0.00625	0.00620
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00203	0.00192	0.00186
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00618	0.00608	0.00605
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00186	0.00174	0.00168
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00631	0.00596	0.00620
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00061	0.00025	0.00051
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00668	0.00632	0.00658
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00098	0.00061	0.00087
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00656	0.00633	0.00628
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00226	0.00201	0.00192
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00690	0.00656	0.00678
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00115	0.00078	0.00102

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00505	0.00488	0.00493
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00015	-0.00005	0.00003
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00715	0.00682	0.00675
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00308	0.00273	0.00265
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00705	0.00669	0.00689
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00135	0.00097	0.00118
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00493	0.00474	0.00483
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00007	-0.00012	-0.00005
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00743	0.00701	0.00692
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00352	0.00312	0.00298
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00712	0.00671	0.00662
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00325	0.00283	0.00271
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00710	0.00670	0.00690
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00123	0.00081	0.00103
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00716	0.00676	0.00698
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00135	0.00092	0.00114
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00670	0.00636	0.00631
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00268	0.00232	0.00223
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00747	0.00710	0.00732
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00181	0.00142	0.00166

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00714	0.00699	0.00695
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00004	-0.00013	-0.00014
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01084	0.01033	0.01006
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00522	0.00469	0.00435
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01064	0.01012	0.01044
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00215	0.00163	0.00193
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00705	0.00689	0.00688
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00000	-0.00017	-0.00019
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01102	0.01077	0.01046
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00511	0.00485	0.00454
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01050	0.01024	0.00999
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00465	0.00438	0.00405
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01025	0.00976	0.01009
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00190	0.00142	0.00175
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01057	0.01008	0.01044
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00228	0.00178	0.00213
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01057	0.01006	0.00978
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00492	0.00438	0.00402
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01128	0.01077	0.01109
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00278	0.00222	0.00253

Passive power(pJ) for S0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00042	0.00025	0.00040
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00538	0.00523	0.00540
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00325	0.00314	0.00320
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00752	0.00740	0.00751
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00144	0.00117	0.00161
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00713	0.00688	0.00733
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00028	0.00010	0.00029
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00527	0.00511	0.00529
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00306	0.00296	0.00303
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00736	0.00726	0.00738
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00319	0.00309	0.00319
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00753	0.00742	0.00755
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00102	0.00075	0.00122
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00671	0.00643	0.00691
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00062	0.00033	0.00083
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00632	0.00604	0.00655
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00342	0.00331	0.00340
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00774	0.00762	0.00774
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00104	0.00075	0.00124
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00678	0.00651	0.00700

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00039	-0.00053	-0.00034
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00450	0.00436	0.00456
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00245	0.00238	0.00244
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00653	0.00644	0.00654
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00073	0.00045	0.00093
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00642	0.00615	0.00664
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00031	-0.00046	-0.00027
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00454	0.00442	0.00461
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00278	0.00272	0.00276
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00668	0.00662	0.00668
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00304	0.00299	0.00302
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00693	0.00686	0.00693
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00045	0.00015	0.00062
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00633	0.00601	0.00650
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00035	0.00003	0.00051
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00618	0.00587	0.00635
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00286	0.00278	0.00286
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00691	0.00682	0.00693
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00026	-0.00003	0.00046
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00593	0.00566	0.00614

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00052	-0.00063	-0.00061
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00653	0.00642	0.00649
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00483	0.00478	0.00452
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01045	0.01039	0.01022
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00093	0.00056	0.00118
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00941	0.00904	0.00968
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00048	-0.00060	-0.00052
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00657	0.00646	0.00652
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00435	0.00438	0.00417
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01024	0.01025	0.01013
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00484	0.00486	0.00467
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01074	0.01075	0.01061
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00081	0.00048	0.00114
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00913	0.00881	0.00948
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00043	0.00010	0.00080
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00875	0.00841	0.00910
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00509	0.00502	0.00478
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01077	0.01070	0.01053
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00024	-0.00015	0.00052
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00877	0.00841	0.00906

Passive power(pJ) for S1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * A3 * S0 * X)	0.00297	0.00282	0.00300
	(A1 * A3 * S0 * X)	-0.00012	-0.00029	-0.00010
	(A0 * A2 * !S0 * X)	0.00297	0.00282	0.00300
	(A0 * A2 * !S0 * X)	-0.00012	-0.00029	-0.00010
	(!A1 * !A3 * S0 * !X)	0.00304	0.00289	0.00308
	(!A1 * !A3 * S0 * !X)	-0.00010	-0.00026	-0.00006
	(!A0 * !A2 * !S0 * !X)	0.00304	0.00289	0.00308
	(!A0 * !A2 * !S0 * !X)	-0.00010	-0.00026	-0.00006
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00314	0.00300	0.00317
	(A1 * A3 * S0 * X)	-0.00009	-0.00025	-0.00007
	(A0 * A2 * !S0 * X)	0.00314	0.00300	0.00317
	(A0 * A2 * !S0 * X)	-0.00009	-0.00025	-0.00007
	(!A1 * !A3 * S0 * !X)	0.00310	0.00295	0.00314
	(!A1 * !A3 * S0 * !X)	-0.00013	-0.00030	-0.00009
	(!A0 * !A2 * !S0 * !X)	0.00310	0.00295	0.00314
	(!A0 * !A2 * !S0 * !X)	-0.00013	-0.00030	-0.00009
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00456	0.00437	0.00446
	(A1 * A3 * S0 * X)	-0.00004	-0.00026	-0.00016
	(A0 * A2 * !S0 * X)	0.00456	0.00437	0.00446
	(A0 * A2 * !S0 * X)	-0.00004	-0.00026	-0.00016
	(!A1 * !A3 * S0 * !X)	0.00447	0.00427	0.00438
	(!A1 * !A3 * S0 * !X)	-0.00021	-0.00044	-0.00032
	(!A0 * !A2 * !S0 * !X)	0.00447	0.00425	0.00438
	(!A0 * !A2 * !S0 * !X)	-0.00021	-0.00042	-0.00032

Passive power(pJ) for S1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * A3 * S0 * X)	-0.00033	-0.00041	-0.00011
	(A1 * A3 * S0 * X)	0.00277	0.00269	0.00300
	(A0 * A2 * !S0 * X)	-0.00033	-0.00041	-0.00011
	(A0 * A2 * !S0 * X)	0.00277	0.00269	0.00300
	(!A1 * !A3 * S0 * !X)	-0.00036	-0.00044	-0.00015
	(!A1 * !A3 * S0 * !X)	0.00277	0.00270	0.00299
	(!A0 * !A2 * !S0 * !X)	-0.00036	-0.00045	-0.00015
	(!A0 * !A2 * !S0 * !X)	0.00277	0.00270	0.00299
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00036	-0.00044	-0.00013
	(A1 * A3 * S0 * X)	0.00287	0.00279	0.00310
	(A0 * A2 * !S0 * X)	-0.00036	-0.00044	-0.00013
	(A0 * A2 * !S0 * X)	0.00287	0.00279	0.00310
	(!A1 * !A3 * S0 * !X)	-0.00031	-0.00040	-0.00011
	(!A1 * !A3 * S0 * !X)	0.00292	0.00283	0.00313
	(!A0 * !A2 * !S0 * !X)	-0.00031	-0.00040	-0.00011
	(!A0 * !A2 * !S0 * !X)	0.00292	0.00283	0.00313
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00055	-0.00068	-0.00046
	(A1 * A3 * S0 * X)	0.00406	0.00394	0.00415
	(A0 * A2 * !S0 * X)	-0.00055	-0.00068	-0.00046
	(A0 * A2 * !S0 * X)	0.00406	0.00394	0.00415
	(!A1 * !A3 * S0 * !X)	-0.00038	-0.00053	-0.00032
	(!A1 * !A3 * S0 * !X)	0.00431	0.00416	0.00438
	(!A0 * !A2 * !S0 * !X)	-0.00038	-0.00053	-0.00032
	(!A0 * !A2 * !S0 * !X)	0.00431	0.00416	0.00438

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A_N	B	Y
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2b_1	7.99200
sky130_fd_sc_hs__nand2b_2	11.18880
sky130_fd_sc_hs__nand2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	Y
sky130_fd_sc_hs__nand2b_1	0.00219	0.00259	0.40846
sky130_fd_sc_hs__nand2b_2	0.00245	0.00488	0.81755
sky130_fd_sc_hs__nand2b_4	0.00360	0.00755	0.88924

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.03006	0.04759
sky130_fd_sc_hs__nand2b_2	0.00000	0.02818	0.04694
sky130_fd_sc_hs__nand2b_4	0.00000	0.06267	0.10069

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2b_1	A_N->Y (RR)	0.13513	1.07806	8.18554
	B->Y (FR)	0.10016	1.26695	12.18360
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.12401	0.93958	8.23003
	B->Y (FR)	0.09251	1.14997	12.53400
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.15444	0.98128	8.52156
	B->Y (FR)	0.12882	1.17235	12.58580

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2b_1	A_N->Y (FF)	0.18664	0.96242	5.84520
	B->Y (RF)	0.05470	0.73368	6.98494
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.21446	0.99899	6.64687
	B->Y (RF)	0.05610	0.67554	7.17753
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.16690	0.81656	4.85444
	B->Y (RF)	0.05148	0.53577	5.58339

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00345	0.00334	0.00350
	A_N	0.00184	0.00174	0.00191
	B	0.00017	0.00013	0.00015
	B	0.00195	0.00184	0.00196
sky130_fd_sc_hs__nand2b_2	A_N	0.00449	0.00448	0.00466
	A_N	0.00285	0.00284	0.00303
	B	0.00014	0.00005	0.00009
	B	0.00360	0.00352	0.00216
sky130_fd_sc_hs__nand2b_4	A_N	0.00607	0.00608	0.00645
	A_N	0.00371	0.00372	0.00412
	B	0.00009	-0.00013	-0.00006
	B	0.00542	0.00522	0.00461

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00182	0.00178	0.00215
	A_N	0.00343	0.00338	0.00374
	B	0.00234	0.00232	0.00237
	B	0.00055	0.00053	0.00053
sky130_fd_sc_hs__nand2b_2	A_N	0.00313	0.00314	0.00389
	A_N	0.00478	0.00479	0.00506
	B	0.00453	0.00454	0.00453
	B	0.00102	0.00098	0.00102
sky130_fd_sc_hs__nand2b_4	A_N	0.00542	0.00539	0.00613
	A_N	0.00779	0.00773	0.00836
	B	0.00791	0.00785	0.00825
	B	0.00248	0.00242	0.00247

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00270	0.00256	0.00272
	(!B * Y)	0.00099	0.00085	0.00101
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00372	0.00356	0.00370
	(!B * Y)	0.00184	0.00167	0.00181
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00461	0.00436	0.00463
	(!B * Y)	0.00186	0.00160	0.00187

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00011	0.00002	0.00035
	(!B * Y)	0.00182	0.00173	0.00207
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00047	0.00034	0.00056
	(!B * Y)	0.00237	0.00225	0.00246
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00080	0.00065	0.00119
	(!B * Y)	0.00360	0.00344	0.00395

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00081	0.00081	0.00081
	(A_N * Y)	-0.00080	-0.00080	-0.00080
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00137	0.00138	0.00137
	(A_N * Y)	-0.00166	-0.00166	-0.00166
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00277	0.00278	0.00276
	(A_N * Y)	-0.00175	-0.00175	-0.00174

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00078	-0.00081	-0.00081
	(A_N * Y)	0.00081	0.00081	0.00080
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00133	-0.00138	-0.00137
	(A_N * Y)	0.00168	0.00167	0.00166
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00267	-0.00277	-0.00276
	(A_N * Y)	0.00181	0.00177	0.00175

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2_1	4.79520
sky130_fd_sc_hs__nand2_2	7.99200
sky130_fd_sc_hs__nand2_4	14.38560
sky130_fd_sc_hs__nand2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nand2_1	0.00260	0.00251	0.43824
sky130_fd_sc_hs__nand2_2	0.00496	0.00490	0.85983
sky130_fd_sc_hs__nand2_4	0.00764	0.00737	0.86570
sky130_fd_sc_hs__nand2_8	0.01459	0.01455	1.66496

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2_1	0.00000	0.00682	0.02167
sky130_fd_sc_hs__nand2_2	0.00000	0.01365	0.04335
sky130_fd_sc_hs__nand2_4	0.00000	0.01646	0.04335
sky130_fd_sc_hs__nand2_8	0.00000	0.03292	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (FR)	0.07850	1.26328	12.50560
	B->Y (FR)	0.09571	1.27894	12.52500
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.06762	1.11202	12.47020
	B->Y (FR)	0.09048	1.13318	12.45270
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.09723	1.14144	12.56100
	B->Y (FR)	0.14247	1.18489	12.56370
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.07650	1.00815	12.37580
	B->Y (FR)	0.11875	1.03594	12.17110

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.04391	0.76701	7.53621
	B->Y (RF)	0.04980	0.74246	7.20918
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.04155	0.71457	7.84147
	B->Y (RF)	0.05166	0.69192	7.47744
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.03855	0.56090	6.03511
	B->Y (RF)	0.04750	0.53940	5.59449
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.03481	0.51634	6.23382
	B->Y (RF)	0.04378	0.48455	5.55638

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00020	-0.00022	-0.00020
	A	0.00170	0.00169	0.00171
	B	0.00003	-0.00001	0.00001
	B	0.00232	0.00221	0.00230
sky130_fd_sc_hs__nand2_2	A	-0.00062	-0.00064	-0.00057
	A	0.00305	0.00302	0.00146
	B	0.00020	0.00008	0.00013
	B	0.00471	0.00461	0.00300
sky130_fd_sc_hs__nand2_4	A	-0.00122	-0.00138	-0.00125
	A	0.00441	0.00424	0.00440
	B	0.00031	0.00003	0.00010
	B	0.00756	0.00732	0.00737
sky130_fd_sc_hs__nand2_8	A	-0.00279	-0.00296	-0.00260
	A	0.00811	0.00796	0.00837
	B	0.00006	-0.00044	-0.00025
	B	0.01438	0.01367	0.01418

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00185	0.00184	0.00190
	A	-0.00005	-0.00007	-0.00005
	B	0.00229	0.00234	0.00239
	B	-0.00003	-0.00005	-0.00004
sky130_fd_sc_hs__nand2_2	A	0.00365	0.00365	0.00371
	A	-0.00002	-0.00006	-0.00000
	B	0.00464	0.00460	0.00475
	B	0.00002	-0.00002	0.00001
sky130_fd_sc_hs__nand2_4	A	0.00676	0.00671	0.00688
	A	0.00116	0.00105	0.00114
	B	0.00868	0.00861	0.00906
	B	0.00121	0.00114	0.00118
sky130_fd_sc_hs__nand2_8	A	0.01076	0.01059	0.01122
	A	-0.00012	-0.00029	-0.00006
	B	0.01476	0.01469	0.01478
	B	0.00005	-0.00012	0.00003

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00028	0.00028	0.00027
	(!B * Y)	-0.00099	-0.00099	-0.00101
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00054	0.00054	0.00050
	(!B * Y)	-0.00190	-0.00192	-0.00197
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00105	0.00105	0.00098
	(!B * Y)	-0.00232	-0.00233	-0.00244
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00207	0.00207	0.00195
	(!B * Y)	-0.00444	-0.00448	-0.00469

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00027	-0.00026	-0.00026
	(!B * Y)	0.00102	0.00102	0.00101
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00048	-0.00048	-0.00048
	(!B * Y)	0.00199	0.00198	0.00198
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00094	-0.00095	-0.00094
	(!B * Y)	0.00244	0.00246	0.00244
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00189	-0.00188	-0.00187
	(!B * Y)	0.00472	0.00472	0.00469

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00067	0.00067	0.00067
	(!A * Y)	-0.00084	-0.00085	-0.00084
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00129	0.00128	0.00129
	(!A * Y)	-0.00165	-0.00165	-0.00165
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00255	0.00256	0.00255
	(!A * Y)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.00511	0.00512	0.00510
	(!A * Y)	-0.00347	-0.00348	-0.00346

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	**(!A * Y)**	-0.00064	-0.00067	-0.00067
	(!A * Y)	0.00086	0.00085	0.00085
sky130_fd_sc_hs__nand2_2	**(!A * Y)**	-0.00123	-0.00128	-0.00129
	(!A * Y)	0.00167	0.00166	0.00165
sky130_fd_sc_hs__nand2_4	**(!A * Y)**	-0.00244	-0.00256	-0.00255
	(!A * Y)	0.00179	0.00175	0.00174
sky130_fd_sc_hs__nand2_8	**(!A * Y)**	-0.00486	-0.00512	-0.00510
	(!A * Y)	0.00356	0.00351	0.00348

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A_N	B	C	Y
x	0	x	1
x	1	0	1
0	1	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3b_1	9.59040
sky130_fd_sc_hs__nand3b_2	14.38560
sky130_fd_sc_hs__nand3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	Y
sky130_fd_sc_hs__nand3b_1	0.00204	0.00260	0.00252	0.43490
sky130_fd_sc_hs__nand3b_2	0.00242	0.00493	0.00490	0.86739
sky130_fd_sc_hs__nand3b_4	0.00340	0.00714	0.00720	0.83910

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3b_1	0.00000	0.02846	0.04759
sky130_fd_sc_hs__nand3b_2	0.00000	0.02499	0.06861
sky130_fd_sc_hs__nand3b_4	0.00000	0.05899	0.10069

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3b_1	A_N->Y (RR)	0.14161	1.07525	8.27345
	B->Y (FR)	0.11490	1.30356	12.60900
	C->Y (FR)	0.12665	1.31060	12.51370
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.13465	0.95019	8.39346
	B->Y (FR)	0.10023	1.14617	12.52640
	C->Y (FR)	0.11618	1.16940	12.61520
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.16588	1.00950	8.57763
	B->Y (FR)	0.13625	1.17052	12.36200
	C->Y (FR)	0.17959	1.23463	12.60960

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3b_1	A_N->Y (FF)	0.20224	1.09632	7.33241
	B->Y (RF)	0.08178	0.89330	8.55222
	C->Y (RF)	0.08787	0.85926	8.11375
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.24155	1.14199	8.58706
	B->Y (RF)	0.08357	0.84167	9.14930
	C->Y (RF)	0.08911	0.79484	8.57183
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.19590	0.96217	6.65000
	B->Y (RF)	0.08705	0.73799	7.74475
	C->Y (RF)	0.09362	0.65065	6.62565

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00333	0.00322	0.00339
	A_N	0.00193	0.00183	0.00200
	B	0.00030	0.00024	0.00025
	B	0.00213	0.00201	0.00209
	C	0.00050	0.00046	0.00046
	C	0.00262	0.00251	0.00258
sky130_fd_sc_hs__nand3b_2	A_N	0.00467	0.00464	0.00483
	A_N	0.00313	0.00310	0.00329
	B	0.00037	0.00023	0.00027
	B	0.00406	0.00391	0.00233
	C	0.00081	0.00070	0.00072
	C	0.00529	0.00517	0.00365
sky130_fd_sc_hs__nand3b_4	A_N	0.00625	0.00637	0.00678
	A_N	0.00392	0.00404	0.00445
	B	0.00043	0.00005	0.00014
	B	0.00565	0.00528	0.00539
	C	0.00128	0.00105	0.00108
	C	0.00824	0.00802	0.00662

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00237	0.00231	0.00270
	A_N	0.00377	0.00371	0.00407
	B	0.00284	0.00282	0.00285
	B	0.00100	0.00097	0.00097
	C	0.00325	0.00323	0.00326
	C	0.00108	0.00105	0.00105
sky130_fd_sc_hs__nand3b_2	A_N	0.00423	0.00423	0.00452
	A_N	0.00577	0.00577	0.00606
	B	0.00539	0.00535	0.00540
	B	0.00168	0.00162	0.00166
	C	0.00630	0.00627	0.00633
	C	0.00168	0.00163	0.00166
sky130_fd_sc_hs__nand3b_4	A_N	0.00580	0.00576	0.00649
	A_N	0.00813	0.00809	0.00872
	B	0.00795	0.00798	0.00792
	B	0.00265	0.00260	0.00264
	C	0.01031	0.01024	0.01035
	C	0.00298	0.00292	0.00295

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(B * !C * Y)	0.00256	0.00243	0.00259
	(B * !C * Y)	0.00097	0.00084	0.00100
	(!B * Y)	0.00255	0.00242	0.00258
	(!B * Y)	0.00097	0.00084	0.00100
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00387	0.00372	0.00386
	(B * !C * Y)	0.00186	0.00170	0.00184
	(!B * Y)	0.00381	0.00366	0.00380
	(!B * Y)	0.00186	0.00170	0.00184
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00466	0.00443	0.00469
	(B * !C * Y)	0.00182	0.00159	0.00185
	(!B * Y)	0.00456	0.00433	0.00460
	(!B * Y)	0.00180	0.00157	0.00184

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(B * !C * Y)	0.00019	0.00011	0.00044
	(B * !C * Y)	0.00183	0.00175	0.00207
	(!B * Y)	0.00019	0.00011	0.00045
	(!B * Y)	0.00178	0.00170	0.00204
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00044	0.00032	0.00052
	(B * !C * Y)	0.00254	0.00243	0.00259
	(!B * Y)	0.00049	0.00037	0.00059
	(!B * Y)	0.00246	0.00235	0.00255
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00087	0.00074	0.00124
	(B * !C * Y)	0.00391	0.00376	0.00420
	(!B * Y)	0.00094	0.00081	0.00135
	(!B * Y)	0.00374	0.00360	0.00413

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * C * Y)	0.00075	0.00075	0.00075
	(A_N * C * Y)	-0.00082	-0.00082	-0.00082
	(A_N * !C * Y)	0.00050	0.00050	0.00050
	(A_N * !C * Y)	-0.00083	-0.00083	-0.00082
	(!A_N * !C * Y)	0.00030	0.00030	0.00031
	(!A_N * !C * Y)	-0.00097	-0.00098	-0.00098
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00138	0.00139	0.00139
	(A_N * C * Y)	-0.00170	-0.00170	-0.00170
	(A_N * !C * Y)	0.00089	0.00089	0.00089
	(A_N * !C * Y)	-0.00171	-0.00171	-0.00171
	(!A_N * !C * Y)	0.00065	0.00066	0.00067
	(!A_N * !C * Y)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00281	0.00282	0.00281
	(A_N * C * Y)	-0.00166	-0.00166	-0.00165
	(A_N * !C * Y)	0.00163	0.00164	0.00163
	(A_N * !C * Y)	-0.00183	-0.00184	-0.00183
	(!A_N * !C * Y)	0.00123	0.00123	0.00126
	(!A_N * !C * Y)	-0.00202	-0.00202	-0.00201

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * C * Y)	-0.00073	-0.00075	-0.00075
	(A_N * C * Y)	0.00084	0.00083	0.00083
	(A_N * !C * Y)	-0.00050	-0.00050	-0.00050
	(A_N * !C * Y)	0.00085	0.00087	0.00083
	(!A_N * !C * Y)	-0.00029	-0.00029	-0.00029
	(!A_N * !C * Y)	0.00099	0.00101	0.00099
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00134	-0.00139	-0.00139
	(A_N * C * Y)	0.00172	0.00172	0.00171
	(A_N * !C * Y)	-0.00089	-0.00089	-0.00089
	(A_N * !C * Y)	0.00173	0.00176	0.00171
	(!A_N * !C * Y)	-0.00062	-0.00063	-0.00064
	(!A_N * !C * Y)	0.00187	0.00190	0.00185
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00264	-0.00282	-0.00281
	(A_N * C * Y)	0.00177	0.00169	0.00166
	(A_N * !C * Y)	-0.00163	-0.00164	-0.00163
	(A_N * !C * Y)	0.00190	0.00193	0.00185
	(!A_N * !C * Y)	-0.00118	-0.00120	-0.00121
	(!A_N * !C * Y)	0.00207	0.00211	0.00203

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * B * Y)	0.00064	0.00064	0.00064
	(A_N * B * Y)	-0.00081	-0.00081	-0.00081
	(A_N * !B * Y)	0.00064	0.00065	0.00064
	(A_N * !B * Y)	-0.00081	-0.00081	-0.00081
	(!A_N * !B * Y)	0.00061	0.00062	0.00062
	(!A_N * !B * Y)	-0.00084	-0.00084	-0.00084
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00139	0.00140	0.00139
	(A_N * B * Y)	-0.00163	-0.00164	-0.00163
	(A_N * !B * Y)	0.00140	0.00140	0.00139
	(A_N * !B * Y)	-0.00163	-0.00163	-0.00163
	(!A_N * !B * Y)	0.00123	0.00123	0.00123
	(!A_N * !B * Y)	-0.00180	-0.00181	-0.00180
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00265	0.00267	0.00265
	(A_N * B * Y)	-0.00169	-0.00169	-0.00168
	(A_N * !B * Y)	0.00264	0.00265	0.00263
	(A_N * !B * Y)	-0.00173	-0.00173	-0.00171
	(!A_N * !B * Y)	0.00241	0.00241	0.00240
	(!A_N * !B * Y)	-0.00195	-0.00195	-0.00193

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * B * Y)	-0.00061	-0.00064	-0.00064
	(A_N * B * Y)	0.00081	0.00083	0.00081
	(A_N * !B * Y)	-0.00062	-0.00065	-0.00064
	(A_N * !B * Y)	0.00081	0.00082	0.00081
	(!A_N * !B * Y)	-0.00060	-0.00062	-0.00062
	(!A_N * !B * Y)	0.00084	0.00085	0.00084
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00134	-0.00140	-0.00139
	(A_N * B * Y)	0.00163	0.00165	0.00164
	(A_N * !B * Y)	-0.00135	-0.00140	-0.00139
	(A_N * !B * Y)	0.00163	0.00164	0.00164
	(!A_N * !B * Y)	-0.00118	-0.00123	-0.00123
	(!A_N * !B * Y)	0.00181	0.00182	0.00180
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00254	-0.00267	-0.00265
	(A_N * B * Y)	0.00171	0.00171	0.00168
	(A_N * !B * Y)	-0.00253	-0.00265	-0.00263
	(A_N * !B * Y)	0.00175	0.00173	0.00171
	(!A_N * !B * Y)	-0.00229	-0.00241	-0.00240
	(!A_N * !B * Y)	0.00199	0.00195	0.00193

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	Y
0	x	x	1
1	0	x	1
1	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3_1	7.99200
sky130_fd_sc_hs__nand3_2	11.18880
sky130_fd_sc_hs__nand3_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nand3_1	0.00264	0.00268	0.00259	0.43992
sky130_fd_sc_hs__nand3_2	0.00493	0.00536	0.00487	0.75662
sky130_fd_sc_hs__nand3_4	0.00739	0.00726	0.00728	0.86565

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	0.00523	0.03251
sky130_fd_sc_hs__nand3_2	0.00000	0.01046	0.06502
sky130_fd_sc_hs__nand3_4	0.00000	0.01278	0.06502

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (FR)	0.09507	1.27763	12.51530
	B->Y (FR)	0.11507	1.30015	12.52390
	C->Y (FR)	0.12762	1.31614	12.55880
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.08330	1.15003	12.53540
	B->Y (FR)	0.10123	1.11601	11.79390
	C->Y (FR)	0.11745	1.13849	11.83720
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.09490	1.13646	12.52420
	B->Y (FR)	0.13984	1.17377	12.51160
	C->Y (FR)	0.16847	1.20624	12.43220

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.06540	0.89929	8.78817
	B->Y (RF)	0.07860	0.89598	8.61171
	C->Y (RF)	0.08340	0.86098	8.17646
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.05401	0.78806	8.47183
	B->Y (RF)	0.07272	0.79002	8.31283
	C->Y (RF)	0.08033	0.75716	7.85780
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.04428	0.63476	6.91779
	B->Y (RF)	0.06129	0.63108	6.62026
	C->Y (RF)	0.06743	0.59063	6.04629

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00014	-0.00018	-0.00016
	A	0.00188	0.00177	0.00108
	B	0.00018	0.00011	0.00012
	B	0.00260	0.00253	0.00170
	C	0.00034	0.00029	0.00029
	C	0.00317	0.00305	0.00231
sky130_fd_sc_hs__nand3_2	A	-0.00057	-0.00063	-0.00055
	A	0.00325	0.00320	0.00329
	B	0.00025	0.00010	0.00014
	B	0.00507	0.00490	0.00501
	C	0.00087	0.00072	0.00074
	C	0.00637	0.00623	0.00629
sky130_fd_sc_hs__nand3_4	A	-0.00122	-0.00138	-0.00123
	A	0.00446	0.00430	0.00291
	B	0.00031	-0.00007	0.00003
	B	0.00764	0.00727	0.00736
	C	0.00124	0.00097	0.00099
	C	0.01031	0.01003	0.01003

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00258	0.00255	0.00257
	A	0.00056	0.00052	0.00053
	B	0.00302	0.00300	0.00301
	B	0.00057	0.00054	0.00055
	C	0.00347	0.00345	0.00347
	C	0.00055	0.00052	0.00052
sky130_fd_sc_hs__nand3_2	A	0.00435	0.00429	0.00435
	A	0.00054	0.00046	0.00051
	B	0.00540	0.00534	0.00536
	B	0.00050	0.00043	0.00047
	C	0.00625	0.00621	0.00630
	C	0.00054	0.00047	0.00049
sky130_fd_sc_hs__nand3_4	A	0.00656	0.00651	0.00681
	A	0.00089	0.00079	0.00087
	B	0.00845	0.00842	0.00953
	B	0.00094	0.00087	0.00091
	C	0.01033	0.01031	0.01030
	C	0.00084	0.00077	0.00081

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00028	0.00028	0.00025
	(B * !C * Y)	-0.00095	-0.00096	-0.00101
	(!B * Y)	0.00028	0.00028	0.00026
	(!B * Y)	-0.00098	-0.00099	-0.00101
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00055	0.00055	0.00048
	(B * !C * Y)	-0.00174	-0.00176	-0.00188
	(!B * Y)	0.00055	0.00056	0.00052
	(!B * Y)	-0.00182	-0.00184	-0.00189
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00102	0.00102	0.00090
	(B * !C * Y)	-0.00210	-0.00212	-0.00235
	(!B * Y)	0.00103	0.00102	0.00096
	(!B * Y)	-0.00226	-0.00227	-0.00238

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00025	-0.00025	-0.00025
	(B * !C * Y)	0.00101	0.00102	0.00101
	(!B * Y)	-0.00025	-0.00025	-0.00025
	(!B * Y)	0.00101	0.00102	0.00101
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00047	-0.00047	-0.00047
	(B * !C * Y)	0.00191	0.00190	0.00190
	(!B * Y)	-0.00049	-0.00050	-0.00049
	(!B * Y)	0.00189	0.00190	0.00190
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00090	-0.00089	-0.00088
	(B * !C * Y)	0.00240	0.00241	0.00238
	(!B * Y)	-0.00092	-0.00092	-0.00091
	(!B * Y)	0.00238	0.00240	0.00238

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00034	0.00034	0.00034
	(A * !C * Y)	-0.00084	-0.00084	-0.00084
	(!A * C * Y)	0.00065	0.00065	0.00065
	(!A * C * Y)	-0.00084	-0.00084	-0.00084
	(!A * !C * Y)	0.00038	0.00038	0.00038
	(!A * !C * Y)	-0.00085	-0.00085	-0.00084
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00069	0.00069	0.00069
	(A * !C * Y)	-0.00178	-0.00178	-0.00176
	(!A * C * Y)	0.00128	0.00130	0.00129
	(!A * C * Y)	-0.00176	-0.00177	-0.00176
	(!A * !C * Y)	0.00079	0.00079	0.00079
	(!A * !C * Y)	-0.00179	-0.00179	-0.00178
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00124	0.00125	0.00126
	(A * !C * Y)	-0.00174	-0.00174	-0.00173
	(!A * C * Y)	0.00254	0.00255	0.00254
	(!A * C * Y)	-0.00174	-0.00175	-0.00174
	(!A * !C * Y)	0.00141	0.00141	0.00140
	(!A * !C * Y)	-0.00176	-0.00177	-0.00176

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00032	-0.00033	-0.00033
	(A * !C * Y)	0.00086	0.00088	0.00085
	(!A * C * Y)	-0.00062	-0.00065	-0.00065
	(!A * C * Y)	0.00086	0.00085	0.00085
	(!A * !C * Y)	-0.00038	-0.00038	-0.00038
	(!A * !C * Y)	0.00087	0.00089	0.00085
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00065	-0.00066	-0.00066
	(A * !C * Y)	0.00181	0.00184	0.00179
	(!A * C * Y)	-0.00123	-0.00130	-0.00129
	(!A * C * Y)	0.00178	0.00178	0.00177
	(!A * !C * Y)	-0.00079	-0.00079	-0.00079
	(!A * !C * Y)	0.00180	0.00183	0.00179
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00117	-0.00119	-0.00120
	(A * !C * Y)	0.00183	0.00185	0.00177
	(!A * C * Y)	-0.00240	-0.00255	-0.00254
	(!A * C * Y)	0.00181	0.00176	0.00175
	(!A * !C * Y)	-0.00141	-0.00141	-0.00140
	(!A * !C * Y)	0.00184	0.00187	0.00177

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00069	0.00070	0.00069
	(A * !B * Y)	-0.00085	-0.00085	-0.00085
	(!A * B * Y)	0.00068	0.00068	0.00068
	(!A * B * Y)	-0.00085	-0.00085	-0.00085
	(!A * !B * Y)	0.00068	0.00070	0.00069
	(!A * !B * Y)	-0.00084	-0.00085	-0.00085
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00126	0.00127	0.00126
	(A * !B * Y)	-0.00167	-0.00167	-0.00167
	(!A * B * Y)	0.00123	0.00123	0.00124
	(!A * B * Y)	-0.00166	-0.00166	-0.00166
	(!A * !B * Y)	0.00127	0.00127	0.00126
	(!A * !B * Y)	-0.00167	-0.00167	-0.00167
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00254	0.00257	0.00255
	(A * !B * Y)	-0.00176	-0.00177	-0.00177
	(!A * B * Y)	0.00250	0.00252	0.00250
	(!A * B * Y)	-0.00177	-0.00178	-0.00177
	(!A * !B * Y)	0.00256	0.00256	0.00255
	(!A * !B * Y)	-0.00177	-0.00177	-0.00177

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00067	-0.00070	-0.00069
	(A * !B * Y)	0.00085	0.00086	0.00085
	(!A * B * Y)	-0.00065	-0.00068	-0.00068
	(!A * B * Y)	0.00085	0.00086	0.00085
	(!A * !B * Y)	-0.00067	-0.00070	-0.00069
	(!A * !B * Y)	0.00085	0.00086	0.00085
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00122	-0.00127	-0.00126
	(A * !B * Y)	0.00167	0.00168	0.00167
	(!A * B * Y)	-0.00117	-0.00123	-0.00124
	(!A * B * Y)	0.00167	0.00169	0.00167
	(!A * !B * Y)	-0.00122	-0.00127	-0.00126
	(!A * !B * Y)	0.00167	0.00168	0.00167
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00246	-0.00257	-0.00255
	(A * !B * Y)	0.00177	0.00178	0.00177
	(!A * B * Y)	-0.00237	-0.00252	-0.00250
	(!A * B * Y)	0.00178	0.00179	0.00177
	(!A * !B * Y)	-0.00247	-0.00256	-0.00255
	(!A * !B * Y)	0.00177	0.00178	0.00177

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A_N	B_N	C	D	Y
0	x	0	x	1
0	x	1	0	1
0	0	1	1	0
x	1	1	1	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4bb_1	14.38560
sky130_fd_sc_hs__nand4bb_2	22.37760
sky130_fd_sc_hs__nand4bb_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	Y
sky130_fd_sc_hs__nand4bb_1	0.00207	0.00201	0.00266	0.00269	0.41056
sky130_fd_sc_hs__nand4bb_2	0.00236	0.00233	0.00499	0.00492	0.83556
sky130_fd_sc_hs__nand4bb_4	0.00328	0.00339	0.00970	0.00972	1.61341

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4bb_1	0.00000	0.05008	0.09020
sky130_fd_sc_hs__nand4bb_2	0.00000	0.03630	0.09388
sky130_fd_sc_hs__nand4bb_4	0.00000	0.10686	0.18150

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4bb_1	A_N->Y (RR)	0.16264	1.10572	8.24287
	B_N->Y (RR)	0.18819	1.13070	8.25914
	C->Y (FR)	0.14971	1.32154	12.26100
	D->Y (FR)	0.16634	1.34322	12.28760
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.14533	0.96006	8.32231
	B_N->Y (RR)	0.17206	0.97110	8.09536
	C->Y (FR)	0.12476	1.15707	12.29770
	D->Y (FR)	0.14173	1.18446	12.33660
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.17081	0.91347	8.50367
	B_N->Y (RR)	0.20144	0.94888	8.59704
	C->Y (FR)	0.12100	1.05754	12.41500
	D->Y (FR)	0.13774	1.08208	12.47460

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4bb_1	A_N->Y (FF)	0.22948	1.24371	8.57090
	B_N->Y (FF)	0.25761	1.27990	8.67293
	C->Y (RF)	0.13778	1.02774	9.39522
	D->Y (RF)	0.14685	1.01144	9.06176
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.26751	1.28039	10.22690
	B_N->Y (FF)	0.31818	1.34131	10.38390
	C->Y (RF)	0.14052	0.95947	10.24740
	D->Y (RF)	0.14765	0.94874	9.91834
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.25951	1.16895	10.36440
	B_N->Y (FF)	0.30141	1.22337	10.49080
	C->Y (RF)	0.14347	0.87190	10.61170
	D->Y (RF)	0.15032	0.85548	10.21670

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00341	0.00330	0.00347
	A_N	0.00221	0.00210	0.00228
	B_N	0.00371	0.00357	0.00373
	B_N	0.00255	0.00241	0.00259
	C	0.00058	0.00050	0.00051
	C	0.00259	0.00252	0.00253
	D	0.00083	0.00076	0.00075
	D	0.00318	0.00310	0.00310
sky130_fd_sc_hs__nand4bb_2	A_N	0.00479	0.00476	0.00494
	A_N	0.00352	0.00348	0.00367
	B_N	0.00587	0.00573	0.00589
	B_N	0.00464	0.00450	0.00469
	C	0.00091	0.00074	0.00077
	C	0.00456	0.00440	0.00445
	D	0.00156	0.00141	0.00139
	D	0.00599	0.00585	0.00428
sky130_fd_sc_hs__nand4bb_4	A_N	0.00794	0.00796	0.00832
	A_N	0.00631	0.00635	0.00675
	B_N	0.00968	0.00949	0.00977
	B_N	0.00799	0.00780	0.00811
	C	0.00149	0.00112	0.00124
	C	0.00869	0.00811	0.00849
	D	0.00256	0.00226	0.00229
	D	0.01137	0.01104	0.01110

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00296	0.00288	0.00326
	A_N	0.00416	0.00408	0.00445
	B_N	0.00360	0.00354	0.00391
	B_N	0.00476	0.00469	0.00506
	C	0.00409	0.00406	0.00407
	C	0.00207	0.00204	0.00204
	D	0.00456	0.00452	0.00454
	D	0.00214	0.00210	0.00210
sky130_fd_sc_hs__nand4bb_2	A_N	0.00501	0.00499	0.00528
	A_N	0.00628	0.00626	0.00655
	B_N	0.00621	0.00619	0.00647
	B_N	0.00744	0.00742	0.00770
	C	0.00720	0.00713	0.00716
	C	0.00352	0.00344	0.00347
	D	0.00810	0.00804	0.00808
	D	0.00349	0.00342	0.00345
sky130_fd_sc_hs__nand4bb_4	A_N	0.01007	0.01007	0.01075
	A_N	0.01171	0.01169	0.01236
	B_N	0.01205	0.01201	0.01267
	B_N	0.01374	0.01370	0.01434
	C	0.01412	0.01391	0.01408
	C	0.00686	0.00667	0.00676
	D	0.01598	0.01582	0.01596
	D	0.00686	0.00665	0.00674

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(B_N * Y)	0.00240	0.00227	0.00244
	(B_N * Y)	0.00087	0.00074	0.00091
	(!B_N * C * !D * Y)	0.00264	0.00251	0.00268
	(!B_N * C * !D * Y)	0.00111	0.00098	0.00115
	(!B_N * !C * Y)	0.00264	0.00251	0.00268
	(!B_N * !C * Y)	0.00111	0.00098	0.00115
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00355	0.00340	0.00354
	(B_N * Y)	0.00189	0.00174	0.00188
	(!B_N * C * !D * Y)	0.00384	0.00369	0.00383
	(!B_N * C * !D * Y)	0.00217	0.00202	0.00216
	(!B_N * !C * Y)	0.00383	0.00369	0.00382
	(!B_N * !C * Y)	0.00217	0.00202	0.00216
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00578	0.00556	0.00578
	(B_N * Y)	0.00341	0.00318	0.00340
	(!B_N * C * !D * Y)	0.00618	0.00595	0.00617
	(!B_N * C * !D * Y)	0.00378	0.00355	0.00378
	(!B_N * !C * Y)	0.00617	0.00594	0.00616
	(!B_N * !C * Y)	0.00378	0.00355	0.00378

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(B_N * Y)	0.00028	0.00021	0.00055
	(B_N * Y)	0.00181	0.00173	0.00207
	(!B_N * C * !D * Y)	0.00008	-0.00000	0.00033
	(!B_N * C * !D * Y)	0.00166	0.00158	0.00189
	(!B_N * !C * Y)	0.00006	-0.00002	0.00032
	(!B_N * !C * Y)	0.00160	0.00152	0.00185
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00071	0.00060	0.00081
	(B_N * Y)	0.00236	0.00226	0.00247
	(!B_N * C * !D * Y)	0.00048	0.00036	0.00054
	(!B_N * C * !D * Y)	0.00225	0.00215	0.00229
	(!B_N * !C * Y)	0.00044	0.00033	0.00053
	(!B_N * !C * Y)	0.00213	0.00202	0.00221
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00136	0.00122	0.00169
	(B_N * Y)	0.00374	0.00360	0.00406
	(!B_N * C * !D * Y)	0.00109	0.00094	0.00134
	(!B_N * C * !D * Y)	0.00373	0.00358	0.00393
	(!B_N * !C * Y)	0.00103	0.00088	0.00132
	(!B_N * !C * Y)	0.00348	0.00333	0.00376

Passive power(pJ) for B_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00235	0.00220	0.00235
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00087	0.00072	0.00087
	(!C * Y)	0.00239	0.00227	0.00242
	(!C * Y)	0.00087	0.00074	0.00089
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00339	0.00321	0.00333
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00177	0.00159	0.00171
	(!C * Y)	0.00347	0.00333	0.00345
	(!C * Y)	0.00176	0.00161	0.00173
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00564	0.00536	0.00553
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00320	0.00291	0.00309
	(!C * Y)	0.00585	0.00562	0.00578
	(!C * Y)	0.00322	0.00297	0.00315

Passive power(pJ) for B_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00061	0.00054	0.00090
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00209	0.00203	0.00238
	(!C * Y)	0.00037	0.00031	0.00065
	(!C * Y)	0.00189	0.00182	0.00217
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00138	0.00127	0.00152
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00299	0.00289	0.00314
	(!C * Y)	0.00092	0.00081	0.00105
	(!C * Y)	0.00260	0.00250	0.00274
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00250	0.00236	0.00288
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00494	0.00481	0.00532
	(!C * Y)	0.00157	0.00143	0.00194
	(!C * Y)	0.00415	0.00402	0.00453

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nand4bb_1	**(A_N * B_N * D * Y)**	0.00071	0.00072	0.00072
	(A_N * B_N * D * Y)	-0.00087	-0.00087	-0.00087
	(A_N * B_N * !D * Y)	0.00050	0.00050	0.00050
	(A_N * B_N * !D * Y)	-0.00087	-0.00087	-0.00087
	(A_N * !B_N * D * Y)	0.00060	0.00061	0.00060
	(A_N * !B_N * D * Y)	-0.00099	-0.00099	-0.00098
	(A_N * !B_N * !D * Y)	0.00038	0.00037	0.00037
	(A_N * !B_N * !D * Y)	-0.00105	-0.00105	-0.00104
	(!A_N * B_N * D * Y)	0.00071	0.00072	0.00072
	(!A_N * B_N * D * Y)	-0.00087	-0.00087	-0.00087
	(!A_N * B_N * !D * Y)	0.00049	0.00049	0.00048
	(!A_N * B_N * !D * Y)	-0.00087	-0.00087	-0.00087
	(!A_N * !B_N * !D * Y)	0.00032	0.00032	0.00032
	(!A_N * !B_N * !D * Y)	-0.00098	-0.00098	-0.00099
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00135	0.00135	0.00135
	(A_N * B_N * D * Y)	-0.00170	-0.00170	-0.00170
	(A_N * B_N * !D * Y)	0.00089	0.00088	0.00088
	(A_N * B_N * !D * Y)	-0.00171	-0.00170	-0.00170
	(A_N * !B_N * D * Y)	0.00128	0.00130	0.00129
	(A_N * !B_N * D * Y)	-0.00177	-0.00178	-0.00176
	(A_N * !B_N * !D * Y)	0.00081	0.00081	0.00081
	(A_N * !B_N * !D * Y)	-0.00188	-0.00188	-0.00187
	(!A_N * B_N * D * Y)	0.00135	0.00136	0.00135
	(!A_N * B_N * D * Y)	-0.00170	-0.00170	-0.00170
	(!A_N * B_N * !D * Y)	0.00086	0.00086	0.00085
	(!A_N * B_N * !D * Y)	-0.00171	-0.00171	-0.00170
	(!A_N * !B_N * !D * Y)	0.00068	0.00068	0.00068
	(!A_N * !B_N * !D * Y)	-0.00176	-0.00176	-0.00177

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00269	0.00271	0.00269
	(A_N * B_N * D * Y)	-0.00332	-0.00333	-0.00331
	(A_N * B_N * !D * Y)	0.00173	0.00175	0.00174
	(A_N * B_N * !D * Y)	-0.00330	-0.00333	-0.00332
	(A_N * !B_N * D * Y)	0.00253	0.00256	0.00254
	(A_N * !B_N * D * Y)	-0.00352	-0.00352	-0.00347
	(A_N * !B_N * !D * Y)	0.00156	0.00156	0.00155
	(A_N * !B_N * !D * Y)	-0.00372	-0.00372	-0.00371
	(!A_N * B_N * D * Y)	0.00270	0.00271	0.00269
	(!A_N * B_N * D * Y)	-0.00333	-0.00333	-0.00332
	(!A_N * B_N * !D * Y)	0.00169	0.00169	0.00168
	(!A_N * B_N * !D * Y)	-0.00334	-0.00334	-0.00332
	(!A_N * !B_N * !D * Y)	0.00132	0.00132	0.00132
	(!A_N * !B_N * !D * Y)	-0.00349	-0.00349	-0.00350

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nand4bb_1	**(A_N * B_N * D * Y)**	-0.00070	-0.00072	-0.00072
	(A_N * B_N * D * Y)	0.00087	0.00088	0.00087
	(A_N * B_N * !D * Y)	-0.00050	-0.00050	-0.00050
	(A_N * B_N * !D * Y)	0.00087	0.00089	0.00088
	(A_N * !B_N * D * Y)	-0.00057	-0.00061	-0.00060
	(A_N * !B_N * D * Y)	0.00102	0.00099	0.00098
	(A_N * !B_N * !D * Y)	-0.00038	-0.00037	-0.00037
	(A_N * !B_N * !D * Y)	0.00105	0.00107	0.00107
	(!A_N * B_N * D * Y)	-0.00070	-0.00072	-0.00072
	(!A_N * B_N * D * Y)	0.00087	0.00088	0.00087
	(!A_N * B_N * !D * Y)	-0.00049	-0.00049	-0.00048
	(!A_N * B_N * !D * Y)	0.00088	0.00090	0.00088
	(!A_N * !B_N * !D * Y)	-0.00031	-0.00031	-0.00031
	(!A_N * !B_N * !D * Y)	0.00101	0.00101	0.00099
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00133	-0.00135	-0.00135
	(A_N * B_N * D * Y)	0.00170	0.00171	0.00170
	(A_N * B_N * !D * Y)	-0.00089	-0.00088	-0.00088
	(A_N * B_N * !D * Y)	0.00171	0.00172	0.00171
	(A_N * !B_N * D * Y)	-0.00122	-0.00130	-0.00129
	(A_N * !B_N * D * Y)	0.00184	0.00178	0.00176
	(A_N * !B_N * !D * Y)	-0.00081	-0.00081	-0.00081
	(A_N * !B_N * !D * Y)	0.00190	0.00194	0.00194
	(!A_N * B_N * D * Y)	-0.00132	-0.00136	-0.00135
	(!A_N * B_N * D * Y)	0.00171	0.00171	0.00170
	(!A_N * B_N * !D * Y)	-0.00086	-0.00086	-0.00085
	(!A_N * B_N * !D * Y)	0.00171	0.00174	0.00171
	(!A_N * !B_N * !D * Y)	-0.00067	-0.00066	-0.00066
	(!A_N * !B_N * !D * Y)	0.00180	0.00179	0.00179

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00264	-0.00271	-0.00269
	(A_N * B_N * D * Y)	0.00332	0.00335	0.00333
	(A_N * B_N * !D * Y)	-0.00173	-0.00175	-0.00174
	(A_N * B_N * !D * Y)	0.00333	0.00337	0.00333
	(A_N * !B_N * D * Y)	-0.00241	-0.00256	-0.00254
	(A_N * !B_N * D * Y)	0.00366	0.00352	0.00347
	(A_N * !B_N * !D * Y)	-0.00156	-0.00156	-0.00155
	(A_N * !B_N * !D * Y)	0.00378	0.00384	0.00384
	(!A_N * B_N * D * Y)	-0.00263	-0.00271	-0.00269
	(!A_N * B_N * D * Y)	0.00334	0.00335	0.00333
	(!A_N * B_N * !D * Y)	-0.00169	-0.00169	-0.00168
	(!A_N * B_N * !D * Y)	0.00336	0.00342	0.00334
	(!A_N * !B_N * !D * Y)	-0.00129	-0.00129	-0.00128
	(!A_N * !B_N * !D * Y)	0.00357	0.00360	0.00353

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(A_N * B_N * C * Y)	0.00061	0.00062	0.00061
	(A_N * B_N * C * Y)	-0.00092	-0.00092	-0.00092
	(A_N * !C * Y)	0.00062	0.00062	0.00062
	(A_N * !C * Y)	-0.00092	-0.00092	-0.00092
	(A_N * !B_N * C * Y)	0.00061	0.00061	0.00060
	(A_N * !B_N * C * Y)	-0.00095	-0.00095	-0.00094
	(!A_N * B_N * C * Y)	0.00061	0.00062	0.00061
	(!A_N * B_N * C * Y)	-0.00092	-0.00092	-0.00092
	(!A_N * B_N * !C * Y)	0.00062	0.00063	0.00062
	(!A_N * B_N * !C * Y)	-0.00092	-0.00092	-0.00092
	(!A_N * !B_N * !C * Y)	0.00062	0.00062	0.00062
	(!A_N * !B_N * !C * Y)	-0.00092	-0.00092	-0.00092

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00128	0.00130	0.00129
	(A_N * B_N * C * Y)	-0.00165	-0.00166	-0.00165
	(A_N * !C * Y)	0.00130	0.00131	0.00130
	(A_N * !C * Y)	-0.00165	-0.00166	-0.00165
	(A_N * !B_N * C * Y)	0.00127	0.00127	0.00127
	(A_N * !B_N * C * Y)	-0.00172	-0.00172	-0.00170
	(!A_N * B_N * C * Y)	0.00128	0.00130	0.00129
	(!A_N * B_N * C * Y)	-0.00165	-0.00166	-0.00165
	(!A_N * B_N * !C * Y)	0.00130	0.00131	0.00130
	(!A_N * B_N * !C * Y)	-0.00165	-0.00166	-0.00165
	(!A_N * !B_N * !C * Y)	0.00129	0.00131	0.00130
	(!A_N * !B_N * !C * Y)	-0.00165	-0.00166	-0.00165
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00255	0.00257	0.00256
	(A_N * B_N * C * Y)	-0.00328	-0.00330	-0.00329
	(A_N * !C * Y)	0.00259	0.00259	0.00258
	(A_N * !C * Y)	-0.00330	-0.00330	-0.00329
	(A_N * !B_N * C * Y)	0.00253	0.00254	0.00252
	(A_N * !B_N * C * Y)	-0.00342	-0.00343	-0.00339
	(!A_N * B_N * C * Y)	0.00256	0.00258	0.00256
	(!A_N * B_N * C * Y)	-0.00329	-0.00331	-0.00329
	(!A_N * B_N * !C * Y)	0.00258	0.00260	0.00257
	(!A_N * B_N * !C * Y)	-0.00330	-0.00331	-0.00329
	(!A_N * !B_N * !C * Y)	0.00259	0.00260	0.00258
	(!A_N * !B_N * !C * Y)	-0.00330	-0.00330	-0.00329

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nand4bb_1	**(A_N * B_N * C * Y)**	-0.00059	-0.00062	-0.00061
	(A_N * B_N * C * Y)	0.00092	0.00093	0.00092
	(A_N * !C * Y)	-0.00060	-0.00062	-0.00062
	(A_N * !C * Y)	0.00092	0.00093	0.00092
	(A_N * !B_N * C * Y)	-0.00057	-0.00061	-0.00060
	(A_N * !B_N * C * Y)	0.00096	0.00096	0.00094
	(!A_N * B_N * C * Y)	-0.00059	-0.00062	-0.00061
	(!A_N * B_N * C * Y)	0.00092	0.00093	0.00092
	(!A_N * B_N * !C * Y)	-0.00060	-0.00063	-0.00062
	(!A_N * B_N * !C * Y)	0.00092	0.00093	0.00092
	(!A_N * !B_N * !C * Y)	-0.00060	-0.00062	-0.00062
	(!A_N * !B_N * !C * Y)	0.00092	0.00093	0.00092
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00122	-0.00130	-0.00129
	(A_N * B_N * C * Y)	0.00165	0.00168	0.00166
	(A_N * !C * Y)	-0.00125	-0.00131	-0.00130
	(A_N * !C * Y)	0.00166	0.00166	0.00166
	(A_N * !B_N * C * Y)	-0.00120	-0.00127	-0.00127
	(A_N * !B_N * C * Y)	0.00175	0.00173	0.00170
	(!A_N * B_N * C * Y)	-0.00122	-0.00130	-0.00129
	(!A_N * B_N * C * Y)	0.00166	0.00168	0.00166
	(!A_N * B_N * !C * Y)	-0.00125	-0.00131	-0.00130
	(!A_N * B_N * !C * Y)	0.00166	0.00166	0.00166
	(!A_N * !B_N * !C * Y)	-0.00125	-0.00131	-0.00130
	(!A_N * !B_N * !C * Y)	0.00166	0.00167	0.00166

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00244	-0.00257	-0.00256
	(A_N * B_N * C * Y)	0.00330	0.00334	0.00330
	(A_N * !C * Y)	-0.00250	-0.00259	-0.00258
	(A_N * !C * Y)	0.00330	0.00332	0.00330
	(A_N * !B_N * C * Y)	-0.00238	-0.00254	-0.00252
	(A_N * !B_N * C * Y)	0.00348	0.00345	0.00339
	(!A_N * B_N * C * Y)	-0.00244	-0.00258	-0.00256
	(!A_N * B_N * C * Y)	0.00330	0.00334	0.00330
	(!A_N * B_N * !C * Y)	-0.00250	-0.00260	-0.00257
	(!A_N * B_N * !C * Y)	0.00330	0.00332	0.00330
	(!A_N * !B_N * !C * Y)	-0.00249	-0.00260	-0.00258
	(!A_N * !B_N * !C * Y)	0.00331	0.00332	0.00330

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A_N	B	C	D	Y
x	0	x	x	1
x	1	0	x	1
x	1	1	0	1
0	1	1	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4b_1	11.18880
sky130_fd_sc_hs__nand4b_2	19.18080
sky130_fd_sc_hs__nand4b_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	Y
sky130_fd_sc_hs__nand4b_1	0.00203	0.00261	0.00261	0.00252	0.43724
sky130_fd_sc_hs__nand4b_2	0.00256	0.00515	0.00498	0.00498	0.86498
sky130_fd_sc_hs__nand4b_4	0.00354	0.00735	0.00750	0.00716	0.87804

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4b_1	0.00000	0.02685	0.04759
sky130_fd_sc_hs__nand4b_2	0.00000	0.02176	0.09028
sky130_fd_sc_hs__nand4b_4	0.00000	0.05524	0.10069

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4b_1	A_N->Y (RR)	0.14837	1.07708	8.21814
	B->Y (FR)	0.12073	1.31048	12.64360
	C->Y (FR)	0.13803	1.33429	12.63560
	D->Y (FR)	0.14589	1.33529	12.57230
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.14293	0.94302	8.19089
	B->Y (FR)	0.10822	1.15027	12.46450
	C->Y (FR)	0.12691	1.17599	12.62380
	D->Y (FR)	0.14151	1.19309	12.59360
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.17798	1.00210	8.49925
	B->Y (FR)	0.15070	1.18702	12.49520
	C->Y (FR)	0.18651	1.22468	12.56110
	D->Y (FR)	0.21791	1.26511	12.65220

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4b_1	A_N->Y (FF)	0.22600	1.26342	8.94688
	B->Y (RF)	0.10686	1.04965	10.05290
	C->Y (RF)	0.12045	1.03032	9.69343
	D->Y (RF)	0.12503	1.00908	9.36160
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.25596	1.27458	10.37550
	B->Y (RF)	0.11434	0.99157	10.94630
	C->Y (RF)	0.12805	0.95896	10.42710
	D->Y (RF)	0.13626	0.94793	10.10290
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.19627	0.96207	6.76520
	B->Y (RF)	0.09729	0.74602	7.82699
	C->Y (RF)	0.11170	0.71827	7.31763
	D->Y (RF)	0.11834	0.70055	6.91492

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00335	0.00326	0.00342
	A_N	0.00208	0.00198	0.00215
	B	0.00030	0.00024	0.00026
	B	0.00225	0.00213	0.00200
	C	0.00059	0.00051	0.00051
	C	0.00282	0.00274	0.00191
	D	0.00077	0.00072	0.00072
	D	0.00335	0.00325	0.00329
sky130_fd_sc_hs__nand4b_2	A_N	0.00482	0.00478	0.00496
	A_N	0.00360	0.00356	0.00375
	B	0.00025	0.00010	0.00016
	B	0.00428	0.00413	0.00258
	C	0.00087	0.00069	0.00073
	C	0.00555	0.00539	0.00498
	D	0.00147	0.00131	0.00132
	D	0.00698	0.00683	0.00637
sky130_fd_sc_hs__nand4b_4	A_N	0.00624	0.00621	0.00660
	A_N	0.00445	0.00444	0.00484
	B	0.00032	-0.00005	0.00004
	B	0.00601	0.00564	0.00428
	C	0.00133	0.00091	0.00096
	C	0.00863	0.00823	0.00781
	D	0.00241	0.00209	0.00209
	D	0.01115	0.01071	0.00941

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00270	0.00265	0.00301
	A_N	0.00398	0.00392	0.00428
	B	0.00309	0.00306	0.00307
	B	0.00113	0.00110	0.00111
	C	0.00351	0.00349	0.00349
	C	0.00122	0.00119	0.00119
	D	0.00390	0.00388	0.00389
	D	0.00121	0.00118	0.00118
sky130_fd_sc_hs__nand4b_2	A_N	0.00491	0.00485	0.00514
	A_N	0.00613	0.00608	0.00636
	B	0.00624	0.00617	0.00621
	B	0.00220	0.00212	0.00215
	C	0.00709	0.00702	0.00707
	C	0.00226	0.00219	0.00222
	D	0.00803	0.00798	0.00801
	D	0.00224	0.00216	0.00219
sky130_fd_sc_hs__nand4b_4	A_N	0.00739	0.00727	0.00789
	A_N	0.00918	0.00905	0.00967
	B	0.00963	0.00954	0.00966
	B	0.00388	0.00380	0.00383
	C	0.01150	0.01144	0.01160
	C	0.00391	0.00382	0.00386
	D	0.01324	0.01323	0.01320
	D	0.00394	0.00386	0.00389

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(B * C * !D * Y)	0.00260	0.00247	0.00262
	(B * C * !D * Y)	0.00100	0.00087	0.00103
	(B * !C * Y)	0.00259	0.00246	0.00262
	(B * !C * Y)	0.00100	0.00087	0.00103
	(!B * Y)	0.00258	0.00245	0.00260
	(!B * Y)	0.00100	0.00087	0.00103
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00386	0.00369	0.00383
	(B * C * !D * Y)	0.00188	0.00171	0.00185
	(B * !C * Y)	0.00386	0.00369	0.00383
	(B * !C * Y)	0.00188	0.00171	0.00185
	(!B * Y)	0.00384	0.00368	0.00381
	(!B * Y)	0.00188	0.00171	0.00185
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00461	0.00436	0.00462
	(B * C * !D * Y)	0.00184	0.00159	0.00186
	(B * !C * Y)	0.00460	0.00436	0.00462
	(B * !C * Y)	0.00184	0.00159	0.00186
	(!B * Y)	0.00456	0.00431	0.00458
	(!B * Y)	0.00185	0.00159	0.00187

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(B * C * !D * Y)	0.00030	0.00022	0.00054
	(B * C * !D * Y)	0.00197	0.00189	0.00218
	(B * !C * Y)	0.00029	0.00021	0.00054
	(B * !C * Y)	0.00193	0.00185	0.00216
	(!B * Y)	0.00029	0.00021	0.00055
	(!B * Y)	0.00187	0.00179	0.00212
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00041	0.00027	0.00044
	(B * C * !D * Y)	0.00254	0.00240	0.00253
	(B * !C * Y)	0.00037	0.00023	0.00043
	(B * !C * Y)	0.00244	0.00230	0.00247
	(!B * Y)	0.00035	0.00021	0.00043
	(!B * Y)	0.00231	0.00219	0.00240
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00083	0.00067	0.00115
	(B * C * !D * Y)	0.00391	0.00375	0.00412
	(B * !C * Y)	0.00077	0.00061	0.00113
	(B * !C * Y)	0.00371	0.00356	0.00401
	(!B * Y)	0.00074	0.00059	0.00114
	(!B * Y)	0.00348	0.00333	0.00386

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nand4b_1	**(A_N * C * D * Y)**	0.00074	0.00074	0.00074
	(A_N * C * D * Y)	-0.00083	-0.00083	-0.00083
	(A_N * C * !D * Y)	0.00050	0.00050	0.00050
	(A_N * C * !D * Y)	-0.00083	-0.00083	-0.00083
	(A_N * !C * Y)	0.00050	0.00050	0.00050
	(A_N * !C * Y)	-0.00083	-0.00083	-0.00083
	(!A_N * C * !D * Y)	0.00030	0.00030	0.00031
	(!A_N * C * !D * Y)	-0.00095	-0.00095	-0.00096
	(!A_N * !C * Y)	0.00031	0.00032	0.00032
	(!A_N * !C * Y)	-0.00096	-0.00097	-0.00097
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00135	0.00136	0.00135
	(A_N * C * D * Y)	-0.00176	-0.00177	-0.00176
	(A_N * C * !D * Y)	0.00088	0.00089	0.00088
	(A_N * C * !D * Y)	-0.00177	-0.00178	-0.00178
	(A_N * !C * Y)	0.00089	0.00090	0.00089
	(A_N * !C * Y)	-0.00178	-0.00178	-0.00178
	(!A_N * C * !D * Y)	0.00064	0.00064	0.00064
	(!A_N * C * !D * Y)	-0.00185	-0.00185	-0.00189
	(!A_N * !C * Y)	0.00067	0.00067	0.00067
	(!A_N * !C * Y)	-0.00190	-0.00190	-0.00190
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00258	0.00259	0.00259
	(A_N * C * D * Y)	-0.00184	-0.00184	-0.00184
	(A_N * C * !D * Y)	0.00162	0.00161	0.00160
	(A_N * C * !D * Y)	-0.00187	-0.00186	-0.00186
	(A_N * !C * Y)	0.00162	0.00162	0.00161
	(A_N * !C * Y)	-0.00187	-0.00187	-0.00187
	(!A_N * C * !D * Y)	0.00119	0.00120	0.00121
	(!A_N * C * !D * Y)	-0.00193	-0.00194	-0.00201
	(!A_N * !C * Y)	0.00125	0.00126	0.00126
	(!A_N * !C * Y)	-0.00202	-0.00203	-0.00204

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(A_N * C * D * Y)	-0.00071	-0.00074	-0.00074
	(A_N * C * D * Y)	0.00085	0.00084	0.00083
	(A_N * C * !D * Y)	-0.00050	-0.00050	-0.00050
	(A_N * C * !D * Y)	0.00085	0.00085	0.00083
	(A_N * !C * Y)	-0.00050	-0.00050	-0.00050
	(A_N * !C * Y)	0.00085	0.00087	0.00083
	(!A_N * C * !D * Y)	-0.00029	-0.00029	-0.00030
	(!A_N * C * !D * Y)	0.00099	0.00101	0.00098
	(!A_N * !C * Y)	-0.00030	-0.00030	-0.00030
	(!A_N * !C * Y)	0.00099	0.00101	0.00098
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00129	-0.00136	-0.00135
	(A_N * C * D * Y)	0.00180	0.00179	0.00177
	(A_N * C * !D * Y)	-0.00088	-0.00089	-0.00088
	(A_N * C * !D * Y)	0.00179	0.00181	0.00178
	(A_N * !C * Y)	-0.00089	-0.00090	-0.00089
	(A_N * !C * Y)	0.00182	0.00183	0.00178
	(!A_N * C * !D * Y)	-0.00061	-0.00062	-0.00062
	(!A_N * C * !D * Y)	0.00195	0.00197	0.00192
	(!A_N * !C * Y)	-0.00063	-0.00064	-0.00064
	(!A_N * !C * Y)	0.00194	0.00197	0.00192

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00244	-0.00259	-0.00259
	(A_N * C * D * Y)	0.00193	0.00188	0.00185
	(A_N * C * !D * Y)	-0.00162	-0.00161	-0.00160
	(A_N * C * !D * Y)	0.00189	0.00190	0.00186
	(A_N * !C * Y)	-0.00162	-0.00162	-0.00161
	(A_N * !C * Y)	0.00194	0.00197	0.00187
	(!A_N * C * !D * Y)	-0.00114	-0.00116	-0.00117
	(!A_N * C * !D * Y)	0.00212	0.00215	0.00208
	(!A_N * !C * Y)	-0.00117	-0.00119	-0.00120
	(!A_N * !C * Y)	0.00211	0.00215	0.00207

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nand4b_1	**(A_N * B * D * Y)**	0.00063	0.00063	0.00063
	(A_N * B * D * Y)	-0.00083	-0.00083	-0.00083
	(A_N * B * !D * Y)	0.00039	0.00039	0.00039
	(A_N * B * !D * Y)	-0.00083	-0.00083	-0.00083
	(A_N * !B * D * Y)	0.00063	0.00064	0.00064
	(A_N * !B * D * Y)	-0.00083	-0.00083	-0.00083
	(A_N * !B * !D * Y)	0.00039	0.00039	0.00039
	(A_N * !B * !D * Y)	-0.00083	-0.00083	-0.00083
	(!A_N * B * !D * Y)	0.00030	0.00030	0.00030
	(!A_N * B * !D * Y)	-0.00085	-0.00086	-0.00085
	(!A_N * !B * D * Y)	0.00061	0.00061	0.00061
	(!A_N * !B * D * Y)	-0.00085	-0.00086	-0.00085
	(!A_N * !B * !D * Y)	0.00035	0.00035	0.00035
	(!A_N * !B * !D * Y)	-0.00086	-0.00086	-0.00086

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00127	0.00128	0.00127
	(A_N * B * D * Y)	-0.00169	-0.00169	-0.00169
	(A_N * B * !D * Y)	0.00080	0.00080	0.00079
	(A_N * B * !D * Y)	-0.00170	-0.00170	-0.00169
	(A_N * !B * D * Y)	0.00129	0.00130	0.00129
	(A_N * !B * D * Y)	-0.00168	-0.00169	-0.00168
	(A_N * !B * !D * Y)	0.00080	0.00080	0.00080
	(A_N * !B * !D * Y)	-0.00169	-0.00169	-0.00169
	(!A_N * B * !D * Y)	0.00067	0.00067	0.00067
	(!A_N * B * !D * Y)	-0.00169	-0.00169	-0.00168
	(!A_N * !B * D * Y)	0.00128	0.00130	0.00129
	(!A_N * !B * D * Y)	-0.00168	-0.00169	-0.00168
	(!A_N * !B * !D * Y)	0.00077	0.00077	0.00077
	(!A_N * !B * !D * Y)	-0.00169	-0.00170	-0.00169
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00257	0.00258	0.00256
	(A_N * B * D * Y)	-0.00184	-0.00184	-0.00183
	(A_N * B * !D * Y)	0.00155	0.00155	0.00154
	(A_N * B * !D * Y)	-0.00184	-0.00185	-0.00184
	(A_N * !B * D * Y)	0.00259	0.00261	0.00260
	(A_N * !B * D * Y)	-0.00183	-0.00183	-0.00183
	(A_N * !B * !D * Y)	0.00153	0.00154	0.00153
	(A_N * !B * !D * Y)	-0.00183	-0.00184	-0.00183
	(!A_N * B * !D * Y)	0.00130	0.00131	0.00131
	(!A_N * B * !D * Y)	-0.00182	-0.00183	-0.00182
	(!A_N * !B * D * Y)	0.00260	0.00261	0.00260
	(!A_N * !B * D * Y)	-0.00183	-0.00183	-0.00183
	(!A_N * !B * !D * Y)	0.00148	0.00148	0.00148
	(!A_N * !B * !D * Y)	-0.00183	-0.00184	-0.00183

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(A_N * B * D * Y)	-0.00059	-0.00063	-0.00063
	(A_N * B * D * Y)	0.00083	0.00083	0.00083
	(A_N * B * !D * Y)	-0.00039	-0.00039	-0.00039
	(A_N * B * !D * Y)	0.00083	0.00084	0.00083
	(A_N * !B * D * Y)	-0.00062	-0.00064	-0.00064
	(A_N * !B * D * Y)	0.00083	0.00083	0.00083
	(A_N * !B * !D * Y)	-0.00039	-0.00039	-0.00039
	(A_N * !B * !D * Y)	0.00083	0.00084	0.00083
	(!A_N * B * !D * Y)	-0.00030	-0.00030	-0.00030
	(!A_N * B * !D * Y)	0.00086	0.00088	0.00086
	(!A_N * !B * D * Y)	-0.00059	-0.00061	-0.00061
	(!A_N * !B * D * Y)	0.00086	0.00086	0.00086
	(!A_N * !B * !D * Y)	-0.00035	-0.00035	-0.00035
	(!A_N * !B * !D * Y)	0.00086	0.00088	0.00086
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00120	-0.00128	-0.00127
	(A_N * B * D * Y)	0.00169	0.00170	0.00169
	(A_N * B * !D * Y)	-0.00080	-0.00080	-0.00079
	(A_N * B * !D * Y)	0.00170	0.00173	0.00170
	(A_N * !B * D * Y)	-0.00124	-0.00130	-0.00129
	(A_N * !B * D * Y)	0.00169	0.00170	0.00169
	(A_N * !B * !D * Y)	-0.00080	-0.00080	-0.00080
	(A_N * !B * !D * Y)	0.00170	0.00171	0.00169
	(!A_N * B * !D * Y)	-0.00065	-0.00065	-0.00065
	(!A_N * B * !D * Y)	0.00169	0.00171	0.00170
	(!A_N * !B * D * Y)	-0.00124	-0.00130	-0.00129
	(!A_N * !B * D * Y)	0.00169	0.00170	0.00169
	(!A_N * !B * !D * Y)	-0.00077	-0.00077	-0.00077
	(!A_N * !B * !D * Y)	0.00170	0.00173	0.00170

sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	-0.00241	-0.00258	-0.00256
	(A_N * B * D * Y)	0.00184	0.00185	0.00183
	(A_N * B * !D * Y)	-0.00155	-0.00155	-0.00154
	(A_N * B * !D * Y)	0.00184	0.00188	0.00184
	(A_N * !B * D * Y)	-0.00250	-0.00261	-0.00260
	(A_N * !B * D * Y)	0.00183	0.00185	0.00183
	(A_N * !B * !D * Y)	-0.00153	-0.00154	-0.00153
	(A_N * !B * !D * Y)	0.00183	0.00186	0.00183
	(!A_N * B * !D * Y)	-0.00128	-0.00129	-0.00127
	(!A_N * B * !D * Y)	0.00188	0.00189	0.00184
	(!A_N * !B * D * Y)	-0.00249	-0.00261	-0.00260
	(!A_N * !B * D * Y)	0.00185	0.00185	0.00183
	(!A_N * !B * !D * Y)	-0.00148	-0.00148	-0.00148
	(!A_N * !B * !D * Y)	0.00187	0.00190	0.00184

Passive power(pJ) for D rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nand4b_1	**(A_N * B * C * Y)**	0.00063	0.00063	0.00063
	(A_N * B * C * Y)	-0.00080	-0.00081	-0.00081
	(A_N * !C * Y)	0.00064	0.00064	0.00064
	(A_N * !C * Y)	-0.00081	-0.00081	-0.00081
	(A_N * !B * C * Y)	0.00062	0.00063	0.00063
	(A_N * !B * C * Y)	-0.00081	-0.00081	-0.00081
	(!A_N * B * !C * Y)	0.00061	0.00062	0.00061
	(!A_N * B * !C * Y)	-0.00083	-0.00084	-0.00083
	(!A_N * !B * C * Y)	0.00060	0.00060	0.00060
	(!A_N * !B * C * Y)	-0.00083	-0.00084	-0.00083
	(!A_N * !B * !C * Y)	0.00061	0.00062	0.00061
	(!A_N * !B * !C * Y)	-0.00083	-0.00084	-0.00083

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00127	0.00127	0.00126
	(A_N * B * C * Y)	-0.00168	-0.00168	-0.00167
	(A_N * !C * Y)	0.00130	0.00130	0.00129
	(A_N * !C * Y)	-0.00168	-0.00168	-0.00167
	(A_N * !B * C * Y)	0.00126	0.00127	0.00126
	(A_N * !B * C * Y)	-0.00167	-0.00167	-0.00167
	(!A_N * B * !C * Y)	0.00130	0.00129	0.00129
	(!A_N * B * !C * Y)	-0.00167	-0.00167	-0.00167
	(!A_N * !B * C * Y)	0.00127	0.00127	0.00126
	(!A_N * !B * C * Y)	-0.00167	-0.00168	-0.00167
	(!A_N * !B * !C * Y)	0.00130	0.00130	0.00129
	(!A_N * !B * !C * Y)	-0.00168	-0.00168	-0.00167
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00248	0.00251	0.00249
	(A_N * B * C * Y)	-0.00166	-0.00168	-0.00167
	(A_N * !C * Y)	0.00256	0.00257	0.00256
	(A_N * !C * Y)	-0.00167	-0.00167	-0.00167
	(A_N * !B * C * Y)	0.00248	0.00252	0.00249
	(A_N * !B * C * Y)	-0.00166	-0.00168	-0.00167
	(!A_N * B * !C * Y)	0.00256	0.00257	0.00256
	(!A_N * B * !C * Y)	-0.00167	-0.00167	-0.00167
	(!A_N * !B * C * Y)	0.00248	0.00251	0.00249
	(!A_N * !B * C * Y)	-0.00166	-0.00168	-0.00167
	(!A_N * !B * !C * Y)	0.00256	0.00257	0.00256
	(!A_N * !B * !C * Y)	-0.00167	-0.00167	-0.00167

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nand4b_1	**(A_N * B * C * Y)**	-0.00059	-0.00063	-0.00063
	(A_N * B * C * Y)	0.00080	0.00082	0.00081
	(A_N * !C * Y)	-0.00062	-0.00064	-0.00064
	(A_N * !C * Y)	0.00081	0.00081	0.00081
	(A_N * !B * C * Y)	-0.00060	-0.00063	-0.00063
	(A_N * !B * C * Y)	0.00081	0.00082	0.00081
	(!A_N * B * !C * Y)	-0.00059	-0.00062	-0.00061
	(!A_N * B * !C * Y)	0.00084	0.00084	0.00084
	(!A_N * !B * C * Y)	-0.00057	-0.00060	-0.00060
	(!A_N * !B * C * Y)	0.00084	0.00085	0.00084
	(!A_N * !B * !C * Y)	-0.00060	-0.00062	-0.00061
	(!A_N * !B * !C * Y)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00119	-0.00127	-0.00126
	(A_N * B * C * Y)	0.00168	0.00170	0.00168
	(A_N * !C * Y)	-0.00125	-0.00130	-0.00129
	(A_N * !C * Y)	0.00168	0.00168	0.00168
	(A_N * !B * C * Y)	-0.00119	-0.00127	-0.00126
	(A_N * !B * C * Y)	0.00167	0.00168	0.00168
	(!A_N * B * !C * Y)	-0.00125	-0.00129	-0.00129
	(!A_N * B * !C * Y)	0.00168	0.00168	0.00168
	(!A_N * !B * C * Y)	-0.00119	-0.00127	-0.00126
	(!A_N * !B * C * Y)	0.00167	0.00168	0.00168
	(!A_N * !B * !C * Y)	-0.00125	-0.00130	-0.00129
	(!A_N * !B * !C * Y)	0.00168	0.00168	0.00168

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00236	-0.00251	-0.00249
	(A_N * B * C * Y)	0.00168	0.00169	0.00168
	(A_N * !C * Y)	-0.00247	-0.00257	-0.00256
	(A_N * !C * Y)	0.00168	0.00168	0.00167
	(A_N * !B * C * Y)	-0.00234	-0.00252	-0.00249
	(A_N * !B * C * Y)	0.00166	0.00169	0.00167
	(!A_N * B * !C * Y)	-0.00247	-0.00257	-0.00256
	(!A_N * B * !C * Y)	0.00168	0.00168	0.00167
	(!A_N * !B * C * Y)	-0.00234	-0.00251	-0.00249
	(!A_N * !B * C * Y)	0.00166	0.00169	0.00167
	(!A_N * !B * !C * Y)	-0.00247	-0.00257	-0.00256
	(!A_N * !B * !C * Y)	0.00168	0.00168	0.00167

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D	Y
0	x	x	x	1
1	0	x	x	1
1	1	0	x	1
1	1	1	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4_1	9.59040
sky130_fd_sc_hs__nand4_2	15.98400
sky130_fd_sc_hs__nand4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nand4_1	0.00255	0.00270	0.00265	0.00265	0.43630
sky130_fd_sc_hs__nand4_2	0.00497	0.00501	0.00505	0.00489	0.85448
sky130_fd_sc_hs__nand4_4	0.00751	0.00729	0.00729	0.00748	0.86748

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4_1	0.00000	0.00361	0.04335
sky130_fd_sc_hs__nand4_2	0.00000	0.00723	0.08669
sky130_fd_sc_hs__nand4_4	0.00000	0.00903	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (FR)	0.10097	1.27891	12.47860
	B->Y (FR)	0.12611	1.31860	12.61660
	C->Y (FR)	0.14195	1.33783	12.66010
	D->Y (FR)	0.15151	1.34222	12.55070
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.08468	1.12757	12.45310
	B->Y (FR)	0.10765	1.14466	12.43030
	C->Y (FR)	0.12360	1.16443	12.42920
	D->Y (FR)	0.13773	1.18859	12.49880
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.10959	1.14282	12.39540
	B->Y (FR)	0.15356	1.17989	12.38280
	C->Y (FR)	0.19140	1.23269	12.61050
	D->Y (FR)	0.22203	1.27281	12.63870

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.08302	1.02605	10.02400
	B->Y (RF)	0.10547	1.04165	9.95669
	C->Y (RF)	0.11749	1.02139	9.59122
	D->Y (RF)	0.12365	0.99932	9.25714
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.07635	0.96288	10.94620
	B->Y (RF)	0.10493	0.98641	10.89880
	C->Y (RF)	0.11912	0.95481	10.38660
	D->Y (RF)	0.12649	0.94030	10.05280
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.05993	0.72879	7.92819
	B->Y (RF)	0.08664	0.74157	7.77260
	C->Y (RF)	0.10139	0.71262	7.26118
	D->Y (RF)	0.10879	0.69397	6.85894

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00005	-0.00008	-0.00007
	A	0.00215	0.00204	0.00214
	B	0.00031	0.00023	0.00024
	B	0.00289	0.00280	0.00214
	C	0.00060	0.00052	0.00052
	C	0.00353	0.00344	0.00325
	D	0.00077	0.00071	0.00070
	D	0.00410	0.00403	0.00379
sky130_fd_sc_hs__nand4_2	A	-0.00051	-0.00056	-0.00048
	A	0.00353	0.00348	0.00197
	B	0.00034	0.00017	0.00022
	B	0.00524	0.00508	0.00515
	C	0.00083	0.00065	0.00068
	C	0.00658	0.00642	0.00478
	D	0.00147	0.00132	0.00131
	D	0.00796	0.00783	0.00620
sky130_fd_sc_hs__nand4_4	A	-0.00105	-0.00126	-0.00110
	A	0.00493	0.00473	0.00322
	B	0.00044	0.00001	0.00010
	B	0.00804	0.00763	0.00601
	C	0.00148	0.00106	0.00110
	C	0.01065	0.01023	0.00881
	D	0.00257	0.00225	0.00223
	D	0.01346	0.01302	0.01166

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00282	0.00278	0.00280
	A	0.00063	0.00059	0.00061
	B	0.00328	0.00325	0.00326
	B	0.00066	0.00063	0.00063
	C	0.00368	0.00365	0.00366
	C	0.00066	0.00063	0.00064
	D	0.00413	0.00406	0.00412
	D	0.00065	0.00062	0.00062
sky130_fd_sc_hs__nand4_2	A	0.00516	0.00500	0.00514
	A	0.00113	0.00103	0.00109
	B	0.00613	0.00606	0.00610
	B	0.00113	0.00107	0.00110
	C	0.00712	0.00705	0.00707
	C	0.00113	0.00106	0.00110
	D	0.00797	0.00792	0.00795
	D	0.00112	0.00104	0.00107
sky130_fd_sc_hs__nand4_4	A	0.00800	0.00788	0.00805
	A	0.00203	0.00191	0.00197
	B	0.00983	0.00975	0.00983
	B	0.00206	0.00198	0.00201
	C	0.01166	0.01161	0.01184
	C	0.00208	0.00199	0.00202
	D	0.01357	0.01353	0.01355
	D	0.00197	0.00189	0.00192

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(B * C * !D * Y)	0.00032	0.00032	0.00028
	(B * C * !D * Y)	-0.00088	-0.00089	-0.00097
	(B * !C * Y)	0.00030	0.00031	0.00028
	(B * !C * Y)	-0.00092	-0.00092	-0.00098
	(!B * Y)	0.00030	0.00030	0.00028
	(!B * Y)	-0.00095	-0.00096	-0.00098
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00059	0.00059	0.00049
	(B * C * !D * Y)	-0.00173	-0.00174	-0.00193
	(B * !C * Y)	0.00054	0.00054	0.00048
	(B * !C * Y)	-0.00183	-0.00184	-0.00196
	(!B * Y)	0.00055	0.00054	0.00051
	(!B * Y)	-0.00191	-0.00192	-0.00197
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00114	0.00114	0.00096
	(B * C * !D * Y)	-0.00194	-0.00197	-0.00234
	(B * !C * Y)	0.00105	0.00105	0.00094
	(B * !C * Y)	-0.00213	-0.00216	-0.00238
	(!B * Y)	0.00105	0.00105	0.00099
	(!B * Y)	-0.00229	-0.00231	-0.00241

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(B * C * !D * Y)	-0.00027	-0.00027	-0.00027
	(B * C * !D * Y)	0.00098	0.00099	0.00098
	(B * !C * Y)	-0.00027	-0.00027	-0.00027
	(B * !C * Y)	0.00098	0.00099	0.00098
	(!B * Y)	-0.00027	-0.00027	-0.00027
	(!B * Y)	0.00098	0.00099	0.00098
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00046	-0.00047	-0.00047
	(B * C * !D * Y)	0.00197	0.00199	0.00198
	(B * !C * Y)	-0.00047	-0.00047	-0.00047
	(B * !C * Y)	0.00199	0.00199	0.00198
	(!B * Y)	-0.00048	-0.00049	-0.00048
	(!B * Y)	0.00197	0.00199	0.00198
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00092	-0.00092	-0.00091
	(B * C * !D * Y)	0.00243	0.00243	0.00241
	(B * !C * Y)	-0.00093	-0.00092	-0.00092
	(B * !C * Y)	0.00243	0.00243	0.00241
	(!B * Y)	-0.00095	-0.00095	-0.00095
	(!B * Y)	0.00241	0.00243	0.00242

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nand4_1	**(A * C * !D * Y)**	0.00031	0.00031	0.00031
	(A * C * !D * Y)	-0.00088	-0.00088	-0.00087
	(A * !C * Y)	0.00032	0.00033	0.00033
	(A * !C * Y)	-0.00087	-0.00088	-0.00087
	(!A * C * D * Y)	0.00061	0.00062	0.00062
	(!A * C * D * Y)	-0.00087	-0.00088	-0.00088
	(!A * C * !D * Y)	0.00037	0.00037	0.00036
	(!A * C * !D * Y)	-0.00089	-0.00088	-0.00088
	(!A * !C * Y)	0.00037	0.00037	0.00037
	(!A * !C * Y)	-0.00088	-0.00089	-0.00088
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00064	0.00065	0.00066
	(A * C * !D * Y)	-0.00167	-0.00167	-0.00166
	(A * !C * Y)	0.00065	0.00065	0.00066
	(A * !C * Y)	-0.00167	-0.00168	-0.00167
	(!A * C * D * Y)	0.00130	0.00131	0.00130
	(!A * C * D * Y)	-0.00167	-0.00168	-0.00167
	(!A * C * !D * Y)	0.00077	0.00077	0.00077
	(!A * C * !D * Y)	-0.00168	-0.00168	-0.00168
	(!A * !C * Y)	0.00074	0.00074	0.00074
	(!A * !C * Y)	-0.00169	-0.00169	-0.00168
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00124	0.00124	0.00127
	(A * C * !D * Y)	-0.00174	-0.00175	-0.00173
	(A * !C * Y)	0.00126	0.00127	0.00128
	(A * !C * Y)	-0.00175	-0.00176	-0.00174
	(!A * C * D * Y)	0.00255	0.00257	0.00256
	(!A * C * D * Y)	-0.00175	-0.00176	-0.00176
	(!A * C * !D * Y)	0.00148	0.00148	0.00147
	(!A * C * !D * Y)	-0.00177	-0.00178	-0.00177
	(!A * !C * Y)	0.00143	0.00143	0.00143
	(!A * !C * Y)	-0.00178	-0.00178	-0.00178

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(A * C * !D * Y)	-0.00030	-0.00030	-0.00031
	(A * C * !D * Y)	0.00090	0.00091	0.00089
	(A * !C * Y)	-0.00030	-0.00031	-0.00031
	(A * !C * Y)	0.00090	0.00091	0.00089
	(!A * C * D * Y)	-0.00058	-0.00062	-0.00062
	(!A * C * D * Y)	0.00090	0.00089	0.00088
	(!A * C * !D * Y)	-0.00037	-0.00037	-0.00036
	(!A * C * !D * Y)	0.00090	0.00090	0.00088
	(!A * !C * Y)	-0.00037	-0.00037	-0.00037
	(!A * !C * Y)	0.00090	0.00091	0.00088
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00061	-0.00062	-0.00062
	(A * C * !D * Y)	0.00171	0.00174	0.00169
	(A * !C * Y)	-0.00062	-0.00063	-0.00064
	(A * !C * Y)	0.00171	0.00174	0.00169
	(!A * C * D * Y)	-0.00121	-0.00131	-0.00130
	(!A * C * D * Y)	0.00170	0.00170	0.00168
	(!A * C * !D * Y)	-0.00077	-0.00077	-0.00077
	(!A * C * !D * Y)	0.00169	0.00171	0.00168
	(!A * !C * Y)	-0.00074	-0.00074	-0.00074
	(!A * !C * Y)	0.00171	0.00174	0.00169

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00119	-0.00119	-0.00119
	(A * C * !D * Y)	0.00188	0.00188	0.00178
	(A * !C * Y)	-0.00121	-0.00122	-0.00123
	(A * !C * Y)	0.00187	0.00187	0.00178
	(!A * C * D * Y)	-0.00236	-0.00257	-0.00256
	(!A * C * D * Y)	0.00185	0.00180	0.00177
	(!A * C * !D * Y)	-0.00148	-0.00148	-0.00147
	(!A * C * !D * Y)	0.00180	0.00181	0.00177
	(!A * !C * Y)	-0.00143	-0.00143	-0.00143
	(!A * !C * Y)	0.00189	0.00190	0.00179

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nand4_1	**(A * B * !D * Y)**	0.00030	0.00031	0.00031
	(A * B * !D * Y)	-0.00086	-0.00087	-0.00086
	(A * !B * D * Y)	0.00061	0.00062	0.00061
	(A * !B * D * Y)	-0.00086	-0.00087	-0.00086
	(A * !B * !D * Y)	0.00035	0.00035	0.00035
	(A * !B * !D * Y)	-0.00086	-0.00087	-0.00087
	(!A * B * D * Y)	0.00060	0.00060	0.00060
	(!A * B * D * Y)	-0.00086	-0.00087	-0.00086
	(!A * B * !D * Y)	0.00035	0.00035	0.00035
	(!A * B * !D * Y)	-0.00087	-0.00087	-0.00086
	(!A * !B * D * Y)	0.00061	0.00061	0.00061
	(!A * !B * D * Y)	-0.00086	-0.00086	-0.00086
	(!A * !B * !D * Y)	0.00036	0.00036	0.00036
	(!A * !B * !D * Y)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00069	0.00069	0.00068
	(A * B * !D * Y)	-0.00167	-0.00166	-0.00165
	(A * !B * D * Y)	0.00128	0.00129	0.00128
	(A * !B * D * Y)	-0.00167	-0.00168	-0.00167
	(A * !B * !D * Y)	0.00076	0.00076	0.00076
	(A * !B * !D * Y)	-0.00167	-0.00168	-0.00167
	(!A * B * D * Y)	0.00126	0.00126	0.00125
	(!A * B * D * Y)	-0.00168	-0.00168	-0.00167
	(!A * B * !D * Y)	0.00078	0.00078	0.00078
	(!A * B * !D * Y)	-0.00167	-0.00168	-0.00168
	(!A * !B * D * Y)	0.00128	0.00129	0.00128
	(!A * !B * D * Y)	-0.00167	-0.00168	-0.00167
	(!A * !B * !D * Y)	0.00078	0.00078	0.00078
	(!A * !B * !D * Y)	-0.00168	-0.00168	-0.00167
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00128	0.00127	0.00126
	(A * B * !D * Y)	-0.00172	-0.00171	-0.00171
	(A * !B * D * Y)	0.00248	0.00250	0.00249
	(A * !B * D * Y)	-0.00173	-0.00174	-0.00173
	(A * !B * !D * Y)	0.00142	0.00142	0.00142
	(A * !B * !D * Y)	-0.00173	-0.00174	-0.00174
	(!A * B * D * Y)	0.00242	0.00243	0.00242
	(!A * B * D * Y)	-0.00174	-0.00174	-0.00173
	(!A * B * !D * Y)	0.00143	0.00143	0.00143
	(!A * B * !D * Y)	-0.00174	-0.00174	-0.00174
	(!A * !B * D * Y)	0.00248	0.00250	0.00249
	(!A * !B * D * Y)	-0.00173	-0.00174	-0.00173
	(!A * !B * !D * Y)	0.00147	0.00148	0.00146
	(!A * !B * !D * Y)	-0.00174	-0.00175	-0.00174

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(A * B * !D * Y)	-0.00030	-0.00030	-0.00030
	(A * B * !D * Y)	0.00086	0.00088	0.00087
	(A * !B * D * Y)	-0.00059	-0.00062	-0.00061
	(A * !B * D * Y)	0.00086	0.00087	0.00086
	(A * !B * !D * Y)	-0.00035	-0.00035	-0.00035
	(A * !B * !D * Y)	0.00086	0.00088	0.00087
	(!A * B * D * Y)	-0.00055	-0.00060	-0.00060
	(!A * B * D * Y)	0.00086	0.00087	0.00086
	(!A * B * !D * Y)	-0.00035	-0.00035	-0.00035
	(!A * B * !D * Y)	0.00087	0.00088	0.00087
	(!A * !B * D * Y)	-0.00059	-0.00061	-0.00061
	(!A * !B * D * Y)	0.00087	0.00087	0.00086
	(!A * !B * !D * Y)	-0.00036	-0.00036	-0.00036
	(!A * !B * !D * Y)	0.00087	0.00088	0.00087
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00065	-0.00066	-0.00064
	(A * B * !D * Y)	0.00168	0.00171	0.00168
	(A * !B * D * Y)	-0.00123	-0.00129	-0.00128
	(A * !B * D * Y)	0.00168	0.00169	0.00168
	(A * !B * !D * Y)	-0.00076	-0.00076	-0.00076
	(A * !B * !D * Y)	0.00167	0.00170	0.00168
	(!A * B * D * Y)	-0.00116	-0.00126	-0.00125
	(!A * B * D * Y)	0.00168	0.00169	0.00168
	(!A * B * !D * Y)	-0.00078	-0.00078	-0.00078
	(!A * B * !D * Y)	0.00167	0.00171	0.00168
	(!A * !B * D * Y)	-0.00123	-0.00129	-0.00128
	(!A * !B * D * Y)	0.00168	0.00169	0.00168
	(!A * !B * !D * Y)	-0.00078	-0.00078	-0.00078
	(!A * !B * !D * Y)	0.00168	0.00171	0.00168

sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	-0.00121	-0.00123	-0.00121
	(A * B * !D * Y)	0.00174	0.00177	0.00174
	(A * !B * D * Y)	-0.00237	-0.00250	-0.00249
	(A * !B * D * Y)	0.00174	0.00176	0.00174
	(A * !B * !D * Y)	-0.00142	-0.00142	-0.00142
	(A * !B * !D * Y)	0.00173	0.00177	0.00174
	(!A * B * D * Y)	-0.00223	-0.00243	-0.00242
	(!A * B * D * Y)	0.00174	0.00175	0.00174
	(!A * B * !D * Y)	-0.00143	-0.00143	-0.00143
	(!A * B * !D * Y)	0.00174	0.00177	0.00174
	(!A * !B * D * Y)	-0.00238	-0.00250	-0.00249
	(!A * !B * D * Y)	0.00174	0.00176	0.00174
	(!A * !B * !D * Y)	-0.00147	-0.00148	-0.00146
	(!A * !B * !D * Y)	0.00174	0.00176	0.00174

Passive power(pJ) for D rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nand4_1	**(A * B * !C * Y)**	0.00061	0.00062	0.00062
	(A * B * !C * Y)	-0.00090	-0.00090	-0.00090
	(A * !B * C * Y)	0.00060	0.00061	0.00060
	(A * !B * C * Y)	-0.00090	-0.00090	-0.00090
	(A * !B * !C * Y)	0.00062	0.00062	0.00061
	(A * !B * !C * Y)	-0.00090	-0.00090	-0.00090
	(!A * B * C * Y)	0.00060	0.00060	0.00060
	(!A * B * C * Y)	-0.00090	-0.00090	-0.00090
	(!A * !C * Y)	0.00061	0.00062	0.00062
	(!A * !C * Y)	-0.00090	-0.00090	-0.00090
	(!A * !B * C * Y)	0.00060	0.00061	0.00060
	(!A * !B * C * Y)	-0.00090	-0.00090	-0.00090

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00130	0.00132	0.00131
	(A * B * !C * Y)	-0.00165	-0.00166	-0.00165
	(A * !B * C * Y)	0.00126	0.00127	0.00126
	(A * !B * C * Y)	-0.00165	-0.00166	-0.00165
	(A * !B * !C * Y)	0.00130	0.00131	0.00131
	(A * !B * !C * Y)	-0.00165	-0.00165	-0.00165
	(!A * B * C * Y)	0.00125	0.00126	0.00125
	(!A * B * C * Y)	-0.00165	-0.00166	-0.00165
	(!A * !C * Y)	0.00130	0.00131	0.00131
	(!A * !C * Y)	-0.00165	-0.00165	-0.00165
	(!A * !B * C * Y)	0.00126	0.00127	0.00126
	(!A * !B * C * Y)	-0.00165	-0.00166	-0.00165
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00263	0.00264	0.00262
	(A * B * !C * Y)	-0.00177	-0.00178	-0.00177
	(A * !B * C * Y)	0.00253	0.00255	0.00253
	(A * !B * C * Y)	-0.00177	-0.00178	-0.00177
	(A * !B * !C * Y)	0.00262	0.00263	0.00262
	(A * !B * !C * Y)	-0.00177	-0.00178	-0.00177
	(!A * B * C * Y)	0.00251	0.00252	0.00251
	(!A * B * C * Y)	-0.00178	-0.00178	-0.00177
	(!A * !C * Y)	0.00262	0.00262	0.00262
	(!A * !C * Y)	-0.00177	-0.00177	-0.00177
	(!A * !B * C * Y)	0.00253	0.00255	0.00253
	(!A * !B * C * Y)	-0.00177	-0.00178	-0.00177

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nand4_1	**(A * B * !C * Y)**	-0.00060	-0.00062	-0.00062
	(A * B * !C * Y)	0.00090	0.00091	0.00090
	(A * !B * C * Y)	-0.00057	-0.00061	-0.00060
	(A * !B * C * Y)	0.00090	0.00092	0.00090
	(A * !B * !C * Y)	-0.00060	-0.00062	-0.00061
	(A * !B * !C * Y)	0.00090	0.00091	0.00090
	(!A * B * C * Y)	-0.00057	-0.00060	-0.00060
	(!A * B * C * Y)	0.00091	0.00092	0.00090
	(!A * !C * Y)	-0.00060	-0.00062	-0.00062
	(!A * !C * Y)	0.00090	0.00091	0.00090
	(!A * !B * C * Y)	-0.00057	-0.00061	-0.00060
	(!A * !B * C * Y)	0.00090	0.00092	0.00090
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00126	-0.00132	-0.00131
	(A * B * !C * Y)	0.00165	0.00166	0.00165
	(A * !B * C * Y)	-0.00119	-0.00127	-0.00126
	(A * !B * C * Y)	0.00165	0.00167	0.00165
	(A * !B * !C * Y)	-0.00127	-0.00131	-0.00131
	(A * !B * !C * Y)	0.00165	0.00166	0.00165
	(!A * B * C * Y)	-0.00117	-0.00126	-0.00125
	(!A * B * C * Y)	0.00165	0.00167	0.00165
	(!A * !C * Y)	-0.00127	-0.00131	-0.00131
	(!A * !C * Y)	0.00165	0.00166	0.00165
	(!A * !B * C * Y)	-0.00119	-0.00127	-0.00126
	(!A * !B * C * Y)	0.00165	0.00167	0.00165

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00253	-0.00264	-0.00262
	(A * B * !C * Y)	0.00178	0.00178	0.00178
	(A * !B * C * Y)	-0.00238	-0.00255	-0.00253
	(A * !B * C * Y)	0.00178	0.00180	0.00178
	(A * !B * !C * Y)	-0.00254	-0.00263	-0.00262
	(A * !B * !C * Y)	0.00178	0.00178	0.00178
	(!A * B * C * Y)	-0.00235	-0.00252	-0.00251
	(!A * B * C * Y)	0.00178	0.00180	0.00178
	(!A * !C * Y)	-0.00253	-0.00262	-0.00262
	(!A * !C * Y)	0.00178	0.00178	0.00178
	(!A * !B * C * Y)	-0.00239	-0.00255	-0.00253
	(!A * !B * C * Y)	0.00178	0.00180	0.00178

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B_N	Y
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2b_1	7.99200
sky130_fd_sc_hs__nor2b_2	11.18880
sky130_fd_sc_hs__nor2b_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	Y
sky130_fd_sc_hs__nor2b_1	0.00254	0.00208	0.19584
sky130_fd_sc_hs__nor2b_2	0.00501	0.00241	0.37612
sky130_fd_sc_hs__nor2b_4	0.00826	0.00345	0.74390

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.02881	0.05035
sky130_fd_sc_hs__nor2b_2	0.00000	0.02568	0.03652
sky130_fd_sc_hs__nor2b_4	0.00000	0.06574	0.11151

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (FR)	0.19646	1.62883	12.72920
	B_N->Y (RR)	0.21059	1.39272	8.59374
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.18323	1.43453	12.77740
	B_N->Y (RR)	0.17725	1.19333	8.74178
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.14060	1.22197	12.68190
	B_N->Y (RR)	0.15962	1.04317	8.93980

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.03626	0.54593	4.60832
	B_N->Y (FF)	0.17079	0.79661	3.95480
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.03342	0.49973	4.59034
	B_N->Y (FF)	0.20126	0.85198	4.48881
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.04311	0.58996	5.97448
	B_N->Y (FF)	0.19165	0.85003	4.81472

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00038	0.00034	0.00033
	A	0.00217	0.00215	0.00214
	B_N	0.00334	0.00321	0.00336
	B_N	0.00186	0.00173	0.00189
sky130_fd_sc_hs__nor2b_2	A	0.00081	0.00075	0.00075
	A	0.00441	0.00437	0.00402
	B_N	0.00483	0.00471	0.00488
	B_N	0.00340	0.00327	0.00344
sky130_fd_sc_hs__nor2b_4	A	0.00128	0.00122	0.00125
	A	0.00718	0.00712	0.00716
	B_N	0.00714	0.00700	0.00729
	B_N	0.00503	0.00489	0.00520

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00218	0.00213	0.00211
	A	0.00040	0.00033	0.00032
	B_N	0.00181	0.00179	0.00211
	B_N	0.00329	0.00324	0.00359
sky130_fd_sc_hs__nor2b_2	A	0.00414	0.00397	0.00395
	A	0.00058	0.00040	0.00036
	B_N	0.00303	0.00306	0.00334
	B_N	0.00446	0.00450	0.00478
sky130_fd_sc_hs__nor2b_4	A	0.00655	0.00626	0.00651
	A	0.00071	0.00038	0.00037
	B_N	0.00443	0.00457	0.00526
	B_N	0.00654	0.00668	0.00734

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00074	0.00070	0.00069
	(!B_N * !Y)	-0.00087	-0.00093	-0.00093
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00150	0.00143	0.00141
	(!B_N * !Y)	-0.00159	-0.00169	-0.00169
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00194	0.00177	0.00174
	(!B_N * !Y)	-0.00317	-0.00339	-0.00338

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00069	-0.00069	-0.00069
	(!B_N * !Y)	0.00094	0.00094	0.00093
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00141	-0.00142	-0.00141
	(!B_N * !Y)	0.00168	0.00170	0.00169
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00174	-0.00174	-0.00173
	(!B_N * !Y)	0.00339	0.00340	0.00338

Passive power(pJ) for B_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00208	0.00195	0.00208
	(A * !Y)	0.00047	0.00033	0.00047
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00276	0.00260	0.00268
	(A * !Y)	0.00094	0.00078	0.00087
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00428	0.00404	0.00420
	(A * !Y)	0.00157	0.00132	0.00149

Passive power(pJ) for B_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00070	0.00063	0.00099
	(A * !Y)	0.00231	0.00224	0.00260
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00143	0.00132	0.00159
	(A * !Y)	0.00324	0.00313	0.00339
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00173	0.00160	0.00219
	(A * !Y)	0.00442	0.00429	0.00487

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
x	1	0
1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2_1	4.79520
sky130_fd_sc_hs__nor2_2	7.99200
sky130_fd_sc_hs__nor2_4	14.38560
sky130_fd_sc_hs__nor2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nor2_1	0.00256	0.00263	0.19378
sky130_fd_sc_hs__nor2_2	0.00403	0.00383	0.36532
sky130_fd_sc_hs__nor2_4	0.00768	0.00765	0.70941
sky130_fd_sc_hs__nor2_8	0.01495	0.01508	1.37907

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.00557	0.01084
sky130_fd_sc_hs__nor2_2	0.00000	0.00977	0.02167
sky130_fd_sc_hs__nor2_4	0.00000	0.01953	0.04335
sky130_fd_sc_hs__nor2_8	0.00000	0.03906	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (FR)	0.19203	1.61964	12.62740
	B->Y (FR)	0.15871	1.53757	12.27610
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.14860	1.39096	12.58160
	B->Y (FR)	0.09727	1.28879	12.17950
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.14693	1.23103	12.54560
	B->Y (FR)	0.09635	1.13343	12.18130
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.13883	1.10279	12.61430
	B->Y (FR)	0.09624	1.02100	12.32290

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.03650	0.54476	4.58857
	B->Y (RF)	0.03426	0.53524	4.57334
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.04267	0.63518	5.84803
	B->Y (RF)	0.03671	0.61721	5.82769
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.04224	0.58178	5.81812
	B->Y (RF)	0.03591	0.55853	5.76635
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.04067	0.53095	5.77990
	B->Y (RF)	0.04208	0.51687	5.76607

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00017	-0.00022	-0.00022
	A	0.00216	0.00213	0.00189
	B	-0.00022	-0.00026	-0.00024
	B	0.00178	0.00174	0.00178
sky130_fd_sc_hs__nor2_2	A	-0.00039	-0.00041	-0.00041
	A	0.00346	0.00343	0.00343
	B	-0.00027	-0.00029	-0.00025
	B	0.00260	0.00258	0.00264
sky130_fd_sc_hs__nor2_4	A	0.00016	0.00009	0.00010
	A	0.00758	0.00751	0.00754
	B	-0.00004	-0.00009	0.00001
	B	0.00578	0.00570	0.00586
sky130_fd_sc_hs__nor2_8	A	-0.00007	-0.00020	-0.00014
	A	0.01446	0.01435	0.01445
	B	-0.00056	-0.00066	-0.00038
	B	0.01092	0.01083	0.01119

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00267	0.00261	0.00259
	A	0.00036	0.00029	0.00027
	B	0.00197	0.00196	0.00195
	B	-0.00002	-0.00005	-0.00005
sky130_fd_sc_hs__nor2_2	A	0.00435	0.00420	0.00415
	A	0.00060	0.00044	0.00041
	B	0.00227	0.00227	0.00230
	B	-0.00058	-0.00060	-0.00057
sky130_fd_sc_hs__nor2_4	A	0.00829	0.00793	0.00787
	A	0.00104	0.00069	0.00065
	B	0.00453	0.00444	0.00459
	B	-0.00126	-0.00136	-0.00124
sky130_fd_sc_hs__nor2_8	A	0.01583	0.01513	0.01545
	A	0.00162	0.00087	0.00091
	B	0.00894	0.00871	0.00913
	B	-0.00251	-0.00276	-0.00235

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00080	0.00076	0.00075
	(B * !Y)	-0.00074	-0.00080	-0.00080
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00103	0.00096	0.00094
	(B * !Y)	-0.00149	-0.00160	-0.00160
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00173	0.00154	0.00151
	(B * !Y)	-0.00297	-0.00323	-0.00323
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00331	0.00294	0.00291
	(B * !Y)	-0.00587	-0.00638	-0.00642

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00075	-0.00074	-0.00074
	(B * !Y)	0.00081	0.00080	0.00080
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00095	-0.00095	-0.00094
	(B * !Y)	0.00160	0.00160	0.00160
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00151	-0.00150	-0.00150
	(B * !Y)	0.00326	0.00323	0.00323
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00290	-0.00289	-0.00289
	(B * !Y)	0.00639	0.00638	0.00642

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00085	0.00086	0.00085
	(A * !Y)	-0.00046	-0.00046	-0.00045
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00094	0.00095	0.00094
	(A * !Y)	-0.00093	-0.00093	-0.00092
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00188	0.00192	0.00189
	(A * !Y)	-0.00180	-0.00185	-0.00182
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00371	0.00376	0.00372
	(A * !Y)	-0.00360	-0.00365	-0.00360

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	**(A * !Y)**	-0.00080	-0.00081	-0.00084
	(A * !Y)	0.00049	0.00049	0.00047
sky130_fd_sc_hs__nor2_2	**(A * !Y)**	-0.00080	-0.00081	-0.00092
	(A * !Y)	0.00104	0.00104	0.00095
sky130_fd_sc_hs__nor2_4	**(A * !Y)**	-0.00164	-0.00167	-0.00185
	(A * !Y)	0.00204	0.00204	0.00188
sky130_fd_sc_hs__nor2_8	**(A * !Y)**	-0.00325	-0.00332	-0.00366
	(A * !Y)	0.00399	0.00401	0.00372

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C_N	Y
0	x	0	0
0	0	1	1
x	1	1	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3b_1	9.59040
sky130_fd_sc_hs__nor3b_2	15.98400
sky130_fd_sc_hs__nor3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	Y
sky130_fd_sc_hs__nor3b_1	0.00251	0.00262	0.00202	0.12301
sky130_fd_sc_hs__nor3b_2	0.00490	0.00489	0.00240	0.23410
sky130_fd_sc_hs__nor3b_4	0.00984	0.00977	0.00337	0.43029

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3b_1	0.00000	0.02714	0.05311
sky130_fd_sc_hs__nor3b_2	0.00000	0.02236	0.04204
sky130_fd_sc_hs__nor3b_4	0.00000	0.06184	0.12277

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (FR)	0.39394	1.99134	12.58340
	B->Y (FR)	0.36474	1.94998	12.80630
	C_N->Y (RR)	0.32246	1.68183	8.81366
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.36462	1.73957	12.53810
	B->Y (FR)	0.32944	1.68956	12.79440
	C_N->Y (RR)	0.25596	1.40960	8.85029
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.35696	1.53871	12.33210
	B->Y (FR)	0.32389	1.49317	12.61840
	C_N->Y (RR)	0.28307	1.31070	9.21657

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.03791	0.51053	3.90665
	B->Y (RF)	0.03993	0.51003	3.93618
	C_N->Y (FF)	0.17477	0.77213	3.65417
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.03343	0.46407	3.83333
	B->Y (RF)	0.03417	0.45448	3.80839
	C_N->Y (FF)	0.20372	0.82902	4.18175
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.03318	0.43272	3.79502
	B->Y (RF)	0.03407	0.42414	3.77374
	C_N->Y (FF)	0.21726	0.81861	4.02368

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00081	0.00076	0.00075
	A	0.00297	0.00293	0.00292
	B	0.00072	0.00067	0.00065
	B	0.00264	0.00259	0.00258
	C_N	0.00358	0.00342	0.00357
	C_N	0.00234	0.00218	0.00233
sky130_fd_sc_hs__nor3b_2	A	0.00124	0.00116	0.00114
	A	0.00582	0.00575	0.00574
	B	0.00123	0.00115	0.00114
	B	0.00503	0.00493	0.00493
	C_N	0.00523	0.00507	0.00523
	C_N	0.00409	0.00392	0.00408
sky130_fd_sc_hs__nor3b_4	A	0.00231	0.00214	0.00211
	A	0.01149	0.01132	0.01136
	B	0.00237	0.00219	0.00219
	B	0.01006	0.00988	0.00987
	C_N	0.00940	0.00925	0.00950
	C_N	0.00809	0.00792	0.00820

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00290	0.00282	0.00276
	A	0.00078	0.00070	0.00065
	B	0.00233	0.00228	0.00224
	B	0.00043	0.00036	0.00033
	C_N	0.00195	0.00191	0.00225
	C_N	0.00319	0.00314	0.00348
sky130_fd_sc_hs__nor3b_2	A	0.00580	0.00562	0.00548
	A	0.00136	0.00118	0.00106
	B	0.00435	0.00421	0.00413
	B	0.00060	0.00044	0.00037
	C_N	0.00333	0.00336	0.00363
	C_N	0.00448	0.00449	0.00477
sky130_fd_sc_hs__nor3b_4	A	0.01145	0.01109	0.01085
	A	0.00252	0.00211	0.00193
	B	0.00864	0.00832	0.00822
	B	0.00104	0.00069	0.00059
	C_N	0.00714	0.00731	0.00790
	C_N	0.00845	0.00857	0.00921

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * C_N * !Y)	0.00070	0.00070	0.00069
	(B * C_N * !Y)	-0.00076	-0.00078	-0.00078
	(B * !C_N * !Y)	0.00066	0.00067	0.00066
	(B * !C_N * !Y)	-0.00079	-0.00081	-0.00081
	(!B * !C_N * !Y)	0.00066	0.00067	0.00066
	(!B * !C_N * !Y)	-0.00075	-0.00079	-0.00078
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00141	0.00142	0.00140
	(B * C_N * !Y)	-0.00157	-0.00162	-0.00162
	(B * !C_N * !Y)	0.00140	0.00142	0.00140
	(B * !C_N * !Y)	-0.00158	-0.00162	-0.00162
	(!B * !C_N * !Y)	0.00141	0.00142	0.00140
	(!B * !C_N * !Y)	-0.00151	-0.00158	-0.00156
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00305	0.00304	0.00300
	(B * C_N * !Y)	-0.00300	-0.00309	-0.00309
	(B * !C_N * !Y)	0.00281	0.00282	0.00278
	(B * !C_N * !Y)	-0.00324	-0.00332	-0.00331
	(!B * !C_N * !Y)	0.00279	0.00281	0.00278
	(!B * !C_N * !Y)	-0.00309	-0.00323	-0.00319

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * C_N * !Y)	-0.00069	-0.00069	-0.00069
	(B * C_N * !Y)	0.00079	0.00078	0.00078
	(B * !C_N * !Y)	-0.00066	-0.00066	-0.00066
	(B * !C_N * !Y)	0.00081	0.00081	0.00081
	(!B * !C_N * !Y)	-0.00066	-0.00067	-0.00066
	(!B * !C_N * !Y)	0.00078	0.00079	0.00078
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00140	-0.00140	-0.00140
	(B * C_N * !Y)	0.00163	0.00162	0.00162
	(B * !C_N * !Y)	-0.00140	-0.00140	-0.00140
	(B * !C_N * !Y)	0.00163	0.00162	0.00162
	(!B * !C_N * !Y)	-0.00139	-0.00141	-0.00140
	(!B * !C_N * !Y)	0.00155	0.00158	0.00156
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00300	-0.00301	-0.00300
	(B * C_N * !Y)	0.00307	0.00309	0.00309
	(B * !C_N * !Y)	-0.00280	-0.00279	-0.00278
	(B * !C_N * !Y)	0.00334	0.00332	0.00331
	(!B * !C_N * !Y)	-0.00277	-0.00279	-0.00277
	(!B * !C_N * !Y)	0.00318	0.00323	0.00319

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(A * C_N * !Y)	0.00081	0.00083	0.00081
	(A * C_N * !Y)	-0.00050	-0.00051	-0.00050
	(A * !C_N * !Y)	0.00070	0.00071	0.00069
	(A * !C_N * !Y)	-0.00068	-0.00069	-0.00068
	(!A * !C_N * !Y)	0.00075	0.00070	0.00069
	(!A * !C_N * !Y)	-0.00082	-0.00089	-0.00090
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00144	0.00146	0.00144
	(A * C_N * !Y)	-0.00106	-0.00107	-0.00105
	(A * !C_N * !Y)	0.00142	0.00143	0.00140
	(A * !C_N * !Y)	-0.00121	-0.00123	-0.00122
	(!A * !C_N * !Y)	0.00149	0.00140	0.00139
	(!A * !C_N * !Y)	-0.00158	-0.00167	-0.00167
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00295	0.00296	0.00291
	(A * C_N * !Y)	-0.00212	-0.00212	-0.00210
	(A * !C_N * !Y)	0.00286	0.00287	0.00281
	(A * !C_N * !Y)	-0.00246	-0.00247	-0.00245
	(!A * !C_N * !Y)	0.00304	0.00282	0.00279
	(!A * !C_N * !Y)	-0.00309	-0.00335	-0.00335

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(A * C_N * !Y)	-0.00080	-0.00081	-0.00080
	(A * C_N * !Y)	0.00052	0.00052	0.00052
	(A * !C_N * !Y)	-0.00069	-0.00070	-0.00069
	(A * !C_N * !Y)	0.00068	0.00069	0.00068
	(!A * !C_N * !Y)	-0.00069	-0.00069	-0.00069
	(!A * !C_N * !Y)	0.00090	0.00090	0.00090
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00142	-0.00143	-0.00143
	(A * C_N * !Y)	0.00108	0.00108	0.00108
	(A * !C_N * !Y)	-0.00139	-0.00140	-0.00139
	(A * !C_N * !Y)	0.00121	0.00123	0.00122
	(!A * !C_N * !Y)	-0.00139	-0.00139	-0.00138
	(!A * !C_N * !Y)	0.00168	0.00167	0.00167
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00288	-0.00290	-0.00288
	(A * C_N * !Y)	0.00213	0.00215	0.00216
	(A * !C_N * !Y)	-0.00280	-0.00282	-0.00280
	(A * !C_N * !Y)	0.00246	0.00247	0.00245
	(!A * !C_N * !Y)	-0.00276	-0.00278	-0.00277
	(!A * !C_N * !Y)	0.00332	0.00335	0.00335

Passive power(pJ) for C_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00204	0.00192	0.00205
	(B * !Y)	0.00050	0.00037	0.00051
	(A * !B * !Y)	0.00210	0.00198	0.00209
	(A * !B * !Y)	0.00053	0.00039	0.00052
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00274	0.00258	0.00266
	(B * !Y)	0.00095	0.00079	0.00088
	(A * !B * !Y)	0.00288	0.00272	0.00276
	(A * !B * !Y)	0.00102	0.00086	0.00092
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00445	0.00422	0.00431
	(B * !Y)	0.00176	0.00152	0.00163
	(A * !B * !Y)	0.00471	0.00447	0.00448
	(A * !B * !Y)	0.00189	0.00164	0.00169

Passive power(pJ) for C_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00073	0.00066	0.00102
	(B * !Y)	0.00227	0.00220	0.00256
	(A * !B * !Y)	0.00073	0.00066	0.00102
	(A * !B * !Y)	0.00227	0.00220	0.00256
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00141	0.00131	0.00158
	(B * !Y)	0.00318	0.00309	0.00335
	(A * !B * !Y)	0.00141	0.00131	0.00158
	(A * !B * !Y)	0.00319	0.00309	0.00335
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00332	0.00318	0.00374
	(B * !Y)	0.00599	0.00586	0.00641
	(A * !B * !Y)	0.00332	0.00319	0.00374
	(A * !B * !Y)	0.00600	0.00587	0.00642

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	Y
0	0	0	1
0	x	1	0
x	1	x	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3_1	6.39360
sky130_fd_sc_hs__nor3_2	11.18880
sky130_fd_sc_hs__nor3_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nor3_1	0.00260	0.00283	0.00268	0.12305
sky130_fd_sc_hs__nor3_2	0.00399	0.00420	0.00389	0.24328
sky130_fd_sc_hs__nor3_4	0.00879	0.00866	0.00834	0.44413

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	0.00391	0.01084
sky130_fd_sc_hs__nor3_2	0.00000	0.00678	0.02167
sky130_fd_sc_hs__nor3_4	0.00000	0.01357	0.04335

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (FR)	0.40404	1.99439	12.55610
	B->Y (FR)	0.38029	1.95802	12.78640
	C->Y (FR)	0.28555	1.80350	12.20320
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.30651	1.68450	12.62170
	B->Y (FR)	0.27571	1.63924	12.80950
	C->Y (FR)	0.15326	1.45648	12.22590
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.32162	1.52146	12.51780
	B->Y (FR)	0.27739	1.45720	12.72960
	C->Y (FR)	0.15579	1.28220	12.15730

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.03907	0.51243	3.90716
	B->Y (RF)	0.04157	0.51121	3.92874
	C->Y (RF)	0.03818	0.50100	3.91593
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.04636	0.60375	5.04573
	B->Y (RF)	0.04751	0.59157	5.01159
	C->Y (RF)	0.04016	0.57094	4.98539
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.04340	0.55447	4.91327
	B->Y (RF)	0.04684	0.54633	4.92385
	C->Y (RF)	0.04552	0.52771	4.89558

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00012	0.00006	0.00004
	A	0.00310	0.00305	0.00304
	B	0.00015	0.00008	0.00006
	B	0.00278	0.00271	0.00269
	C	0.00012	0.00005	0.00008
	C	0.00239	0.00232	0.00236
sky130_fd_sc_hs__nor3_2	A	0.00005	0.00001	0.00000
	A	0.00476	0.00472	0.00472
	B	0.00019	0.00015	0.00014
	B	0.00418	0.00414	0.00389
	C	0.00019	0.00013	0.00018
	C	0.00323	0.00315	0.00324
sky130_fd_sc_hs__nor3_4	A	-0.00005	-0.00015	-0.00016
	A	0.01013	0.01000	0.01005
	B	-0.00002	-0.00015	-0.00015
	B	0.00832	0.00818	0.00819
	C	-0.00030	-0.00041	-0.00029
	C	0.00661	0.00652	0.00666

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00371	0.00363	0.00356
	A	0.00079	0.00071	0.00066
	B	0.00307	0.00300	0.00295
	B	0.00047	0.00040	0.00036
	C	0.00226	0.00224	0.00222
	C	-0.00000	-0.00003	-0.00005
sky130_fd_sc_hs__nor3_2	A	0.00595	0.00579	0.00567
	A	0.00143	0.00126	0.00116
	B	0.00457	0.00442	0.00438
	B	0.00069	0.00053	0.00045
	C	0.00251	0.00248	0.00253
	C	-0.00053	-0.00056	-0.00056
sky130_fd_sc_hs__nor3_4	A	0.01276	0.01233	0.01207
	A	0.00298	0.00252	0.00231
	B	0.00951	0.00917	0.00909
	B	0.00133	0.00098	0.00087
	C	0.00579	0.00572	0.00587
	C	-0.00110	-0.00122	-0.00115

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00077	0.00077	0.00077
	(B * C * !Y)	-0.00078	-0.00080	-0.00079
	(B * !C * !Y)	0.00077	0.00077	0.00077
	(B * !C * !Y)	-0.00077	-0.00080	-0.00079
	(!B * C * !Y)	0.00077	0.00077	0.00077
	(!B * C * !Y)	-0.00073	-0.00077	-0.00076
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00090	0.00091	0.00090
	(B * C * !Y)	-0.00152	-0.00157	-0.00156
	(B * !C * !Y)	0.00091	0.00091	0.00090
	(B * !C * !Y)	-0.00151	-0.00157	-0.00156
	(!B * C * !Y)	0.00091	0.00090	0.00090
	(!B * C * !Y)	-0.00143	-0.00149	-0.00148
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00173	0.00173	0.00172
	(B * C * !Y)	-0.00326	-0.00335	-0.00334
	(B * !C * !Y)	0.00173	0.00173	0.00172
	(B * !C * !Y)	-0.00325	-0.00337	-0.00334
	(!B * C * !Y)	0.00173	0.00172	0.00172
	(!B * C * !Y)	-0.00304	-0.00321	-0.00317

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00077	-0.00077	-0.00076
	(B * C * !Y)	0.00080	0.00080	0.00079
	(B * !C * !Y)	-0.00077	-0.00076	-0.00076
	(B * !C * !Y)	0.00080	0.00080	0.00079
	(!B * C * !Y)	-0.00076	-0.00077	-0.00076
	(!B * C * !Y)	0.00076	0.00077	0.00076
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00090	-0.00090	-0.00090
	(B * C * !Y)	0.00155	0.00157	0.00156
	(B * !C * !Y)	-0.00090	-0.00090	-0.00090
	(B * !C * !Y)	0.00155	0.00157	0.00156
	(!B * C * !Y)	-0.00090	-0.00090	-0.00090
	(!B * C * !Y)	0.00148	0.00149	0.00148
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00171	-0.00172	-0.00172
	(B * C * !Y)	0.00331	0.00335	0.00334
	(B * !C * !Y)	-0.00171	-0.00172	-0.00172
	(B * !C * !Y)	0.00332	0.00337	0.00334
	(!B * C * !Y)	-0.00171	-0.00172	-0.00171
	(!B * C * !Y)	0.00316	0.00321	0.00317

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00080	0.00081	0.00079
	(A * C * !Y)	-0.00055	-0.00055	-0.00055
	(A * !C * !Y)	0.00079	0.00080	0.00079
	(A * !C * !Y)	-0.00049	-0.00050	-0.00049
	(!A * C * !Y)	0.00085	0.00080	0.00079
	(!A * C * !Y)	-0.00068	-0.00076	-0.00076
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00081	0.00082	0.00080
	(A * C * !Y)	-0.00119	-0.00121	-0.00120
	(A * !C * !Y)	0.00080	0.00081	0.00079
	(A * !C * !Y)	-0.00109	-0.00111	-0.00110
	(!A * C * !Y)	0.00092	0.00079	0.00078
	(!A * C * !Y)	-0.00150	-0.00165	-0.00165
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00186	0.00189	0.00185
	(A * C * !Y)	-0.00225	-0.00227	-0.00225
	(A * !C * !Y)	0.00186	0.00188	0.00185
	(A * !C * !Y)	-0.00201	-0.00202	-0.00200
	(!A * C * !Y)	0.00206	0.00187	0.00185
	(!A * C * !Y)	-0.00286	-0.00311	-0.00311

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00079	-0.00079	-0.00079
	(A * C * !Y)	0.00055	0.00055	0.00055
	(A * !C * !Y)	-0.00078	-0.00079	-0.00078
	(A * !C * !Y)	0.00051	0.00051	0.00051
	(!A * C * !Y)	-0.00079	-0.00079	-0.00078
	(!A * C * !Y)	0.00077	0.00076	0.00076
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00078	-0.00079	-0.00079
	(A * C * !Y)	0.00119	0.00121	0.00120
	(A * !C * !Y)	-0.00078	-0.00078	-0.00078
	(A * !C * !Y)	0.00112	0.00113	0.00112
	(!A * C * !Y)	-0.00079	-0.00078	-0.00078
	(!A * C * !Y)	0.00166	0.00165	0.00165
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00185	-0.00186	-0.00185
	(A * C * !Y)	0.00225	0.00227	0.00225
	(A * !C * !Y)	-0.00178	-0.00180	-0.00178
	(A * !C * !Y)	0.00206	0.00208	0.00209
	(!A * C * !Y)	-0.00184	-0.00184	-0.00183
	(!A * C * !Y)	0.00309	0.00311	0.00311

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00083	0.00084	0.00083
	(B * !Y)	-0.00046	-0.00046	-0.00045
	(A * !B * !Y)	0.00083	0.00084	0.00083
	(A * !B * !Y)	-0.00046	-0.00046	-0.00045
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00093	0.00094	0.00093
	(B * !Y)	-0.00092	-0.00092	-0.00091
	(A * !B * !Y)	0.00093	0.00094	0.00093
	(A * !B * !Y)	-0.00092	-0.00092	-0.00091
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00211	0.00212	0.00210
	(B * !Y)	-0.00188	-0.00190	-0.00187
	(A * !B * !Y)	0.00211	0.00211	0.00210
	(A * !B * !Y)	-0.00188	-0.00188	-0.00187

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00079	-0.00079	-0.00082
	(B * !Y)	0.00050	0.00050	0.00047
	(A * !B * !Y)	-0.00072	-0.00074	-0.00081
	(A * !B * !Y)	0.00053	0.00053	0.00047
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00079	-0.00080	-0.00091
	(B * !Y)	0.00103	0.00103	0.00094
	(A * !B * !Y)	-0.00066	-0.00068	-0.00088
	(A * !B * !Y)	0.00111	0.00111	0.00096
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00186	-0.00189	-0.00207
	(B * !Y)	0.00208	0.00209	0.00194
	(A * !B * !Y)	-0.00156	-0.00160	-0.00200
	(A * !B * !Y)	0.00225	0.00226	0.00196

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	Y
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4bb_1	15.98400
sky130_fd_sc_hs__nor4bb_2	23.97600
sky130_fd_sc_hs__nor4bb_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	Y
sky130_fd_sc_hs__nor4bb_1	0.00264	0.00271	0.00215	0.00212	0.08916
sky130_fd_sc_hs__nor4bb_2	0.00490	0.00515	0.00249	0.00236	0.16059
sky130_fd_sc_hs__nor4bb_4	0.00965	0.01033	0.00342	0.00332	0.32301

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4bb_1	0.00000	0.04904	0.10069
sky130_fd_sc_hs__nor4bb_2	0.00000	0.03423	0.07304
sky130_fd_sc_hs__nor4bb_4	0.00000	0.10272	0.22346

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (FR)	0.67408	2.40482	12.59950
	B->Y (FR)	0.64887	2.35828	12.73490
	C_N->Y (RR)	0.62563	2.14542	9.30989
	D_N->Y (RR)	0.42892	1.93027	8.96032
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.64644	2.12481	12.35400
	B->Y (FR)	0.60912	2.05476	12.44610
	C_N->Y (RR)	0.57287	1.84165	9.09542
	D_N->Y (RR)	0.35851	1.61076	8.74841
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.63305	1.90988	12.57010
	B->Y (FR)	0.59803	1.85210	12.69350
	C_N->Y (RR)	0.55232	1.67516	9.70948
	D_N->Y (RR)	0.35350	1.47123	9.43929

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.03994	0.49394	3.51136
	B->Y (RF)	0.04063	0.48859	3.48530
	C_N->Y (FF)	0.20937	0.80281	3.68016
	D_N->Y (FF)	0.18115	0.76163	3.50602
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.03494	0.44698	3.38105
	B->Y (RF)	0.03623	0.44495	3.37437
	C_N->Y (FF)	0.22832	0.84360	4.13117
	D_N->Y (FF)	0.20530	0.81820	4.03888
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.03596	0.43350	3.49809
	B->Y (RF)	0.03656	0.42512	3.43621
	C_N->Y (FF)	0.22715	0.81138	3.86302
	D_N->Y (FF)	0.21820	0.80440	3.84756

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00147	0.00141	0.00139
	A	0.00383	0.00376	0.00375
	B	0.00145	0.00138	0.00136
	B	0.00350	0.00344	0.00342
	C_N	0.00468	0.00451	0.00463
	C_N	0.00339	0.00323	0.00334
	D_N	0.00391	0.00375	0.00388
	D_N	0.00278	0.00261	0.00275
sky130_fd_sc_hs__nor4bb_2	A	0.00271	0.00261	0.00258
	A	0.00735	0.00724	0.00723
	B	0.00269	0.00257	0.00255
	B	0.00664	0.00651	0.00650
	C_N	0.00685	0.00666	0.00679
	C_N	0.00573	0.00554	0.00567
	D_N	0.00586	0.00567	0.00581
	D_N	0.00489	0.00469	0.00484
sky130_fd_sc_hs__nor4bb_4	A	0.00559	0.00536	0.00533
	A	0.01452	0.01428	0.01429
	B	0.00547	0.00524	0.00522
	B	0.01330	0.01307	0.01306
	C_N	0.01243	0.01219	0.01240
	C_N	0.01120	0.01096	0.01117
	D_N	0.01045	0.01023	0.01047
	D_N	0.00932	0.00910	0.00933

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00343	0.00334	0.00323
	A	0.00112	0.00103	0.00094
	B	0.00285	0.00278	0.00270
	B	0.00082	0.00074	0.00066
	C_N	0.00282	0.00275	0.00300
	C_N	0.00411	0.00400	0.00428
	D_N	0.00206	0.00201	0.00235
	D_N	0.00320	0.00313	0.00347
sky130_fd_sc_hs__nor4bb_2	A	0.00675	0.00654	0.00629
	A	0.00231	0.00209	0.00187
	B	0.00525	0.00510	0.00493
	B	0.00136	0.00119	0.00104
	C_N	0.00501	0.00487	0.00500
	C_N	0.00613	0.00599	0.00612
	D_N	0.00351	0.00353	0.00379
	D_N	0.00449	0.00448	0.00476
sky130_fd_sc_hs__nor4bb_4	A	0.01288	0.01250	0.01205
	A	0.00432	0.00389	0.00353
	B	0.01054	0.01019	0.00986
	B	0.00285	0.00245	0.00216
	C_N	0.00917	0.00899	0.00935
	C_N	0.01040	0.01020	0.01057
	D_N	0.00722	0.00730	0.00793
	D_N	0.00835	0.00840	0.00905

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4bb_1	**(B * C_N * D_N * !Y)**	0.00080	0.00080	0.00079
	(B * C_N * D_N * !Y)	-0.00076	-0.00078	-0.00078
	(B * !D_N * !Y)	0.00080	0.00080	0.00079
	(B * !D_N * !Y)	-0.00076	-0.00078	-0.00078
	(B * !C_N * D_N * !Y)	0.00073	0.00074	0.00073
	(B * !C_N * D_N * !Y)	-0.00083	-0.00085	-0.00084
	(!B * C_N * !D_N * !Y)	0.00083	0.00082	0.00080
	(!B * C_N * !D_N * !Y)	-0.00071	-0.00075	-0.00074
	(!B * !C_N * D_N * !Y)	0.00073	0.00073	0.00073
	(!B * !C_N * D_N * !Y)	-0.00079	-0.00082	-0.00081
	(!B * !C_N * !D_N * !Y)	0.00073	0.00073	0.00073
	(!B * !C_N * !D_N * !Y)	-0.00079	-0.00082	-0.00081
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00140	0.00140	0.00139
	(B * C_N * D_N * !Y)	-0.00157	-0.00162	-0.00161
	(B * !D_N * !Y)	0.00140	0.00140	0.00139
	(B * !D_N * !Y)	-0.00157	-0.00162	-0.00161
	(B * !C_N * D_N * !Y)	0.00139	0.00140	0.00139
	(B * !C_N * D_N * !Y)	-0.00157	-0.00162	-0.00161
	(!B * C_N * !D_N * !Y)	0.00148	0.00145	0.00142
	(!B * C_N * !D_N * !Y)	-0.00147	-0.00154	-0.00152
	(!B * !C_N * D_N * !Y)	0.00139	0.00140	0.00139
	(!B * !C_N * D_N * !Y)	-0.00149	-0.00157	-0.00155
	(!B * !C_N * !D_N * !Y)	0.00139	0.00140	0.00139
	(!B * !C_N * !D_N * !Y)	-0.00149	-0.00156	-0.00155

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00273	0.00273	0.00270
	(B * C_N * D_N * !Y)	-0.00303	-0.00314	-0.00312
	(B * !D_N * !Y)	0.00274	0.00274	0.00271
	(B * !D_N * !Y)	-0.00303	-0.00313	-0.00311
	(B * !C_N * D_N * !Y)	0.00271	0.00272	0.00269
	(B * !C_N * D_N * !Y)	-0.00306	-0.00314	-0.00312
	(!B * C_N * !D_N * !Y)	0.00289	0.00282	0.00275
	(!B * C_N * !D_N * !Y)	-0.00283	-0.00296	-0.00292
	(!B * !C_N * D_N * !Y)	0.00270	0.00272	0.00269
	(!B * !C_N * D_N * !Y)	-0.00288	-0.00302	-0.00298
	(!B * !C_N * !D_N * !Y)	0.00270	0.00272	0.00269
	(!B * !C_N * !D_N * !Y)	-0.00289	-0.00302	-0.00298

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4bb_1	**(B * C_N * D_N * !Y)**	-0.00079	-0.00079	-0.00079
	(B * C_N * D_N * !Y)	0.00079	0.00078	0.00078
	(B * !D_N * !Y)	-0.00079	-0.00079	-0.00079
	(B * !D_N * !Y)	0.00079	0.00078	0.00078
	(B * !C_N * D_N * !Y)	-0.00073	-0.00073	-0.00073
	(B * !C_N * D_N * !Y)	0.00085	0.00085	0.00084
	(!B * C_N * !D_N * !Y)	-0.00082	-0.00082	-0.00080
	(!B * C_N * !D_N * !Y)	0.00075	0.00075	0.00074
	(!B * !C_N * D_N * !Y)	-0.00072	-0.00073	-0.00073
	(!B * !C_N * D_N * !Y)	0.00081	0.00082	0.00081
	(!B * !C_N * !D_N * !Y)	-0.00073	-0.00073	-0.00073
	(!B * !C_N * !D_N * !Y)	0.00082	0.00082	0.00081

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00139	-0.00139	-0.00138
	(B * C_N * D_N * !Y)	0.00163	0.00162	0.00161
	(B * !D_N * !Y)	-0.00139	-0.00139	-0.00139
	(B * !D_N * !Y)	0.00162	0.00162	0.00161
	(B * !C_N * D_N * !Y)	-0.00139	-0.00139	-0.00138
	(B * !C_N * D_N * !Y)	0.00163	0.00162	0.00161
	(!B * C_N * !D_N * !Y)	-0.00145	-0.00145	-0.00142
	(!B * C_N * !D_N * !Y)	0.00151	0.00154	0.00152
	(!B * !C_N * D_N * !Y)	-0.00139	-0.00139	-0.00138
	(!B * !C_N * D_N * !Y)	0.00156	0.00157	0.00155
	(!B * !C_N * !D_N * !Y)	-0.00139	-0.00139	-0.00138
	(!B * !C_N * !D_N * !Y)	0.00155	0.00156	0.00155
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00269	-0.00270	-0.00269
	(B * C_N * D_N * !Y)	0.00311	0.00314	0.00312
	(B * !D_N * !Y)	-0.00271	-0.00271	-0.00270
	(B * !D_N * !Y)	0.00312	0.00313	0.00311
	(B * !C_N * D_N * !Y)	-0.00269	-0.00269	-0.00268
	(B * !C_N * D_N * !Y)	0.00313	0.00314	0.00312
	(!B * C_N * !D_N * !Y)	-0.00282	-0.00282	-0.00275
	(!B * C_N * !D_N * !Y)	0.00292	0.00296	0.00292
	(!B * !C_N * D_N * !Y)	-0.00268	-0.00270	-0.00269
	(!B * !C_N * D_N * !Y)	0.00297	0.00302	0.00298
	(!B * !C_N * !D_N * !Y)	-0.00268	-0.00270	-0.00268
	(!B * !C_N * !D_N * !Y)	0.00298	0.00302	0.00298

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4bb_1	**(A * C_N * D_N * !Y)**	0.00085	0.00086	0.00085
	(A * C_N * D_N * !Y)	-0.00050	-0.00050	-0.00050
	(A * C_N * !D_N * !Y)	0.00091	0.00093	0.00093
	(A * C_N * !D_N * !Y)	-0.00056	-0.00057	-0.00056
	(A * !C_N * D_N * !Y)	0.00077	0.00078	0.00076
	(A * !C_N * D_N * !Y)	-0.00066	-0.00066	-0.00065
	(A * !C_N * !D_N * !Y)	0.00076	0.00078	0.00076
	(A * !C_N * !D_N * !Y)	-0.00068	-0.00068	-0.00068
	(!A * C_N * !D_N * !Y)	0.00091	0.00087	0.00086
	(!A * C_N * !D_N * !Y)	-0.00070	-0.00073	-0.00073
	(!A * !C_N * D_N * !Y)	0.00077	0.00076	0.00076
	(!A * !C_N * D_N * !Y)	-0.00085	-0.00086	-0.00086
	(!A * !C_N * !D_N * !Y)	0.00077	0.00076	0.00076
	(!A * !C_N * !D_N * !Y)	-0.00085	-0.00086	-0.00086
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00150	0.00152	0.00150
	(A * C_N * D_N * !Y)	-0.00110	-0.00111	-0.00110
	(A * C_N * !D_N * !Y)	0.00161	0.00167	0.00167
	(A * C_N * !D_N * !Y)	-0.00124	-0.00124	-0.00123
	(A * !C_N * D_N * !Y)	0.00146	0.00148	0.00145
	(A * !C_N * D_N * !Y)	-0.00130	-0.00130	-0.00129
	(A * !C_N * !D_N * !Y)	0.00145	0.00148	0.00145
	(A * !C_N * !D_N * !Y)	-0.00132	-0.00134	-0.00133
	(!A * C_N * !D_N * !Y)	0.00163	0.00156	0.00152
	(!A * C_N * !D_N * !Y)	-0.00153	-0.00159	-0.00158
	(!A * !C_N * D_N * !Y)	0.00148	0.00146	0.00145
	(!A * !C_N * D_N * !Y)	-0.00169	-0.00172	-0.00171
	(!A * !C_N * !D_N * !Y)	0.00146	0.00146	0.00145
	(!A * !C_N * !D_N * !Y)	-0.00170	-0.00172	-0.00171

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00290	0.00294	0.00289
	(A * C_N * D_N * !Y)	-0.00219	-0.00221	-0.00218
	(A * C_N * !D_N * !Y)	0.00319	0.00328	0.00326
	(A * C_N * !D_N * !Y)	-0.00241	-0.00242	-0.00241
	(A * !C_N * D_N * !Y)	0.00279	0.00280	0.00279
	(A * !C_N * D_N * !Y)	-0.00255	-0.00256	-0.00255
	(A * !C_N * !D_N * !Y)	0.00276	0.00279	0.00278
	(A * !C_N * !D_N * !Y)	-0.00265	-0.00266	-0.00265
	(!A * C_N * !D_N * !Y)	0.00321	0.00304	0.00295
	(!A * C_N * !D_N * !Y)	-0.00299	-0.00309	-0.00309
	(!A * !C_N * D_N * !Y)	0.00282	0.00281	0.00278
	(!A * !C_N * D_N * !Y)	-0.00333	-0.00339	-0.00337
	(!A * !C_N * !D_N * !Y)	0.00277	0.00280	0.00278
	(!A * !C_N * !D_N * !Y)	-0.00333	-0.00339	-0.00338

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4bb_1	**(A * C_N * D_N * !Y)**	-0.00084	-0.00085	-0.00084
	(A * C_N * D_N * !Y)	0.00051	0.00051	0.00051
	(A * C_N * !D_N * !Y)	-0.00089	-0.00090	-0.00089
	(A * C_N * !D_N * !Y)	0.00056	0.00057	0.00056
	(A * !C_N * D_N * !Y)	-0.00076	-0.00076	-0.00076
	(A * !C_N * D_N * !Y)	0.00066	0.00066	0.00065
	(A * !C_N * !D_N * !Y)	-0.00076	-0.00076	-0.00076
	(A * !C_N * !D_N * !Y)	0.00068	0.00068	0.00068
	(!A * C_N * !D_N * !Y)	-0.00089	-0.00087	-0.00086
	(!A * C_N * !D_N * !Y)	0.00072	0.00073	0.00073
	(!A * !C_N * D_N * !Y)	-0.00076	-0.00076	-0.00076
	(!A * !C_N * D_N * !Y)	0.00086	0.00086	0.00086
	(!A * !C_N * !D_N * !Y)	-0.00076	-0.00076	-0.00076
	(!A * !C_N * !D_N * !Y)	0.00086	0.00086	0.00086
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00147	-0.00149	-0.00149
	(A * C_N * D_N * !Y)	0.00111	0.00112	0.00112
	(A * C_N * !D_N * !Y)	-0.00158	-0.00159	-0.00158
	(A * C_N * !D_N * !Y)	0.00124	0.00124	0.00123
	(A * !C_N * D_N * !Y)	-0.00145	-0.00146	-0.00145
	(A * !C_N * D_N * !Y)	0.00130	0.00130	0.00129
	(A * !C_N * !D_N * !Y)	-0.00144	-0.00146	-0.00145
	(A * !C_N * !D_N * !Y)	0.00132	0.00134	0.00133
	(!A * C_N * !D_N * !Y)	-0.00159	-0.00156	-0.00152
	(!A * C_N * !D_N * !Y)	0.00157	0.00159	0.00158
	(!A * !C_N * D_N * !Y)	-0.00145	-0.00145	-0.00145
	(!A * !C_N * D_N * !Y)	0.00172	0.00172	0.00171
	(!A * !C_N * !D_N * !Y)	-0.00145	-0.00145	-0.00145
	(!A * !C_N * !D_N * !Y)	0.00172	0.00172	0.00171

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	-0.00285	-0.00287	-0.00288
	(A * C_N * D_N * !Y)	0.00221	0.00223	0.00222
	(A * C_N * !D_N * !Y)	-0.00308	-0.00310	-0.00309
	(A * C_N * !D_N * !Y)	0.00241	0.00242	0.00241
	(A * !C_N * D_N * !Y)	-0.00278	-0.00279	-0.00278
	(A * !C_N * D_N * !Y)	0.00255	0.00256	0.00255
	(A * !C_N * !D_N * !Y)	-0.00276	-0.00278	-0.00277
	(A * !C_N * !D_N * !Y)	0.00265	0.00266	0.00265
	(!A * C_N * !D_N * !Y)	-0.00310	-0.00304	-0.00295
	(!A * C_N * !D_N * !Y)	0.00308	0.00309	0.00309
	(!A * !C_N * D_N * !Y)	-0.00277	-0.00279	-0.00278
	(!A * !C_N * D_N * !Y)	0.00336	0.00339	0.00337
	(!A * !C_N * !D_N * !Y)	-0.00276	-0.00278	-0.00277
	(!A * !C_N * !D_N * !Y)	0.00336	0.00339	0.00338

Passive power(pJ) for C_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4bb_1	**(B * !Y)**	0.00234	0.00220	0.00233
	(B * !Y)	0.00066	0.00051	0.00065
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00240	0.00227	0.00237
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00068	0.00054	0.00065
sky130_fd_sc_hs__nor4bb_2	**(B * !Y)**	0.00270	0.00256	0.00267
	(B * !Y)	0.00089	0.00075	0.00087
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00287	0.00273	0.00279
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00098	0.00082	0.00091
sky130_fd_sc_hs__nor4bb_4	**(B * !Y)**	0.00436	0.00413	0.00434
	(B * !Y)	0.00181	0.00157	0.00180
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00459	0.00435	0.00447
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00187	0.00163	0.00180

Passive power(pJ) for C_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00095	0.00085	0.00120
	(B * !Y)	0.00262	0.00253	0.00288
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00095	0.00085	0.00120
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00263	0.00254	0.00288
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00168	0.00157	0.00183
	(B * !Y)	0.00347	0.00337	0.00362
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00168	0.00157	0.00183
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00348	0.00338	0.00363
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00295	0.00281	0.00336
	(B * !Y)	0.00547	0.00534	0.00587
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00297	0.00283	0.00337
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00549	0.00536	0.00588

Passive power(pJ) for D_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * C_N * !Y)	0.00211	0.00196	0.00207
	(B * C_N * !Y)	0.00058	0.00043	0.00054
	(A * !B * C_N * !Y)	0.00218	0.00204	0.00212
	(A * !B * C_N * !Y)	0.00062	0.00047	0.00057
	(!C_N * !Y)	0.00222	0.00208	0.00221
	(!C_N * !Y)	0.00070	0.00055	0.00068
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00269	0.00255	0.00261
	(B * C_N * !Y)	0.00103	0.00088	0.00095
	(A * !B * C_N * !Y)	0.00290	0.00274	0.00274
	(A * !B * C_N * !Y)	0.00116	0.00100	0.00103
	(!C_N * !Y)	0.00281	0.00266	0.00275
	(!C_N * !Y)	0.00116	0.00101	0.00111
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00421	0.00397	0.00400
	(B * C_N * !Y)	0.00178	0.00154	0.00159
	(A * !B * C_N * !Y)	0.00454	0.00429	0.00421
	(A * !B * C_N * !Y)	0.00199	0.00175	0.00172
	(!C_N * !Y)	0.00436	0.00413	0.00424
	(!C_N * !Y)	0.00198	0.00175	0.00186

Passive power(pJ) for D_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * C_N * !Y)	0.00085	0.00076	0.00112
	(B * C_N * !Y)	0.00237	0.00229	0.00264
	(A * !B * C_N * !Y)	0.00085	0.00076	0.00112
	(A * !B * C_N * !Y)	0.00237	0.00229	0.00264
	(!C_N * !Y)	0.00068	0.00060	0.00096
	(!C_N * !Y)	0.00220	0.00212	0.00248
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00153	0.00143	0.00170
	(B * C_N * !Y)	0.00317	0.00308	0.00334
	(A * !B * C_N * !Y)	0.00153	0.00143	0.00170
	(A * !B * C_N * !Y)	0.00317	0.00308	0.00334
	(!C_N * !Y)	0.00133	0.00123	0.00150
	(!C_N * !Y)	0.00297	0.00288	0.00314
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00353	0.00341	0.00397
	(B * C_N * !Y)	0.00591	0.00579	0.00634
	(A * !B * C_N * !Y)	0.00353	0.00341	0.00397
	(A * !B * C_N * !Y)	0.00592	0.00580	0.00634
	(!C_N * !Y)	0.00316	0.00303	0.00359
	(!C_N * !Y)	0.00553	0.00541	0.00596

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	Y
0	0	x	0	0
0	0	0	1	1
0	x	1	1	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4b_1	11.18880
sky130_fd_sc_hs__nor4b_2	19.18080
sky130_fd_sc_hs__nor4b_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	Y
sky130_fd_sc_hs__nor4b_1	0.00254	0.00264	0.00263	0.00205	0.08906
sky130_fd_sc_hs__nor4b_2	0.00500	0.00507	0.00510	0.00240	0.16566
sky130_fd_sc_hs__nor4b_4	0.00979	0.00985	0.01001	0.00360	0.31918

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4b_1	0.00000	0.02581	0.05587
sky130_fd_sc_hs__nor4b_2	0.00000	0.01969	0.04756
sky130_fd_sc_hs__nor4b_4	0.00000	0.05651	0.13381

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (FR)	0.64790	2.37758	12.56010
	B->Y (FR)	0.61953	2.32764	12.70180
	C->Y (FR)	0.53171	2.22497	12.80090
	D_N->Y (RR)	0.44146	1.93550	8.94379
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.65175	2.14730	12.57820
	B->Y (FR)	0.61260	2.07681	12.67860
	C->Y (FR)	0.52059	1.97027	12.82900
	D_N->Y (RR)	0.36417	1.63461	8.97683
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.62859	1.90857	12.52950
	B->Y (FR)	0.59023	1.84117	12.64330
	C->Y (FR)	0.49424	1.73076	12.80150
	D_N->Y (RR)	0.36796	1.47857	9.40167

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.04004	0.49715	3.53845
	B->Y (RF)	0.04147	0.49421	3.52380
	C->Y (RF)	0.04179	0.48477	3.50577
	D_N->Y (FF)	0.18068	0.76402	3.52518
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.03532	0.44944	3.41616
	B->Y (RF)	0.03647	0.44739	3.41057
	C->Y (RF)	0.03861	0.44324	3.41407
	D_N->Y (FF)	0.21042	0.82260	4.05129
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.03540	0.42670	3.43573
	B->Y (RF)	0.03585	0.42167	3.40909
	C->Y (RF)	0.03613	0.40703	3.34879
	D_N->Y (FF)	0.21218	0.79466	3.80146

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00090	0.00084	0.00082
	A	0.00358	0.00352	0.00352
	B	0.00089	0.00083	0.00081
	B	0.00324	0.00318	0.00317
	C	0.00079	0.00073	0.00071
	C	0.00289	0.00283	0.00281
	D_N	0.00375	0.00358	0.00372
	D_N	0.00262	0.00245	0.00259
sky130_fd_sc_hs__nor4b_2	A	0.00167	0.00155	0.00153
	A	0.00750	0.00739	0.00737
	B	0.00168	0.00156	0.00153
	B	0.00673	0.00660	0.00658
	C	0.00163	0.00149	0.00148
	C	0.00596	0.00583	0.00581
	D_N	0.00569	0.00549	0.00563
	D_N	0.00499	0.00479	0.00494
sky130_fd_sc_hs__nor4b_4	A	0.00327	0.00304	0.00301
	A	0.01476	0.01453	0.01452
	B	0.00328	0.00302	0.00299
	B	0.01321	0.01297	0.01296
	C	0.00315	0.00288	0.00288
	C	0.01171	0.01146	0.01145
	D_N	0.01001	0.00974	0.00997
	D_N	0.00955	0.00927	0.00950

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00380	0.00372	0.00361
	A	0.00122	0.00113	0.00105
	B	0.00320	0.00313	0.00305
	B	0.00090	0.00082	0.00075
	C	0.00257	0.00253	0.00248
	C	0.00049	0.00045	0.00039
	D_N	0.00220	0.00216	0.00249
	D_N	0.00332	0.00327	0.00362
sky130_fd_sc_hs__nor4b_2	A	0.00783	0.00762	0.00733
	A	0.00227	0.00205	0.00184
	B	0.00631	0.00616	0.00597
	B	0.00139	0.00122	0.00107
	C	0.00491	0.00482	0.00470
	C	0.00062	0.00049	0.00039
	D_N	0.00389	0.00387	0.00415
	D_N	0.00459	0.00456	0.00485
sky130_fd_sc_hs__nor4b_4	A	0.01520	0.01481	0.01428
	A	0.00428	0.00384	0.00347
	B	0.01231	0.01200	0.01166
	B	0.00262	0.00226	0.00199
	C	0.00951	0.00926	0.00908
	C	0.00101	0.00073	0.00059
	D_N	0.00777	0.00779	0.00844
	D_N	0.00824	0.00824	0.00890

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4b_1	**(B * C * D_N * !Y)**	0.00070	0.00071	0.00070
	(B * C * D_N * !Y)	-0.00076	-0.00078	-0.00078
	(B * !D_N * !Y)	0.00067	0.00068	0.00067
	(B * !D_N * !Y)	-0.00079	-0.00081	-0.00081
	(B * !C * D_N * !Y)	0.00070	0.00071	0.00070
	(B * !C * D_N * !Y)	-0.00076	-0.00078	-0.00078
	(!B * C * D_N * !Y)	0.00070	0.00071	0.00070
	(!B * C * D_N * !Y)	-0.00071	-0.00075	-0.00074
	(!B * C * !D_N * !Y)	0.00067	0.00068	0.00067
	(!B * C * !D_N * !Y)	-0.00074	-0.00078	-0.00077
	(!B * !C * !D_N * !Y)	0.00067	0.00068	0.00067
	(!B * !C * !D_N * !Y)	-0.00074	-0.00077	-0.00077
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00142	0.00143	0.00141
	(B * C * D_N * !Y)	-0.00159	-0.00164	-0.00163
	(B * !D_N * !Y)	0.00142	0.00143	0.00141
	(B * !D_N * !Y)	-0.00159	-0.00164	-0.00163
	(B * !C * D_N * !Y)	0.00142	0.00143	0.00141
	(B * !C * D_N * !Y)	-0.00158	-0.00164	-0.00163
	(!B * C * D_N * !Y)	0.00142	0.00143	0.00141
	(!B * C * D_N * !Y)	-0.00149	-0.00157	-0.00155
	(!B * C * !D_N * !Y)	0.00141	0.00143	0.00141
	(!B * C * !D_N * !Y)	-0.00149	-0.00157	-0.00155
	(!B * !C * !D_N * !Y)	0.00142	0.00143	0.00142
	(!B * !C * !D_N * !Y)	-0.00148	-0.00155	-0.00154

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00277	0.00279	0.00276
	(B * C * D_N * !Y)	-0.00313	-0.00322	-0.00321
	(B * !D_N * !Y)	0.00277	0.00279	0.00276
	(B * !D_N * !Y)	-0.00313	-0.00322	-0.00321
	(B * !C * D_N * !Y)	0.00277	0.00279	0.00276
	(B * !C * D_N * !Y)	-0.00312	-0.00321	-0.00321
	(!B * C * D_N * !Y)	0.00276	0.00279	0.00276
	(!B * C * D_N * !Y)	-0.00294	-0.00309	-0.00306
	(!B * C * !D_N * !Y)	0.00276	0.00279	0.00276
	(!B * C * !D_N * !Y)	-0.00294	-0.00309	-0.00306
	(!B * !C * !D_N * !Y)	0.00276	0.00278	0.00276
	(!B * !C * !D_N * !Y)	-0.00292	-0.00306	-0.00302

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	**(B * C * D_N * !Y)**	-0.00070	-0.00070	-0.00070
	(B * C * D_N * !Y)	0.00078	0.00078	0.00078
	(B * !D_N * !Y)	-0.00067	-0.00067	-0.00067
	(B * !D_N * !Y)	0.00081	0.00081	0.00081
	(B * !C * D_N * !Y)	-0.00070	-0.00070	-0.00070
	(B * !C * D_N * !Y)	0.00078	0.00078	0.00078
	(!B * C * D_N * !Y)	-0.00070	-0.00070	-0.00070
	(!B * C * D_N * !Y)	0.00075	0.00075	0.00074
	(!B * C * !D_N * !Y)	-0.00067	-0.00067	-0.00067
	(!B * C * !D_N * !Y)	0.00078	0.00078	0.00077
	(!B * !C * !D_N * !Y)	-0.00067	-0.00067	-0.00067
	(!B * !C * !D_N * !Y)	0.00077	0.00077	0.00077

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00141	-0.00141	-0.00141
	(B * C * D_N * !Y)	0.00164	0.00164	0.00163
	(B * !D_N * !Y)	-0.00141	-0.00141	-0.00141
	(B * !D_N * !Y)	0.00164	0.00164	0.00163
	(B * !C * D_N * !Y)	-0.00142	-0.00141	-0.00141
	(B * !C * D_N * !Y)	0.00165	0.00164	0.00163
	(!B * C * D_N * !Y)	-0.00141	-0.00142	-0.00141
	(!B * C * D_N * !Y)	0.00156	0.00157	0.00155
	(!B * C * !D_N * !Y)	-0.00141	-0.00142	-0.00141
	(!B * C * !D_N * !Y)	0.00156	0.00157	0.00155
	(!B * !C * !D_N * !Y)	-0.00141	-0.00142	-0.00141
	(!B * !C * !D_N * !Y)	0.00152	0.00155	0.00154
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00277	-0.00276	-0.00275
	(B * C * D_N * !Y)	0.00324	0.00322	0.00321
	(B * !D_N * !Y)	-0.00276	-0.00276	-0.00275
	(B * !D_N * !Y)	0.00322	0.00322	0.00321
	(B * !C * D_N * !Y)	-0.00277	-0.00275	-0.00275
	(B * !C * D_N * !Y)	0.00324	0.00321	0.00321
	(!B * C * D_N * !Y)	-0.00275	-0.00277	-0.00275
	(!B * C * D_N * !Y)	0.00305	0.00309	0.00306
	(!B * C * !D_N * !Y)	-0.00274	-0.00277	-0.00275
	(!B * C * !D_N * !Y)	0.00304	0.00309	0.00306
	(!B * !C * !D_N * !Y)	-0.00275	-0.00277	-0.00276
	(!B * !C * !D_N * !Y)	0.00302	0.00306	0.00302

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4b_1	**(A * C * D_N * !Y)**	0.00073	0.00074	0.00072
	(A * C * D_N * !Y)	-0.00057	-0.00057	-0.00056
	(A * C * !D_N * !Y)	0.00069	0.00070	0.00069
	(A * C * !D_N * !Y)	-0.00061	-0.00062	-0.00061
	(A * !C * D_N * !Y)	0.00072	0.00073	0.00072
	(A * !C * D_N * !Y)	-0.00050	-0.00051	-0.00050
	(A * !C * !D_N * !Y)	0.00069	0.00070	0.00069
	(A * !C * !D_N * !Y)	-0.00059	-0.00060	-0.00059
	(!A * C * D_N * !Y)	0.00073	0.00072	0.00072
	(!A * C * D_N * !Y)	-0.00075	-0.00077	-0.00077
	(!A * C * !D_N * !Y)	0.00070	0.00069	0.00069
	(!A * C * !D_N * !Y)	-0.00079	-0.00080	-0.00080
	(!A * !C * !D_N * !Y)	0.00069	0.00069	0.00069
	(!A * !C * !D_N * !Y)	-0.00073	-0.00076	-0.00076
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00145	0.00147	0.00145
	(A * C * D_N * !Y)	-0.00123	-0.00123	-0.00122
	(A * C * !D_N * !Y)	0.00145	0.00147	0.00144
	(A * C * !D_N * !Y)	-0.00125	-0.00127	-0.00126
	(A * !C * D_N * !Y)	0.00144	0.00146	0.00144
	(A * !C * D_N * !Y)	-0.00108	-0.00110	-0.00108
	(A * !C * !D_N * !Y)	0.00145	0.00146	0.00145
	(A * !C * !D_N * !Y)	-0.00122	-0.00122	-0.00121
	(!A * C * D_N * !Y)	0.00147	0.00145	0.00144
	(!A * C * D_N * !Y)	-0.00160	-0.00164	-0.00164
	(!A * C * !D_N * !Y)	0.00146	0.00145	0.00144
	(!A * C * !D_N * !Y)	-0.00161	-0.00164	-0.00164
	(!A * !C * !D_N * !Y)	0.00145	0.00145	0.00144
	(!A * !C * !D_N * !Y)	-0.00151	-0.00157	-0.00156

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00283	0.00287	0.00282
	(A * C * D_N * !Y)	-0.00240	-0.00241	-0.00239
	(A * C * !D_N * !Y)	0.00282	0.00286	0.00281
	(A * C * !D_N * !Y)	-0.00246	-0.00249	-0.00246
	(A * !C * D_N * !Y)	0.00281	0.00285	0.00281
	(A * !C * D_N * !Y)	-0.00213	-0.00215	-0.00212
	(A * !C * !D_N * !Y)	0.00282	0.00285	0.00283
	(A * !C * !D_N * !Y)	-0.00236	-0.00241	-0.00237
	(!A * C * D_N * !Y)	0.00287	0.00283	0.00281
	(!A * C * D_N * !Y)	-0.00316	-0.00325	-0.00324
	(!A * C * !D_N * !Y)	0.00282	0.00283	0.00281
	(!A * C * !D_N * !Y)	-0.00317	-0.00325	-0.00324
	(!A * !C * !D_N * !Y)	0.00282	0.00283	0.00281
	(!A * !C * !D_N * !Y)	-0.00297	-0.00310	-0.00307

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4b_1	**(A * C * D_N * !Y)**	-0.00072	-0.00072	-0.00072
	(A * C * D_N * !Y)	0.00057	0.00057	0.00056
	(A * C * !D_N * !Y)	-0.00069	-0.00069	-0.00069
	(A * C * !D_N * !Y)	0.00061	0.00062	0.00061
	(A * !C * D_N * !Y)	-0.00072	-0.00072	-0.00072
	(A * !C * D_N * !Y)	0.00051	0.00051	0.00051
	(A * !C * !D_N * !Y)	-0.00069	-0.00069	-0.00069
	(A * !C * !D_N * !Y)	0.00059	0.00060	0.00059
	(!A * C * D_N * !Y)	-0.00072	-0.00072	-0.00072
	(!A * C * D_N * !Y)	0.00077	0.00077	0.00077
	(!A * C * !D_N * !Y)	-0.00069	-0.00069	-0.00069
	(!A * C * !D_N * !Y)	0.00080	0.00080	0.00080
	(!A * !C * !D_N * !Y)	-0.00069	-0.00069	-0.00069
	(!A * !C * !D_N * !Y)	0.00076	0.00076	0.00076
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00144	-0.00145	-0.00144
	(A * C * D_N * !Y)	0.00123	0.00123	0.00122
	(A * C * !D_N * !Y)	-0.00143	-0.00145	-0.00144
	(A * C * !D_N * !Y)	0.00125	0.00127	0.00126
	(A * !C * D_N * !Y)	-0.00143	-0.00144	-0.00143
	(A * !C * D_N * !Y)	0.00109	0.00111	0.00110
	(A * !C * !D_N * !Y)	-0.00145	-0.00145	-0.00145
	(A * !C * !D_N * !Y)	0.00122	0.00122	0.00121
	(!A * C * D_N * !Y)	-0.00144	-0.00144	-0.00144
	(!A * C * D_N * !Y)	0.00164	0.00164	0.00164
	(!A * C * !D_N * !Y)	-0.00144	-0.00144	-0.00144
	(!A * C * !D_N * !Y)	0.00165	0.00164	0.00164
	(!A * !C * !D_N * !Y)	-0.00144	-0.00145	-0.00144
	(!A * !C * !D_N * !Y)	0.00155	0.00157	0.00156

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00281	-0.00282	-0.00280
	(A * C * D_N * !Y)	0.00240	0.00241	0.00239
	(A * C * !D_N * !Y)	-0.00280	-0.00282	-0.00280
	(A * C * !D_N * !Y)	0.00246	0.00249	0.00246
	(A * !C * D_N * !Y)	-0.00279	-0.00281	-0.00279
	(A * !C * D_N * !Y)	0.00214	0.00217	0.00216
	(A * !C * !D_N * !Y)	-0.00280	-0.00284	-0.00281
	(A * !C * !D_N * !Y)	0.00236	0.00241	0.00237
	(!A * C * D_N * !Y)	-0.00281	-0.00281	-0.00280
	(!A * C * D_N * !Y)	0.00325	0.00325	0.00324
	(!A * C * !D_N * !Y)	-0.00281	-0.00281	-0.00280
	(!A * C * !D_N * !Y)	0.00325	0.00325	0.00324
	(!A * !C * !D_N * !Y)	-0.00280	-0.00283	-0.00281
	(!A * !C * !D_N * !Y)	0.00306	0.00310	0.00307

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(B * D_N * !Y)	0.00082	0.00083	0.00082
	(B * D_N * !Y)	-0.00050	-0.00051	-0.00050
	(B * !D_N * !Y)	0.00069	0.00070	0.00069
	(B * !D_N * !Y)	-0.00069	-0.00069	-0.00069
	(A * !B * D_N * !Y)	0.00082	0.00083	0.00082
	(A * !B * D_N * !Y)	-0.00050	-0.00050	-0.00050
	(A * !B * !D_N * !Y)	0.00070	0.00070	0.00069
	(A * !B * !D_N * !Y)	-0.00070	-0.00071	-0.00070
	(!A * !B * !D_N * !Y)	0.00076	0.00070	0.00069
	(!A * !B * !D_N * !Y)	-0.00084	-0.00090	-0.00090

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00155	0.00158	0.00155
	(B * D_N * !Y)	-0.00102	-0.00103	-0.00102
	(B * !D_N * !Y)	0.00149	0.00150	0.00148
	(B * !D_N * !Y)	-0.00123	-0.00124	-0.00122
	(A * !B * D_N * !Y)	0.00156	0.00158	0.00155
	(A * !B * D_N * !Y)	-0.00102	-0.00103	-0.00102
	(A * !B * !D_N * !Y)	0.00148	0.00149	0.00147
	(A * !B * !D_N * !Y)	-0.00126	-0.00128	-0.00126
	(!A * !B * !D_N * !Y)	0.00156	0.00148	0.00146
	(!A * !B * !D_N * !Y)	-0.00154	-0.00166	-0.00166
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00306	0.00310	0.00305
	(B * D_N * !Y)	-0.00204	-0.00206	-0.00203
	(B * !D_N * !Y)	0.00298	0.00298	0.00299
	(B * !D_N * !Y)	-0.00235	-0.00237	-0.00234
	(A * !B * D_N * !Y)	0.00304	0.00310	0.00305
	(A * !B * D_N * !Y)	-0.00201	-0.00205	-0.00203
	(A * !B * !D_N * !Y)	0.00300	0.00302	0.00298
	(A * !B * !D_N * !Y)	-0.00240	-0.00245	-0.00241
	(!A * !B * !D_N * !Y)	0.00322	0.00300	0.00296
	(!A * !B * !D_N * !Y)	-0.00296	-0.00321	-0.00321

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4b_1	**(B * D_N * !Y)**	-0.00081	-0.00081	-0.00081
	(B * D_N * !Y)	0.00051	0.00052	0.00051
	(B * !D_N * !Y)	-0.00069	-0.00070	-0.00069
	(B * !D_N * !Y)	0.00069	0.00069	0.00069
	(A * !B * D_N * !Y)	-0.00075	-0.00076	-0.00080
	(A * !B * D_N * !Y)	0.00055	0.00054	0.00052
	(A * !B * !D_N * !Y)	-0.00069	-0.00070	-0.00069
	(A * !B * !D_N * !Y)	0.00070	0.00071	0.00070
	(!A * !B * !D_N * !Y)	-0.00069	-0.00069	-0.00069
	(!A * !B * !D_N * !Y)	0.00090	0.00090	0.00090
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00153	-0.00154	-0.00154
	(B * D_N * !Y)	0.00105	0.00105	0.00105
	(B * !D_N * !Y)	-0.00147	-0.00148	-0.00147
	(B * !D_N * !Y)	0.00123	0.00124	0.00122
	(A * !B * D_N * !Y)	-0.00136	-0.00139	-0.00149
	(A * !B * D_N * !Y)	0.00113	0.00113	0.00107
	(A * !B * !D_N * !Y)	-0.00147	-0.00149	-0.00147
	(A * !B * !D_N * !Y)	0.00126	0.00128	0.00126
	(!A * !B * !D_N * !Y)	-0.00146	-0.00147	-0.00146
	(!A * !B * !D_N * !Y)	0.00164	0.00166	0.00166
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00299	-0.00302	-0.00302
	(B * D_N * !Y)	0.00208	0.00210	0.00209
	(B * !D_N * !Y)	-0.00298	-0.00298	-0.00297
	(B * !D_N * !Y)	0.00235	0.00237	0.00234
	(A * !B * D_N * !Y)	-0.00269	-0.00273	-0.00294
	(A * !B * D_N * !Y)	0.00224	0.00224	0.00211
	(A * !B * !D_N * !Y)	-0.00297	-0.00301	-0.00298
	(A * !B * !D_N * !Y)	0.00240	0.00245	0.00241
	(!A * !B * !D_N * !Y)	-0.00296	-0.00297	-0.00295
	(!A * !B * !D_N * !Y)	0.00319	0.00321	0.00321

Passive power(pJ) for D_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00211	0.00199	0.00211
	(C * !Y)	0.00051	0.00037	0.00051
	(B * !C * !Y)	0.00218	0.00205	0.00216
	(B * !C * !Y)	0.00055	0.00041	0.00053
	(A * !B * !C * !Y)	0.00226	0.00212	0.00221
	(A * !B * !C * !Y)	0.00059	0.00045	0.00056
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00276	0.00261	0.00269
	(C * !Y)	0.00094	0.00078	0.00087
	(B * !C * !Y)	0.00291	0.00275	0.00279
	(B * !C * !Y)	0.00102	0.00085	0.00092
	(A * !B * !C * !Y)	0.00311	0.00294	0.00292
	(A * !B * !C * !Y)	0.00114	0.00097	0.00100
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00426	0.00400	0.00412
	(C * !Y)	0.00158	0.00133	0.00144
	(B * !C * !Y)	0.00455	0.00429	0.00431
	(B * !C * !Y)	0.00174	0.00149	0.00153
	(A * !B * !C * !Y)	0.00493	0.00466	0.00455
	(A * !B * !C * !Y)	0.00198	0.00170	0.00168

Passive power(pJ) for D_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00071	0.00064	0.00100
	(C * !Y)	0.00232	0.00224	0.00260
	(B * !C * !Y)	0.00071	0.00064	0.00100
	(B * !C * !Y)	0.00232	0.00224	0.00260
	(A * !B * !C * !Y)	0.00071	0.00064	0.00100
	(A * !B * !C * !Y)	0.00232	0.00224	0.00260
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00141	0.00130	0.00157
	(C * !Y)	0.00322	0.00312	0.00338
	(B * !C * !Y)	0.00141	0.00130	0.00157
	(B * !C * !Y)	0.00322	0.00313	0.00338
	(A * !B * !C * !Y)	0.00141	0.00130	0.00157
	(A * !B * !C * !Y)	0.00322	0.00313	0.00338
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00290	0.00275	0.00332
	(C * !Y)	0.00557	0.00541	0.00599
	(B * !C * !Y)	0.00290	0.00275	0.00332
	(B * !C * !Y)	0.00557	0.00542	0.00599
	(A * !B * !C * !Y)	0.00290	0.00275	0.00332
	(A * !B * !C * !Y)	0.00558	0.00542	0.00599

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D	Y
0	0	0	0	1
0	0	x	1	0
0	x	1	x	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4_1	9.59040
sky130_fd_sc_hs__nor4_2	14.38560
sky130_fd_sc_hs__nor4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nor4_1	0.00248	0.00264	0.00264	0.00268	0.08929
sky130_fd_sc_hs__nor4_2	0.00381	0.00442	0.00438	0.00408	0.17204
sky130_fd_sc_hs__nor4_4	0.00752	0.00789	0.00768	0.00784	0.32225

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	0.00258	0.01104
sky130_fd_sc_hs__nor4_2	0.00000	0.00446	0.02167
sky130_fd_sc_hs__nor4_4	0.00000	0.00892	0.04335

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (FR)	0.63556	2.36364	12.54160
	B->Y (FR)	0.61127	2.31770	12.67880
	C->Y (FR)	0.52298	2.21348	12.78850
	D->Y (FR)	0.37628	2.00619	12.07640
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.51393	2.00743	12.54000
	B->Y (FR)	0.48050	1.95032	12.65080
	C->Y (FR)	0.37443	1.82416	12.74220
	D->Y (FR)	0.20065	1.58776	11.99390
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.55448	1.83542	12.43490
	B->Y (FR)	0.52029	1.77296	12.56640
	C->Y (FR)	0.42253	1.66038	12.69790
	D->Y (FR)	0.23929	1.42078	11.97300

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.03867	0.49024	3.50278
	B->Y (RF)	0.04095	0.49383	3.52654
	C->Y (RF)	0.04185	0.48518	3.51243
	D->Y (RF)	0.03885	0.47296	3.48037
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.04582	0.57796	4.47406
	B->Y (RF)	0.05028	0.58119	4.51105
	C->Y (RF)	0.05156	0.56689	4.48139
	D->Y (RF)	0.04365	0.53741	4.38876
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.04760	0.53887	4.37859
	B->Y (RF)	0.05012	0.53434	4.37423
	C->Y (RF)	0.05196	0.52544	4.38589
	D->Y (RF)	0.04436	0.50065	4.34577

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00024	0.00018	0.00017
	A	0.00357	0.00351	0.00350
	B	0.00030	0.00024	0.00022
	B	0.00327	0.00320	0.00319
	C	0.00029	0.00023	0.00021
	C	0.00289	0.00283	0.00281
	D	0.00026	0.00018	0.00022
	D	0.00256	0.00248	0.00252
sky130_fd_sc_hs__nor4_2	A	0.00027	0.00022	0.00021
	A	0.00579	0.00574	0.00574
	B	0.00011	0.00005	0.00004
	B	0.00522	0.00515	0.00515
	C	0.00024	0.00017	0.00015
	C	0.00444	0.00435	0.00434
	D	0.00011	0.00004	0.00010
	D	0.00353	0.00341	0.00352
sky130_fd_sc_hs__nor4_4	A	0.00194	0.00183	0.00180
	A	0.01325	0.01312	0.01315
	B	0.00199	0.00185	0.00183
	B	0.01185	0.01169	0.01170
	C	0.00203	0.00188	0.00186
	C	0.01026	0.01011	0.01011
	D	0.00194	0.00172	0.00185
	D	0.00866	0.00846	0.00859

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00436	0.00427	0.00416
	A	0.00116	0.00107	0.00098
	B	0.00372	0.00366	0.00356
	B	0.00084	0.00076	0.00069
	C	0.00299	0.00295	0.00289
	C	0.00043	0.00039	0.00033
	D	0.00222	0.00221	0.00219
	D	-0.00006	-0.00009	-0.00011
sky130_fd_sc_hs__nor4_2	A	0.00737	0.00718	0.00695
	A	0.00217	0.00198	0.00180
	B	0.00633	0.00617	0.00598
	B	0.00142	0.00126	0.00110
	C	0.00457	0.00447	0.00436
	C	0.00045	0.00034	0.00025
	D	0.00287	0.00285	0.00284
	D	-0.00054	-0.00056	-0.00058
sky130_fd_sc_hs__nor4_4	A	0.01493	0.01453	0.01405
	A	0.00429	0.00389	0.00353
	B	0.01209	0.01177	0.01141
	B	0.00258	0.00224	0.00197
	C	0.00910	0.00887	0.00868
	C	0.00103	0.00077	0.00061
	D	0.00564	0.00551	0.00554
	D	-0.00108	-0.00123	-0.00119

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00072	0.00073	0.00072
	(B * D * !Y)	-0.00079	-0.00080	-0.00080
	(B * C * !D * !Y)	0.00072	0.00073	0.00072
	(B * C * !D * !Y)	-0.00079	-0.00080	-0.00080
	(B * !C * !D * !Y)	0.00072	0.00073	0.00072
	(B * !C * !D * !Y)	-0.00078	-0.00080	-0.00080
	(!B * C * D * !Y)	0.00072	0.00073	0.00072
	(!B * C * D * !Y)	-0.00074	-0.00077	-0.00077
	(!B * C * !D * !Y)	0.00072	0.00073	0.00072
	(!B * C * !D * !Y)	-0.00074	-0.00077	-0.00077
	(!B * !C * D * !Y)	0.00072	0.00073	0.00072
	(!B * !C * D * !Y)	-0.00073	-0.00076	-0.00075
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00073	0.00073	0.00072
	(B * D * !Y)	-0.00152	-0.00156	-0.00156
	(B * C * !D * !Y)	0.00073	0.00073	0.00072
	(B * C * !D * !Y)	-0.00152	-0.00156	-0.00155
	(B * !C * !D * !Y)	0.00073	0.00073	0.00072
	(B * !C * !D * !Y)	-0.00151	-0.00155	-0.00155
	(!B * C * D * !Y)	0.00073	0.00073	0.00072
	(!B * C * D * !Y)	-0.00141	-0.00149	-0.00147
	(!B * C * !D * !Y)	0.00073	0.00073	0.00072
	(!B * C * !D * !Y)	-0.00141	-0.00149	-0.00147
	(!B * !C * D * !Y)	0.00073	0.00073	0.00072
	(!B * !C * D * !Y)	-0.00139	-0.00146	-0.00145

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00151	0.00152	0.00151
	(B * D * !Y)	-0.00310	-0.00319	-0.00318
	(B * C * !D * !Y)	0.00151	0.00152	0.00151
	(B * C * !D * !Y)	-0.00310	-0.00319	-0.00318
	(B * !C * !D * !Y)	0.00151	0.00152	0.00151
	(B * !C * !D * !Y)	-0.00309	-0.00318	-0.00318
	(!B * C * D * !Y)	0.00151	0.00152	0.00151
	(!B * C * D * !Y)	-0.00291	-0.00306	-0.00303
	(!B * C * !D * !Y)	0.00151	0.00152	0.00151
	(!B * C * !D * !Y)	-0.00291	-0.00306	-0.00303
	(!B * !C * D * !Y)	0.00152	0.00152	0.00151
	(!B * !C * D * !Y)	-0.00287	-0.00301	-0.00298

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00072	-0.00072	-0.00072
	(B * D * !Y)	0.00081	0.00080	0.00080
	(B * C * !D * !Y)	-0.00072	-0.00072	-0.00072
	(B * C * !D * !Y)	0.00081	0.00080	0.00080
	(B * !C * !D * !Y)	-0.00072	-0.00072	-0.00072
	(B * !C * !D * !Y)	0.00081	0.00080	0.00080
	(!B * C * D * !Y)	-0.00072	-0.00073	-0.00072
	(!B * C * D * !Y)	0.00077	0.00077	0.00077
	(!B * C * !D * !Y)	-0.00072	-0.00073	-0.00072
	(!B * C * !D * !Y)	0.00077	0.00077	0.00077
	(!B * !C * D * !Y)	-0.00072	-0.00073	-0.00072
	(!B * !C * D * !Y)	0.00076	0.00076	0.00075

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00072	-0.00072	-0.00072
	(B * D * !Y)	0.00156	0.00156	0.00156
	(B * C * !D * !Y)	-0.00072	-0.00072	-0.00072
	(B * C * !D * !Y)	0.00156	0.00156	0.00155
	(B * !C * !D * !Y)	-0.00072	-0.00072	-0.00072
	(B * !C * !D * !Y)	0.00156	0.00155	0.00155
	(!B * C * D * !Y)	-0.00072	-0.00073	-0.00072
	(!B * C * D * !Y)	0.00148	0.00149	0.00147
	(!B * C * !D * !Y)	-0.00072	-0.00073	-0.00072
	(!B * C * !D * !Y)	0.00148	0.00149	0.00147
	(!B * !C * D * !Y)	-0.00072	-0.00072	-0.00072
	(!B * !C * D * !Y)	0.00145	0.00146	0.00145
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00150	-0.00150	-0.00150
	(B * D * !Y)	0.00319	0.00319	0.00318
	(B * C * !D * !Y)	-0.00151	-0.00150	-0.00150
	(B * C * !D * !Y)	0.00321	0.00319	0.00318
	(B * !C * !D * !Y)	-0.00151	-0.00150	-0.00150
	(B * !C * !D * !Y)	0.00321	0.00318	0.00318
	(!B * C * D * !Y)	-0.00151	-0.00151	-0.00150
	(!B * C * D * !Y)	0.00304	0.00306	0.00303
	(!B * C * !D * !Y)	-0.00151	-0.00151	-0.00150
	(!B * C * !D * !Y)	0.00304	0.00306	0.00303
	(!B * !C * D * !Y)	-0.00151	-0.00152	-0.00151
	(!B * !C * D * !Y)	0.00299	0.00301	0.00298

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4_1	**(A * C * D * !Y)**	0.00069	0.00071	0.00069
	(A * C * D * !Y)	-0.00061	-0.00062	-0.00062
	(A * C * !D * !Y)	0.00069	0.00071	0.00069
	(A * C * !D * !Y)	-0.00060	-0.00060	-0.00060
	(A * !C * D * !Y)	0.00069	0.00070	0.00069
	(A * !C * D * !Y)	-0.00059	-0.00060	-0.00059
	(A * !C * !D * !Y)	0.00069	0.00070	0.00069
	(A * !C * !D * !Y)	-0.00053	-0.00054	-0.00053
	(!A * C * D * !Y)	0.00070	0.00070	0.00069
	(!A * C * D * !Y)	-0.00079	-0.00080	-0.00080
	(!A * C * !D * !Y)	0.00070	0.00070	0.00069
	(!A * C * !D * !Y)	-0.00078	-0.00080	-0.00080
	(!A * !C * D * !Y)	0.00070	0.00069	0.00069
	(!A * !C * D * !Y)	-0.00073	-0.00076	-0.00076
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00093	0.00094	0.00092
	(A * C * D * !Y)	-0.00126	-0.00127	-0.00125
	(A * C * !D * !Y)	0.00093	0.00094	0.00092
	(A * C * !D * !Y)	-0.00121	-0.00122	-0.00121
	(A * !C * D * !Y)	0.00091	0.00092	0.00092
	(A * !C * D * !Y)	-0.00119	-0.00121	-0.00119
	(A * !C * !D * !Y)	0.00092	0.00093	0.00092
	(A * !C * !D * !Y)	-0.00109	-0.00110	-0.00109
	(!A * C * D * !Y)	0.00093	0.00092	0.00091
	(!A * C * D * !Y)	-0.00158	-0.00163	-0.00162
	(!A * C * !D * !Y)	0.00093	0.00092	0.00091
	(!A * C * !D * !Y)	-0.00158	-0.00163	-0.00162
	(!A * !C * D * !Y)	0.00092	0.00091	0.00091
	(!A * !C * D * !Y)	-0.00147	-0.00154	-0.00153

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00156	0.00159	0.00156
	(A * C * D * !Y)	-0.00251	-0.00252	-0.00249
	(A * C * !D * !Y)	0.00156	0.00159	0.00156
	(A * C * !D * !Y)	-0.00243	-0.00244	-0.00242
	(A * !C * D * !Y)	0.00157	0.00158	0.00157
	(A * !C * D * !Y)	-0.00239	-0.00242	-0.00238
	(A * !C * !D * !Y)	0.00158	0.00158	0.00156
	(A * !C * !D * !Y)	-0.00220	-0.00219	-0.00216
	(!A * C * D * !Y)	0.00158	0.00157	0.00156
	(!A * C * D * !Y)	-0.00322	-0.00329	-0.00328
	(!A * C * !D * !Y)	0.00158	0.00157	0.00156
	(!A * C * !D * !Y)	-0.00320	-0.00329	-0.00328
	(!A * !C * D * !Y)	0.00157	0.00157	0.00156
	(!A * !C * D * !Y)	-0.00297	-0.00311	-0.00309

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4_1	**(A * C * D * !Y)**	-0.00069	-0.00070	-0.00069
	(A * C * D * !Y)	0.00061	0.00062	0.00062
	(A * C * !D * !Y)	-0.00069	-0.00070	-0.00069
	(A * C * !D * !Y)	0.00060	0.00060	0.00060
	(A * !C * D * !Y)	-0.00069	-0.00070	-0.00069
	(A * !C * D * !Y)	0.00059	0.00060	0.00059
	(A * !C * !D * !Y)	-0.00069	-0.00070	-0.00069
	(A * !C * !D * !Y)	0.00054	0.00054	0.00054
	(!A * C * D * !Y)	-0.00069	-0.00069	-0.00069
	(!A * C * D * !Y)	0.00080	0.00080	0.00080
	(!A * C * !D * !Y)	-0.00069	-0.00069	-0.00069
	(!A * C * !D * !Y)	0.00080	0.00080	0.00080
	(!A * !C * D * !Y)	-0.00069	-0.00069	-0.00069
	(!A * !C * D * !Y)	0.00076	0.00076	0.00076
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00092	-0.00093	-0.00092
	(A * C * D * !Y)	0.00126	0.00127	0.00125
	(A * C * !D * !Y)	-0.00092	-0.00092	-0.00092
	(A * C * !D * !Y)	0.00121	0.00122	0.00121
	(A * !C * D * !Y)	-0.00091	-0.00092	-0.00091
	(A * !C * D * !Y)	0.00119	0.00121	0.00119
	(A * !C * !D * !Y)	-0.00092	-0.00092	-0.00091
	(A * !C * !D * !Y)	0.00111	0.00111	0.00110
	(!A * C * D * !Y)	-0.00092	-0.00092	-0.00091
	(!A * C * D * !Y)	0.00163	0.00163	0.00162
	(!A * C * !D * !Y)	-0.00092	-0.00092	-0.00091
	(!A * C * !D * !Y)	0.00163	0.00163	0.00162
	(!A * !C * D * !Y)	-0.00091	-0.00091	-0.00091
	(!A * !C * D * !Y)	0.00154	0.00154	0.00153

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	-0.00156	-0.00157	-0.00156
	(A * C * D * !Y)	0.00251	0.00252	0.00249
	(A * C * !D * !Y)	-0.00156	-0.00157	-0.00156
	(A * C * !D * !Y)	0.00243	0.00244	0.00242
	(A * !C * D * !Y)	-0.00157	-0.00158	-0.00156
	(A * !C * D * !Y)	0.00239	0.00242	0.00238
	(A * !C * !D * !Y)	-0.00156	-0.00156	-0.00155
	(A * !C * !D * !Y)	0.00220	0.00221	0.00220
	(!A * C * D * !Y)	-0.00156	-0.00156	-0.00156
	(!A * C * D * !Y)	0.00329	0.00329	0.00328
	(!A * C * !D * !Y)	-0.00156	-0.00156	-0.00156
	(!A * C * !D * !Y)	0.00329	0.00329	0.00328
	(!A * !C * D * !Y)	-0.00156	-0.00157	-0.00156
	(!A * !C * D * !Y)	0.00310	0.00311	0.00309

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00071	0.00072	0.00070
	(B * D * !Y)	-0.00056	-0.00057	-0.00056
	(B * !D * !Y)	0.00070	0.00072	0.00070
	(B * !D * !Y)	-0.00050	-0.00051	-0.00051
	(A * !B * D * !Y)	0.00071	0.00071	0.00070
	(A * !B * D * !Y)	-0.00057	-0.00059	-0.00058
	(A * !B * !D * !Y)	0.00071	0.00072	0.00070
	(A * !B * !D * !Y)	-0.00050	-0.00051	-0.00050
	(!A * !B * D * !Y)	0.00078	0.00071	0.00070
	(!A * !B * D * !Y)	-0.00070	-0.00078	-0.00078

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00092	0.00093	0.00091
	(B * D * !Y)	-0.00115	-0.00116	-0.00115
	(B * !D * !Y)	0.00091	0.00092	0.00090
	(B * !D * !Y)	-0.00103	-0.00104	-0.00103
	(A * !B * D * !Y)	0.00092	0.00091	0.00090
	(A * !B * D * !Y)	-0.00117	-0.00119	-0.00117
	(A * !B * !D * !Y)	0.00091	0.00092	0.00090
	(A * !B * !D * !Y)	-0.00103	-0.00104	-0.00102
	(!A * !B * D * !Y)	0.00102	0.00091	0.00090
	(!A * !B * D * !Y)	-0.00143	-0.00159	-0.00159
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00152	0.00154	0.00151
	(B * D * !Y)	-0.00231	-0.00233	-0.00230
	(B * !D * !Y)	0.00150	0.00152	0.00150
	(B * !D * !Y)	-0.00209	-0.00212	-0.00210
	(A * !B * D * !Y)	0.00154	0.00152	0.00150
	(A * !B * D * !Y)	-0.00234	-0.00240	-0.00236
	(A * !B * !D * !Y)	0.00150	0.00153	0.00150
	(A * !B * !D * !Y)	-0.00208	-0.00211	-0.00209
	(!A * !B * D * !Y)	0.00176	0.00152	0.00149
	(!A * !B * D * !Y)	-0.00286	-0.00319	-0.00320

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00070	-0.00071	-0.00070
	(B * D * !Y)	0.00056	0.00057	0.00056
	(B * !D * !Y)	-0.00070	-0.00070	-0.00069
	(B * !D * !Y)	0.00052	0.00052	0.00052
	(A * !B * D * !Y)	-0.00070	-0.00071	-0.00070
	(A * !B * D * !Y)	0.00057	0.00059	0.00058
	(A * !B * !D * !Y)	-0.00064	-0.00065	-0.00068
	(A * !B * !D * !Y)	0.00055	0.00055	0.00052
	(!A * !B * D * !Y)	-0.00070	-0.00070	-0.00070
	(!A * !B * D * !Y)	0.00078	0.00078	0.00078
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00091	-0.00091	-0.00091
	(B * D * !Y)	0.00115	0.00116	0.00115
	(B * !D * !Y)	-0.00088	-0.00088	-0.00087
	(B * !D * !Y)	0.00107	0.00107	0.00107
	(A * !B * D * !Y)	-0.00090	-0.00091	-0.00090
	(A * !B * D * !Y)	0.00117	0.00119	0.00117
	(A * !B * !D * !Y)	-0.00074	-0.00077	-0.00086
	(A * !B * !D * !Y)	0.00113	0.00113	0.00106
	(!A * !B * D * !Y)	-0.00089	-0.00089	-0.00089
	(!A * !B * D * !Y)	0.00159	0.00159	0.00159
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00150	-0.00151	-0.00150
	(B * D * !Y)	0.00231	0.00233	0.00230
	(B * !D * !Y)	-0.00148	-0.00149	-0.00148
	(B * !D * !Y)	0.00215	0.00216	0.00215
	(A * !B * D * !Y)	-0.00149	-0.00152	-0.00150
	(A * !B * D * !Y)	0.00234	0.00240	0.00236
	(A * !B * !D * !Y)	-0.00126	-0.00128	-0.00140
	(A * !B * !D * !Y)	0.00226	0.00225	0.00217
	(!A * !B * D * !Y)	-0.00149	-0.00149	-0.00148
	(!A * !B * D * !Y)	0.00319	0.00319	0.00320

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00082	0.00083	0.00082
	(C * !Y)	-0.00046	-0.00047	-0.00046
	(B * !C * !Y)	0.00082	0.00083	0.00082
	(B * !C * !Y)	-0.00046	-0.00047	-0.00046
	(A * !B * !C * !Y)	0.00082	0.00083	0.00082
	(A * !B * !C * !Y)	-0.00046	-0.00047	-0.00046
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00101	0.00101	0.00101
	(C * !Y)	-0.00092	-0.00092	-0.00091
	(B * !C * !Y)	0.00101	0.00101	0.00101
	(B * !C * !Y)	-0.00091	-0.00091	-0.00091
	(A * !B * !C * !Y)	0.00100	0.00101	0.00101
	(A * !B * !C * !Y)	-0.00091	-0.00091	-0.00091
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00190	0.00192	0.00189
	(C * !Y)	-0.00183	-0.00185	-0.00182
	(B * !C * !Y)	0.00190	0.00192	0.00189
	(B * !C * !Y)	-0.00183	-0.00184	-0.00182
	(A * !B * !C * !Y)	0.00189	0.00192	0.00189
	(A * !B * !C * !Y)	-0.00183	-0.00185	-0.00182

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00077	-0.00078	-0.00081
	(C * !Y)	0.00050	0.00051	0.00047
	(B * !C * !Y)	-0.00071	-0.00072	-0.00080
	(B * !C * !Y)	0.00055	0.00055	0.00048
	(A * !B * !C * !Y)	-0.00063	-0.00064	-0.00078
	(A * !B * !C * !Y)	0.00059	0.00059	0.00050
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00091	-0.00092	-0.00099
	(C * !Y)	0.00100	0.00100	0.00094
	(B * !C * !Y)	-0.00074	-0.00076	-0.00096
	(B * !C * !Y)	0.00110	0.00110	0.00096
	(A * !B * !C * !Y)	-0.00057	-0.00059	-0.00090
	(A * !B * !C * !Y)	0.00121	0.00120	0.00099
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00167	-0.00169	-0.00186
	(C * !Y)	0.00203	0.00203	0.00188
	(B * !C * !Y)	-0.00140	-0.00142	-0.00180
	(B * !C * !Y)	0.00220	0.00219	0.00191
	(A * !B * !C * !Y)	-0.00101	-0.00105	-0.00168
	(A * !B * !C * !Y)	0.00243	0.00243	0.00198

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	C1	D1	Y
0	0	x	x	x	1
x	1	0	x	x	1
x	1	1	0	x	1
x	1	1	1	0	1
x	1	1	1	1	0
1	x	0	x	x	1
1	x	1	0	x	1
1	x	1	1	0	1
1	x	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111ai_1	11.18880
sky130_fd_sc_hs__o2111ai_2	19.18080
sky130_fd_sc_hs__o2111ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__o2111ai_1	0.00249	0.00262	0.00253	0.00271	0.00264	0.19478
sky130_fd_sc_hs__o2111ai_2	0.00480	0.00488	0.00507	0.00494	0.00492	0.36984
sky130_fd_sc_hs__o2111ai_4	0.00959	0.00976	0.00745	0.00753	0.00747	0.67997

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	0.00471	0.04335
sky130_fd_sc_hs__o2111ai_2	0.00000	0.00942	0.08669
sky130_fd_sc_hs__o2111ai_4	0.00000	0.01275	0.10837

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (FR)	0.39154	1.83814	12.92500
	A2->Y (FR)	0.35986	1.75413	12.54330
	B1->Y (FR)	0.13812	1.07978	8.83221
	C1->Y (FR)	0.12286	1.06582	8.81887
	D1->Y (FR)	0.10366	1.04161	8.79522
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.38263	1.64624	12.90900
	A2->Y (FR)	0.33398	1.53949	12.53510
	B1->Y (FR)	0.12678	0.98199	8.74380
	C1->Y (FR)	0.10989	0.96473	8.71869
	D1->Y (FR)	0.08432	0.93710	8.68131
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.38099	1.49049	12.83350
	A2->Y (FR)	0.32624	1.38057	12.45970
	B1->Y (FR)	0.21715	1.21545	11.53030
	C1->Y (FR)	0.17278	1.15048	11.19130
	D1->Y (FR)	0.13005	1.12602	11.42680

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.14618	0.83734	6.06598
	A2->Y (RF)	0.12800	0.80856	5.98488
	B1->Y (RF)	0.13665	0.85238	6.44602
	C1->Y (RF)	0.12413	0.87136	6.80117
	D1->Y (RF)	0.10456	0.85850	6.87141
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.15400	0.78834	6.22096
	A2->Y (RF)	0.13054	0.75429	6.13611
	B1->Y (RF)	0.14361	0.80053	6.59751
	C1->Y (RF)	0.12794	0.83113	7.11034
	D1->Y (RF)	0.09768	0.80739	7.17605
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.14377	0.70034	6.02630
	A2->Y (RF)	0.12870	0.68334	6.08988
	B1->Y (RF)	0.11234	0.69740	6.56552
	C1->Y (RF)	0.09723	0.72329	7.05003
	D1->Y (RF)	0.06690	0.70454	7.17296

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00108	0.00101	0.00098
	A1	0.00479	0.00472	0.00463
	A2	0.00110	0.00101	0.00100
	A2	0.00443	0.00435	0.00433
	B1	0.00061	0.00052	0.00052
	B1	0.00380	0.00365	0.00369
	C1	0.00032	0.00023	0.00023
	C1	0.00318	0.00308	0.00309
	D1	0.00009	0.00001	0.00001
	D1	0.00255	0.00240	0.00249
sky130_fd_sc_hs__o2111ai_2	A1	0.00169	0.00154	0.00148
	A1	0.00914	0.00900	0.00858
	A2	0.00171	0.00152	0.00152
	A2	0.00834	0.00814	0.00812
	B1	0.00074	0.00055	0.00056
	B1	0.00731	0.00708	0.00711
	C1	0.00028	0.00006	0.00008
	C1	0.00595	0.00572	0.00577
	D1	-0.00063	-0.00076	-0.00070
	D1	0.00424	0.00410	0.00422

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00301	0.00268	0.00259
	A1	0.01756	0.01726	0.01706
	A2	0.00295	0.00258	0.00260
	A2	0.01607	0.01567	0.01564
	B1	0.00140	0.00095	0.00097
	B1	0.01246	0.01203	0.01208
	C1	0.00040	-0.00007	0.00000
	C1	0.00993	0.00948	0.00959
	D1	-0.00110	-0.00140	-0.00127
	D1	0.00673	0.00644	0.00664

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.00494	0.00489	0.00492
	A1	0.00106	0.00100	0.00098
	A2	0.00420	0.00417	0.00433
	A2	0.00068	0.00065	0.00063
	B1	0.00435	0.00431	0.00427
	B1	0.00111	0.00105	0.00103
	C1	0.00398	0.00392	0.00402
	C1	0.00110	0.00105	0.00103
	D1	0.00352	0.00345	0.00350
	D1	0.00109	0.00102	0.00100

sky130_fd_sc_hs__o2111ai_2	**A1**	0.01012	0.01000	0.00992
	A1	0.00234	0.00220	0.00215
	A2	0.00827	0.00820	0.00819
	A2	0.00124	0.00118	0.00117
	B1	0.00902	0.00892	0.00908
	B1	0.00234	0.00223	0.00217
	C1	0.00808	0.00797	0.00790
	C1	0.00237	0.00226	0.00222
	D1	0.00712	0.00698	0.00700
	D1	0.00233	0.00220	0.00217
sky130_fd_sc_hs__o2111ai_4	**A1**	0.01925	0.01897	0.01893
	A1	0.00404	0.00372	0.00364
	A2	0.01562	0.01546	0.01551
	A2	0.00172	0.00153	0.00159
	B1	0.01648	0.01643	0.01645
	B1	0.00510	0.00499	0.00492
	C1	0.01475	0.01465	0.01457
	C1	0.00515	0.00504	0.00498
	D1	0.01282	0.01267	0.01261
	D1	0.00511	0.00497	0.00493

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * C1 * D1 * !Y)**	0.00077	0.00073	0.00073
	(A2 * B1 * C1 * D1 * !Y)	-0.00074	-0.00081	-0.00081
	(A2 * B1 * C1 * !D1 * Y)	0.00072	0.00073	0.00072
	(A2 * B1 * C1 * !D1 * Y)	-0.00079	-0.00081	-0.00080
	(A2 * B1 * !C1 * Y)	0.00072	0.00073	0.00072
	(A2 * B1 * !C1 * Y)	-0.00079	-0.00081	-0.00080
	(A2 * !B1 * Y)	0.00072	0.00073	0.00072
	(A2 * !B1 * Y)	-0.00079	-0.00081	-0.00080
	(!A2 * B1 * C1 * !D1 * Y)	0.00065	0.00065	0.00065
	(!A2 * B1 * C1 * !D1 * Y)	-0.00082	-0.00082	-0.00082
	(!A2 * B1 * !C1 * D1 * Y)	0.00065	0.00066	0.00066
	(!A2 * B1 * !C1 * D1 * Y)	-0.00082	-0.00082	-0.00082
	(!A2 * B1 * !C1 * !D1 * Y)	0.00065	0.00066	0.00066
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00082	-0.00082	-0.00082
	(!A2 * !B1 * C1 * D1 * Y)	0.00067	0.00067	0.00067
	(!A2 * !B1 * C1 * D1 * Y)	-0.00082	-0.00082	-0.00082
	(!A2 * !B1 * !D1 * Y)	0.00067	0.00067	0.00067
	(!A2 * !B1 * !D1 * Y)	-0.00082	-0.00082	-0.00082
	(!A2 * !B1 * !C1 * D1 * Y)	0.00067	0.00067	0.00067
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00082	-0.00082	-0.00082

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00149	0.00142	0.00140
	(A2 * B1 * C1 * D1 * !Y)	-0.00151	-0.00162	-0.00162
	(A2 * B1 * C1 * !D1 * Y)	0.00140	0.00141	0.00140
	(A2 * B1 * C1 * !D1 * Y)	-0.00159	-0.00163	-0.00162
	(A2 * B1 * !C1 * Y)	0.00140	0.00141	0.00140
	(A2 * B1 * !C1 * Y)	-0.00159	-0.00163	-0.00162
	(A2 * !B1 * Y)	0.00140	0.00141	0.00140
	(A2 * !B1 * Y)	-0.00159	-0.00163	-0.00162
	(!A2 * B1 * C1 * !D1 * Y)	0.00124	0.00125	0.00124
	(!A2 * B1 * C1 * !D1 * Y)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * !C1 * D1 * Y)	0.00125	0.00126	0.00126
	(!A2 * B1 * !C1 * D1 * Y)	-0.00166	-0.00166	-0.00166
	(!A2 * B1 * !C1 * !D1 * Y)	0.00125	0.00126	0.00126
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00166	-0.00166	-0.00166
	(!A2 * !B1 * C1 * D1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * C1 * D1 * Y)	-0.00166	-0.00167	-0.00166
	(!A2 * !B1 * !D1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * !D1 * Y)	-0.00166	-0.00167	-0.00166
	(!A2 * !B1 * !C1 * D1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00166	-0.00167	-0.00166

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00299	0.00289	0.00285
	(A2 * B1 * C1 * D1 * !Y)	-0.00295	-0.00313	-0.00312
	(A2 * B1 * C1 * !D1 * Y)	0.00274	0.00276	0.00273
	(A2 * B1 * C1 * !D1 * Y)	-0.00320	-0.00326	-0.00325
	(A2 * B1 * !C1 * Y)	0.00274	0.00276	0.00273
	(A2 * B1 * !C1 * Y)	-0.00320	-0.00326	-0.00325
	(A2 * !B1 * Y)	0.00274	0.00276	0.00273
	(A2 * !B1 * Y)	-0.00320	-0.00326	-0.00325
	(!A2 * B1 * C1 * !D1 * Y)	0.00242	0.00244	0.00242
	(!A2 * B1 * C1 * !D1 * Y)	-0.00331	-0.00333	-0.00331
	(!A2 * B1 * !C1 * D1 * Y)	0.00245	0.00246	0.00245
	(!A2 * B1 * !C1 * D1 * Y)	-0.00331	-0.00332	-0.00331
	(!A2 * B1 * !C1 * !D1 * Y)	0.00245	0.00246	0.00245
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00331	-0.00330	-0.00331
	(!A2 * !B1 * C1 * D1 * Y)	0.00251	0.00253	0.00250
	(!A2 * !B1 * C1 * D1 * Y)	-0.00331	-0.00333	-0.00331
	(!A2 * !B1 * !D1 * Y)	0.00251	0.00252	0.00250
	(!A2 * !B1 * !D1 * Y)	-0.00331	-0.00333	-0.00331
	(!A2 * !B1 * !C1 * D1 * Y)	0.00251	0.00252	0.00250
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00331	-0.00333	-0.00331

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * C1 * D1 * !Y)**	-0.00072	-0.00072	-0.00072
	(A2 * B1 * C1 * D1 * !Y)	0.00081	0.00081	0.00081
	(A2 * B1 * C1 * !D1 * Y)	-0.00072	-0.00072	-0.00072
	(A2 * B1 * C1 * !D1 * Y)	0.00081	0.00081	0.00080
	(A2 * B1 * !C1 * Y)	-0.00072	-0.00072	-0.00072
	(A2 * B1 * !C1 * Y)	0.00081	0.00081	0.00080
	(A2 * !B1 * Y)	-0.00072	-0.00072	-0.00072
	(A2 * !B1 * Y)	0.00081	0.00081	0.00080
	(!A2 * B1 * C1 * !D1 * Y)	-0.00061	-0.00065	-0.00065
	(!A2 * B1 * C1 * !D1 * Y)	0.00082	0.00083	0.00082
	(!A2 * B1 * !C1 * D1 * Y)	-0.00062	-0.00066	-0.00066
	(!A2 * B1 * !C1 * D1 * Y)	0.00082	0.00083	0.00082
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00062	-0.00066	-0.00066
	(!A2 * B1 * !C1 * !D1 * Y)	0.00082	0.00083	0.00082
	(!A2 * !B1 * C1 * D1 * Y)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * C1 * D1 * Y)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !D1 * Y)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * !D1 * Y)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * !C1 * D1 * Y)	0.00082	0.00082	0.00082

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00140	-0.00140	-0.00140
	(A2 * B1 * C1 * D1 * !Y)	0.00163	0.00162	0.00162
	(A2 * B1 * C1 * !D1 * Y)	-0.00140	-0.00140	-0.00139
	(A2 * B1 * C1 * !D1 * Y)	0.00163	0.00163	0.00162
	(A2 * B1 * !C1 * Y)	-0.00140	-0.00140	-0.00139
	(A2 * B1 * !C1 * Y)	0.00163	0.00163	0.00162
	(A2 * !B1 * Y)	-0.00139	-0.00140	-0.00139
	(A2 * !B1 * Y)	0.00161	0.00163	0.00162
	(!A2 * B1 * C1 * !D1 * Y)	-0.00117	-0.00125	-0.00124
	(!A2 * B1 * C1 * !D1 * Y)	0.00166	0.00167	0.00167
	(!A2 * B1 * !C1 * D1 * Y)	-0.00118	-0.00126	-0.00126
	(!A2 * B1 * !C1 * D1 * Y)	0.00166	0.00167	0.00167
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00118	-0.00126	-0.00126
	(!A2 * B1 * !C1 * !D1 * Y)	0.00166	0.00167	0.00167
	(!A2 * !B1 * C1 * D1 * Y)	-0.00123	-0.00129	-0.00128
	(!A2 * !B1 * C1 * D1 * Y)	0.00166	0.00168	0.00167
	(!A2 * !B1 * !D1 * Y)	-0.00123	-0.00129	-0.00128
	(!A2 * !B1 * !D1 * Y)	0.00166	0.00167	0.00167
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00123	-0.00129	-0.00128
	(!A2 * !B1 * !C1 * D1 * Y)	0.00166	0.00168	0.00167

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00286	-0.00286	-0.00285
	(A2 * B1 * C1 * D1 * !Y)	0.00313	0.00313	0.00312
	(A2 * B1 * C1 * !D1 * Y)	-0.00273	-0.00273	-0.00272
	(A2 * B1 * C1 * !D1 * Y)	0.00326	0.00326	0.00325
	(A2 * B1 * !C1 * Y)	-0.00273	-0.00273	-0.00272
	(A2 * B1 * !C1 * Y)	0.00327	0.00326	0.00325
	(A2 * !B1 * Y)	-0.00271	-0.00273	-0.00272
	(A2 * !B1 * Y)	0.00323	0.00326	0.00325
	(!A2 * B1 * C1 * !D1 * Y)	-0.00226	-0.00244	-0.00242
	(!A2 * B1 * C1 * !D1 * Y)	0.00332	0.00336	0.00332
	(!A2 * B1 * !C1 * D1 * Y)	-0.00229	-0.00246	-0.00245
	(!A2 * B1 * !C1 * D1 * Y)	0.00331	0.00336	0.00332
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00230	-0.00246	-0.00245
	(!A2 * B1 * !C1 * !D1 * Y)	0.00331	0.00330	0.00332
	(!A2 * !B1 * C1 * D1 * Y)	-0.00239	-0.00253	-0.00250
	(!A2 * !B1 * C1 * D1 * Y)	0.00331	0.00333	0.00332
	(!A2 * !B1 * !D1 * Y)	-0.00239	-0.00252	-0.00250
	(!A2 * !B1 * !D1 * Y)	0.00331	0.00334	0.00332
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00239	-0.00252	-0.00250
	(!A2 * !B1 * !C1 * D1 * Y)	0.00331	0.00334	0.00332

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o2111ai_1	**(A1 * B1 * C1 * D1 * !Y)**	0.00080	0.00080	0.00079
	(A1 * B1 * C1 * D1 * !Y)	-0.00046	-0.00046	-0.00045
	(A1 * B1 * C1 * !D1 * Y)	0.00071	0.00071	0.00070
	(A1 * B1 * C1 * !D1 * Y)	-0.00078	-0.00079	-0.00079
	(A1 * B1 * !C1 * D1 * Y)	0.00071	0.00071	0.00070
	(A1 * B1 * !C1 * D1 * Y)	-0.00078	-0.00079	-0.00079
	(A1 * B1 * !C1 * !D1 * Y)	0.00070	0.00071	0.00070
	(A1 * B1 * !C1 * !D1 * Y)	-0.00078	-0.00079	-0.00079
	(A1 * !B1 * C1 * D1 * Y)	0.00071	0.00071	0.00070
	(A1 * !B1 * C1 * D1 * Y)	-0.00078	-0.00079	-0.00079
	(A1 * !B1 * !D1 * Y)	0.00071	0.00071	0.00070
	(A1 * !B1 * !D1 * Y)	-0.00078	-0.00079	-0.00079
	(A1 * !B1 * !C1 * D1 * Y)	0.00071	0.00071	0.00070
	(A1 * !B1 * !C1 * D1 * Y)	-0.00078	-0.00079	-0.00079
	(!A1 * B1 * C1 * !D1 * Y)	0.00063	0.00063	0.00063
	(!A1 * B1 * C1 * !D1 * Y)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * !C1 * D1 * Y)	0.00064	0.00064	0.00064
	(!A1 * B1 * !C1 * D1 * Y)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * !C1 * !D1 * Y)	0.00063	0.00064	0.00064
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00081	-0.00081	-0.00081
	(!A1 * !B1 * C1 * D1 * Y)	0.00065	0.00066	0.00065
	(!A1 * !B1 * C1 * D1 * Y)	-0.00080	-0.00081	-0.00081
	(!A1 * !B1 * !D1 * Y)	0.00065	0.00065	0.00065
	(!A1 * !B1 * !D1 * Y)	-0.00080	-0.00081	-0.00081
	(!A1 * !B1 * !C1 * D1 * Y)	0.00064	0.00065	0.00065
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00080	-0.00081	-0.00081

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00155	0.00155	0.00153
	(A1 * B1 * C1 * D1 * !Y)	-0.00094	-0.00093	-0.00092
	(A1 * B1 * C1 * !D1 * Y)	0.00137	0.00137	0.00136
	(A1 * B1 * C1 * !D1 * Y)	-0.00157	-0.00160	-0.00159
	(A1 * B1 * !C1 * D1 * Y)	0.00138	0.00137	0.00136
	(A1 * B1 * !C1 * D1 * Y)	-0.00157	-0.00160	-0.00159
	(A1 * B1 * !C1 * !D1 * Y)	0.00137	0.00137	0.00136
	(A1 * B1 * !C1 * !D1 * Y)	-0.00157	-0.00161	-0.00160
	(A1 * !B1 * C1 * D1 * Y)	0.00138	0.00137	0.00136
	(A1 * !B1 * C1 * D1 * Y)	-0.00157	-0.00160	-0.00159
	(A1 * !B1 * !D1 * Y)	0.00136	0.00137	0.00136
	(A1 * !B1 * !D1 * Y)	-0.00156	-0.00161	-0.00160
	(A1 * !B1 * !C1 * D1 * Y)	0.00136	0.00137	0.00136
	(A1 * !B1 * !C1 * D1 * Y)	-0.00156	-0.00161	-0.00160
	(!A1 * B1 * C1 * !D1 * Y)	0.00122	0.00122	0.00121
	(!A1 * B1 * C1 * !D1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !C1 * D1 * Y)	0.00123	0.00124	0.00123
	(!A1 * B1 * !C1 * D1 * Y)	-0.00164	-0.00164	-0.00164
	(!A1 * B1 * !C1 * !D1 * Y)	0.00122	0.00123	0.00123
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00163	-0.00164	-0.00164
	(!A1 * !B1 * C1 * D1 * Y)	0.00125	0.00125	0.00125
	(!A1 * !B1 * C1 * D1 * Y)	-0.00163	-0.00164	-0.00164
	(!A1 * !B1 * !D1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !D1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !C1 * D1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00320	0.00320	0.00316
	(A1 * B1 * C1 * D1 * !Y)	-0.00187	-0.00187	-0.00184
	(A1 * B1 * C1 * !D1 * Y)	0.00276	0.00280	0.00278
	(A1 * B1 * C1 * !D1 * Y)	-0.00316	-0.00325	-0.00323
	(A1 * B1 * !C1 * D1 * Y)	0.00281	0.00280	0.00278
	(A1 * B1 * !C1 * D1 * Y)	-0.00320	-0.00325	-0.00323
	(A1 * B1 * !C1 * !D1 * Y)	0.00280	0.00279	0.00278
	(A1 * B1 * !C1 * !D1 * Y)	-0.00320	-0.00325	-0.00324
	(A1 * !B1 * C1 * D1 * Y)	0.00276	0.00280	0.00278
	(A1 * !B1 * C1 * D1 * Y)	-0.00316	-0.00325	-0.00323
	(A1 * !B1 * !D1 * Y)	0.00280	0.00279	0.00278
	(A1 * !B1 * !D1 * Y)	-0.00320	-0.00325	-0.00324
	(A1 * !B1 * !C1 * D1 * Y)	0.00280	0.00279	0.00278
	(A1 * !B1 * !C1 * D1 * Y)	-0.00320	-0.00325	-0.00324
	(!A1 * B1 * C1 * !D1 * Y)	0.00248	0.00248	0.00246
	(!A1 * B1 * C1 * !D1 * Y)	-0.00332	-0.00331	-0.00331
	(!A1 * B1 * !C1 * D1 * Y)	0.00249	0.00252	0.00249
	(!A1 * B1 * !C1 * D1 * Y)	-0.00331	-0.00332	-0.00331
	(!A1 * B1 * !C1 * !D1 * Y)	0.00249	0.00252	0.00249
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00331	-0.00333	-0.00331
	(!A1 * !B1 * C1 * D1 * Y)	0.00253	0.00257	0.00255
	(!A1 * !B1 * C1 * D1 * Y)	-0.00330	-0.00333	-0.00331
	(!A1 * !B1 * !D1 * Y)	0.00253	0.00255	0.00254
	(!A1 * !B1 * !D1 * Y)	-0.00330	-0.00332	-0.00331
	(!A1 * !B1 * !C1 * D1 * Y)	0.00253	0.00255	0.00254
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00330	-0.00332	-0.00331

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A1 * B1 * C1 * D1 * !Y)**	-0.00074	-0.00075	-0.00078
	(A1 * B1 * C1 * D1 * !Y)	0.00049	0.00049	0.00046
	(A1 * B1 * C1 * !D1 * Y)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * C1 * !D1 * Y)	0.00079	0.00079	0.00079
	(A1 * B1 * !C1 * D1 * Y)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * !C1 * D1 * Y)	0.00079	0.00079	0.00079
	(A1 * B1 * !C1 * !D1 * Y)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * !C1 * !D1 * Y)	0.00080	0.00079	0.00079
	(A1 * !B1 * C1 * D1 * Y)	-0.00071	-0.00070	-0.00070
	(A1 * !B1 * C1 * D1 * Y)	0.00080	0.00079	0.00079
	(A1 * !B1 * !D1 * Y)	-0.00071	-0.00070	-0.00070
	(A1 * !B1 * !D1 * Y)	0.00080	0.00079	0.00079
	(A1 * !B1 * !C1 * D1 * Y)	-0.00071	-0.00070	-0.00070
	(A1 * !B1 * !C1 * D1 * Y)	0.00080	0.00079	0.00079
	(!A1 * B1 * C1 * !D1 * Y)	-0.00058	-0.00063	-0.00063
	(!A1 * B1 * C1 * !D1 * Y)	0.00081	0.00082	0.00081
	(!A1 * B1 * !C1 * D1 * Y)	-0.00060	-0.00064	-0.00064
	(!A1 * B1 * !C1 * D1 * Y)	0.00081	0.00082	0.00081
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00060	-0.00064	-0.00064
	(!A1 * B1 * !C1 * !D1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !B1 * C1 * D1 * Y)	-0.00063	-0.00065	-0.00065
	(!A1 * !B1 * C1 * D1 * Y)	0.00081	0.00081	0.00081
	(!A1 * !B1 * !D1 * Y)	-0.00063	-0.00065	-0.00065
	(!A1 * !B1 * !D1 * Y)	0.00081	0.00081	0.00081
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00063	-0.00065	-0.00065
	(!A1 * !B1 * !C1 * D1 * Y)	0.00081	0.00081	0.00081

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00140	-0.00140	-0.00151
	(A1 * B1 * C1 * D1 * !Y)	0.00105	0.00104	0.00096
	(A1 * B1 * C1 * !D1 * Y)	-0.00136	-0.00136	-0.00136
	(A1 * B1 * C1 * !D1 * Y)	0.00160	0.00160	0.00159
	(A1 * B1 * !C1 * D1 * Y)	-0.00136	-0.00136	-0.00136
	(A1 * B1 * !C1 * D1 * Y)	0.00160	0.00160	0.00159
	(A1 * B1 * !C1 * !D1 * Y)	-0.00136	-0.00137	-0.00136
	(A1 * B1 * !C1 * !D1 * Y)	0.00160	0.00161	0.00160
	(A1 * !B1 * C1 * D1 * Y)	-0.00135	-0.00137	-0.00136
	(A1 * !B1 * C1 * D1 * Y)	0.00158	0.00160	0.00159
	(A1 * !B1 * !D1 * Y)	-0.00136	-0.00137	-0.00136
	(A1 * !B1 * !D1 * Y)	0.00159	0.00161	0.00160
	(A1 * !B1 * !C1 * D1 * Y)	-0.00136	-0.00137	-0.00136
	(A1 * !B1 * !C1 * D1 * Y)	0.00159	0.00161	0.00160
	(!A1 * B1 * C1 * !D1 * Y)	-0.00114	-0.00122	-0.00121
	(!A1 * B1 * C1 * !D1 * Y)	0.00164	0.00166	0.00164
	(!A1 * B1 * !C1 * D1 * Y)	-0.00115	-0.00124	-0.00123
	(!A1 * B1 * !C1 * D1 * Y)	0.00164	0.00164	0.00164
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00115	-0.00123	-0.00123
	(!A1 * B1 * !C1 * !D1 * Y)	0.00164	0.00164	0.00164
	(!A1 * !B1 * C1 * D1 * Y)	-0.00119	-0.00125	-0.00125
	(!A1 * !B1 * C1 * D1 * Y)	0.00164	0.00165	0.00164
	(!A1 * !B1 * !D1 * Y)	-0.00120	-0.00126	-0.00125
	(!A1 * !B1 * !D1 * Y)	0.00164	0.00165	0.00164
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00120	-0.00126	-0.00125
	(!A1 * !B1 * !C1 * D1 * Y)	0.00164	0.00165	0.00164

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00288	-0.00291	-0.00312
	(A1 * B1 * C1 * D1 * !Y)	0.00211	0.00211	0.00191
	(A1 * B1 * C1 * !D1 * Y)	-0.00276	-0.00278	-0.00277
	(A1 * B1 * C1 * !D1 * Y)	0.00324	0.00325	0.00323
	(A1 * B1 * !C1 * D1 * Y)	-0.00276	-0.00278	-0.00277
	(A1 * B1 * !C1 * D1 * Y)	0.00322	0.00325	0.00323
	(A1 * B1 * !C1 * !D1 * Y)	-0.00276	-0.00278	-0.00277
	(A1 * B1 * !C1 * !D1 * Y)	0.00323	0.00325	0.00324
	(A1 * !B1 * C1 * D1 * Y)	-0.00276	-0.00278	-0.00277
	(A1 * !B1 * C1 * D1 * Y)	0.00324	0.00325	0.00323
	(A1 * !B1 * !D1 * Y)	-0.00278	-0.00278	-0.00277
	(A1 * !B1 * !D1 * Y)	0.00325	0.00325	0.00324
	(A1 * !B1 * !C1 * D1 * Y)	-0.00278	-0.00278	-0.00277
	(A1 * !B1 * !C1 * D1 * Y)	0.00325	0.00325	0.00324
	(!A1 * B1 * C1 * !D1 * Y)	-0.00231	-0.00248	-0.00246
	(!A1 * B1 * C1 * !D1 * Y)	0.00332	0.00331	0.00332
	(!A1 * B1 * !C1 * D1 * Y)	-0.00234	-0.00252	-0.00249
	(!A1 * B1 * !C1 * D1 * Y)	0.00331	0.00332	0.00332
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00234	-0.00252	-0.00249
	(!A1 * B1 * !C1 * !D1 * Y)	0.00331	0.00335	0.00332
	(!A1 * !B1 * C1 * D1 * Y)	-0.00243	-0.00257	-0.00255
	(!A1 * !B1 * C1 * D1 * Y)	0.00330	0.00333	0.00332
	(!A1 * !B1 * !D1 * Y)	-0.00243	-0.00255	-0.00254
	(!A1 * !B1 * !D1 * Y)	0.00330	0.00333	0.00332
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00243	-0.00255	-0.00254
	(!A1 * !B1 * !C1 * D1 * Y)	0.00330	0.00334	0.00332

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * C1 * !D1 * Y)**	0.00061	0.00062	0.00061
	(A2 * C1 * !D1 * Y)	-0.00082	-0.00082	-0.00082
	(A2 * !C1 * D1 * Y)	0.00063	0.00064	0.00063
	(A2 * !C1 * D1 * Y)	-0.00082	-0.00082	-0.00082
	(A2 * !C1 * !D1 * Y)	0.00063	0.00063	0.00063
	(A2 * !C1 * !D1 * Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * C1 * !D1 * Y)	0.00061	0.00062	0.00061
	(A1 * !A2 * C1 * !D1 * Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !C1 * D1 * Y)	0.00063	0.00064	0.00063
	(A1 * !A2 * !C1 * D1 * Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !C1 * !D1 * Y)	0.00063	0.00064	0.00063
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * C1 * D1 * Y)	0.00035	0.00035	0.00035
	(!A1 * !A2 * C1 * D1 * Y)	-0.00080	-0.00080	-0.00079
	(!A1 * !A2 * C1 * !D1 * Y)	0.00038	0.00038	0.00038
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * !C1 * D1 * Y)	0.00040	0.00040	0.00040
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00041	0.00041	0.00041
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00082	-0.00082	-0.00082

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00130	0.00131	0.00131
	(A2 * C1 * !D1 * Y)	-0.00170	-0.00171	-0.00170
	(A2 * !C1 * D1 * Y)	0.00134	0.00136	0.00134
	(A2 * !C1 * D1 * Y)	-0.00171	-0.00171	-0.00170
	(A2 * !C1 * !D1 * Y)	0.00134	0.00135	0.00134
	(A2 * !C1 * !D1 * Y)	-0.00171	-0.00171	-0.00170
	(A1 * !A2 * C1 * !D1 * Y)	0.00130	0.00131	0.00131
	(A1 * !A2 * C1 * !D1 * Y)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * !C1 * D1 * Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * !C1 * D1 * Y)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * !C1 * !D1 * Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * C1 * D1 * Y)	0.00073	0.00074	0.00075
	(!A1 * !A2 * C1 * D1 * Y)	-0.00165	-0.00166	-0.00163
	(!A1 * !A2 * C1 * !D1 * Y)	0.00081	0.00081	0.00081
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00170	-0.00171	-0.00171
	(!A1 * !A2 * !C1 * D1 * Y)	0.00083	0.00083	0.00083
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00085	0.00085	0.00085
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00171	-0.00171	-0.00170

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00251	0.00251	0.00250
	(A2 * C1 * !D1 * Y)	-0.00180	-0.00179	-0.00179
	(A2 * !C1 * D1 * Y)	0.00258	0.00258	0.00258
	(A2 * !C1 * D1 * Y)	-0.00179	-0.00179	-0.00179
	(A2 * !C1 * !D1 * Y)	0.00258	0.00260	0.00258
	(A2 * !C1 * !D1 * Y)	-0.00179	-0.00179	-0.00179
	(A1 * !A2 * C1 * !D1 * Y)	0.00248	0.00248	0.00249
	(A1 * !A2 * C1 * !D1 * Y)	-0.00178	-0.00178	-0.00179
	(A1 * !A2 * !C1 * D1 * Y)	0.00257	0.00259	0.00258
	(A1 * !A2 * !C1 * D1 * Y)	-0.00178	-0.00179	-0.00179
	(A1 * !A2 * !C1 * !D1 * Y)	0.00258	0.00259	0.00258
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00179	-0.00179	-0.00179
	(!A1 * !A2 * C1 * D1 * Y)	0.00136	0.00136	0.00138
	(!A1 * !A2 * C1 * D1 * Y)	-0.00168	-0.00167	-0.00165
	(!A1 * !A2 * C1 * !D1 * Y)	0.00149	0.00150	0.00149
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00179	-0.00180	-0.00180
	(!A1 * !A2 * !C1 * D1 * Y)	0.00153	0.00154	0.00153
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00178	-0.00179	-0.00179
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00156	0.00157	0.00156
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00179	-0.00179	-0.00179

Passive power(pJ) for B1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * C1 * !D1 * Y)**	-0.00057	-0.00062	-0.00061
	(A2 * C1 * !D1 * Y)	0.00082	0.00082	0.00082
	(A2 * !C1 * D1 * Y)	-0.00061	-0.00064	-0.00063
	(A2 * !C1 * D1 * Y)	0.00082	0.00082	0.00082
	(A2 * !C1 * !D1 * Y)	-0.00061	-0.00063	-0.00063
	(A2 * !C1 * !D1 * Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * C1 * !D1 * Y)	-0.00057	-0.00062	-0.00061
	(A1 * !A2 * C1 * !D1 * Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * !C1 * D1 * Y)	-0.00061	-0.00064	-0.00063
	(A1 * !A2 * !C1 * D1 * Y)	0.00082	0.00083	0.00082
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00061	-0.00064	-0.00063
	(A1 * !A2 * !C1 * !D1 * Y)	0.00082	0.00083	0.00082
	(!A1 * !A2 * C1 * D1 * Y)	-0.00032	-0.00033	-0.00032
	(!A1 * !A2 * C1 * D1 * Y)	0.00082	0.00084	0.00082
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * C1 * !D1 * Y)	0.00082	0.00083	0.00082
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !C1 * D1 * Y)	0.00083	0.00083	0.00082
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00083	0.00084	0.00082

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00124	-0.00131	-0.00131
	(A2 * C1 * !D1 * Y)	0.00171	0.00172	0.00171
	(A2 * !C1 * D1 * Y)	-0.00130	-0.00136	-0.00134
	(A2 * !C1 * D1 * Y)	0.00171	0.00172	0.00171
	(A2 * !C1 * !D1 * Y)	-0.00130	-0.00135	-0.00134
	(A2 * !C1 * !D1 * Y)	0.00171	0.00172	0.00171
	(A1 * !A2 * C1 * !D1 * Y)	-0.00122	-0.00131	-0.00131
	(A1 * !A2 * C1 * !D1 * Y)	0.00171	0.00172	0.00171
	(A1 * !A2 * !C1 * D1 * Y)	-0.00129	-0.00135	-0.00134
	(A1 * !A2 * !C1 * D1 * Y)	0.00170	0.00172	0.00171
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00129	-0.00135	-0.00134
	(A1 * !A2 * !C1 * !D1 * Y)	0.00170	0.00172	0.00171
	(!A1 * !A2 * C1 * D1 * Y)	-0.00069	-0.00070	-0.00069
	(!A1 * !A2 * C1 * D1 * Y)	0.00170	0.00174	0.00171
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00081	-0.00081	-0.00081
	(!A1 * !A2 * C1 * !D1 * Y)	0.00170	0.00174	0.00171
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * !C1 * D1 * Y)	0.00172	0.00174	0.00171
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00173	0.00174	0.00171

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00234	-0.00251	-0.00250
	(A2 * C1 * !D1 * Y)	0.00180	0.00180	0.00179
	(A2 * !C1 * D1 * Y)	-0.00248	-0.00258	-0.00258
	(A2 * !C1 * D1 * Y)	0.00179	0.00180	0.00179
	(A2 * !C1 * !D1 * Y)	-0.00249	-0.00260	-0.00258
	(A2 * !C1 * !D1 * Y)	0.00179	0.00180	0.00179
	(A1 * !A2 * C1 * !D1 * Y)	-0.00232	-0.00248	-0.00249
	(A1 * !A2 * C1 * !D1 * Y)	0.00180	0.00180	0.00179
	(A1 * !A2 * !C1 * D1 * Y)	-0.00247	-0.00259	-0.00258
	(A1 * !A2 * !C1 * D1 * Y)	0.00179	0.00180	0.00179
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00247	-0.00259	-0.00258
	(A1 * !A2 * !C1 * !D1 * Y)	0.00179	0.00180	0.00179
	(!A1 * !A2 * C1 * D1 * Y)	-0.00126	-0.00128	-0.00126
	(!A1 * !A2 * C1 * D1 * Y)	0.00179	0.00182	0.00179
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !A2 * C1 * !D1 * Y)	0.00179	0.00183	0.00180
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00153	-0.00154	-0.00153
	(!A1 * !A2 * !C1 * D1 * Y)	0.00181	0.00182	0.00179
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00156	-0.00157	-0.00156
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00181	0.00182	0.00179

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * !D1 * Y)**	0.00065	0.00065	0.00065
	(A2 * B1 * !D1 * Y)	-0.00085	-0.00085	-0.00085
	(A2 * !B1 * D1 * Y)	0.00035	0.00035	0.00035
	(A2 * !B1 * D1 * Y)	-0.00085	-0.00085	-0.00084
	(A2 * !B1 * !D1 * Y)	0.00038	0.00038	0.00038
	(A2 * !B1 * !D1 * Y)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * B1 * !D1 * Y)	0.00065	0.00065	0.00065
	(A1 * !A2 * B1 * !D1 * Y)	-0.00085	-0.00085	-0.00085
	(!A2 * !B1 * D1 * Y)	0.00035	0.00035	0.00035
	(!A2 * !B1 * D1 * Y)	-0.00085	-0.00085	-0.00084
	(!A2 * !B1 * !D1 * Y)	0.00038	0.00038	0.00038
	(!A2 * !B1 * !D1 * Y)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * B1 * D1 * Y)	0.00034	0.00034	0.00033
	(!A1 * !A2 * B1 * D1 * Y)	-0.00085	-0.00085	-0.00084
	(!A1 * !A2 * B1 * !D1 * Y)	0.00040	0.00040	0.00040
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00085	-0.00085	-0.00085

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00127	0.00128	0.00127
	(A2 * B1 * !D1 * Y)	-0.00165	-0.00166	-0.00165
	(A2 * !B1 * D1 * Y)	0.00069	0.00069	0.00069
	(A2 * !B1 * D1 * Y)	-0.00165	-0.00166	-0.00164
	(A2 * !B1 * !D1 * Y)	0.00078	0.00078	0.00078
	(A2 * !B1 * !D1 * Y)	-0.00167	-0.00167	-0.00166
	(A1 * !A2 * B1 * !D1 * Y)	0.00127	0.00128	0.00127
	(A1 * !A2 * B1 * !D1 * Y)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * D1 * Y)	0.00069	0.00069	0.00069
	(!A2 * !B1 * D1 * Y)	-0.00166	-0.00165	-0.00164
	(!A2 * !B1 * !D1 * Y)	0.00078	0.00078	0.00078
	(!A2 * !B1 * !D1 * Y)	-0.00167	-0.00167	-0.00166
	(!A1 * !A2 * B1 * D1 * Y)	0.00066	0.00066	0.00067
	(!A1 * !A2 * B1 * D1 * Y)	-0.00165	-0.00165	-0.00164
	(!A1 * !A2 * B1 * !D1 * Y)	0.00079	0.00079	0.00079
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00166	-0.00167	-0.00166

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00252	0.00255	0.00253
	(A2 * B1 * !D1 * Y)	-0.00176	-0.00177	-0.00176
	(A2 * !B1 * D1 * Y)	0.00129	0.00130	0.00130
	(A2 * !B1 * D1 * Y)	-0.00175	-0.00176	-0.00174
	(A2 * !B1 * !D1 * Y)	0.00145	0.00146	0.00145
	(A2 * !B1 * !D1 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * B1 * !D1 * Y)	0.00252	0.00254	0.00253
	(A1 * !A2 * B1 * !D1 * Y)	-0.00175	-0.00176	-0.00176
	(!A2 * !B1 * D1 * Y)	0.00130	0.00130	0.00130
	(!A2 * !B1 * D1 * Y)	-0.00176	-0.00175	-0.00174
	(!A2 * !B1 * !D1 * Y)	0.00145	0.00145	0.00145
	(!A2 * !B1 * !D1 * Y)	-0.00178	-0.00178	-0.00178
	(!A1 * !A2 * B1 * D1 * Y)	0.00125	0.00126	0.00127
	(!A1 * !A2 * B1 * D1 * Y)	-0.00175	-0.00175	-0.00173
	(!A1 * !A2 * B1 * !D1 * Y)	0.00151	0.00150	0.00149
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00178	-0.00178	-0.00177

Passive power(pJ) for C1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * !D1 * Y)**	-0.00061	-0.00065	-0.00065
	(A2 * B1 * !D1 * Y)	0.00088	0.00086	0.00085
	(A2 * !B1 * D1 * Y)	-0.00032	-0.00033	-0.00033
	(A2 * !B1 * D1 * Y)	0.00087	0.00089	0.00086
	(A2 * !B1 * !D1 * Y)	-0.00038	-0.00038	-0.00038
	(A2 * !B1 * !D1 * Y)	0.00088	0.00090	0.00086
	(A1 * !A2 * B1 * !D1 * Y)	-0.00060	-0.00065	-0.00065
	(A1 * !A2 * B1 * !D1 * Y)	0.00088	0.00086	0.00085
	(!A2 * !B1 * D1 * Y)	-0.00032	-0.00033	-0.00033
	(!A2 * !B1 * D1 * Y)	0.00087	0.00089	0.00086
	(!A2 * !B1 * !D1 * Y)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !D1 * Y)	0.00088	0.00090	0.00086
	(!A1 * !A2 * B1 * D1 * Y)	-0.00031	-0.00032	-0.00032
	(!A1 * !A2 * B1 * D1 * Y)	0.00087	0.00089	0.00086
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * B1 * !D1 * Y)	0.00087	0.00087	0.00085

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00119	-0.00128	-0.00127
	(A2 * B1 * !D1 * Y)	0.00169	0.00168	0.00166
	(A2 * !B1 * D1 * Y)	-0.00064	-0.00065	-0.00066
	(A2 * !B1 * D1 * Y)	0.00170	0.00173	0.00167
	(A2 * !B1 * !D1 * Y)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * !D1 * Y)	0.00169	0.00172	0.00166
	(A1 * !A2 * B1 * !D1 * Y)	-0.00118	-0.00128	-0.00127
	(A1 * !A2 * B1 * !D1 * Y)	0.00169	0.00168	0.00166
	(!A2 * !B1 * D1 * Y)	-0.00064	-0.00065	-0.00066
	(!A2 * !B1 * D1 * Y)	0.00170	0.00173	0.00167
	(!A2 * !B1 * !D1 * Y)	-0.00078	-0.00078	-0.00078
	(!A2 * !B1 * !D1 * Y)	0.00169	0.00172	0.00166
	(!A1 * !A2 * B1 * D1 * Y)	-0.00062	-0.00063	-0.00064
	(!A1 * !A2 * B1 * D1 * Y)	0.00171	0.00173	0.00167
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * B1 * !D1 * Y)	0.00168	0.00170	0.00166

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00233	-0.00255	-0.00253
	(A2 * B1 * !D1 * Y)	0.00187	0.00180	0.00176
	(A2 * !B1 * D1 * Y)	-0.00120	-0.00122	-0.00124
	(A2 * !B1 * D1 * Y)	0.00187	0.00190	0.00179
	(A2 * !B1 * !D1 * Y)	-0.00145	-0.00146	-0.00145
	(A2 * !B1 * !D1 * Y)	0.00188	0.00190	0.00179
	(A1 * !A2 * B1 * !D1 * Y)	-0.00232	-0.00254	-0.00253
	(A1 * !A2 * B1 * !D1 * Y)	0.00187	0.00180	0.00176
	(!A2 * !B1 * D1 * Y)	-0.00120	-0.00122	-0.00124
	(!A2 * !B1 * D1 * Y)	0.00187	0.00190	0.00179
	(!A2 * !B1 * !D1 * Y)	-0.00145	-0.00145	-0.00145
	(!A2 * !B1 * !D1 * Y)	0.00188	0.00190	0.00179
	(!A1 * !A2 * B1 * D1 * Y)	-0.00117	-0.00119	-0.00120
	(!A1 * !A2 * B1 * D1 * Y)	0.00188	0.00190	0.00179
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00151	-0.00150	-0.00149
	(!A1 * !A2 * B1 * !D1 * Y)	0.00186	0.00182	0.00177

Passive power(pJ) for D1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00026	0.00026	0.00025
	(A2 * !C1 * Y)	-0.00098	-0.00099	-0.00101
	(A2 * !B1 * C1 * Y)	0.00027	0.00027	0.00025
	(A2 * !B1 * C1 * Y)	-0.00095	-0.00096	-0.00101
	(!A2 * !C1 * Y)	0.00026	0.00026	0.00025
	(!A2 * !C1 * Y)	-0.00099	-0.00099	-0.00101
	(!A2 * !B1 * C1 * Y)	0.00027	0.00027	0.00025
	(!A2 * !B1 * C1 * Y)	-0.00095	-0.00096	-0.00101
	(!A1 * !A2 * B1 * C1 * Y)	0.00031	0.00031	0.00026
	(!A1 * !A2 * B1 * C1 * Y)	-0.00088	-0.00089	-0.00099

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00060	0.00059	0.00056
	(A2 * !C1 * Y)	-0.00188	-0.00188	-0.00194
	(A2 * !B1 * C1 * Y)	0.00062	0.00061	0.00054
	(A2 * !B1 * C1 * Y)	-0.00179	-0.00180	-0.00192
	(!A2 * !C1 * Y)	0.00059	0.00059	0.00056
	(!A2 * !C1 * Y)	-0.00187	-0.00188	-0.00194
	(!A2 * !B1 * C1 * Y)	0.00061	0.00061	0.00054
	(!A2 * !B1 * C1 * Y)	-0.00178	-0.00180	-0.00192
	(!A1 * !A2 * B1 * C1 * Y)	0.00066	0.00067	0.00055
	(!A1 * !A2 * B1 * C1 * Y)	-0.00164	-0.00167	-0.00189
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00106	0.00106	0.00100
	(A2 * !C1 * Y)	-0.00225	-0.00227	-0.00237
	(A2 * !B1 * C1 * Y)	0.00109	0.00109	0.00097
	(A2 * !B1 * C1 * Y)	-0.00210	-0.00211	-0.00234
	(!A2 * !C1 * Y)	0.00106	0.00106	0.00100
	(!A2 * !C1 * Y)	-0.00226	-0.00226	-0.00237
	(!A2 * !B1 * C1 * Y)	0.00110	0.00109	0.00097
	(!A2 * !B1 * C1 * Y)	-0.00210	-0.00211	-0.00234
	(!A1 * !A2 * B1 * C1 * Y)	0.00121	0.00120	0.00100
	(!A1 * !A2 * B1 * C1 * Y)	-0.00184	-0.00186	-0.00228

Passive power(pJ) for D1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00024	-0.00024	-0.00024
	(A2 * !C1 * Y)	0.00101	0.00102	0.00101
	(A2 * !B1 * C1 * Y)	-0.00024	-0.00024	-0.00023
	(A2 * !B1 * C1 * Y)	0.00101	0.00102	0.00101
	(!A2 * !C1 * Y)	-0.00024	-0.00024	-0.00024
	(!A2 * !C1 * Y)	0.00101	0.00101	0.00101
	(!A2 * !B1 * C1 * Y)	-0.00024	-0.00024	-0.00023
	(!A2 * !B1 * C1 * Y)	0.00101	0.00101	0.00101
	(!A1 * !A2 * B1 * C1 * Y)	-0.00024	-0.00024	-0.00023
	(!A1 * !A2 * B1 * C1 * Y)	0.00101	0.00101	0.00101
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00054	-0.00054	-0.00054
	(A2 * !C1 * Y)	0.00195	0.00195	0.00194
	(A2 * !B1 * C1 * Y)	-0.00052	-0.00052	-0.00052
	(A2 * !B1 * C1 * Y)	0.00193	0.00195	0.00194
	(!A2 * !C1 * Y)	-0.00054	-0.00054	-0.00054
	(!A2 * !C1 * Y)	0.00195	0.00194	0.00194
	(!A2 * !B1 * C1 * Y)	-0.00052	-0.00052	-0.00052
	(!A2 * !B1 * C1 * Y)	0.00193	0.00194	0.00194
	(!A1 * !A2 * B1 * C1 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * B1 * C1 * Y)	0.00195	0.00195	0.00194
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00096	-0.00096	-0.00096
	(A2 * !C1 * Y)	0.00237	0.00238	0.00238
	(A2 * !B1 * C1 * Y)	-0.00095	-0.00094	-0.00093
	(A2 * !B1 * C1 * Y)	0.00239	0.00238	0.00237
	(!A2 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(!A2 * !C1 * Y)	0.00238	0.00241	0.00238
	(!A2 * !B1 * C1 * Y)	-0.00095	-0.00095	-0.00093
	(!A2 * !B1 * C1 * Y)	0.00239	0.00241	0.00237
	(!A1 * !A2 * B1 * C1 * Y)	-0.00094	-0.00093	-0.00093
	(!A1 * !A2 * B1 * C1 * Y)	0.00239	0.00238	0.00237

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	C1	D1	X
0	0	x	x	x	0
x	1	0	x	x	0
x	1	1	0	x	0
x	1	1	1	0	0
x	1	1	1	1	1
1	x	0	x	x	0
1	x	1	0	x	0
1	x	1	1	0	0
1	x	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111a_1	12.78720
sky130_fd_sc_hs__o2111a_2	15.98400
sky130_fd_sc_hs__o2111a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__o2111a_1	0.00241	0.00248	0.00230	0.00251	0.00253	0.43554
sky130_fd_sc_hs__o2111a_2	0.00244	0.00245	0.00241	0.00251	0.00261	0.87578
sky130_fd_sc_hs__o2111a_4	0.00463	0.00503	0.00426	0.00440	0.00445	1.68256

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111a_1	0.00000	0.02500	0.16272
sky130_fd_sc_hs__o2111a_2	0.00000	0.02964	0.10745
sky130_fd_sc_hs__o2111a_4	0.00000	0.07016	0.33097

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (RR)	0.28182	1.25442	8.94767
	A2->X (RR)	0.25865	1.22415	8.84788
	B1->X (RR)	0.27120	1.25669	8.89348
	C1->X (RR)	0.26019	1.26106	8.84125
	D1->X (RR)	0.24227	1.22850	8.58420
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.31297	1.16056	9.06008
	A2->X (RR)	0.28913	1.13128	8.97535
	B1->X (RR)	0.30324	1.16712	9.05127
	C1->X (RR)	0.29124	1.17648	9.03120
	D1->X (RR)	0.27140	1.15077	8.80653
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.34738	1.09149	9.13901
	A2->X (RR)	0.32709	1.07380	9.08684
	B1->X (RR)	0.33621	1.10412	9.17287
	C1->X (RR)	0.32342	1.12748	9.20038
	D1->X (RR)	0.29403	1.08982	8.93278

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.54937	1.32646	6.61672
	A2->X (FF)	0.51805	1.24027	6.04355
	B1->X (FF)	0.25842	1.01124	5.60183
	C1->X (FF)	0.23749	0.98408	5.49135
	D1->X (FF)	0.20455	0.94483	5.34790
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.66115	1.44423	7.04049
	A2->X (FF)	0.62897	1.35333	6.52462
	B1->X (FF)	0.27391	1.02495	6.04608
	C1->X (FF)	0.25560	1.00295	5.95671
	D1->X (FF)	0.22561	0.96728	5.82754
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.72519	1.47753	7.13445
	A2->X (FF)	0.69686	1.39123	6.69463
	B1->X (FF)	0.33313	1.04602	6.08780
	C1->X (FF)	0.31030	1.02076	5.98567
	D1->X (FF)	0.27467	0.98330	5.84360

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.00611	0.00615	0.00614
	A1	0.00236	0.00240	0.00241
	A2	0.00542	0.00542	0.00543
	A2	0.00203	0.00203	0.00205
	B1	0.00550	0.00553	0.00556
	B1	0.00249	0.00251	0.00256
	C1	0.00512	0.00513	0.00517
	C1	0.00248	0.00249	0.00255
	D1	0.00473	0.00468	0.00480
	D1	0.00248	0.00243	0.00256
sky130_fd_sc_hs__o2111a_2	A1	0.00743	0.00762	0.00766
	A1	0.00369	0.00387	0.00396
	A2	0.00672	0.00688	0.00692
	A2	0.00336	0.00352	0.00360
	B1	0.00683	0.00698	0.00704
	B1	0.00374	0.00388	0.00399
	C1	0.00642	0.00655	0.00662
	C1	0.00373	0.00386	0.00397
	D1	0.00604	0.00610	0.00624
	D1	0.00372	0.00378	0.00395

sky130_fd_sc_hs__o2111a_4	**A1**	0.01525	0.01555	0.01561
	A1	0.00762	0.00791	0.00810
	A2	0.01404	0.01432	0.01444
	A2	0.00693	0.00722	0.00742
	B1	0.01403	0.01431	0.01446
	B1	0.00785	0.00811	0.00840
	C1	0.01321	0.01345	0.01363
	C1	0.00786	0.00809	0.00838
	D1	0.01229	0.01243	0.01277
	D1	0.00783	0.00797	0.00839

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00235	0.00241	0.00266
	A1	0.00589	0.00595	0.00587
	A2	0.00238	0.00239	0.00259
	A2	0.00556	0.00557	0.00572
	B1	0.00198	0.00194	0.00246
	B1	0.00490	0.00486	0.00517
	C1	0.00177	0.00170	0.00215
	C1	0.00438	0.00430	0.00464
	D1	0.00152	0.00139	0.00191
	D1	0.00379	0.00368	0.00404

sky130_fd_sc_hs__o2111a_2	**A1**	0.00345	0.00366	0.00395
	A1	0.00699	0.00720	0.00717
	A2	0.00349	0.00367	0.00423
	A2	0.00663	0.00682	0.00699
	B1	0.00309	0.00319	0.00415
	B1	0.00609	0.00620	0.00642
	C1	0.00288	0.00288	0.00355
	C1	0.00554	0.00562	0.00586
	D1	0.00257	0.00259	0.00329
	D1	0.00492	0.00493	0.00520
sky130_fd_sc_hs__o2111a_4	**A1**	0.00668	0.00704	0.00788
	A1	0.01388	0.01426	0.01425
	A2	0.00672	0.00695	0.00920
	A2	0.01334	0.01358	0.01397
	B1	0.00602	0.00596	0.00773
	B1	0.01201	0.01224	0.01292
	C1	0.00559	0.00576	0.00747
	C1	0.01087	0.01103	0.01175
	D1	0.00478	0.00495	0.00670
	D1	0.00927	0.00944	0.01024

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * B1 * C1 * D1 * X)**	0.00079	0.00074	0.00073
	(A2 * B1 * C1 * D1 * X)	-0.00067	-0.00074	-0.00074
	(A2 * B1 * C1 * !D1 * !X)	0.00073	0.00073	0.00073
	(A2 * B1 * C1 * !D1 * !X)	-0.00073	-0.00074	-0.00074
	(A2 * B1 * !C1 * !X)	0.00073	0.00073	0.00073
	(A2 * B1 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(A2 * !B1 * !X)	0.00073	0.00073	0.00073
	(A2 * !B1 * !X)	-0.00073	-0.00074	-0.00074
	(!A2 * B1 * C1 * !D1 * !X)	0.00065	0.00065	0.00065
	(!A2 * B1 * C1 * !D1 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * B1 * !C1 * D1 * !X)	0.00066	0.00066	0.00066
	(!A2 * B1 * !C1 * D1 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * B1 * !C1 * !D1 * !X)	0.00066	0.00066	0.00066
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * !B1 * C1 * D1 * !X)	0.00068	0.00068	0.00067
	(!A2 * !B1 * C1 * D1 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * !B1 * !D1 * !X)	0.00068	0.00067	0.00067
	(!A2 * !B1 * !D1 * !X)	-0.00075	-0.00075	-0.00075
	(!A2 * !B1 * !C1 * D1 * !X)	0.00068	0.00067	0.00067
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00075	-0.00075	-0.00075

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00082	0.00077	0.00076
	(A2 * B1 * C1 * D1 * X)	-0.00067	-0.00073	-0.00074
	(A2 * B1 * C1 * !D1 * !X)	0.00075	0.00076	0.00076
	(A2 * B1 * C1 * !D1 * !X)	-0.00072	-0.00073	-0.00073
	(A2 * B1 * !C1 * !X)	0.00075	0.00076	0.00076
	(A2 * B1 * !C1 * !X)	-0.00072	-0.00073	-0.00073
	(A2 * !B1 * !X)	0.00075	0.00076	0.00076
	(A2 * !B1 * !X)	-0.00072	-0.00073	-0.00073
	(!A2 * B1 * C1 * !D1 * !X)	0.00068	0.00068	0.00068
	(!A2 * B1 * C1 * !D1 * !X)	-0.00074	-0.00075	-0.00075
	(!A2 * B1 * !C1 * D1 * !X)	0.00069	0.00069	0.00069
	(!A2 * B1 * !C1 * D1 * !X)	-0.00074	-0.00075	-0.00075
	(!A2 * B1 * !C1 * !D1 * !X)	0.00069	0.00069	0.00069
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00074	-0.00075	-0.00075
	(!A2 * !B1 * C1 * D1 * !X)	0.00071	0.00071	0.00071
	(!A2 * !B1 * C1 * D1 * !X)	-0.00075	-0.00075	-0.00075
	(!A2 * !B1 * !D1 * !X)	0.00071	0.00071	0.00071
	(!A2 * !B1 * !D1 * !X)	-0.00075	-0.00075	-0.00075
	(!A2 * !B1 * !C1 * D1 * !X)	0.00071	0.00071	0.00071
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00075	-0.00075	-0.00075

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00157	0.00148	0.00146
	(A2 * B1 * C1 * D1 * X)	-0.00131	-0.00144	-0.00144
	(A2 * B1 * C1 * !D1 * !X)	0.00134	0.00135	0.00134
	(A2 * B1 * C1 * !D1 * !X)	-0.00153	-0.00156	-0.00155
	(A2 * B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(A2 * B1 * !C1 * !X)	-0.00153	-0.00156	-0.00155
	(A2 * !B1 * !X)	0.00134	0.00135	0.00134
	(A2 * !B1 * !X)	-0.00153	-0.00156	-0.00155
	(!A2 * B1 * C1 * !D1 * !X)	0.00120	0.00121	0.00120
	(!A2 * B1 * C1 * !D1 * !X)	-0.00158	-0.00159	-0.00158
	(!A2 * B1 * !C1 * D1 * !X)	0.00121	0.00122	0.00121
	(!A2 * B1 * !C1 * D1 * !X)	-0.00158	-0.00159	-0.00158
	(!A2 * B1 * !C1 * !D1 * !X)	0.00121	0.00122	0.00121
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00158	-0.00159	-0.00158
	(!A2 * !B1 * C1 * D1 * !X)	0.00124	0.00124	0.00124
	(!A2 * !B1 * C1 * D1 * !X)	-0.00158	-0.00159	-0.00158
	(!A2 * !B1 * !D1 * !X)	0.00123	0.00124	0.00124
	(!A2 * !B1 * !D1 * !X)	-0.00158	-0.00159	-0.00158
	(!A2 * !B1 * !C1 * D1 * !X)	0.00124	0.00124	0.00124
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00158	-0.00159	-0.00158

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * B1 * C1 * D1 * X)**	-0.00073	-0.00072	-0.00072
	(A2 * B1 * C1 * D1 * X)	0.00075	0.00074	0.00074
	(A2 * B1 * C1 * !D1 * !X)	-0.00073	-0.00072	-0.00072
	(A2 * B1 * C1 * !D1 * !X)	0.00074	0.00074	0.00074
	(A2 * B1 * !C1 * !X)	-0.00073	-0.00072	-0.00072
	(A2 * B1 * !C1 * !X)	0.00075	0.00074	0.00074
	(A2 * !B1 * !X)	-0.00073	-0.00072	-0.00072
	(A2 * !B1 * !X)	0.00075	0.00074	0.00074
	(!A2 * B1 * C1 * !D1 * !X)	-0.00061	-0.00065	-0.00065
	(!A2 * B1 * C1 * !D1 * !X)	0.00075	0.00076	0.00076
	(!A2 * B1 * !C1 * D1 * !X)	-0.00062	-0.00066	-0.00066
	(!A2 * B1 * !C1 * D1 * !X)	0.00075	0.00076	0.00076
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00062	-0.00066	-0.00066
	(!A2 * B1 * !C1 * !D1 * !X)	0.00075	0.00076	0.00076
	(!A2 * !B1 * C1 * D1 * !X)	-0.00065	-0.00068	-0.00067
	(!A2 * !B1 * C1 * D1 * !X)	0.00076	0.00076	0.00076
	(!A2 * !B1 * !D1 * !X)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * !D1 * !X)	0.00076	0.00076	0.00076
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * !C1 * D1 * !X)	0.00076	0.00076	0.00076

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00075	-0.00075	-0.00075
	(A2 * B1 * C1 * D1 * X)	0.00074	0.00073	0.00074
	(A2 * B1 * C1 * !D1 * !X)	-0.00075	-0.00075	-0.00075
	(A2 * B1 * C1 * !D1 * !X)	0.00073	0.00073	0.00073
	(A2 * B1 * !C1 * !X)	-0.00075	-0.00075	-0.00075
	(A2 * B1 * !C1 * !X)	0.00074	0.00073	0.00073
	(A2 * !B1 * !X)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * !X)	0.00074	0.00073	0.00073
	(!A2 * B1 * C1 * !D1 * !X)	-0.00064	-0.00068	-0.00068
	(!A2 * B1 * C1 * !D1 * !X)	0.00074	0.00076	0.00075
	(!A2 * B1 * !C1 * D1 * !X)	-0.00065	-0.00069	-0.00069
	(!A2 * B1 * !C1 * D1 * !X)	0.00075	0.00076	0.00075
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00065	-0.00069	-0.00069
	(!A2 * B1 * !C1 * !D1 * !X)	0.00075	0.00076	0.00075
	(!A2 * !B1 * C1 * D1 * !X)	-0.00068	-0.00071	-0.00071
	(!A2 * !B1 * C1 * D1 * !X)	0.00075	0.00076	0.00075
	(!A2 * !B1 * !D1 * !X)	-0.00068	-0.00071	-0.00071
	(!A2 * !B1 * !D1 * !X)	0.00075	0.00076	0.00075
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00068	-0.00071	-0.00071
	(!A2 * !B1 * !C1 * D1 * !X)	0.00075	0.00076	0.00075

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00146	-0.00146	-0.00145
	(A2 * B1 * C1 * D1 * X)	0.00145	0.00145	0.00144
	(A2 * B1 * C1 * !D1 * !X)	-0.00134	-0.00134	-0.00134
	(A2 * B1 * C1 * !D1 * !X)	0.00156	0.00156	0.00155
	(A2 * B1 * !C1 * !X)	-0.00134	-0.00134	-0.00134
	(A2 * B1 * !C1 * !X)	0.00156	0.00156	0.00155
	(A2 * !B1 * !X)	-0.00134	-0.00134	-0.00134
	(A2 * !B1 * !X)	0.00156	0.00156	0.00155
	(!A2 * B1 * C1 * !D1 * !X)	-0.00114	-0.00121	-0.00120
	(!A2 * B1 * C1 * !D1 * !X)	0.00159	0.00161	0.00159
	(!A2 * B1 * !C1 * D1 * !X)	-0.00115	-0.00122	-0.00121
	(!A2 * B1 * !C1 * D1 * !X)	0.00159	0.00161	0.00159
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00115	-0.00122	-0.00121
	(!A2 * B1 * !C1 * !D1 * !X)	0.00159	0.00161	0.00159
	(!A2 * !B1 * C1 * D1 * !X)	-0.00119	-0.00124	-0.00124
	(!A2 * !B1 * C1 * D1 * !X)	0.00158	0.00159	0.00159
	(!A2 * !B1 * !D1 * !X)	-0.00119	-0.00124	-0.00124
	(!A2 * !B1 * !D1 * !X)	0.00158	0.00159	0.00159
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00119	-0.00124	-0.00124
	(!A2 * !B1 * !C1 * D1 * !X)	0.00158	0.00159	0.00159

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A1 * B1 * C1 * D1 * X)**	0.00077	0.00077	0.00076
	(A1 * B1 * C1 * D1 * X)	-0.00043	-0.00043	-0.00043
	(A1 * B1 * C1 * !D1 * !X)	0.00070	0.00069	0.00069
	(A1 * B1 * C1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * !C1 * D1 * !X)	0.00070	0.00069	0.00069
	(A1 * B1 * !C1 * D1 * !X)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * !C1 * !D1 * !X)	0.00069	0.00069	0.00069
	(A1 * B1 * !C1 * !D1 * !X)	-0.00071	-0.00072	-0.00072
	(A1 * !B1 * C1 * D1 * !X)	0.00070	0.00069	0.00069
	(A1 * !B1 * C1 * D1 * !X)	-0.00072	-0.00072	-0.00072
	(A1 * !B1 * !D1 * !X)	0.00069	0.00069	0.00069
	(A1 * !B1 * !D1 * !X)	-0.00071	-0.00072	-0.00072
	(A1 * !B1 * !C1 * D1 * !X)	0.00069	0.00069	0.00069
	(A1 * !B1 * !C1 * D1 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * B1 * C1 * !D1 * !X)	0.00062	0.00062	0.00061
	(!A1 * B1 * C1 * !D1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * B1 * !C1 * D1 * !X)	0.00062	0.00063	0.00062
	(!A1 * B1 * !C1 * D1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * B1 * !C1 * !D1 * !X)	0.00062	0.00062	0.00062
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * C1 * D1 * !X)	0.00064	0.00063	0.00064
	(!A1 * !B1 * C1 * D1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * !D1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !B1 * !D1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * !C1 * D1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00074	-0.00074	-0.00074

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00077	0.00077	0.00076
	(A1 * B1 * C1 * D1 * X)	-0.00042	-0.00042	-0.00041
	(A1 * B1 * C1 * !D1 * !X)	0.00069	0.00070	0.00069
	(A1 * B1 * C1 * !D1 * !X)	-0.00069	-0.00071	-0.00071
	(A1 * B1 * !C1 * D1 * !X)	0.00069	0.00070	0.00069
	(A1 * B1 * !C1 * D1 * !X)	-0.00069	-0.00071	-0.00071
	(A1 * B1 * !C1 * !D1 * !X)	0.00069	0.00070	0.00069
	(A1 * B1 * !C1 * !D1 * !X)	-0.00069	-0.00071	-0.00071
	(A1 * !B1 * C1 * D1 * !X)	0.00069	0.00069	0.00069
	(A1 * !B1 * C1 * D1 * !X)	-0.00069	-0.00071	-0.00071
	(A1 * !B1 * !D1 * !X)	0.00069	0.00070	0.00069
	(A1 * !B1 * !D1 * !X)	-0.00069	-0.00071	-0.00071
	(A1 * !B1 * !C1 * D1 * !X)	0.00069	0.00070	0.00069
	(A1 * !B1 * !C1 * D1 * !X)	-0.00070	-0.00071	-0.00071
	(!A1 * B1 * C1 * !D1 * !X)	0.00063	0.00063	0.00062
	(!A1 * B1 * C1 * !D1 * !X)	-0.00072	-0.00073	-0.00072
	(!A1 * B1 * !C1 * D1 * !X)	0.00063	0.00063	0.00063
	(!A1 * B1 * !C1 * D1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * B1 * !C1 * !D1 * !X)	0.00063	0.00063	0.00063
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !B1 * C1 * D1 * !X)	0.00064	0.00065	0.00064
	(!A1 * !B1 * C1 * D1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !B1 * !D1 * !X)	0.00064	0.00065	0.00064
	(!A1 * !B1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !B1 * !C1 * D1 * !X)	0.00064	0.00065	0.00064
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00072	-0.00072	-0.00072

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00169	0.00169	0.00167
	(A1 * B1 * C1 * D1 * X)	-0.00087	-0.00086	-0.00085
	(A1 * B1 * C1 * !D1 * !X)	0.00141	0.00142	0.00141
	(A1 * B1 * C1 * !D1 * !X)	-0.00153	-0.00156	-0.00156
	(A1 * B1 * !C1 * D1 * !X)	0.00141	0.00142	0.00141
	(A1 * B1 * !C1 * D1 * !X)	-0.00153	-0.00156	-0.00156
	(A1 * B1 * !C1 * !D1 * !X)	0.00141	0.00142	0.00141
	(A1 * B1 * !C1 * !D1 * !X)	-0.00154	-0.00156	-0.00156
	(A1 * !B1 * C1 * D1 * !X)	0.00141	0.00142	0.00141
	(A1 * !B1 * C1 * D1 * !X)	-0.00153	-0.00156	-0.00156
	(A1 * !B1 * !D1 * !X)	0.00141	0.00142	0.00141
	(A1 * !B1 * !D1 * !X)	-0.00153	-0.00156	-0.00156
	(A1 * !B1 * !C1 * D1 * !X)	0.00141	0.00142	0.00141
	(A1 * !B1 * !C1 * D1 * !X)	-0.00153	-0.00156	-0.00156
	(!A1 * B1 * C1 * !D1 * !X)	0.00124	0.00126	0.00125
	(!A1 * B1 * C1 * !D1 * !X)	-0.00159	-0.00160	-0.00160
	(!A1 * B1 * !C1 * D1 * !X)	0.00126	0.00126	0.00126
	(!A1 * B1 * !C1 * D1 * !X)	-0.00159	-0.00159	-0.00160
	(!A1 * B1 * !C1 * !D1 * !X)	0.00126	0.00127	0.00126
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00159	-0.00160	-0.00160
	(!A1 * !B1 * C1 * D1 * !X)	0.00129	0.00130	0.00129
	(!A1 * !B1 * C1 * D1 * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * !B1 * !D1 * !X)	0.00129	0.00130	0.00129
	(!A1 * !B1 * !D1 * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * !B1 * !C1 * D1 * !X)	0.00129	0.00130	0.00129
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00160	-0.00160	-0.00160

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A1 * B1 * C1 * D1 * X)**	-0.00072	-0.00072	-0.00075
	(A1 * B1 * C1 * D1 * X)	0.00046	0.00047	0.00044
	(A1 * B1 * C1 * !D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * C1 * !D1 * !X)	0.00073	0.00072	0.00072
	(A1 * B1 * !C1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * !C1 * D1 * !X)	0.00073	0.00072	0.00072
	(A1 * B1 * !C1 * !D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * !C1 * !D1 * !X)	0.00073	0.00072	0.00072
	(A1 * !B1 * C1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * C1 * D1 * !X)	0.00073	0.00072	0.00072
	(A1 * !B1 * !D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * !D1 * !X)	0.00073	0.00072	0.00072
	(A1 * !B1 * !C1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * !C1 * D1 * !X)	0.00073	0.00072	0.00072
	(!A1 * B1 * C1 * !D1 * !X)	-0.00057	-0.00062	-0.00061
	(!A1 * B1 * C1 * !D1 * !X)	0.00074	0.00075	0.00074
	(!A1 * B1 * !C1 * D1 * !X)	-0.00059	-0.00063	-0.00062
	(!A1 * B1 * !C1 * D1 * !X)	0.00074	0.00075	0.00074
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00059	-0.00062	-0.00062
	(!A1 * B1 * !C1 * !D1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !B1 * C1 * D1 * !X)	-0.00062	-0.00063	-0.00064
	(!A1 * !B1 * C1 * D1 * !X)	0.00074	0.00074	0.00074
	(!A1 * !B1 * !D1 * !X)	-0.00062	-0.00064	-0.00064
	(!A1 * !B1 * !D1 * !X)	0.00074	0.00074	0.00074
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00062	-0.00064	-0.00064
	(!A1 * !B1 * !C1 * D1 * !X)	0.00074	0.00074	0.00074

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00072	-0.00072	-0.00075
	(A1 * B1 * C1 * D1 * X)	0.00045	0.00045	0.00043
	(A1 * B1 * C1 * !D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * C1 * !D1 * !X)	0.00071	0.00071	0.00071
	(A1 * B1 * !C1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * !C1 * D1 * !X)	0.00071	0.00071	0.00071
	(A1 * B1 * !C1 * !D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * !C1 * !D1 * !X)	0.00071	0.00071	0.00071
	(A1 * !B1 * C1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * C1 * D1 * !X)	0.00071	0.00071	0.00071
	(A1 * !B1 * !D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * !D1 * !X)	0.00071	0.00071	0.00071
	(A1 * !B1 * !C1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * !C1 * D1 * !X)	0.00071	0.00071	0.00071
	(!A1 * B1 * C1 * !D1 * !X)	-0.00058	-0.00063	-0.00062
	(!A1 * B1 * C1 * !D1 * !X)	0.00072	0.00073	0.00072
	(!A1 * B1 * !C1 * D1 * !X)	-0.00059	-0.00063	-0.00063
	(!A1 * B1 * !C1 * D1 * !X)	0.00072	0.00073	0.00073
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00059	-0.00063	-0.00063
	(!A1 * B1 * !C1 * !D1 * !X)	0.00072	0.00073	0.00073
	(!A1 * !B1 * C1 * D1 * !X)	-0.00062	-0.00065	-0.00064
	(!A1 * !B1 * C1 * D1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !B1 * !D1 * !X)	-0.00062	-0.00065	-0.00064
	(!A1 * !B1 * !D1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00062	-0.00065	-0.00064
	(!A1 * !B1 * !C1 * D1 * !X)	0.00073	0.00073	0.00073

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00158	-0.00159	-0.00165
	(A1 * B1 * C1 * D1 * X)	0.00094	0.00094	0.00088
	(A1 * B1 * C1 * !D1 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * B1 * C1 * !D1 * !X)	0.00156	0.00156	0.00156
	(A1 * B1 * !C1 * D1 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * B1 * !C1 * D1 * !X)	0.00156	0.00156	0.00156
	(A1 * B1 * !C1 * !D1 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * B1 * !C1 * !D1 * !X)	0.00157	0.00156	0.00156
	(A1 * !B1 * C1 * D1 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * !B1 * C1 * D1 * !X)	0.00156	0.00156	0.00156
	(A1 * !B1 * !D1 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * !B1 * !D1 * !X)	0.00157	0.00156	0.00156
	(A1 * !B1 * !C1 * D1 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * !B1 * !C1 * D1 * !X)	0.00157	0.00156	0.00156
	(!A1 * B1 * C1 * !D1 * !X)	-0.00116	-0.00126	-0.00125
	(!A1 * B1 * C1 * !D1 * !X)	0.00160	0.00161	0.00160
	(!A1 * B1 * !C1 * D1 * !X)	-0.00118	-0.00126	-0.00126
	(!A1 * B1 * !C1 * D1 * !X)	0.00160	0.00159	0.00160
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00118	-0.00127	-0.00126
	(!A1 * B1 * !C1 * !D1 * !X)	0.00160	0.00161	0.00160
	(!A1 * !B1 * C1 * D1 * !X)	-0.00123	-0.00130	-0.00129
	(!A1 * !B1 * C1 * D1 * !X)	0.00160	0.00160	0.00160
	(!A1 * !B1 * !D1 * !X)	-0.00123	-0.00130	-0.00129
	(!A1 * !B1 * !D1 * !X)	0.00160	0.00160	0.00160
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00123	-0.00130	-0.00129
	(!A1 * !B1 * !C1 * D1 * !X)	0.00160	0.00160	0.00160

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * C1 * !D1 * !X)**	0.00060	0.00060	0.00060
	(A2 * C1 * !D1 * !X)	-0.00065	-0.00065	-0.00065
	(A2 * !C1 * D1 * !X)	0.00062	0.00062	0.00062
	(A2 * !C1 * D1 * !X)	-0.00065	-0.00065	-0.00065
	(A2 * !C1 * !D1 * !X)	0.00061	0.00062	0.00061
	(A2 * !C1 * !D1 * !X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * C1 * !D1 * !X)	0.00060	0.00060	0.00060
	(A1 * !A2 * C1 * !D1 * !X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * !C1 * D1 * !X)	0.00062	0.00062	0.00062
	(A1 * !A2 * !C1 * D1 * !X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * !C1 * !D1 * !X)	0.00061	0.00062	0.00061
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * C1 * D1 * !X)	0.00034	0.00034	0.00034
	(!A1 * !A2 * C1 * D1 * !X)	-0.00063	-0.00063	-0.00062
	(!A1 * !A2 * C1 * !D1 * !X)	0.00037	0.00036	0.00036
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * !C1 * D1 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00065	-0.00065	-0.00065

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00062	0.00062	0.00062
	(A2 * C1 * !D1 * !X)	-0.00074	-0.00074	-0.00074
	(A2 * !C1 * D1 * !X)	0.00063	0.00063	0.00063
	(A2 * !C1 * D1 * !X)	-0.00074	-0.00074	-0.00074
	(A2 * !C1 * !D1 * !X)	0.00063	0.00064	0.00063
	(A2 * !C1 * !D1 * !X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * C1 * !D1 * !X)	0.00062	0.00062	0.00062
	(A1 * !A2 * C1 * !D1 * !X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * !C1 * D1 * !X)	0.00063	0.00064	0.00063
	(A1 * !A2 * !C1 * D1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * !C1 * !D1 * !X)	0.00063	0.00064	0.00063
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * !A2 * C1 * D1 * !X)	0.00036	0.00036	0.00036
	(!A1 * !A2 * C1 * D1 * !X)	-0.00072	-0.00072	-0.00071
	(!A1 * !A2 * C1 * !D1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !A2 * !C1 * D1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00075	-0.00074	-0.00074
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00041	0.00041	0.00041
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00074	-0.00074	-0.00074

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00121	0.00122	0.00122
	(A2 * C1 * !D1 * !X)	-0.00128	-0.00128	-0.00128
	(A2 * !C1 * D1 * !X)	0.00123	0.00125	0.00124
	(A2 * !C1 * D1 * !X)	-0.00127	-0.00128	-0.00128
	(A2 * !C1 * !D1 * !X)	0.00123	0.00125	0.00124
	(A2 * !C1 * !D1 * !X)	-0.00127	-0.00129	-0.00128
	(A1 * !A2 * C1 * !D1 * !X)	0.00121	0.00122	0.00121
	(A1 * !A2 * C1 * !D1 * !X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * !C1 * D1 * !X)	0.00124	0.00125	0.00124
	(A1 * !A2 * !C1 * D1 * !X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !C1 * !D1 * !X)	0.00124	0.00125	0.00124
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * !A2 * C1 * D1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A2 * C1 * D1 * !X)	-0.00122	-0.00122	-0.00121
	(!A1 * !A2 * C1 * !D1 * !X)	0.00075	0.00075	0.00074
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00128	-0.00129	-0.00129
	(!A1 * !A2 * !C1 * D1 * !X)	0.00075	0.00074	0.00074
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00129	-0.00129	-0.00128
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00129	-0.00129	-0.00128

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * C1 * !D1 * !X)**	-0.00056	-0.00060	-0.00060
	(A2 * C1 * !D1 * !X)	0.00065	0.00065	0.00065
	(A2 * !C1 * D1 * !X)	-0.00059	-0.00062	-0.00062
	(A2 * !C1 * D1 * !X)	0.00065	0.00065	0.00065
	(A2 * !C1 * !D1 * !X)	-0.00060	-0.00062	-0.00061
	(A2 * !C1 * !D1 * !X)	0.00065	0.00065	0.00065
	(A1 * !A2 * C1 * !D1 * !X)	-0.00055	-0.00060	-0.00060
	(A1 * !A2 * C1 * !D1 * !X)	0.00065	0.00065	0.00065
	(A1 * !A2 * !C1 * D1 * !X)	-0.00059	-0.00062	-0.00062
	(A1 * !A2 * !C1 * D1 * !X)	0.00065	0.00066	0.00065
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00059	-0.00062	-0.00061
	(A1 * !A2 * !C1 * !D1 * !X)	0.00065	0.00066	0.00065
	(!A1 * !A2 * C1 * D1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * C1 * D1 * !X)	0.00066	0.00066	0.00065
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00037	-0.00036	-0.00036
	(!A1 * !A2 * C1 * !D1 * !X)	0.00065	0.00066	0.00065
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !C1 * D1 * !X)	0.00066	0.00066	0.00065
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00065	0.00066	0.00065

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00058	-0.00062	-0.00062
	(A2 * C1 * !D1 * !X)	0.00074	0.00075	0.00074
	(A2 * !C1 * D1 * !X)	-0.00061	-0.00063	-0.00063
	(A2 * !C1 * D1 * !X)	0.00074	0.00075	0.00075
	(A2 * !C1 * !D1 * !X)	-0.00061	-0.00064	-0.00063
	(A2 * !C1 * !D1 * !X)	0.00074	0.00075	0.00075
	(A1 * !A2 * C1 * !D1 * !X)	-0.00057	-0.00062	-0.00062
	(A1 * !A2 * C1 * !D1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A2 * !C1 * D1 * !X)	-0.00061	-0.00064	-0.00063
	(A1 * !A2 * !C1 * D1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00061	-0.00064	-0.00063
	(A1 * !A2 * !C1 * !D1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !A2 * C1 * D1 * !X)	-0.00033	-0.00033	-0.00032
	(!A1 * !A2 * C1 * D1 * !X)	0.00074	0.00076	0.00075
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * C1 * !D1 * !X)	0.00075	0.00075	0.00074
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !C1 * D1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00075	0.00076	0.00075

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00114	-0.00122	-0.00122
	(A2 * C1 * !D1 * !X)	0.00128	0.00129	0.00128
	(A2 * !C1 * D1 * !X)	-0.00120	-0.00125	-0.00124
	(A2 * !C1 * D1 * !X)	0.00128	0.00129	0.00128
	(A2 * !C1 * !D1 * !X)	-0.00120	-0.00125	-0.00124
	(A2 * !C1 * !D1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * C1 * !D1 * !X)	-0.00112	-0.00122	-0.00121
	(A1 * !A2 * C1 * !D1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * !C1 * D1 * !X)	-0.00119	-0.00125	-0.00124
	(A1 * !A2 * !C1 * D1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00119	-0.00125	-0.00124
	(A1 * !A2 * !C1 * !D1 * !X)	0.00128	0.00129	0.00128
	(!A1 * !A2 * C1 * D1 * !X)	-0.00061	-0.00062	-0.00060
	(!A1 * !A2 * C1 * D1 * !X)	0.00129	0.00131	0.00129
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00075	-0.00075	-0.00074
	(!A1 * !A2 * C1 * !D1 * !X)	0.00128	0.00131	0.00129
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00075	-0.00074	-0.00074
	(!A1 * !A2 * !C1 * D1 * !X)	0.00130	0.00131	0.00129
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00129	0.00131	0.00129

Passive power(pJ) for C1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * B1 * !D1 * !X)**	0.00062	0.00062	0.00062
	(A2 * B1 * !D1 * !X)	-0.00069	-0.00069	-0.00069
	(A2 * !B1 * D1 * !X)	0.00031	0.00031	0.00031
	(A2 * !B1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(A2 * !B1 * !D1 * !X)	0.00034	0.00034	0.00034
	(A2 * !B1 * !D1 * !X)	-0.00070	-0.00070	-0.00069
	(A1 * !A2 * B1 * !D1 * !X)	0.00061	0.00062	0.00062
	(A1 * !A2 * B1 * !D1 * !X)	-0.00069	-0.00069	-0.00069
	(!A2 * !B1 * D1 * !X)	0.00031	0.00031	0.00031
	(!A2 * !B1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(!A2 * !B1 * !D1 * !X)	0.00034	0.00034	0.00034
	(!A2 * !B1 * !D1 * !X)	-0.00070	-0.00070	-0.00069
	(!A1 * !A2 * B1 * D1 * !X)	0.00032	0.00032	0.00031
	(!A1 * !A2 * B1 * D1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * B1 * !D1 * !X)	0.00037	0.00037	0.00037
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00070	-0.00070	-0.00069

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00062	0.00063	0.00062
	(A2 * B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * D1 * !X)	0.00032	0.00033	0.00033
	(A2 * !B1 * D1 * !X)	-0.00077	-0.00077	-0.00076
	(A2 * !B1 * !D1 * !X)	0.00037	0.00037	0.00037
	(A2 * !B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B1 * !D1 * !X)	0.00062	0.00063	0.00062
	(A1 * !A2 * B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(!A2 * !B1 * D1 * !X)	0.00032	0.00033	0.00033
	(!A2 * !B1 * D1 * !X)	-0.00077	-0.00077	-0.00076
	(!A2 * !B1 * !D1 * !X)	0.00037	0.00037	0.00037
	(!A2 * !B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * B1 * D1 * !X)	0.00033	0.00033	0.00033
	(!A1 * !A2 * B1 * D1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * !A2 * B1 * !D1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00128	0.00129	0.00129
	(A2 * B1 * !D1 * !X)	-0.00131	-0.00132	-0.00131
	(A2 * !B1 * D1 * !X)	0.00067	0.00067	0.00068
	(A2 * !B1 * D1 * !X)	-0.00132	-0.00132	-0.00131
	(A2 * !B1 * !D1 * !X)	0.00075	0.00076	0.00076
	(A2 * !B1 * !D1 * !X)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * B1 * !D1 * !X)	0.00128	0.00129	0.00129
	(A1 * !A2 * B1 * !D1 * !X)	-0.00131	-0.00132	-0.00131
	(!A2 * !B1 * D1 * !X)	0.00067	0.00067	0.00068
	(!A2 * !B1 * D1 * !X)	-0.00132	-0.00131	-0.00131
	(!A2 * !B1 * !D1 * !X)	0.00076	0.00076	0.00076
	(!A2 * !B1 * !D1 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * !A2 * B1 * D1 * !X)	0.00065	0.00065	0.00066
	(!A1 * !A2 * B1 * D1 * !X)	-0.00131	-0.00131	-0.00130
	(!A1 * !A2 * B1 * !D1 * !X)	0.00079	0.00079	0.00078
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00133	-0.00133	-0.00132

Passive power(pJ) for C1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * B1 * !D1 * !X)**	-0.00058	-0.00062	-0.00062
	(A2 * B1 * !D1 * !X)	0.00072	0.00070	0.00069
	(A2 * !B1 * D1 * !X)	-0.00029	-0.00029	-0.00030
	(A2 * !B1 * D1 * !X)	0.00071	0.00072	0.00070
	(A2 * !B1 * !D1 * !X)	-0.00034	-0.00034	-0.00034
	(A2 * !B1 * !D1 * !X)	0.00073	0.00074	0.00070
	(A1 * !A2 * B1 * !D1 * !X)	-0.00057	-0.00062	-0.00062
	(A1 * !A2 * B1 * !D1 * !X)	0.00072	0.00071	0.00069
	(!A2 * !B1 * D1 * !X)	-0.00029	-0.00029	-0.00030
	(!A2 * !B1 * D1 * !X)	0.00071	0.00072	0.00070
	(!A2 * !B1 * !D1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !D1 * !X)	0.00073	0.00074	0.00070
	(!A1 * !A2 * B1 * D1 * !X)	-0.00028	-0.00029	-0.00029
	(!A1 * !A2 * B1 * D1 * !X)	0.00071	0.00073	0.00070
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B1 * !D1 * !X)	0.00072	0.00071	0.00069

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00059	-0.00063	-0.00062
	(A2 * B1 * !D1 * !X)	0.00079	0.00078	0.00077
	(A2 * !B1 * D1 * !X)	-0.00031	-0.00031	-0.00031
	(A2 * !B1 * D1 * !X)	0.00080	0.00080	0.00078
	(A2 * !B1 * !D1 * !X)	-0.00037	-0.00037	-0.00037
	(A2 * !B1 * !D1 * !X)	0.00081	0.00081	0.00077
	(A1 * !A2 * B1 * !D1 * !X)	-0.00059	-0.00063	-0.00062
	(A1 * !A2 * B1 * !D1 * !X)	0.00079	0.00078	0.00077
	(!A2 * !B1 * D1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * D1 * !X)	0.00080	0.00080	0.00078
	(!A2 * !B1 * !D1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !D1 * !X)	0.00081	0.00081	0.00077
	(!A1 * !A2 * B1 * D1 * !X)	-0.00030	-0.00031	-0.00031
	(!A1 * !A2 * B1 * D1 * !X)	0.00079	0.00080	0.00078
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * B1 * !D1 * !X)	0.00078	0.00079	0.00077

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00121	-0.00129	-0.00129
	(A2 * B1 * !D1 * !X)	0.00134	0.00133	0.00132
	(A2 * !B1 * D1 * !X)	-0.00063	-0.00065	-0.00065
	(A2 * !B1 * D1 * !X)	0.00134	0.00137	0.00132
	(A2 * !B1 * !D1 * !X)	-0.00075	-0.00076	-0.00076
	(A2 * !B1 * !D1 * !X)	0.00134	0.00137	0.00133
	(A1 * !A2 * B1 * !D1 * !X)	-0.00121	-0.00129	-0.00129
	(A1 * !A2 * B1 * !D1 * !X)	0.00136	0.00133	0.00132
	(!A2 * !B1 * D1 * !X)	-0.00064	-0.00065	-0.00065
	(!A2 * !B1 * D1 * !X)	0.00136	0.00137	0.00132
	(!A2 * !B1 * !D1 * !X)	-0.00076	-0.00076	-0.00076
	(!A2 * !B1 * !D1 * !X)	0.00134	0.00137	0.00133
	(!A1 * !A2 * B1 * D1 * !X)	-0.00061	-0.00063	-0.00063
	(!A1 * !A2 * B1 * D1 * !X)	0.00135	0.00137	0.00133
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * B1 * !D1 * !X)	0.00134	0.00135	0.00132

Passive power(pJ) for D1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00027	0.00027	0.00026
	(A2 * !C1 * !X)	-0.00085	-0.00084	-0.00086
	(A2 * !B1 * C1 * !X)	0.00027	0.00027	0.00025
	(A2 * !B1 * C1 * !X)	-0.00081	-0.00081	-0.00086
	(!A2 * !C1 * !X)	0.00027	0.00027	0.00026
	(!A2 * !C1 * !X)	-0.00084	-0.00084	-0.00086
	(!A2 * !B1 * C1 * !X)	0.00027	0.00027	0.00025
	(!A2 * !B1 * C1 * !X)	-0.00081	-0.00081	-0.00086
	(!A1 * !A2 * B1 * C1 * !X)	0.00031	0.00031	0.00026
	(!A1 * !A2 * B1 * C1 * !X)	-0.00074	-0.00075	-0.00084

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00028	0.00028	0.00027
	(A2 * !C1 * !X)	-0.00094	-0.00094	-0.00096
	(A2 * !B1 * C1 * !X)	0.00028	0.00028	0.00026
	(A2 * !B1 * C1 * !X)	-0.00090	-0.00091	-0.00096
	(!A2 * !C1 * !X)	0.00028	0.00028	0.00027
	(!A2 * !C1 * !X)	-0.00094	-0.00094	-0.00096
	(!A2 * !B1 * C1 * !X)	0.00028	0.00028	0.00026
	(!A2 * !B1 * C1 * !X)	-0.00090	-0.00091	-0.00096
	(!A1 * !A2 * B1 * C1 * !X)	0.00032	0.00032	0.00027
	(!A1 * !A2 * B1 * C1 * !X)	-0.00083	-0.00084	-0.00094
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00059	0.00059	0.00055
	(A2 * !C1 * !X)	-0.00154	-0.00155	-0.00161
	(A2 * !B1 * C1 * !X)	0.00059	0.00059	0.00052
	(A2 * !B1 * C1 * !X)	-0.00147	-0.00147	-0.00160
	(!A2 * !C1 * !X)	0.00059	0.00059	0.00055
	(!A2 * !C1 * !X)	-0.00155	-0.00155	-0.00161
	(!A2 * !B1 * C1 * !X)	0.00059	0.00059	0.00052
	(!A2 * !B1 * C1 * !X)	-0.00147	-0.00147	-0.00160
	(!A1 * !A2 * B1 * C1 * !X)	0.00065	0.00064	0.00053
	(!A1 * !A2 * B1 * C1 * !X)	-0.00134	-0.00134	-0.00157

Passive power(pJ) for D1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00025	-0.00025	-0.00025
	(A2 * !C1 * !X)	0.00086	0.00087	0.00086
	(A2 * !B1 * C1 * !X)	-0.00024	-0.00024	-0.00024
	(A2 * !B1 * C1 * !X)	0.00086	0.00087	0.00086
	(!A2 * !C1 * !X)	-0.00025	-0.00025	-0.00025
	(!A2 * !C1 * !X)	0.00086	0.00086	0.00086
	(!A2 * !B1 * C1 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * C1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * B1 * C1 * !X)	-0.00024	-0.00025	-0.00024
	(!A1 * !A2 * B1 * C1 * !X)	0.00086	0.00088	0.00086
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00026	-0.00026	-0.00026
	(A2 * !C1 * !X)	0.00097	0.00098	0.00097
	(A2 * !B1 * C1 * !X)	-0.00025	-0.00026	-0.00025
	(A2 * !B1 * C1 * !X)	0.00096	0.00098	0.00097
	(!A2 * !C1 * !X)	-0.00026	-0.00026	-0.00026
	(!A2 * !C1 * !X)	0.00096	0.00098	0.00097
	(!A2 * !B1 * C1 * !X)	-0.00025	-0.00026	-0.00025
	(!A2 * !B1 * C1 * !X)	0.00096	0.00098	0.00097
	(!A1 * !A2 * B1 * C1 * !X)	-0.00025	-0.00026	-0.00025
	(!A1 * !A2 * B1 * C1 * !X)	0.00097	0.00098	0.00097
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00053	-0.00052	-0.00052
	(A2 * !C1 * !X)	0.00161	0.00161	0.00162
	(A2 * !B1 * C1 * !X)	-0.00051	-0.00051	-0.00051
	(A2 * !B1 * C1 * !X)	0.00161	0.00161	0.00161
	(!A2 * !C1 * !X)	-0.00053	-0.00053	-0.00052
	(!A2 * !C1 * !X)	0.00161	0.00164	0.00161
	(!A2 * !B1 * C1 * !X)	-0.00051	-0.00052	-0.00051
	(!A2 * !B1 * C1 * !X)	0.00161	0.00164	0.00161
	(!A1 * !A2 * B1 * C1 * !X)	-0.00051	-0.00052	-0.00051
	(!A1 * !A2 * B1 * C1 * !X)	0.00161	0.00164	0.00161

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	C1	Y
0	0	x	x	1
x	1	0	x	1
x	1	1	0	1
x	1	1	1	0
1	x	0	x	1
1	x	1	0	1
1	x	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211ai_1	9.59040
sky130_fd_sc_hs__o211ai_2	15.98400
sky130_fd_sc_hs__o211ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__o211ai_1	0.00250	0.00262	0.00267	0.00261	0.19343
sky130_fd_sc_hs__o211ai_2	0.00483	0.00500	0.00500	0.00488	0.36808
sky130_fd_sc_hs__o211ai_4	0.00953	0.00987	0.00716	0.00740	0.70957

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.00658	0.03251
sky130_fd_sc_hs__o211ai_2	0.00000	0.01315	0.06502
sky130_fd_sc_hs__o211ai_4	0.00000	0.01818	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (FR)	0.35205	1.78924	12.80310
	A2->Y (FR)	0.31993	1.70446	12.44870
	B1->Y (FR)	0.12512	1.07006	8.84520
	C1->Y (FR)	0.10336	1.04984	8.82226
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.31860	1.57475	12.82130
	A2->Y (FR)	0.27148	1.47129	12.43020
	B1->Y (FR)	0.10250	0.95635	8.69829
	C1->Y (FR)	0.07570	0.92694	8.64400
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.29319	1.39030	12.72920
	A2->Y (FR)	0.24846	1.29373	12.40580
	B1->Y (FR)	0.14929	1.14166	11.42780
	C1->Y (FR)	0.09982	1.08670	11.29120

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.10776	0.73762	5.60391
	A2->Y (RF)	0.09430	0.71425	5.53747
	B1->Y (RF)	0.09892	0.77106	6.09085
	C1->Y (RF)	0.08351	0.77146	6.22211
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.09930	0.66505	5.55551
	A2->Y (RF)	0.08661	0.64571	5.53607
	B1->Y (RF)	0.09103	0.71303	6.18663
	C1->Y (RF)	0.06979	0.70532	6.32503
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.09720	0.61960	5.69202
	A2->Y (RF)	0.08014	0.58946	5.58907
	B1->Y (RF)	0.08169	0.65439	6.29989
	C1->Y (RF)	0.06283	0.66213	6.61161

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00084	0.00078	0.00075
	A1	0.00409	0.00403	0.00379
	A2	0.00085	0.00077	0.00077
	A2	0.00374	0.00366	0.00365
	B1	0.00039	0.00029	0.00029
	B1	0.00315	0.00305	0.00304
	C1	0.00007	-0.00001	-0.00000
	C1	0.00242	0.00234	0.00235
sky130_fd_sc_hs__o211ai_2	A1	0.00100	0.00087	0.00083
	A1	0.00756	0.00745	0.00729
	A2	0.00101	0.00084	0.00086
	A2	0.00677	0.00660	0.00661
	B1	0.00032	0.00010	0.00013
	B1	0.00586	0.00563	0.00572
	C1	-0.00062	-0.00074	-0.00067
	C1	0.00405	0.00386	0.00405
sky130_fd_sc_hs__o211ai_4	A1	0.00194	0.00165	0.00158
	A1	0.01466	0.01442	0.01350
	A2	0.00192	0.00154	0.00159
	A2	0.01310	0.01273	0.01277
	B1	0.00035	-0.00003	0.00004
	B1	0.00938	0.00899	0.00911
	C1	-0.00128	-0.00147	-0.00135
	C1	0.00615	0.00594	0.00615

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00443	0.00444	0.00439
	A1	0.00108	0.00103	0.00101
	A2	0.00370	0.00368	0.00373
	A2	0.00069	0.00066	0.00065
	B1	0.00390	0.00385	0.00387
	B1	0.00111	0.00106	0.00104
	C1	0.00344	0.00338	0.00348
	C1	0.00112	0.00105	0.00103
sky130_fd_sc_hs__o211ai_2	A1	0.00852	0.00841	0.00846
	A1	0.00177	0.00163	0.00158
	A2	0.00668	0.00667	0.00679
	A2	0.00067	0.00060	0.00061
	B1	0.00735	0.00723	0.00748
	B1	0.00177	0.00166	0.00161
	C1	0.00633	0.00622	0.00630
	C1	0.00175	0.00161	0.00159
sky130_fd_sc_hs__o211ai_4	A1	0.01550	0.01523	0.01534
	A1	0.00237	0.00207	0.00200
	A2	0.01193	0.01181	0.01189
	A2	0.00021	0.00004	0.00012
	B1	0.01255	0.01252	0.01240
	B1	0.00350	0.00341	0.00335
	C1	0.01073	0.01068	0.01111
	C1	0.00348	0.00335	0.00332

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o211ai_1	**(A2 * B1 * C1 * !Y)**	0.00078	0.00073	0.00073
	(A2 * B1 * C1 * !Y)	-0.00073	-0.00080	-0.00080
	(A2 * B1 * !C1 * Y)	0.00073	0.00073	0.00073
	(A2 * B1 * !C1 * Y)	-0.00078	-0.00080	-0.00080
	(A2 * !B1 * Y)	0.00073	0.00073	0.00073
	(A2 * !B1 * Y)	-0.00078	-0.00080	-0.00080
	(!A2 * B1 * !C1 * Y)	0.00066	0.00066	0.00066
	(!A2 * B1 * !C1 * Y)	-0.00081	-0.00082	-0.00081
	(!A2 * !B1 * C1 * Y)	0.00067	0.00068	0.00067
	(!A2 * !B1 * C1 * Y)	-0.00081	-0.00082	-0.00081
	(!A2 * !B1 * !C1 * Y)	0.00067	0.00067	0.00067
	(!A2 * !B1 * !C1 * Y)	-0.00081	-0.00081	-0.00081
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00152	0.00144	0.00142
	(A2 * B1 * C1 * !Y)	-0.00151	-0.00163	-0.00163
	(A2 * B1 * !C1 * Y)	0.00142	0.00143	0.00142
	(A2 * B1 * !C1 * Y)	-0.00160	-0.00164	-0.00163
	(A2 * !B1 * Y)	0.00142	0.00143	0.00142
	(A2 * !B1 * Y)	-0.00160	-0.00164	-0.00163
	(!A2 * B1 * !C1 * Y)	0.00129	0.00130	0.00129
	(!A2 * B1 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(!A2 * !B1 * C1 * Y)	0.00131	0.00131	0.00131
	(!A2 * !B1 * C1 * Y)	-0.00168	-0.00168	-0.00168
	(!A2 * !B1 * !C1 * Y)	0.00131	0.00132	0.00131
	(!A2 * !B1 * !C1 * Y)	-0.00168	-0.00168	-0.00168

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00298	0.00282	0.00278
	(A2 * B1 * C1 * !Y)	-0.00298	-0.00323	-0.00323
	(A2 * B1 * !C1 * Y)	0.00278	0.00280	0.00277
	(A2 * B1 * !C1 * Y)	-0.00316	-0.00324	-0.00323
	(A2 * !B1 * Y)	0.00278	0.00280	0.00277
	(A2 * !B1 * Y)	-0.00316	-0.00324	-0.00323
	(!A2 * B1 * !C1 * Y)	0.00249	0.00250	0.00249
	(!A2 * B1 * !C1 * Y)	-0.00332	-0.00332	-0.00332
	(!A2 * !B1 * C1 * Y)	0.00254	0.00255	0.00253
	(!A2 * !B1 * C1 * Y)	-0.00332	-0.00333	-0.00332
	(!A2 * !B1 * !C1 * Y)	0.00254	0.00255	0.00253
	(!A2 * !B1 * !C1 * Y)	-0.00332	-0.00333	-0.00332

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o211ai_1	**(A2 * B1 * C1 * !Y)**	-0.00072	-0.00072	-0.00072
	(A2 * B1 * C1 * !Y)	0.00080	0.00080	0.00080
	(A2 * B1 * !C1 * Y)	-0.00073	-0.00072	-0.00072
	(A2 * B1 * !C1 * Y)	0.00080	0.00080	0.00080
	(A2 * !B1 * Y)	-0.00073	-0.00072	-0.00072
	(A2 * !B1 * Y)	0.00080	0.00080	0.00080
	(!A2 * B1 * !C1 * Y)	-0.00062	-0.00066	-0.00066
	(!A2 * B1 * !C1 * Y)	0.00081	0.00082	0.00082
	(!A2 * !B1 * C1 * Y)	-0.00065	-0.00068	-0.00067
	(!A2 * !B1 * C1 * Y)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !C1 * Y)	-0.00065	-0.00067	-0.00067
	(!A2 * !B1 * !C1 * Y)	0.00082	0.00082	0.00082

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00142	-0.00142	-0.00142
	(A2 * B1 * C1 * !Y)	0.00163	0.00163	0.00163
	(A2 * B1 * !C1 * Y)	-0.00141	-0.00142	-0.00141
	(A2 * B1 * !C1 * Y)	0.00164	0.00164	0.00163
	(A2 * !B1 * Y)	-0.00142	-0.00142	-0.00141
	(A2 * !B1 * Y)	0.00164	0.00164	0.00163
	(!A2 * B1 * !C1 * Y)	-0.00122	-0.00130	-0.00129
	(!A2 * B1 * !C1 * Y)	0.00168	0.00170	0.00168
	(!A2 * !B1 * C1 * Y)	-0.00126	-0.00131	-0.00131
	(!A2 * !B1 * C1 * Y)	0.00169	0.00169	0.00168
	(!A2 * !B1 * !C1 * Y)	-0.00126	-0.00132	-0.00131
	(!A2 * !B1 * !C1 * Y)	0.00169	0.00169	0.00168
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00278	-0.00277	-0.00276
	(A2 * B1 * C1 * !Y)	0.00326	0.00323	0.00323
	(A2 * B1 * !C1 * Y)	-0.00277	-0.00277	-0.00277
	(A2 * B1 * !C1 * Y)	0.00324	0.00324	0.00323
	(A2 * !B1 * Y)	-0.00278	-0.00277	-0.00277
	(A2 * !B1 * Y)	0.00326	0.00324	0.00323
	(!A2 * B1 * !C1 * Y)	-0.00234	-0.00250	-0.00249
	(!A2 * B1 * !C1 * Y)	0.00333	0.00332	0.00333
	(!A2 * !B1 * C1 * Y)	-0.00242	-0.00255	-0.00253
	(!A2 * !B1 * C1 * Y)	0.00332	0.00334	0.00333
	(!A2 * !B1 * !C1 * Y)	-0.00242	-0.00255	-0.00253
	(!A2 * !B1 * !C1 * Y)	0.00332	0.00334	0.00333

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o211ai_1	**(A1 * B1 * C1 * !Y)**	0.00079	0.00079	0.00078
	(A1 * B1 * C1 * !Y)	-0.00048	-0.00048	-0.00047
	(A1 * B1 * !C1 * Y)	0.00071	0.00071	0.00071
	(A1 * B1 * !C1 * Y)	-0.00079	-0.00080	-0.00080
	(A1 * !B1 * C1 * Y)	0.00072	0.00071	0.00071
	(A1 * !B1 * C1 * Y)	-0.00079	-0.00080	-0.00080
	(A1 * !B1 * !C1 * Y)	0.00071	0.00071	0.00071
	(A1 * !B1 * !C1 * Y)	-0.00079	-0.00080	-0.00080
	(!A1 * B1 * !C1 * Y)	0.00064	0.00064	0.00064
	(!A1 * B1 * !C1 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !B1 * C1 * Y)	0.00065	0.00065	0.00065
	(!A1 * !B1 * C1 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !B1 * !C1 * Y)	0.00066	0.00066	0.00065
	(!A1 * !B1 * !C1 * Y)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00164	0.00164	0.00161
	(A1 * B1 * C1 * !Y)	-0.00093	-0.00092	-0.00091
	(A1 * B1 * !C1 * Y)	0.00143	0.00143	0.00142
	(A1 * B1 * !C1 * Y)	-0.00158	-0.00162	-0.00161
	(A1 * !B1 * C1 * Y)	0.00143	0.00143	0.00142
	(A1 * !B1 * C1 * Y)	-0.00158	-0.00162	-0.00161
	(A1 * !B1 * !C1 * Y)	0.00141	0.00142	0.00142
	(A1 * !B1 * !C1 * Y)	-0.00157	-0.00162	-0.00161
	(!A1 * B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(!A1 * B1 * !C1 * Y)	-0.00165	-0.00166	-0.00166
	(!A1 * !B1 * C1 * Y)	0.00130	0.00131	0.00130
	(!A1 * !B1 * C1 * Y)	-0.00165	-0.00166	-0.00166
	(!A1 * !B1 * !C1 * Y)	0.00130	0.00131	0.00130
	(!A1 * !B1 * !C1 * Y)	-0.00165	-0.00166	-0.00166

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00319	0.00320	0.00315
	(A1 * B1 * C1 * !Y)	-0.00188	-0.00187	-0.00184
	(A1 * B1 * !C1 * Y)	0.00279	0.00279	0.00277
	(A1 * B1 * !C1 * Y)	-0.00318	-0.00324	-0.00323
	(A1 * !B1 * C1 * Y)	0.00280	0.00279	0.00277
	(A1 * !B1 * C1 * Y)	-0.00318	-0.00324	-0.00323
	(A1 * !B1 * !C1 * Y)	0.00279	0.00279	0.00277
	(A1 * !B1 * !C1 * Y)	-0.00318	-0.00325	-0.00324
	(!A1 * B1 * !C1 * Y)	0.00247	0.00251	0.00249
	(!A1 * B1 * !C1 * Y)	-0.00332	-0.00335	-0.00333
	(!A1 * !B1 * C1 * Y)	0.00254	0.00255	0.00253
	(!A1 * !B1 * C1 * Y)	-0.00333	-0.00335	-0.00333
	(!A1 * !B1 * !C1 * Y)	0.00255	0.00254	0.00253
	(!A1 * !B1 * !C1 * Y)	-0.00333	-0.00334	-0.00333

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o211ai_1	**(A1 * B1 * C1 * !Y)**	-0.00074	-0.00074	-0.00077
	(A1 * B1 * C1 * !Y)	0.00051	0.00051	0.00048
	(A1 * B1 * !C1 * Y)	-0.00071	-0.00071	-0.00071
	(A1 * B1 * !C1 * Y)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * Y)	-0.00071	-0.00071	-0.00071
	(A1 * !B1 * C1 * Y)	0.00080	0.00080	0.00080
	(A1 * !B1 * !C1 * Y)	-0.00071	-0.00071	-0.00071
	(A1 * !B1 * !C1 * Y)	0.00081	0.00080	0.00080
	(!A1 * B1 * !C1 * Y)	-0.00060	-0.00064	-0.00064
	(!A1 * B1 * !C1 * Y)	0.00082	0.00083	0.00082
	(!A1 * !B1 * C1 * Y)	-0.00063	-0.00065	-0.00065
	(!A1 * !B1 * C1 * Y)	0.00082	0.00082	0.00082
	(!A1 * !B1 * !C1 * Y)	-0.00063	-0.00066	-0.00065
	(!A1 * !B1 * !C1 * Y)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00148	-0.00149	-0.00159
	(A1 * B1 * C1 * !Y)	0.00103	0.00104	0.00095
	(A1 * B1 * !C1 * Y)	-0.00142	-0.00142	-0.00142
	(A1 * B1 * !C1 * Y)	0.00161	0.00162	0.00161
	(A1 * !B1 * C1 * Y)	-0.00142	-0.00142	-0.00142
	(A1 * !B1 * C1 * Y)	0.00162	0.00162	0.00161
	(A1 * !B1 * !C1 * Y)	-0.00141	-0.00142	-0.00142
	(A1 * !B1 * !C1 * Y)	0.00161	0.00162	0.00161
	(!A1 * B1 * !C1 * Y)	-0.00121	-0.00129	-0.00128
	(!A1 * B1 * !C1 * Y)	0.00166	0.00168	0.00166
	(!A1 * !B1 * C1 * Y)	-0.00125	-0.00131	-0.00130
	(!A1 * !B1 * C1 * Y)	0.00166	0.00166	0.00166
	(!A1 * !B1 * !C1 * Y)	-0.00125	-0.00131	-0.00130
	(!A1 * !B1 * !C1 * Y)	0.00166	0.00166	0.00166

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00291	-0.00294	-0.00311
	(A1 * B1 * C1 * !Y)	0.00207	0.00207	0.00191
	(A1 * B1 * !C1 * Y)	-0.00277	-0.00277	-0.00276
	(A1 * B1 * !C1 * Y)	0.00323	0.00324	0.00323
	(A1 * !B1 * C1 * Y)	-0.00277	-0.00277	-0.00276
	(A1 * !B1 * C1 * Y)	0.00324	0.00324	0.00323
	(A1 * !B1 * !C1 * Y)	-0.00277	-0.00277	-0.00276
	(A1 * !B1 * !C1 * Y)	0.00325	0.00325	0.00324
	(!A1 * B1 * !C1 * Y)	-0.00233	-0.00251	-0.00249
	(!A1 * B1 * !C1 * Y)	0.00334	0.00335	0.00334
	(!A1 * !B1 * C1 * Y)	-0.00241	-0.00255	-0.00253
	(!A1 * !B1 * C1 * Y)	0.00333	0.00335	0.00334
	(!A1 * !B1 * !C1 * Y)	-0.00242	-0.00254	-0.00253
	(!A1 * !B1 * !C1 * Y)	0.00333	0.00335	0.00334

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00064	0.00064	0.00064
	(A2 * !C1 * Y)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * !C1 * Y)	0.00064	0.00064	0.00064
	(A1 * !A2 * !C1 * Y)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * C1 * Y)	0.00035	0.00035	0.00035
	(!A1 * !A2 * C1 * Y)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * !C1 * Y)	0.00041	0.00041	0.00041
	(!A1 * !A2 * !C1 * Y)	-0.00087	-0.00087	-0.00086
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00127	0.00129	0.00128
	(A2 * !C1 * Y)	-0.00168	-0.00170	-0.00169
	(A1 * !A2 * !C1 * Y)	0.00128	0.00129	0.00128
	(A1 * !A2 * !C1 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * C1 * Y)	0.00066	0.00066	0.00067
	(!A1 * !A2 * C1 * Y)	-0.00169	-0.00169	-0.00167
	(!A1 * !A2 * !C1 * Y)	0.00078	0.00078	0.00077
	(!A1 * !A2 * !C1 * Y)	-0.00170	-0.00170	-0.00170
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00253	0.00255	0.00254
	(A2 * !C1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !C1 * Y)	0.00253	0.00254	0.00254
	(A1 * !A2 * !C1 * Y)	-0.00169	-0.00169	-0.00169
	(!A1 * !A2 * C1 * Y)	0.00128	0.00128	0.00130
	(!A1 * !A2 * C1 * Y)	-0.00169	-0.00169	-0.00166
	(!A1 * !A2 * !C1 * Y)	0.00151	0.00151	0.00150
	(!A1 * !A2 * !C1 * Y)	-0.00171	-0.00172	-0.00171

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00061	-0.00064	-0.00064
	(A2 * !C1 * Y)	0.00088	0.00087	0.00087
	(A1 * !A2 * !C1 * Y)	-0.00061	-0.00064	-0.00064
	(A1 * !A2 * !C1 * Y)	0.00088	0.00087	0.00087
	(!A1 * !A2 * C1 * Y)	-0.00032	-0.00033	-0.00033
	(!A1 * !A2 * C1 * Y)	0.00089	0.00090	0.00087
	(!A1 * !A2 * !C1 * Y)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !C1 * Y)	0.00089	0.00090	0.00087
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00122	-0.00129	-0.00128
	(A2 * !C1 * Y)	0.00171	0.00170	0.00169
	(A1 * !A2 * !C1 * Y)	-0.00121	-0.00129	-0.00128
	(A1 * !A2 * !C1 * Y)	0.00171	0.00171	0.00169
	(!A1 * !A2 * C1 * Y)	-0.00062	-0.00063	-0.00064
	(!A1 * !A2 * C1 * Y)	0.00174	0.00176	0.00171
	(!A1 * !A2 * !C1 * Y)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * !C1 * Y)	0.00173	0.00176	0.00170
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00242	-0.00255	-0.00254
	(A2 * !C1 * Y)	0.00174	0.00171	0.00170
	(A1 * !A2 * !C1 * Y)	-0.00239	-0.00254	-0.00254
	(A1 * !A2 * !C1 * Y)	0.00176	0.00171	0.00170
	(!A1 * !A2 * C1 * Y)	-0.00119	-0.00122	-0.00123
	(!A1 * !A2 * C1 * Y)	0.00178	0.00181	0.00172
	(!A1 * !A2 * !C1 * Y)	-0.00151	-0.00151	-0.00150
	(!A1 * !A2 * !C1 * Y)	0.00179	0.00180	0.00171

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00027	0.00027	0.00026
	(A2 * !B1 * Y)	-0.00097	-0.00098	-0.00100
	(!A2 * !B1 * Y)	0.00027	0.00027	0.00026
	(!A2 * !B1 * Y)	-0.00097	-0.00098	-0.00100
	(!A1 * !A2 * B1 * Y)	0.00030	0.00030	0.00026
	(!A1 * !A2 * B1 * Y)	-0.00091	-0.00092	-0.00099
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00058	0.00058	0.00054
	(A2 * !B1 * Y)	-0.00188	-0.00189	-0.00194
	(!A2 * !B1 * Y)	0.00058	0.00058	0.00054
	(!A2 * !B1 * Y)	-0.00187	-0.00189	-0.00194
	(!A1 * !A2 * B1 * Y)	0.00060	0.00060	0.00052
	(!A1 * !A2 * B1 * Y)	-0.00176	-0.00178	-0.00192
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00110	0.00110	0.00103
	(A2 * !B1 * Y)	-0.00220	-0.00221	-0.00232
	(!A2 * !B1 * Y)	0.00109	0.00110	0.00103
	(!A2 * !B1 * Y)	-0.00218	-0.00221	-0.00232
	(!A1 * !A2 * B1 * Y)	0.00115	0.00114	0.00099
	(!A1 * !A2 * B1 * Y)	-0.00197	-0.00198	-0.00228

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00025	-0.00025	-0.00025
	(A2 * !B1 * Y)	0.00100	0.00100	0.00100
	(!A2 * !B1 * Y)	-0.00025	-0.00025	-0.00025
	(!A2 * !B1 * Y)	0.00100	0.00100	0.00100
	(!A1 * !A2 * B1 * Y)	-0.00025	-0.00025	-0.00024
	(!A1 * !A2 * B1 * Y)	0.00100	0.00100	0.00100
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00052	-0.00052	-0.00051
	(A2 * !B1 * Y)	0.00196	0.00196	0.00195
	(!A2 * !B1 * Y)	-0.00052	-0.00051	-0.00051
	(!A2 * !B1 * Y)	0.00196	0.00194	0.00195
	(!A1 * !A2 * B1 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * B1 * Y)	0.00194	0.00196	0.00195
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00099	-0.00099	-0.00099
	(A2 * !B1 * Y)	0.00233	0.00234	0.00233
	(!A2 * !B1 * Y)	-0.00100	-0.00098	-0.00099
	(!A2 * !B1 * Y)	0.00234	0.00232	0.00233
	(!A1 * !A2 * B1 * Y)	-0.00096	-0.00096	-0.00095
	(!A1 * !A2 * B1 * Y)	0.00234	0.00234	0.00233

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	C1	X
0	0	x	x	0
x	1	0	x	0
x	1	1	0	0
x	1	1	1	1
1	x	0	x	0
1	x	1	0	0
1	x	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211a_1	14.38560
sky130_fd_sc_hs__o211a_2	12.78720
sky130_fd_sc_hs__o211a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__o211a_1	0.00243	0.00263	0.00242	0.00238	0.45033
sky130_fd_sc_hs__o211a_2	0.00258	0.00258	0.00258	0.00252	0.87469
sky130_fd_sc_hs__o211a_4	0.00465	0.00444	0.00464	0.00408	1.67464

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	0.02304	0.07921
sky130_fd_sc_hs__o211a_2	0.00000	0.03202	0.08197
sky130_fd_sc_hs__o211a_4	0.00000	0.07924	0.24131

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (RR)	0.25044	1.22181	8.87389
	A2->X (RR)	0.22923	1.19379	8.76575
	B1->X (RR)	0.23858	1.22751	8.79261
	C1->X (RR)	0.22405	1.19928	8.53294
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.25223	1.09300	8.91353
	A2->X (RR)	0.22707	1.06375	8.82177
	B1->X (RR)	0.24176	1.11264	8.90343
	C1->X (RR)	0.22734	1.09457	8.69909
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.24833	0.99644	8.99999
	A2->X (RR)	0.23732	0.97469	8.89664
	B1->X (RR)	0.23628	1.00710	8.95275
	C1->X (RR)	0.21975	0.98081	8.70719

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.50963	1.28789	6.55657
	A2->X (FF)	0.47657	1.20252	5.98732
	B1->X (FF)	0.20848	0.96655	5.63586
	C1->X (FF)	0.18886	0.93606	5.51676
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.61094	1.38632	6.89084
	A2->X (FF)	0.57480	1.29467	6.37221
	B1->X (FF)	0.25372	1.00096	5.94654
	C1->X (FF)	0.23071	0.97223	5.83554
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.55356	1.28831	6.75094
	A2->X (FF)	0.51657	1.19225	6.19719
	B1->X (FF)	0.25070	0.95263	5.74626
	C1->X (FF)	0.24578	0.94396	5.67141

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00570	0.00571	0.00569
	A1	0.00247	0.00248	0.00248
	A2	0.00519	0.00518	0.00518
	A2	0.00214	0.00212	0.00213
	B1	0.00515	0.00514	0.00516
	B1	0.00249	0.00247	0.00251
	C1	0.00477	0.00471	0.00484
	C1	0.00248	0.00242	0.00256
sky130_fd_sc_hs__o211a_2	A1	0.00694	0.00709	0.00711
	A1	0.00354	0.00369	0.00376
	A2	0.00622	0.00636	0.00638
	A2	0.00318	0.00331	0.00338
	B1	0.00638	0.00649	0.00655
	B1	0.00357	0.00368	0.00379
	C1	0.00595	0.00602	0.00616
	C1	0.00356	0.00363	0.00378
sky130_fd_sc_hs__o211a_4	A1	0.01280	0.01313	0.01326
	A1	0.00668	0.00701	0.00722
	A2	0.01122	0.01150	0.01165
	A2	0.00592	0.00620	0.00642
	B1	0.01189	0.01216	0.01238
	B1	0.00691	0.00718	0.00748
	C1	0.01079	0.01095	0.01137
	C1	0.00691	0.00709	0.00755

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00225	0.00227	0.00255
	A1	0.00537	0.00539	0.00533
	A2	0.00207	0.00203	0.00251
	A2	0.00499	0.00499	0.00516
	B1	0.00185	0.00179	0.00217
	B1	0.00452	0.00444	0.00467
	C1	0.00165	0.00155	0.00199
	C1	0.00396	0.00387	0.00413
sky130_fd_sc_hs__o211a_2	A1	0.00319	0.00336	0.00445
	A1	0.00647	0.00665	0.00662
	A2	0.00320	0.00333	0.00376
	A2	0.00611	0.00626	0.00646
	B1	0.00289	0.00297	0.00349
	B1	0.00567	0.00575	0.00600
	C1	0.00264	0.00270	0.00338
	C1	0.00506	0.00511	0.00539
sky130_fd_sc_hs__o211a_4	A1	0.00600	0.00647	0.00674
	A1	0.01190	0.01239	0.01242
	A2	0.00621	0.00650	0.00709
	A2	0.01124	0.01161	0.01208
	B1	0.00517	0.00539	0.00662
	B1	0.01013	0.01032	0.01105
	C1	0.00505	0.00526	0.00669
	C1	0.00897	0.00917	0.00998

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o211a_1	**(A2 * B1 * C1 * X)**	0.00076	0.00072	0.00071
	(A2 * B1 * C1 * X)	-0.00066	-0.00074	-0.00074
	(A2 * B1 * !C1 * !X)	0.00063	0.00063	0.00062
	(A2 * B1 * !C1 * !X)	-0.00081	-0.00082	-0.00082
	(A2 * !B1 * !X)	0.00062	0.00063	0.00062
	(A2 * !B1 * !X)	-0.00080	-0.00082	-0.00082
	(!A2 * B1 * !C1 * !X)	0.00056	0.00056	0.00056
	(!A2 * B1 * !C1 * !X)	-0.00083	-0.00084	-0.00084
	(!A2 * !B1 * C1 * !X)	0.00058	0.00058	0.00057
	(!A2 * !B1 * C1 * !X)	-0.00084	-0.00084	-0.00084
	(!A2 * !B1 * !C1 * !X)	0.00058	0.00058	0.00057
	(!A2 * !B1 * !C1 * !X)	-0.00084	-0.00084	-0.00084
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00084	0.00080	0.00079
	(A2 * B1 * C1 * X)	-0.00065	-0.00071	-0.00071
	(A2 * B1 * !C1 * !X)	0.00067	0.00068	0.00067
	(A2 * B1 * !C1 * !X)	-0.00081	-0.00082	-0.00082
	(A2 * !B1 * !X)	0.00067	0.00068	0.00067
	(A2 * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(!A2 * B1 * !C1 * !X)	0.00061	0.00062	0.00061
	(!A2 * B1 * !C1 * !X)	-0.00084	-0.00084	-0.00084
	(!A2 * !B1 * C1 * !X)	0.00063	0.00063	0.00063
	(!A2 * !B1 * C1 * !X)	-0.00084	-0.00084	-0.00084
	(!A2 * !B1 * !C1 * !X)	0.00063	0.00063	0.00063
	(!A2 * !B1 * !C1 * !X)	-0.00084	-0.00084	-0.00084

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00150	0.00141	0.00140
	(A2 * B1 * C1 * X)	-0.00134	-0.00146	-0.00147
	(A2 * B1 * !C1 * !X)	0.00138	0.00138	0.00138
	(A2 * B1 * !C1 * !X)	-0.00145	-0.00149	-0.00148
	(A2 * !B1 * !X)	0.00138	0.00138	0.00138
	(A2 * !B1 * !X)	-0.00145	-0.00149	-0.00148
	(!A2 * B1 * !C1 * !X)	0.00125	0.00127	0.00126
	(!A2 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(!A2 * !B1 * C1 * !X)	0.00128	0.00130	0.00128
	(!A2 * !B1 * C1 * !X)	-0.00151	-0.00152	-0.00151
	(!A2 * !B1 * !C1 * !X)	0.00128	0.00130	0.00128
	(!A2 * !B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o211a_1	**(A2 * B1 * C1 * X)**	-0.00070	-0.00070	-0.00070
	(A2 * B1 * C1 * X)	0.00074	0.00074	0.00074
	(A2 * B1 * !C1 * !X)	-0.00062	-0.00062	-0.00062
	(A2 * B1 * !C1 * !X)	0.00083	0.00082	0.00082
	(A2 * !B1 * !X)	-0.00062	-0.00062	-0.00062
	(A2 * !B1 * !X)	0.00083	0.00082	0.00082
	(!A2 * B1 * !C1 * !X)	-0.00053	-0.00056	-0.00056
	(!A2 * B1 * !C1 * !X)	0.00084	0.00085	0.00084
	(!A2 * !B1 * C1 * !X)	-0.00055	-0.00058	-0.00057
	(!A2 * !B1 * C1 * !X)	0.00084	0.00085	0.00084
	(!A2 * !B1 * !C1 * !X)	-0.00055	-0.00058	-0.00057
	(!A2 * !B1 * !C1 * !X)	0.00084	0.00085	0.00084

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00079	-0.00078	-0.00078
	(A2 * B1 * C1 * X)	0.00072	0.00071	0.00071
	(A2 * B1 * !C1 * !X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * !C1 * !X)	0.00083	0.00082	0.00082
	(A2 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(A2 * !B1 * !X)	0.00083	0.00082	0.00082
	(!A2 * B1 * !C1 * !X)	-0.00058	-0.00062	-0.00061
	(!A2 * B1 * !C1 * !X)	0.00084	0.00085	0.00084
	(!A2 * !B1 * C1 * !X)	-0.00061	-0.00063	-0.00063
	(!A2 * !B1 * C1 * !X)	0.00085	0.00084	0.00084
	(!A2 * !B1 * !C1 * !X)	-0.00061	-0.00063	-0.00063
	(!A2 * !B1 * !C1 * !X)	0.00085	0.00084	0.00084
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00139	-0.00139	-0.00139
	(A2 * B1 * C1 * X)	0.00146	0.00147	0.00147
	(A2 * B1 * !C1 * !X)	-0.00137	-0.00138	-0.00137
	(A2 * B1 * !C1 * !X)	0.00148	0.00149	0.00148
	(A2 * !B1 * !X)	-0.00137	-0.00138	-0.00137
	(A2 * !B1 * !X)	0.00148	0.00149	0.00148
	(!A2 * B1 * !C1 * !X)	-0.00120	-0.00127	-0.00126
	(!A2 * B1 * !C1 * !X)	0.00153	0.00153	0.00152
	(!A2 * !B1 * C1 * !X)	-0.00124	-0.00130	-0.00128
	(!A2 * !B1 * C1 * !X)	0.00151	0.00153	0.00152
	(!A2 * !B1 * !C1 * !X)	-0.00124	-0.00130	-0.00128
	(!A2 * !B1 * !C1 * !X)	0.00151	0.00153	0.00152

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o211a_1	**(A1 * B1 * C1 * X)**	0.00091	0.00092	0.00091
	(A1 * B1 * C1 * X)	-0.00042	-0.00043	-0.00042
	(A1 * B1 * !C1 * !X)	0.00082	0.00082	0.00081
	(A1 * B1 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(A1 * !B1 * C1 * !X)	0.00082	0.00082	0.00081
	(A1 * !B1 * C1 * !X)	-0.00073	-0.00074	-0.00074
	(A1 * !B1 * !C1 * !X)	0.00081	0.00082	0.00081
	(A1 * !B1 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(!A1 * B1 * !C1 * !X)	0.00076	0.00076	0.00075
	(!A1 * B1 * !C1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !B1 * C1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !B1 * C1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !B1 * !C1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !B1 * !C1 * !X)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00080	0.00080	0.00079
	(A1 * B1 * C1 * X)	-0.00043	-0.00042	-0.00042
	(A1 * B1 * !C1 * !X)	0.00067	0.00067	0.00066
	(A1 * B1 * !C1 * !X)	-0.00077	-0.00078	-0.00078
	(A1 * !B1 * C1 * !X)	0.00067	0.00067	0.00066
	(A1 * !B1 * C1 * !X)	-0.00077	-0.00078	-0.00078
	(A1 * !B1 * !C1 * !X)	0.00066	0.00067	0.00066
	(A1 * !B1 * !C1 * !X)	-0.00076	-0.00078	-0.00078
	(!A1 * B1 * !C1 * !X)	0.00060	0.00060	0.00060
	(!A1 * B1 * !C1 * !X)	-0.00079	-0.00080	-0.00079
	(!A1 * !B1 * C1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !B1 * C1 * !X)	-0.00080	-0.00079	-0.00080
	(!A1 * !B1 * !C1 * !X)	0.00062	0.00062	0.00061
	(!A1 * !B1 * !C1 * !X)	-0.00080	-0.00080	-0.00080

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00136	0.00136	0.00134
	(A1 * B1 * C1 * X)	-0.00087	-0.00087	-0.00085
	(A1 * B1 * !C1 * !X)	0.00116	0.00117	0.00117
	(A1 * B1 * !C1 * !X)	-0.00145	-0.00148	-0.00148
	(A1 * !B1 * C1 * !X)	0.00117	0.00117	0.00117
	(A1 * !B1 * C1 * !X)	-0.00145	-0.00148	-0.00148
	(A1 * !B1 * !C1 * !X)	0.00117	0.00117	0.00117
	(A1 * !B1 * !C1 * !X)	-0.00145	-0.00148	-0.00148
	(!A1 * B1 * !C1 * !X)	0.00105	0.00105	0.00105
	(!A1 * B1 * !C1 * !X)	-0.00152	-0.00152	-0.00152
	(!A1 * !B1 * C1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !B1 * C1 * !X)	-0.00152	-0.00153	-0.00152
	(!A1 * !B1 * !C1 * !X)	0.00108	0.00108	0.00108
	(!A1 * !B1 * !C1 * !X)	-0.00152	-0.00153	-0.00152

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o211a_1	**(A1 * B1 * C1 * X)**	-0.00087	-0.00087	-0.00090
	(A1 * B1 * C1 * X)	0.00046	0.00045	0.00043
	(A1 * B1 * !C1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(A1 * !B1 * C1 * !X)	-0.00082	-0.00082	-0.00081
	(A1 * !B1 * C1 * !X)	0.00074	0.00074	0.00074
	(A1 * !B1 * !C1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * !B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(!A1 * B1 * !C1 * !X)	-0.00072	-0.00076	-0.00075
	(!A1 * B1 * !C1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !B1 * C1 * !X)	-0.00074	-0.00077	-0.00077
	(!A1 * !B1 * C1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !B1 * !C1 * !X)	-0.00074	-0.00077	-0.00077
	(!A1 * !B1 * !C1 * !X)	0.00076	0.00076	0.00076
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00075	-0.00076	-0.00079
	(A1 * B1 * C1 * X)	0.00046	0.00046	0.00043
	(A1 * B1 * !C1 * !X)	-0.00066	-0.00066	-0.00066
	(A1 * B1 * !C1 * !X)	0.00078	0.00078	0.00078
	(A1 * !B1 * C1 * !X)	-0.00067	-0.00066	-0.00066
	(A1 * !B1 * C1 * !X)	0.00078	0.00078	0.00078
	(A1 * !B1 * !C1 * !X)	-0.00066	-0.00066	-0.00066
	(A1 * !B1 * !C1 * !X)	0.00078	0.00078	0.00078
	(!A1 * B1 * !C1 * !X)	-0.00057	-0.00060	-0.00060
	(!A1 * B1 * !C1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !B1 * C1 * !X)	-0.00059	-0.00062	-0.00062
	(!A1 * !B1 * C1 * !X)	0.00080	0.00079	0.00080
	(!A1 * !B1 * !C1 * !X)	-0.00059	-0.00062	-0.00061
	(!A1 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00125	-0.00126	-0.00133
	(A1 * B1 * C1 * X)	0.00094	0.00094	0.00088
	(A1 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * B1 * !C1 * !X)	0.00148	0.00148	0.00148
	(A1 * !B1 * C1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !B1 * C1 * !X)	0.00149	0.00148	0.00148
	(A1 * !B1 * !C1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !B1 * !C1 * !X)	0.00149	0.00148	0.00148
	(!A1 * B1 * !C1 * !X)	-0.00099	-0.00105	-0.00105
	(!A1 * B1 * !C1 * !X)	0.00152	0.00154	0.00153
	(!A1 * !B1 * C1 * !X)	-0.00104	-0.00109	-0.00108
	(!A1 * !B1 * C1 * !X)	0.00153	0.00154	0.00153
	(!A1 * !B1 * !C1 * !X)	-0.00104	-0.00108	-0.00108
	(!A1 * !B1 * !C1 * !X)	0.00153	0.00154	0.00153

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00052	0.00053	0.00052
	(A2 * !C1 * !X)	-0.00085	-0.00086	-0.00085
	(A1 * !A2 * !C1 * !X)	0.00052	0.00053	0.00052
	(A1 * !A2 * !C1 * !X)	-0.00085	-0.00086	-0.00085
	(!A1 * !A2 * C1 * !X)	0.00028	0.00028	0.00028
	(!A1 * !A2 * C1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * !C1 * !X)	0.00034	0.00034	0.00034
	(!A1 * !A2 * !C1 * !X)	-0.00087	-0.00087	-0.00086
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00061	0.00061	0.00061
	(A2 * !C1 * !X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * !C1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A2 * !C1 * !X)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * C1 * !X)	0.00032	0.00032	0.00032
	(!A1 * !A2 * C1 * !X)	-0.00081	-0.00081	-0.00080
	(!A1 * !A2 * !C1 * !X)	0.00037	0.00037	0.00037
	(!A1 * !A2 * !C1 * !X)	-0.00082	-0.00082	-0.00081
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00134	0.00135	0.00134
	(A2 * !C1 * !X)	-0.00136	-0.00137	-0.00137
	(A1 * !A2 * !C1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !C1 * !X)	-0.00136	-0.00137	-0.00136
	(!A1 * !A2 * C1 * !X)	0.00083	0.00083	0.00082
	(!A1 * !A2 * C1 * !X)	-0.00137	-0.00137	-0.00136
	(!A1 * !A2 * !C1 * !X)	0.00092	0.00092	0.00092
	(!A1 * !A2 * !C1 * !X)	-0.00138	-0.00139	-0.00138

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00050	-0.00053	-0.00052
	(A2 * !C1 * !X)	0.00087	0.00086	0.00086
	(A1 * !A2 * !C1 * !X)	-0.00049	-0.00053	-0.00052
	(A1 * !A2 * !C1 * !X)	0.00087	0.00086	0.00086
	(!A1 * !A2 * C1 * !X)	-0.00026	-0.00026	-0.00026
	(!A1 * !A2 * C1 * !X)	0.00089	0.00089	0.00087
	(!A1 * !A2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * !C1 * !X)	0.00089	0.00089	0.00087
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00058	-0.00061	-0.00061
	(A2 * !C1 * !X)	0.00082	0.00081	0.00080
	(A1 * !A2 * !C1 * !X)	-0.00057	-0.00061	-0.00061
	(A1 * !A2 * !C1 * !X)	0.00083	0.00081	0.00080
	(!A1 * !A2 * C1 * !X)	-0.00029	-0.00030	-0.00030
	(!A1 * !A2 * C1 * !X)	0.00084	0.00084	0.00082
	(!A1 * !A2 * !C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * !C1 * !X)	0.00085	0.00085	0.00082
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00128	-0.00135	-0.00134
	(A2 * !C1 * !X)	0.00139	0.00138	0.00137
	(A1 * !A2 * !C1 * !X)	-0.00128	-0.00135	-0.00134
	(A1 * !A2 * !C1 * !X)	0.00140	0.00139	0.00137
	(!A1 * !A2 * C1 * !X)	-0.00077	-0.00078	-0.00079
	(!A1 * !A2 * C1 * !X)	0.00141	0.00142	0.00139
	(!A1 * !A2 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(!A1 * !A2 * !C1 * !X)	0.00143	0.00142	0.00138

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00022	0.00022	0.00021
	(A2 * !B1 * !X)	-0.00093	-0.00094	-0.00095
	(!A2 * !B1 * !X)	0.00023	0.00022	0.00021
	(!A2 * !B1 * !X)	-0.00093	-0.00094	-0.00095
	(!A1 * !A2 * B1 * !X)	0.00026	0.00026	0.00022
	(!A1 * !A2 * B1 * !X)	-0.00087	-0.00088	-0.00095
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00028	0.00028	0.00027
	(A2 * !B1 * !X)	-0.00089	-0.00090	-0.00092
	(!A2 * !B1 * !X)	0.00028	0.00028	0.00027
	(!A2 * !B1 * !X)	-0.00090	-0.00090	-0.00092
	(!A1 * !A2 * B1 * !X)	0.00031	0.00031	0.00027
	(!A1 * !A2 * B1 * !X)	-0.00084	-0.00085	-0.00091
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00042	0.00042	0.00039
	(A2 * !B1 * !X)	-0.00151	-0.00151	-0.00155
	(!A2 * !B1 * !X)	0.00042	0.00042	0.00039
	(!A2 * !B1 * !X)	-0.00151	-0.00151	-0.00155
	(!A1 * !A2 * B1 * !X)	0.00048	0.00047	0.00040
	(!A1 * !A2 * B1 * !X)	-0.00139	-0.00140	-0.00153

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00021	-0.00021	-0.00021
	(A2 * !B1 * !X)	0.00096	0.00096	0.00096
	(!A2 * !B1 * !X)	-0.00021	-0.00021	-0.00021
	(!A2 * !B1 * !X)	0.00095	0.00097	0.00096
	(!A1 * !A2 * B1 * !X)	-0.00020	-0.00021	-0.00020
	(!A1 * !A2 * B1 * !X)	0.00095	0.00097	0.00096
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00026	-0.00026	-0.00026
	(A2 * !B1 * !X)	0.00093	0.00093	0.00092
	(!A2 * !B1 * !X)	-0.00026	-0.00026	-0.00026
	(!A2 * !B1 * !X)	0.00093	0.00093	0.00092
	(!A1 * !A2 * B1 * !X)	-0.00026	-0.00026	-0.00025
	(!A1 * !A2 * B1 * !X)	0.00092	0.00093	0.00092
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(A2 * !B1 * !X)	0.00155	0.00158	0.00156
	(!A2 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * !X)	0.00155	0.00158	0.00156
	(!A1 * !A2 * B1 * !X)	-0.00037	-0.00037	-0.00036
	(!A1 * !A2 * B1 * !X)	0.00156	0.00158	0.00156

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A1	A2	B1	Y
0	0	x	1
x	1	0	1
x	1	1	0
1	x	0	1
1	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ai_1	7.99200
sky130_fd_sc_hs__o21ai_2	11.18880
sky130_fd_sc_hs__o21ai_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__o21ai_1	0.00263	0.00272	0.00265	0.19556
sky130_fd_sc_hs__o21ai_2	0.00533	0.00493	0.00487	0.38718
sky130_fd_sc_hs__o21ai_4	0.00935	0.00973	0.00732	0.71773

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ai_1	0.00000	0.00787	0.02167
sky130_fd_sc_hs__o21ai_2	0.00000	0.01574	0.04335
sky130_fd_sc_hs__o21ai_4	0.00000	0.02335	0.06502

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (FR)	0.28193	1.71916	12.80070
	A2->Y (FR)	0.24873	1.63363	12.44500
	B1->Y (FR)	0.08895	1.03082	8.78805
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.24196	1.49130	12.87700
	A2->Y (FR)	0.19654	1.39023	12.50180
	B1->Y (FR)	0.06630	0.93397	8.83508
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.22925	1.32888	12.81410
	A2->Y (FR)	0.18619	1.23771	12.52030
	B1->Y (FR)	0.09226	1.11050	11.73760

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.06850	0.64874	5.23371
	A2->Y (RF)	0.06055	0.63223	5.19006
	B1->Y (RF)	0.05740	0.67380	5.55538
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.05800	0.58661	5.22445
	A2->Y (RF)	0.05272	0.57507	5.23121
	B1->Y (RF)	0.04015	0.59195	5.59179
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.05562	0.54051	5.19860
	A2->Y (RF)	0.05028	0.52460	5.18403
	B1->Y (RF)	0.04128	0.55363	5.56388

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00036	0.00029	0.00027
	A1	0.00329	0.00323	0.00300
	A2	0.00039	0.00031	0.00032
	A2	0.00293	0.00284	0.00286
	B1	-0.00008	-0.00015	-0.00013
	B1	0.00233	0.00226	0.00229
sky130_fd_sc_hs__o21ai_2	A1	0.00042	0.00028	0.00026
	A1	0.00601	0.00588	0.00546
	A2	0.00044	0.00030	0.00034
	A2	0.00510	0.00489	0.00501
	B1	-0.00076	-0.00081	-0.00074
	B1	0.00367	0.00360	0.00368
sky130_fd_sc_hs__o21ai_4	A1	0.00066	0.00040	0.00037
	A1	0.01144	0.01121	0.01048
	A2	0.00054	0.00023	0.00035
	A2	0.00989	0.00957	0.00970
	B1	-0.00135	-0.00147	-0.00136
	B1	0.00576	0.00562	0.00583

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00359	0.00358	0.00355
	A1	0.00062	0.00056	0.00053
	A2	0.00283	0.00280	0.00283
	A2	0.00023	0.00020	0.00019
	B1	0.00297	0.00292	0.00288
	B1	0.00059	0.00053	0.00051
sky130_fd_sc_hs__o21ai_2	A1	0.00660	0.00646	0.00647
	A1	0.00093	0.00081	0.00076
	A2	0.00482	0.00479	0.00488
	A2	0.00002	-0.00003	-0.00002
	B1	0.00528	0.00516	0.00526
	B1	0.00093	0.00082	0.00081
sky130_fd_sc_hs__o21ai_4	A1	0.01237	0.01210	0.01217
	A1	0.00146	0.00118	0.00111
	A2	0.00902	0.00891	0.00916
	A2	-0.00058	-0.00070	-0.00061
	B1	0.00951	0.00939	0.00935
	B1	0.00258	0.00245	0.00242

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00086	0.00082	0.00081
	(A2 * B1 * !Y)	-0.00072	-0.00079	-0.00079
	(A2 * !B1 * Y)	0.00074	0.00075	0.00074
	(A2 * !B1 * Y)	-0.00084	-0.00085	-0.00085
	(!A2 * !B1 * Y)	0.00069	0.00069	0.00069
	(!A2 * !B1 * Y)	-0.00087	-0.00087	-0.00087
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00160	0.00152	0.00150
	(A2 * B1 * !Y)	-0.00147	-0.00160	-0.00160
	(A2 * !B1 * Y)	0.00141	0.00142	0.00141
	(A2 * !B1 * Y)	-0.00165	-0.00169	-0.00168
	(!A2 * !B1 * Y)	0.00130	0.00131	0.00130
	(!A2 * !B1 * Y)	-0.00172	-0.00173	-0.00172
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00293	0.00277	0.00273
	(A2 * B1 * !Y)	-0.00294	-0.00318	-0.00318
	(A2 * !B1 * Y)	0.00273	0.00275	0.00272
	(A2 * !B1 * Y)	-0.00312	-0.00321	-0.00319
	(!A2 * !B1 * Y)	0.00251	0.00253	0.00251
	(!A2 * !B1 * Y)	-0.00328	-0.00329	-0.00328

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(A2 * B1 * !Y)	0.00079	0.00079	0.00079
	(A2 * !B1 * Y)	-0.00074	-0.00074	-0.00074
	(A2 * !B1 * Y)	0.00086	0.00085	0.00085
	(!A2 * !B1 * Y)	-0.00066	-0.00069	-0.00069
	(!A2 * !B1 * Y)	0.00088	0.00087	0.00087
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00150	-0.00150	-0.00149
	(A2 * B1 * !Y)	0.00160	0.00160	0.00160
	(A2 * !B1 * Y)	-0.00141	-0.00141	-0.00140
	(A2 * !B1 * Y)	0.00169	0.00169	0.00168
	(!A2 * !B1 * Y)	-0.00125	-0.00131	-0.00130
	(!A2 * !B1 * Y)	0.00173	0.00174	0.00173
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00274	-0.00273	-0.00272
	(A2 * B1 * !Y)	0.00320	0.00318	0.00318
	(A2 * !B1 * Y)	-0.00270	-0.00272	-0.00271
	(A2 * !B1 * Y)	0.00317	0.00321	0.00319
	(!A2 * !B1 * Y)	-0.00240	-0.00253	-0.00251
	(!A2 * !B1 * Y)	0.00330	0.00330	0.00329

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00083	0.00084	0.00083
	(A1 * B1 * !Y)	-0.00045	-0.00046	-0.00045
	(A1 * !B1 * Y)	0.00067	0.00067	0.00067
	(A1 * !B1 * Y)	-0.00086	-0.00087	-0.00087
	(!A1 * !B1 * Y)	0.00062	0.00063	0.00062
	(!A1 * !B1 * Y)	-0.00089	-0.00089	-0.00089
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00149	0.00151	0.00149
	(A1 * B1 * !Y)	-0.00091	-0.00092	-0.00091
	(A1 * !B1 * Y)	0.00136	0.00137	0.00136
	(A1 * !B1 * Y)	-0.00151	-0.00155	-0.00155
	(!A1 * !B1 * Y)	0.00127	0.00127	0.00126
	(!A1 * !B1 * Y)	-0.00160	-0.00159	-0.00159
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00316	0.00320	0.00316
	(A1 * B1 * !Y)	-0.00184	-0.00187	-0.00184
	(A1 * !B1 * Y)	0.00275	0.00278	0.00276
	(A1 * !B1 * Y)	-0.00315	-0.00324	-0.00323
	(!A1 * !B1 * Y)	0.00256	0.00256	0.00254
	(!A1 * !B1 * Y)	-0.00335	-0.00335	-0.00334

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00079	-0.00079	-0.00082
	(A1 * B1 * !Y)	0.00049	0.00049	0.00046
	(A1 * !B1 * Y)	-0.00067	-0.00067	-0.00067
	(A1 * !B1 * Y)	0.00087	0.00087	0.00087
	(!A1 * !B1 * Y)	-0.00060	-0.00062	-0.00062
	(!A1 * !B1 * Y)	0.00089	0.00089	0.00089
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00139	-0.00140	-0.00148
	(A1 * B1 * !Y)	0.00101	0.00101	0.00094
	(A1 * !B1 * Y)	-0.00136	-0.00136	-0.00136
	(A1 * !B1 * Y)	0.00155	0.00155	0.00155
	(!A1 * !B1 * Y)	-0.00121	-0.00127	-0.00126
	(!A1 * !B1 * Y)	0.00160	0.00159	0.00159
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00291	-0.00295	-0.00312
	(A1 * B1 * !Y)	0.00205	0.00206	0.00190
	(A1 * !B1 * Y)	-0.00275	-0.00276	-0.00275
	(A1 * !B1 * Y)	0.00324	0.00324	0.00323
	(!A1 * !B1 * Y)	-0.00243	-0.00256	-0.00254
	(!A1 * !B1 * Y)	0.00335	0.00337	0.00335

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00030	0.00030	0.00027
	(!A1 * !A2 * Y)	-0.00100	-0.00100	-0.00104
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00060	0.00060	0.00055
	(!A1 * !A2 * Y)	-0.00181	-0.00182	-0.00190
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00106	0.00106	0.00097
	(!A1 * !A2 * Y)	-0.00211	-0.00213	-0.00229

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00026	-0.00026	-0.00026
	(!A1 * !A2 * Y)	0.00104	0.00105	0.00104
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * Y)	0.00192	0.00192	0.00192
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00094	-0.00093	-0.00093
	(!A1 * !A2 * Y)	0.00231	0.00231	0.00230

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A1	A2	B1	X
0	0	x	0
x	1	0	0
x	1	1	1
1	x	0	0
1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21a_1	9.59040
sky130_fd_sc_hs__o21a_2	12.78720
sky130_fd_sc_hs__o21a_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__o21a_1	0.00225	0.00229	0.00228	0.44366
sky130_fd_sc_hs__o21a_2	0.00246	0.00243	0.00254	0.87090
sky130_fd_sc_hs__o21a_4	0.00471	0.00435	0.00421	1.70040

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21a_1	0.00000	0.03150	0.07307
sky130_fd_sc_hs__o21a_2	0.00000	0.03159	0.05648
sky130_fd_sc_hs__o21a_4	0.00000	0.07861	0.15166

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (RR)	0.16829	1.13264	8.58702
	A2->X (RR)	0.15442	1.10449	8.44314
	B1->X (RR)	0.15804	1.10721	8.28430
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.17321	1.01803	8.77806
	A2->X (RR)	0.16050	0.99662	8.67799
	B1->X (RR)	0.16268	1.00450	8.54178
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.17752	0.92270	8.83732
	A2->X (RR)	0.16925	0.90097	8.72604
	B1->X (RR)	0.16280	0.90198	8.57334

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.39532	1.14935	6.10409
	A2->X (FF)	0.35864	1.06176	5.48415
	B1->X (FF)	0.17282	0.89695	5.17088
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.52498	1.28120	6.59505
	A2->X (FF)	0.49122	1.19300	6.05573
	B1->X (FF)	0.20753	0.93592	5.64916
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.49521	1.22016	6.56220
	A2->X (FF)	0.45345	1.12379	5.99125
	B1->X (FF)	0.21951	0.91339	5.58549

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00449	0.00450	0.00450
	A1	0.00198	0.00198	0.00199
	A2	0.00374	0.00371	0.00375
	A2	0.00158	0.00154	0.00158
	B1	0.00402	0.00397	0.00412
	B1	0.00210	0.00204	0.00220
sky130_fd_sc_hs__o21a_2	A1	0.00593	0.00607	0.00611
	A1	0.00318	0.00332	0.00343
	A2	0.00521	0.00530	0.00536
	A2	0.00286	0.00295	0.00303
	B1	0.00535	0.00538	0.00553
	B1	0.00322	0.00326	0.00341
sky130_fd_sc_hs__o21a_4	A1	0.01142	0.01169	0.01181
	A1	0.00625	0.00653	0.00673
	A2	0.00978	0.00999	0.01015
	A2	0.00546	0.00568	0.00585
	B1	0.01019	0.01031	0.01071
	B1	0.00644	0.00657	0.00699

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00186	0.00189	0.00225
	A1	0.00432	0.00438	0.00435
	A2	0.00188	0.00188	0.00224
	A2	0.00399	0.00400	0.00423
	B1	0.00150	0.00144	0.00193
	B1	0.00346	0.00339	0.00377
sky130_fd_sc_hs__o21a_2	A1	0.00304	0.00325	0.00375
	A1	0.00571	0.00593	0.00593
	A2	0.00309	0.00319	0.00403
	A2	0.00535	0.00553	0.00578
	B1	0.00267	0.00269	0.00333
	B1	0.00481	0.00484	0.00513
sky130_fd_sc_hs__o21a_4	A1	0.00552	0.00597	0.00695
	A1	0.01058	0.01104	0.01111
	A2	0.00573	0.00594	0.00741
	A2	0.00990	0.01026	0.01082
	B1	0.00499	0.00517	0.00640
	B1	0.00881	0.00896	0.00975

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00069	0.00065	0.00064
	(A2 * B1 * X)	-0.00068	-0.00075	-0.00075
	(A2 * !B1 * !X)	0.00064	0.00065	0.00064
	(A2 * !B1 * !X)	-0.00073	-0.00075	-0.00075
	(!A2 * !B1 * !X)	0.00059	0.00060	0.00059
	(!A2 * !B1 * !X)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00082	0.00078	0.00077
	(A2 * B1 * X)	-0.00067	-0.00073	-0.00074
	(A2 * !B1 * !X)	0.00076	0.00077	0.00077
	(A2 * !B1 * !X)	-0.00072	-0.00073	-0.00073
	(!A2 * !B1 * !X)	0.00071	0.00071	0.00071
	(!A2 * !B1 * !X)	-0.00075	-0.00075	-0.00075
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00153	0.00144	0.00143
	(A2 * B1 * X)	-0.00130	-0.00142	-0.00143
	(A2 * !B1 * !X)	0.00139	0.00139	0.00139
	(A2 * !B1 * !X)	-0.00144	-0.00147	-0.00146
	(!A2 * !B1 * !X)	0.00129	0.00131	0.00129
	(!A2 * !B1 * !X)	-0.00149	-0.00150	-0.00150

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00064	-0.00064	-0.00063
	(A2 * B1 * X)	0.00075	0.00075	0.00075
	(A2 * !B1 * !X)	-0.00064	-0.00064	-0.00064
	(A2 * !B1 * !X)	0.00075	0.00075	0.00075
	(!A2 * !B1 * !X)	-0.00057	-0.00060	-0.00059
	(!A2 * !B1 * !X)	0.00077	0.00077	0.00076
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A2 * B1 * X)	0.00074	0.00073	0.00074
	(A2 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(A2 * !B1 * !X)	0.00074	0.00073	0.00073
	(!A2 * !B1 * !X)	-0.00069	-0.00071	-0.00071
	(!A2 * !B1 * !X)	0.00075	0.00076	0.00075
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00143	-0.00143	-0.00142
	(A2 * B1 * X)	0.00142	0.00143	0.00143
	(A2 * !B1 * !X)	-0.00139	-0.00139	-0.00138
	(A2 * !B1 * !X)	0.00146	0.00147	0.00146
	(!A2 * !B1 * !X)	-0.00125	-0.00131	-0.00129
	(!A2 * !B1 * !X)	0.00150	0.00151	0.00150

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00067	0.00067	0.00066
	(A1 * B1 * X)	-0.00045	-0.00045	-0.00044
	(A1 * !B1 * !X)	0.00061	0.00061	0.00061
	(A1 * !B1 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * !B1 * !X)	0.00056	0.00057	0.00056
	(!A1 * !B1 * !X)	-0.00073	-0.00074	-0.00073
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00076	0.00076	0.00075
	(A1 * B1 * X)	-0.00042	-0.00042	-0.00041
	(A1 * !B1 * !X)	0.00070	0.00069	0.00069
	(A1 * !B1 * !X)	-0.00071	-0.00071	-0.00071
	(!A1 * !B1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !B1 * !X)	-0.00073	-0.00073	-0.00073
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00133	0.00133	0.00131
	(A1 * B1 * X)	-0.00086	-0.00085	-0.00084
	(A1 * !B1 * !X)	0.00115	0.00116	0.00116
	(A1 * !B1 * !X)	-0.00141	-0.00145	-0.00145
	(!A1 * !B1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !B1 * !X)	-0.00149	-0.00149	-0.00149

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00061	-0.00062	-0.00065
	(A1 * B1 * X)	0.00048	0.00048	0.00045
	(A1 * !B1 * !X)	-0.00061	-0.00061	-0.00060
	(A1 * !B1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !B1 * !X)	-0.00054	-0.00057	-0.00056
	(!A1 * !B1 * !X)	0.00074	0.00075	0.00074
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00071	-0.00072	-0.00075
	(A1 * B1 * X)	0.00045	0.00045	0.00043
	(A1 * !B1 * !X)	-0.00069	-0.00068	-0.00068
	(A1 * !B1 * !X)	0.00071	0.00071	0.00071
	(!A1 * !B1 * !X)	-0.00061	-0.00064	-0.00064
	(!A1 * !B1 * !X)	0.00073	0.00074	0.00073
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00121	-0.00123	-0.00130
	(A1 * B1 * X)	0.00093	0.00093	0.00087
	(A1 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !B1 * !X)	0.00145	0.00145	0.00145
	(!A1 * !B1 * !X)	-0.00102	-0.00107	-0.00107
	(!A1 * !B1 * !X)	0.00150	0.00149	0.00149

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00027	0.00027	0.00025
	(!A1 * !A2 * !X)	-0.00079	-0.00080	-0.00083
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00030	0.00030	0.00027
	(!A1 * !A2 * !X)	-0.00089	-0.00090	-0.00094
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00047	0.00047	0.00042
	(!A1 * !A2 * !X)	-0.00153	-0.00153	-0.00161

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00024	-0.00024	-0.00024
	(!A1 * !A2 * !X)	0.00083	0.00084	0.00083
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00027	-0.00027	-0.00026
	(!A1 * !A2 * !X)	0.00095	0.00096	0.00095
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00041	-0.00041	-0.00040
	(!A1 * !A2 * !X)	0.00163	0.00164	0.00162

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A1	A2	B1_N	Y
0	0	x	1
x	1	0	0
x	1	1	1
1	x	0	0
1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21bai_1	9.59040
sky130_fd_sc_hs__o21bai_2	14.38560
sky130_fd_sc_hs__o21bai_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__o21bai_1	0.00249	0.00280	0.00220	0.19870
sky130_fd_sc_hs__o21bai_2	0.00529	0.00486	0.00242	0.38315
sky130_fd_sc_hs__o21bai_4	0.00946	0.00967	0.00326	0.72886

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21bai_1	0.00000	0.03110	0.04759
sky130_fd_sc_hs__o21bai_2	0.00000	0.03028	0.04694
sky130_fd_sc_hs__o21bai_4	0.00000	0.06956	0.10069

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (FR)	0.26412	1.71216	12.92250
	A2->Y (FR)	0.23486	1.63006	12.54990
	B1_N->Y (RR)	0.12998	0.81566	4.45854
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.23993	1.48165	12.76770
	A2->Y (FR)	0.19603	1.38607	12.39800
	B1_N->Y (RR)	0.12468	0.75222	4.57679
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.23850	1.33535	12.83650
	A2->Y (FR)	0.19363	1.23877	12.50810
	B1_N->Y (RR)	0.16979	0.98668	7.92754

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.07031	0.65118	5.27957
	A2->Y (RF)	0.06273	0.63618	5.24261
	B1_N->Y (FF)	0.19186	0.88497	4.53013
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.06628	0.58937	5.20988
	A2->Y (RF)	0.05992	0.57826	5.21521
	B1_N->Y (FF)	0.21498	0.92468	5.14185
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.07607	0.55622	5.29356
	A2->Y (RF)	0.06277	0.53445	5.23004
	B1_N->Y (FF)	0.19071	0.83521	4.75419

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00033	0.00027	0.00026
	A1	0.00259	0.00254	0.00245
	A2	0.00033	0.00025	0.00026
	A2	0.00232	0.00225	0.00226
	B1_N	0.00328	0.00315	0.00328
	B1_N	0.00217	0.00204	0.00217
sky130_fd_sc_hs__o21bai_2	A1	0.00040	0.00027	0.00024
	A1	0.00495	0.00484	0.00439
	A2	0.00043	0.00030	0.00034
	A2	0.00399	0.00385	0.00392
	B1_N	0.00449	0.00443	0.00458
	B1_N	0.00364	0.00357	0.00372
sky130_fd_sc_hs__o21bai_4	A1	0.00075	0.00050	0.00048
	A1	0.00957	0.00936	0.00872
	A2	0.00068	0.00038	0.00052
	A2	0.00798	0.00757	0.00782
	B1_N	0.00605	0.00603	0.00641
	B1_N	0.00562	0.00560	0.00603

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00331	0.00327	0.00330
	A1	0.00103	0.00098	0.00096
	A2	0.00260	0.00258	0.00258
	A2	0.00056	0.00054	0.00053
	B1_N	0.00261	0.00251	0.00284
	B1_N	0.00375	0.00365	0.00398
sky130_fd_sc_hs__o21bai_2	A1	0.00657	0.00646	0.00642
	A1	0.00199	0.00186	0.00182
	A2	0.00482	0.00478	0.00486
	A2	0.00117	0.00112	0.00114
	B1_N	0.00503	0.00493	0.00518
	B1_N	0.00595	0.00586	0.00607
sky130_fd_sc_hs__o21bai_4	A1	0.01306	0.01279	0.01267
	A1	0.00418	0.00390	0.00384
	A2	0.00959	0.00947	0.00979
	A2	0.00214	0.00201	0.00210
	B1_N	0.00996	0.00982	0.01030
	B1_N	0.01055	0.01040	0.01092

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(A2 * B1_N * Y)	0.00072	0.00073	0.00072
	(A2 * B1_N * Y)	-0.00078	-0.00080	-0.00080
	(A2 * !B1_N * !Y)	0.00077	0.00073	0.00072
	(A2 * !B1_N * !Y)	-0.00074	-0.00080	-0.00080
	(!A2 * B1_N * Y)	0.00068	0.00069	0.00068
	(!A2 * B1_N * Y)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00148	0.00149	0.00148
	(A2 * B1_N * Y)	-0.00164	-0.00168	-0.00167
	(A2 * !B1_N * !Y)	0.00161	0.00152	0.00150
	(A2 * !B1_N * !Y)	-0.00152	-0.00165	-0.00165
	(!A2 * B1_N * Y)	0.00141	0.00141	0.00141
	(!A2 * B1_N * Y)	-0.00170	-0.00171	-0.00170
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00277	0.00279	0.00276
	(A2 * B1_N * Y)	-0.00316	-0.00325	-0.00323
	(A2 * !B1_N * !Y)	0.00298	0.00281	0.00277
	(A2 * !B1_N * !Y)	-0.00297	-0.00323	-0.00322
	(!A2 * B1_N * Y)	0.00263	0.00261	0.00261
	(!A2 * B1_N * Y)	-0.00332	-0.00331	-0.00331

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(A2 * B1_N * Y)	-0.00072	-0.00072	-0.00072
	(A2 * B1_N * Y)	0.00080	0.00080	0.00080
	(A2 * !B1_N * !Y)	-0.00072	-0.00072	-0.00072
	(A2 * !B1_N * !Y)	0.00080	0.00080	0.00080
	(!A2 * B1_N * Y)	-0.00067	-0.00069	-0.00068
	(!A2 * B1_N * Y)	0.00083	0.00082	0.00082
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00148	-0.00148	-0.00147
	(A2 * B1_N * Y)	0.00167	0.00168	0.00167
	(A2 * !B1_N * !Y)	-0.00150	-0.00150	-0.00149
	(A2 * !B1_N * !Y)	0.00165	0.00165	0.00165
	(!A2 * B1_N * Y)	-0.00137	-0.00141	-0.00141
	(!A2 * B1_N * Y)	0.00171	0.00172	0.00171
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00275	-0.00276	-0.00275
	(A2 * B1_N * Y)	0.00322	0.00325	0.00323
	(A2 * !B1_N * !Y)	-0.00276	-0.00277	-0.00276
	(A2 * !B1_N * !Y)	0.00321	0.00323	0.00322
	(!A2 * B1_N * Y)	-0.00253	-0.00261	-0.00261
	(!A2 * B1_N * Y)	0.00333	0.00334	0.00333

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(A1 * B1_N * Y)	0.00075	0.00074	0.00074
	(A1 * B1_N * Y)	-0.00086	-0.00088	-0.00087
	(A1 * !B1_N * !Y)	0.00084	0.00086	0.00084
	(A1 * !B1_N * !Y)	-0.00051	-0.00052	-0.00051
	(!A1 * B1_N * Y)	0.00070	0.00070	0.00070
	(!A1 * B1_N * Y)	-0.00090	-0.00089	-0.00090
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00135	0.00135	0.00134
	(A1 * B1_N * Y)	-0.00152	-0.00156	-0.00155
	(A1 * !B1_N * !Y)	0.00148	0.00150	0.00147
	(A1 * !B1_N * !Y)	-0.00091	-0.00092	-0.00091
	(!A1 * B1_N * Y)	0.00127	0.00128	0.00128
	(!A1 * B1_N * Y)	-0.00159	-0.00159	-0.00159
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00275	0.00276	0.00273
	(A1 * B1_N * Y)	-0.00317	-0.00324	-0.00322
	(A1 * !B1_N * !Y)	0.00311	0.00315	0.00310
	(A1 * !B1_N * !Y)	-0.00186	-0.00188	-0.00185
	(!A1 * B1_N * Y)	0.00259	0.00261	0.00259
	(!A1 * B1_N * Y)	-0.00332	-0.00334	-0.00332

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(A1 * B1_N * Y)	-0.00074	-0.00074	-0.00074
	(A1 * B1_N * Y)	0.00087	0.00088	0.00087
	(A1 * !B1_N * !Y)	-0.00080	-0.00080	-0.00084
	(A1 * !B1_N * !Y)	0.00056	0.00056	0.00052
	(!A1 * B1_N * Y)	-0.00068	-0.00070	-0.00070
	(!A1 * B1_N * Y)	0.00090	0.00090	0.00090
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00134	-0.00135	-0.00134
	(A1 * B1_N * Y)	0.00155	0.00156	0.00155
	(A1 * !B1_N * !Y)	-0.00137	-0.00139	-0.00146
	(A1 * !B1_N * !Y)	0.00099	0.00100	0.00093
	(!A1 * B1_N * Y)	-0.00124	-0.00128	-0.00128
	(!A1 * B1_N * Y)	0.00159	0.00160	0.00160
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00272	-0.00274	-0.00273
	(A1 * B1_N * Y)	0.00321	0.00324	0.00322
	(A1 * !B1_N * !Y)	-0.00286	-0.00286	-0.00306
	(A1 * !B1_N * !Y)	0.00206	0.00204	0.00191
	(!A1 * B1_N * Y)	-0.00251	-0.00261	-0.00259
	(!A1 * B1_N * Y)	0.00334	0.00335	0.00334

Passive power(pJ) for B1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(!A1 * !A2 * Y)	0.00261	0.00246	0.00262
	(!A1 * !A2 * Y)	0.00095	0.00080	0.00096
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00375	0.00360	0.00373
	(!A1 * !A2 * Y)	0.00187	0.00171	0.00185
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00454	0.00431	0.00458
	(!A1 * !A2 * Y)	0.00198	0.00175	0.00202

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(!A1 * !A2 * Y)	0.00016	0.00007	0.00041
	(!A1 * !A2 * Y)	0.00185	0.00175	0.00207
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00046	0.00033	0.00055
	(!A1 * !A2 * Y)	0.00237	0.00225	0.00245
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00086	0.00073	0.00126
	(!A1 * !A2 * Y)	0.00348	0.00335	0.00384

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A1	A2	B1_N	X
0	0	x	0
x	1	0	1
x	1	1	0
1	x	0	1
1	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ba_1	12.78720
sky130_fd_sc_hs__o21ba_2	12.78720
sky130_fd_sc_hs__o21ba_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__o21ba_1	0.00229	0.00244	0.00200	0.41623
sky130_fd_sc_hs__o21ba_2	0.00238	0.00251	0.00214	0.83423
sky130_fd_sc_hs__o21ba_4	0.00478	0.00455	0.00258	1.57765

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.04747	0.05926
sky130_fd_sc_hs__o21ba_2	0.00000	0.05482	0.06926
sky130_fd_sc_hs__o21ba_4	0.00000	0.08540	0.15442

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (RR)	0.19064	1.17304	8.69106
	A2->X (RR)	0.17683	1.14679	8.56683
	B1_N->X (FR)	0.31866	1.46443	9.93206
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.18679	1.02813	8.76858
	A2->X (RR)	0.17156	1.00568	8.66570
	B1_N->X (FR)	0.32499	1.32893	9.97551
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.19499	0.93894	8.81389
	A2->X (RR)	0.18813	0.91768	8.70448
	B1_N->X (FR)	0.35346	1.30106	10.64760

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.41738	1.17187	6.09153
	A2->X (FF)	0.38756	1.09261	5.50838
	B1_N->X (RF)	0.22544	0.72044	3.14590
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.51631	1.27384	6.56241
	A2->X (FF)	0.48468	1.18761	6.01740
	B1_N->X (RF)	0.26086	0.75247	3.34222
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.49604	1.21836	6.44349
	A2->X (FF)	0.45558	1.12379	5.87667
	B1_N->X (RF)	0.26892	0.73582	3.29967

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00477	0.00478	0.00478
	A1	0.00267	0.00271	0.00269
	A2	0.00413	0.00409	0.00412
	A2	0.00228	0.00224	0.00228
	B1_N	0.00432	0.00428	0.00456
	B1_N	0.00536	0.00531	0.00560
sky130_fd_sc_hs__o21ba_2	A1	0.00588	0.00603	0.00607
	A1	0.00372	0.00387	0.00397
	A2	0.00521	0.00531	0.00536
	A2	0.00332	0.00342	0.00349
	B1_N	0.00532	0.00540	0.00569
	B1_N	0.00646	0.00654	0.00684
sky130_fd_sc_hs__o21ba_4	A1	0.01136	0.01162	0.01174
	A1	0.00707	0.00733	0.00752
	A2	0.00974	0.00996	0.01012
	A2	0.00629	0.00652	0.00669
	B1_N	0.00997	0.01029	0.01051
	B1_N	0.01101	0.01131	0.01168

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00185	0.00189	0.00195
	A1	0.00392	0.00398	0.00396
	A2	0.00186	0.00188	0.00214
	A2	0.00365	0.00367	0.00390
	B1_N	0.00479	0.00460	0.00469
	B1_N	0.00377	0.00358	0.00367
sky130_fd_sc_hs__o21ba_2	A1	0.00284	0.00305	0.00335
	A1	0.00496	0.00518	0.00518
	A2	0.00284	0.00295	0.00328
	A2	0.00468	0.00485	0.00510
	B1_N	0.00607	0.00596	0.00604
	B1_N	0.00494	0.00483	0.00488
sky130_fd_sc_hs__o21ba_4	A1	0.00536	0.00581	0.00591
	A1	0.00960	0.01005	0.01012
	A2	0.00554	0.00580	0.00663
	A2	0.00889	0.00924	0.00980
	B1_N	0.01003	0.01019	0.01027
	B1_N	0.00902	0.00919	0.00925

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A2 * B1_N * !X)	0.00064	0.00064	0.00064
	(A2 * B1_N * !X)	-0.00074	-0.00075	-0.00075
	(A2 * !B1_N * X)	0.00069	0.00065	0.00063
	(A2 * !B1_N * X)	-0.00069	-0.00075	-0.00076
	(!A2 * B1_N * !X)	0.00060	0.00060	0.00060
	(!A2 * B1_N * !X)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00072	0.00073	0.00072
	(A2 * B1_N * !X)	-0.00072	-0.00073	-0.00073
	(A2 * !B1_N * X)	0.00078	0.00073	0.00072
	(A2 * !B1_N * X)	-0.00067	-0.00073	-0.00073
	(!A2 * B1_N * !X)	0.00069	0.00068	0.00068
	(!A2 * B1_N * !X)	-0.00075	-0.00075	-0.00075
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00142	0.00142	0.00142
	(A2 * B1_N * !X)	-0.00146	-0.00150	-0.00149
	(A2 * !B1_N * X)	0.00153	0.00144	0.00143
	(A2 * !B1_N * X)	-0.00136	-0.00148	-0.00148
	(!A2 * B1_N * !X)	0.00134	0.00136	0.00135
	(!A2 * B1_N * !X)	-0.00153	-0.00154	-0.00153

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A2 * B1_N * !X)	-0.00064	-0.00063	-0.00063
	(A2 * B1_N * !X)	0.00076	0.00075	0.00075
	(A2 * !B1_N * X)	-0.00063	-0.00063	-0.00063
	(A2 * !B1_N * X)	0.00076	0.00075	0.00076
	(!A2 * B1_N * !X)	-0.00058	-0.00060	-0.00060
	(!A2 * B1_N * !X)	0.00077	0.00078	0.00077
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00072	-0.00072	-0.00072
	(A2 * B1_N * !X)	0.00074	0.00073	0.00073
	(A2 * !B1_N * X)	-0.00072	-0.00072	-0.00072
	(A2 * !B1_N * X)	0.00074	0.00073	0.00073
	(!A2 * B1_N * !X)	-0.00066	-0.00068	-0.00068
	(!A2 * B1_N * !X)	0.00075	0.00075	0.00075
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00142	-0.00142	-0.00141
	(A2 * B1_N * !X)	0.00149	0.00150	0.00149
	(A2 * !B1_N * X)	-0.00142	-0.00143	-0.00142
	(A2 * !B1_N * X)	0.00148	0.00149	0.00148
	(!A2 * B1_N * !X)	-0.00131	-0.00136	-0.00135
	(!A2 * B1_N * !X)	0.00153	0.00155	0.00153

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A1 * B1_N * !X)	0.00068	0.00067	0.00067
	(A1 * B1_N * !X)	-0.00075	-0.00075	-0.00075
	(A1 * !B1_N * X)	0.00071	0.00072	0.00071
	(A1 * !B1_N * X)	-0.00049	-0.00050	-0.00049
	(!A1 * B1_N * !X)	0.00064	0.00064	0.00064
	(!A1 * B1_N * !X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00075	0.00074	0.00074
	(A1 * B1_N * !X)	-0.00073	-0.00074	-0.00074
	(A1 * !B1_N * X)	0.00079	0.00080	0.00079
	(A1 * !B1_N * X)	-0.00045	-0.00047	-0.00046
	(!A1 * B1_N * !X)	0.00070	0.00071	0.00070
	(!A1 * B1_N * !X)	-0.00075	-0.00076	-0.00076
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00121	0.00120	0.00119
	(A1 * B1_N * !X)	-0.00148	-0.00149	-0.00149
	(A1 * !B1_N * X)	0.00134	0.00136	0.00135
	(A1 * !B1_N * X)	-0.00088	-0.00090	-0.00088
	(!A1 * B1_N * !X)	0.00113	0.00112	0.00112
	(!A1 * B1_N * !X)	-0.00155	-0.00154	-0.00154

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A1 * B1_N * !X)	-0.00067	-0.00067	-0.00067
	(A1 * B1_N * !X)	0.00076	0.00075	0.00075
	(A1 * !B1_N * X)	-0.00067	-0.00067	-0.00070
	(A1 * !B1_N * X)	0.00052	0.00053	0.00050
	(!A1 * B1_N * !X)	-0.00062	-0.00064	-0.00064
	(!A1 * B1_N * !X)	0.00078	0.00078	0.00077
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00074	-0.00074	-0.00074
	(A1 * B1_N * !X)	0.00075	0.00074	0.00074
	(A1 * !B1_N * X)	-0.00075	-0.00076	-0.00079
	(A1 * !B1_N * X)	0.00050	0.00050	0.00047
	(!A1 * B1_N * !X)	-0.00068	-0.00071	-0.00070
	(!A1 * B1_N * !X)	0.00076	0.00076	0.00076
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00120	-0.00119	-0.00119
	(A1 * B1_N * !X)	0.00150	0.00149	0.00149
	(A1 * !B1_N * X)	-0.00125	-0.00126	-0.00133
	(A1 * !B1_N * X)	0.00097	0.00097	0.00091
	(!A1 * B1_N * !X)	-0.00108	-0.00112	-0.00112
	(!A1 * B1_N * !X)	0.00155	0.00154	0.00154

Passive power(pJ) for B1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(!A1 * !A2 * !X)	0.00241	0.00228	0.00244
	(!A1 * !A2 * !X)	0.00087	0.00074	0.00091
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00264	0.00250	0.00266
	(!A1 * !A2 * !X)	0.00102	0.00087	0.00103
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00367	0.00350	0.00362
	(!A1 * !A2 * !X)	0.00168	0.00151	0.00163

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(!A1 * !A2 * !X)	0.00021	0.00014	0.00048
	(!A1 * !A2 * !X)	0.00177	0.00169	0.00202
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00018	0.00009	0.00043
	(!A1 * !A2 * !X)	0.00182	0.00173	0.00206
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00033	0.00021	0.00040
	(!A1 * !A2 * !X)	0.00234	0.00223	0.00240

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	B2	C1	Y
0	0	x	x	x	1
x	1	0	0	x	1
x	1	x	1	0	1
x	1	x	1	1	0
x	1	1	x	0	1
x	1	1	x	1	0
1	x	0	0	x	1
1	x	x	1	0	1
1	x	x	1	1	0
1	x	1	x	0	1
1	x	1	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221ai_1	12.78720
sky130_fd_sc_hs__o221ai_2	19.18080
sky130_fd_sc_hs__o221ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__o221ai_1	0.00258	0.00275	0.00270	0.00263	0.00268	0.19199
sky130_fd_sc_hs__o221ai_2	0.00529	0.00484	0.00557	0.00484	0.00491	0.37590
sky130_fd_sc_hs__o221ai_4	0.01003	0.00958	0.01017	0.00956	0.00977	0.72514

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.00803	0.03251
sky130_fd_sc_hs__o221ai_2	0.00000	0.01605	0.06502
sky130_fd_sc_hs__o221ai_4	0.00000	0.03210	0.13004

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (FR)	0.40327	1.84334	12.84640
	A2->Y (FR)	0.36843	1.75638	12.46480
	B1->Y (FR)	0.30419	1.72399	12.67000
	B2->Y (FR)	0.26795	1.63656	12.29790
	C1->Y (FR)	0.09760	1.02977	8.72106
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.35505	1.60384	12.80980
	A2->Y (FR)	0.31165	1.50470	12.43930
	B1->Y (FR)	0.27088	1.50294	12.71140
	B2->Y (FR)	0.22363	1.39919	12.31100
	C1->Y (FR)	0.07562	0.92985	8.69535
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.33819	1.42776	12.71140
	A2->Y (FR)	0.29677	1.33399	12.37650
	B1->Y (FR)	0.26172	1.34797	12.80480
	B2->Y (FR)	0.21673	1.25107	12.43400
	C1->Y (FR)	0.07387	0.86954	8.72896

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.13065	0.77272	5.63318
	A2->Y (RF)	0.11858	0.75546	5.60129
	B1->Y (RF)	0.11802	0.79934	6.13672
	B2->Y (RF)	0.10309	0.77540	6.06182
	C1->Y (RF)	0.09671	0.80289	6.36522
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.10654	0.68296	5.64636
	A2->Y (RF)	0.09551	0.66929	5.65751
	B1->Y (RF)	0.09331	0.70972	6.16070
	B2->Y (RF)	0.08226	0.70380	6.26268
	C1->Y (RF)	0.05626	0.69492	6.46662
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.11066	0.63916	5.74813
	A2->Y (RF)	0.09765	0.62024	5.74414
	B1->Y (RF)	0.09860	0.67422	6.37529
	B2->Y (RF)	0.08429	0.65436	6.38756
	C1->Y (RF)	0.05915	0.65308	6.72550

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00111	0.00103	0.00099
	A1	0.00504	0.00496	0.00487
	A2	0.00114	0.00105	0.00103
	A2	0.00471	0.00462	0.00460
	B1	0.00041	0.00032	0.00028
	B1	0.00381	0.00372	0.00346
	B2	0.00043	0.00033	0.00034
	B2	0.00338	0.00329	0.00330
	C1	-0.00017	-0.00024	-0.00023
	C1	0.00275	0.00260	0.00270
sky130_fd_sc_hs__o221ai_2	A1	0.00177	0.00160	0.00153
	A1	0.00934	0.00918	0.00869
	A2	0.00181	0.00161	0.00162
	A2	0.00842	0.00825	0.00825
	B1	0.00052	0.00030	0.00027
	B1	0.00714	0.00693	0.00688
	B2	0.00056	0.00036	0.00039
	B2	0.00620	0.00592	0.00603
	C1	-0.00068	-0.00079	-0.00073
	C1	0.00475	0.00457	0.00476

sky130_fd_sc_hs__o221ai_4	**A1**	0.00302	0.00268	0.00257
	A1	0.01796	0.01767	0.01676
	A2	0.00310	0.00271	0.00274
	A2	0.01629	0.01592	0.01594
	B1	0.00077	0.00034	0.00032
	B1	0.01374	0.01333	0.01329
	B2	0.00079	0.00033	0.00047
	B2	0.01204	0.01161	0.01175
	C1	-0.00133	-0.00156	-0.00134
	C1	0.00954	0.00923	0.00958

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.00555	0.00551	0.00551
	A1	0.00140	0.00135	0.00131
	A2	0.00475	0.00472	0.00477
	A2	0.00095	0.00092	0.00088
	B1	0.00483	0.00477	0.00484
	B1	0.00142	0.00137	0.00132
	B2	0.00404	0.00402	0.00404
	B2	0.00106	0.00102	0.00099
	C1	0.00430	0.00422	0.00433
	C1	0.00144	0.00138	0.00133

sky130_fd_sc_hs__o221ai_2	**A1**	0.01037	0.01029	0.01016
	A1	0.00240	0.00228	0.00220
	A2	0.00866	0.00859	0.00855
	A2	0.00158	0.00151	0.00147
	B1	0.00910	0.00896	0.00901
	B1	0.00244	0.00231	0.00223
	B2	0.00728	0.00724	0.00745
	B2	0.00157	0.00150	0.00146
	C1	0.00776	0.00764	0.00778
	C1	0.00244	0.00231	0.00225
sky130_fd_sc_hs__o221ai_4	**A1**	0.02052	0.02030	0.02052
	A1	0.00479	0.00453	0.00440
	A2	0.01715	0.01701	0.01731
	A2	0.00308	0.00289	0.00286
	B1	0.01785	0.01756	0.01752
	B1	0.00483	0.00455	0.00444
	B2	0.01456	0.01437	0.01432
	B2	0.00315	0.00297	0.00295
	C1	0.01532	0.01503	0.01522
	C1	0.00479	0.00448	0.00443

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	0.00081	0.00078	0.00077
	(A2 * B2 * C1 * !Y)	-0.00076	-0.00082	-0.00082
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00077	0.00078	0.00077
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00080	-0.00082	-0.00081
	(A2 * B1 * !B2 * C1 * !Y)	0.00081	0.00078	0.00077
	(A2 * B1 * !B2 * C1 * !Y)	-0.00076	-0.00082	-0.00082
	(A2 * !B1 * !B2 * Y)	0.00077	0.00078	0.00077
	(A2 * !B1 * !B2 * Y)	-0.00080	-0.00082	-0.00081
	(!A2 * B2 * !C1 * Y)	0.00069	0.00069	0.00069
	(!A2 * B2 * !C1 * Y)	-0.00083	-0.00083	-0.00083
	(!A2 * B1 * !B2 * !C1 * Y)	0.00069	0.00070	0.00070
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * !B2 * C1 * Y)	0.00071	0.00071	0.00071
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00070	0.00071	0.00071
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00158	0.00149	0.00147
	(A2 * B2 * C1 * !Y)	-0.00149	-0.00162	-0.00162
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00142	0.00143	0.00141
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00164	-0.00168	-0.00167
	(A2 * B1 * !B2 * C1 * !Y)	0.00158	0.00149	0.00147
	(A2 * B1 * !B2 * C1 * !Y)	-0.00149	-0.00162	-0.00162
	(A2 * !B1 * !B2 * Y)	0.00142	0.00143	0.00141
	(A2 * !B1 * !B2 * Y)	-0.00164	-0.00168	-0.00167
	(!A2 * B2 * !C1 * Y)	0.00126	0.00127	0.00126
	(!A2 * B2 * !C1 * Y)	-0.00171	-0.00172	-0.00171
	(!A2 * B1 * !B2 * !C1 * Y)	0.00127	0.00129	0.00127
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00171	-0.00172	-0.00171
	(!A2 * !B1 * !B2 * C1 * Y)	0.00129	0.00131	0.00130
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00170	-0.00172	-0.00171
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00130	0.00131	0.00130
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00172	-0.00172	-0.00171

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00312	0.00294	0.00289
	(A2 * B2 * C1 * !Y)	-0.00292	-0.00320	-0.00318
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00287	0.00289	0.00286
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00315	-0.00323	-0.00321
	(A2 * B1 * !B2 * C1 * !Y)	0.00312	0.00294	0.00289
	(A2 * B1 * !B2 * C1 * !Y)	-0.00292	-0.00320	-0.00318
	(A2 * !B1 * !B2 * Y)	0.00288	0.00289	0.00286
	(A2 * !B1 * !B2 * Y)	-0.00315	-0.00323	-0.00321
	(!A2 * B2 * !C1 * Y)	0.00253	0.00255	0.00253
	(!A2 * B2 * !C1 * Y)	-0.00329	-0.00331	-0.00329
	(!A2 * B1 * !B2 * !C1 * Y)	0.00256	0.00258	0.00256
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00329	-0.00331	-0.00329
	(!A2 * !B1 * !B2 * C1 * Y)	0.00261	0.00263	0.00262
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00328	-0.00330	-0.00329
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00262	0.00263	0.00262
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00328	-0.00330	-0.00329

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	-0.00077	-0.00077	-0.00076
	(A2 * B2 * C1 * !Y)	0.00082	0.00082	0.00082
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00082	0.00082	0.00081
	(A2 * B1 * !B2 * C1 * !Y)	-0.00077	-0.00077	-0.00076
	(A2 * B1 * !B2 * C1 * !Y)	0.00082	0.00082	0.00082
	(A2 * !B1 * !B2 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * !B2 * Y)	0.00082	0.00082	0.00081
	(!A2 * B2 * !C1 * Y)	-0.00065	-0.00069	-0.00069
	(!A2 * B2 * !C1 * Y)	0.00084	0.00084	0.00083
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00066	-0.00070	-0.00070
	(!A2 * B1 * !B2 * !C1 * Y)	0.00083	0.00084	0.00083
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00068	-0.00071	-0.00071
	(!A2 * !B1 * !B2 * C1 * Y)	0.00083	0.00085	0.00083
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00068	-0.00071	-0.00071
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00083	0.00085	0.00083

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00147	-0.00147	-0.00146
	(A2 * B2 * C1 * !Y)	0.00163	0.00162	0.00162
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00142	-0.00141	-0.00141
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00168	0.00168	0.00167
	(A2 * B1 * !B2 * C1 * !Y)	-0.00147	-0.00147	-0.00146
	(A2 * B1 * !B2 * C1 * !Y)	0.00163	0.00162	0.00162
	(A2 * !B1 * !B2 * Y)	-0.00141	-0.00141	-0.00141
	(A2 * !B1 * !B2 * Y)	0.00168	0.00168	0.00167
	(!A2 * B2 * !C1 * Y)	-0.00118	-0.00127	-0.00126
	(!A2 * B2 * !C1 * Y)	0.00172	0.00174	0.00172
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00120	-0.00129	-0.00127
	(!A2 * B1 * !B2 * !C1 * Y)	0.00172	0.00174	0.00172
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00125	-0.00131	-0.00130
	(!A2 * !B1 * !B2 * C1 * Y)	0.00172	0.00174	0.00172
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00125	-0.00131	-0.00130
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00172	0.00174	0.00172

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00290	-0.00289	-0.00288
	(A2 * B2 * C1 * !Y)	0.00320	0.00320	0.00318
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00287	-0.00287	-0.00286
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00323	0.00323	0.00321
	(A2 * B1 * !B2 * C1 * !Y)	-0.00290	-0.00289	-0.00288
	(A2 * B1 * !B2 * C1 * !Y)	0.00320	0.00320	0.00318
	(A2 * !B1 * !B2 * Y)	-0.00285	-0.00286	-0.00286
	(A2 * !B1 * !B2 * Y)	0.00321	0.00323	0.00321
	(!A2 * B2 * !C1 * Y)	-0.00236	-0.00255	-0.00253
	(!A2 * B2 * !C1 * Y)	0.00329	0.00334	0.00330
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00241	-0.00258	-0.00256
	(!A2 * B1 * !B2 * !C1 * Y)	0.00330	0.00334	0.00330
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00249	-0.00263	-0.00262
	(!A2 * !B1 * !B2 * C1 * Y)	0.00328	0.00331	0.00330
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00249	-0.00263	-0.00262
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00328	0.00331	0.00330

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A1 * B2 * C1 * !Y)**	0.00082	0.00082	0.00081
	(A1 * B2 * C1 * !Y)	-0.00051	-0.00051	-0.00050
	(A1 * B2 * !C1 * Y)	0.00070	0.00070	0.00070
	(A1 * B2 * !C1 * Y)	-0.00086	-0.00087	-0.00087
	(A1 * B1 * !B2 * C1 * !Y)	0.00082	0.00082	0.00081
	(A1 * B1 * !B2 * C1 * !Y)	-0.00051	-0.00051	-0.00050
	(A1 * B1 * !B2 * !C1 * Y)	0.00069	0.00070	0.00069
	(A1 * B1 * !B2 * !C1 * Y)	-0.00086	-0.00087	-0.00087
	(A1 * !B1 * !B2 * C1 * Y)	0.00070	0.00070	0.00069
	(A1 * !B1 * !B2 * C1 * Y)	-0.00086	-0.00087	-0.00087
	(A1 * !B1 * !B2 * !C1 * Y)	0.00069	0.00070	0.00069
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00085	-0.00087	-0.00087
	(!A1 * B2 * !C1 * Y)	0.00063	0.00063	0.00062
	(!A1 * B2 * !C1 * Y)	-0.00090	-0.00090	-0.00089
	(!A1 * B1 * !B2 * !C1 * Y)	0.00063	0.00064	0.00063
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !B1 * !B2 * C1 * Y)	0.00064	0.00065	0.00064
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00064	0.00064	0.00064
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00089	-0.00089	-0.00089

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00148	0.00149	0.00147
	(A1 * B2 * C1 * !Y)	-0.00092	-0.00092	-0.00090
	(A1 * B2 * !C1 * Y)	0.00134	0.00135	0.00134
	(A1 * B2 * !C1 * Y)	-0.00151	-0.00155	-0.00154
	(A1 * B1 * !B2 * C1 * !Y)	0.00148	0.00149	0.00147
	(A1 * B1 * !B2 * C1 * !Y)	-0.00092	-0.00092	-0.00090
	(A1 * B1 * !B2 * !C1 * Y)	0.00134	0.00135	0.00134
	(A1 * B1 * !B2 * !C1 * Y)	-0.00151	-0.00155	-0.00154
	(A1 * !B1 * !B2 * C1 * Y)	0.00133	0.00135	0.00134
	(A1 * !B1 * !B2 * C1 * Y)	-0.00151	-0.00154	-0.00154
	(A1 * !B1 * !B2 * !C1 * Y)	0.00134	0.00135	0.00134
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00151	-0.00155	-0.00154
	(!A1 * B2 * !C1 * Y)	0.00120	0.00120	0.00119
	(!A1 * B2 * !C1 * Y)	-0.00158	-0.00160	-0.00159
	(!A1 * B1 * !B2 * !C1 * Y)	0.00120	0.00122	0.00121
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00158	-0.00160	-0.00159
	(!A1 * !B1 * !B2 * C1 * Y)	0.00123	0.00124	0.00123
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00159	-0.00159	-0.00159
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00123	0.00124	0.00123
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00159	-0.00159	-0.00159

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00300	0.00301	0.00297
	(A1 * B2 * C1 * !Y)	-0.00184	-0.00183	-0.00181
	(A1 * B2 * !C1 * Y)	0.00262	0.00262	0.00261
	(A1 * B2 * !C1 * Y)	-0.00313	-0.00320	-0.00318
	(A1 * B1 * !B2 * C1 * !Y)	0.00300	0.00301	0.00297
	(A1 * B1 * !B2 * C1 * !Y)	-0.00184	-0.00183	-0.00181
	(A1 * B1 * !B2 * !C1 * Y)	0.00260	0.00262	0.00261
	(A1 * B1 * !B2 * !C1 * Y)	-0.00311	-0.00320	-0.00318
	(A1 * !B1 * !B2 * C1 * Y)	0.00260	0.00262	0.00261
	(A1 * !B1 * !B2 * C1 * Y)	-0.00311	-0.00319	-0.00317
	(A1 * !B1 * !B2 * !C1 * Y)	0.00260	0.00262	0.00261
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00311	-0.00320	-0.00319
	(!A1 * B2 * !C1 * Y)	0.00234	0.00234	0.00232
	(!A1 * B2 * !C1 * Y)	-0.00327	-0.00329	-0.00327
	(!A1 * B1 * !B2 * !C1 * Y)	0.00234	0.00237	0.00235
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00327	-0.00329	-0.00327
	(!A1 * !B1 * !B2 * C1 * Y)	0.00240	0.00242	0.00240
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00327	-0.00328	-0.00327
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00240	0.00242	0.00240
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00327	-0.00326	-0.00327

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A1 * B2 * C1 * !Y)**	-0.00076	-0.00077	-0.00080
	(A1 * B2 * C1 * !Y)	0.00054	0.00055	0.00051
	(A1 * B2 * !C1 * Y)	-0.00070	-0.00070	-0.00069
	(A1 * B2 * !C1 * Y)	0.00088	0.00087	0.00087
	(A1 * B1 * !B2 * C1 * !Y)	-0.00076	-0.00077	-0.00080
	(A1 * B1 * !B2 * C1 * !Y)	0.00055	0.00055	0.00051
	(A1 * B1 * !B2 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * !B2 * !C1 * Y)	0.00088	0.00087	0.00087
	(A1 * !B1 * !B2 * C1 * Y)	-0.00070	-0.00070	-0.00069
	(A1 * !B1 * !B2 * C1 * Y)	0.00088	0.00087	0.00087
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * !B2 * !C1 * Y)	0.00088	0.00087	0.00087
	(!A1 * B2 * !C1 * Y)	-0.00058	-0.00063	-0.00062
	(!A1 * B2 * !C1 * Y)	0.00090	0.00090	0.00089
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00059	-0.00064	-0.00063
	(!A1 * B1 * !B2 * !C1 * Y)	0.00089	0.00090	0.00089
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00061	-0.00065	-0.00064
	(!A1 * !B1 * !B2 * C1 * Y)	0.00089	0.00091	0.00089
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00061	-0.00064	-0.00064
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00089	0.00091	0.00089

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00137	-0.00138	-0.00145
	(A1 * B2 * C1 * !Y)	0.00100	0.00100	0.00093
	(A1 * B2 * !C1 * Y)	-0.00134	-0.00134	-0.00133
	(A1 * B2 * !C1 * Y)	0.00154	0.00155	0.00154
	(A1 * B1 * !B2 * C1 * !Y)	-0.00137	-0.00138	-0.00145
	(A1 * B1 * !B2 * C1 * !Y)	0.00100	0.00100	0.00093
	(A1 * B1 * !B2 * !C1 * Y)	-0.00134	-0.00134	-0.00133
	(A1 * B1 * !B2 * !C1 * Y)	0.00155	0.00155	0.00154
	(A1 * !B1 * !B2 * C1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * !B1 * !B2 * C1 * Y)	0.00154	0.00154	0.00154
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * !B1 * !B2 * !C1 * Y)	0.00154	0.00155	0.00154
	(!A1 * B2 * !C1 * Y)	-0.00111	-0.00120	-0.00119
	(!A1 * B2 * !C1 * Y)	0.00158	0.00161	0.00159
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00114	-0.00122	-0.00121
	(!A1 * B1 * !B2 * !C1 * Y)	0.00158	0.00161	0.00159
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00118	-0.00124	-0.00123
	(!A1 * !B1 * !B2 * C1 * Y)	0.00159	0.00161	0.00159
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00118	-0.00124	-0.00123
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00159	0.00161	0.00159

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00276	-0.00279	-0.00294
	(A1 * B2 * C1 * !Y)	0.00200	0.00200	0.00186
	(A1 * B2 * !C1 * Y)	-0.00260	-0.00261	-0.00260
	(A1 * B2 * !C1 * Y)	0.00318	0.00320	0.00318
	(A1 * B1 * !B2 * C1 * !Y)	-0.00276	-0.00279	-0.00294
	(A1 * B1 * !B2 * C1 * !Y)	0.00200	0.00200	0.00186
	(A1 * B1 * !B2 * !C1 * Y)	-0.00260	-0.00261	-0.00260
	(A1 * B1 * !B2 * !C1 * Y)	0.00319	0.00320	0.00318
	(A1 * !B1 * !B2 * C1 * Y)	-0.00260	-0.00261	-0.00260
	(A1 * !B1 * !B2 * C1 * Y)	0.00318	0.00319	0.00317
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00260	-0.00261	-0.00260
	(A1 * !B1 * !B2 * !C1 * Y)	0.00320	0.00320	0.00319
	(!A1 * B2 * !C1 * Y)	-0.00217	-0.00234	-0.00232
	(!A1 * B2 * !C1 * Y)	0.00327	0.00331	0.00328
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00222	-0.00237	-0.00235
	(!A1 * B1 * !B2 * !C1 * Y)	0.00327	0.00331	0.00328
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00230	-0.00242	-0.00240
	(!A1 * !B1 * !B2 * C1 * Y)	0.00328	0.00328	0.00328
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00230	-0.00242	-0.00240
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00328	0.00326	0.00328

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	0.00086	0.00082	0.00081
	(A2 * B2 * C1 * !Y)	-0.00073	-0.00080	-0.00079
	(A2 * !B2 * !C1 * Y)	0.00069	0.00069	0.00069
	(A2 * !B2 * !C1 * Y)	-0.00088	-0.00089	-0.00089
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00073	0.00074	0.00073
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00085	-0.00088	-0.00087
	(A1 * !A2 * B2 * C1 * !Y)	0.00086	0.00082	0.00081
	(A1 * !A2 * B2 * C1 * !Y)	-0.00073	-0.00079	-0.00079
	(A1 * !A2 * !B2 * !C1 * Y)	0.00069	0.00069	0.00069
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00089	-0.00089	-0.00089
	(!A1 * !A2 * B2 * C1 * Y)	0.00036	0.00037	0.00036
	(!A1 * !A2 * B2 * C1 * Y)	-0.00086	-0.00088	-0.00087
	(!A1 * !A2 * B2 * !C1 * Y)	0.00044	0.00044	0.00044
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00086	-0.00087	-0.00087
	(!A1 * !A2 * !B2 * C1 * Y)	0.00039	0.00038	0.00039
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00088	-0.00088	-0.00087
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00046	0.00046	0.00046
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00089	-0.00089	-0.00089

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00167	0.00160	0.00158
	(A2 * B2 * C1 * !Y)	-0.00145	-0.00156	-0.00157
	(A2 * !B2 * !C1 * Y)	0.00131	0.00132	0.00131
	(A2 * !B2 * !C1 * Y)	-0.00175	-0.00176	-0.00175
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00143	0.00144	0.00142
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00169	-0.00173	-0.00172
	(A1 * !A2 * B2 * C1 * !Y)	0.00167	0.00160	0.00158
	(A1 * !A2 * B2 * C1 * !Y)	-0.00145	-0.00157	-0.00157
	(A1 * !A2 * !B2 * !C1 * Y)	0.00131	0.00131	0.00131
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00175	-0.00176	-0.00175
	(!A1 * !A2 * B2 * C1 * Y)	0.00067	0.00067	0.00067
	(!A1 * !A2 * B2 * C1 * Y)	-0.00169	-0.00174	-0.00172
	(!A1 * !A2 * B2 * !C1 * Y)	0.00081	0.00081	0.00080
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00169	-0.00172	-0.00172
	(!A1 * !A2 * !B2 * C1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00174	-0.00175	-0.00173
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00084	0.00085	0.00085
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00175	-0.00176	-0.00176

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00314	0.00299	0.00295
	(A2 * B2 * C1 * !Y)	-0.00285	-0.00313	-0.00311
	(A2 * !B2 * !C1 * Y)	0.00254	0.00254	0.00254
	(A2 * !B2 * !C1 * Y)	-0.00339	-0.00338	-0.00338
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00274	0.00278	0.00275
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00323	-0.00333	-0.00331
	(A1 * !A2 * B2 * C1 * !Y)	0.00314	0.00299	0.00295
	(A1 * !A2 * B2 * C1 * !Y)	-0.00285	-0.00313	-0.00311
	(A1 * !A2 * !B2 * !C1 * Y)	0.00253	0.00253	0.00253
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00338	-0.00338	-0.00338
	(!A1 * !A2 * B2 * C1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !A2 * B2 * C1 * Y)	-0.00324	-0.00335	-0.00332
	(!A1 * !A2 * B2 * !C1 * Y)	0.00150	0.00152	0.00150
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00324	-0.00333	-0.00331
	(!A1 * !A2 * !B2 * C1 * Y)	0.00133	0.00134	0.00134
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00337	-0.00338	-0.00333
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00159	0.00159	0.00158
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00339	-0.00340	-0.00339

Passive power(pJ) for B1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	-0.00081	-0.00081	-0.00080
	(A2 * B2 * C1 * !Y)	0.00080	0.00080	0.00079
	(A2 * !B2 * !C1 * Y)	-0.00066	-0.00069	-0.00069
	(A2 * !B2 * !C1 * Y)	0.00090	0.00089	0.00089
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00073	-0.00073	-0.00073
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00087	0.00088	0.00087
	(A1 * !A2 * B2 * C1 * !Y)	-0.00081	-0.00080	-0.00080
	(A1 * !A2 * B2 * C1 * !Y)	0.00080	0.00079	0.00079
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00065	-0.00069	-0.00069
	(A1 * !A2 * !B2 * !C1 * Y)	0.00089	0.00089	0.00089
	(!A1 * !A2 * B2 * C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * B2 * C1 * Y)	0.00088	0.00088	0.00087
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B2 * !C1 * Y)	0.00088	0.00087	0.00087
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00036	-0.00037	-0.00037
	(!A1 * !A2 * !B2 * C1 * Y)	0.00089	0.00091	0.00089
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00089	0.00091	0.00089

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00158	-0.00157	-0.00157
	(A2 * B2 * C1 * !Y)	0.00158	0.00156	0.00157
	(A2 * !B2 * !C1 * Y)	-0.00124	-0.00132	-0.00131
	(A2 * !B2 * !C1 * Y)	0.00176	0.00177	0.00176
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00142	-0.00142	-0.00142
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00173	0.00173	0.00172
	(A1 * !A2 * B2 * C1 * !Y)	-0.00158	-0.00157	-0.00157
	(A1 * !A2 * B2 * C1 * !Y)	0.00158	0.00157	0.00157
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00124	-0.00131	-0.00131
	(A1 * !A2 * !B2 * !C1 * Y)	0.00178	0.00177	0.00176
	(!A1 * !A2 * B2 * C1 * Y)	-0.00066	-0.00065	-0.00066
	(!A1 * !A2 * B2 * C1 * Y)	0.00176	0.00175	0.00172
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00081	-0.00081	-0.00080
	(!A1 * !A2 * B2 * !C1 * Y)	0.00173	0.00172	0.00172
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00066	-0.00067	-0.00067
	(!A1 * !A2 * !B2 * C1 * Y)	0.00179	0.00182	0.00176
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00084	-0.00085	-0.00085
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00178	0.00179	0.00176

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00295	-0.00297	-0.00294
	(A2 * B2 * C1 * !Y)	0.00311	0.00315	0.00311
	(A2 * !B2 * !C1 * Y)	-0.00239	-0.00254	-0.00254
	(A2 * !B2 * !C1 * Y)	0.00340	0.00341	0.00339
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00274	-0.00276	-0.00275
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00332	0.00333	0.00331
	(A1 * !A2 * B2 * C1 * !Y)	-0.00294	-0.00296	-0.00294
	(A1 * !A2 * B2 * C1 * !Y)	0.00310	0.00313	0.00311
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00236	-0.00253	-0.00253
	(A1 * !A2 * !B2 * !C1 * Y)	0.00340	0.00342	0.00339
	(!A1 * !A2 * B2 * C1 * Y)	-0.00123	-0.00123	-0.00125
	(!A1 * !A2 * B2 * C1 * Y)	0.00337	0.00337	0.00332
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00150	-0.00152	-0.00150
	(!A1 * !A2 * B2 * !C1 * Y)	0.00330	0.00333	0.00331
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00123	-0.00125	-0.00126
	(!A1 * !A2 * !B2 * C1 * Y)	0.00344	0.00351	0.00340
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00159	-0.00159	-0.00158
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00340	0.00342	0.00339

Passive power(pJ) for B2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B1 * C1 * !Y)**	0.00080	0.00080	0.00079
	(A2 * B1 * C1 * !Y)	-0.00046	-0.00046	-0.00046
	(A2 * B1 * !C1 * Y)	0.00070	0.00070	0.00069
	(A2 * B1 * !C1 * Y)	-0.00080	-0.00081	-0.00081
	(A2 * !B1 * !C1 * Y)	0.00065	0.00066	0.00065
	(A2 * !B1 * !C1 * Y)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * B1 * C1 * !Y)	0.00079	0.00080	0.00079
	(A1 * !A2 * B1 * C1 * !Y)	-0.00045	-0.00046	-0.00046
	(A1 * !A2 * B1 * !C1 * Y)	0.00069	0.00070	0.00069
	(A1 * !A2 * B1 * !C1 * Y)	-0.00080	-0.00081	-0.00081
	(A1 * !A2 * !B1 * !C1 * Y)	0.00065	0.00066	0.00065
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * B1 * C1 * Y)	0.00034	0.00034	0.00033
	(!A1 * !A2 * B1 * C1 * Y)	-0.00080	-0.00082	-0.00081
	(!A1 * !A2 * B1 * !C1 * Y)	0.00041	0.00041	0.00041
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00080	-0.00082	-0.00081
	(!A1 * !A2 * !B1 * C1 * Y)	0.00036	0.00036	0.00036
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00083	-0.00082	-0.00081
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00043	0.00043	0.00043
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00083	-0.00084	-0.00083

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00145	0.00148	0.00146
	(A2 * B1 * C1 * !Y)	-0.00090	-0.00091	-0.00090
	(A2 * B1 * !C1 * Y)	0.00132	0.00133	0.00132
	(A2 * B1 * !C1 * Y)	-0.00152	-0.00155	-0.00155
	(A2 * !B1 * !C1 * Y)	0.00122	0.00123	0.00122
	(A2 * !B1 * !C1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * !A2 * B1 * C1 * !Y)	0.00146	0.00148	0.00146
	(A1 * !A2 * B1 * C1 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * B1 * !C1 * Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * !C1 * Y)	-0.00152	-0.00155	-0.00155
	(A1 * !A2 * !B1 * !C1 * Y)	0.00122	0.00122	0.00122
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00158	-0.00159	-0.00158
	(!A1 * !A2 * B1 * C1 * Y)	0.00060	0.00060	0.00060
	(!A1 * !A2 * B1 * C1 * Y)	-0.00151	-0.00156	-0.00154
	(!A1 * !A2 * B1 * !C1 * Y)	0.00074	0.00074	0.00074
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00152	-0.00156	-0.00155
	(!A1 * !A2 * !B1 * C1 * Y)	0.00065	0.00065	0.00065
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00158	-0.00158	-0.00156
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00079	0.00078	0.00078
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00160	-0.00160	-0.00159

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00297	0.00302	0.00298
	(A2 * B1 * C1 * !Y)	-0.00180	-0.00183	-0.00180
	(A2 * B1 * !C1 * Y)	0.00268	0.00270	0.00269
	(A2 * B1 * !C1 * Y)	-0.00305	-0.00312	-0.00311
	(A2 * !B1 * !C1 * Y)	0.00246	0.00247	0.00247
	(A2 * !B1 * !C1 * Y)	-0.00319	-0.00320	-0.00320
	(A1 * !A2 * B1 * C1 * !Y)	0.00297	0.00297	0.00298
	(A1 * !A2 * B1 * C1 * !Y)	-0.00180	-0.00180	-0.00180
	(A1 * !A2 * B1 * !C1 * Y)	0.00268	0.00270	0.00268
	(A1 * !A2 * B1 * !C1 * Y)	-0.00305	-0.00313	-0.00311
	(A1 * !A2 * !B1 * !C1 * Y)	0.00247	0.00247	0.00247
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00321	-0.00320	-0.00320
	(!A1 * !A2 * B1 * C1 * Y)	0.00122	0.00121	0.00120
	(!A1 * !A2 * B1 * C1 * Y)	-0.00308	-0.00315	-0.00311
	(!A1 * !A2 * B1 * !C1 * Y)	0.00146	0.00147	0.00146
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00306	-0.00312	-0.00312
	(!A1 * !A2 * !B1 * C1 * Y)	0.00130	0.00130	0.00130
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00320	-0.00320	-0.00315
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00155	0.00155	0.00154
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00322	-0.00322	-0.00321

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B1 * C1 * !Y)**	-0.00075	-0.00075	-0.00079
	(A2 * B1 * C1 * !Y)	0.00050	0.00049	0.00047
	(A2 * B1 * !C1 * Y)	-0.00070	-0.00069	-0.00069
	(A2 * B1 * !C1 * Y)	0.00081	0.00081	0.00081
	(A2 * !B1 * !C1 * Y)	-0.00063	-0.00066	-0.00065
	(A2 * !B1 * !C1 * Y)	0.00083	0.00083	0.00083
	(A1 * !A2 * B1 * C1 * !Y)	-0.00075	-0.00075	-0.00079
	(A1 * !A2 * B1 * C1 * !Y)	0.00050	0.00049	0.00047
	(A1 * !A2 * B1 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * B1 * !C1 * Y)	0.00081	0.00081	0.00081
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00062	-0.00066	-0.00065
	(A1 * !A2 * !B1 * !C1 * Y)	0.00083	0.00083	0.00083
	(!A1 * !A2 * B1 * C1 * Y)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * B1 * C1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * B1 * !C1 * Y)	0.00082	0.00082	0.00081
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * !B1 * C1 * Y)	0.00084	0.00085	0.00083
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00083	0.00085	0.00083

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00136	-0.00137	-0.00145
	(A2 * B1 * C1 * !Y)	0.00100	0.00099	0.00093
	(A2 * B1 * !C1 * Y)	-0.00132	-0.00133	-0.00132
	(A2 * B1 * !C1 * Y)	0.00154	0.00155	0.00155
	(A2 * !B1 * !C1 * Y)	-0.00116	-0.00123	-0.00122
	(A2 * !B1 * !C1 * Y)	0.00159	0.00160	0.00159
	(A1 * !A2 * B1 * C1 * !Y)	-0.00136	-0.00137	-0.00145
	(A1 * !A2 * B1 * C1 * !Y)	0.00100	0.00099	0.00093
	(A1 * !A2 * B1 * !C1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * !A2 * B1 * !C1 * Y)	0.00154	0.00155	0.00155
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00116	-0.00122	-0.00122
	(A1 * !A2 * !B1 * !C1 * Y)	0.00160	0.00160	0.00159
	(!A1 * !A2 * B1 * C1 * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * B1 * C1 * Y)	0.00155	0.00156	0.00154
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00074	-0.00074	-0.00074
	(!A1 * !A2 * B1 * !C1 * Y)	0.00155	0.00156	0.00155
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00060	-0.00061	-0.00061
	(!A1 * !A2 * !B1 * C1 * Y)	0.00160	0.00163	0.00159
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00079	-0.00078	-0.00078
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00160	0.00162	0.00159

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00278	-0.00279	-0.00295
	(A2 * B1 * C1 * !Y)	0.00199	0.00198	0.00186
	(A2 * B1 * !C1 * Y)	-0.00268	-0.00268	-0.00268
	(A2 * B1 * !C1 * Y)	0.00313	0.00312	0.00311
	(A2 * !B1 * !C1 * Y)	-0.00232	-0.00247	-0.00247
	(A2 * !B1 * !C1 * Y)	0.00321	0.00322	0.00321
	(A1 * !A2 * B1 * C1 * !Y)	-0.00278	-0.00279	-0.00295
	(A1 * !A2 * B1 * C1 * !Y)	0.00199	0.00198	0.00186
	(A1 * !A2 * B1 * !C1 * Y)	-0.00268	-0.00269	-0.00268
	(A1 * !A2 * B1 * !C1 * Y)	0.00313	0.00313	0.00311
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00231	-0.00247	-0.00247
	(A1 * !A2 * !B1 * !C1 * Y)	0.00322	0.00323	0.00321
	(!A1 * !A2 * B1 * C1 * Y)	-0.00119	-0.00120	-0.00120
	(!A1 * !A2 * B1 * C1 * Y)	0.00314	0.00316	0.00311
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00146	-0.00147	-0.00146
	(!A1 * !A2 * B1 * !C1 * Y)	0.00313	0.00312	0.00312
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00120	-0.00122	-0.00122
	(!A1 * !A2 * !B1 * C1 * Y)	0.00326	0.00330	0.00322
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00155	-0.00155	-0.00154
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00324	0.00327	0.00321

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	(A2 * !B1 * !B2 * Y)	0.00033	0.00033	0.00030
	(A2 * !B1 * !B2 * Y)	-0.00100	-0.00101	-0.00105
	(!A2 * !B1 * !B2 * Y)	0.00033	0.00033	0.00030
	(!A2 * !B1 * !B2 * Y)	-0.00100	-0.00101	-0.00105
	(!A1 * !A2 * B2 * Y)	0.00037	0.00037	0.00030
	(!A1 * !A2 * B2 * Y)	-0.00090	-0.00091	-0.00103
	(!A1 * !A2 * B1 * !B2 * Y)	0.00037	0.00037	0.00030
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00092	-0.00092	-0.00103
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00061	0.00061	0.00056
	(A2 * !B1 * !B2 * Y)	-0.00184	-0.00186	-0.00194
	(!A2 * !B1 * !B2 * Y)	0.00061	0.00061	0.00056
	(!A2 * !B1 * !B2 * Y)	-0.00184	-0.00186	-0.00194
	(!A1 * !A2 * B2 * Y)	0.00067	0.00067	0.00055
	(!A1 * !A2 * B2 * Y)	-0.00166	-0.00168	-0.00191
	(!A1 * !A2 * B1 * !B2 * Y)	0.00067	0.00067	0.00056
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00169	-0.00171	-0.00191
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00105	0.00106	0.00097
	(A2 * !B1 * !B2 * Y)	-0.00376	-0.00379	-0.00394
	(!A2 * !B1 * !B2 * Y)	0.00106	0.00106	0.00097
	(!A2 * !B1 * !B2 * Y)	-0.00377	-0.00379	-0.00394
	(!A1 * !A2 * B2 * Y)	0.00117	0.00117	0.00096
	(!A1 * !A2 * B2 * Y)	-0.00342	-0.00346	-0.00388
	(!A1 * !A2 * B1 * !B2 * Y)	0.00117	0.00117	0.00097
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00348	-0.00351	-0.00389

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	(A2 * !B1 * !B2 * Y)	-0.00029	-0.00029	-0.00029
	(A2 * !B1 * !B2 * Y)	0.00105	0.00106	0.00105
	(!A2 * !B1 * !B2 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !B2 * Y)	0.00105	0.00105	0.00105
	(!A1 * !A2 * B2 * Y)	-0.00029	-0.00028	-0.00028
	(!A1 * !A2 * B2 * Y)	0.00106	0.00106	0.00105
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00029	-0.00028	-0.00028
	(!A1 * !A2 * B1 * !B2 * Y)	0.00105	0.00105	0.00105
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00054	-0.00054	-0.00053
	(A2 * !B1 * !B2 * Y)	0.00196	0.00196	0.00195
	(!A2 * !B1 * !B2 * Y)	-0.00054	-0.00054	-0.00053
	(!A2 * !B1 * !B2 * Y)	0.00196	0.00198	0.00195
	(!A1 * !A2 * B2 * Y)	-0.00051	-0.00052	-0.00051
	(!A1 * !A2 * B2 * Y)	0.00194	0.00196	0.00195
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00053	-0.00053	-0.00052
	(!A1 * !A2 * B1 * !B2 * Y)	0.00196	0.00198	0.00195
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00093	-0.00093	-0.00092
	(A2 * !B1 * !B2 * Y)	0.00397	0.00397	0.00396
	(!A2 * !B1 * !B2 * Y)	-0.00094	-0.00094	-0.00092
	(!A2 * !B1 * !B2 * Y)	0.00398	0.00402	0.00396
	(!A1 * !A2 * B2 * Y)	-0.00088	-0.00089	-0.00089
	(!A1 * !A2 * B2 * Y)	0.00392	0.00397	0.00396
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00091	-0.00092	-0.00090
	(!A1 * !A2 * B1 * !B2 * Y)	0.00398	0.00402	0.00396

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	B2	C1	X
0	0	x	x	x	0
x	1	0	0	x	0
x	1	x	1	0	0
x	1	x	1	1	1
x	1	1	x	0	0
x	1	1	x	1	1
1	x	0	0	x	0
1	x	x	1	0	0
1	x	x	1	1	1
1	x	1	x	0	0
1	x	1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221a_1	14.38560
sky130_fd_sc_hs__o221a_2	15.98400
sky130_fd_sc_hs__o221a_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__o221a_1	0.00239	0.00238	0.00232	0.00250	0.00245	0.43402
sky130_fd_sc_hs__o221a_2	0.00254	0.00250	0.00249	0.00261	0.00256	0.87204
sky130_fd_sc_hs__o221a_4	0.00475	0.00429	0.00507	0.00431	0.00440	1.66761

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.02508	0.07921
sky130_fd_sc_hs__o221a_2	0.00000	0.03319	0.08197
sky130_fd_sc_hs__o221a_4	0.00000	0.06729	0.16393

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (RR)	0.27861	1.27234	9.06507
	A2->X (RR)	0.26610	1.25530	8.98252
	B1->X (RR)	0.26447	1.28451	9.01873
	B2->X (RR)	0.25346	1.26053	8.90214
	C1->X (RR)	0.24239	1.24515	8.69514
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.27335	1.13232	9.13165
	A2->X (RR)	0.26217	1.11778	9.06359
	B1->X (RR)	0.25985	1.14974	9.12159
	B2->X (RR)	0.25330	1.13245	9.03275
	C1->X (RR)	0.23898	1.12243	8.85814
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.28519	1.04136	9.09422
	A2->X (RR)	0.27522	1.02899	9.02218
	B1->X (RR)	0.27329	1.05999	9.08674
	B2->X (RR)	0.26156	1.03673	8.97851
	C1->X (RR)	0.24673	1.02637	8.80291

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.55054	1.36826	6.72682
	A2->X (FF)	0.51383	1.27811	6.22761
	B1->X (FF)	0.47552	1.28294	6.49783
	B2->X (FF)	0.44246	1.19784	5.99915
	C1->X (FF)	0.19226	0.96021	5.64101
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.66311	1.47021	7.09975
	A2->X (FF)	0.62211	1.37051	6.61869
	B1->X (FF)	0.57129	1.36869	6.87152
	B2->X (FF)	0.53877	1.28184	6.41475
	C1->X (FF)	0.22914	0.98728	5.95628
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.58872	1.35030	6.95368
	A2->X (FF)	0.54716	1.25254	6.45796
	B1->X (FF)	0.52766	1.28154	6.77031
	B2->X (FF)	0.48428	1.18596	6.28342
	C1->X (FF)	0.21070	0.93047	5.88170

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.00666	0.00662	0.00655
	A1	0.00295	0.00291	0.00286
	A2	0.00597	0.00598	0.00595
	A2	0.00260	0.00261	0.00260
	B1	0.00597	0.00595	0.00592
	B1	0.00293	0.00291	0.00290
	B2	0.00536	0.00532	0.00530
	B2	0.00254	0.00249	0.00249
	C1	0.00557	0.00550	0.00557
	C1	0.00294	0.00287	0.00295
sky130_fd_sc_hs__o221a_2	A1	0.00806	0.00815	0.00812
	A1	0.00408	0.00417	0.00418
	A2	0.00732	0.00747	0.00748
	A2	0.00369	0.00384	0.00390
	B1	0.00731	0.00741	0.00740
	B1	0.00407	0.00417	0.00421
	B2	0.00671	0.00679	0.00679
	B2	0.00372	0.00380	0.00385
	C1	0.00684	0.00688	0.00696
	C1	0.00409	0.00413	0.00423

sky130_fd_sc_hs__o221a_4	**A1**	0.01493	0.01518	0.01521
	A1	0.00768	0.00794	0.00806
	A2	0.01322	0.01351	0.01361
	A2	0.00686	0.00715	0.00734
	B1	0.01386	0.01409	0.01415
	B1	0.00766	0.00790	0.00797
	B2	0.01209	0.01231	0.01241
	B2	0.00690	0.00711	0.00730
	C1	0.01254	0.01268	0.01295
	C1	0.00766	0.00781	0.00815

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00251	0.00250	0.00272
	A1	0.00601	0.00600	0.00593
	A2	0.00245	0.00241	0.00279
	A2	0.00565	0.00564	0.00577
	B1	0.00209	0.00209	0.00216
	B1	0.00509	0.00512	0.00507
	B2	0.00202	0.00192	0.00243
	B2	0.00479	0.00476	0.00496
	C1	0.00160	0.00151	0.00193
	C1	0.00426	0.00416	0.00443

sky130_fd_sc_hs__o221a_2	**A1**	0.00342	0.00356	0.00426
	A1	0.00723	0.00738	0.00732
	A2	0.00343	0.00354	0.00451
	A2	0.00686	0.00699	0.00716
	B1	0.00301	0.00317	0.00498
	B1	0.00620	0.00637	0.00637
	B2	0.00293	0.00304	0.00379
	B2	0.00587	0.00599	0.00623
	C1	0.00255	0.00258	0.00312
	C1	0.00534	0.00538	0.00566
sky130_fd_sc_hs__o221a_4	**A1**	0.00635	0.00673	0.00779
	A1	0.01332	0.01372	0.01370
	A2	0.00655	0.00684	0.00788
	A2	0.01259	0.01293	0.01334
	B1	0.00557	0.00592	0.00704
	B1	0.01171	0.01207	0.01212
	B2	0.00584	0.00603	0.00681
	B2	0.01096	0.01125	0.01178
	C1	0.00508	0.00520	0.00621
	C1	0.01003	0.01019	0.01079

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	0.00074	0.00069	0.00068
	(A2 * B2 * C1 * X)	-0.00065	-0.00072	-0.00072
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00059	0.00059	0.00059
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00080	-0.00081	-0.00081
	(A2 * B1 * !B2 * C1 * X)	0.00074	0.00069	0.00068
	(A2 * B1 * !B2 * C1 * X)	-0.00065	-0.00072	-0.00072
	(A2 * !B1 * !B2 * !X)	0.00059	0.00059	0.00059
	(A2 * !B1 * !B2 * !X)	-0.00080	-0.00081	-0.00081
	(!A2 * B2 * !C1 * !X)	0.00053	0.00053	0.00053
	(!A2 * B2 * !C1 * !X)	-0.00083	-0.00083	-0.00082
	(!A2 * B1 * !B2 * !C1 * !X)	0.00053	0.00054	0.00053
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(!A2 * !B1 * !B2 * C1 * !X)	0.00054	0.00054	0.00054
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00054	0.00054	0.00054
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00083	0.00079	0.00078
	(A2 * B2 * C1 * X)	-0.00065	-0.00071	-0.00072
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00068	0.00069	0.00068
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00080	-0.00082	-0.00082
	(A2 * B1 * !B2 * C1 * X)	0.00083	0.00079	0.00078
	(A2 * B1 * !B2 * C1 * X)	-0.00065	-0.00071	-0.00072
	(A2 * !B1 * !B2 * !X)	0.00068	0.00069	0.00068
	(A2 * !B1 * !B2 * !X)	-0.00080	-0.00082	-0.00082
	(!A2 * B2 * !C1 * !X)	0.00061	0.00061	0.00061
	(!A2 * B2 * !C1 * !X)	-0.00083	-0.00083	-0.00083
	(!A2 * B1 * !B2 * !C1 * !X)	0.00061	0.00062	0.00062
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * !B2 * C1 * !X)	0.00062	0.00063	0.00062
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00062	0.00063	0.00062
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00154	0.00145	0.00144
	(A2 * B2 * C1 * X)	-0.00129	-0.00141	-0.00142
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00132	0.00132	0.00132
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00151	-0.00154	-0.00154
	(A2 * B1 * !B2 * C1 * X)	0.00154	0.00145	0.00144
	(A2 * B1 * !B2 * C1 * X)	-0.00129	-0.00141	-0.00142
	(A2 * !B1 * !B2 * !X)	0.00132	0.00132	0.00132
	(A2 * !B1 * !B2 * !X)	-0.00151	-0.00154	-0.00154
	(!A2 * B2 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A2 * B2 * !C1 * !X)	-0.00157	-0.00157	-0.00157
	(!A2 * B1 * !B2 * !C1 * !X)	0.00120	0.00122	0.00121
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00157	-0.00157	-0.00157
	(!A2 * !B1 * !B2 * C1 * !X)	0.00121	0.00123	0.00122
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00156	-0.00157	-0.00157
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00121	0.00123	0.00122
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00156	-0.00157	-0.00157

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	-0.00068	-0.00068	-0.00067
	(A2 * B2 * C1 * X)	0.00072	0.00072	0.00072
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00059	-0.00059	-0.00058
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00081	0.00081	0.00081
	(A2 * B1 * !B2 * C1 * X)	-0.00068	-0.00068	-0.00067
	(A2 * B1 * !B2 * C1 * X)	0.00072	0.00072	0.00072
	(A2 * !B1 * !B2 * !X)	-0.00059	-0.00059	-0.00058
	(A2 * !B1 * !B2 * !X)	0.00082	0.00081	0.00081
	(!A2 * B2 * !C1 * !X)	-0.00049	-0.00053	-0.00053
	(!A2 * B2 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00050	-0.00054	-0.00053
	(!A2 * B1 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00051	-0.00054	-0.00054
	(!A2 * !B1 * !B2 * C1 * !X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00051	-0.00054	-0.00054
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00078	-0.00078	-0.00078
	(A2 * B2 * C1 * X)	0.00072	0.00071	0.00072
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00068	-0.00068	-0.00068
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00082	0.00082	0.00082
	(A2 * B1 * !B2 * C1 * X)	-0.00078	-0.00078	-0.00078
	(A2 * B1 * !B2 * C1 * X)	0.00072	0.00071	0.00072
	(A2 * !B1 * !B2 * !X)	-0.00068	-0.00068	-0.00068
	(A2 * !B1 * !B2 * !X)	0.00082	0.00082	0.00082
	(!A2 * B2 * !C1 * !X)	-0.00057	-0.00061	-0.00061
	(!A2 * B2 * !C1 * !X)	0.00084	0.00084	0.00083
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00058	-0.00062	-0.00062
	(!A2 * B1 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00060	-0.00063	-0.00062
	(!A2 * !B1 * !B2 * C1 * !X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00060	-0.00063	-0.00062
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00144	-0.00144	-0.00143
	(A2 * B2 * C1 * X)	0.00141	0.00142	0.00142
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00132	-0.00132	-0.00131
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00154	0.00155	0.00154
	(A2 * B1 * !B2 * C1 * X)	-0.00144	-0.00144	-0.00143
	(A2 * B1 * !B2 * C1 * X)	0.00141	0.00142	0.00142
	(A2 * !B1 * !B2 * !X)	-0.00132	-0.00132	-0.00131
	(A2 * !B1 * !B2 * !X)	0.00154	0.00155	0.00154
	(!A2 * B2 * !C1 * !X)	-0.00113	-0.00120	-0.00119
	(!A2 * B2 * !C1 * !X)	0.00158	0.00158	0.00157
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00115	-0.00122	-0.00121
	(!A2 * B1 * !B2 * !C1 * !X)	0.00158	0.00158	0.00157
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00117	-0.00123	-0.00122
	(!A2 * !B1 * !B2 * C1 * !X)	0.00158	0.00158	0.00157
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00117	-0.00123	-0.00122
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00158	0.00158	0.00157

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A1 * B2 * C1 * X)**	0.00070	0.00071	0.00070
	(A1 * B2 * C1 * X)	-0.00043	-0.00043	-0.00042
	(A1 * B2 * !C1 * !X)	0.00061	0.00061	0.00060
	(A1 * B2 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * B1 * !B2 * C1 * X)	0.00070	0.00071	0.00070
	(A1 * B1 * !B2 * C1 * X)	-0.00043	-0.00043	-0.00042
	(A1 * B1 * !B2 * !C1 * !X)	0.00060	0.00061	0.00060
	(A1 * B1 * !B2 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(A1 * !B1 * !B2 * C1 * !X)	0.00061	0.00061	0.00060
	(A1 * !B1 * !B2 * C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !B1 * !B2 * !C1 * !X)	0.00060	0.00061	0.00060
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(!A1 * B2 * !C1 * !X)	0.00054	0.00054	0.00054
	(!A1 * B2 * !C1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * B1 * !B2 * !C1 * !X)	0.00054	0.00055	0.00054
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !B1 * !B2 * C1 * !X)	0.00055	0.00055	0.00055
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00055	0.00055	0.00055
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00076	-0.00076	-0.00076

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00079	0.00080	0.00079
	(A1 * B2 * C1 * X)	-0.00042	-0.00042	-0.00042
	(A1 * B2 * !C1 * !X)	0.00070	0.00070	0.00069
	(A1 * B2 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(A1 * B1 * !B2 * C1 * X)	0.00079	0.00080	0.00079
	(A1 * B1 * !B2 * C1 * X)	-0.00042	-0.00042	-0.00042
	(A1 * B1 * !B2 * !C1 * !X)	0.00070	0.00069	0.00069
	(A1 * B1 * !B2 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(A1 * !B1 * !B2 * C1 * !X)	0.00070	0.00070	0.00069
	(A1 * !B1 * !B2 * C1 * !X)	-0.00073	-0.00074	-0.00074
	(A1 * !B1 * !B2 * !C1 * !X)	0.00070	0.00070	0.00069
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(!A1 * B2 * !C1 * !X)	0.00062	0.00062	0.00062
	(!A1 * B2 * !C1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * B1 * !B2 * !C1 * !X)	0.00063	0.00063	0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !B1 * !B2 * C1 * !X)	0.00063	0.00063	0.00063
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00075	-0.00076	-0.00075
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00063	0.00064	0.00063
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00075	-0.00076	-0.00075

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00129	0.00130	0.00128
	(A1 * B2 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * B2 * !C1 * !X)	0.00112	0.00113	0.00112
	(A1 * B2 * !C1 * !X)	-0.00141	-0.00145	-0.00144
	(A1 * B1 * !B2 * C1 * X)	0.00129	0.00130	0.00128
	(A1 * B1 * !B2 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * B1 * !B2 * !C1 * !X)	0.00112	0.00113	0.00112
	(A1 * B1 * !B2 * !C1 * !X)	-0.00142	-0.00145	-0.00144
	(A1 * !B1 * !B2 * C1 * !X)	0.00112	0.00112	0.00112
	(A1 * !B1 * !B2 * C1 * !X)	-0.00141	-0.00144	-0.00144
	(A1 * !B1 * !B2 * !C1 * !X)	0.00112	0.00113	0.00112
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00142	-0.00145	-0.00145
	(!A1 * B2 * !C1 * !X)	0.00101	0.00101	0.00100
	(!A1 * B2 * !C1 * !X)	-0.00149	-0.00149	-0.00148
	(!A1 * B1 * !B2 * !C1 * !X)	0.00101	0.00102	0.00101
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00148	-0.00149	-0.00148
	(!A1 * !B1 * !B2 * C1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00148	-0.00148	-0.00148
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00148	-0.00148	-0.00148

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A1 * B2 * C1 * X)**	-0.00065	-0.00066	-0.00069
	(A1 * B2 * C1 * X)	0.00045	0.00046	0.00043
	(A1 * B2 * !C1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * B2 * !C1 * !X)	0.00074	0.00074	0.00074
	(A1 * B1 * !B2 * C1 * X)	-0.00066	-0.00066	-0.00069
	(A1 * B1 * !B2 * C1 * X)	0.00046	0.00046	0.00043
	(A1 * B1 * !B2 * !C1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * B1 * !B2 * !C1 * !X)	0.00074	0.00074	0.00074
	(A1 * !B1 * !B2 * C1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * !B1 * !B2 * C1 * !X)	0.00074	0.00074	0.00074
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * !B1 * !B2 * !C1 * !X)	0.00075	0.00074	0.00074
	(!A1 * B2 * !C1 * !X)	-0.00050	-0.00054	-0.00054
	(!A1 * B2 * !C1 * !X)	0.00076	0.00077	0.00076
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00051	-0.00055	-0.00054
	(!A1 * B1 * !B2 * !C1 * !X)	0.00076	0.00077	0.00076
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00052	-0.00055	-0.00055
	(!A1 * !B1 * !B2 * C1 * !X)	0.00076	0.00077	0.00076
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00052	-0.00055	-0.00055
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00076	0.00077	0.00076

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00074	-0.00075	-0.00078
	(A1 * B2 * C1 * X)	0.00046	0.00046	0.00043
	(A1 * B2 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * B2 * !C1 * !X)	0.00074	0.00074	0.00074
	(A1 * B1 * !B2 * C1 * X)	-0.00074	-0.00075	-0.00078
	(A1 * B1 * !B2 * C1 * X)	0.00046	0.00046	0.00043
	(A1 * B1 * !B2 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * !B2 * !C1 * !X)	0.00074	0.00074	0.00074
	(A1 * !B1 * !B2 * C1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * !B2 * C1 * !X)	0.00074	0.00074	0.00074
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * !B2 * !C1 * !X)	0.00075	0.00074	0.00074
	(!A1 * B2 * !C1 * !X)	-0.00058	-0.00062	-0.00062
	(!A1 * B2 * !C1 * !X)	0.00076	0.00076	0.00076
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00059	-0.00063	-0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00060	-0.00063	-0.00063
	(!A1 * !B1 * !B2 * C1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00060	-0.00064	-0.00063
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00076	0.00076	0.00076

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00119	-0.00120	-0.00126
	(A1 * B2 * C1 * X)	0.00092	0.00092	0.00086
	(A1 * B2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B2 * !C1 * !X)	0.00145	0.00145	0.00144
	(A1 * B1 * !B2 * C1 * X)	-0.00119	-0.00120	-0.00126
	(A1 * B1 * !B2 * C1 * X)	0.00092	0.00092	0.00086
	(A1 * B1 * !B2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * !B2 * !C1 * !X)	0.00145	0.00145	0.00144
	(A1 * !B1 * !B2 * C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * !B2 * C1 * !X)	0.00145	0.00144	0.00144
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * !B2 * !C1 * !X)	0.00146	0.00145	0.00145
	(!A1 * B2 * !C1 * !X)	-0.00093	-0.00101	-0.00100
	(!A1 * B2 * !C1 * !X)	0.00149	0.00150	0.00149
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00095	-0.00102	-0.00101
	(!A1 * B1 * !B2 * !C1 * !X)	0.00148	0.00150	0.00149
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00097	-0.00103	-0.00102
	(!A1 * !B1 * !B2 * C1 * !X)	0.00149	0.00148	0.00149
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00097	-0.00103	-0.00102
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00149	0.00148	0.00149

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	0.00069	0.00064	0.00064
	(A2 * B2 * C1 * X)	-0.00068	-0.00073	-0.00074
	(A2 * !B2 * !C1 * !X)	0.00056	0.00057	0.00057
	(A2 * !B2 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00060	0.00061	0.00060
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * B2 * C1 * X)	0.00069	0.00064	0.00064
	(A1 * !A2 * B2 * C1 * X)	-0.00068	-0.00073	-0.00074
	(A1 * !A2 * !B2 * !C1 * !X)	0.00056	0.00057	0.00057
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * B2 * C1 * !X)	0.00029	0.00029	0.00029
	(!A1 * !A2 * B2 * C1 * !X)	-0.00076	-0.00077	-0.00077
	(!A1 * !A2 * B2 * !C1 * !X)	0.00035	0.00035	0.00035
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00076	-0.00077	-0.00077
	(!A1 * !A2 * !B2 * C1 * !X)	0.00030	0.00030	0.00031
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00078	-0.00077	-0.00076
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00037	0.00036	0.00036
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00078	-0.00078	-0.00078

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00080	0.00075	0.00074
	(A2 * B2 * C1 * X)	-0.00065	-0.00072	-0.00072
	(A2 * !B2 * !C1 * !X)	0.00064	0.00064	0.00064
	(A2 * !B2 * !C1 * !X)	-0.00079	-0.00079	-0.00079
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00068	0.00069	0.00068
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * B2 * C1 * X)	0.00080	0.00075	0.00074
	(A1 * !A2 * B2 * C1 * X)	-0.00065	-0.00072	-0.00072
	(A1 * !A2 * !B2 * !C1 * !X)	0.00064	0.00064	0.00064
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * B2 * C1 * !X)	0.00032	0.00032	0.00032
	(!A1 * !A2 * B2 * C1 * !X)	-0.00076	-0.00078	-0.00078
	(!A1 * !A2 * B2 * !C1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00076	-0.00078	-0.00078
	(!A1 * !A2 * !B2 * C1 * !X)	0.00034	0.00034	0.00034
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00079	-0.00078	-0.00077
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00041	0.00041	0.00041
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00080	-0.00079	-0.00079

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00170	0.00161	0.00160
	(A2 * B2 * C1 * X)	-0.00130	-0.00142	-0.00142
	(A2 * !B2 * !C1 * !X)	0.00140	0.00142	0.00141
	(A2 * !B2 * !C1 * !X)	-0.00156	-0.00157	-0.00156
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00149	0.00149	0.00149
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00150	-0.00154	-0.00153
	(A1 * !A2 * B2 * C1 * X)	0.00170	0.00161	0.00160
	(A1 * !A2 * B2 * C1 * X)	-0.00130	-0.00142	-0.00142
	(A1 * !A2 * !B2 * !C1 * !X)	0.00140	0.00142	0.00141
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00156	-0.00157	-0.00156
	(!A1 * !A2 * B2 * C1 * !X)	0.00082	0.00081	0.00081
	(!A1 * !A2 * B2 * C1 * !X)	-0.00151	-0.00155	-0.00154
	(!A1 * !A2 * B2 * !C1 * !X)	0.00092	0.00092	0.00092
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00152	-0.00155	-0.00154
	(!A1 * !A2 * !B2 * C1 * !X)	0.00084	0.00084	0.00085
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00156	-0.00156	-0.00154
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00096	0.00096	0.00096
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00158	-0.00158	-0.00157

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	-0.00063	-0.00063	-0.00063
	(A2 * B2 * C1 * X)	0.00074	0.00074	0.00074
	(A2 * !B2 * !C1 * !X)	-0.00055	-0.00057	-0.00057
	(A2 * !B2 * !C1 * !X)	0.00079	0.00078	0.00078
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00077	0.00077	0.00077
	(A1 * !A2 * B2 * C1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * B2 * C1 * X)	0.00074	0.00074	0.00074
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00054	-0.00057	-0.00057
	(A1 * !A2 * !B2 * !C1 * !X)	0.00078	0.00078	0.00078
	(!A1 * !A2 * B2 * C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * B2 * C1 * !X)	0.00078	0.00077	0.00077
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B2 * !C1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * !B2 * C1 * !X)	0.00079	0.00080	0.00078
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00037	-0.00036	-0.00036
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00078	0.00080	0.00078

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00074	-0.00074	-0.00073
	(A2 * B2 * C1 * X)	0.00072	0.00072	0.00072
	(A2 * !B2 * !C1 * !X)	-0.00061	-0.00064	-0.00064
	(A2 * !B2 * !C1 * !X)	0.00080	0.00079	0.00079
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00068	-0.00068	-0.00068
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00077	0.00077	0.00077
	(A1 * !A2 * B2 * C1 * X)	-0.00074	-0.00074	-0.00073
	(A1 * !A2 * B2 * C1 * X)	0.00072	0.00072	0.00072
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00061	-0.00064	-0.00064
	(A1 * !A2 * !B2 * !C1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A2 * B2 * C1 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * B2 * C1 * !X)	0.00078	0.00078	0.00078
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * B2 * !C1 * !X)	0.00078	0.00078	0.00078
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00032	-0.00033	-0.00032
	(!A1 * !A2 * !B2 * C1 * !X)	0.00080	0.00081	0.00079
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00080	0.00081	0.00079

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00160	-0.00160	-0.00159
	(A2 * B2 * C1 * X)	0.00142	0.00143	0.00142
	(A2 * !B2 * !C1 * !X)	-0.00135	-0.00142	-0.00141
	(A2 * !B2 * !C1 * !X)	0.00156	0.00158	0.00157
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00149	-0.00149	-0.00148
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00153	0.00154	0.00153
	(A1 * !A2 * B2 * C1 * X)	-0.00160	-0.00160	-0.00159
	(A1 * !A2 * B2 * C1 * X)	0.00142	0.00143	0.00142
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00134	-0.00142	-0.00141
	(A1 * !A2 * !B2 * !C1 * !X)	0.00157	0.00158	0.00157
	(!A1 * !A2 * B2 * C1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * !A2 * B2 * C1 * !X)	0.00156	0.00157	0.00154
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(!A1 * !A2 * B2 * !C1 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00081	-0.00082	-0.00082
	(!A1 * !A2 * !B2 * C1 * !X)	0.00159	0.00160	0.00158
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00159	0.00160	0.00158

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o221a_1	**(A2 * B1 * C1 * X)**	0.00079	0.00079	0.00078
	(A2 * B1 * C1 * X)	-0.00044	-0.00044	-0.00043
	(A2 * B1 * !C1 * !X)	0.00068	0.00068	0.00067
	(A2 * B1 * !C1 * !X)	-0.00076	-0.00077	-0.00077
	(A2 * !B1 * !C1 * !X)	0.00064	0.00064	0.00064
	(A2 * !B1 * !C1 * !X)	-0.00078	-0.00079	-0.00078
	(A1 * !A2 * B1 * C1 * X)	0.00078	0.00079	0.00078
	(A1 * !A2 * B1 * C1 * X)	-0.00043	-0.00044	-0.00043
	(A1 * !A2 * B1 * !C1 * !X)	0.00068	0.00068	0.00067
	(A1 * !A2 * B1 * !C1 * !X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	0.00063	0.00064	0.00064
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A2 * B1 * C1 * !X)	0.00034	0.00034	0.00033
	(!A1 * !A2 * B1 * C1 * !X)	-0.00076	-0.00077	-0.00077
	(!A1 * !A2 * B1 * !C1 * !X)	0.00040	0.00040	0.00039
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00076	-0.00077	-0.00077
	(!A1 * !A2 * !B1 * C1 * !X)	0.00035	0.00035	0.00036
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00041	0.00041	0.00041
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00079	-0.00079	-0.00078

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00084	0.00085	0.00084
	(A2 * B1 * C1 * X)	-0.00042	-0.00043	-0.00042
	(A2 * B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(A2 * B1 * !C1 * !X)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(A2 * !B1 * !C1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B1 * C1 * X)	0.00084	0.00085	0.00084
	(A1 * !A2 * B1 * C1 * X)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * B1 * !C1 * !X)	0.00073	0.00074	0.00074
	(A1 * !A2 * B1 * !C1 * !X)	-0.00074	-0.00075	-0.00075
	(A1 * !A2 * !B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * B1 * C1 * !X)	0.00036	0.00035	0.00035
	(!A1 * !A2 * B1 * C1 * !X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * B1 * !C1 * !X)	0.00041	0.00042	0.00042
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * !A2 * !B1 * C1 * !X)	0.00037	0.00037	0.00038
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00077	-0.00077	-0.00076
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00044	0.00044	0.00044
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00078	-0.00078	-0.00078

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00132	0.00134	0.00133
	(A2 * B1 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A2 * B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(A2 * B1 * !C1 * !X)	-0.00144	-0.00148	-0.00147
	(A2 * !B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(A2 * !B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * !A2 * B1 * C1 * X)	0.00132	0.00134	0.00133
	(A1 * !A2 * B1 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * B1 * !C1 * !X)	-0.00144	-0.00147	-0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	0.00107	0.00109	0.00108
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00150	-0.00152	-0.00151
	(!A1 * !A2 * B1 * C1 * !X)	0.00051	0.00051	0.00051
	(!A1 * !A2 * B1 * C1 * !X)	-0.00145	-0.00149	-0.00148
	(!A1 * !A2 * B1 * !C1 * !X)	0.00062	0.00063	0.00062
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00145	-0.00148	-0.00148
	(!A1 * !A2 * !B1 * C1 * !X)	0.00054	0.00054	0.00055
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00151	-0.00151	-0.00149
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00066	0.00066	0.00066
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00153	-0.00153	-0.00152

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B1 * C1 * X)**	-0.00074	-0.00074	-0.00078
	(A2 * B1 * C1 * X)	0.00047	0.00047	0.00044
	(A2 * B1 * !C1 * !X)	-0.00068	-0.00068	-0.00067
	(A2 * B1 * !C1 * !X)	0.00077	0.00077	0.00077
	(A2 * !B1 * !C1 * !X)	-0.00061	-0.00064	-0.00064
	(A2 * !B1 * !C1 * !X)	0.00079	0.00079	0.00078
	(A1 * !A2 * B1 * C1 * X)	-0.00074	-0.00074	-0.00078
	(A1 * !A2 * B1 * C1 * X)	0.00048	0.00047	0.00044
	(A1 * !A2 * B1 * !C1 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * B1 * !C1 * !X)	0.00077	0.00077	0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00061	-0.00064	-0.00064
	(A1 * !A2 * !B1 * !C1 * !X)	0.00079	0.00079	0.00078
	(!A1 * !A2 * B1 * C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * B1 * C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !A2 * B1 * !C1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * !B1 * C1 * !X)	0.00079	0.00080	0.00079
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00079	0.00080	0.00079

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00081	-0.00080	-0.00084
	(A2 * B1 * C1 * X)	0.00046	0.00045	0.00043
	(A2 * B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A2 * B1 * !C1 * !X)	0.00075	0.00075	0.00075
	(A2 * !B1 * !C1 * !X)	-0.00067	-0.00070	-0.00069
	(A2 * !B1 * !C1 * !X)	0.00078	0.00078	0.00077
	(A1 * !A2 * B1 * C1 * X)	-0.00081	-0.00081	-0.00084
	(A1 * !A2 * B1 * C1 * X)	0.00046	0.00045	0.00043
	(A1 * !A2 * B1 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(A1 * !A2 * B1 * !C1 * !X)	0.00076	0.00075	0.00075
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00066	-0.00070	-0.00069
	(A1 * !A2 * !B1 * !C1 * !X)	0.00078	0.00077	0.00077
	(!A1 * !A2 * B1 * C1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B1 * C1 * !X)	0.00076	0.00076	0.00075
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00041	-0.00042	-0.00042
	(!A1 * !A2 * B1 * !C1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00035	-0.00036	-0.00036
	(!A1 * !A2 * !B1 * C1 * !X)	0.00078	0.00079	0.00077
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00078	0.00079	0.00078

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00124	-0.00124	-0.00131
	(A2 * B1 * C1 * X)	0.00093	0.00092	0.00087
	(A2 * B1 * !C1 * !X)	-0.00114	-0.00115	-0.00115
	(A2 * B1 * !C1 * !X)	0.00146	0.00148	0.00147
	(A2 * !B1 * !C1 * !X)	-0.00102	-0.00109	-0.00108
	(A2 * !B1 * !C1 * !X)	0.00151	0.00152	0.00151
	(A1 * !A2 * B1 * C1 * X)	-0.00124	-0.00124	-0.00131
	(A1 * !A2 * B1 * C1 * X)	0.00093	0.00092	0.00087
	(A1 * !A2 * B1 * !C1 * !X)	-0.00115	-0.00115	-0.00115
	(A1 * !A2 * B1 * !C1 * !X)	0.00148	0.00147	0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00102	-0.00109	-0.00108
	(A1 * !A2 * !B1 * !C1 * !X)	0.00152	0.00152	0.00151
	(!A1 * !A2 * B1 * C1 * !X)	-0.00051	-0.00051	-0.00051
	(!A1 * !A2 * B1 * C1 * !X)	0.00149	0.00149	0.00148
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00062	-0.00063	-0.00062
	(!A1 * !A2 * B1 * !C1 * !X)	0.00149	0.00148	0.00148
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * !B1 * C1 * !X)	0.00153	0.00155	0.00152
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00066	-0.00066	-0.00066
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00153	0.00155	0.00152

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	(A2 * !B1 * !B2 * !X)	0.00030	0.00029	0.00027
	(A2 * !B1 * !B2 * !X)	-0.00091	-0.00091	-0.00095
	(!A2 * !B1 * !B2 * !X)	0.00030	0.00029	0.00027
	(!A2 * !B1 * !B2 * !X)	-0.00091	-0.00091	-0.00095
	(!A1 * !A2 * B2 * !X)	0.00031	0.00030	0.00025
	(!A1 * !A2 * B2 * !X)	-0.00083	-0.00084	-0.00094
	(!A1 * !A2 * B1 * !B2 * !X)	0.00031	0.00031	0.00026
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00085	-0.00085	-0.00094
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00034	0.00034	0.00031
	(A2 * !B1 * !B2 * !X)	-0.00091	-0.00092	-0.00096
	(!A2 * !B1 * !B2 * !X)	0.00034	0.00034	0.00031
	(!A2 * !B1 * !B2 * !X)	-0.00091	-0.00092	-0.00096
	(!A1 * !A2 * B2 * !X)	0.00036	0.00036	0.00030
	(!A1 * !A2 * B2 * !X)	-0.00082	-0.00083	-0.00094
	(!A1 * !A2 * B1 * !B2 * !X)	0.00036	0.00036	0.00031
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00084	-0.00085	-0.00094
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00051	0.00050	0.00045
	(A2 * !B1 * !B2 * !X)	-0.00171	-0.00171	-0.00179
	(!A2 * !B1 * !B2 * !X)	0.00051	0.00050	0.00045
	(!A2 * !B1 * !B2 * !X)	-0.00171	-0.00171	-0.00179
	(!A1 * !A2 * B2 * !X)	0.00053	0.00052	0.00043
	(!A1 * !A2 * B2 * !X)	-0.00157	-0.00157	-0.00177
	(!A1 * !A2 * B1 * !B2 * !X)	0.00053	0.00053	0.00044
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00159	-0.00160	-0.00177

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	(A2 * !B1 * !B2 * !X)	-0.00026	-0.00026	-0.00026
	(A2 * !B1 * !B2 * !X)	0.00097	0.00097	0.00096
	(!A2 * !B1 * !B2 * !X)	-0.00025	-0.00026	-0.00026
	(!A2 * !B1 * !B2 * !X)	0.00095	0.00097	0.00096
	(!A1 * !A2 * B2 * !X)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * B2 * !X)	0.00096	0.00097	0.00096
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * B1 * !B2 * !X)	0.00096	0.00097	0.00096
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(A2 * !B1 * !B2 * !X)	0.00097	0.00098	0.00096
	(!A2 * !B1 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !B2 * !X)	0.00097	0.00098	0.00096
	(!A1 * !A2 * B2 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * B2 * !X)	0.00096	0.00096	0.00096
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00029	-0.00030	-0.00029
	(!A1 * !A2 * B1 * !B2 * !X)	0.00096	0.00098	0.00096
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00043	-0.00044	-0.00043
	(A2 * !B1 * !B2 * !X)	0.00179	0.00183	0.00180
	(!A2 * !B1 * !B2 * !X)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * !B2 * !X)	0.00179	0.00183	0.00180
	(!A1 * !A2 * B2 * !X)	-0.00042	-0.00042	-0.00041
	(!A1 * !A2 * B2 * !X)	0.00180	0.00183	0.00180
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * B1 * !B2 * !X)	0.00180	0.00183	0.00180

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	B2	Y
0	0	x	x	1
x	1	0	0	1
x	1	x	1	0
x	1	1	x	0
1	x	0	0	1
1	x	x	1	0
1	x	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22ai_1	9.59040
sky130_fd_sc_hs__o22ai_2	15.98400
sky130_fd_sc_hs__o22ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__o22ai_1	0.00259	0.00256	0.00265	0.00272	0.19411
sky130_fd_sc_hs__o22ai_2	0.00485	0.00503	0.00503	0.00495	0.36677
sky130_fd_sc_hs__o22ai_4	0.01001	0.00956	0.01048	0.00979	0.71170

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22ai_1	0.00000	0.00825	0.02167
sky130_fd_sc_hs__o22ai_2	0.00000	0.01649	0.04335
sky130_fd_sc_hs__o22ai_4	0.00000	0.03298	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	**A1->Y (FR)**	0.33903	1.77446	12.80780
	A2->Y (FR)	0.29932	1.68313	12.44810
	B1->Y (FR)	0.21881	1.64651	12.67670
	B2->Y (FR)	0.18527	1.56146	12.32460
sky130_fd_sc_hs__o22ai_2	**A1->Y (FR)**	0.29717	1.54598	12.77640
	A2->Y (FR)	0.27664	1.46713	12.40390
	B1->Y (FR)	0.20232	1.44150	12.63960
	B2->Y (FR)	0.15044	1.33765	12.24740
sky130_fd_sc_hs__o22ai_4	**A1->Y (FR)**	0.30286	1.38642	12.70100
	A2->Y (FR)	0.25968	1.29476	12.36560
	B1->Y (FR)	0.19018	1.27302	12.65920
	B2->Y (FR)	0.14479	1.18186	12.29500

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.08170	0.67292	5.27970
	A2->Y (RF)	0.07346	0.65941	5.25652
	B1->Y (RF)	0.06559	0.68943	5.58340
	B2->Y (RF)	0.05809	0.67433	5.53989
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.08016	0.62694	5.28661
	A2->Y (RF)	0.07041	0.61031	5.25231
	B1->Y (RF)	0.06284	0.64149	5.63609
	B2->Y (RF)	0.05234	0.61859	5.56631
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.06789	0.55532	5.19987
	A2->Y (RF)	0.05931	0.53674	5.17108
	B1->Y (RF)	0.05938	0.58543	5.60598
	B2->Y (RF)	0.05281	0.58116	5.72535

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00083	0.00075	0.00072
	A1	0.00419	0.00412	0.00402
	A2	0.00087	0.00078	0.00079
	A2	0.00377	0.00370	0.00370
	B1	-0.00002	-0.00009	-0.00010
	B1	0.00281	0.00274	0.00250
	B2	0.00002	-0.00006	-0.00004
	B2	0.00241	0.00235	0.00238
sky130_fd_sc_hs__o22ai_2	A1	0.00148	0.00131	0.00127
	A1	0.00819	0.00804	0.00798
	A2	0.00145	0.00125	0.00127
	A2	0.00739	0.00720	0.00722
	B1	-0.00017	-0.00029	-0.00029
	B1	0.00548	0.00538	0.00537
	B2	-0.00020	-0.00032	-0.00025
	B2	0.00458	0.00446	0.00455
sky130_fd_sc_hs__o22ai_4	A1	0.00231	0.00199	0.00195
	A1	0.01554	0.01524	0.01519
	A2	0.00231	0.00197	0.00206
	A2	0.01379	0.01347	0.01356
	B1	-0.00046	-0.00074	-0.00070
	B1	0.01076	0.01047	0.01054
	B2	-0.00046	-0.00073	-0.00053
	B2	0.00907	0.00880	0.00903

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00451	0.00448	0.00448
	A1	0.00099	0.00094	0.00090
	A2	0.00366	0.00365	0.00366
	A2	0.00058	0.00056	0.00053
	B1	0.00378	0.00373	0.00368
	B1	0.00101	0.00095	0.00091
	B2	0.00303	0.00300	0.00305
	B2	0.00065	0.00061	0.00058
sky130_fd_sc_hs__o22ai_2	A1	0.00916	0.00905	0.00904
	A1	0.00223	0.00210	0.00199
	A2	0.00742	0.00737	0.00737
	A2	0.00119	0.00113	0.00107
	B1	0.00772	0.00756	0.00753
	B1	0.00224	0.00207	0.00198
	B2	0.00583	0.00578	0.00572
	B2	0.00114	0.00105	0.00102
sky130_fd_sc_hs__o22ai_4	A1	0.01734	0.01704	0.01695
	A1	0.00365	0.00337	0.00322
	A2	0.01400	0.01381	0.01375
	A2	0.00194	0.00176	0.00173
	B1	0.01466	0.01432	0.01416
	B1	0.00369	0.00332	0.00325
	B2	0.01136	0.01114	0.01141
	B2	0.00200	0.00177	0.00179

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00080	0.00077	0.00076
	(A2 * B2 * !Y)	-0.00077	-0.00082	-0.00082
	(A2 * B1 * !B2 * !Y)	0.00080	0.00077	0.00076
	(A2 * B1 * !B2 * !Y)	-0.00077	-0.00082	-0.00082
	(A2 * !B1 * !B2 * Y)	0.00076	0.00077	0.00076
	(A2 * !B1 * !B2 * Y)	-0.00080	-0.00082	-0.00082
	(!A2 * !B1 * !B2 * Y)	0.00070	0.00071	0.00071
	(!A2 * !B1 * !B2 * Y)	-0.00083	-0.00084	-0.00083
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00150	0.00143	0.00141
	(A2 * B2 * !Y)	-0.00150	-0.00162	-0.00161
	(A2 * B1 * !B2 * !Y)	0.00150	0.00143	0.00141
	(A2 * B1 * !B2 * !Y)	-0.00150	-0.00162	-0.00161
	(A2 * !B1 * !B2 * Y)	0.00141	0.00142	0.00140
	(A2 * !B1 * !B2 * Y)	-0.00159	-0.00163	-0.00162
	(!A2 * !B1 * !B2 * Y)	0.00130	0.00131	0.00130
	(!A2 * !B1 * !B2 * Y)	-0.00166	-0.00166	-0.00166
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00308	0.00288	0.00283
	(A2 * B2 * !Y)	-0.00291	-0.00320	-0.00319
	(A2 * B1 * !B2 * !Y)	0.00308	0.00288	0.00283
	(A2 * B1 * !B2 * !Y)	-0.00291	-0.00320	-0.00319
	(A2 * !B1 * !B2 * Y)	0.00276	0.00278	0.00275
	(A2 * !B1 * !B2 * Y)	-0.00321	-0.00329	-0.00327
	(!A2 * !B1 * !B2 * Y)	0.00252	0.00254	0.00253
	(!A2 * !B1 * !B2 * Y)	-0.00336	-0.00337	-0.00336

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00076	-0.00076	-0.00076
	(A2 * B2 * !Y)	0.00083	0.00082	0.00082
	(A2 * B1 * !B2 * !Y)	-0.00076	-0.00076	-0.00076
	(A2 * B1 * !B2 * !Y)	0.00083	0.00082	0.00082
	(A2 * !B1 * !B2 * Y)	-0.00076	-0.00076	-0.00076
	(A2 * !B1 * !B2 * Y)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !B2 * Y)	-0.00068	-0.00071	-0.00071
	(!A2 * !B1 * !B2 * Y)	0.00084	0.00085	0.00084
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00141	-0.00141	-0.00141
	(A2 * B2 * !Y)	0.00162	0.00162	0.00161
	(A2 * B1 * !B2 * !Y)	-0.00142	-0.00141	-0.00141
	(A2 * B1 * !B2 * !Y)	0.00162	0.00162	0.00161
	(A2 * !B1 * !B2 * Y)	-0.00141	-0.00140	-0.00140
	(A2 * !B1 * !B2 * Y)	0.00164	0.00163	0.00162
	(!A2 * !B1 * !B2 * Y)	-0.00124	-0.00131	-0.00130
	(!A2 * !B1 * !B2 * Y)	0.00167	0.00166	0.00167
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00282	-0.00283	-0.00282
	(A2 * B2 * !Y)	0.00317	0.00320	0.00319
	(A2 * B1 * !B2 * !Y)	-0.00282	-0.00283	-0.00282
	(A2 * B1 * !B2 * !Y)	0.00317	0.00320	0.00319
	(A2 * !B1 * !B2 * Y)	-0.00275	-0.00275	-0.00274
	(A2 * !B1 * !B2 * Y)	0.00328	0.00329	0.00327
	(!A2 * !B1 * !B2 * Y)	-0.00241	-0.00254	-0.00253
	(!A2 * !B1 * !B2 * Y)	0.00337	0.00338	0.00337

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00075	0.00076	0.00075
	(A1 * B2 * !Y)	-0.00047	-0.00047	-0.00046
	(A1 * B1 * !B2 * !Y)	0.00075	0.00076	0.00075
	(A1 * B1 * !B2 * !Y)	-0.00046	-0.00047	-0.00046
	(A1 * !B1 * !B2 * Y)	0.00070	0.00069	0.00069
	(A1 * !B1 * !B2 * Y)	-0.00077	-0.00078	-0.00078
	(!A1 * !B1 * !B2 * Y)	0.00064	0.00064	0.00064
	(!A1 * !B1 * !B2 * Y)	-0.00080	-0.00080	-0.00080
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00162	0.00163	0.00161
	(A1 * B2 * !Y)	-0.00093	-0.00093	-0.00092
	(A1 * B1 * !B2 * !Y)	0.00160	0.00163	0.00161
	(A1 * B1 * !B2 * !Y)	-0.00091	-0.00093	-0.00092
	(A1 * !B1 * !B2 * Y)	0.00141	0.00141	0.00140
	(A1 * !B1 * !B2 * Y)	-0.00161	-0.00164	-0.00163
	(!A1 * !B1 * !B2 * Y)	0.00129	0.00131	0.00130
	(!A1 * !B1 * !B2 * Y)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00300	0.00300	0.00296
	(A1 * B2 * !Y)	-0.00183	-0.00182	-0.00179
	(A1 * B1 * !B2 * !Y)	0.00294	0.00300	0.00296
	(A1 * B1 * !B2 * !Y)	-0.00178	-0.00182	-0.00179
	(A1 * !B1 * !B2 * Y)	0.00270	0.00272	0.00270
	(A1 * !B1 * !B2 * Y)	-0.00300	-0.00307	-0.00306
	(!A1 * !B1 * !B2 * Y)	0.00250	0.00250	0.00249
	(!A1 * !B1 * !B2 * Y)	-0.00318	-0.00317	-0.00317

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00070	-0.00071	-0.00074
	(A1 * B2 * !Y)	0.00051	0.00051	0.00048
	(A1 * B1 * !B2 * !Y)	-0.00070	-0.00071	-0.00074
	(A1 * B1 * !B2 * !Y)	0.00051	0.00051	0.00048
	(A1 * !B1 * !B2 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * !B1 * !B2 * Y)	0.00078	0.00078	0.00078
	(!A1 * !B1 * !B2 * Y)	-0.00061	-0.00064	-0.00064
	(!A1 * !B1 * !B2 * Y)	0.00080	0.00081	0.00080
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00148	-0.00149	-0.00159
	(A1 * B2 * !Y)	0.00104	0.00104	0.00095
	(A1 * B1 * !B2 * !Y)	-0.00148	-0.00149	-0.00159
	(A1 * B1 * !B2 * !Y)	0.00104	0.00104	0.00095
	(A1 * !B1 * !B2 * Y)	-0.00140	-0.00140	-0.00140
	(A1 * !B1 * !B2 * Y)	0.00164	0.00164	0.00163
	(!A1 * !B1 * !B2 * Y)	-0.00124	-0.00131	-0.00130
	(!A1 * !B1 * !B2 * Y)	0.00169	0.00169	0.00169
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00276	-0.00278	-0.00293
	(A1 * B2 * !Y)	0.00198	0.00198	0.00185
	(A1 * B1 * !B2 * !Y)	-0.00276	-0.00278	-0.00293
	(A1 * B1 * !B2 * !Y)	0.00198	0.00198	0.00185
	(A1 * !B1 * !B2 * Y)	-0.00270	-0.00270	-0.00269
	(A1 * !B1 * !B2 * Y)	0.00306	0.00307	0.00306
	(!A1 * !B1 * !B2 * Y)	-0.00237	-0.00250	-0.00249
	(!A1 * !B1 * !B2 * Y)	0.00318	0.00317	0.00318

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00084	0.00080	0.00079
	(A2 * B2 * !Y)	-0.00074	-0.00080	-0.00080
	(A1 * !A2 * B2 * !Y)	0.00084	0.00080	0.00079
	(A1 * !A2 * B2 * !Y)	-0.00074	-0.00080	-0.00080
	(!A1 * !A2 * B2 * Y)	0.00030	0.00030	0.00030
	(!A1 * !A2 * B2 * Y)	-0.00098	-0.00100	-0.00099
	(!A1 * !A2 * !B2 * Y)	0.00036	0.00036	0.00032
	(!A1 * !A2 * !B2 * Y)	-0.00094	-0.00094	-0.00100
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00149	0.00142	0.00140
	(A2 * B2 * !Y)	-0.00152	-0.00165	-0.00164
	(A1 * !A2 * B2 * !Y)	0.00149	0.00142	0.00140
	(A1 * !A2 * B2 * !Y)	-0.00152	-0.00164	-0.00164
	(!A1 * !A2 * B2 * Y)	0.00051	0.00051	0.00051
	(!A1 * !A2 * B2 * Y)	-0.00192	-0.00196	-0.00195
	(!A1 * !A2 * !B2 * Y)	0.00062	0.00062	0.00054
	(!A1 * !A2 * !B2 * Y)	-0.00186	-0.00188	-0.00199
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00319	0.00305	0.00300
	(A2 * B2 * !Y)	-0.00284	-0.00312	-0.00310
	(A1 * !A2 * B2 * !Y)	0.00319	0.00305	0.00300
	(A1 * !A2 * B2 * !Y)	-0.00284	-0.00310	-0.00310
	(!A1 * !A2 * B2 * Y)	0.00095	0.00096	0.00096
	(!A1 * !A2 * B2 * Y)	-0.00390	-0.00399	-0.00398
	(!A1 * !A2 * !B2 * Y)	0.00115	0.00114	0.00102
	(!A1 * !A2 * !B2 * Y)	-0.00382	-0.00385	-0.00404

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00079	-0.00079	-0.00078
	(A2 * B2 * !Y)	0.00081	0.00081	0.00080
	(A1 * !A2 * B2 * !Y)	-0.00079	-0.00079	-0.00078
	(A1 * !A2 * B2 * !Y)	0.00081	0.00080	0.00080
	(!A1 * !A2 * B2 * Y)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * B2 * Y)	0.00100	0.00100	0.00099
	(!A1 * !A2 * !B2 * Y)	-0.00030	-0.00031	-0.00030
	(!A1 * !A2 * !B2 * Y)	0.00101	0.00103	0.00101
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00140	-0.00140	-0.00139
	(A2 * B2 * !Y)	0.00165	0.00165	0.00164
	(A1 * !A2 * B2 * !Y)	-0.00140	-0.00140	-0.00139
	(A1 * !A2 * B2 * !Y)	0.00165	0.00164	0.00164
	(!A1 * !A2 * B2 * Y)	-0.00051	-0.00051	-0.00051
	(!A1 * !A2 * B2 * Y)	0.00195	0.00196	0.00195
	(!A1 * !A2 * !B2 * Y)	-0.00051	-0.00052	-0.00051
	(!A1 * !A2 * !B2 * Y)	0.00200	0.00204	0.00201
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00301	-0.00301	-0.00300
	(A2 * B2 * !Y)	0.00310	0.00312	0.00310
	(A1 * !A2 * B2 * !Y)	-0.00301	-0.00300	-0.00300
	(A1 * !A2 * B2 * !Y)	0.00312	0.00310	0.00310
	(!A1 * !A2 * B2 * Y)	-0.00095	-0.00096	-0.00096
	(!A1 * !A2 * B2 * Y)	0.00400	0.00399	0.00398
	(!A1 * !A2 * !B2 * Y)	-0.00098	-0.00097	-0.00097
	(!A1 * !A2 * !B2 * Y)	0.00408	0.00406	0.00407

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00081	0.00082	0.00081
	(A2 * B1 * !Y)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * B1 * !Y)	0.00081	0.00081	0.00081
	(A1 * !A2 * B1 * !Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * B1 * Y)	0.00025	0.00025	0.00025
	(!A1 * !A2 * B1 * Y)	-0.00097	-0.00098	-0.00098
	(!A1 * !A2 * !B1 * Y)	0.00031	0.00031	0.00027
	(!A1 * !A2 * !B1 * Y)	-0.00093	-0.00094	-0.00100
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00154	0.00156	0.00154
	(A2 * B1 * !Y)	-0.00093	-0.00094	-0.00092
	(A1 * !A2 * B1 * !Y)	0.00154	0.00154	0.00154
	(A1 * !A2 * B1 * !Y)	-0.00093	-0.00092	-0.00092
	(!A1 * !A2 * B1 * Y)	0.00048	0.00048	0.00048
	(!A1 * !A2 * B1 * Y)	-0.00187	-0.00193	-0.00191
	(!A1 * !A2 * !B1 * Y)	0.00060	0.00059	0.00052
	(!A1 * !A2 * !B1 * Y)	-0.00183	-0.00184	-0.00196
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00300	0.00299	0.00300
	(A2 * B1 * !Y)	-0.00182	-0.00181	-0.00181
	(A1 * !A2 * B1 * !Y)	0.00299	0.00300	0.00300
	(A1 * !A2 * B1 * !Y)	-0.00182	-0.00181	-0.00181
	(!A1 * !A2 * B1 * Y)	0.00090	0.00091	0.00090
	(!A1 * !A2 * B1 * Y)	-0.00369	-0.00376	-0.00375
	(!A1 * !A2 * !B1 * Y)	0.00109	0.00109	0.00097
	(!A1 * !A2 * !B1 * Y)	-0.00360	-0.00364	-0.00383

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00077	-0.00077	-0.00081
	(A2 * B1 * !Y)	0.00049	0.00049	0.00046
	(A1 * !A2 * B1 * !Y)	-0.00077	-0.00077	-0.00081
	(A1 * !A2 * B1 * !Y)	0.00049	0.00049	0.00046
	(!A1 * !A2 * B1 * Y)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * B1 * Y)	0.00098	0.00098	0.00098
	(!A1 * !A2 * !B1 * Y)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * !B1 * Y)	0.00100	0.00100	0.00100
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00140	-0.00142	-0.00152
	(A2 * B1 * !Y)	0.00104	0.00104	0.00096
	(A1 * !A2 * B1 * !Y)	-0.00140	-0.00142	-0.00152
	(A1 * !A2 * B1 * !Y)	0.00104	0.00104	0.00096
	(!A1 * !A2 * B1 * Y)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * B1 * Y)	0.00191	0.00193	0.00191
	(!A1 * !A2 * !B1 * Y)	-0.00049	-0.00049	-0.00048
	(!A1 * !A2 * !B1 * Y)	0.00198	0.00197	0.00197
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00279	-0.00281	-0.00297
	(A2 * B1 * !Y)	0.00198	0.00199	0.00186
	(A1 * !A2 * B1 * !Y)	-0.00280	-0.00282	-0.00297
	(A1 * !A2 * B1 * !Y)	0.00200	0.00199	0.00186
	(!A1 * !A2 * B1 * Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !A2 * B1 * Y)	0.00375	0.00376	0.00375
	(!A1 * !A2 * !B1 * Y)	-0.00093	-0.00092	-0.00091
	(!A1 * !A2 * !B1 * Y)	0.00387	0.00386	0.00386

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	B2	X
0	0	x	x	0
x	1	0	0	0
x	1	x	1	1
x	1	1	x	1
1	x	0	0	0
1	x	x	1	1
1	x	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22a_1	12.78720
sky130_fd_sc_hs__o22a_2	12.78720
sky130_fd_sc_hs__o22a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__o22a_1	0.00223	0.00234	0.00243	0.00261	0.45208
sky130_fd_sc_hs__o22a_2	0.00240	0.00246	0.00257	0.00255	0.88512
sky130_fd_sc_hs__o22a_4	0.00468	0.00434	0.00484	0.00456	1.68236

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	0.02290	0.05372
sky130_fd_sc_hs__o22a_2	0.00000	0.02866	0.05648
sky130_fd_sc_hs__o22a_4	0.00000	0.05838	0.11297

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (RR)	0.18832	1.16630	8.75674
	A2->X (RR)	0.17838	1.14398	8.64348
	B1->X (RR)	0.17441	1.13912	8.43546
	B2->X (RR)	0.16294	1.11267	8.30631
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.19066	1.04908	8.95439
	A2->X (RR)	0.17992	1.03072	8.86722
	B1->X (RR)	0.17657	1.03662	8.70777
	B2->X (RR)	0.16392	1.01063	8.60113
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.19841	0.96019	8.97121
	A2->X (RR)	0.19406	0.94266	8.87344
	B1->X (RR)	0.18313	0.94304	8.71279
	B2->X (RR)	0.17982	0.93410	8.63044

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.43491	1.23653	6.41717
	A2->X (FF)	0.40147	1.15128	5.89620
	B1->X (FF)	0.34736	1.13666	6.09359
	B2->X (FF)	0.31241	1.05867	5.60960
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.55496	1.35134	6.85586
	A2->X (FF)	0.52013	1.25958	6.37251
	B1->X (FF)	0.45547	1.24044	6.54751
	B2->X (FF)	0.41756	1.15302	6.08792
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.52786	1.28729	6.80513
	A2->X (FF)	0.48597	1.18947	6.30813
	B1->X (FF)	0.44710	1.19748	6.55003
	B2->X (FF)	0.40802	1.10776	6.08312

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00545	0.00547	0.00545
	A1	0.00232	0.00234	0.00233
	A2	0.00476	0.00474	0.00474
	A2	0.00195	0.00193	0.00194
	B1	0.00483	0.00478	0.00485
	B1	0.00230	0.00226	0.00233
	B2	0.00435	0.00429	0.00440
	B2	0.00200	0.00194	0.00206
sky130_fd_sc_hs__o22a_2	A1	0.00683	0.00699	0.00701
	A1	0.00354	0.00371	0.00376
	A2	0.00610	0.00623	0.00627
	A2	0.00316	0.00330	0.00338
	B1	0.00616	0.00623	0.00631
	B1	0.00356	0.00364	0.00374
	B2	0.00544	0.00550	0.00561
	B2	0.00321	0.00327	0.00339
sky130_fd_sc_hs__o22a_4	A1	0.01352	0.01381	0.01391
	A1	0.00728	0.00759	0.00777
	A2	0.01184	0.01210	0.01222
	A2	0.00642	0.00669	0.00690
	B1	0.01234	0.01251	0.01276
	B1	0.00728	0.00746	0.00773
	B2	0.01068	0.01080	0.01111
	B2	0.00644	0.00656	0.00690

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00202	0.00202	0.00237
	A1	0.00508	0.00513	0.00508
	A2	0.00202	0.00185	0.00241
	A2	0.00474	0.00474	0.00495
	B1	0.00155	0.00152	0.00168
	B1	0.00410	0.00408	0.00408
	B2	0.00131	0.00129	0.00177
	B2	0.00368	0.00365	0.00392
sky130_fd_sc_hs__o22a_2	A1	0.00314	0.00336	0.00557
	A1	0.00635	0.00656	0.00656
	A2	0.00326	0.00339	0.00457
	A2	0.00602	0.00618	0.00641
	B1	0.00254	0.00263	0.00326
	B1	0.00515	0.00529	0.00530
	B2	0.00253	0.00264	0.00331
	B2	0.00478	0.00489	0.00519
sky130_fd_sc_hs__o22a_4	A1	0.00591	0.00637	0.00757
	A1	0.01204	0.01250	0.01256
	A2	0.00611	0.00635	0.00774
	A2	0.01138	0.01173	0.01225
	B1	0.00504	0.00531	0.00621
	B1	0.01017	0.01054	0.01062
	B2	0.00527	0.00551	0.00694
	B2	0.00954	0.00978	0.01040

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00067	0.00063	0.00062
	(A2 * B2 * X)	-0.00069	-0.00075	-0.00076
	(A2 * B1 * !B2 * X)	0.00067	0.00063	0.00062
	(A2 * B1 * !B2 * X)	-0.00069	-0.00075	-0.00076
	(A2 * !B1 * !B2 * !X)	0.00061	0.00062	0.00061
	(A2 * !B1 * !B2 * !X)	-0.00074	-0.00076	-0.00075
	(!A2 * !B1 * !B2 * !X)	0.00056	0.00057	0.00056
	(!A2 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00077	0.00073	0.00072
	(A2 * B2 * X)	-0.00068	-0.00074	-0.00075
	(A2 * B1 * !B2 * X)	0.00077	0.00073	0.00072
	(A2 * B1 * !B2 * X)	-0.00068	-0.00074	-0.00075
	(A2 * !B1 * !B2 * !X)	0.00072	0.00073	0.00072
	(A2 * !B1 * !B2 * !X)	-0.00073	-0.00074	-0.00074
	(!A2 * !B1 * !B2 * !X)	0.00067	0.00068	0.00067
	(!A2 * !B1 * !B2 * !X)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00149	0.00140	0.00139
	(A2 * B2 * X)	-0.00131	-0.00143	-0.00143
	(A2 * B1 * !B2 * X)	0.00149	0.00140	0.00139
	(A2 * B1 * !B2 * X)	-0.00131	-0.00143	-0.00143
	(A2 * !B1 * !B2 * !X)	0.00135	0.00135	0.00135
	(A2 * !B1 * !B2 * !X)	-0.00144	-0.00148	-0.00147
	(!A2 * !B1 * !B2 * !X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * !B2 * !X)	-0.00150	-0.00151	-0.00151

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00062	-0.00061	-0.00061
	(A2 * B2 * X)	0.00076	0.00075	0.00076
	(A2 * B1 * !B2 * X)	-0.00062	-0.00061	-0.00061
	(A2 * B1 * !B2 * X)	0.00076	0.00075	0.00076
	(A2 * !B1 * !B2 * !X)	-0.00061	-0.00061	-0.00061
	(A2 * !B1 * !B2 * !X)	0.00076	0.00076	0.00075
	(!A2 * !B1 * !B2 * !X)	-0.00053	-0.00057	-0.00056
	(!A2 * !B1 * !B2 * !X)	0.00078	0.00078	0.00077
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00072	-0.00072	-0.00072
	(A2 * B2 * X)	0.00075	0.00074	0.00075
	(A2 * B1 * !B2 * X)	-0.00072	-0.00072	-0.00072
	(A2 * B1 * !B2 * X)	0.00075	0.00074	0.00075
	(A2 * !B1 * !B2 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * !B1 * !B2 * !X)	0.00075	0.00074	0.00074
	(!A2 * !B1 * !B2 * !X)	-0.00065	-0.00068	-0.00067
	(!A2 * !B1 * !B2 * !X)	0.00076	0.00077	0.00076
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00139	-0.00139	-0.00138
	(A2 * B2 * X)	0.00143	0.00144	0.00143
	(A2 * B1 * !B2 * X)	-0.00139	-0.00139	-0.00138
	(A2 * B1 * !B2 * X)	0.00143	0.00144	0.00143
	(A2 * !B1 * !B2 * !X)	-0.00135	-0.00135	-0.00135
	(A2 * !B1 * !B2 * !X)	0.00147	0.00148	0.00147
	(!A2 * !B1 * !B2 * !X)	-0.00120	-0.00126	-0.00125
	(!A2 * !B1 * !B2 * !X)	0.00152	0.00152	0.00151

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00069	0.00070	0.00069
	(A1 * B2 * X)	-0.00043	-0.00044	-0.00043
	(A1 * B1 * !B2 * X)	0.00070	0.00070	0.00069
	(A1 * B1 * !B2 * X)	-0.00044	-0.00044	-0.00043
	(A1 * !B1 * !B2 * !X)	0.00060	0.00060	0.00059
	(A1 * !B1 * !B2 * !X)	-0.00074	-0.00075	-0.00075
	(!A1 * !B1 * !B2 * !X)	0.00054	0.00055	0.00054
	(!A1 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00075	0.00076	0.00075
	(A1 * B2 * X)	-0.00044	-0.00044	-0.00043
	(A1 * B1 * !B2 * X)	0.00076	0.00076	0.00075
	(A1 * B1 * !B2 * X)	-0.00044	-0.00044	-0.00043
	(A1 * !B1 * !B2 * !X)	0.00070	0.00069	0.00069
	(A1 * !B1 * !B2 * !X)	-0.00071	-0.00072	-0.00071
	(!A1 * !B1 * !B2 * !X)	0.00064	0.00064	0.00064
	(!A1 * !B1 * !B2 * !X)	-0.00073	-0.00073	-0.00073
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00131	0.00131	0.00129
	(A1 * B2 * X)	-0.00088	-0.00087	-0.00086
	(A1 * B1 * !B2 * X)	0.00131	0.00131	0.00129
	(A1 * B1 * !B2 * X)	-0.00088	-0.00087	-0.00086
	(A1 * !B1 * !B2 * !X)	0.00114	0.00115	0.00115
	(A1 * !B1 * !B2 * !X)	-0.00143	-0.00146	-0.00146
	(!A1 * !B1 * !B2 * !X)	0.00105	0.00105	0.00105
	(!A1 * !B1 * !B2 * !X)	-0.00151	-0.00151	-0.00151

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00064	-0.00065	-0.00068
	(A1 * B2 * X)	0.00047	0.00047	0.00044
	(A1 * B1 * !B2 * X)	-0.00064	-0.00065	-0.00068
	(A1 * B1 * !B2 * X)	0.00047	0.00047	0.00044
	(A1 * !B1 * !B2 * !X)	-0.00059	-0.00060	-0.00059
	(A1 * !B1 * !B2 * !X)	0.00075	0.00075	0.00075
	(!A1 * !B1 * !B2 * !X)	-0.00052	-0.00055	-0.00054
	(!A1 * !B1 * !B2 * !X)	0.00077	0.00078	0.00077
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00070	-0.00071	-0.00074
	(A1 * B2 * X)	0.00047	0.00048	0.00045
	(A1 * B1 * !B2 * X)	-0.00070	-0.00071	-0.00074
	(A1 * B1 * !B2 * X)	0.00047	0.00048	0.00045
	(A1 * !B1 * !B2 * !X)	-0.00070	-0.00069	-0.00069
	(A1 * !B1 * !B2 * !X)	0.00072	0.00072	0.00071
	(!A1 * !B1 * !B2 * !X)	-0.00061	-0.00064	-0.00064
	(!A1 * !B1 * !B2 * !X)	0.00073	0.00074	0.00073
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00120	-0.00121	-0.00128
	(A1 * B2 * X)	0.00094	0.00095	0.00088
	(A1 * B1 * !B2 * X)	-0.00120	-0.00121	-0.00128
	(A1 * B1 * !B2 * X)	0.00094	0.00095	0.00088
	(A1 * !B1 * !B2 * !X)	-0.00114	-0.00115	-0.00114
	(A1 * !B1 * !B2 * !X)	0.00146	0.00146	0.00146
	(!A1 * !B1 * !B2 * !X)	-0.00099	-0.00105	-0.00105
	(!A1 * !B1 * !B2 * !X)	0.00152	0.00152	0.00151

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00072	0.00067	0.00066
	(A2 * B2 * X)	-0.00071	-0.00077	-0.00077
	(A1 * !A2 * B2 * X)	0.00072	0.00067	0.00066
	(A1 * !A2 * B2 * X)	-0.00071	-0.00077	-0.00077
	(!A1 * !A2 * B2 * !X)	0.00021	0.00021	0.00021
	(!A1 * !A2 * B2 * !X)	-0.00096	-0.00097	-0.00097
	(!A1 * !A2 * !B2 * !X)	0.00025	0.00025	0.00022
	(!A1 * !A2 * !B2 * !X)	-0.00093	-0.00093	-0.00098
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00082	0.00077	0.00076
	(A2 * B2 * X)	-0.00065	-0.00072	-0.00072
	(A1 * !A2 * B2 * X)	0.00082	0.00077	0.00076
	(A1 * !A2 * B2 * X)	-0.00065	-0.00072	-0.00072
	(!A1 * !A2 * B2 * !X)	0.00025	0.00025	0.00025
	(!A1 * !A2 * B2 * !X)	-0.00093	-0.00094	-0.00094
	(!A1 * !A2 * !B2 * !X)	0.00031	0.00031	0.00027
	(!A1 * !A2 * !B2 * !X)	-0.00089	-0.00089	-0.00095
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00156	0.00149	0.00146
	(A2 * B2 * X)	-0.00130	-0.00143	-0.00143
	(A1 * !A2 * B2 * X)	0.00156	0.00149	0.00146
	(A1 * !A2 * B2 * X)	-0.00130	-0.00143	-0.00143
	(!A1 * !A2 * B2 * !X)	0.00064	0.00065	0.00064
	(!A1 * !A2 * B2 * !X)	-0.00170	-0.00175	-0.00174
	(!A1 * !A2 * !B2 * !X)	0.00072	0.00072	0.00067
	(!A1 * !A2 * !B2 * !X)	-0.00166	-0.00168	-0.00176

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00066	-0.00066	-0.00065
	(A2 * B2 * X)	0.00078	0.00078	0.00077
	(A1 * !A2 * B2 * X)	-0.00066	-0.00065	-0.00065
	(A1 * !A2 * B2 * X)	0.00078	0.00077	0.00077
	(!A1 * !A2 * B2 * !X)	-0.00021	-0.00021	-0.00021
	(!A1 * !A2 * B2 * !X)	0.00097	0.00097	0.00097
	(!A1 * !A2 * !B2 * !X)	-0.00021	-0.00021	-0.00021
	(!A1 * !A2 * !B2 * !X)	0.00100	0.00100	0.00099
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00076	-0.00076	-0.00076
	(A2 * B2 * X)	0.00072	0.00072	0.00072
	(A1 * !A2 * B2 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * B2 * X)	0.00072	0.00072	0.00072
	(!A1 * !A2 * B2 * !X)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * B2 * !X)	0.00095	0.00094	0.00094
	(!A1 * !A2 * !B2 * !X)	-0.00025	-0.00026	-0.00025
	(!A1 * !A2 * !B2 * !X)	0.00096	0.00097	0.00096
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00146	-0.00147	-0.00145
	(A2 * B2 * X)	0.00143	0.00144	0.00143
	(A1 * !A2 * B2 * X)	-0.00146	-0.00146	-0.00145
	(A1 * !A2 * B2 * X)	0.00143	0.00143	0.00143
	(!A1 * !A2 * B2 * !X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * B2 * !X)	0.00174	0.00175	0.00174
	(!A1 * !A2 * !B2 * !X)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * !B2 * !X)	0.00178	0.00178	0.00177

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00090	0.00091	0.00090
	(A2 * B1 * X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * B1 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * B1 * X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * B1 * !X)	0.00042	0.00042	0.00041
	(!A1 * !A2 * B1 * !X)	-0.00084	-0.00086	-0.00085
	(!A1 * !A2 * !B1 * !X)	0.00046	0.00046	0.00043
	(!A1 * !A2 * !B1 * !X)	-0.00081	-0.00082	-0.00087
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00077	0.00078	0.00077
	(A2 * B1 * X)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * B1 * X)	0.00077	0.00078	0.00077
	(A1 * !A2 * B1 * X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * B1 * !X)	0.00025	0.00025	0.00024
	(!A1 * !A2 * B1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * !B1 * !X)	0.00030	0.00030	0.00026
	(!A1 * !A2 * !B1 * !X)	-0.00084	-0.00084	-0.00090
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00137	0.00139	0.00137
	(A2 * B1 * X)	-0.00085	-0.00087	-0.00085
	(A1 * !A2 * B1 * X)	0.00137	0.00139	0.00137
	(A1 * !A2 * B1 * X)	-0.00085	-0.00087	-0.00085
	(!A1 * !A2 * B1 * !X)	0.00040	0.00039	0.00039
	(!A1 * !A2 * B1 * !X)	-0.00175	-0.00177	-0.00176
	(!A1 * !A2 * !B1 * !X)	0.00048	0.00047	0.00042
	(!A1 * !A2 * !B1 * !X)	-0.00171	-0.00171	-0.00180

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00086	-0.00087	-0.00089
	(A2 * B1 * X)	0.00045	0.00045	0.00043
	(A1 * !A2 * B1 * X)	-0.00086	-0.00087	-0.00089
	(A1 * !A2 * B1 * X)	0.00045	0.00045	0.00043
	(!A1 * !A2 * B1 * !X)	-0.00042	-0.00041	-0.00041
	(!A1 * !A2 * B1 * !X)	0.00086	0.00086	0.00085
	(!A1 * !A2 * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * !B1 * !X)	0.00087	0.00088	0.00088
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00073	-0.00073	-0.00076
	(A2 * B1 * X)	0.00046	0.00046	0.00043
	(A1 * !A2 * B1 * X)	-0.00073	-0.00073	-0.00076
	(A1 * !A2 * B1 * X)	0.00046	0.00046	0.00043
	(!A1 * !A2 * B1 * !X)	-0.00024	-0.00025	-0.00024
	(!A1 * !A2 * B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A2 * !B1 * !X)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * !B1 * !X)	0.00090	0.00092	0.00091
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00128	-0.00128	-0.00136
	(A2 * B1 * X)	0.00094	0.00093	0.00088
	(A1 * !A2 * B1 * X)	-0.00128	-0.00128	-0.00136
	(A1 * !A2 * B1 * X)	0.00094	0.00094	0.00088
	(!A1 * !A2 * B1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * B1 * !X)	0.00176	0.00177	0.00176
	(!A1 * !A2 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(!A1 * !A2 * !B1 * !X)	0.00181	0.00183	0.00181

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1_N	A2_N	B1	B2	Y
x	x	0	0	1
0	x	x	1	0
0	x	1	x	0
1	0	x	1	0
1	0	1	x	0
1	1	x	1	1
1	1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2ai_1	11.18880
sky130_fd_sc_hs__o2bb2ai_2	19.18080
sky130_fd_sc_hs__o2bb2ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__o2bb2ai_1	0.00210	0.00230	0.00253	0.00269	0.19906
sky130_fd_sc_hs__o2bb2ai_2	0.00480	0.00421	0.00514	0.00478	0.38987
sky130_fd_sc_hs__o2bb2ai_4	0.00977	0.00989	0.00952	0.00987	0.72771

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.03484	0.09241
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.06967	0.18483
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.06992	0.09773

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2bb2ai_1	A1_N->Y (RR)	0.15611	0.85454	4.60589
	A2_N->Y (RR)	0.15053	0.83428	4.35008
	B1->Y (FR)	0.26312	1.71141	12.91490
	B2->Y (FR)	0.23121	1.62750	12.55380
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.13766	0.74535	4.52608
	A2_N->Y (RR)	0.12913	0.71668	4.25374
	B1->Y (FR)	0.23363	1.47355	12.78970
	B2->Y (FR)	0.19114	1.37610	12.42390
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.14564	0.68384	4.46960
	A2_N->Y (RR)	0.13692	0.66458	4.19949
	B1->Y (FR)	0.24091	1.33694	12.83460
	B2->Y (FR)	0.19696	1.24253	12.49990

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2bb2ai_1	A1_N->Y (FF)	0.22194	0.93509	4.78988
	A2_N->Y (FF)	0.20177	0.90174	4.63363
	B1->Y (RF)	0.07109	0.65488	5.30585
	B2->Y (RF)	0.06215	0.63808	5.26019
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.19669	0.86638	4.70299
	A2_N->Y (FF)	0.18300	0.83751	4.54088
	B1->Y (RF)	0.06295	0.58841	5.23835
	B2->Y (RF)	0.05663	0.57689	5.24035
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.20352	0.88000	5.21886
	A2_N->Y (FF)	0.17749	0.83461	4.99056
	B1->Y (RF)	0.06842	0.55475	5.29440
	B2->Y (RF)	0.05718	0.53254	5.22355

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00372	0.00370	0.00378
	A1_N	0.00217	0.00214	0.00222
	A2_N	0.00339	0.00330	0.00349
	A2_N	0.00218	0.00209	0.00232
	B1	0.00030	0.00024	0.00022
	B1	0.00254	0.00248	0.00228
	B2	0.00030	0.00023	0.00024
	B2	0.00223	0.00216	0.00217
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00688	0.00680	0.00696
	A1_N	0.00346	0.00337	0.00355
	A2_N	0.00591	0.00576	0.00622
	A2_N	0.00360	0.00345	0.00401
	B1	0.00043	0.00030	0.00028
	B1	0.00491	0.00479	0.00436
	B2	0.00044	0.00032	0.00036
	B2	0.00396	0.00378	0.00389
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01501	0.01487	0.01509
	A1_N	0.00761	0.00749	0.00771
	A2_N	0.01306	0.01264	0.01333
	A2_N	0.00760	0.00719	0.00799
	B1	0.00065	0.00040	0.00038
	B1	0.00958	0.00934	0.00882
	B2	0.00059	0.00026	0.00038
	B2	0.00799	0.00768	0.00782

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00278	0.00272	0.00307
	A1_N	0.00432	0.00426	0.00458
	A2_N	0.00262	0.00249	0.00287
	A2_N	0.00386	0.00373	0.00410
	B1	0.00332	0.00329	0.00328
	B1	0.00107	0.00101	0.00099
	B2	0.00259	0.00257	0.00257
	B2	0.00062	0.00060	0.00059
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00505	0.00486	0.00554
	A1_N	0.00845	0.00825	0.00890
	A2_N	0.00472	0.00457	0.00528
	A2_N	0.00710	0.00690	0.00765
	B1	0.00645	0.00633	0.00635
	B1	0.00195	0.00182	0.00179
	B2	0.00470	0.00466	0.00476
	B2	0.00111	0.00107	0.00108
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01093	0.01047	0.01144
	A1_N	0.01827	0.01778	0.01851
	A2_N	0.00973	0.00912	0.01006
	A2_N	0.01535	0.01473	0.01563
	B1	0.01336	0.01309	0.01308
	B1	0.00441	0.00412	0.00406
	B2	0.00990	0.00977	0.01004
	B2	0.00231	0.00217	0.00226

Passive power(pJ) for A1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A2_N * !B1 * !B2 * Y)	0.00310	0.00300	0.00311
	(A2_N * !B1 * !B2 * Y)	0.00109	0.00099	0.00109
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00058	0.00059	0.00059
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00064	-0.00065	-0.00065
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00604	0.00581	0.00602
	(A2_N * !B1 * !B2 * Y)	0.00172	0.00146	0.00168
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00115	0.00116	0.00115
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00159	-0.00159	-0.00158
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.01323	0.01274	0.01291
	(A2_N * !B1 * !B2 * Y)	0.00398	0.00344	0.00365
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00258	0.00259	0.00257
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00331	-0.00332	-0.00331

Passive power(pJ) for A1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A2_N * !B1 * !B2 * Y)	0.00031	0.00024	0.00057
	(A2_N * !B1 * !B2 * Y)	0.00235	0.00227	0.00258
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00056	-0.00059	-0.00059
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00066	0.00065	0.00065
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00052	0.00031	0.00096
	(A2_N * !B1 * !B2 * Y)	0.00490	0.00469	0.00529
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00110	-0.00116	-0.00115
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00161	0.00160	0.00159
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00122	0.00073	0.00143
	(A2_N * !B1 * !B2 * Y)	0.01058	0.01009	0.01068
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00246	-0.00259	-0.00257
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00337	0.00334	0.00332

Passive power(pJ) for A2_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * !B1 * !B2 * Y)	0.00281	0.00267	0.00288
	(A1_N * !B1 * !B2 * Y)	0.00110	0.00095	0.00117
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00024	0.00024	0.00023
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00081	-0.00081	-0.00083
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00519	0.00494	0.00539
	(A1_N * !B1 * !B2 * Y)	0.00187	0.00160	0.00207
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00045	0.00046	0.00043
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00150	-0.00152	-0.00155
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.01156	0.01089	0.01149
	(A1_N * !B1 * !B2 * Y)	0.00394	0.00327	0.00386
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00104	0.00104	0.00098
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00383	-0.00386	-0.00396

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * !B1 * !B2 * Y)	0.00015	0.00003	0.00039
	(A1_N * !B1 * !B2 * Y)	0.00188	0.00176	0.00212
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00022	-0.00022	-0.00022
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00083	0.00083	0.00083
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00016	-0.00003	0.00071
	(A1_N * !B1 * !B2 * Y)	0.00351	0.00332	0.00404
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00042	-0.00042	-0.00041
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00155	0.00156	0.00156
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00001	-0.00058	0.00029
	(A1_N * !B1 * !B2 * Y)	0.00767	0.00711	0.00796
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00095	-0.00094	-0.00093
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00399	0.00400	0.00398

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * A2_N * B2 * Y)	0.00072	0.00073	0.00072
	(A1_N * A2_N * B2 * Y)	-0.00080	-0.00082	-0.00081
	(A1_N * A2_N * !B2 * Y)	0.00069	0.00069	0.00069
	(A1_N * A2_N * !B2 * Y)	-0.00083	-0.00083	-0.00083
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00077	0.00074	0.00073
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00075	-0.00081	-0.00081
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00144	0.00145	0.00144
	(A1_N * A2_N * B2 * Y)	-0.00163	-0.00167	-0.00166
	(A1_N * A2_N * !B2 * Y)	0.00137	0.00138	0.00137
	(A1_N * A2_N * !B2 * Y)	-0.00170	-0.00170	-0.00170
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00156	0.00148	0.00146
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00152	-0.00165	-0.00164
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00279	0.00281	0.00278
	(A1_N * A2_N * B2 * Y)	-0.00316	-0.00324	-0.00323
	(A1_N * A2_N * !B2 * Y)	0.00263	0.00264	0.00262
	(A1_N * A2_N * !B2 * Y)	-0.00332	-0.00333	-0.00331
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00300	0.00282	0.00278
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00297	-0.00323	-0.00323

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * A2_N * B2 * Y)	-0.00072	-0.00072	-0.00072
	(A1_N * A2_N * B2 * Y)	0.00082	0.00082	0.00081
	(A1_N * A2_N * !B2 * Y)	-0.00067	-0.00069	-0.00069
	(A1_N * A2_N * !B2 * Y)	0.00084	0.00083	0.00083
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00073	-0.00072	-0.00072
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00082	0.00081	0.00081
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00143	-0.00143	-0.00143
	(A1_N * A2_N * B2 * Y)	0.00167	0.00167	0.00166
	(A1_N * A2_N * !B2 * Y)	-0.00133	-0.00138	-0.00137
	(A1_N * A2_N * !B2 * Y)	0.00170	0.00171	0.00171
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00146	-0.00145	-0.00145
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00165	0.00165	0.00164
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00278	-0.00277	-0.00277
	(A1_N * A2_N * B2 * Y)	0.00326	0.00324	0.00323
	(A1_N * A2_N * !B2 * Y)	-0.00253	-0.00264	-0.00262
	(A1_N * A2_N * !B2 * Y)	0.00333	0.00334	0.00333
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00278	-0.00277	-0.00276
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00326	0.00323	0.00323

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * A2_N * B1 * Y)	0.00076	0.00076	0.00075
	(A1_N * A2_N * B1 * Y)	-0.00081	-0.00082	-0.00082
	(A1_N * A2_N * !B1 * Y)	0.00072	0.00071	0.00072
	(A1_N * A2_N * !B1 * Y)	-0.00084	-0.00083	-0.00084
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00081	0.00082	0.00081
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00051	-0.00051	-0.00051
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00134	0.00135	0.00134
	(A1_N * A2_N * B1 * Y)	-0.00150	-0.00154	-0.00154
	(A1_N * A2_N * !B1 * Y)	0.00128	0.00127	0.00128
	(A1_N * A2_N * !B1 * Y)	-0.00158	-0.00157	-0.00158
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00146	0.00148	0.00146
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00090	-0.00091	-0.00090
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00278	0.00279	0.00278
	(A1_N * A2_N * B1 * Y)	-0.00318	-0.00327	-0.00326
	(A1_N * A2_N * !B1 * Y)	0.00264	0.00263	0.00262
	(A1_N * A2_N * !B1 * Y)	-0.00336	-0.00335	-0.00334
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00317	0.00321	0.00317
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00186	-0.00188	-0.00185

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * A2_N * B1 * Y)	-0.00076	-0.00075	-0.00075
	(A1_N * A2_N * B1 * Y)	0.00083	0.00082	0.00082
	(A1_N * A2_N * !B1 * Y)	-0.00070	-0.00071	-0.00072
	(A1_N * A2_N * !B1 * Y)	0.00085	0.00084	0.00084
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00077	-0.00077	-0.00080
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00055	0.00055	0.00052
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00133	-0.00133	-0.00133
	(A1_N * A2_N * B1 * Y)	0.00154	0.00154	0.00154
	(A1_N * A2_N * !B1 * Y)	-0.00123	-0.00127	-0.00128
	(A1_N * A2_N * !B1 * Y)	0.00158	0.00158	0.00159
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00136	-0.00137	-0.00144
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00100	0.00100	0.00093
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00278	-0.00278	-0.00277
	(A1_N * A2_N * B1 * Y)	0.00327	0.00327	0.00326
	(A1_N * A2_N * !B1 * Y)	-0.00253	-0.00263	-0.00262
	(A1_N * A2_N * !B1 * Y)	0.00336	0.00337	0.00336
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00292	-0.00296	-0.00313
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00205	0.00207	0.00191

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1_N	A2_N	B1	B2	X
x	x	0	0	0
0	x	x	1	1
0	x	1	x	1
1	0	x	1	1
1	0	1	x	1
1	1	x	1	0
1	1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2a_1	14.38560
sky130_fd_sc_hs__o2bb2a_2	14.38560
sky130_fd_sc_hs__o2bb2a_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__o2bb2a_1	0.00209	0.00224	0.00224	0.00245	0.44128
sky130_fd_sc_hs__o2bb2a_2	0.00210	0.00233	0.00240	0.00250	0.85069
sky130_fd_sc_hs__o2bb2a_4	0.00208	0.00226	0.00446	0.00443	1.70425

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.06454	0.10408
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.05958	0.11409
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.11748	0.15525

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2bb2a_1	A1_N->X (FR)	0.32244	1.45959	10.00440
	A2_N->X (FR)	0.30211	1.42374	9.81355
	B1->X (RR)	0.18346	1.14524	8.62172
	B2->X (RR)	0.17013	1.12034	8.49732
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.34649	1.35978	10.18000
	A2_N->X (FR)	0.32492	1.32478	9.99779
	B1->X (RR)	0.18969	1.03360	8.84683
	B2->X (RR)	0.17449	1.01237	8.75324
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.40325	1.32442	10.49440
	A2_N->X (FR)	0.38239	1.29532	10.34280
	B1->X (RR)	0.21231	0.94974	8.91703
	B2->X (RR)	0.19360	0.92056	8.78819

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2bb2a_1	A1_N->X (RF)	0.25415	0.76409	3.29142
	A2_N->X (RF)	0.24953	0.74279	3.06461
	B1->X (FF)	0.41385	1.17402	6.17926
	B2->X (FF)	0.38564	1.09551	5.59509
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.30196	0.79573	3.37599
	A2_N->X (RF)	0.29822	0.77679	3.15462
	B1->X (FF)	0.53981	1.30170	6.62205
	B2->X (FF)	0.50877	1.21432	6.09413
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.32527	0.82868	3.72291
	A2_N->X (RF)	0.32079	0.81692	3.53011
	B1->X (FF)	0.53059	1.26216	6.66384
	B2->X (FF)	0.48007	1.15588	6.07100

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00414	0.00413	0.00444
	A1_N	0.00561	0.00561	0.00592
	A2_N	0.00396	0.00390	0.00425
	A2_N	0.00508	0.00502	0.00538
	B1	0.00458	0.00459	0.00459
	B1	0.00248	0.00248	0.00249
	B2	0.00396	0.00391	0.00394
	B2	0.00208	0.00204	0.00208
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00561	0.00576	0.00608
	A1_N	0.00712	0.00726	0.00758
	A2_N	0.00539	0.00549	0.00585
	A2_N	0.00658	0.00668	0.00706
	B1	0.00610	0.00625	0.00629
	B1	0.00384	0.00399	0.00407
	B2	0.00545	0.00555	0.00560
	B2	0.00345	0.00356	0.00361
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01072	0.01113	0.01152
	A1_N	0.01173	0.01210	0.01263
	A2_N	0.01053	0.01088	0.01130
	A2_N	0.01119	0.01151	0.01206
	B1	0.01187	0.01214	0.01226
	B1	0.00763	0.00790	0.00811
	B2	0.01006	0.01031	0.01048
	B2	0.00653	0.00679	0.00708

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00529	0.00520	0.00521
	A1_N	0.00381	0.00367	0.00371
	A2_N	0.00491	0.00476	0.00494
	A2_N	0.00381	0.00364	0.00381
	B1	0.00198	0.00201	0.00224
	B1	0.00405	0.00410	0.00409
	B2	0.00198	0.00198	0.00227
	B2	0.00381	0.00381	0.00404
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00660	0.00669	0.00670
	A1_N	0.00507	0.00514	0.00515
	A2_N	0.00625	0.00627	0.00642
	A2_N	0.00508	0.00510	0.00521
	B1	0.00306	0.00328	0.00352
	B1	0.00528	0.00551	0.00551
	B2	0.00306	0.00319	0.00379
	B2	0.00500	0.00518	0.00543
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01003	0.01047	0.01042
	A1_N	0.00905	0.00943	0.00943
	A2_N	0.00966	0.00997	0.01022
	A2_N	0.00905	0.00937	0.00950
	B1	0.00574	0.00618	0.00985
	B1	0.00996	0.01042	0.01049
	B2	0.00578	0.00600	0.00674
	B2	0.00920	0.00956	0.01010

Passive power(pJ) for A1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A2_N * !B1 * !B2 * !X)	0.00279	0.00270	0.00282
	(A2_N * !B1 * !B2 * !X)	0.00081	0.00071	0.00083
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00062	0.00063	0.00062
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00062	-0.00063	-0.00062
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00295	0.00286	0.00297
	(A2_N * !B1 * !B2 * !X)	0.00090	0.00080	0.00092
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00066	0.00065	0.00066
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00061	-0.00061	-0.00061
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00348	0.00339	0.00348
	(A2_N * !B1 * !B2 * !X)	0.00143	0.00134	0.00143
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00065	0.00066	0.00065
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00059	-0.00060	-0.00060

Passive power(pJ) for A1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A2_N * !B1 * !B2 * !X)	0.00031	0.00024	0.00059
	(A2_N * !B1 * !B2 * !X)	0.00233	0.00225	0.00257
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00059	-0.00062	-0.00062
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00065	0.00064	0.00063
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00032	0.00025	0.00059
	(A2_N * !B1 * !B2 * !X)	0.00240	0.00233	0.00264
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00063	-0.00065	-0.00066
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00063	0.00062	0.00061
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00061	0.00053	0.00082
	(A2_N * !B1 * !B2 * !X)	0.00269	0.00261	0.00288
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00062	-0.00065	-0.00065
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00062	0.00061	0.00060

Passive power(pJ) for A2_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * !B1 * !B2 * !X)	0.00253	0.00240	0.00262
	(A1_N * !B1 * !B2 * !X)	0.00088	0.00074	0.00097
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00022	0.00022	0.00021
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00079	-0.00080	-0.00082
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00272	0.00259	0.00280
	(A1_N * !B1 * !B2 * !X)	0.00098	0.00083	0.00105
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00026	0.00026	0.00025
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00081	-0.00081	-0.00083
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00323	0.00310	0.00328
	(A1_N * !B1 * !B2 * !X)	0.00152	0.00137	0.00156
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00024	0.00024	0.00023
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00079	-0.00079	-0.00081

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * !B1 * !B2 * !X)	0.00011	0.00001	0.00039
	(A1_N * !B1 * !B2 * !X)	0.00178	0.00168	0.00205
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00021	-0.00021	-0.00021
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00010	-0.00001	0.00035
	(A1_N * !B1 * !B2 * !X)	0.00186	0.00176	0.00211
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00025	-0.00025	-0.00024
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00084	0.00084	0.00083
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00042	0.00028	0.00061
	(A1_N * !B1 * !B2 * !X)	0.00216	0.00203	0.00234
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00022	-0.00022	-0.00022
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00082	0.00081	0.00081

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * A2_N * B2 * !X)	0.00063	0.00064	0.00063
	(A1_N * A2_N * B2 * !X)	-0.00072	-0.00073	-0.00073
	(A1_N * A2_N * !B2 * !X)	0.00060	0.00060	0.00060
	(A1_N * A2_N * !B2 * !X)	-0.00074	-0.00074	-0.00074
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00069	0.00064	0.00063
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00066	-0.00073	-0.00073
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00071	0.00072	0.00071
	(A1_N * A2_N * B2 * !X)	-0.00074	-0.00075	-0.00075
	(A1_N * A2_N * !B2 * !X)	0.00068	0.00068	0.00068
	(A1_N * A2_N * !B2 * !X)	-0.00076	-0.00076	-0.00076
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00077	0.00072	0.00071
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00069	-0.00075	-0.00076
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00128	0.00129	0.00128
	(A1_N * A2_N * B2 * !X)	-0.00146	-0.00150	-0.00150
	(A1_N * A2_N * !B2 * !X)	0.00121	0.00121	0.00121
	(A1_N * A2_N * !B2 * !X)	-0.00154	-0.00154	-0.00154
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00139	0.00130	0.00128
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00136	-0.00149	-0.00150

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * A2_N * B2 * !X)	-0.00063	-0.00063	-0.00063
	(A1_N * A2_N * B2 * !X)	0.00074	0.00073	0.00073
	(A1_N * A2_N * !B2 * !X)	-0.00058	-0.00060	-0.00060
	(A1_N * A2_N * !B2 * !X)	0.00075	0.00074	0.00075
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00063	-0.00063	-0.00063
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00074	0.00073	0.00073
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00071	-0.00071	-0.00071
	(A1_N * A2_N * B2 * !X)	0.00076	0.00075	0.00075
	(A1_N * A2_N * !B2 * !X)	-0.00066	-0.00068	-0.00068
	(A1_N * A2_N * !B2 * !X)	0.00078	0.00078	0.00077
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00071	-0.00071	-0.00071
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00076	0.00075	0.00076
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00127	-0.00127	-0.00127
	(A1_N * A2_N * B2 * !X)	0.00150	0.00150	0.00150
	(A1_N * A2_N * !B2 * !X)	-0.00117	-0.00121	-0.00121
	(A1_N * A2_N * !B2 * !X)	0.00156	0.00155	0.00154
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00128	-0.00128	-0.00127
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00149	0.00149	0.00150

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * A2_N * B1 * !X)	0.00069	0.00068	0.00068
	(A1_N * A2_N * B1 * !X)	-0.00074	-0.00074	-0.00075
	(A1_N * A2_N * !B1 * !X)	0.00064	0.00065	0.00064
	(A1_N * A2_N * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00072	0.00074	0.00073
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00047	-0.00048	-0.00047
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00076	0.00077	0.00077
	(A1_N * A2_N * B1 * !X)	-0.00071	-0.00073	-0.00073
	(A1_N * A2_N * !B1 * !X)	0.00073	0.00074	0.00073
	(A1_N * A2_N * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00076	0.00078	0.00077
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00050	-0.00051	-0.00050
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00125	0.00124	0.00123
	(A1_N * A2_N * B1 * !X)	-0.00146	-0.00149	-0.00148
	(A1_N * A2_N * !B1 * !X)	0.00118	0.00118	0.00117
	(A1_N * A2_N * !B1 * !X)	-0.00153	-0.00153	-0.00153
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00135	0.00138	0.00136
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00091	-0.00092	-0.00091

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * A2_N * B1 * !X)	-0.00068	-0.00068	-0.00068
	(A1_N * A2_N * B1 * !X)	0.00075	0.00074	0.00075
	(A1_N * A2_N * !B1 * !X)	-0.00063	-0.00064	-0.00064
	(A1_N * A2_N * !B1 * !X)	0.00077	0.00076	0.00076
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00069	-0.00069	-0.00072
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00050	0.00051	0.00048
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00076	-0.00077	-0.00076
	(A1_N * A2_N * B1 * !X)	0.00073	0.00073	0.00073
	(A1_N * A2_N * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(A1_N * A2_N * !B1 * !X)	0.00075	0.00075	0.00074
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00073	-0.00073	-0.00076
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00054	0.00054	0.00051
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00123	-0.00123	-0.00123
	(A1_N * A2_N * B1 * !X)	0.00149	0.00149	0.00148
	(A1_N * A2_N * !B1 * !X)	-0.00113	-0.00118	-0.00117
	(A1_N * A2_N * !B1 * !X)	0.00153	0.00153	0.00153
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00123	-0.00124	-0.00134
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00103	0.00103	0.00094

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	C1	Y
0	0	0	x	x	1
0	x	1	0	x	1
0	x	1	1	0	1
0	x	1	1	1	0
x	1	x	0	x	1
x	1	x	1	0	1
x	1	x	1	1	0
1	x	x	0	x	1
1	x	x	1	0	1
1	x	x	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311ai_1	11.18880
sky130_fd_sc_hs__o311ai_2	19.18080
sky130_fd_sc_hs__o311ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__o311ai_1	0.00245	0.00259	0.00253	0.00263	0.00270	0.12083
sky130_fd_sc_hs__o311ai_2	0.00476	0.00490	0.00500	0.00501	0.00510	0.22535
sky130_fd_sc_hs__o311ai_4	0.00936	0.00943	0.00997	0.00766	0.00725	0.44069

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.00698	0.03251
sky130_fd_sc_hs__o311ai_2	0.00000	0.01395	0.06502
sky130_fd_sc_hs__o311ai_4	0.00000	0.01842	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (FR)	0.60081	2.19464	12.64540
	A2->Y (FR)	0.57575	2.15677	12.87430
	A3->Y (FR)	0.48138	1.99961	12.28960
	B1->Y (FR)	0.11579	0.96279	7.62693
	C1->Y (FR)	0.09691	0.94015	7.60172
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.62055	2.00312	12.64400
	A2->Y (FR)	0.57671	1.93709	12.83730
	A3->Y (FR)	0.47986	1.77595	12.30540
	B1->Y (FR)	0.11181	0.90050	7.58920
	C1->Y (FR)	0.08965	0.87907	7.56964
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.55141	1.74451	12.56600
	A2->Y (FR)	0.51832	1.69511	12.83040
	A3->Y (FR)	0.41090	1.52538	12.25690
	B1->Y (FR)	0.15612	1.03205	9.26374
	C1->Y (FR)	0.10929	0.99448	9.26490

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.10598	0.66908	4.58715
	A2->Y (RF)	0.10705	0.66667	4.60630
	A3->Y (RF)	0.09143	0.64299	4.56181
	B1->Y (RF)	0.09425	0.69222	5.02072
	C1->Y (RF)	0.08114	0.69274	5.07082
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.11571	0.64582	4.64423
	A2->Y (RF)	0.11091	0.62855	4.60883
	A3->Y (RF)	0.09647	0.60571	4.56612
	B1->Y (RF)	0.10186	0.66826	5.08598
	C1->Y (RF)	0.08534	0.68240	5.30566
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.10925	0.59071	4.61921
	A2->Y (RF)	0.10383	0.57425	4.59041
	A3->Y (RF)	0.08763	0.54783	4.53994
	B1->Y (RF)	0.09598	0.64696	5.39532
	C1->Y (RF)	0.07330	0.64101	5.52376

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00065	0.00058	0.00055
	A1	0.00438	0.00431	0.00427
	A2	0.00069	0.00061	0.00058
	A2	0.00405	0.00398	0.00393
	A3	0.00068	0.00059	0.00060
	A3	0.00365	0.00357	0.00357
	B1	0.00015	0.00004	0.00005
	B1	0.00330	0.00318	0.00320
	C1	-0.00016	-0.00026	-0.00024
	C1	0.00266	0.00253	0.00259
sky130_fd_sc_hs__o311ai_2	A1	0.00151	0.00134	0.00129
	A1	0.00906	0.00891	0.00883
	A2	0.00152	0.00135	0.00130
	A2	0.00830	0.00814	0.00805
	A3	0.00150	0.00127	0.00131
	A3	0.00753	0.00731	0.00732
	B1	0.00027	0.00009	0.00015
	B1	0.00670	0.00648	0.00652
	C1	-0.00034	-0.00053	-0.00046
	C1	0.00526	0.00505	0.00515

sky130_fd_sc_hs__o311ai_4	**A1**	0.00220	0.00194	0.00186
	A1	0.01699	0.01673	0.01661
	A2	0.00227	0.00199	0.00189
	A2	0.01548	0.01514	0.01504
	A3	0.00228	0.00182	0.00191
	A3	0.01409	0.01364	0.01370
	B1	0.00044	-0.00007	0.00000
	B1	0.01140	0.01077	0.01093
	C1	-0.00095	-0.00124	-0.00113
	C1	0.00823	0.00796	0.00805

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.00518	0.00514	0.00507
	A1	0.00139	0.00132	0.00127
	A2	0.00453	0.00450	0.00444
	A2	0.00106	0.00100	0.00096
	A3	0.00370	0.00369	0.00368
	A3	0.00059	0.00058	0.00055
	B1	0.00458	0.00451	0.00447
	B1	0.00145	0.00138	0.00132
	C1	0.00419	0.00412	0.00406
	C1	0.00144	0.00136	0.00130

sky130_fd_sc_hs__o311ai_2	**A1**	0.01056	0.01041	0.01027
	A1	0.00288	0.00271	0.00258
	A2	0.00891	0.00881	0.00877
	A2	0.00187	0.00177	0.00169
	A3	0.00735	0.00731	0.00731
	A3	0.00102	0.00096	0.00093
	B1	0.00919	0.00909	0.00889
	B1	0.00291	0.00277	0.00265
	C1	0.00831	0.00816	0.00802
	C1	0.00290	0.00273	0.00263
sky130_fd_sc_hs__o311ai_4	**A1**	0.01913	0.01883	0.01869
	A1	0.00413	0.00381	0.00359
	A2	0.01625	0.01597	0.01581
	A2	0.00262	0.00232	0.00219
	A3	0.01277	0.01262	0.01273
	A3	0.00040	0.00024	0.00026
	B1	0.01610	0.01600	0.01578
	B1	0.00528	0.00516	0.00498
	C1	0.01414	0.01402	0.01394
	C1	0.00530	0.00514	0.00500

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A2 * B1 * !C1 * Y)**	0.00071	0.00072	0.00071
	(A2 * B1 * !C1 * Y)	-0.00079	-0.00081	-0.00081
	(A2 * A3 * B1 * C1 * !Y)	0.00071	0.00072	0.00071
	(A2 * A3 * B1 * C1 * !Y)	-0.00079	-0.00081	-0.00081
	(A2 * !B1 * Y)	0.00071	0.00072	0.00071
	(A2 * !B1 * Y)	-0.00079	-0.00081	-0.00081
	(A2 * !A3 * B1 * C1 * !Y)	0.00071	0.00072	0.00071
	(A2 * !A3 * B1 * C1 * !Y)	-0.00079	-0.00081	-0.00081
	(!A2 * A3 * B1 * C1 * !Y)	0.00071	0.00072	0.00071
	(!A2 * A3 * B1 * C1 * !Y)	-0.00074	-0.00078	-0.00078
	(!A2 * A3 * B1 * !C1 * Y)	0.00071	0.00072	0.00071
	(!A2 * A3 * B1 * !C1 * Y)	-0.00075	-0.00078	-0.00078
	(!A2 * A3 * !B1 * Y)	0.00071	0.00072	0.00071
	(!A2 * A3 * !B1 * Y)	-0.00075	-0.00078	-0.00078
	(!A2 * !A3 * B1 * !C1 * Y)	0.00065	0.00065	0.00065
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00083	-0.00083	-0.00083
	(!A2 * !A3 * !B1 * C1 * Y)	0.00066	0.00067	0.00066
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00083	-0.00083	-0.00083
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00066	0.00067	0.00066
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00139	0.00140	0.00139
	(A2 * B1 * !C1 * Y)	-0.00157	-0.00161	-0.00161
	(A2 * A3 * B1 * C1 * !Y)	0.00140	0.00141	0.00139
	(A2 * A3 * B1 * C1 * !Y)	-0.00156	-0.00161	-0.00160
	(A2 * !B1 * Y)	0.00139	0.00140	0.00139
	(A2 * !B1 * Y)	-0.00157	-0.00161	-0.00161
	(A2 * !A3 * B1 * C1 * !Y)	0.00140	0.00141	0.00139
	(A2 * !A3 * B1 * C1 * !Y)	-0.00155	-0.00161	-0.00160
	(!A2 * A3 * B1 * C1 * !Y)	0.00140	0.00141	0.00139
	(!A2 * A3 * B1 * C1 * !Y)	-0.00146	-0.00155	-0.00153
	(!A2 * A3 * B1 * !C1 * Y)	0.00139	0.00140	0.00139
	(!A2 * A3 * B1 * !C1 * Y)	-0.00148	-0.00155	-0.00153
	(!A2 * A3 * !B1 * Y)	0.00139	0.00140	0.00139
	(!A2 * A3 * !B1 * Y)	-0.00148	-0.00155	-0.00153
	(!A2 * !A3 * B1 * !C1 * Y)	0.00125	0.00126	0.00125
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00166	-0.00167	-0.00166
	(!A2 * !A3 * !B1 * C1 * Y)	0.00126	0.00127	0.00127
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00165	-0.00166	-0.00166
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00126	0.00128	0.00127
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00165	-0.00166	-0.00166

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00280	0.00281	0.00278
	(A2 * B1 * !C1 * Y)	-0.00313	-0.00322	-0.00320
	(A2 * A3 * B1 * C1 * !Y)	0.00280	0.00281	0.00278
	(A2 * A3 * B1 * C1 * !Y)	-0.00313	-0.00322	-0.00320
	(A2 * !B1 * Y)	0.00280	0.00281	0.00278
	(A2 * !B1 * Y)	-0.00313	-0.00321	-0.00320
	(A2 * !A3 * B1 * C1 * !Y)	0.00280	0.00281	0.00278
	(A2 * !A3 * B1 * C1 * !Y)	-0.00312	-0.00321	-0.00320
	(!A2 * A3 * B1 * C1 * !Y)	0.00280	0.00281	0.00278
	(!A2 * A3 * B1 * C1 * !Y)	-0.00294	-0.00310	-0.00306
	(!A2 * A3 * B1 * !C1 * Y)	0.00278	0.00281	0.00278
	(!A2 * A3 * B1 * !C1 * Y)	-0.00296	-0.00310	-0.00306
	(!A2 * A3 * !B1 * Y)	0.00278	0.00281	0.00278
	(!A2 * A3 * !B1 * Y)	-0.00296	-0.00310	-0.00306
	(!A2 * !A3 * B1 * !C1 * Y)	0.00249	0.00251	0.00249
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00332	-0.00333	-0.00332
	(!A2 * !A3 * !B1 * C1 * Y)	0.00254	0.00256	0.00254
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00332	-0.00333	-0.00332
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00254	0.00255	0.00254
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00332	-0.00332	-0.00332

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A2 * B1 * !C1 * Y)**	-0.00071	-0.00071	-0.00071
	(A2 * B1 * !C1 * Y)	0.00082	0.00081	0.00081
	(A2 * A3 * B1 * C1 * !Y)	-0.00071	-0.00071	-0.00071
	(A2 * A3 * B1 * C1 * !Y)	0.00082	0.00081	0.00081
	(A2 * !B1 * Y)	-0.00071	-0.00071	-0.00071
	(A2 * !B1 * Y)	0.00082	0.00081	0.00081
	(A2 * !A3 * B1 * C1 * !Y)	-0.00071	-0.00071	-0.00071
	(A2 * !A3 * B1 * C1 * !Y)	0.00082	0.00081	0.00081
	(!A2 * A3 * B1 * C1 * !Y)	-0.00071	-0.00071	-0.00071
	(!A2 * A3 * B1 * C1 * !Y)	0.00078	0.00078	0.00078
	(!A2 * A3 * B1 * !C1 * Y)	-0.00071	-0.00072	-0.00071
	(!A2 * A3 * B1 * !C1 * Y)	0.00078	0.00078	0.00078
	(!A2 * A3 * !B1 * Y)	-0.00071	-0.00072	-0.00071
	(!A2 * A3 * !B1 * Y)	0.00078	0.00078	0.00078
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00061	-0.00065	-0.00065
	(!A2 * !A3 * B1 * !C1 * Y)	0.00083	0.00084	0.00083
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00064	-0.00067	-0.00066
	(!A2 * !A3 * !B1 * C1 * Y)	0.00083	0.00084	0.00083
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00064	-0.00067	-0.00066
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00139	-0.00139	-0.00139
	(A2 * B1 * !C1 * Y)	0.00162	0.00161	0.00161
	(A2 * A3 * B1 * C1 * !Y)	-0.00140	-0.00139	-0.00139
	(A2 * A3 * B1 * C1 * !Y)	0.00161	0.00161	0.00160
	(A2 * !B1 * Y)	-0.00139	-0.00139	-0.00139
	(A2 * !B1 * Y)	0.00162	0.00161	0.00161
	(A2 * !A3 * B1 * C1 * !Y)	-0.00139	-0.00139	-0.00139
	(A2 * !A3 * B1 * C1 * !Y)	0.00161	0.00161	0.00160
	(!A2 * A3 * B1 * C1 * !Y)	-0.00138	-0.00140	-0.00139
	(!A2 * A3 * B1 * C1 * !Y)	0.00151	0.00155	0.00153
	(!A2 * A3 * B1 * !C1 * Y)	-0.00138	-0.00139	-0.00139
	(!A2 * A3 * B1 * !C1 * Y)	0.00152	0.00155	0.00153
	(!A2 * A3 * !B1 * Y)	-0.00138	-0.00139	-0.00139
	(!A2 * A3 * !B1 * Y)	0.00153	0.00155	0.00153
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00117	-0.00126	-0.00125
	(!A2 * !A3 * B1 * !C1 * Y)	0.00166	0.00167	0.00166
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00121	-0.00127	-0.00127
	(!A2 * !A3 * !B1 * C1 * Y)	0.00167	0.00167	0.00166
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00121	-0.00128	-0.00127
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00167	0.00167	0.00166

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00279	-0.00278	-0.00277
	(A2 * B1 * !C1 * Y)	0.00323	0.00322	0.00320
	(A2 * A3 * B1 * C1 * !Y)	-0.00279	-0.00278	-0.00277
	(A2 * A3 * B1 * C1 * !Y)	0.00323	0.00322	0.00320
	(A2 * !B1 * Y)	-0.00278	-0.00278	-0.00277
	(A2 * !B1 * Y)	0.00321	0.00321	0.00320
	(A2 * !A3 * B1 * C1 * !Y)	-0.00279	-0.00278	-0.00277
	(A2 * !A3 * B1 * C1 * !Y)	0.00323	0.00321	0.00320
	(!A2 * A3 * B1 * C1 * !Y)	-0.00277	-0.00279	-0.00277
	(!A2 * A3 * B1 * C1 * !Y)	0.00305	0.00310	0.00306
	(!A2 * A3 * B1 * !C1 * Y)	-0.00277	-0.00279	-0.00277
	(!A2 * A3 * B1 * !C1 * Y)	0.00305	0.00310	0.00306
	(!A2 * A3 * !B1 * Y)	-0.00277	-0.00279	-0.00277
	(!A2 * A3 * !B1 * Y)	0.00306	0.00310	0.00306
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00237	-0.00251	-0.00249
	(!A2 * !A3 * B1 * !C1 * Y)	0.00333	0.00336	0.00332
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00242	-0.00256	-0.00254
	(!A2 * !A3 * !B1 * C1 * Y)	0.00332	0.00333	0.00332
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00243	-0.00255	-0.00254
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00332	0.00332	0.00332

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A1 * A3 * B1 * C1 * !Y)**	0.00072	0.00073	0.00071
	(A1 * A3 * B1 * C1 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * A3 * B1 * !C1 * Y)	0.00068	0.00069	0.00068
	(A1 * A3 * B1 * !C1 * Y)	-0.00065	-0.00065	-0.00065
	(A1 * A3 * !B1 * Y)	0.00068	0.00069	0.00068
	(A1 * A3 * !B1 * Y)	-0.00064	-0.00065	-0.00065
	(A1 * !A3 * B1 * C1 * !Y)	0.00072	0.00072	0.00071
	(A1 * !A3 * B1 * C1 * !Y)	-0.00052	-0.00053	-0.00052
	(A1 * !A3 * B1 * !C1 * Y)	0.00068	0.00068	0.00068
	(A1 * !A3 * B1 * !C1 * Y)	-0.00081	-0.00082	-0.00082
	(A1 * !A3 * !B1 * C1 * Y)	0.00068	0.00068	0.00068
	(A1 * !A3 * !B1 * C1 * Y)	-0.00081	-0.00082	-0.00082
	(A1 * !A3 * !B1 * !C1 * Y)	0.00068	0.00068	0.00068
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00081	-0.00082	-0.00082
	(!A1 * A3 * B1 * C1 * !Y)	0.00077	0.00071	0.00071
	(!A1 * A3 * B1 * C1 * !Y)	-0.00071	-0.00079	-0.00079
	(!A1 * A3 * B1 * !C1 * Y)	0.00067	0.00068	0.00068
	(!A1 * A3 * B1 * !C1 * Y)	-0.00080	-0.00082	-0.00082
	(!A1 * A3 * !B1 * Y)	0.00068	0.00068	0.00068
	(!A1 * A3 * !B1 * Y)	-0.00081	-0.00082	-0.00082
	(!A1 * !A3 * B1 * !C1 * Y)	0.00062	0.00062	0.00061
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00084	-0.00085	-0.00084
	(!A1 * !A3 * !B1 * C1 * Y)	0.00062	0.00063	0.00062
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00084	-0.00085	-0.00084
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00062	0.00063	0.00062
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00084	-0.00085	-0.00084

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00144	0.00146	0.00143
	(A1 * A3 * B1 * C1 * !Y)	-0.00120	-0.00121	-0.00120
	(A1 * A3 * B1 * !C1 * Y)	0.00140	0.00142	0.00140
	(A1 * A3 * B1 * !C1 * Y)	-0.00129	-0.00130	-0.00129
	(A1 * A3 * !B1 * Y)	0.00140	0.00142	0.00140
	(A1 * A3 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A3 * B1 * C1 * !Y)	0.00144	0.00144	0.00141
	(A1 * !A3 * B1 * C1 * !Y)	-0.00109	-0.00109	-0.00108
	(A1 * !A3 * B1 * !C1 * Y)	0.00141	0.00141	0.00140
	(A1 * !A3 * B1 * !C1 * Y)	-0.00160	-0.00163	-0.00162
	(A1 * !A3 * !B1 * C1 * Y)	0.00141	0.00141	0.00140
	(A1 * !A3 * !B1 * C1 * Y)	-0.00160	-0.00163	-0.00162
	(A1 * !A3 * !B1 * !C1 * Y)	0.00141	0.00141	0.00140
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00160	-0.00163	-0.00162
	(!A1 * A3 * B1 * C1 * !Y)	0.00154	0.00142	0.00141
	(!A1 * A3 * B1 * C1 * !Y)	-0.00151	-0.00165	-0.00165
	(!A1 * A3 * B1 * !C1 * Y)	0.00141	0.00141	0.00140
	(!A1 * A3 * B1 * !C1 * Y)	-0.00163	-0.00166	-0.00165
	(!A1 * A3 * !B1 * Y)	0.00141	0.00141	0.00140
	(!A1 * A3 * !B1 * Y)	-0.00163	-0.00166	-0.00165
	(!A1 * !A3 * B1 * !C1 * Y)	0.00126	0.00127	0.00126
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * !B1 * C1 * Y)	0.00127	0.00129	0.00128
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00169	-0.00169	-0.00169
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00127	0.00129	0.00128
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00168	-0.00169	-0.00169

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00284	0.00286	0.00281
	(A1 * A3 * B1 * C1 * !Y)	-0.00231	-0.00233	-0.00230
	(A1 * A3 * B1 * !C1 * Y)	0.00275	0.00279	0.00275
	(A1 * A3 * B1 * !C1 * Y)	-0.00251	-0.00254	-0.00252
	(A1 * A3 * !B1 * Y)	0.00275	0.00279	0.00275
	(A1 * A3 * !B1 * Y)	-0.00251	-0.00254	-0.00252
	(A1 * !A3 * B1 * C1 * !Y)	0.00278	0.00284	0.00279
	(A1 * !A3 * B1 * C1 * !Y)	-0.00206	-0.00211	-0.00208
	(A1 * !A3 * B1 * !C1 * Y)	0.00274	0.00276	0.00274
	(A1 * !A3 * B1 * !C1 * Y)	-0.00312	-0.00319	-0.00318
	(A1 * !A3 * !B1 * C1 * Y)	0.00274	0.00276	0.00274
	(A1 * !A3 * !B1 * C1 * Y)	-0.00312	-0.00319	-0.00318
	(A1 * !A3 * !B1 * !C1 * Y)	0.00273	0.00277	0.00274
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00311	-0.00319	-0.00318
	(!A1 * A3 * B1 * C1 * !Y)	0.00303	0.00281	0.00278
	(!A1 * A3 * B1 * C1 * !Y)	-0.00294	-0.00320	-0.00320
	(!A1 * A3 * B1 * !C1 * Y)	0.00276	0.00276	0.00274
	(!A1 * A3 * B1 * !C1 * Y)	-0.00319	-0.00324	-0.00323
	(!A1 * A3 * !B1 * Y)	0.00276	0.00276	0.00274
	(!A1 * A3 * !B1 * Y)	-0.00319	-0.00324	-0.00324
	(!A1 * !A3 * B1 * !C1 * Y)	0.00246	0.00246	0.00246
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00332	-0.00332	-0.00332
	(!A1 * !A3 * !B1 * C1 * Y)	0.00250	0.00252	0.00250
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00332	-0.00333	-0.00333
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00250	0.00252	0.00250
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00332	-0.00333	-0.00333

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A1 * A3 * B1 * C1 * !Y)**	-0.00071	-0.00071	-0.00071
	(A1 * A3 * B1 * C1 * !Y)	0.00058	0.00058	0.00058
	(A1 * A3 * B1 * !C1 * Y)	-0.00067	-0.00068	-0.00067
	(A1 * A3 * B1 * !C1 * Y)	0.00065	0.00065	0.00065
	(A1 * A3 * !B1 * Y)	-0.00067	-0.00068	-0.00067
	(A1 * A3 * !B1 * Y)	0.00064	0.00065	0.00065
	(A1 * !A3 * B1 * C1 * !Y)	-0.00070	-0.00071	-0.00070
	(A1 * !A3 * B1 * C1 * !Y)	0.00053	0.00054	0.00054
	(A1 * !A3 * B1 * !C1 * Y)	-0.00068	-0.00068	-0.00067
	(A1 * !A3 * B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(A1 * !A3 * !B1 * C1 * Y)	-0.00068	-0.00068	-0.00067
	(A1 * !A3 * !B1 * C1 * Y)	0.00082	0.00082	0.00082
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00068	-0.00068	-0.00067
	(A1 * !A3 * !B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(!A1 * A3 * B1 * C1 * !Y)	-0.00071	-0.00070	-0.00070
	(!A1 * A3 * B1 * C1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * A3 * B1 * !C1 * Y)	-0.00067	-0.00068	-0.00067
	(!A1 * A3 * B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(!A1 * A3 * !B1 * Y)	-0.00068	-0.00068	-0.00067
	(!A1 * A3 * !B1 * Y)	0.00082	0.00082	0.00082
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00057	-0.00062	-0.00061
	(!A1 * !A3 * B1 * !C1 * Y)	0.00084	0.00085	0.00084
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00060	-0.00063	-0.00062
	(!A1 * !A3 * !B1 * C1 * Y)	0.00085	0.00085	0.00085
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00060	-0.00063	-0.00062
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00085	0.00085	0.00085

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00142	-0.00143	-0.00142
	(A1 * A3 * B1 * C1 * !Y)	0.00120	0.00121	0.00120
	(A1 * A3 * B1 * !C1 * Y)	-0.00139	-0.00141	-0.00140
	(A1 * A3 * B1 * !C1 * Y)	0.00129	0.00130	0.00129
	(A1 * A3 * !B1 * Y)	-0.00140	-0.00141	-0.00140
	(A1 * A3 * !B1 * Y)	0.00129	0.00130	0.00129
	(A1 * !A3 * B1 * C1 * !Y)	-0.00138	-0.00138	-0.00137
	(A1 * !A3 * B1 * C1 * !Y)	0.00112	0.00113	0.00112
	(A1 * !A3 * B1 * !C1 * Y)	-0.00140	-0.00140	-0.00140
	(A1 * !A3 * B1 * !C1 * Y)	0.00163	0.00163	0.00162
	(A1 * !A3 * !B1 * C1 * Y)	-0.00140	-0.00140	-0.00140
	(A1 * !A3 * !B1 * C1 * Y)	0.00163	0.00163	0.00162
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00140	-0.00140	-0.00140
	(A1 * !A3 * !B1 * !C1 * Y)	0.00163	0.00163	0.00162
	(!A1 * A3 * B1 * C1 * !Y)	-0.00141	-0.00141	-0.00140
	(!A1 * A3 * B1 * C1 * !Y)	0.00165	0.00165	0.00165
	(!A1 * A3 * B1 * !C1 * Y)	-0.00140	-0.00140	-0.00140
	(!A1 * A3 * B1 * !C1 * Y)	0.00165	0.00166	0.00165
	(!A1 * A3 * !B1 * Y)	-0.00140	-0.00140	-0.00140
	(!A1 * A3 * !B1 * Y)	0.00166	0.00166	0.00165
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00117	-0.00127	-0.00126
	(!A1 * !A3 * B1 * !C1 * Y)	0.00169	0.00171	0.00169
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00121	-0.00129	-0.00128
	(!A1 * !A3 * !B1 * C1 * Y)	0.00170	0.00169	0.00169
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00121	-0.00129	-0.00128
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00170	0.00169	0.00169

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00279	-0.00281	-0.00279
	(A1 * A3 * B1 * C1 * !Y)	0.00231	0.00233	0.00230
	(A1 * A3 * B1 * !C1 * Y)	-0.00273	-0.00276	-0.00274
	(A1 * A3 * B1 * !C1 * Y)	0.00251	0.00254	0.00252
	(A1 * A3 * !B1 * Y)	-0.00273	-0.00276	-0.00274
	(A1 * A3 * !B1 * Y)	0.00251	0.00254	0.00252
	(A1 * !A3 * B1 * C1 * !Y)	-0.00276	-0.00277	-0.00275
	(A1 * !A3 * B1 * C1 * !Y)	0.00212	0.00213	0.00214
	(A1 * !A3 * B1 * !C1 * Y)	-0.00274	-0.00275	-0.00274
	(A1 * !A3 * B1 * !C1 * Y)	0.00318	0.00319	0.00318
	(A1 * !A3 * !B1 * C1 * Y)	-0.00274	-0.00275	-0.00274
	(A1 * !A3 * !B1 * C1 * Y)	0.00319	0.00319	0.00318
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00273	-0.00275	-0.00274
	(A1 * !A3 * !B1 * !C1 * Y)	0.00320	0.00319	0.00318
	(!A1 * A3 * B1 * C1 * !Y)	-0.00278	-0.00278	-0.00277
	(!A1 * A3 * B1 * C1 * !Y)	0.00320	0.00320	0.00320
	(!A1 * A3 * B1 * !C1 * Y)	-0.00274	-0.00274	-0.00273
	(!A1 * A3 * B1 * !C1 * Y)	0.00324	0.00324	0.00323
	(!A1 * A3 * !B1 * Y)	-0.00274	-0.00274	-0.00273
	(!A1 * A3 * !B1 * Y)	0.00325	0.00324	0.00324
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00231	-0.00246	-0.00246
	(!A1 * !A3 * B1 * !C1 * Y)	0.00333	0.00336	0.00333
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00239	-0.00252	-0.00250
	(!A1 * !A3 * !B1 * C1 * Y)	0.00334	0.00333	0.00333
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00239	-0.00252	-0.00250
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00334	0.00333	0.00333

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A2 * B1 * C1 * !Y)**	0.00077	0.00077	0.00076
	(A2 * B1 * C1 * !Y)	-0.00046	-0.00046	-0.00045
	(A2 * B1 * !C1 * Y)	0.00070	0.00069	0.00069
	(A2 * B1 * !C1 * Y)	-0.00077	-0.00078	-0.00078
	(A2 * !B1 * C1 * Y)	0.00070	0.00069	0.00069
	(A2 * !B1 * C1 * Y)	-0.00077	-0.00078	-0.00078
	(A2 * !B1 * !C1 * Y)	0.00070	0.00069	0.00069
	(A2 * !B1 * !C1 * Y)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * B1 * C1 * !Y)	0.00077	0.00077	0.00076
	(A1 * !A2 * B1 * C1 * !Y)	-0.00046	-0.00046	-0.00045
	(A1 * !A2 * B1 * !C1 * Y)	0.00069	0.00070	0.00069
	(A1 * !A2 * B1 * !C1 * Y)	-0.00071	-0.00074	-0.00073
	(A1 * !A2 * !B1 * C1 * Y)	0.00069	0.00070	0.00069
	(A1 * !A2 * !B1 * C1 * Y)	-0.00071	-0.00074	-0.00073
	(A1 * !A2 * !B1 * !C1 * Y)	0.00069	0.00070	0.00069
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00071	-0.00075	-0.00074
	(!A1 * !A2 * B1 * !C1 * Y)	0.00062	0.00062	0.00062
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * !B1 * C1 * Y)	0.00063	0.00064	0.00063
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00064	0.00064	0.00064
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00080	-0.00080	-0.00080

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00157	0.00160	0.00157
	(A2 * B1 * C1 * !Y)	-0.00093	-0.00094	-0.00093
	(A2 * B1 * !C1 * Y)	0.00137	0.00139	0.00138
	(A2 * B1 * !C1 * Y)	-0.00159	-0.00163	-0.00163
	(A2 * !B1 * C1 * Y)	0.00138	0.00139	0.00138
	(A2 * !B1 * C1 * Y)	-0.00159	-0.00163	-0.00163
	(A2 * !B1 * !C1 * Y)	0.00138	0.00139	0.00138
	(A2 * !B1 * !C1 * Y)	-0.00160	-0.00164	-0.00163
	(A1 * !A2 * B1 * C1 * !Y)	0.00157	0.00160	0.00157
	(A1 * !A2 * B1 * C1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * !A2 * B1 * !C1 * Y)	0.00139	0.00138	0.00138
	(A1 * !A2 * B1 * !C1 * Y)	-0.00150	-0.00155	-0.00154
	(A1 * !A2 * !B1 * C1 * Y)	0.00139	0.00138	0.00138
	(A1 * !A2 * !B1 * C1 * Y)	-0.00150	-0.00155	-0.00154
	(A1 * !A2 * !B1 * !C1 * Y)	0.00139	0.00140	0.00138
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00151	-0.00156	-0.00155
	(!A1 * !A2 * B1 * !C1 * Y)	0.00124	0.00125	0.00124
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * !B1 * C1 * Y)	0.00127	0.00127	0.00126
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00168	-0.00168	-0.00167
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00127	0.00127	0.00126
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00168	-0.00168	-0.00167

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00319	0.00325	0.00320
	(A2 * B1 * C1 * !Y)	-0.00184	-0.00188	-0.00185
	(A2 * B1 * !C1 * Y)	0.00267	0.00266	0.00264
	(A2 * B1 * !C1 * Y)	-0.00336	-0.00340	-0.00341
	(A2 * !B1 * C1 * Y)	0.00267	0.00266	0.00264
	(A2 * !B1 * C1 * Y)	-0.00336	-0.00345	-0.00341
	(A2 * !B1 * !C1 * Y)	0.00267	0.00266	0.00264
	(A2 * !B1 * !C1 * Y)	-0.00337	-0.00344	-0.00342
	(A1 * !A2 * B1 * C1 * !Y)	0.00324	0.00320	0.00320
	(A1 * !A2 * B1 * C1 * !Y)	-0.00188	-0.00184	-0.00184
	(A1 * !A2 * B1 * !C1 * Y)	0.00264	0.00264	0.00264
	(A1 * !A2 * B1 * !C1 * Y)	-0.00310	-0.00318	-0.00318
	(A1 * !A2 * !B1 * C1 * Y)	0.00264	0.00264	0.00264
	(A1 * !A2 * !B1 * C1 * Y)	-0.00311	-0.00318	-0.00318
	(A1 * !A2 * !B1 * !C1 * Y)	0.00264	0.00265	0.00264
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00311	-0.00327	-0.00321
	(!A1 * !A2 * B1 * !C1 * Y)	0.00239	0.00239	0.00239
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00351	-0.00351	-0.00351
	(!A1 * !A2 * !B1 * C1 * Y)	0.00243	0.00245	0.00243
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00351	-0.00353	-0.00351
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00243	0.00244	0.00243
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00351	-0.00352	-0.00351

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A2 * B1 * C1 * !Y)**	-0.00071	-0.00072	-0.00076
	(A2 * B1 * C1 * !Y)	0.00049	0.00050	0.00047
	(A2 * B1 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(A2 * B1 * !C1 * Y)	0.00078	0.00078	0.00078
	(A2 * !B1 * C1 * Y)	-0.00069	-0.00069	-0.00069
	(A2 * !B1 * C1 * Y)	0.00078	0.00078	0.00078
	(A2 * !B1 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(A2 * !B1 * !C1 * Y)	0.00078	0.00078	0.00078
	(A1 * !A2 * B1 * C1 * !Y)	-0.00065	-0.00066	-0.00074
	(A1 * !A2 * B1 * C1 * !Y)	0.00053	0.00053	0.00047
	(A1 * !A2 * B1 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * B1 * !C1 * Y)	0.00073	0.00074	0.00073
	(A1 * !A2 * !B1 * C1 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * !B1 * C1 * Y)	0.00074	0.00074	0.00073
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * !B1 * !C1 * Y)	0.00074	0.00075	0.00074
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00059	-0.00062	-0.00062
	(!A1 * !A2 * B1 * !C1 * Y)	0.00080	0.00081	0.00080
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00061	-0.00064	-0.00063
	(!A1 * !A2 * !B1 * C1 * Y)	0.00080	0.00081	0.00080
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00061	-0.00064	-0.00064
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00080	0.00081	0.00080

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00147	-0.00148	-0.00156
	(A2 * B1 * C1 * !Y)	0.00103	0.00103	0.00096
	(A2 * B1 * !C1 * Y)	-0.00137	-0.00138	-0.00138
	(A2 * B1 * !C1 * Y)	0.00163	0.00163	0.00163
	(A2 * !B1 * C1 * Y)	-0.00138	-0.00138	-0.00138
	(A2 * !B1 * C1 * Y)	0.00163	0.00163	0.00163
	(A2 * !B1 * !C1 * Y)	-0.00138	-0.00138	-0.00138
	(A2 * !B1 * !C1 * Y)	0.00164	0.00164	0.00163
	(A1 * !A2 * B1 * C1 * !Y)	-0.00130	-0.00131	-0.00152
	(A1 * !A2 * B1 * C1 * !Y)	0.00113	0.00112	0.00098
	(A1 * !A2 * B1 * !C1 * Y)	-0.00137	-0.00138	-0.00138
	(A1 * !A2 * B1 * !C1 * Y)	0.00153	0.00155	0.00154
	(A1 * !A2 * !B1 * C1 * Y)	-0.00138	-0.00138	-0.00138
	(A1 * !A2 * !B1 * C1 * Y)	0.00153	0.00155	0.00154
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00137	-0.00139	-0.00138
	(A1 * !A2 * !B1 * !C1 * Y)	0.00154	0.00156	0.00155
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00116	-0.00125	-0.00124
	(!A1 * !A2 * B1 * !C1 * Y)	0.00167	0.00168	0.00168
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00120	-0.00127	-0.00126
	(!A1 * !A2 * !B1 * C1 * Y)	0.00168	0.00168	0.00168
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00121	-0.00127	-0.00126
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00168	0.00168	0.00168

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00296	-0.00296	-0.00317
	(A2 * B1 * C1 * !Y)	0.00207	0.00206	0.00191
	(A2 * B1 * !C1 * Y)	-0.00264	-0.00263	-0.00264
	(A2 * B1 * !C1 * Y)	0.00342	0.00340	0.00341
	(A2 * !B1 * C1 * Y)	-0.00264	-0.00266	-0.00264
	(A2 * !B1 * C1 * Y)	0.00342	0.00345	0.00341
	(A2 * !B1 * !C1 * Y)	-0.00265	-0.00265	-0.00264
	(A2 * !B1 * !C1 * Y)	0.00343	0.00344	0.00342
	(A1 * !A2 * B1 * C1 * !Y)	-0.00269	-0.00271	-0.00310
	(A1 * !A2 * B1 * C1 * !Y)	0.00223	0.00221	0.00193
	(A1 * !A2 * B1 * !C1 * Y)	-0.00264	-0.00264	-0.00264
	(A1 * !A2 * B1 * !C1 * Y)	0.00319	0.00318	0.00318
	(A1 * !A2 * !B1 * C1 * Y)	-0.00264	-0.00264	-0.00264
	(A1 * !A2 * !B1 * C1 * Y)	0.00317	0.00318	0.00318
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00264	-0.00265	-0.00264
	(A1 * !A2 * !B1 * !C1 * Y)	0.00321	0.00327	0.00321
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00225	-0.00239	-0.00239
	(!A1 * !A2 * B1 * !C1 * Y)	0.00352	0.00352	0.00352
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00232	-0.00245	-0.00243
	(!A1 * !A2 * !B1 * C1 * Y)	0.00353	0.00353	0.00352
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00232	-0.00244	-0.00243
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00352	0.00352	0.00352

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00063	0.00064	0.00063
	(A3 * !C1 * Y)	-0.00086	-0.00086	-0.00086
	(A2 * !A3 * !C1 * Y)	0.00063	0.00064	0.00063
	(A2 * !A3 * !C1 * Y)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * !A3 * !C1 * Y)	0.00063	0.00064	0.00063
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * !A3 * C1 * Y)	0.00033	0.00033	0.00033
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00086	-0.00086	-0.00085
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00039	0.00039	0.00039
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00087	-0.00087	-0.00086
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00133	0.00133	0.00132
	(A3 * !C1 * Y)	-0.00169	-0.00169	-0.00168
	(A2 * !A3 * !C1 * Y)	0.00132	0.00133	0.00132
	(A2 * !A3 * !C1 * Y)	-0.00169	-0.00169	-0.00168
	(A1 * !A2 * !A3 * !C1 * Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(!A1 * !A2 * !A3 * C1 * Y)	0.00069	0.00069	0.00070
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00169	-0.00169	-0.00167
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00083	0.00082	0.00082
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00171	-0.00170	-0.00170
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00245	0.00247	0.00245
	(A3 * !C1 * Y)	-0.00195	-0.00196	-0.00195
	(A2 * !A3 * !C1 * Y)	0.00245	0.00246	0.00245
	(A2 * !A3 * !C1 * Y)	-0.00195	-0.00195	-0.00195
	(A1 * !A2 * !A3 * !C1 * Y)	0.00244	0.00247	0.00245
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00195	-0.00196	-0.00195
	(!A1 * !A2 * !A3 * C1 * Y)	0.00125	0.00125	0.00126
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00197	-0.00197	-0.00194
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00150	0.00149	0.00149
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00201	-0.00201	-0.00200

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00060	-0.00064	-0.00063
	(A3 * !C1 * Y)	0.00087	0.00086	0.00086
	(A2 * !A3 * !C1 * Y)	-0.00060	-0.00064	-0.00063
	(A2 * !A3 * !C1 * Y)	0.00088	0.00087	0.00086
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00060	-0.00064	-0.00063
	(A1 * !A2 * !A3 * !C1 * Y)	0.00088	0.00087	0.00086
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00030	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * C1 * Y)	0.00088	0.00090	0.00087
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00090	0.00090	0.00087
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00127	-0.00133	-0.00132
	(A3 * !C1 * Y)	0.00171	0.00170	0.00169
	(A2 * !A3 * !C1 * Y)	-0.00126	-0.00133	-0.00132
	(A2 * !A3 * !C1 * Y)	0.00171	0.00170	0.00169
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00125	-0.00133	-0.00132
	(A1 * !A2 * !A3 * !C1 * Y)	0.00171	0.00170	0.00169
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00064	-0.00065	-0.00066
	(!A1 * !A2 * !A3 * C1 * Y)	0.00174	0.00176	0.00171
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00083	-0.00082	-0.00082
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00174	0.00175	0.00170

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00232	-0.00247	-0.00245
	(A3 * !C1 * Y)	0.00201	0.00197	0.00195
	(A2 * !A3 * !C1 * Y)	-0.00231	-0.00246	-0.00245
	(A2 * !A3 * !C1 * Y)	0.00202	0.00197	0.00195
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00228	-0.00247	-0.00245
	(A1 * !A2 * !A3 * !C1 * Y)	0.00204	0.00197	0.00195
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00115	-0.00117	-0.00118
	(!A1 * !A2 * !A3 * C1 * Y)	0.00207	0.00209	0.00200
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00150	-0.00149	-0.00149
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00209	0.00208	0.00200

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00029	0.00029	0.00028
	(A3 * !B1 * Y)	-0.00101	-0.00101	-0.00103
	(A2 * !A3 * !B1 * Y)	0.00029	0.00029	0.00028
	(A2 * !A3 * !B1 * Y)	-0.00101	-0.00101	-0.00103
	(!A2 * !A3 * !B1 * Y)	0.00029	0.00029	0.00028
	(!A2 * !A3 * !B1 * Y)	-0.00101	-0.00101	-0.00103
	(!A1 * !A2 * !A3 * B1 * Y)	0.00033	0.00032	0.00028
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00094	-0.00094	-0.00102
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00058	0.00057	0.00054
	(A3 * !B1 * Y)	-0.00198	-0.00198	-0.00203
	(A2 * !A3 * !B1 * Y)	0.00057	0.00057	0.00054
	(A2 * !A3 * !B1 * Y)	-0.00196	-0.00198	-0.00203
	(!A2 * !A3 * !B1 * Y)	0.00058	0.00057	0.00054
	(!A2 * !A3 * !B1 * Y)	-0.00198	-0.00198	-0.00203
	(!A1 * !A2 * !A3 * B1 * Y)	0.00062	0.00063	0.00053
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00181	-0.00183	-0.00200
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00107	0.00107	0.00101
	(A3 * !B1 * Y)	-0.00218	-0.00220	-0.00230
	(A2 * !A3 * !B1 * Y)	0.00107	0.00107	0.00101
	(A2 * !A3 * !B1 * Y)	-0.00219	-0.00219	-0.00230
	(!A2 * !A3 * !B1 * Y)	0.00107	0.00107	0.00101
	(!A2 * !A3 * !B1 * Y)	-0.00219	-0.00220	-0.00230
	(!A1 * !A2 * !A3 * B1 * Y)	0.00117	0.00117	0.00100
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00190	-0.00191	-0.00224

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00027	-0.00027	-0.00027
	(A3 * !B1 * Y)	0.00103	0.00104	0.00103
	(A2 * !A3 * !B1 * Y)	-0.00027	-0.00027	-0.00027
	(A2 * !A3 * !B1 * Y)	0.00103	0.00104	0.00103
	(!A2 * !A3 * !B1 * Y)	-0.00027	-0.00028	-0.00027
	(!A2 * !A3 * !B1 * Y)	0.00103	0.00105	0.00103
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00027	-0.00027	-0.00027
	(!A1 * !A2 * !A3 * B1 * Y)	0.00104	0.00103	0.00103
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00052	-0.00052	-0.00052
	(A3 * !B1 * Y)	0.00203	0.00204	0.00203
	(A2 * !A3 * !B1 * Y)	-0.00052	-0.00052	-0.00052
	(A2 * !A3 * !B1 * Y)	0.00203	0.00204	0.00203
	(!A2 * !A3 * !B1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !A3 * !B1 * Y)	0.00203	0.00206	0.00203
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00051	-0.00051	-0.00050
	(!A1 * !A2 * !A3 * B1 * Y)	0.00203	0.00203	0.00203
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00097	-0.00097	-0.00097
	(A3 * !B1 * Y)	0.00230	0.00231	0.00230
	(A2 * !A3 * !B1 * Y)	-0.00098	-0.00098	-0.00097
	(A2 * !A3 * !B1 * Y)	0.00231	0.00234	0.00230
	(!A2 * !A3 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(!A2 * !A3 * !B1 * Y)	0.00230	0.00233	0.00230
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00095	-0.00096	-0.00094
	(!A1 * !A2 * !A3 * B1 * Y)	0.00231	0.00233	0.00230

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	C1	X
0	0	0	x	x	0
0	x	1	0	x	0
0	x	1	1	0	0
0	x	1	1	1	1
x	1	x	0	x	0
x	1	x	1	0	0
x	1	x	1	1	1
1	x	x	0	x	0
1	x	x	1	0	0
1	x	x	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311a_1	14.38560
sky130_fd_sc_hs__o311a_2	14.38560
sky130_fd_sc_hs__o311a_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__o311a_1	0.00237	0.00284	0.00244	0.00239	0.00246	0.43764
sky130_fd_sc_hs__o311a_2	0.00262	0.00262	0.00262	0.00261	0.00259	0.88060
sky130_fd_sc_hs__o311a_4	0.00431	0.00475	0.00439	0.00540	0.00464	1.69821

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.02366	0.07921
sky130_fd_sc_hs__o311a_2	0.00000	0.03152	0.06732
sky130_fd_sc_hs__o311a_4	0.00000	0.06547	0.16393

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (RR)	0.26508	1.25296	8.96198
	A2->X (RR)	0.26003	1.24552	8.90181
	A3->X (RR)	0.24119	1.21277	8.76422
	B1->X (RR)	0.24808	1.25280	8.86749
	C1->X (RR)	0.23641	1.23163	8.61945
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.26883	1.12398	9.11344
	A2->X (RR)	0.25822	1.10703	9.03622
	A3->X (RR)	0.23227	1.07692	8.94040
	B1->X (RR)	0.25772	1.14509	9.11756
	C1->X (RR)	0.24349	1.13084	8.90507
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.28503	1.04253	9.08048
	A2->X (RR)	0.27039	1.02169	9.00550
	A3->X (RR)	0.25136	0.99708	8.89482
	B1->X (RR)	0.27540	1.06530	9.07945
	C1->X (RR)	0.25379	1.03457	8.80485

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.91272	1.71946	7.05883
	A2->X (FF)	0.88673	1.67554	7.09353
	A3->X (FF)	0.74875	1.47907	6.36723
	B1->X (FF)	0.20831	0.97719	5.77129
	C1->X (FF)	0.19138	0.94862	5.66820
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.96798	1.77861	7.39635
	A2->X (FF)	0.92331	1.72642	7.46728
	A3->X (FF)	0.84415	1.58264	6.92960
	B1->X (FF)	0.25854	1.01580	6.15078
	C1->X (FF)	0.23597	0.98699	6.04464
sky130_fd_sc_hs__o311a_4	A1->X (FF)	1.06355	1.84200	7.45779
	A2->X (FF)	1.02990	1.78883	7.50562
	A3->X (FF)	0.89521	1.58558	6.81530
	B1->X (FF)	0.23772	0.95180	6.04868
	C1->X (FF)	0.21296	0.92198	5.93288

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.00679	0.00676	0.00669
	A1	0.00313	0.00309	0.00304
	A2	0.00619	0.00618	0.00611
	A2	0.00276	0.00274	0.00269
	A3	0.00513	0.00513	0.00511
	A3	0.00212	0.00212	0.00210
	B1	0.00619	0.00615	0.00613
	B1	0.00315	0.00311	0.00312
	C1	0.00586	0.00579	0.00585
	C1	0.00314	0.00307	0.00314
sky130_fd_sc_hs__o311a_2	A1	0.00794	0.00798	0.00792
	A1	0.00400	0.00403	0.00402
	A2	0.00714	0.00729	0.00729
	A2	0.00356	0.00371	0.00373
	A3	0.00640	0.00654	0.00655
	A3	0.00318	0.00332	0.00336
	B1	0.00731	0.00736	0.00734
	B1	0.00409	0.00414	0.00417
	C1	0.00690	0.00692	0.00697
	C1	0.00408	0.00409	0.00419

sky130_fd_sc_hs__o311a_4	**A1**	0.01502	0.01532	0.01541
	A1	0.00819	0.00850	0.00861
	A2	0.01385	0.01417	0.01423
	A2	0.00743	0.00775	0.00790
	A3	0.01179	0.01210	0.01220
	A3	0.00612	0.00643	0.00660
	B1	0.01422	0.01442	0.01455
	B1	0.00818	0.00839	0.00861
	C1	0.01312	0.01328	0.01359
	C1	0.00819	0.00835	0.00875

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00231	0.00231	0.00232
	A1	0.00589	0.00589	0.00582
	A2	0.00233	0.00231	0.00228
	A2	0.00565	0.00564	0.00557
	A3	0.00232	0.00234	0.00252
	A3	0.00520	0.00521	0.00536
	B1	0.00169	0.00163	0.00211
	B1	0.00474	0.00468	0.00491
	C1	0.00147	0.00139	0.00176
	C1	0.00426	0.00416	0.00442

sky130_fd_sc_hs__o311a_2	**A1**	0.00327	0.00341	0.00400
	A1	0.00711	0.00725	0.00724
	A2	0.00328	0.00344	0.00370
	A2	0.00672	0.00689	0.00688
	A3	0.00326	0.00340	0.00414
	A3	0.00633	0.00646	0.00663
	B1	0.00294	0.00301	0.00369
	B1	0.00617	0.00624	0.00648
	C1	0.00269	0.00272	0.00365
	C1	0.00556	0.00560	0.00588
sky130_fd_sc_hs__o311a_4	**A1**	0.00677	0.00717	0.00817
	A1	0.01340	0.01380	0.01392
	A2	0.00666	0.00704	0.00723
	A2	0.01281	0.01321	0.01330
	A3	0.00677	0.00705	0.00878
	A3	0.01214	0.01242	0.01291
	B1	0.00572	0.00585	0.00706
	B1	0.01181	0.01190	0.01239
	C1	0.00523	0.00537	0.00696
	C1	0.01027	0.01043	0.01101

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A2 * B1 * !C1 * !X)**	0.00063	0.00063	0.00063
	(A2 * B1 * !C1 * !X)	-0.00080	-0.00081	-0.00081
	(A2 * A3 * B1 * C1 * X)	0.00073	0.00074	0.00073
	(A2 * A3 * B1 * C1 * X)	-0.00069	-0.00071	-0.00070
	(A2 * !B1 * !X)	0.00063	0.00063	0.00063
	(A2 * !B1 * !X)	-0.00080	-0.00081	-0.00081
	(A2 * !A3 * B1 * C1 * X)	0.00073	0.00074	0.00073
	(A2 * !A3 * B1 * C1 * X)	-0.00068	-0.00070	-0.00070
	(!A2 * A3 * B1 * C1 * X)	0.00074	0.00074	0.00073
	(!A2 * A3 * B1 * C1 * X)	-0.00065	-0.00069	-0.00068
	(!A2 * A3 * B1 * !C1 * !X)	0.00063	0.00063	0.00063
	(!A2 * A3 * B1 * !C1 * !X)	-0.00076	-0.00079	-0.00078
	(!A2 * A3 * !B1 * !X)	0.00063	0.00063	0.00063
	(!A2 * A3 * !B1 * !X)	-0.00076	-0.00079	-0.00078
	(!A2 * !A3 * B1 * !C1 * !X)	0.00058	0.00059	0.00058
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(!A2 * !A3 * !B1 * C1 * !X)	0.00060	0.00060	0.00060
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00082	-0.00083	-0.00082
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00060	0.00060	0.00060
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00082	-0.00083	-0.00082

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00066	0.00067	0.00066
	(A2 * B1 * !C1 * !X)	-0.00087	-0.00089	-0.00089
	(A2 * A3 * B1 * C1 * X)	0.00075	0.00076	0.00076
	(A2 * A3 * B1 * C1 * X)	-0.00078	-0.00080	-0.00080
	(A2 * !B1 * !X)	0.00066	0.00067	0.00066
	(A2 * !B1 * !X)	-0.00087	-0.00089	-0.00089
	(A2 * !A3 * B1 * C1 * X)	0.00075	0.00076	0.00076
	(A2 * !A3 * B1 * C1 * X)	-0.00078	-0.00080	-0.00080
	(!A2 * A3 * B1 * C1 * X)	0.00076	0.00076	0.00076
	(!A2 * A3 * B1 * C1 * X)	-0.00073	-0.00077	-0.00076
	(!A2 * A3 * B1 * !C1 * !X)	0.00066	0.00067	0.00066
	(!A2 * A3 * B1 * !C1 * !X)	-0.00082	-0.00086	-0.00085
	(!A2 * A3 * !B1 * !X)	0.00066	0.00067	0.00066
	(!A2 * A3 * !B1 * !X)	-0.00082	-0.00086	-0.00085
	(!A2 * !A3 * B1 * !C1 * !X)	0.00060	0.00061	0.00060
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00091	-0.00091	-0.00091
	(!A2 * !A3 * !B1 * C1 * !X)	0.00061	0.00062	0.00061
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00091	-0.00091	-0.00091
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00061	0.00062	0.00061
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00091	-0.00091	-0.00091

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00114	0.00115	0.00114
	(A2 * B1 * !C1 * !X)	-0.00145	-0.00148	-0.00148
	(A2 * A3 * B1 * C1 * X)	0.00114	0.00115	0.00114
	(A2 * A3 * B1 * C1 * X)	-0.00145	-0.00148	-0.00148
	(A2 * !B1 * !X)	0.00114	0.00115	0.00114
	(A2 * !B1 * !X)	-0.00145	-0.00148	-0.00148
	(A2 * !A3 * B1 * C1 * X)	0.00114	0.00115	0.00114
	(A2 * !A3 * B1 * C1 * X)	-0.00144	-0.00148	-0.00148
	(!A2 * A3 * B1 * C1 * X)	0.00115	0.00115	0.00114
	(!A2 * A3 * B1 * C1 * X)	-0.00136	-0.00143	-0.00142
	(!A2 * A3 * B1 * !C1 * !X)	0.00114	0.00115	0.00114
	(!A2 * A3 * B1 * !C1 * !X)	-0.00137	-0.00143	-0.00141
	(!A2 * A3 * !B1 * !X)	0.00114	0.00115	0.00114
	(!A2 * A3 * !B1 * !X)	-0.00137	-0.00143	-0.00141
	(!A2 * !A3 * B1 * !C1 * !X)	0.00104	0.00105	0.00104
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(!A2 * !A3 * !B1 * C1 * !X)	0.00106	0.00106	0.00106
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00152	-0.00152	-0.00151
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00106	0.00106	0.00106
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00152	-0.00152	-0.00152

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A2 * B1 * !C1 * !X)**	-0.00063	-0.00063	-0.00063
	(A2 * B1 * !C1 * !X)	0.00082	0.00081	0.00081
	(A2 * A3 * B1 * C1 * X)	-0.00073	-0.00073	-0.00073
	(A2 * A3 * B1 * C1 * X)	0.00071	0.00071	0.00070
	(A2 * !B1 * !X)	-0.00063	-0.00063	-0.00063
	(A2 * !B1 * !X)	0.00082	0.00081	0.00081
	(A2 * !A3 * B1 * C1 * X)	-0.00073	-0.00073	-0.00073
	(A2 * !A3 * B1 * C1 * X)	0.00071	0.00070	0.00070
	(!A2 * A3 * B1 * C1 * X)	-0.00073	-0.00074	-0.00073
	(!A2 * A3 * B1 * C1 * X)	0.00068	0.00069	0.00068
	(!A2 * A3 * B1 * !C1 * !X)	-0.00063	-0.00063	-0.00063
	(!A2 * A3 * B1 * !C1 * !X)	0.00079	0.00079	0.00078
	(!A2 * A3 * !B1 * !X)	-0.00063	-0.00063	-0.00063
	(!A2 * A3 * !B1 * !X)	0.00079	0.00079	0.00078
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00056	-0.00059	-0.00058
	(!A2 * !A3 * B1 * !C1 * !X)	0.00083	0.00083	0.00083
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00058	-0.00060	-0.00060
	(!A2 * !A3 * !B1 * C1 * !X)	0.00082	0.00084	0.00083
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00058	-0.00060	-0.00060
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00082	0.00084	0.00083

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00066	-0.00066	-0.00066
	(A2 * B1 * !C1 * !X)	0.00089	0.00089	0.00089
	(A2 * A3 * B1 * C1 * X)	-0.00075	-0.00075	-0.00075
	(A2 * A3 * B1 * C1 * X)	0.00080	0.00080	0.00080
	(A2 * !B1 * !X)	-0.00066	-0.00066	-0.00066
	(A2 * !B1 * !X)	0.00089	0.00089	0.00089
	(A2 * !A3 * B1 * C1 * X)	-0.00075	-0.00075	-0.00075
	(A2 * !A3 * B1 * C1 * X)	0.00080	0.00080	0.00080
	(!A2 * A3 * B1 * C1 * X)	-0.00075	-0.00076	-0.00075
	(!A2 * A3 * B1 * C1 * X)	0.00076	0.00077	0.00076
	(!A2 * A3 * B1 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(!A2 * A3 * B1 * !C1 * !X)	0.00086	0.00086	0.00085
	(!A2 * A3 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(!A2 * A3 * !B1 * !X)	0.00086	0.00086	0.00085
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00057	-0.00061	-0.00060
	(!A2 * !A3 * B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00059	-0.00062	-0.00061
	(!A2 * !A3 * !B1 * C1 * !X)	0.00092	0.00092	0.00091
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00059	-0.00062	-0.00061
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00092	0.00092	0.00091

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00113	-0.00113	-0.00113
	(A2 * B1 * !C1 * !X)	0.00148	0.00148	0.00148
	(A2 * A3 * B1 * C1 * X)	-0.00113	-0.00113	-0.00113
	(A2 * A3 * B1 * C1 * X)	0.00148	0.00148	0.00148
	(A2 * !B1 * !X)	-0.00114	-0.00113	-0.00113
	(A2 * !B1 * !X)	0.00149	0.00148	0.00148
	(A2 * !A3 * B1 * C1 * X)	-0.00114	-0.00113	-0.00113
	(A2 * !A3 * B1 * C1 * X)	0.00149	0.00148	0.00148
	(!A2 * A3 * B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(!A2 * A3 * B1 * C1 * X)	0.00142	0.00143	0.00142
	(!A2 * A3 * B1 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(!A2 * A3 * B1 * !C1 * !X)	0.00142	0.00143	0.00141
	(!A2 * A3 * !B1 * !X)	-0.00113	-0.00114	-0.00113
	(!A2 * A3 * !B1 * !X)	0.00142	0.00143	0.00141
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00098	-0.00105	-0.00104
	(!A2 * !A3 * B1 * !C1 * !X)	0.00151	0.00154	0.00152
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00101	-0.00106	-0.00106
	(!A2 * !A3 * !B1 * C1 * !X)	0.00152	0.00154	0.00152
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00101	-0.00106	-0.00106
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00152	0.00154	0.00152

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A1 * A3 * B1 * C1 * X)**	0.00076	0.00078	0.00076
	(A1 * A3 * B1 * C1 * X)	-0.00056	-0.00056	-0.00055
	(A1 * A3 * B1 * !C1 * !X)	0.00063	0.00064	0.00063
	(A1 * A3 * B1 * !C1 * !X)	-0.00072	-0.00073	-0.00072
	(A1 * A3 * !B1 * !X)	0.00063	0.00064	0.00063
	(A1 * A3 * !B1 * !X)	-0.00072	-0.00073	-0.00072
	(A1 * !A3 * B1 * C1 * X)	0.00076	0.00077	0.00076
	(A1 * !A3 * B1 * C1 * X)	-0.00050	-0.00050	-0.00049
	(A1 * !A3 * B1 * !C1 * !X)	0.00063	0.00063	0.00063
	(A1 * !A3 * B1 * !C1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A3 * !B1 * C1 * !X)	0.00063	0.00063	0.00063
	(A1 * !A3 * !B1 * C1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A3 * !B1 * !C1 * !X)	0.00063	0.00063	0.00063
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * A3 * B1 * C1 * X)	0.00081	0.00076	0.00076
	(!A1 * A3 * B1 * C1 * X)	-0.00068	-0.00074	-0.00074
	(!A1 * A3 * B1 * !C1 * !X)	0.00063	0.00063	0.00063
	(!A1 * A3 * B1 * !C1 * !X)	-0.00085	-0.00086	-0.00086
	(!A1 * A3 * !B1 * !X)	0.00063	0.00063	0.00063
	(!A1 * A3 * !B1 * !X)	-0.00085	-0.00086	-0.00086
	(!A1 * !A3 * B1 * !C1 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A3 * !B1 * C1 * !X)	0.00059	0.00060	0.00059
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00059	0.00060	0.00059
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00088	-0.00088	-0.00088

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00071	0.00071	0.00070
	(A1 * A3 * B1 * C1 * X)	-0.00061	-0.00061	-0.00060
	(A1 * A3 * B1 * !C1 * !X)	0.00067	0.00068	0.00067
	(A1 * A3 * B1 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * A3 * !B1 * !X)	0.00066	0.00068	0.00067
	(A1 * A3 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * !A3 * B1 * C1 * X)	0.00070	0.00071	0.00069
	(A1 * !A3 * B1 * C1 * X)	-0.00055	-0.00055	-0.00054
	(A1 * !A3 * B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(A1 * !A3 * B1 * !C1 * !X)	-0.00083	-0.00084	-0.00084
	(A1 * !A3 * !B1 * C1 * !X)	0.00067	0.00067	0.00067
	(A1 * !A3 * !B1 * C1 * !X)	-0.00083	-0.00084	-0.00084
	(A1 * !A3 * !B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * A3 * B1 * C1 * X)	0.00077	0.00070	0.00069
	(!A1 * A3 * B1 * C1 * X)	-0.00074	-0.00082	-0.00082
	(!A1 * A3 * B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(!A1 * A3 * B1 * !C1 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * A3 * !B1 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * !A3 * B1 * !C1 * !X)	0.00060	0.00061	0.00060
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00087	-0.00087	-0.00086
	(!A1 * !A3 * !B1 * C1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00133	0.00134	0.00132
	(A1 * A3 * B1 * C1 * X)	-0.00112	-0.00113	-0.00112
	(A1 * A3 * B1 * !C1 * !X)	0.00132	0.00134	0.00131
	(A1 * A3 * B1 * !C1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * A3 * !B1 * !X)	0.00132	0.00134	0.00131
	(A1 * A3 * !B1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !A3 * B1 * C1 * X)	0.00131	0.00134	0.00131
	(A1 * !A3 * B1 * C1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * !A3 * B1 * !C1 * !X)	0.00133	0.00132	0.00131
	(A1 * !A3 * B1 * !C1 * !X)	-0.00145	-0.00147	-0.00147
	(A1 * !A3 * !B1 * C1 * !X)	0.00133	0.00132	0.00131
	(A1 * !A3 * !B1 * C1 * !X)	-0.00145	-0.00147	-0.00147
	(A1 * !A3 * !B1 * !C1 * !X)	0.00133	0.00132	0.00131
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00145	-0.00147	-0.00147
	(!A1 * A3 * B1 * C1 * X)	0.00141	0.00132	0.00131
	(!A1 * A3 * B1 * C1 * X)	-0.00136	-0.00147	-0.00148
	(!A1 * A3 * B1 * !C1 * !X)	0.00132	0.00132	0.00131
	(!A1 * A3 * B1 * !C1 * !X)	-0.00145	-0.00147	-0.00147
	(!A1 * A3 * !B1 * !X)	0.00132	0.00132	0.00131
	(!A1 * A3 * !B1 * !X)	-0.00145	-0.00147	-0.00147
	(!A1 * !A3 * B1 * !C1 * !X)	0.00120	0.00120	0.00119
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00151	-0.00151	-0.00150
	(!A1 * !A3 * !B1 * C1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00150	-0.00151	-0.00150
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A1 * A3 * B1 * C1 * X)**	-0.00076	-0.00076	-0.00076
	(A1 * A3 * B1 * C1 * X)	0.00056	0.00056	0.00055
	(A1 * A3 * B1 * !C1 * !X)	-0.00062	-0.00063	-0.00062
	(A1 * A3 * B1 * !C1 * !X)	0.00072	0.00073	0.00072
	(A1 * A3 * !B1 * !X)	-0.00062	-0.00063	-0.00062
	(A1 * A3 * !B1 * !X)	0.00072	0.00073	0.00072
	(A1 * !A3 * B1 * C1 * X)	-0.00075	-0.00076	-0.00075
	(A1 * !A3 * B1 * C1 * X)	0.00050	0.00051	0.00051
	(A1 * !A3 * B1 * !C1 * !X)	-0.00063	-0.00063	-0.00063
	(A1 * !A3 * B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A3 * !B1 * C1 * !X)	-0.00063	-0.00063	-0.00063
	(A1 * !A3 * !B1 * C1 * !X)	0.00087	0.00087	0.00086
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00063	-0.00063	-0.00063
	(A1 * !A3 * !B1 * !C1 * !X)	0.00087	0.00087	0.00086
	(!A1 * A3 * B1 * C1 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * A3 * B1 * C1 * X)	0.00074	0.00074	0.00074
	(!A1 * A3 * B1 * !C1 * !X)	-0.00063	-0.00063	-0.00062
	(!A1 * A3 * B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(!A1 * A3 * !B1 * !X)	-0.00063	-0.00063	-0.00062
	(!A1 * A3 * !B1 * !X)	0.00087	0.00086	0.00086
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00055	-0.00059	-0.00058
	(!A1 * !A3 * B1 * !C1 * !X)	0.00089	0.00089	0.00088
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00057	-0.00060	-0.00059
	(!A1 * !A3 * !B1 * C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00057	-0.00060	-0.00059
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00088	0.00089	0.00088

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00069	-0.00070	-0.00069
	(A1 * A3 * B1 * C1 * X)	0.00061	0.00061	0.00060
	(A1 * A3 * B1 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * A3 * B1 * !C1 * !X)	0.00066	0.00067	0.00066
	(A1 * A3 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * A3 * !B1 * !X)	0.00066	0.00067	0.00066
	(A1 * !A3 * B1 * C1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * !A3 * B1 * C1 * X)	0.00056	0.00057	0.00056
	(A1 * !A3 * B1 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * !A3 * B1 * !C1 * !X)	0.00084	0.00084	0.00084
	(A1 * !A3 * !B1 * C1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * !A3 * !B1 * C1 * !X)	0.00084	0.00084	0.00084
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * !A3 * !B1 * !C1 * !X)	0.00084	0.00084	0.00084
	(!A1 * A3 * B1 * C1 * X)	-0.00069	-0.00069	-0.00069
	(!A1 * A3 * B1 * C1 * X)	0.00082	0.00082	0.00082
	(!A1 * A3 * B1 * !C1 * !X)	-0.00067	-0.00066	-0.00066
	(!A1 * A3 * B1 * !C1 * !X)	0.00085	0.00084	0.00084
	(!A1 * A3 * !B1 * !X)	-0.00066	-0.00066	-0.00066
	(!A1 * A3 * !B1 * !X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00056	-0.00061	-0.00060
	(!A1 * !A3 * B1 * !C1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00059	-0.00062	-0.00061
	(!A1 * !A3 * !B1 * C1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00059	-0.00062	-0.00061
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00087	0.00088	0.00087

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00131	-0.00132	-0.00131
	(A1 * A3 * B1 * C1 * X)	0.00112	0.00113	0.00112
	(A1 * A3 * B1 * !C1 * !X)	-0.00131	-0.00132	-0.00131
	(A1 * A3 * B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(A1 * A3 * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(A1 * A3 * !B1 * !X)	0.00119	0.00120	0.00119
	(A1 * !A3 * B1 * C1 * X)	-0.00130	-0.00131	-0.00129
	(A1 * !A3 * B1 * C1 * X)	0.00102	0.00102	0.00102
	(A1 * !A3 * B1 * !C1 * !X)	-0.00131	-0.00131	-0.00131
	(A1 * !A3 * B1 * !C1 * !X)	0.00147	0.00147	0.00147
	(A1 * !A3 * !B1 * C1 * !X)	-0.00131	-0.00131	-0.00131
	(A1 * !A3 * !B1 * C1 * !X)	0.00147	0.00147	0.00147
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00131	-0.00131
	(A1 * !A3 * !B1 * !C1 * !X)	0.00147	0.00147	0.00147
	(!A1 * A3 * B1 * C1 * X)	-0.00131	-0.00131	-0.00130
	(!A1 * A3 * B1 * C1 * X)	0.00147	0.00147	0.00148
	(!A1 * A3 * B1 * !C1 * !X)	-0.00131	-0.00131	-0.00131
	(!A1 * A3 * B1 * !C1 * !X)	0.00147	0.00147	0.00147
	(!A1 * A3 * !B1 * !X)	-0.00131	-0.00131	-0.00131
	(!A1 * A3 * !B1 * !X)	0.00147	0.00147	0.00147
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00112	-0.00120	-0.00119
	(!A1 * !A3 * B1 * !C1 * !X)	0.00151	0.00152	0.00151
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00116	-0.00122	-0.00121
	(!A1 * !A3 * !B1 * C1 * !X)	0.00151	0.00152	0.00151
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00116	-0.00122	-0.00121
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00151	0.00152	0.00151

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A2 * B1 * C1 * X)**	0.00071	0.00071	0.00070
	(A2 * B1 * C1 * X)	-0.00046	-0.00046	-0.00045
	(A2 * B1 * !C1 * !X)	0.00063	0.00062	0.00062
	(A2 * B1 * !C1 * !X)	-0.00075	-0.00076	-0.00076
	(A2 * !B1 * C1 * !X)	0.00063	0.00062	0.00062
	(A2 * !B1 * C1 * !X)	-0.00075	-0.00076	-0.00076
	(A2 * !B1 * !C1 * !X)	0.00063	0.00062	0.00062
	(A2 * !B1 * !C1 * !X)	-0.00075	-0.00076	-0.00076
	(A1 * !A2 * B1 * C1 * X)	0.00071	0.00071	0.00070
	(A1 * !A2 * B1 * C1 * X)	-0.00046	-0.00046	-0.00045
	(A1 * !A2 * B1 * !C1 * !X)	0.00062	0.00063	0.00062
	(A1 * !A2 * B1 * !C1 * !X)	-0.00070	-0.00072	-0.00072
	(A1 * !A2 * !B1 * C1 * !X)	0.00062	0.00063	0.00062
	(A1 * !A2 * !B1 * C1 * !X)	-0.00070	-0.00073	-0.00072
	(A1 * !A2 * !B1 * !C1 * !X)	0.00062	0.00063	0.00062
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00070	-0.00073	-0.00072
	(!A1 * !A2 * B1 * !C1 * !X)	0.00057	0.00058	0.00058
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * !B1 * C1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00077	-0.00078	-0.00077

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00078	0.00078	0.00077
	(A2 * B1 * C1 * X)	-0.00046	-0.00046	-0.00046
	(A2 * B1 * !C1 * !X)	0.00066	0.00067	0.00067
	(A2 * B1 * !C1 * !X)	-0.00080	-0.00082	-0.00082
	(A2 * !B1 * C1 * !X)	0.00066	0.00067	0.00067
	(A2 * !B1 * C1 * !X)	-0.00080	-0.00082	-0.00082
	(A2 * !B1 * !C1 * !X)	0.00066	0.00067	0.00067
	(A2 * !B1 * !C1 * !X)	-0.00080	-0.00082	-0.00082
	(A1 * !A2 * B1 * C1 * X)	0.00078	0.00078	0.00077
	(A1 * !A2 * B1 * C1 * X)	-0.00046	-0.00046	-0.00045
	(A1 * !A2 * B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(A1 * !A2 * B1 * !C1 * !X)	-0.00075	-0.00078	-0.00077
	(A1 * !A2 * !B1 * C1 * !X)	0.00067	0.00067	0.00067
	(A1 * !A2 * !B1 * C1 * !X)	-0.00075	-0.00078	-0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00075	-0.00078	-0.00077
	(!A1 * !A2 * B1 * !C1 * !X)	0.00060	0.00061	0.00060
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * !A2 * !B1 * C1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00084	-0.00084	-0.00084

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00134	0.00135	0.00133
	(A2 * B1 * C1 * X)	-0.00090	-0.00090	-0.00089
	(A2 * B1 * !C1 * !X)	0.00117	0.00116	0.00116
	(A2 * B1 * !C1 * !X)	-0.00150	-0.00152	-0.00152
	(A2 * !B1 * C1 * !X)	0.00117	0.00116	0.00116
	(A2 * !B1 * C1 * !X)	-0.00150	-0.00152	-0.00152
	(A2 * !B1 * !C1 * !X)	0.00115	0.00116	0.00116
	(A2 * !B1 * !C1 * !X)	-0.00148	-0.00152	-0.00152
	(A1 * !A2 * B1 * C1 * X)	0.00135	0.00135	0.00133
	(A1 * !A2 * B1 * C1 * X)	-0.00091	-0.00090	-0.00089
	(A1 * !A2 * B1 * !C1 * !X)	0.00115	0.00116	0.00116
	(A1 * !A2 * B1 * !C1 * !X)	-0.00140	-0.00145	-0.00144
	(A1 * !A2 * !B1 * C1 * !X)	0.00115	0.00116	0.00116
	(A1 * !A2 * !B1 * C1 * !X)	-0.00140	-0.00145	-0.00144
	(A1 * !A2 * !B1 * !C1 * !X)	0.00115	0.00117	0.00116
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00140	-0.00145	-0.00144
	(!A1 * !A2 * B1 * !C1 * !X)	0.00105	0.00106	0.00105
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00155	-0.00156	-0.00155
	(!A1 * !A2 * !B1 * C1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00155	-0.00155	-0.00155
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00155	-0.00155	-0.00155

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A2 * B1 * C1 * X)**	-0.00063	-0.00064	-0.00069
	(A2 * B1 * C1 * X)	0.00051	0.00051	0.00047
	(A2 * B1 * !C1 * !X)	-0.00062	-0.00062	-0.00062
	(A2 * B1 * !C1 * !X)	0.00075	0.00076	0.00076
	(A2 * !B1 * C1 * !X)	-0.00062	-0.00062	-0.00062
	(A2 * !B1 * C1 * !X)	0.00076	0.00076	0.00076
	(A2 * !B1 * !C1 * !X)	-0.00062	-0.00062	-0.00062
	(A2 * !B1 * !C1 * !X)	0.00076	0.00076	0.00076
	(A1 * !A2 * B1 * C1 * X)	-0.00058	-0.00058	-0.00068
	(A1 * !A2 * B1 * C1 * X)	0.00055	0.00055	0.00047
	(A1 * !A2 * B1 * !C1 * !X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B1 * !C1 * !X)	0.00072	0.00072	0.00072
	(A1 * !A2 * !B1 * C1 * !X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * !B1 * C1 * !X)	0.00072	0.00073	0.00072
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * !B1 * !C1 * !X)	0.00072	0.00073	0.00072
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00055	-0.00058	-0.00058
	(!A1 * !A2 * B1 * !C1 * !X)	0.00078	0.00078	0.00077
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00057	-0.00059	-0.00059
	(!A1 * !A2 * !B1 * C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00057	-0.00059	-0.00059
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00077	0.00078	0.00077

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00073	-0.00073	-0.00076
	(A2 * B1 * C1 * X)	0.00049	0.00050	0.00047
	(A2 * B1 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A2 * B1 * !C1 * !X)	0.00082	0.00082	0.00082
	(A2 * !B1 * C1 * !X)	-0.00066	-0.00067	-0.00066
	(A2 * !B1 * C1 * !X)	0.00082	0.00082	0.00082
	(A2 * !B1 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A2 * !B1 * !C1 * !X)	0.00082	0.00082	0.00082
	(A1 * !A2 * B1 * C1 * X)	-0.00066	-0.00067	-0.00075
	(A1 * !A2 * B1 * C1 * X)	0.00054	0.00054	0.00047
	(A1 * !A2 * B1 * !C1 * !X)	-0.00067	-0.00067	-0.00066
	(A1 * !A2 * B1 * !C1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !B1 * C1 * !X)	-0.00067	-0.00067	-0.00066
	(A1 * !A2 * !B1 * C1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00067	-0.00067	-0.00066
	(A1 * !A2 * !B1 * !C1 * !X)	0.00078	0.00078	0.00077
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00056	-0.00061	-0.00060
	(!A1 * !A2 * B1 * !C1 * !X)	0.00084	0.00085	0.00084
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00059	-0.00062	-0.00061
	(!A1 * !A2 * !B1 * C1 * !X)	0.00085	0.00085	0.00084
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00059	-0.00062	-0.00061
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00085	0.00085	0.00084

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00119	-0.00121	-0.00131
	(A2 * B1 * C1 * X)	0.00102	0.00102	0.00093
	(A2 * B1 * !C1 * !X)	-0.00116	-0.00116	-0.00115
	(A2 * B1 * !C1 * !X)	0.00152	0.00152	0.00152
	(A2 * !B1 * C1 * !X)	-0.00116	-0.00116	-0.00115
	(A2 * !B1 * C1 * !X)	0.00152	0.00152	0.00152
	(A2 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * !B1 * !C1 * !X)	0.00152	0.00152	0.00152
	(A1 * !A2 * B1 * C1 * X)	-0.00108	-0.00109	-0.00128
	(A1 * !A2 * B1 * C1 * X)	0.00110	0.00109	0.00094
	(A1 * !A2 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * B1 * !C1 * !X)	0.00144	0.00145	0.00144
	(A1 * !A2 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * C1 * !X)	0.00143	0.00145	0.00144
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00099	-0.00106	-0.00105
	(!A1 * !A2 * B1 * !C1 * !X)	0.00155	0.00157	0.00155
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00102	-0.00108	-0.00107
	(!A1 * !A2 * !B1 * C1 * !X)	0.00155	0.00155	0.00155
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00103	-0.00108	-0.00107
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00155	0.00155	0.00155

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00055	0.00055	0.00055
	(A3 * !C1 * !X)	-0.00079	-0.00079	-0.00079
	(A2 * !A3 * !C1 * !X)	0.00055	0.00055	0.00055
	(A2 * !A3 * !C1 * !X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * !A3 * !C1 * !X)	0.00055	0.00056	0.00055
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * !A3 * C1 * !X)	0.00034	0.00034	0.00032
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00039	0.00039	0.00038
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00079	-0.00079	-0.00079
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00061	0.00061	0.00061
	(A3 * !C1 * !X)	-0.00082	-0.00082	-0.00082
	(A2 * !A3 * !C1 * !X)	0.00061	0.00061	0.00061
	(A2 * !A3 * !C1 * !X)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !A3 * !C1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * !A3 * C1 * !X)	0.00031	0.00031	0.00031
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00083	-0.00083	-0.00082
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00037	0.00037	0.00037
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00084	-0.00084	-0.00084
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00121	0.00122	0.00121
	(A3 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(A2 * !A3 * !C1 * !X)	0.00121	0.00122	0.00121
	(A2 * !A3 * !C1 * !X)	-0.00177	-0.00177	-0.00177
	(A1 * !A2 * !A3 * !C1 * !X)	0.00121	0.00122	0.00121
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00177	-0.00177	-0.00177
	(!A1 * !A2 * !A3 * C1 * !X)	0.00070	0.00070	0.00070
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00178	-0.00177	-0.00176
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00083	0.00082	0.00082
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00179	-0.00179	-0.00178

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00052	-0.00055	-0.00055
	(A3 * !C1 * !X)	0.00081	0.00080	0.00079
	(A2 * !A3 * !C1 * !X)	-0.00052	-0.00055	-0.00055
	(A2 * !A3 * !C1 * !X)	0.00081	0.00079	0.00079
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00052	-0.00056	-0.00055
	(A1 * !A2 * !A3 * !C1 * !X)	0.00081	0.00080	0.00079
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * !A3 * C1 * !X)	0.00081	0.00082	0.00079
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00039	-0.00039	-0.00038
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00082	0.00081	0.00079
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00058	-0.00061	-0.00061
	(A3 * !C1 * !X)	0.00084	0.00083	0.00082
	(A2 * !A3 * !C1 * !X)	-0.00058	-0.00061	-0.00061
	(A2 * !A3 * !C1 * !X)	0.00084	0.00083	0.00082
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00057	-0.00061	-0.00061
	(A1 * !A2 * !A3 * !C1 * !X)	0.00084	0.00083	0.00082
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * !A3 * C1 * !X)	0.00086	0.00086	0.00083
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00088	0.00087	0.00084

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00116	-0.00122	-0.00121
	(A3 * !C1 * !X)	0.00180	0.00179	0.00178
	(A2 * !A3 * !C1 * !X)	-0.00116	-0.00122	-0.00121
	(A2 * !A3 * !C1 * !X)	0.00180	0.00178	0.00178
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00115	-0.00122	-0.00121
	(A1 * !A2 * !A3 * !C1 * !X)	0.00180	0.00179	0.00178
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00064	-0.00065	-0.00066
	(!A1 * !A2 * !A3 * C1 * !X)	0.00182	0.00185	0.00179
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00083	-0.00082	-0.00082
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00184	0.00183	0.00178

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00026	0.00026	0.00025
	(A3 * !B1 * !X)	-0.00092	-0.00093	-0.00094
	(A2 * !A3 * !B1 * !X)	0.00026	0.00026	0.00025
	(A2 * !A3 * !B1 * !X)	-0.00092	-0.00093	-0.00094
	(!A2 * !A3 * !B1 * !X)	0.00026	0.00026	0.00025
	(!A2 * !A3 * !B1 * !X)	-0.00092	-0.00092	-0.00094
	(!A1 * !A2 * !A3 * B1 * !X)	0.00032	0.00032	0.00027
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00084	-0.00084	-0.00093
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00029	0.00029	0.00028
	(A3 * !B1 * !X)	-0.00093	-0.00094	-0.00096
	(A2 * !A3 * !B1 * !X)	0.00029	0.00029	0.00028
	(A2 * !A3 * !B1 * !X)	-0.00093	-0.00093	-0.00096
	(!A2 * !A3 * !B1 * !X)	0.00029	0.00029	0.00028
	(!A2 * !A3 * !B1 * !X)	-0.00093	-0.00094	-0.00096
	(!A1 * !A2 * !A3 * B1 * !X)	0.00032	0.00032	0.00028
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00087	-0.00087	-0.00095
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00053	0.00053	0.00050
	(A3 * !B1 * !X)	-0.00173	-0.00174	-0.00179
	(A2 * !A3 * !B1 * !X)	0.00053	0.00053	0.00050
	(A2 * !A3 * !B1 * !X)	-0.00174	-0.00174	-0.00179
	(!A2 * !A3 * !B1 * !X)	0.00053	0.00053	0.00050
	(!A2 * !A3 * !B1 * !X)	-0.00173	-0.00174	-0.00179
	(!A1 * !A2 * !A3 * B1 * !X)	0.00059	0.00059	0.00050
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00159	-0.00159	-0.00176

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00024	-0.00024	-0.00024
	(A3 * !B1 * !X)	0.00094	0.00094	0.00094
	(A2 * !A3 * !B1 * !X)	-0.00024	-0.00024	-0.00024
	(A2 * !A3 * !B1 * !X)	0.00094	0.00096	0.00094
	(!A2 * !A3 * !B1 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * !A3 * !B1 * !X)	0.00094	0.00096	0.00094
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00024	-0.00024	-0.00024
	(!A1 * !A2 * !A3 * B1 * !X)	0.00094	0.00096	0.00094
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00027	-0.00027	-0.00027
	(A3 * !B1 * !X)	0.00095	0.00097	0.00096
	(A2 * !A3 * !B1 * !X)	-0.00027	-0.00027	-0.00027
	(A2 * !A3 * !B1 * !X)	0.00095	0.00097	0.00096
	(!A2 * !A3 * !B1 * !X)	-0.00027	-0.00027	-0.00027
	(!A2 * !A3 * !B1 * !X)	0.00095	0.00097	0.00096
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00027	-0.00027	-0.00026
	(!A1 * !A2 * !A3 * B1 * !X)	0.00096	0.00097	0.00096
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(A3 * !B1 * !X)	0.00179	0.00182	0.00179
	(A2 * !A3 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(A2 * !A3 * !B1 * !X)	0.00179	0.00182	0.00179
	(!A2 * !A3 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !A3 * !B1 * !X)	0.00179	0.00182	0.00179
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * !A3 * B1 * !X)	0.00179	0.00182	0.00179

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	A3	B1	Y
0	0	0	x	1
0	x	1	0	1
0	x	1	1	0
x	1	x	0	1
x	1	x	1	0
1	x	x	0	1
1	x	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31ai_1	9.59040
sky130_fd_sc_hs__o31ai_2	15.98400
sky130_fd_sc_hs__o31ai_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__o31ai_1	0.00242	0.00287	0.00282	0.00254	0.12201
sky130_fd_sc_hs__o31ai_2	0.00493	0.00484	0.00514	0.00507	0.22982
sky130_fd_sc_hs__o31ai_4	0.00946	0.00949	0.00999	0.00751	0.44299

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31ai_1	0.00000	0.00787	0.02167
sky130_fd_sc_hs__o31ai_2	0.00000	0.01574	0.04335
sky130_fd_sc_hs__o31ai_4	0.00000	0.02201	0.06502

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	**A1->Y (FR)**	0.50691	2.10044	12.61020
	A2->Y (FR)	0.49560	2.07353	12.84440
	A3->Y (FR)	0.40305	1.91809	12.26460
	B1->Y (FR)	0.08902	0.93403	7.60808
sky130_fd_sc_hs__o31ai_2	**A1->Y (FR)**	0.51003	1.89467	12.65680
	A2->Y (FR)	0.46317	1.82655	12.84870
	A3->Y (FR)	0.37017	1.67713	12.31890
	B1->Y (FR)	0.07752	0.87137	7.61287
sky130_fd_sc_hs__o31ai_4	**A1->Y (FR)**	0.46386	1.66154	12.59420
	A2->Y (FR)	0.42201	1.59950	12.81980
	A3->Y (FR)	0.32331	1.44441	12.29840
	B1->Y (FR)	0.10062	0.99120	9.31540

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.06920	0.59920	4.38659
	A2->Y (RF)	0.07197	0.59392	4.37145
	A3->Y (RF)	0.06270	0.57664	4.33515
	B1->Y (RF)	0.05806	0.61960	4.59117
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.06970	0.57019	4.42847
	A2->Y (RF)	0.06915	0.55810	4.39967
	A3->Y (RF)	0.06182	0.54126	4.37070
	B1->Y (RF)	0.05332	0.58200	4.66088
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.06804	0.52868	4.40960
	A2->Y (RF)	0.06623	0.51363	4.36898
	A3->Y (RF)	0.05576	0.48841	4.29000
	B1->Y (RF)	0.05112	0.56272	4.92564

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00039	0.00033	0.00031
	A1	0.00373	0.00367	0.00364
	A2	0.00042	0.00033	0.00030
	A2	0.00354	0.00346	0.00342
	A3	0.00041	0.00030	0.00032
	A3	0.00314	0.00303	0.00305
	B1	-0.00012	-0.00018	-0.00015
	B1	0.00267	0.00256	0.00263
sky130_fd_sc_hs__o31ai_2	A1	0.00074	0.00058	0.00054
	A1	0.00749	0.00733	0.00727
	A2	0.00077	0.00061	0.00056
	A2	0.00664	0.00646	0.00641
	A3	0.00073	0.00051	0.00057
	A3	0.00590	0.00569	0.00573
	B1	-0.00067	-0.00078	-0.00068
	B1	0.00479	0.00464	0.00475
sky130_fd_sc_hs__o31ai_4	A1	0.00115	0.00087	0.00082
	A1	0.01420	0.01391	0.01385
	A2	0.00117	0.00086	0.00082
	A2	0.01263	0.01232	0.01224
	A3	0.00110	0.00071	0.00084
	A3	0.01111	0.01070	0.01085
	B1	-0.00117	-0.00140	-0.00128
	B1	0.00777	0.00753	0.00763

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00444	0.00437	0.00430
	A1	0.00109	0.00103	0.00097
	A2	0.00389	0.00383	0.00377
	A2	0.00071	0.00065	0.00060
	A3	0.00307	0.00306	0.00302
	A3	0.00026	0.00024	0.00021
	B1	0.00378	0.00371	0.00366
	B1	0.00109	0.00102	0.00096
sky130_fd_sc_hs__o31ai_2	A1	0.00906	0.00890	0.00873
	A1	0.00232	0.00215	0.00202
	A2	0.00736	0.00725	0.00718
	A2	0.00136	0.00126	0.00118
	A3	0.00583	0.00579	0.00576
	A3	0.00046	0.00041	0.00039
	B1	0.00755	0.00741	0.00730
	B1	0.00234	0.00218	0.00208
sky130_fd_sc_hs__o31ai_4	A1	0.01666	0.01632	0.01607
	A1	0.00364	0.00331	0.00307
	A2	0.01347	0.01322	0.01313
	A2	0.00179	0.00153	0.00142
	A3	0.01029	0.01016	0.01023
	A3	-0.00008	-0.00021	-0.00017
	B1	0.01335	0.01319	0.01305
	B1	0.00479	0.00463	0.00447

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o31ai_1	**(A2 * A3 * B1 * !Y)**	0.00071	0.00072	0.00071
	(A2 * A3 * B1 * !Y)	-0.00077	-0.00079	-0.00079
	(A2 * !B1 * Y)	0.00071	0.00072	0.00071
	(A2 * !B1 * Y)	-0.00077	-0.00079	-0.00079
	(A2 * !A3 * B1 * !Y)	0.00071	0.00072	0.00071
	(A2 * !A3 * B1 * !Y)	-0.00077	-0.00079	-0.00079
	(!A2 * A3 * B1 * !Y)	0.00071	0.00072	0.00071
	(!A2 * A3 * B1 * !Y)	-0.00072	-0.00076	-0.00075
	(!A2 * A3 * !B1 * Y)	0.00071	0.00072	0.00071
	(!A2 * A3 * !B1 * Y)	-0.00072	-0.00076	-0.00075
	(!A2 * !A3 * !B1 * Y)	0.00066	0.00067	0.00066
	(!A2 * !A3 * !B1 * Y)	-0.00081	-0.00081	-0.00081
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00145	0.00146	0.00144
	(A2 * A3 * B1 * !Y)	-0.00158	-0.00164	-0.00163
	(A2 * !B1 * Y)	0.00144	0.00145	0.00144
	(A2 * !B1 * Y)	-0.00159	-0.00164	-0.00163
	(A2 * !A3 * B1 * !Y)	0.00145	0.00146	0.00144
	(A2 * !A3 * B1 * !Y)	-0.00157	-0.00164	-0.00163
	(!A2 * A3 * B1 * !Y)	0.00145	0.00146	0.00144
	(!A2 * A3 * B1 * !Y)	-0.00148	-0.00157	-0.00155
	(!A2 * A3 * !B1 * Y)	0.00144	0.00145	0.00144
	(!A2 * A3 * !B1 * Y)	-0.00149	-0.00157	-0.00155
	(!A2 * !A3 * !B1 * Y)	0.00130	0.00132	0.00131
	(!A2 * !A3 * !B1 * Y)	-0.00168	-0.00169	-0.00169

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00279	0.00280	0.00277
	(A2 * A3 * B1 * !Y)	-0.00314	-0.00324	-0.00322
	(A2 * !B1 * Y)	0.00278	0.00280	0.00277
	(A2 * !B1 * Y)	-0.00315	-0.00322	-0.00322
	(A2 * !A3 * B1 * !Y)	0.00279	0.00280	0.00277
	(A2 * !A3 * B1 * !Y)	-0.00313	-0.00324	-0.00322
	(!A2 * A3 * B1 * !Y)	0.00279	0.00280	0.00277
	(!A2 * A3 * B1 * !Y)	-0.00294	-0.00306	-0.00306
	(!A2 * A3 * !B1 * Y)	0.00277	0.00280	0.00277
	(!A2 * A3 * !B1 * Y)	-0.00296	-0.00306	-0.00307
	(!A2 * !A3 * !B1 * Y)	0.00253	0.00254	0.00253
	(!A2 * !A3 * !B1 * Y)	-0.00333	-0.00334	-0.00333

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	**(A2 * A3 * B1 * !Y)**	-0.00071	-0.00071	-0.00071
	(A2 * A3 * B1 * !Y)	0.00079	0.00079	0.00079
	(A2 * !B1 * Y)	-0.00071	-0.00071	-0.00071
	(A2 * !B1 * Y)	0.00079	0.00079	0.00079
	(A2 * !A3 * B1 * !Y)	-0.00071	-0.00071	-0.00071
	(A2 * !A3 * B1 * !Y)	0.00079	0.00079	0.00079
	(!A2 * A3 * B1 * !Y)	-0.00071	-0.00072	-0.00071
	(!A2 * A3 * B1 * !Y)	0.00075	0.00076	0.00075
	(!A2 * A3 * !B1 * Y)	-0.00071	-0.00072	-0.00071
	(!A2 * A3 * !B1 * Y)	0.00075	0.00076	0.00075
	(!A2 * !A3 * !B1 * Y)	-0.00064	-0.00067	-0.00066
	(!A2 * !A3 * !B1 * Y)	0.00081	0.00082	0.00081

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00144	-0.00144	-0.00144
	(A2 * A3 * B1 * !Y)	0.00164	0.00164	0.00163
	(A2 * !B1 * Y)	-0.00144	-0.00144	-0.00143
	(A2 * !B1 * Y)	0.00164	0.00164	0.00163
	(A2 * !A3 * B1 * !Y)	-0.00144	-0.00144	-0.00144
	(A2 * !A3 * B1 * !Y)	0.00164	0.00164	0.00163
	(!A2 * A3 * B1 * !Y)	-0.00144	-0.00145	-0.00144
	(!A2 * A3 * B1 * !Y)	0.00155	0.00157	0.00155
	(!A2 * A3 * !B1 * Y)	-0.00143	-0.00144	-0.00143
	(!A2 * A3 * !B1 * Y)	0.00155	0.00157	0.00155
	(!A2 * !A3 * !B1 * Y)	-0.00125	-0.00132	-0.00131
	(!A2 * !A3 * !B1 * Y)	0.00170	0.00169	0.00169
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00276	-0.00278	-0.00277
	(A2 * A3 * B1 * !Y)	0.00320	0.00324	0.00322
	(A2 * !B1 * Y)	-0.00276	-0.00276	-0.00276
	(A2 * !B1 * Y)	0.00321	0.00322	0.00322
	(A2 * !A3 * B1 * !Y)	-0.00276	-0.00278	-0.00277
	(A2 * !A3 * B1 * !Y)	0.00320	0.00324	0.00322
	(!A2 * A3 * B1 * !Y)	-0.00276	-0.00276	-0.00277
	(!A2 * A3 * B1 * !Y)	0.00305	0.00306	0.00306
	(!A2 * A3 * !B1 * Y)	-0.00276	-0.00275	-0.00276
	(!A2 * A3 * !B1 * Y)	0.00307	0.00306	0.00307
	(!A2 * !A3 * !B1 * Y)	-0.00240	-0.00254	-0.00253
	(!A2 * !A3 * !B1 * Y)	0.00334	0.00335	0.00334

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31ai_1	**(A1 * A3 * B1 * !Y)**	0.00083	0.00084	0.00082
	(A1 * A3 * B1 * !Y)	-0.00061	-0.00061	-0.00060
	(A1 * A3 * !B1 * Y)	0.00071	0.00072	0.00071
	(A1 * A3 * !B1 * Y)	-0.00075	-0.00076	-0.00075
	(A1 * !A3 * B1 * !Y)	0.00081	0.00083	0.00082
	(A1 * !A3 * B1 * !Y)	-0.00054	-0.00055	-0.00055
	(A1 * !A3 * !B1 * Y)	0.00071	0.00071	0.00071
	(A1 * !A3 * !B1 * Y)	-0.00092	-0.00093	-0.00092
	(!A1 * A3 * B1 * !Y)	0.00089	0.00082	0.00082
	(!A1 * A3 * B1 * !Y)	-0.00075	-0.00082	-0.00082
	(!A1 * A3 * !B1 * Y)	0.00070	0.00071	0.00071
	(!A1 * A3 * !B1 * Y)	-0.00091	-0.00093	-0.00093
	(!A1 * !A3 * !B1 * Y)	0.00065	0.00065	0.00064
	(!A1 * !A3 * !B1 * Y)	-0.00095	-0.00095	-0.00095
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00144	0.00146	0.00143
	(A1 * A3 * B1 * !Y)	-0.00117	-0.00119	-0.00118
	(A1 * A3 * !B1 * Y)	0.00139	0.00142	0.00139
	(A1 * A3 * !B1 * Y)	-0.00127	-0.00129	-0.00128
	(A1 * !A3 * B1 * !Y)	0.00144	0.00144	0.00142
	(A1 * !A3 * B1 * !Y)	-0.00107	-0.00107	-0.00105
	(A1 * !A3 * !B1 * Y)	0.00139	0.00140	0.00139
	(A1 * !A3 * !B1 * Y)	-0.00157	-0.00162	-0.00161
	(!A1 * A3 * B1 * !Y)	0.00154	0.00143	0.00141
	(!A1 * A3 * B1 * !Y)	-0.00148	-0.00162	-0.00162
	(!A1 * A3 * !B1 * Y)	0.00140	0.00140	0.00139
	(!A1 * A3 * !B1 * Y)	-0.00161	-0.00164	-0.00163
	(!A1 * !A3 * !B1 * Y)	0.00127	0.00128	0.00127
	(!A1 * !A3 * !B1 * Y)	-0.00167	-0.00168	-0.00168

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00288	0.00289	0.00283
	(A1 * A3 * B1 * !Y)	-0.00234	-0.00234	-0.00234
	(A1 * A3 * !B1 * Y)	0.00276	0.00280	0.00275
	(A1 * A3 * !B1 * Y)	-0.00255	-0.00255	-0.00255
	(A1 * !A3 * B1 * !Y)	0.00281	0.00286	0.00281
	(A1 * !A3 * B1 * !Y)	-0.00209	-0.00213	-0.00210
	(A1 * !A3 * !B1 * Y)	0.00275	0.00277	0.00275
	(A1 * !A3 * !B1 * Y)	-0.00316	-0.00323	-0.00322
	(!A1 * A3 * B1 * !Y)	0.00308	0.00283	0.00280
	(!A1 * A3 * B1 * !Y)	-0.00294	-0.00323	-0.00322
	(!A1 * A3 * !B1 * Y)	0.00277	0.00277	0.00275
	(!A1 * A3 * !B1 * Y)	-0.00321	-0.00328	-0.00326
	(!A1 * !A3 * !B1 * Y)	0.00252	0.00250	0.00251
	(!A1 * !A3 * !B1 * Y)	-0.00336	-0.00334	-0.00335

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31ai_1	**(A1 * A3 * B1 * !Y)**	-0.00082	-0.00082	-0.00081
	(A1 * A3 * B1 * !Y)	0.00061	0.00061	0.00060
	(A1 * A3 * !B1 * Y)	-0.00070	-0.00071	-0.00070
	(A1 * A3 * !B1 * Y)	0.00075	0.00076	0.00075
	(A1 * !A3 * B1 * !Y)	-0.00081	-0.00081	-0.00080
	(A1 * !A3 * B1 * !Y)	0.00056	0.00056	0.00056
	(A1 * !A3 * !B1 * Y)	-0.00071	-0.00071	-0.00070
	(A1 * !A3 * !B1 * Y)	0.00093	0.00093	0.00092
	(!A1 * A3 * B1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * A3 * B1 * !Y)	0.00082	0.00082	0.00082
	(!A1 * A3 * !B1 * Y)	-0.00070	-0.00071	-0.00070
	(!A1 * A3 * !B1 * Y)	0.00093	0.00093	0.00093
	(!A1 * !A3 * !B1 * Y)	-0.00062	-0.00065	-0.00064
	(!A1 * !A3 * !B1 * Y)	0.00095	0.00095	0.00095
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00141	-0.00143	-0.00142
	(A1 * A3 * B1 * !Y)	0.00117	0.00119	0.00118
	(A1 * A3 * !B1 * Y)	-0.00138	-0.00140	-0.00139
	(A1 * A3 * !B1 * Y)	0.00127	0.00129	0.00128
	(A1 * !A3 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * !A3 * B1 * !Y)	0.00110	0.00110	0.00110
	(A1 * !A3 * !B1 * Y)	-0.00139	-0.00139	-0.00139
	(A1 * !A3 * !B1 * Y)	0.00162	0.00162	0.00161
	(!A1 * A3 * B1 * !Y)	-0.00141	-0.00141	-0.00140
	(!A1 * A3 * B1 * !Y)	0.00162	0.00162	0.00162
	(!A1 * A3 * !B1 * Y)	-0.00139	-0.00139	-0.00139
	(!A1 * A3 * !B1 * Y)	0.00164	0.00164	0.00163
	(!A1 * !A3 * !B1 * Y)	-0.00121	-0.00128	-0.00127
	(!A1 * !A3 * !B1 * Y)	0.00168	0.00168	0.00168

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00281	-0.00281	-0.00281
	(A1 * A3 * B1 * !Y)	0.00234	0.00234	0.00234
	(A1 * A3 * !B1 * Y)	-0.00274	-0.00274	-0.00274
	(A1 * A3 * !B1 * Y)	0.00255	0.00255	0.00255
	(A1 * !A3 * B1 * !Y)	-0.00272	-0.00274	-0.00273
	(A1 * !A3 * B1 * !Y)	0.00216	0.00217	0.00219
	(A1 * !A3 * !B1 * Y)	-0.00274	-0.00275	-0.00274
	(A1 * !A3 * !B1 * Y)	0.00321	0.00323	0.00322
	(!A1 * A3 * B1 * !Y)	-0.00278	-0.00280	-0.00278
	(!A1 * A3 * B1 * !Y)	0.00319	0.00323	0.00322
	(!A1 * A3 * !B1 * Y)	-0.00274	-0.00275	-0.00274
	(!A1 * A3 * !B1 * Y)	0.00325	0.00328	0.00326
	(!A1 * !A3 * !B1 * Y)	-0.00239	-0.00250	-0.00251
	(!A1 * !A3 * !B1 * Y)	0.00336	0.00337	0.00336

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00088	0.00089	0.00088
	(A2 * B1 * !Y)	-0.00046	-0.00047	-0.00046
	(A2 * !B1 * Y)	0.00068	0.00068	0.00068
	(A2 * !B1 * Y)	-0.00090	-0.00092	-0.00092
	(A1 * !A2 * B1 * !Y)	0.00088	0.00089	0.00088
	(A1 * !A2 * B1 * !Y)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * !B1 * Y)	0.00067	0.00068	0.00068
	(A1 * !A2 * !B1 * Y)	-0.00084	-0.00088	-0.00087
	(!A1 * !A2 * !B1 * Y)	0.00062	0.00063	0.00062
	(!A1 * !A2 * !B1 * Y)	-0.00094	-0.00094	-0.00094

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00164	0.00166	0.00163
	(A2 * B1 * !Y)	-0.00092	-0.00093	-0.00092
	(A2 * !B1 * Y)	0.00137	0.00137	0.00136
	(A2 * !B1 * Y)	-0.00168	-0.00171	-0.00170
	(A1 * !A2 * B1 * !Y)	0.00163	0.00166	0.00163
	(A1 * !A2 * B1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * !B1 * Y)	0.00135	0.00136	0.00136
	(A1 * !A2 * !B1 * Y)	-0.00156	-0.00160	-0.00161
	(!A1 * !A2 * !B1 * Y)	0.00124	0.00126	0.00125
	(!A1 * !A2 * !B1 * Y)	-0.00175	-0.00176	-0.00175
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00320	0.00324	0.00319
	(A2 * B1 * !Y)	-0.00184	-0.00185	-0.00182
	(A2 * !B1 * Y)	0.00266	0.00269	0.00266
	(A2 * !B1 * Y)	-0.00330	-0.00338	-0.00337
	(A1 * !A2 * B1 * !Y)	0.00320	0.00320	0.00319
	(A1 * !A2 * B1 * !Y)	-0.00183	-0.00182	-0.00182
	(A1 * !A2 * !B1 * Y)	0.00267	0.00267	0.00266
	(A1 * !A2 * !B1 * Y)	-0.00309	-0.00316	-0.00315
	(!A1 * !A2 * !B1 * Y)	0.00245	0.00247	0.00245
	(!A1 * !A2 * !B1 * Y)	-0.00347	-0.00349	-0.00347

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00083	-0.00084	-0.00087
	(A2 * B1 * !Y)	0.00051	0.00051	0.00047
	(A2 * !B1 * Y)	-0.00068	-0.00068	-0.00067
	(A2 * !B1 * Y)	0.00092	0.00092	0.00092
	(A1 * !A2 * B1 * !Y)	-0.00077	-0.00078	-0.00086
	(A1 * !A2 * B1 * !Y)	0.00054	0.00054	0.00048
	(A1 * !A2 * !B1 * Y)	-0.00067	-0.00068	-0.00067
	(A1 * !A2 * !B1 * Y)	0.00087	0.00088	0.00087
	(!A1 * !A2 * !B1 * Y)	-0.00060	-0.00063	-0.00062
	(!A1 * !A2 * !B1 * Y)	0.00094	0.00094	0.00094
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00152	-0.00153	-0.00162
	(A2 * B1 * !Y)	0.00101	0.00101	0.00095
	(A2 * !B1 * Y)	-0.00136	-0.00136	-0.00135
	(A2 * !B1 * Y)	0.00171	0.00171	0.00170
	(A1 * !A2 * B1 * !Y)	-0.00136	-0.00138	-0.00158
	(A1 * !A2 * B1 * !Y)	0.00111	0.00111	0.00096
	(A1 * !A2 * !B1 * Y)	-0.00135	-0.00135	-0.00135
	(A1 * !A2 * !B1 * Y)	0.00160	0.00160	0.00161
	(!A1 * !A2 * !B1 * Y)	-0.00118	-0.00126	-0.00125
	(!A1 * !A2 * !B1 * Y)	0.00175	0.00176	0.00175
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00298	-0.00300	-0.00316
	(A2 * B1 * !Y)	0.00201	0.00201	0.00188
	(A2 * !B1 * Y)	-0.00266	-0.00266	-0.00265
	(A2 * !B1 * Y)	0.00338	0.00338	0.00337
	(A1 * !A2 * B1 * !Y)	-0.00267	-0.00270	-0.00309
	(A1 * !A2 * B1 * !Y)	0.00221	0.00220	0.00191
	(A1 * !A2 * !B1 * Y)	-0.00265	-0.00266	-0.00265
	(A1 * !A2 * !B1 * Y)	0.00315	0.00316	0.00315
	(!A1 * !A2 * !B1 * Y)	-0.00233	-0.00247	-0.00245
	(!A1 * !A2 * !B1 * Y)	0.00347	0.00349	0.00348

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	(!A1 * !A2 * !A3 * Y)	0.00031	0.00030	0.00028
	(!A1 * !A2 * !A3 * Y)	-0.00094	-0.00094	-0.00099
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00061	0.00061	0.00054
	(!A1 * !A2 * !A3 * Y)	-0.00185	-0.00186	-0.00197
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00109	0.00109	0.00097
	(!A1 * !A2 * !A3 * Y)	-0.00213	-0.00216	-0.00236

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	(!A1 * !A2 * !A3 * Y)	-0.00027	-0.00027	-0.00027
	(!A1 * !A2 * !A3 * Y)	0.00099	0.00101	0.00099
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * !A3 * Y)	0.00200	0.00199	0.00199
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00094	-0.00093	-0.00092
	(!A1 * !A2 * !A3 * Y)	0.00240	0.00238	0.00238

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A1	A2	A3	B1	X
0	0	0	x	0
0	x	1	0	0
0	x	1	1	1
x	1	x	0	0
x	1	x	1	1
1	x	x	0	0
1	x	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31a_1	11.18880
sky130_fd_sc_hs__o31a_2	12.78720
sky130_fd_sc_hs__o31a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__o31a_1	0.00240	0.00235	0.00236	0.00219	0.43160
sky130_fd_sc_hs__o31a_2	0.00254	0.00247	0.00250	0.00262	0.81476
sky130_fd_sc_hs__o31a_4	0.00431	0.00463	0.00462	0.00459	1.69270

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.03220	0.07307
sky130_fd_sc_hs__o31a_2	0.00000	0.03056	0.05648
sky130_fd_sc_hs__o31a_4	0.00000	0.06207	0.11297

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (RR)	0.18312	1.16733	8.71620
	A2->X (RR)	0.17929	1.15520	8.62854
	A3->X (RR)	0.16473	1.12833	8.50031
	B1->X (RR)	0.16856	1.13935	8.39765
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.18718	1.05706	8.91502
	A2->X (RR)	0.18458	1.04813	8.84999
	A3->X (RR)	0.16949	1.02633	8.75197
	B1->X (RR)	0.17374	1.04554	8.67963
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.19419	0.95280	8.97531
	A2->X (RR)	0.18732	0.93767	8.89424
	A3->X (RR)	0.17392	0.91744	8.78427
	B1->X (RR)	0.17949	0.94191	8.71310

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.71232	1.48269	6.57950
	A2->X (FF)	0.67293	1.43540	6.54738
	A3->X (FF)	0.58648	1.28703	5.87202
	B1->X (FF)	0.18832	0.92579	5.37292
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.92686	1.70978	7.02465
	A2->X (FF)	0.88677	1.66117	7.07140
	A3->X (FF)	0.80097	1.50456	6.44548
	B1->X (FF)	0.21382	0.94457	5.71684
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.89524	1.64816	7.11548
	A2->X (FF)	0.85742	1.59392	7.12475
	A3->X (FF)	0.74574	1.41154	6.43465
	B1->X (FF)	0.19823	0.89841	5.80857

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00547	0.00541	0.00536
	A1	0.00243	0.00238	0.00234
	A2	0.00480	0.00479	0.00477
	A2	0.00211	0.00210	0.00208
	A3	0.00410	0.00406	0.00407
	A3	0.00169	0.00165	0.00167
	B1	0.00482	0.00475	0.00487
	B1	0.00252	0.00246	0.00258
sky130_fd_sc_hs__o31a_2	A1	0.00691	0.00699	0.00696
	A1	0.00368	0.00376	0.00377
	A2	0.00622	0.00635	0.00635
	A2	0.00336	0.00349	0.00353
	A3	0.00554	0.00565	0.00565
	A3	0.00293	0.00305	0.00305
	B1	0.00626	0.00628	0.00637
	B1	0.00366	0.00368	0.00378
sky130_fd_sc_hs__o31a_4	A1	0.01307	0.01335	0.01344
	A1	0.00722	0.00750	0.00769
	A2	0.01198	0.01225	0.01232
	A2	0.00649	0.00677	0.00695
	A3	0.01006	0.01032	0.01045
	A3	0.00536	0.00562	0.00587
	B1	0.01189	0.01202	0.01232
	B1	0.00721	0.00734	0.00766

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00194	0.00193	0.00204
	A1	0.00493	0.00493	0.00488
	A2	0.00194	0.00196	0.00202
	A2	0.00456	0.00459	0.00455
	A3	0.00194	0.00192	0.00217
	A3	0.00425	0.00426	0.00445
	B1	0.00154	0.00147	0.00201
	B1	0.00387	0.00381	0.00419
sky130_fd_sc_hs__o31a_2	A1	0.00303	0.00314	0.00391
	A1	0.00620	0.00632	0.00628
	A2	0.00305	0.00318	0.00425
	A2	0.00583	0.00596	0.00595
	A3	0.00302	0.00313	0.00372
	A3	0.00553	0.00564	0.00585
	B1	0.00252	0.00256	0.00321
	B1	0.00516	0.00521	0.00550
sky130_fd_sc_hs__o31a_4	A1	0.00593	0.00638	0.00653
	A1	0.01174	0.01220	0.01229
	A2	0.00571	0.00614	0.00630
	A2	0.01108	0.01152	0.01163
	A3	0.00591	0.00623	0.00723
	A3	0.01043	0.01076	0.01128
	B1	0.00503	0.00516	0.00618
	B1	0.00988	0.00999	0.01059

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o31a_1	**(A2 * A3 * B1 * X)**	0.00069	0.00069	0.00069
	(A2 * A3 * B1 * X)	-0.00069	-0.00070	-0.00070
	(A2 * !B1 * !X)	0.00059	0.00059	0.00058
	(A2 * !B1 * !X)	-0.00079	-0.00081	-0.00081
	(A2 * !A3 * B1 * X)	0.00069	0.00069	0.00069
	(A2 * !A3 * B1 * X)	-0.00068	-0.00070	-0.00070
	(!A2 * A3 * B1 * X)	0.00069	0.00069	0.00069
	(!A2 * A3 * B1 * X)	-0.00064	-0.00068	-0.00067
	(!A2 * A3 * !B1 * !X)	0.00058	0.00059	0.00058
	(!A2 * A3 * !B1 * !X)	-0.00074	-0.00078	-0.00077
	(!A2 * !A3 * !B1 * !X)	0.00054	0.00054	0.00054
	(!A2 * !A3 * !B1 * !X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00076	0.00076	0.00076
	(A2 * A3 * B1 * X)	-0.00072	-0.00074	-0.00074
	(A2 * !B1 * !X)	0.00070	0.00071	0.00070
	(A2 * !B1 * !X)	-0.00078	-0.00079	-0.00079
	(A2 * !A3 * B1 * X)	0.00076	0.00076	0.00076
	(A2 * !A3 * B1 * X)	-0.00072	-0.00074	-0.00074
	(!A2 * A3 * B1 * X)	0.00076	0.00076	0.00076
	(!A2 * A3 * B1 * X)	-0.00067	-0.00071	-0.00071
	(!A2 * A3 * !B1 * !X)	0.00070	0.00071	0.00070
	(!A2 * A3 * !B1 * !X)	-0.00073	-0.00077	-0.00076
	(!A2 * !A3 * !B1 * !X)	0.00065	0.00066	0.00065
	(!A2 * !A3 * !B1 * !X)	-0.00081	-0.00081	-0.00081

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00115	0.00116	0.00115
	(A2 * A3 * B1 * X)	-0.00144	-0.00148	-0.00147
	(A2 * !B1 * !X)	0.00115	0.00116	0.00115
	(A2 * !B1 * !X)	-0.00144	-0.00148	-0.00147
	(A2 * !A3 * B1 * X)	0.00116	0.00116	0.00115
	(A2 * !A3 * B1 * X)	-0.00142	-0.00148	-0.00147
	(!A2 * A3 * B1 * X)	0.00116	0.00116	0.00115
	(!A2 * A3 * B1 * X)	-0.00133	-0.00141	-0.00140
	(!A2 * A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(!A2 * A3 * !B1 * !X)	-0.00134	-0.00141	-0.00140
	(!A2 * !A3 * !B1 * !X)	0.00105	0.00106	0.00105
	(!A2 * !A3 * !B1 * !X)	-0.00152	-0.00153	-0.00152

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * A3 * B1 * X)**	-0.00069	-0.00069	-0.00069
	(A2 * A3 * B1 * X)	0.00070	0.00070	0.00070
	(A2 * !B1 * !X)	-0.00058	-0.00058	-0.00058
	(A2 * !B1 * !X)	0.00081	0.00081	0.00081
	(A2 * !A3 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A2 * !A3 * B1 * X)	0.00071	0.00070	0.00070
	(!A2 * A3 * B1 * X)	-0.00069	-0.00069	-0.00068
	(!A2 * A3 * B1 * X)	0.00067	0.00068	0.00067
	(!A2 * A3 * !B1 * !X)	-0.00058	-0.00059	-0.00058
	(!A2 * A3 * !B1 * !X)	0.00078	0.00078	0.00077
	(!A2 * !A3 * !B1 * !X)	-0.00052	-0.00054	-0.00054
	(!A2 * !A3 * !B1 * !X)	0.00082	0.00083	0.00082

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00076	-0.00075	-0.00075
	(A2 * A3 * B1 * X)	0.00074	0.00074	0.00074
	(A2 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(A2 * !B1 * !X)	0.00080	0.00079	0.00079
	(A2 * !A3 * B1 * X)	-0.00076	-0.00075	-0.00075
	(A2 * !A3 * B1 * X)	0.00074	0.00074	0.00074
	(!A2 * A3 * B1 * X)	-0.00075	-0.00076	-0.00075
	(!A2 * A3 * B1 * X)	0.00071	0.00071	0.00071
	(!A2 * A3 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(!A2 * A3 * !B1 * !X)	0.00076	0.00077	0.00076
	(!A2 * !A3 * !B1 * !X)	-0.00063	-0.00066	-0.00065
	(!A2 * !A3 * !B1 * !X)	0.00081	0.00082	0.00081
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00115	-0.00115	-0.00114
	(A2 * A3 * B1 * X)	0.00148	0.00148	0.00147
	(A2 * !B1 * !X)	-0.00115	-0.00115	-0.00114
	(A2 * !B1 * !X)	0.00148	0.00148	0.00147
	(A2 * !A3 * B1 * X)	-0.00115	-0.00115	-0.00114
	(A2 * !A3 * B1 * X)	0.00148	0.00148	0.00147
	(!A2 * A3 * B1 * X)	-0.00115	-0.00115	-0.00114
	(!A2 * A3 * B1 * X)	0.00140	0.00141	0.00140
	(!A2 * A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(!A2 * A3 * !B1 * !X)	0.00139	0.00141	0.00140
	(!A2 * !A3 * !B1 * !X)	-0.00101	-0.00106	-0.00105
	(!A2 * !A3 * !B1 * !X)	0.00154	0.00154	0.00153

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31a_1	**(A1 * A3 * B1 * X)**	0.00065	0.00066	0.00064
	(A1 * A3 * B1 * X)	-0.00051	-0.00051	-0.00050
	(A1 * A3 * !B1 * !X)	0.00060	0.00061	0.00060
	(A1 * A3 * !B1 * !X)	-0.00056	-0.00057	-0.00057
	(A1 * !A3 * B1 * X)	0.00064	0.00065	0.00064
	(A1 * !A3 * B1 * X)	-0.00045	-0.00046	-0.00045
	(A1 * !A3 * !B1 * !X)	0.00061	0.00061	0.00060
	(A1 * !A3 * !B1 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * A3 * B1 * X)	0.00070	0.00064	0.00063
	(!A1 * A3 * B1 * X)	-0.00061	-0.00069	-0.00070
	(!A1 * A3 * !B1 * !X)	0.00061	0.00061	0.00060
	(!A1 * A3 * !B1 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * !A3 * !B1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A3 * !B1 * !X)	-0.00074	-0.00074	-0.00074
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00072	0.00073	0.00071
	(A1 * A3 * B1 * X)	-0.00052	-0.00052	-0.00052
	(A1 * A3 * !B1 * !X)	0.00067	0.00069	0.00067
	(A1 * A3 * !B1 * !X)	-0.00058	-0.00058	-0.00058
	(A1 * !A3 * B1 * X)	0.00071	0.00071	0.00070
	(A1 * !A3 * B1 * X)	-0.00047	-0.00047	-0.00046
	(A1 * !A3 * !B1 * !X)	0.00068	0.00068	0.00067
	(A1 * !A3 * !B1 * !X)	-0.00072	-0.00073	-0.00073
	(!A1 * A3 * B1 * X)	0.00078	0.00071	0.00070
	(!A1 * A3 * B1 * X)	-0.00063	-0.00070	-0.00071
	(!A1 * A3 * !B1 * !X)	0.00068	0.00068	0.00067
	(!A1 * A3 * !B1 * !X)	-0.00072	-0.00073	-0.00073
	(!A1 * !A3 * !B1 * !X)	0.00062	0.00063	0.00062
	(!A1 * !A3 * !B1 * !X)	-0.00075	-0.00075	-0.00075

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00139	0.00142	0.00139
	(A1 * A3 * B1 * X)	-0.00107	-0.00108	-0.00107
	(A1 * A3 * !B1 * !X)	0.00137	0.00139	0.00137
	(A1 * A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(A1 * !A3 * B1 * X)	0.00139	0.00139	0.00138
	(A1 * !A3 * B1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * !A3 * !B1 * !X)	0.00137	0.00139	0.00137
	(A1 * !A3 * !B1 * !X)	-0.00144	-0.00147	-0.00146
	(!A1 * A3 * B1 * X)	0.00149	0.00140	0.00137
	(!A1 * A3 * B1 * X)	-0.00131	-0.00145	-0.00145
	(!A1 * A3 * !B1 * !X)	0.00138	0.00139	0.00137
	(!A1 * A3 * !B1 * !X)	-0.00141	-0.00145	-0.00144
	(!A1 * !A3 * !B1 * !X)	0.00127	0.00128	0.00128
	(!A1 * !A3 * !B1 * !X)	-0.00150	-0.00151	-0.00151

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31a_1	**(A1 * A3 * B1 * X)**	-0.00064	-0.00064	-0.00064
	(A1 * A3 * B1 * X)	0.00051	0.00051	0.00050
	(A1 * A3 * !B1 * !X)	-0.00060	-0.00061	-0.00060
	(A1 * A3 * !B1 * !X)	0.00056	0.00057	0.00057
	(A1 * !A3 * B1 * X)	-0.00062	-0.00063	-0.00062
	(A1 * !A3 * B1 * X)	0.00046	0.00047	0.00047
	(A1 * !A3 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * !A3 * !B1 * !X)	0.00072	0.00072	0.00072
	(!A1 * A3 * B1 * X)	-0.00063	-0.00063	-0.00063
	(!A1 * A3 * B1 * X)	0.00069	0.00069	0.00070
	(!A1 * A3 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(!A1 * A3 * !B1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A3 * !B1 * !X)	-0.00053	-0.00056	-0.00056
	(!A1 * !A3 * !B1 * !X)	0.00074	0.00075	0.00074
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00070	-0.00071	-0.00070
	(A1 * A3 * B1 * X)	0.00052	0.00052	0.00052
	(A1 * A3 * !B1 * !X)	-0.00067	-0.00068	-0.00067
	(A1 * A3 * !B1 * !X)	0.00058	0.00058	0.00058
	(A1 * !A3 * B1 * X)	-0.00069	-0.00070	-0.00069
	(A1 * !A3 * B1 * X)	0.00048	0.00048	0.00048
	(A1 * !A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * A3 * B1 * X)	-0.00070	-0.00070	-0.00069
	(!A1 * A3 * B1 * X)	0.00071	0.00070	0.00071
	(!A1 * A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * A3 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A3 * !B1 * !X)	-0.00060	-0.00063	-0.00062
	(!A1 * !A3 * !B1 * !X)	0.00075	0.00076	0.00075

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00138	-0.00138	-0.00138
	(A1 * A3 * B1 * X)	0.00107	0.00108	0.00107
	(A1 * A3 * !B1 * !X)	-0.00137	-0.00138	-0.00137
	(A1 * A3 * !B1 * !X)	0.00114	0.00115	0.00114
	(A1 * !A3 * B1 * X)	-0.00136	-0.00137	-0.00136
	(A1 * !A3 * B1 * X)	0.00099	0.00100	0.00099
	(A1 * !A3 * !B1 * !X)	-0.00136	-0.00137	-0.00137
	(A1 * !A3 * !B1 * !X)	0.00146	0.00147	0.00146
	(!A1 * A3 * B1 * X)	-0.00137	-0.00137	-0.00136
	(!A1 * A3 * B1 * X)	0.00144	0.00145	0.00145
	(!A1 * A3 * !B1 * !X)	-0.00136	-0.00137	-0.00137
	(!A1 * A3 * !B1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A3 * !B1 * !X)	-0.00123	-0.00128	-0.00128
	(!A1 * !A3 * !B1 * !X)	0.00152	0.00152	0.00151

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00069	0.00070	0.00069
	(A2 * B1 * X)	-0.00042	-0.00042	-0.00042
	(A2 * !B1 * !X)	0.00060	0.00060	0.00060
	(A2 * !B1 * !X)	-0.00073	-0.00074	-0.00073
	(A1 * !A2 * B1 * X)	0.00069	0.00070	0.00069
	(A1 * !A2 * B1 * X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * !B1 * !X)	0.00060	0.00060	0.00060
	(A1 * !A2 * !B1 * !X)	-0.00067	-0.00070	-0.00069
	(!A1 * !A2 * !B1 * !X)	0.00055	0.00055	0.00055
	(!A1 * !A2 * !B1 * !X)	-0.00075	-0.00075	-0.00075

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00080	0.00081	0.00080
	(A2 * B1 * X)	-0.00042	-0.00042	-0.00042
	(A2 * !B1 * !X)	0.00070	0.00070	0.00069
	(A2 * !B1 * !X)	-0.00074	-0.00075	-0.00075
	(A1 * !A2 * B1 * X)	0.00081	0.00081	0.00080
	(A1 * !A2 * B1 * X)	-0.00043	-0.00042	-0.00042
	(A1 * !A2 * !B1 * !X)	0.00069	0.00070	0.00069
	(A1 * !A2 * !B1 * !X)	-0.00068	-0.00071	-0.00071
	(!A1 * !A2 * !B1 * !X)	0.00064	0.00065	0.00064
	(!A1 * !A2 * !B1 * !X)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00138	0.00139	0.00137
	(A2 * B1 * X)	-0.00094	-0.00094	-0.00093
	(A2 * !B1 * !X)	0.00125	0.00124	0.00123
	(A2 * !B1 * !X)	-0.00149	-0.00152	-0.00152
	(A1 * !A2 * B1 * X)	0.00138	0.00139	0.00137
	(A1 * !A2 * B1 * X)	-0.00094	-0.00094	-0.00092
	(A1 * !A2 * !B1 * !X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !B1 * !X)	-0.00139	-0.00144	-0.00143
	(!A1 * !A2 * !B1 * !X)	0.00112	0.00113	0.00112
	(!A1 * !A2 * !B1 * !X)	-0.00159	-0.00160	-0.00159

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00064	-0.00065	-0.00068
	(A2 * B1 * X)	0.00046	0.00046	0.00043
	(A2 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(A2 * !B1 * !X)	0.00074	0.00074	0.00073
	(A1 * !A2 * B1 * X)	-0.00059	-0.00060	-0.00067
	(A1 * !A2 * B1 * X)	0.00049	0.00049	0.00044
	(A1 * !A2 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * !A2 * !B1 * !X)	0.00069	0.00070	0.00069
	(!A1 * !A2 * !B1 * !X)	-0.00053	-0.00055	-0.00055
	(!A1 * !A2 * !B1 * !X)	0.00075	0.00076	0.00075
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00075	-0.00076	-0.00079
	(A2 * B1 * X)	0.00046	0.00046	0.00043
	(A2 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(A2 * !B1 * !X)	0.00075	0.00075	0.00075
	(A1 * !A2 * B1 * X)	-0.00070	-0.00071	-0.00078
	(A1 * !A2 * B1 * X)	0.00049	0.00049	0.00043
	(A1 * !A2 * !B1 * !X)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * !B1 * !X)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !B1 * !X)	-0.00062	-0.00065	-0.00064
	(!A1 * !A2 * !B1 * !X)	0.00076	0.00077	0.00076
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00124	-0.00126	-0.00135
	(A2 * B1 * X)	0.00103	0.00103	0.00096
	(A2 * !B1 * !X)	-0.00123	-0.00123	-0.00123
	(A2 * !B1 * !X)	0.00152	0.00152	0.00152
	(A1 * !A2 * B1 * X)	-0.00113	-0.00115	-0.00132
	(A1 * !A2 * B1 * X)	0.00110	0.00110	0.00097
	(A1 * !A2 * !B1 * !X)	-0.00123	-0.00124	-0.00123
	(A1 * !A2 * !B1 * !X)	0.00144	0.00144	0.00143
	(!A1 * !A2 * !B1 * !X)	-0.00107	-0.00113	-0.00112
	(!A1 * !A2 * !B1 * !X)	0.00160	0.00160	0.00159

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	(!A1 * !A2 * !A3 * !X)	0.00026	0.00026	0.00023
	(!A1 * !A2 * !A3 * !X)	-0.00075	-0.00075	-0.00079
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00033	0.00033	0.00030
	(!A1 * !A2 * !A3 * !X)	-0.00093	-0.00094	-0.00099
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00050	0.00050	0.00044
	(!A1 * !A2 * !A3 * !X)	-0.00175	-0.00176	-0.00186

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	(!A1 * !A2 * !A3 * !X)	-0.00023	-0.00023	-0.00022
	(!A1 * !A2 * !A3 * !X)	0.00080	0.00081	0.00080
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * !A3 * !X)	0.00099	0.00101	0.00100
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00042	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * !X)	0.00187	0.00190	0.00188

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	B2	Y
0	0	0	x	x	1
0	x	1	0	0	1
0	x	1	x	1	0
0	x	1	1	x	0
x	1	x	0	0	1
x	1	x	x	1	0
x	1	x	1	x	0
1	x	x	0	0	1
1	x	x	x	1	0
1	x	x	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32ai_1	11.18880
sky130_fd_sc_hs__o32ai_2	20.77920
sky130_fd_sc_hs__o32ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__o32ai_1	0.00242	0.00269	0.00263	0.00260	0.00270	0.12042
sky130_fd_sc_hs__o32ai_2	0.00513	0.00479	0.00525	0.00496	0.00505	0.22662
sky130_fd_sc_hs__o32ai_4	0.00964	0.00971	0.00989	0.01015	0.00983	0.43998

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.00771	0.02167
sky130_fd_sc_hs__o32ai_2	0.00000	0.01541	0.04335
sky130_fd_sc_hs__o32ai_4	0.00000	0.03083	0.08669

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (FR)	0.60111	2.18962	12.62110
	A2->Y (FR)	0.57111	2.14479	12.84190
	A3->Y (FR)	0.47653	1.98781	12.25650
	B1->Y (FR)	0.21792	1.41511	9.97873
	B2->Y (FR)	0.18484	1.32597	9.63684
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.60684	1.97229	12.56990
	A2->Y (FR)	0.56905	1.92000	12.82350
	A3->Y (FR)	0.45878	1.74633	12.22190
	B1->Y (FR)	0.21488	1.29384	10.10780
	B2->Y (FR)	0.16157	1.19029	9.73508
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.59392	1.78022	12.60620
	A2->Y (FR)	0.55829	1.72893	12.86830
	A3->Y (FR)	0.44632	1.55795	12.29570
	B1->Y (FR)	0.20306	1.16219	10.08630
	B2->Y (FR)	0.15360	1.06593	9.75403

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.08162	0.61894	4.39942
	A2->Y (RF)	0.08392	0.61888	4.42867
	A3->Y (RF)	0.07476	0.60418	4.40065
	B1->Y (RF)	0.06539	0.62584	4.60495
	B2->Y (RF)	0.05802	0.60989	4.56412
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.08129	0.58038	4.35417
	A2->Y (RF)	0.08389	0.58398	4.42324
	A3->Y (RF)	0.07362	0.56625	4.38705
	B1->Y (RF)	0.06331	0.58451	4.62035
	B2->Y (RF)	0.05497	0.56986	4.61764
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.09318	0.56538	4.44561
	A2->Y (RF)	0.08737	0.55018	4.40449
	A3->Y (RF)	0.07331	0.52704	4.34794
	B1->Y (RF)	0.07485	0.59672	4.94696
	B2->Y (RF)	0.06499	0.59030	5.03935

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00086	0.00078	0.00075
	A1	0.00461	0.00455	0.00451
	A2	0.00091	0.00083	0.00080
	A2	0.00433	0.00425	0.00421
	A3	0.00090	0.00081	0.00082
	A3	0.00390	0.00381	0.00382
	B1	-0.00001	-0.00009	-0.00011
	B1	0.00315	0.00307	0.00306
	B2	0.00001	-0.00007	-0.00004
	B2	0.00278	0.00266	0.00273
sky130_fd_sc_hs__o32ai_2	A1	0.00152	0.00135	0.00129
	A1	0.00947	0.00931	0.00924
	A2	0.00161	0.00143	0.00138
	A2	0.00855	0.00837	0.00830
	A3	0.00157	0.00131	0.00135
	A3	0.00788	0.00764	0.00767
	B1	-0.00015	-0.00030	-0.00031
	B1	0.00627	0.00612	0.00612
	B2	-0.00026	-0.00041	-0.00032
	B2	0.00551	0.00535	0.00545

sky130_fd_sc_hs__o32ai_4	**A1**	0.00306	0.00273	0.00263
	A1	0.01864	0.01833	0.01822
	A2	0.00309	0.00274	0.00265
	A2	0.01706	0.01668	0.01659
	A3	0.00309	0.00261	0.00273
	A3	0.01551	0.01500	0.01514
	B1	-0.00036	-0.00070	-0.00070
	B1	0.01266	0.01234	0.01236
	B2	-0.00040	-0.00076	-0.00057
	B2	0.01102	0.01067	0.01087

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.00531	0.00526	0.00514
	A1	0.00144	0.00138	0.00130
	A2	0.00459	0.00454	0.00446
	A2	0.00101	0.00097	0.00090
	A3	0.00377	0.00375	0.00370
	A3	0.00058	0.00057	0.00052
	B1	0.00452	0.00446	0.00437
	B1	0.00147	0.00139	0.00132
	B2	0.00377	0.00373	0.00365
	B2	0.00109	0.00103	0.00096

sky130_fd_sc_hs__o32ai_2	**A1**	0.01109	0.01094	0.01069
	A1	0.00297	0.00282	0.00263
	A2	0.00951	0.00940	0.00922
	A2	0.00230	0.00218	0.00202
	A3	0.00784	0.00778	0.00768
	A3	0.00116	0.00112	0.00102
	B1	0.00925	0.00908	0.00888
	B1	0.00309	0.00290	0.00275
	B2	0.00761	0.00751	0.00737
	B2	0.00205	0.00195	0.00182
sky130_fd_sc_hs__o32ai_4	**A1**	0.02157	0.02126	0.02080
	A1	0.00567	0.00536	0.00505
	A2	0.01861	0.01835	0.01807
	A2	0.00408	0.00383	0.00358
	A3	0.01515	0.01500	0.01489
	A3	0.00206	0.00192	0.00180
	B1	0.01832	0.01794	0.01758
	B1	0.00582	0.00540	0.00516
	B2	0.01500	0.01477	0.01463
	B2	0.00395	0.00369	0.00351

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A2 * A3 * B2 * !Y)**	0.00073	0.00073	0.00073
	(A2 * A3 * B2 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * A3 * B1 * !B2 * !Y)	0.00073	0.00073	0.00073
	(A2 * A3 * B1 * !B2 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * !B1 * !B2 * Y)	0.00073	0.00073	0.00073
	(A2 * !B1 * !B2 * Y)	-0.00078	-0.00080	-0.00080
	(A2 * !A3 * B2 * !Y)	0.00073	0.00073	0.00073
	(A2 * !A3 * B2 * !Y)	-0.00078	-0.00080	-0.00080
	(A2 * !A3 * B1 * !B2 * !Y)	0.00073	0.00073	0.00073
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00078	-0.00080	-0.00080
	(!A2 * A3 * B2 * !Y)	0.00073	0.00073	0.00073
	(!A2 * A3 * B2 * !Y)	-0.00073	-0.00077	-0.00077
	(!A2 * A3 * B1 * !B2 * !Y)	0.00073	0.00073	0.00073
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00073	-0.00077	-0.00077
	(!A2 * A3 * !B1 * !B2 * Y)	0.00073	0.00073	0.00073
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00074	-0.00077	-0.00077
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00067	0.00068	0.00068
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00081	-0.00082	-0.00082

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00150	0.00152	0.00150
	(A2 * A3 * B2 * !Y)	-0.00162	-0.00167	-0.00167
	(A2 * A3 * B1 * !B2 * !Y)	0.00150	0.00152	0.00150
	(A2 * A3 * B1 * !B2 * !Y)	-0.00162	-0.00167	-0.00167
	(A2 * !B1 * !B2 * Y)	0.00150	0.00152	0.00150
	(A2 * !B1 * !B2 * Y)	-0.00163	-0.00167	-0.00167
	(A2 * !A3 * B2 * !Y)	0.00151	0.00152	0.00150
	(A2 * !A3 * B2 * !Y)	-0.00162	-0.00167	-0.00167
	(A2 * !A3 * B1 * !B2 * !Y)	0.00151	0.00152	0.00150
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00162	-0.00167	-0.00167
	(!A2 * A3 * B2 * !Y)	0.00151	0.00152	0.00150
	(!A2 * A3 * B2 * !Y)	-0.00153	-0.00161	-0.00160
	(!A2 * A3 * B1 * !B2 * !Y)	0.00151	0.00152	0.00150
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00153	-0.00161	-0.00160
	(!A2 * A3 * !B1 * !B2 * Y)	0.00150	0.00152	0.00150
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00154	-0.00162	-0.00160
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00137	0.00138	0.00137
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00173	-0.00174	-0.00173

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00283	0.00285	0.00282
	(A2 * A3 * B2 * !Y)	-0.00316	-0.00324	-0.00324
	(A2 * A3 * B1 * !B2 * !Y)	0.00283	0.00285	0.00282
	(A2 * A3 * B1 * !B2 * !Y)	-0.00316	-0.00324	-0.00324
	(A2 * !B1 * !B2 * Y)	0.00283	0.00285	0.00282
	(A2 * !B1 * !B2 * Y)	-0.00316	-0.00324	-0.00324
	(A2 * !A3 * B2 * !Y)	0.00284	0.00285	0.00282
	(A2 * !A3 * B2 * !Y)	-0.00315	-0.00324	-0.00324
	(A2 * !A3 * B1 * !B2 * !Y)	0.00284	0.00285	0.00282
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00315	-0.00324	-0.00324
	(!A2 * A3 * B2 * !Y)	0.00284	0.00285	0.00282
	(!A2 * A3 * B2 * !Y)	-0.00298	-0.00313	-0.00310
	(!A2 * A3 * B1 * !B2 * !Y)	0.00284	0.00285	0.00282
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00298	-0.00313	-0.00310
	(!A2 * A3 * !B1 * !B2 * Y)	0.00282	0.00285	0.00282
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00299	-0.00314	-0.00310
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00258	0.00261	0.00258
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00336	-0.00338	-0.00336

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A2 * A3 * B2 * !Y)**	-0.00072	-0.00072	-0.00072
	(A2 * A3 * B2 * !Y)	0.00080	0.00080	0.00080
	(A2 * A3 * B1 * !B2 * !Y)	-0.00072	-0.00072	-0.00072
	(A2 * A3 * B1 * !B2 * !Y)	0.00080	0.00080	0.00080
	(A2 * !B1 * !B2 * Y)	-0.00073	-0.00072	-0.00072
	(A2 * !B1 * !B2 * Y)	0.00081	0.00080	0.00080
	(A2 * !A3 * B2 * !Y)	-0.00072	-0.00072	-0.00072
	(A2 * !A3 * B2 * !Y)	0.00080	0.00080	0.00080
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00072	-0.00072	-0.00072
	(A2 * !A3 * B1 * !B2 * !Y)	0.00080	0.00080	0.00080
	(!A2 * A3 * B2 * !Y)	-0.00072	-0.00073	-0.00072
	(!A2 * A3 * B2 * !Y)	0.00077	0.00077	0.00077
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00072	-0.00073	-0.00072
	(!A2 * A3 * B1 * !B2 * !Y)	0.00077	0.00077	0.00077
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00073	-0.00073	-0.00072
	(!A2 * A3 * !B1 * !B2 * Y)	0.00077	0.00077	0.00077
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00064	-0.00068	-0.00068
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00082	0.00083	0.00082

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00150	-0.00150	-0.00150
	(A2 * A3 * B2 * !Y)	0.00167	0.00167	0.00167
	(A2 * A3 * B1 * !B2 * !Y)	-0.00150	-0.00150	-0.00150
	(A2 * A3 * B1 * !B2 * !Y)	0.00167	0.00167	0.00167
	(A2 * !B1 * !B2 * Y)	-0.00150	-0.00150	-0.00150
	(A2 * !B1 * !B2 * Y)	0.00167	0.00167	0.00167
	(A2 * !A3 * B2 * !Y)	-0.00150	-0.00150	-0.00150
	(A2 * !A3 * B2 * !Y)	0.00167	0.00167	0.00167
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00150	-0.00150	-0.00150
	(A2 * !A3 * B1 * !B2 * !Y)	0.00167	0.00167	0.00167
	(!A2 * A3 * B2 * !Y)	-0.00150	-0.00151	-0.00150
	(!A2 * A3 * B2 * !Y)	0.00160	0.00161	0.00160
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00150	-0.00151	-0.00150
	(!A2 * A3 * B1 * !B2 * !Y)	0.00160	0.00161	0.00160
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00150	-0.00151	-0.00150
	(!A2 * A3 * !B1 * !B2 * Y)	0.00161	0.00162	0.00160
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00130	-0.00138	-0.00137
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00174	0.00176	0.00174

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00283	-0.00281	-0.00281
	(A2 * A3 * B2 * !Y)	0.00327	0.00324	0.00324
	(A2 * A3 * B1 * !B2 * !Y)	-0.00283	-0.00281	-0.00281
	(A2 * A3 * B1 * !B2 * !Y)	0.00327	0.00324	0.00324
	(A2 * !B1 * !B2 * Y)	-0.00283	-0.00281	-0.00281
	(A2 * !B1 * !B2 * Y)	0.00327	0.00324	0.00324
	(A2 * !A3 * B2 * !Y)	-0.00282	-0.00281	-0.00281
	(A2 * !A3 * B2 * !Y)	0.00326	0.00324	0.00324
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00282	-0.00281	-0.00281
	(A2 * !A3 * B1 * !B2 * !Y)	0.00326	0.00324	0.00324
	(!A2 * A3 * B2 * !Y)	-0.00280	-0.00283	-0.00282
	(!A2 * A3 * B2 * !Y)	0.00307	0.00313	0.00310
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00281	-0.00283	-0.00281
	(!A2 * A3 * B1 * !B2 * !Y)	0.00308	0.00313	0.00310
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00281	-0.00283	-0.00281
	(!A2 * A3 * !B1 * !B2 * Y)	0.00309	0.00314	0.00310
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00246	-0.00261	-0.00258
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00339	0.00341	0.00337

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A1 * A3 * B2 * !Y)**	0.00071	0.00072	0.00071
	(A1 * A3 * B2 * !Y)	-0.00062	-0.00063	-0.00062
	(A1 * A3 * B1 * !B2 * !Y)	0.00071	0.00072	0.00071
	(A1 * A3 * B1 * !B2 * !Y)	-0.00062	-0.00063	-0.00062
	(A1 * A3 * !B1 * !B2 * Y)	0.00070	0.00071	0.00070
	(A1 * A3 * !B1 * !B2 * Y)	-0.00066	-0.00067	-0.00067
	(A1 * !A3 * B2 * !Y)	0.00071	0.00072	0.00071
	(A1 * !A3 * B2 * !Y)	-0.00057	-0.00057	-0.00056
	(A1 * !A3 * B1 * !B2 * !Y)	0.00071	0.00072	0.00071
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00057	-0.00057	-0.00056
	(A1 * !A3 * !B1 * !B2 * Y)	0.00071	0.00070	0.00070
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00083	-0.00084	-0.00084
	(!A1 * A3 * B2 * !Y)	0.00078	0.00071	0.00071
	(!A1 * A3 * B2 * !Y)	-0.00076	-0.00083	-0.00084
	(!A1 * A3 * B1 * !B2 * !Y)	0.00078	0.00071	0.00071
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00076	-0.00083	-0.00084
	(!A1 * A3 * !B1 * !B2 * Y)	0.00070	0.00070	0.00070
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00083	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00064	0.00065	0.00064
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00085	-0.00086	-0.00086

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00141	0.00142	0.00140
	(A1 * A3 * B2 * !Y)	-0.00116	-0.00116	-0.00115
	(A1 * A3 * B1 * !B2 * !Y)	0.00141	0.00142	0.00140
	(A1 * A3 * B1 * !B2 * !Y)	-0.00116	-0.00116	-0.00115
	(A1 * A3 * !B1 * !B2 * Y)	0.00137	0.00139	0.00137
	(A1 * A3 * !B1 * !B2 * Y)	-0.00126	-0.00128	-0.00127
	(A1 * !A3 * B2 * !Y)	0.00141	0.00141	0.00139
	(A1 * !A3 * B2 * !Y)	-0.00106	-0.00105	-0.00104
	(A1 * !A3 * B1 * !B2 * !Y)	0.00141	0.00141	0.00139
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00106	-0.00105	-0.00104
	(A1 * !A3 * !B1 * !B2 * Y)	0.00136	0.00137	0.00137
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00155	-0.00159	-0.00159
	(!A1 * A3 * B2 * !Y)	0.00149	0.00140	0.00138
	(!A1 * A3 * B2 * !Y)	-0.00148	-0.00160	-0.00159
	(!A1 * A3 * B1 * !B2 * !Y)	0.00149	0.00140	0.00138
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00148	-0.00160	-0.00159
	(!A1 * A3 * !B1 * !B2 * Y)	0.00137	0.00137	0.00137
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00159	-0.00162	-0.00162
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00124	0.00125	0.00125
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00165	-0.00166	-0.00166

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00289	0.00292	0.00286
	(A1 * A3 * B2 * !Y)	-0.00235	-0.00237	-0.00235
	(A1 * A3 * B1 * !B2 * !Y)	0.00289	0.00292	0.00286
	(A1 * A3 * B1 * !B2 * !Y)	-0.00235	-0.00237	-0.00235
	(A1 * A3 * !B1 * !B2 * Y)	0.00282	0.00287	0.00282
	(A1 * A3 * !B1 * !B2 * Y)	-0.00253	-0.00256	-0.00254
	(A1 * !A3 * B2 * !Y)	0.00289	0.00289	0.00285
	(A1 * !A3 * B2 * !Y)	-0.00216	-0.00215	-0.00213
	(A1 * !A3 * B1 * !B2 * !Y)	0.00289	0.00289	0.00285
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00216	-0.00215	-0.00213
	(A1 * !A3 * !B1 * !B2 * Y)	0.00285	0.00283	0.00282
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00318	-0.00322	-0.00321
	(!A1 * A3 * B2 * !Y)	0.00309	0.00287	0.00284
	(!A1 * A3 * B2 * !Y)	-0.00300	-0.00326	-0.00326
	(!A1 * A3 * B1 * !B2 * !Y)	0.00309	0.00287	0.00284
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00300	-0.00326	-0.00326
	(!A1 * A3 * !B1 * !B2 * Y)	0.00284	0.00284	0.00282
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00323	-0.00329	-0.00328
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00257	0.00259	0.00258
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00336	-0.00337	-0.00336

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A1 * A3 * B2 * !Y)**	-0.00071	-0.00071	-0.00071
	(A1 * A3 * B2 * !Y)	0.00062	0.00063	0.00062
	(A1 * A3 * B1 * !B2 * !Y)	-0.00071	-0.00071	-0.00071
	(A1 * A3 * B1 * !B2 * !Y)	0.00062	0.00063	0.00062
	(A1 * A3 * !B1 * !B2 * Y)	-0.00070	-0.00070	-0.00070
	(A1 * A3 * !B1 * !B2 * Y)	0.00066	0.00067	0.00067
	(A1 * !A3 * B2 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * !A3 * B2 * !Y)	0.00058	0.00058	0.00058
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * !A3 * B1 * !B2 * !Y)	0.00058	0.00058	0.00058
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A3 * !B1 * !B2 * Y)	0.00084	0.00084	0.00084
	(!A1 * A3 * B2 * !Y)	-0.00071	-0.00070	-0.00070
	(!A1 * A3 * B2 * !Y)	0.00084	0.00083	0.00084
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00071	-0.00070	-0.00070
	(!A1 * A3 * B1 * !B2 * !Y)	0.00084	0.00083	0.00084
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00070	-0.00070	-0.00070
	(!A1 * A3 * !B1 * !B2 * Y)	0.00084	0.00084	0.00084
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00061	-0.00065	-0.00064
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00086	0.00087	0.00086

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00139	-0.00140	-0.00139
	(A1 * A3 * B2 * !Y)	0.00116	0.00116	0.00115
	(A1 * A3 * B1 * !B2 * !Y)	-0.00139	-0.00140	-0.00139
	(A1 * A3 * B1 * !B2 * !Y)	0.00116	0.00116	0.00115
	(A1 * A3 * !B1 * !B2 * Y)	-0.00136	-0.00137	-0.00136
	(A1 * A3 * !B1 * !B2 * Y)	0.00126	0.00128	0.00127
	(A1 * !A3 * B2 * !Y)	-0.00137	-0.00138	-0.00137
	(A1 * !A3 * B2 * !Y)	0.00106	0.00107	0.00107
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00137	-0.00138	-0.00137
	(A1 * !A3 * B1 * !B2 * !Y)	0.00106	0.00107	0.00107
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00136	-0.00137	-0.00136
	(A1 * !A3 * !B1 * !B2 * Y)	0.00159	0.00159	0.00159
	(!A1 * A3 * B2 * !Y)	-0.00139	-0.00139	-0.00138
	(!A1 * A3 * B2 * !Y)	0.00159	0.00160	0.00159
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00139	-0.00139	-0.00138
	(!A1 * A3 * B1 * !B2 * !Y)	0.00160	0.00160	0.00159
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00136	-0.00137	-0.00136
	(!A1 * A3 * !B1 * !B2 * Y)	0.00161	0.00162	0.00162
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00119	-0.00125	-0.00125
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00166	0.00167	0.00166

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00285	-0.00286	-0.00285
	(A1 * A3 * B2 * !Y)	0.00235	0.00237	0.00235
	(A1 * A3 * B1 * !B2 * !Y)	-0.00285	-0.00286	-0.00285
	(A1 * A3 * B1 * !B2 * !Y)	0.00235	0.00237	0.00235
	(A1 * A3 * !B1 * !B2 * Y)	-0.00281	-0.00283	-0.00281
	(A1 * A3 * !B1 * !B2 * Y)	0.00253	0.00256	0.00254
	(A1 * !A3 * B2 * !Y)	-0.00281	-0.00283	-0.00281
	(A1 * !A3 * B2 * !Y)	0.00216	0.00218	0.00218
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00282	-0.00283	-0.00281
	(A1 * !A3 * B1 * !B2 * !Y)	0.00217	0.00218	0.00218
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00282	-0.00283	-0.00281
	(A1 * !A3 * !B1 * !B2 * Y)	0.00322	0.00322	0.00321
	(!A1 * A3 * B2 * !Y)	-0.00284	-0.00284	-0.00283
	(!A1 * A3 * B2 * !Y)	0.00326	0.00326	0.00326
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00284	-0.00284	-0.00283
	(!A1 * A3 * B1 * !B2 * !Y)	0.00326	0.00326	0.00326
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00282	-0.00282	-0.00281
	(!A1 * A3 * !B1 * !B2 * Y)	0.00329	0.00329	0.00328
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00245	-0.00259	-0.00258
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00338	0.00340	0.00337

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00076	0.00077	0.00076
	(A2 * B2 * !Y)	-0.00046	-0.00047	-0.00047
	(A2 * B1 * !B2 * !Y)	0.00076	0.00077	0.00076
	(A2 * B1 * !B2 * !Y)	-0.00047	-0.00047	-0.00047
	(A2 * !B1 * !B2 * Y)	0.00070	0.00070	0.00069
	(A2 * !B1 * !B2 * Y)	-0.00077	-0.00079	-0.00078
	(A1 * !A2 * B2 * !Y)	0.00076	0.00077	0.00076
	(A1 * !A2 * B2 * !Y)	-0.00047	-0.00047	-0.00046
	(A1 * !A2 * B1 * !B2 * !Y)	0.00076	0.00077	0.00076
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00047	-0.00047	-0.00046
	(A1 * !A2 * !B1 * !B2 * Y)	0.00069	0.00070	0.00069
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00071	-0.00074	-0.00073
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00064	0.00064	0.00064
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00167	0.00170	0.00167
	(A2 * B2 * !Y)	-0.00092	-0.00094	-0.00092
	(A2 * B1 * !B2 * !Y)	0.00167	0.00170	0.00167
	(A2 * B1 * !B2 * !Y)	-0.00093	-0.00094	-0.00092
	(A2 * !B1 * !B2 * Y)	0.00135	0.00137	0.00136
	(A2 * !B1 * !B2 * Y)	-0.00170	-0.00175	-0.00174
	(A1 * !A2 * B2 * !Y)	0.00167	0.00170	0.00167
	(A1 * !A2 * B2 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * B1 * !B2 * !Y)	0.00167	0.00170	0.00167
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * !B1 * !B2 * Y)	0.00136	0.00137	0.00136
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00160	-0.00163	-0.00163
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00124	0.00125	0.00125
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00178	-0.00179	-0.00179

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00315	0.00320	0.00316
	(A2 * B2 * !Y)	-0.00182	-0.00185	-0.00182
	(A2 * B1 * !B2 * !Y)	0.00315	0.00321	0.00316
	(A2 * B1 * !B2 * !Y)	-0.00182	-0.00185	-0.00182
	(A2 * !B1 * !B2 * Y)	0.00267	0.00266	0.00264
	(A2 * !B1 * !B2 * Y)	-0.00330	-0.00336	-0.00335
	(A1 * !A2 * B2 * !Y)	0.00319	0.00321	0.00316
	(A1 * !A2 * B2 * !Y)	-0.00185	-0.00185	-0.00182
	(A1 * !A2 * B1 * !B2 * !Y)	0.00315	0.00321	0.00316
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00181	-0.00185	-0.00182
	(A1 * !A2 * !B1 * !B2 * Y)	0.00264	0.00267	0.00264
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00305	-0.00311	-0.00312
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00243	0.00243	0.00244
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00344	-0.00344	-0.00344

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00071	-0.00072	-0.00075
	(A2 * B2 * !Y)	0.00051	0.00051	0.00048
	(A2 * B1 * !B2 * !Y)	-0.00071	-0.00072	-0.00075
	(A2 * B1 * !B2 * !Y)	0.00051	0.00051	0.00048
	(A2 * !B1 * !B2 * Y)	-0.00069	-0.00070	-0.00069
	(A2 * !B1 * !B2 * Y)	0.00078	0.00079	0.00078
	(A1 * !A2 * B2 * !Y)	-0.00064	-0.00065	-0.00074
	(A1 * !A2 * B2 * !Y)	0.00055	0.00055	0.00049
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00064	-0.00065	-0.00074
	(A1 * !A2 * B1 * !B2 * !Y)	0.00055	0.00055	0.00049
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * !B1 * !B2 * Y)	0.00074	0.00074	0.00073
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00061	-0.00064	-0.00064
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00081	0.00081	0.00081
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00153	-0.00154	-0.00165
	(A2 * B2 * !Y)	0.00104	0.00104	0.00096
	(A2 * B1 * !B2 * !Y)	-0.00153	-0.00155	-0.00165
	(A2 * B1 * !B2 * !Y)	0.00104	0.00104	0.00096
	(A2 * !B1 * !B2 * Y)	-0.00135	-0.00136	-0.00135
	(A2 * !B1 * !B2 * Y)	0.00174	0.00175	0.00174
	(A1 * !A2 * B2 * !Y)	-0.00140	-0.00141	-0.00162
	(A1 * !A2 * B2 * !Y)	0.00113	0.00112	0.00097
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00140	-0.00142	-0.00162
	(A1 * !A2 * B1 * !B2 * !Y)	0.00112	0.00112	0.00097
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00135	-0.00136	-0.00135
	(A1 * !A2 * !B1 * !B2 * Y)	0.00162	0.00163	0.00163
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00119	-0.00125	-0.00125
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00179	0.00179	0.00179

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00292	-0.00295	-0.00313
	(A2 * B2 * !Y)	0.00205	0.00205	0.00189
	(A2 * B1 * !B2 * !Y)	-0.00293	-0.00293	-0.00313
	(A2 * B1 * !B2 * !Y)	0.00206	0.00203	0.00189
	(A2 * !B1 * !B2 * Y)	-0.00265	-0.00265	-0.00264
	(A2 * !B1 * !B2 * Y)	0.00336	0.00336	0.00335
	(A1 * !A2 * B2 * !Y)	-0.00264	-0.00265	-0.00306
	(A1 * !A2 * B2 * !Y)	0.00221	0.00218	0.00191
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00264	-0.00266	-0.00306
	(A1 * !A2 * B1 * !B2 * !Y)	0.00221	0.00219	0.00191
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00263	-0.00264	-0.00264
	(A1 * !A2 * !B1 * !B2 * Y)	0.00311	0.00311	0.00312
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00232	-0.00243	-0.00244
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00345	0.00345	0.00345

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00083	0.00079	0.00078
	(A3 * B2 * !Y)	-0.00073	-0.00079	-0.00079
	(A2 * !A3 * B2 * !Y)	0.00083	0.00078	0.00078
	(A2 * !A3 * B2 * !Y)	-0.00073	-0.00079	-0.00079
	(A1 * !A2 * !A3 * B2 * !Y)	0.00083	0.00078	0.00078
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00073	-0.00079	-0.00079
	(!A1 * !A2 * !A3 * B2 * Y)	0.00029	0.00029	0.00029
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00095	-0.00097	-0.00097
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00035	0.00035	0.00031
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00091	-0.00091	-0.00098

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00147	0.00142	0.00140
	(A3 * B2 * !Y)	-0.00146	-0.00156	-0.00156
	(A2 * !A3 * B2 * !Y)	0.00147	0.00142	0.00140
	(A2 * !A3 * B2 * !Y)	-0.00146	-0.00157	-0.00156
	(A1 * !A2 * !A3 * B2 * !Y)	0.00147	0.00142	0.00140
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00146	-0.00157	-0.00156
	(!A1 * !A2 * !A3 * B2 * Y)	0.00047	0.00047	0.00046
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00189	-0.00193	-0.00192
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00059	0.00058	0.00050
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00178	-0.00180	-0.00194
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00313	0.00299	0.00294
	(A3 * B2 * !Y)	-0.00291	-0.00313	-0.00313
	(A2 * !A3 * B2 * !Y)	0.00313	0.00299	0.00294
	(A2 * !A3 * B2 * !Y)	-0.00291	-0.00315	-0.00313
	(A1 * !A2 * !A3 * B2 * !Y)	0.00313	0.00298	0.00294
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00291	-0.00314	-0.00313
	(!A1 * !A2 * !A3 * B2 * Y)	0.00094	0.00094	0.00093
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00393	-0.00402	-0.00399
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00117	0.00117	0.00100
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00374	-0.00377	-0.00404

Passive power(pJ) for B1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00077	-0.00077	-0.00077
	(A3 * B2 * !Y)	0.00079	0.00079	0.00079
	(A2 * !A3 * B2 * !Y)	-0.00077	-0.00077	-0.00077
	(A2 * !A3 * B2 * !Y)	0.00079	0.00079	0.00079
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !A3 * B2 * !Y)	0.00079	0.00079	0.00079
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * !A3 * B2 * Y)	0.00097	0.00097	0.00097
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00029	-0.00030	-0.00029
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00099	0.00100	0.00099
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00140	-0.00140	-0.00140
	(A3 * B2 * !Y)	0.00155	0.00156	0.00156
	(A2 * !A3 * B2 * !Y)	-0.00140	-0.00140	-0.00140
	(A2 * !A3 * B2 * !Y)	0.00155	0.00157	0.00156
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * !A3 * B2 * !Y)	0.00157	0.00158	0.00156
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00047	-0.00047	-0.00046
	(!A1 * !A2 * !A3 * B2 * Y)	0.00193	0.00193	0.00192
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00195	0.00199	0.00196
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00295	-0.00295	-0.00294
	(A3 * B2 * !Y)	0.00314	0.00313	0.00313
	(A2 * !A3 * B2 * !Y)	-0.00295	-0.00296	-0.00294
	(A2 * !A3 * B2 * !Y)	0.00314	0.00316	0.00313
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00295	-0.00295	-0.00294
	(A1 * !A2 * !A3 * B2 * !Y)	0.00314	0.00314	0.00313
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00094	-0.00094	-0.00093
	(!A1 * !A2 * !A3 * B2 * Y)	0.00401	0.00402	0.00399
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00407	0.00413	0.00408

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00081	0.00082	0.00081
	(A3 * B1 * !Y)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * B1 * !Y)	0.00081	0.00082	0.00081
	(A2 * !A3 * B1 * !Y)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * !A3 * B1 * !Y)	0.00081	0.00082	0.00081
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * !A3 * B1 * Y)	0.00025	0.00025	0.00025
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00097	-0.00098	-0.00098
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00031	0.00030	0.00026
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00092	-0.00093	-0.00099
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00159	0.00161	0.00158
	(A3 * B1 * !Y)	-0.00094	-0.00094	-0.00093
	(A2 * !A3 * B1 * !Y)	0.00158	0.00161	0.00158
	(A2 * !A3 * B1 * !Y)	-0.00094	-0.00094	-0.00093
	(A1 * !A2 * !A3 * B1 * !Y)	0.00158	0.00158	0.00158
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !A2 * !A3 * B1 * Y)	0.00049	0.00049	0.00049
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00193	-0.00195	-0.00194
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00061	0.00061	0.00052
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00183	-0.00184	-0.00198

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00312	0.00310	0.00311
	(A3 * B1 * !Y)	-0.00187	-0.00184	-0.00184
	(A2 * !A3 * B1 * !Y)	0.00310	0.00311	0.00311
	(A2 * !A3 * B1 * !Y)	-0.00185	-0.00185	-0.00184
	(A1 * !A2 * !A3 * B1 * !Y)	0.00310	0.00311	0.00311
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00185	-0.00185	-0.00184
	(!A1 * !A2 * !A3 * B1 * Y)	0.00095	0.00095	0.00094
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00382	-0.00386	-0.00385
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00118	0.00118	0.00101
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00363	-0.00366	-0.00393

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00077	-0.00078	-0.00080
	(A3 * B1 * !Y)	0.00049	0.00049	0.00046
	(A2 * !A3 * B1 * !Y)	-0.00076	-0.00077	-0.00080
	(A2 * !A3 * B1 * !Y)	0.00049	0.00049	0.00046
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00077	-0.00077	-0.00080
	(A1 * !A2 * !A3 * B1 * !Y)	0.00049	0.00049	0.00046
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * !A3 * B1 * Y)	0.00097	0.00098	0.00098
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00100	0.00100	0.00100

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00145	-0.00146	-0.00157
	(A3 * B1 * !Y)	0.00105	0.00104	0.00096
	(A2 * !A3 * B1 * !Y)	-0.00145	-0.00147	-0.00157
	(A2 * !A3 * B1 * !Y)	0.00105	0.00105	0.00096
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00146	-0.00147	-0.00157
	(A1 * !A2 * !A3 * B1 * !Y)	0.00105	0.00105	0.00096
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * !A3 * B1 * Y)	0.00194	0.00195	0.00194
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00050	-0.00049	-0.00049
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00200	0.00200	0.00200
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00287	-0.00290	-0.00307
	(A3 * B1 * !Y)	0.00205	0.00205	0.00190
	(A2 * !A3 * B1 * !Y)	-0.00287	-0.00290	-0.00307
	(A2 * !A3 * B1 * !Y)	0.00204	0.00205	0.00190
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00288	-0.00290	-0.00307
	(A1 * !A2 * !A3 * B1 * !Y)	0.00206	0.00205	0.00190
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !A2 * !A3 * B1 * Y)	0.00384	0.00386	0.00385
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00096	-0.00095	-0.00095
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00398	0.00396	0.00397

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	B2	X
0	0	0	x	x	0
0	x	1	0	0	0
0	x	1	x	1	1
0	x	1	1	x	1
x	1	x	0	0	0
x	1	x	x	1	1
x	1	x	1	x	1
1	x	x	0	0	0
1	x	x	x	1	1
1	x	x	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32a_1	12.78720
sky130_fd_sc_hs__o32a_2	15.98400
sky130_fd_sc_hs__o32a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__o32a_1	0.00243	0.00236	0.00236	0.00238	0.00243	0.43060
sky130_fd_sc_hs__o32a_2	0.00255	0.00250	0.00256	0.00276	0.00257	0.86575
sky130_fd_sc_hs__o32a_4	0.00432	0.00465	0.00435	0.00595	0.00464	1.67610

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.02085	0.05372
sky130_fd_sc_hs__o32a_2	0.00000	0.02586	0.05648
sky130_fd_sc_hs__o32a_4	0.00000	0.05277	0.11297

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (RR)	0.20454	1.20294	8.84618
	A2->X (RR)	0.20025	1.19274	8.77374
	A3->X (RR)	0.18757	1.16997	8.66421
	B1->X (RR)	0.18633	1.17402	8.50869
	B2->X (RR)	0.17494	1.14856	8.38847
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.20853	1.08296	9.05871
	A2->X (RR)	0.20621	1.07632	9.00928
	A3->X (RR)	0.19476	1.05870	8.92968
	B1->X (RR)	0.19125	1.07083	8.81025
	B2->X (RR)	0.17957	1.04750	8.72629
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.22741	1.00149	9.06426
	A2->X (RR)	0.21774	0.98496	8.98895
	A3->X (RR)	0.20047	0.95766	8.87433
	B1->X (RR)	0.21266	0.99448	8.80008
	B2->X (RR)	0.19303	0.96199	8.68579

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.77817	1.60803	6.86712
	A2->X (FF)	0.73796	1.56102	6.88009
	A3->X (FF)	0.65028	1.41017	6.28241
	B1->X (FF)	0.37164	1.17160	6.21618
	B2->X (FF)	0.33458	1.08863	5.77961
sky130_fd_sc_hs__o32a_2	A1->X (FF)	1.01151	1.85066	7.43020
	A2->X (FF)	0.97310	1.80338	7.51540
	A3->X (FF)	0.88817	1.64779	6.95347
	B1->X (FF)	0.50688	1.30076	6.75616
	B2->X (FF)	0.46634	1.20762	6.33253
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.96485	1.75955	7.39376
	A2->X (FF)	0.92652	1.70348	7.43263
	A3->X (FF)	0.79915	1.51205	6.80869
	B1->X (FF)	0.46219	1.21198	6.69309
	B2->X (FF)	0.41092	1.11038	6.24733

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.00652	0.00647	0.00640
	A1	0.00287	0.00283	0.00279
	A2	0.00585	0.00586	0.00582
	A2	0.00256	0.00257	0.00256
	A3	0.00513	0.00513	0.00510
	A3	0.00213	0.00214	0.00212
	B1	0.00580	0.00574	0.00577
	B1	0.00285	0.00279	0.00283
	B2	0.00505	0.00498	0.00503
	B2	0.00246	0.00239	0.00245
sky130_fd_sc_hs__o32a_2	A1	0.00796	0.00804	0.00799
	A1	0.00404	0.00412	0.00410
	A2	0.00729	0.00744	0.00743
	A2	0.00372	0.00387	0.00391
	A3	0.00659	0.00674	0.00673
	A3	0.00330	0.00345	0.00348
	B1	0.00721	0.00725	0.00727
	B1	0.00395	0.00399	0.00405
	B2	0.00640	0.00644	0.00648
	B2	0.00364	0.00367	0.00373

sky130_fd_sc_hs__o32a_4	**A1**	0.01538	0.01566	0.01573
	A1	0.00827	0.00856	0.00873
	A2	0.01407	0.01436	0.01439
	A2	0.00745	0.00775	0.00783
	A3	0.01213	0.01244	0.01252
	A3	0.00638	0.00669	0.00688
	B1	0.01434	0.01448	0.01461
	B1	0.00806	0.00820	0.00841
	B2	0.01245	0.01262	0.01286
	B2	0.00735	0.00753	0.00780

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00214	0.00213	0.00263
	A1	0.00573	0.00573	0.00567
	A2	0.00215	0.00217	0.00264
	A2	0.00536	0.00538	0.00533
	A3	0.00214	0.00214	0.00261
	A3	0.00504	0.00505	0.00523
	B1	0.00150	0.00150	0.00177
	B1	0.00451	0.00450	0.00450
	B2	0.00153	0.00148	0.00197
	B2	0.00416	0.00414	0.00441

sky130_fd_sc_hs__o32a_2	**A1**	0.00356	0.00368	0.00451
	A1	0.00742	0.00754	0.00752
	A2	0.00366	0.00379	0.00466
	A2	0.00705	0.00719	0.00719
	A3	0.00365	0.00376	0.00406
	A3	0.00675	0.00686	0.00706
	B1	0.00280	0.00295	0.00369
	B1	0.00612	0.00627	0.00629
	B2	0.00285	0.00285	0.00376
	B2	0.00568	0.00579	0.00607
sky130_fd_sc_hs__o32a_4	**A1**	0.00646	0.00685	0.00901
	A1	0.01353	0.01393	0.01405
	A2	0.00644	0.00682	0.00874
	A2	0.01294	0.01334	0.01345
	A3	0.00658	0.00692	0.00870
	A3	0.01201	0.01236	0.01289
	B1	0.00517	0.00540	0.00689
	B1	0.01163	0.01194	0.01198
	B2	0.00517	0.00544	0.00696
	B2	0.01044	0.01068	0.01128

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A2 * A3 * B2 * X)**	0.00070	0.00070	0.00070
	(A2 * A3 * B2 * X)	-0.00069	-0.00071	-0.00071
	(A2 * A3 * B1 * !B2 * X)	0.00070	0.00070	0.00070
	(A2 * A3 * B1 * !B2 * X)	-0.00069	-0.00071	-0.00071
	(A2 * !B1 * !B2 * !X)	0.00059	0.00060	0.00059
	(A2 * !B1 * !B2 * !X)	-0.00080	-0.00082	-0.00082
	(A2 * !A3 * B2 * X)	0.00070	0.00070	0.00070
	(A2 * !A3 * B2 * X)	-0.00069	-0.00071	-0.00071
	(A2 * !A3 * B1 * !B2 * X)	0.00070	0.00070	0.00070
	(A2 * !A3 * B1 * !B2 * X)	-0.00069	-0.00071	-0.00071
	(!A2 * A3 * B2 * X)	0.00070	0.00070	0.00070
	(!A2 * A3 * B2 * X)	-0.00065	-0.00069	-0.00068
	(!A2 * A3 * B1 * !B2 * X)	0.00070	0.00070	0.00070
	(!A2 * A3 * B1 * !B2 * X)	-0.00065	-0.00069	-0.00068
	(!A2 * A3 * !B1 * !B2 * !X)	0.00059	0.00060	0.00059
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00076	-0.00079	-0.00078
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00055	0.00055	0.00055
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00078	0.00079	0.00078
	(A2 * A3 * B2 * X)	-0.00069	-0.00071	-0.00071
	(A2 * A3 * B1 * !B2 * X)	0.00078	0.00079	0.00078
	(A2 * A3 * B1 * !B2 * X)	-0.00069	-0.00071	-0.00071
	(A2 * !B1 * !B2 * !X)	0.00068	0.00069	0.00068
	(A2 * !B1 * !B2 * !X)	-0.00080	-0.00081	-0.00081
	(A2 * !A3 * B2 * X)	0.00078	0.00079	0.00078
	(A2 * !A3 * B2 * X)	-0.00069	-0.00071	-0.00071
	(A2 * !A3 * B1 * !B2 * X)	0.00078	0.00079	0.00078
	(A2 * !A3 * B1 * !B2 * X)	-0.00069	-0.00071	-0.00071
	(!A2 * A3 * B2 * X)	0.00078	0.00079	0.00078
	(!A2 * A3 * B2 * X)	-0.00065	-0.00069	-0.00068
	(!A2 * A3 * B1 * !B2 * X)	0.00078	0.00079	0.00078
	(!A2 * A3 * B1 * !B2 * X)	-0.00065	-0.00069	-0.00068
	(!A2 * A3 * !B1 * !B2 * !X)	0.00068	0.00068	0.00068
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00075	-0.00079	-0.00078
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00063	0.00063	0.00063
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00082	-0.00083	-0.00083

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00120	0.00121	0.00119
	(A2 * A3 * B2 * X)	-0.00140	-0.00144	-0.00143
	(A2 * A3 * B1 * !B2 * X)	0.00120	0.00121	0.00119
	(A2 * A3 * B1 * !B2 * X)	-0.00140	-0.00144	-0.00144
	(A2 * !B1 * !B2 * !X)	0.00120	0.00121	0.00119
	(A2 * !B1 * !B2 * !X)	-0.00140	-0.00144	-0.00144
	(A2 * !A3 * B2 * X)	0.00120	0.00121	0.00119
	(A2 * !A3 * B2 * X)	-0.00139	-0.00144	-0.00143
	(A2 * !A3 * B1 * !B2 * X)	0.00120	0.00121	0.00119
	(A2 * !A3 * B1 * !B2 * X)	-0.00139	-0.00144	-0.00143
	(!A2 * A3 * B2 * X)	0.00120	0.00121	0.00119
	(!A2 * A3 * B2 * X)	-0.00131	-0.00139	-0.00137
	(!A2 * A3 * B1 * !B2 * X)	0.00120	0.00121	0.00119
	(!A2 * A3 * B1 * !B2 * X)	-0.00131	-0.00139	-0.00137
	(!A2 * A3 * !B1 * !B2 * !X)	0.00120	0.00121	0.00119
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00132	-0.00139	-0.00137
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00110	0.00111	0.00110
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00148	-0.00148	-0.00148

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A2 * A3 * B2 * X)**	-0.00070	-0.00070	-0.00070
	(A2 * A3 * B2 * X)	0.00071	0.00071	0.00071
	(A2 * A3 * B1 * !B2 * X)	-0.00070	-0.00070	-0.00070
	(A2 * A3 * B1 * !B2 * X)	0.00071	0.00071	0.00071
	(A2 * !B1 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(A2 * !B1 * !B2 * !X)	0.00082	0.00082	0.00082
	(A2 * !A3 * B2 * X)	-0.00070	-0.00070	-0.00070
	(A2 * !A3 * B2 * X)	0.00071	0.00071	0.00071
	(A2 * !A3 * B1 * !B2 * X)	-0.00070	-0.00070	-0.00070
	(A2 * !A3 * B1 * !B2 * X)	0.00071	0.00071	0.00071
	(!A2 * A3 * B2 * X)	-0.00070	-0.00070	-0.00070
	(!A2 * A3 * B2 * X)	0.00068	0.00069	0.00068
	(!A2 * A3 * B1 * !B2 * X)	-0.00070	-0.00070	-0.00070
	(!A2 * A3 * B1 * !B2 * X)	0.00068	0.00069	0.00068
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00059	-0.00060	-0.00059
	(!A2 * A3 * !B1 * !B2 * !X)	0.00079	0.00079	0.00078
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00052	-0.00055	-0.00055
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00078	-0.00078	-0.00078
	(A2 * A3 * B2 * X)	0.00071	0.00071	0.00071
	(A2 * A3 * B1 * !B2 * X)	-0.00078	-0.00078	-0.00078
	(A2 * A3 * B1 * !B2 * X)	0.00071	0.00071	0.00071
	(A2 * !B1 * !B2 * !X)	-0.00068	-0.00068	-0.00068
	(A2 * !B1 * !B2 * !X)	0.00082	0.00081	0.00081
	(A2 * !A3 * B2 * X)	-0.00078	-0.00078	-0.00078
	(A2 * !A3 * B2 * X)	0.00071	0.00071	0.00071
	(A2 * !A3 * B1 * !B2 * X)	-0.00078	-0.00078	-0.00078
	(A2 * !A3 * B1 * !B2 * X)	0.00071	0.00071	0.00071
	(!A2 * A3 * B2 * X)	-0.00078	-0.00078	-0.00078
	(!A2 * A3 * B2 * X)	0.00068	0.00069	0.00068
	(!A2 * A3 * B1 * !B2 * X)	-0.00078	-0.00078	-0.00078
	(!A2 * A3 * B1 * !B2 * X)	0.00068	0.00069	0.00068
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00068	-0.00068	-0.00068
	(!A2 * A3 * !B1 * !B2 * !X)	0.00078	0.00079	0.00078
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00060	-0.00063	-0.00063
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00120	-0.00119	-0.00119
	(A2 * A3 * B2 * X)	0.00144	0.00144	0.00143
	(A2 * A3 * B1 * !B2 * X)	-0.00120	-0.00119	-0.00119
	(A2 * A3 * B1 * !B2 * X)	0.00144	0.00144	0.00144
	(A2 * !B1 * !B2 * !X)	-0.00120	-0.00119	-0.00119
	(A2 * !B1 * !B2 * !X)	0.00144	0.00144	0.00144
	(A2 * !A3 * B2 * X)	-0.00120	-0.00119	-0.00119
	(A2 * !A3 * B2 * X)	0.00144	0.00144	0.00143
	(A2 * !A3 * B1 * !B2 * X)	-0.00120	-0.00119	-0.00119
	(A2 * !A3 * B1 * !B2 * X)	0.00144	0.00144	0.00143
	(!A2 * A3 * B2 * X)	-0.00119	-0.00120	-0.00119
	(!A2 * A3 * B2 * X)	0.00137	0.00139	0.00137
	(!A2 * A3 * B1 * !B2 * X)	-0.00119	-0.00120	-0.00119
	(!A2 * A3 * B1 * !B2 * X)	0.00137	0.00139	0.00137
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00118	-0.00120	-0.00119
	(!A2 * A3 * !B1 * !B2 * !X)	0.00136	0.00139	0.00137
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00105	-0.00111	-0.00110
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00149	0.00150	0.00149

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A1 * A3 * B2 * X)**	0.00065	0.00066	0.00064
	(A1 * A3 * B2 * X)	-0.00051	-0.00051	-0.00051
	(A1 * A3 * B1 * !B2 * X)	0.00065	0.00066	0.00064
	(A1 * A3 * B1 * !B2 * X)	-0.00051	-0.00051	-0.00051
	(A1 * A3 * !B1 * !B2 * !X)	0.00061	0.00062	0.00061
	(A1 * A3 * !B1 * !B2 * !X)	-0.00057	-0.00057	-0.00057
	(A1 * !A3 * B2 * X)	0.00064	0.00065	0.00064
	(A1 * !A3 * B2 * X)	-0.00046	-0.00046	-0.00045
	(A1 * !A3 * B1 * !B2 * X)	0.00064	0.00065	0.00064
	(A1 * !A3 * B1 * !B2 * X)	-0.00046	-0.00046	-0.00045
	(A1 * !A3 * !B1 * !B2 * !X)	0.00061	0.00061	0.00061
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * A3 * B2 * X)	0.00071	0.00064	0.00064
	(!A1 * A3 * B2 * X)	-0.00062	-0.00069	-0.00070
	(!A1 * A3 * B1 * !B2 * X)	0.00071	0.00064	0.00064
	(!A1 * A3 * B1 * !B2 * X)	-0.00062	-0.00069	-0.00070
	(!A1 * A3 * !B1 * !B2 * !X)	0.00061	0.00061	0.00061
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00074	-0.00074	-0.00074

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00074	0.00075	0.00073
	(A1 * A3 * B2 * X)	-0.00051	-0.00052	-0.00051
	(A1 * A3 * B1 * !B2 * X)	0.00074	0.00075	0.00073
	(A1 * A3 * B1 * !B2 * X)	-0.00051	-0.00052	-0.00051
	(A1 * A3 * !B1 * !B2 * !X)	0.00069	0.00070	0.00069
	(A1 * A3 * !B1 * !B2 * !X)	-0.00057	-0.00058	-0.00057
	(A1 * !A3 * B2 * X)	0.00073	0.00073	0.00072
	(A1 * !A3 * B2 * X)	-0.00046	-0.00046	-0.00046
	(A1 * !A3 * B1 * !B2 * X)	0.00073	0.00073	0.00072
	(A1 * !A3 * B1 * !B2 * X)	-0.00046	-0.00046	-0.00046
	(A1 * !A3 * !B1 * !B2 * !X)	0.00070	0.00070	0.00069
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * A3 * B2 * X)	0.00080	0.00073	0.00072
	(!A1 * A3 * B2 * X)	-0.00062	-0.00070	-0.00070
	(!A1 * A3 * B1 * !B2 * X)	0.00080	0.00073	0.00072
	(!A1 * A3 * B1 * !B2 * X)	-0.00062	-0.00070	-0.00070
	(!A1 * A3 * !B1 * !B2 * !X)	0.00070	0.00069	0.00069
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00072	-0.00073	-0.00073
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00064	0.00064	0.00064
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00074	-0.00075	-0.00074

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00124	0.00126	0.00123
	(A1 * A3 * B2 * X)	-0.00113	-0.00114	-0.00113
	(A1 * A3 * B1 * !B2 * X)	0.00124	0.00126	0.00123
	(A1 * A3 * B1 * !B2 * X)	-0.00113	-0.00114	-0.00113
	(A1 * A3 * !B1 * !B2 * !X)	0.00122	0.00124	0.00122
	(A1 * A3 * !B1 * !B2 * !X)	-0.00119	-0.00121	-0.00120
	(A1 * !A3 * B2 * X)	0.00123	0.00124	0.00122
	(A1 * !A3 * B2 * X)	-0.00104	-0.00104	-0.00103
	(A1 * !A3 * B1 * !B2 * X)	0.00124	0.00124	0.00122
	(A1 * !A3 * B1 * !B2 * X)	-0.00104	-0.00104	-0.00103
	(A1 * !A3 * !B1 * !B2 * !X)	0.00123	0.00123	0.00122
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00151	-0.00152	-0.00152
	(!A1 * A3 * B2 * X)	0.00135	0.00123	0.00122
	(!A1 * A3 * B2 * X)	-0.00140	-0.00154	-0.00154
	(!A1 * A3 * B1 * !B2 * X)	0.00134	0.00123	0.00122
	(!A1 * A3 * B1 * !B2 * X)	-0.00139	-0.00154	-0.00154
	(!A1 * A3 * !B1 * !B2 * !X)	0.00122	0.00123	0.00122
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00150	-0.00154	-0.00153
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00113	0.00113	0.00113
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00158	-0.00158	-0.00158

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A1 * A3 * B2 * X)**	-0.00064	-0.00064	-0.00064
	(A1 * A3 * B2 * X)	0.00051	0.00051	0.00051
	(A1 * A3 * B1 * !B2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * A3 * B1 * !B2 * X)	0.00051	0.00051	0.00051
	(A1 * A3 * !B1 * !B2 * !X)	-0.00060	-0.00061	-0.00060
	(A1 * A3 * !B1 * !B2 * !X)	0.00057	0.00057	0.00057
	(A1 * !A3 * B2 * X)	-0.00062	-0.00063	-0.00062
	(A1 * !A3 * B2 * X)	0.00046	0.00047	0.00047
	(A1 * !A3 * B1 * !B2 * X)	-0.00062	-0.00063	-0.00062
	(A1 * !A3 * B1 * !B2 * X)	0.00047	0.00047	0.00047
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * !A3 * !B1 * !B2 * !X)	0.00072	0.00072	0.00072
	(!A1 * A3 * B2 * X)	-0.00063	-0.00063	-0.00063
	(!A1 * A3 * B2 * X)	0.00070	0.00069	0.00070
	(!A1 * A3 * B1 * !B2 * X)	-0.00063	-0.00063	-0.00063
	(!A1 * A3 * B1 * !B2 * X)	0.00070	0.00069	0.00070
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00061	-0.00061	-0.00060
	(!A1 * A3 * !B1 * !B2 * !X)	0.00073	0.00072	0.00072
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00053	-0.00056	-0.00056
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00074	0.00075	0.00074

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00072	-0.00073	-0.00072
	(A1 * A3 * B2 * X)	0.00051	0.00052	0.00051
	(A1 * A3 * B1 * !B2 * X)	-0.00072	-0.00073	-0.00072
	(A1 * A3 * B1 * !B2 * X)	0.00051	0.00052	0.00051
	(A1 * A3 * !B1 * !B2 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * A3 * !B1 * !B2 * !X)	0.00057	0.00058	0.00057
	(A1 * !A3 * B2 * X)	-0.00071	-0.00072	-0.00071
	(A1 * !A3 * B2 * X)	0.00047	0.00047	0.00047
	(A1 * !A3 * B1 * !B2 * X)	-0.00071	-0.00072	-0.00071
	(A1 * !A3 * B1 * !B2 * X)	0.00047	0.00047	0.00047
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * !B1 * !B2 * !X)	0.00073	0.00072	0.00072
	(!A1 * A3 * B2 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * A3 * B2 * X)	0.00070	0.00070	0.00070
	(!A1 * A3 * B1 * !B2 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * A3 * B1 * !B2 * X)	0.00070	0.00070	0.00070
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * A3 * !B1 * !B2 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00060	-0.00064	-0.00064
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00075	0.00075	0.00075

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00122	-0.00123	-0.00122
	(A1 * A3 * B2 * X)	0.00113	0.00114	0.00113
	(A1 * A3 * B1 * !B2 * X)	-0.00122	-0.00123	-0.00122
	(A1 * A3 * B1 * !B2 * X)	0.00113	0.00114	0.00113
	(A1 * A3 * !B1 * !B2 * !X)	-0.00121	-0.00123	-0.00122
	(A1 * A3 * !B1 * !B2 * !X)	0.00119	0.00121	0.00120
	(A1 * !A3 * B2 * X)	-0.00122	-0.00122	-0.00121
	(A1 * !A3 * B2 * X)	0.00106	0.00106	0.00106
	(A1 * !A3 * B1 * !B2 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A3 * B1 * !B2 * X)	0.00104	0.00106	0.00106
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00122	-0.00122	-0.00122
	(A1 * !A3 * !B1 * !B2 * !X)	0.00152	0.00152	0.00152
	(!A1 * A3 * B2 * X)	-0.00122	-0.00122	-0.00121
	(!A1 * A3 * B2 * X)	0.00153	0.00154	0.00154
	(!A1 * A3 * B1 * !B2 * X)	-0.00122	-0.00122	-0.00121
	(!A1 * A3 * B1 * !B2 * X)	0.00154	0.00154	0.00154
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * A3 * !B1 * !B2 * !X)	0.00153	0.00154	0.00153
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00107	-0.00113	-0.00113
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00158	0.00160	0.00158

Passive power(pJ) for A3 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00069	0.00070	0.00069
	(A2 * B2 * X)	-0.00042	-0.00042	-0.00042
	(A2 * B1 * !B2 * X)	0.00069	0.00070	0.00069
	(A2 * B1 * !B2 * X)	-0.00042	-0.00042	-0.00042
	(A2 * !B1 * !B2 * !X)	0.00062	0.00061	0.00061
	(A2 * !B1 * !B2 * !X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * B2 * X)	0.00069	0.00070	0.00069
	(A1 * !A2 * B2 * X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * B1 * !B2 * X)	0.00069	0.00070	0.00069
	(A1 * !A2 * B1 * !B2 * X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * !B1 * !B2 * !X)	0.00061	0.00061	0.00061
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00066	-0.00068	-0.00068
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00074	-0.00074	-0.00074
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00080	0.00080	0.00079
	(A2 * B2 * X)	-0.00042	-0.00042	-0.00042
	(A2 * B1 * !B2 * X)	0.00080	0.00080	0.00079
	(A2 * B1 * !B2 * X)	-0.00042	-0.00042	-0.00042
	(A2 * !B1 * !B2 * !X)	0.00070	0.00070	0.00069
	(A2 * !B1 * !B2 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * B2 * X)	0.00080	0.00080	0.00079
	(A1 * !A2 * B2 * X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * B1 * !B2 * X)	0.00080	0.00080	0.00079
	(A1 * !A2 * B1 * !B2 * X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * !B1 * !B2 * !X)	0.00069	0.00070	0.00069
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00068	-0.00070	-0.00070
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00064	0.00064	0.00064
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00076	-0.00076	-0.00076

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00130	0.00131	0.00129
	(A2 * B2 * X)	-0.00085	-0.00085	-0.00084
	(A2 * B1 * !B2 * X)	0.00130	0.00131	0.00129
	(A2 * B1 * !B2 * X)	-0.00084	-0.00085	-0.00084
	(A2 * !B1 * !B2 * !X)	0.00120	0.00119	0.00118
	(A2 * !B1 * !B2 * !X)	-0.00136	-0.00139	-0.00139
	(A1 * !A2 * B2 * X)	0.00130	0.00131	0.00129
	(A1 * !A2 * B2 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * B1 * !B2 * X)	0.00131	0.00131	0.00129
	(A1 * !A2 * B1 * !B2 * X)	-0.00085	-0.00085	-0.00084
	(A1 * !A2 * !B1 * !B2 * !X)	0.00118	0.00118	0.00118
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00127	-0.00131	-0.00130
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00144	-0.00144	-0.00144

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00064	-0.00065	-0.00068
	(A2 * B2 * X)	0.00045	0.00046	0.00043
	(A2 * B1 * !B2 * X)	-0.00064	-0.00065	-0.00068
	(A2 * B1 * !B2 * X)	0.00045	0.00046	0.00043
	(A2 * !B1 * !B2 * !X)	-0.00061	-0.00061	-0.00061
	(A2 * !B1 * !B2 * !X)	0.00072	0.00072	0.00072
	(A1 * !A2 * B2 * X)	-0.00059	-0.00060	-0.00067
	(A1 * !A2 * B2 * X)	0.00049	0.00049	0.00043
	(A1 * !A2 * B1 * !B2 * X)	-0.00059	-0.00060	-0.00067
	(A1 * !A2 * B1 * !B2 * X)	0.00049	0.00049	0.00043
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * !B1 * !B2 * !X)	0.00068	0.00068	0.00068
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00053	-0.00056	-0.00056
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00074	0.00075	0.00074
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00075	-0.00076	-0.00079
	(A2 * B2 * X)	0.00045	0.00046	0.00043
	(A2 * B1 * !B2 * X)	-0.00075	-0.00076	-0.00079
	(A2 * B1 * !B2 * X)	0.00046	0.00046	0.00043
	(A2 * !B1 * !B2 * !X)	-0.00069	-0.00069	-0.00069
	(A2 * !B1 * !B2 * !X)	0.00074	0.00074	0.00074
	(A1 * !A2 * B2 * X)	-0.00070	-0.00071	-0.00077
	(A1 * !A2 * B2 * X)	0.00049	0.00049	0.00043
	(A1 * !A2 * B1 * !B2 * X)	-0.00070	-0.00071	-0.00077
	(A1 * !A2 * B1 * !B2 * X)	0.00049	0.00049	0.00043
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * !B1 * !B2 * !X)	0.00070	0.00070	0.00070
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00061	-0.00064	-0.00064
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00076	0.00077	0.00076

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00115	-0.00117	-0.00127
	(A2 * B2 * X)	0.00094	0.00095	0.00087
	(A2 * B1 * !B2 * X)	-0.00115	-0.00117	-0.00127
	(A2 * B1 * !B2 * X)	0.00094	0.00095	0.00087
	(A2 * !B1 * !B2 * !X)	-0.00118	-0.00118	-0.00118
	(A2 * !B1 * !B2 * !X)	0.00139	0.00139	0.00139
	(A1 * !A2 * B2 * X)	-0.00104	-0.00106	-0.00124
	(A1 * !A2 * B2 * X)	0.00101	0.00102	0.00088
	(A1 * !A2 * B1 * !B2 * X)	-0.00104	-0.00106	-0.00124
	(A1 * !A2 * B1 * !B2 * X)	0.00102	0.00102	0.00088
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * !B1 * !B2 * !X)	0.00131	0.00131	0.00130
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00103	-0.00110	-0.00109
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00144	0.00145	0.00144

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00075	0.00071	0.00070
	(A3 * B2 * X)	-0.00067	-0.00074	-0.00074
	(A2 * !A3 * B2 * X)	0.00075	0.00071	0.00070
	(A2 * !A3 * B2 * X)	-0.00067	-0.00074	-0.00074
	(A1 * !A2 * !A3 * B2 * X)	0.00075	0.00071	0.00070
	(A1 * !A2 * !A3 * B2 * X)	-0.00067	-0.00074	-0.00074
	(!A1 * !A2 * !A3 * B2 * !X)	0.00027	0.00027	0.00027
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00090	-0.00092	-0.00091
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00032	0.00032	0.00028
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00086	-0.00086	-0.00092

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00090	0.00086	0.00085
	(A3 * B2 * X)	-0.00075	-0.00081	-0.00081
	(A2 * !A3 * B2 * X)	0.00090	0.00086	0.00085
	(A2 * !A3 * B2 * X)	-0.00075	-0.00081	-0.00081
	(A1 * !A2 * !A3 * B2 * X)	0.00090	0.00086	0.00085
	(A1 * !A2 * !A3 * B2 * X)	-0.00075	-0.00081	-0.00081
	(!A1 * !A2 * !A3 * B2 * !X)	0.00032	0.00032	0.00032
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00103	-0.00105	-0.00105
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00038	0.00038	0.00034
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00098	-0.00098	-0.00105
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00163	0.00152	0.00150
	(A3 * B2 * X)	-0.00156	-0.00172	-0.00173
	(A2 * !A3 * B2 * X)	0.00163	0.00152	0.00150
	(A2 * !A3 * B2 * X)	-0.00156	-0.00172	-0.00172
	(A1 * !A2 * !A3 * B2 * X)	0.00163	0.00152	0.00150
	(A1 * !A2 * !A3 * B2 * X)	-0.00156	-0.00172	-0.00172
	(!A1 * !A2 * !A3 * B2 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00223	-0.00226	-0.00226
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00057	0.00057	0.00050
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00217	-0.00218	-0.00230

Passive power(pJ) for B1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00070	-0.00070	-0.00070
	(A3 * B2 * X)	0.00074	0.00074	0.00074
	(A2 * !A3 * B2 * X)	-0.00070	-0.00070	-0.00070
	(A2 * !A3 * B2 * X)	0.00074	0.00074	0.00074
	(A1 * !A2 * !A3 * B2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !A3 * B2 * X)	0.00074	0.00074	0.00074
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00027	-0.00027	-0.00027
	(!A1 * !A2 * !A3 * B2 * !X)	0.00092	0.00092	0.00091
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00027	-0.00027	-0.00027
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00093	0.00094	0.00093
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00085	-0.00085	-0.00085
	(A3 * B2 * X)	0.00081	0.00081	0.00081
	(A2 * !A3 * B2 * X)	-0.00085	-0.00085	-0.00085
	(A2 * !A3 * B2 * X)	0.00081	0.00081	0.00081
	(A1 * !A2 * !A3 * B2 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * !A3 * B2 * X)	0.00081	0.00081	0.00081
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * !A3 * B2 * !X)	0.00105	0.00105	0.00105
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00032	-0.00033	-0.00032
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00106	0.00108	0.00106
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00149	-0.00149	-0.00148
	(A3 * B2 * X)	0.00172	0.00172	0.00173
	(A2 * !A3 * B2 * X)	-0.00149	-0.00149	-0.00148
	(A2 * !A3 * B2 * X)	0.00171	0.00173	0.00172
	(A1 * !A2 * !A3 * B2 * X)	-0.00149	-0.00150	-0.00148
	(A1 * !A2 * !A3 * B2 * X)	0.00171	0.00174	0.00172
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !A3 * B2 * !X)	0.00226	0.00226	0.00226
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00231	0.00232	0.00231

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00072	0.00073	0.00072
	(A3 * B1 * X)	-0.00042	-0.00043	-0.00042
	(A2 * !A3 * B1 * X)	0.00072	0.00073	0.00072
	(A2 * !A3 * B1 * X)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * !A3 * B1 * X)	0.00072	0.00073	0.00072
	(A1 * !A2 * !A3 * B1 * X)	-0.00043	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * B1 * !X)	0.00022	0.00022	0.00022
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00027	0.00027	0.00024
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00085	-0.00085	-0.00091
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00080	0.00082	0.00081
	(A3 * B1 * X)	-0.00042	-0.00043	-0.00042
	(A2 * !A3 * B1 * X)	0.00080	0.00082	0.00081
	(A2 * !A3 * B1 * X)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * !A3 * B1 * X)	0.00080	0.00082	0.00081
	(A1 * !A2 * !A3 * B1 * X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * B1 * !X)	0.00025	0.00025	0.00025
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00031	0.00031	0.00027
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00085	-0.00086	-0.00093

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00139	0.00141	0.00139
	(A3 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A2 * !A3 * B1 * X)	0.00139	0.00140	0.00139
	(A2 * !A3 * B1 * X)	-0.00085	-0.00087	-0.00085
	(A1 * !A2 * !A3 * B1 * X)	0.00139	0.00139	0.00139
	(A1 * !A2 * !A3 * B1 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * !A3 * B1 * !X)	0.00045	0.00045	0.00045
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00171	-0.00174	-0.00174
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00055	0.00055	0.00048
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00164	-0.00166	-0.00178

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00068	-0.00068	-0.00071
	(A3 * B1 * X)	0.00046	0.00046	0.00043
	(A2 * !A3 * B1 * X)	-0.00067	-0.00067	-0.00071
	(A2 * !A3 * B1 * X)	0.00046	0.00046	0.00043
	(A1 * !A2 * !A3 * B1 * X)	-0.00067	-0.00068	-0.00071
	(A1 * !A2 * !A3 * B1 * X)	0.00046	0.00046	0.00043
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00022	-0.00022	-0.00022
	(!A1 * !A2 * !A3 * B1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00022	-0.00023	-0.00022
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00091	0.00093	0.00092

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00076	-0.00077	-0.00080
	(A3 * B1 * X)	0.00046	0.00046	0.00043
	(A2 * !A3 * B1 * X)	-0.00076	-0.00077	-0.00080
	(A2 * !A3 * B1 * X)	0.00046	0.00046	0.00043
	(A1 * !A2 * !A3 * B1 * X)	-0.00076	-0.00077	-0.00080
	(A1 * !A2 * !A3 * B1 * X)	0.00046	0.00046	0.00043
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * !A3 * B1 * !X)	0.00091	0.00092	0.00091
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00025	-0.00026	-0.00025
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00093	0.00094	0.00093
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00129	-0.00129	-0.00137
	(A3 * B1 * X)	0.00094	0.00093	0.00088
	(A2 * !A3 * B1 * X)	-0.00129	-0.00130	-0.00137
	(A2 * !A3 * B1 * X)	0.00094	0.00094	0.00088
	(A1 * !A2 * !A3 * B1 * X)	-0.00129	-0.00130	-0.00137
	(A1 * !A2 * !A3 * B1 * X)	0.00094	0.00094	0.00088
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * B1 * !X)	0.00175	0.00174	0.00174
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00179	0.00182	0.00180

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	Y
0	0	0	0	x	1
0	0	x	1	0	1
0	0	x	1	1	0
0	x	1	x	0	1
0	x	1	x	1	0
x	1	x	x	0	1
x	1	x	x	1	0
1	x	x	x	0	1
1	x	x	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41ai_1	11.18880
sky130_fd_sc_hs__o41ai_2	20.77920
sky130_fd_sc_hs__o41ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__o41ai_1	0.00248	0.00254	0.00264	0.00264	0.00269	0.08735
sky130_fd_sc_hs__o41ai_2	0.00486	0.00497	0.00475	0.00490	0.00520	0.16627
sky130_fd_sc_hs__o41ai_4	0.00941	0.00938	0.00955	0.00980	0.00724	0.32054

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.00763	0.02167
sky130_fd_sc_hs__o41ai_2	0.00000	0.01526	0.04335
sky130_fd_sc_hs__o41ai_4	0.00000	0.02037	0.06502

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	**A1->Y (FR)**	0.79981	2.52601	12.57860
	A2->Y (FR)	0.76543	2.46836	12.70220
	A3->Y (FR)	0.68041	2.36700	12.81710
	A4->Y (FR)	0.53303	2.15913	12.10170
	B1->Y (FR)	0.08258	0.87984	6.89659
sky130_fd_sc_hs__o41ai_2	**A1->Y (FR)**	0.80764	2.30697	12.71700
	A2->Y (FR)	0.76785	2.23680	12.82080
	A3->Y (FR)	0.67075	2.12578	12.95200
	A4->Y (FR)	0.46904	1.86260	12.18650
	B1->Y (FR)	0.06589	0.80712	6.80424
sky130_fd_sc_hs__o41ai_4	**A1->Y (FR)**	0.74580	2.03195	12.61570
	A2->Y (FR)	0.70547	1.96403	12.73660
	A3->Y (FR)	0.61355	1.85381	12.87800
	A4->Y (FR)	0.42529	1.60738	12.14680
	B1->Y (FR)	0.08803	0.91778	8.29376

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.06985	0.58066	3.96242
	A2->Y (RF)	0.07127	0.57554	3.94267
	A3->Y (RF)	0.07153	0.56719	3.92206
	A4->Y (RF)	0.06317	0.54993	3.88807
	B1->Y (RF)	0.05351	0.58750	4.06451
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.06640	0.54716	3.96695
	A2->Y (RF)	0.06775	0.54222	3.94557
	A3->Y (RF)	0.06805	0.53087	3.91634
	A4->Y (RF)	0.05978	0.51084	3.87920
	B1->Y (RF)	0.04766	0.55181	4.11574
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.06786	0.51447	3.95220
	A2->Y (RF)	0.06731	0.50564	3.91526
	A3->Y (RF)	0.06597	0.49144	3.87837
	A4->Y (RF)	0.05525	0.46550	3.81127
	B1->Y (RF)	0.04811	0.54848	4.40802

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00066	0.00058	0.00054
	A1	0.00440	0.00432	0.00428
	A2	0.00068	0.00060	0.00057
	A2	0.00404	0.00396	0.00392
	A3	0.00067	0.00059	0.00056
	A3	0.00371	0.00362	0.00357
	A4	0.00067	0.00056	0.00058
	A4	0.00333	0.00323	0.00324
	B1	-0.00017	-0.00025	-0.00021
	B1	0.00289	0.00281	0.00285
sky130_fd_sc_hs__o41ai_2	A1	0.00097	0.00080	0.00074
	A1	0.00853	0.00836	0.00829
	A2	0.00100	0.00082	0.00076
	A2	0.00778	0.00759	0.00752
	A3	0.00103	0.00086	0.00081
	A3	0.00697	0.00679	0.00672
	A4	0.00099	0.00077	0.00084
	A4	0.00617	0.00596	0.00599
	B1	-0.00094	-0.00103	-0.00091
	B1	0.00532	0.00521	0.00533

sky130_fd_sc_hs__o41ai_4	**A1**	0.00171	0.00140	0.00131
	A1	0.01651	0.01623	0.01611
	A2	0.00174	0.00142	0.00133
	A2	0.01494	0.01464	0.01451
	A3	0.00172	0.00139	0.00131
	A3	0.01346	0.01310	0.01299
	A4	0.00166	0.00121	0.00138
	A4	0.01184	0.01140	0.01151
	B1	-0.00133	-0.00154	-0.00141
	B1	0.00889	0.00869	0.00882

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.00498	0.00490	0.00477
	A1	0.00124	0.00117	0.00107
	A2	0.00431	0.00424	0.00414
	A2	0.00090	0.00084	0.00076
	A3	0.00359	0.00356	0.00349
	A3	0.00047	0.00044	0.00038
	A4	0.00281	0.00280	0.00277
	A4	0.00002	0.00001	-0.00002
	B1	0.00421	0.00413	0.00401
	B1	0.00127	0.00119	0.00110

sky130_fd_sc_hs__o41ai_2	**A1**	0.01038	0.01020	0.00988
	A1	0.00292	0.00275	0.00252
	A2	0.00885	0.00873	0.00850
	A2	0.00202	0.00189	0.00172
	A3	0.00737	0.00728	0.00713
	A3	0.00129	0.00119	0.00106
	A4	0.00544	0.00544	0.00540
	A4	0.00003	0.00001	-0.00002
	B1	0.00877	0.00861	0.00836
	B1	0.00289	0.00274	0.00257
sky130_fd_sc_hs__o41ai_4	**A1**	0.01946	0.01911	0.01851
	A1	0.00488	0.00452	0.00412
	A2	0.01652	0.01622	0.01583
	A2	0.00323	0.00294	0.00264
	A3	0.01363	0.01342	0.01319
	A3	0.00160	0.00138	0.00121
	A4	0.01008	0.01001	0.01003
	A4	-0.00055	-0.00063	-0.00061
	B1	0.01558	0.01541	0.01501
	B1	0.00601	0.00586	0.00557

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	0.00072	0.00073	0.00072
	(A2 * A4 * B1 * !Y)	-0.00080	-0.00082	-0.00081
	(A2 * A3 * !A4 * B1 * !Y)	0.00072	0.00073	0.00072
	(A2 * A3 * !A4 * B1 * !Y)	-0.00080	-0.00082	-0.00081
	(A2 * !B1 * Y)	0.00072	0.00073	0.00072
	(A2 * !B1 * Y)	-0.00080	-0.00082	-0.00081
	(A2 * !A3 * !A4 * B1 * !Y)	0.00072	0.00073	0.00072
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00079	-0.00082	-0.00081
	(!A2 * A3 * A4 * B1 * !Y)	0.00072	0.00073	0.00072
	(!A2 * A3 * A4 * B1 * !Y)	-0.00075	-0.00079	-0.00078
	(!A2 * A3 * !B1 * Y)	0.00072	0.00073	0.00072
	(!A2 * A3 * !B1 * Y)	-0.00075	-0.00079	-0.00078
	(!A2 * A3 * !A4 * B1 * !Y)	0.00072	0.00073	0.00072
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00075	-0.00079	-0.00078
	(!A2 * !A3 * A4 * B1 * !Y)	0.00072	0.00073	0.00072
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00074	-0.00078	-0.00077
	(!A2 * !A3 * A4 * !B1 * Y)	0.00072	0.00073	0.00072
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00074	-0.00077	-0.00077
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00066	0.00066	0.00066
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00143	0.00144	0.00143
	(A2 * A4 * B1 * !Y)	-0.00157	-0.00162	-0.00161
	(A2 * A3 * !A4 * B1 * !Y)	0.00143	0.00144	0.00143
	(A2 * A3 * !A4 * B1 * !Y)	-0.00157	-0.00162	-0.00161
	(A2 * !B1 * Y)	0.00143	0.00144	0.00143
	(A2 * !B1 * Y)	-0.00157	-0.00162	-0.00161
	(A2 * !A3 * !A4 * B1 * !Y)	0.00143	0.00144	0.00143
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00156	-0.00162	-0.00161
	(!A2 * A3 * A4 * B1 * !Y)	0.00143	0.00144	0.00143
	(!A2 * A3 * A4 * B1 * !Y)	-0.00148	-0.00155	-0.00154
	(!A2 * A3 * !B1 * Y)	0.00143	0.00144	0.00143
	(!A2 * A3 * !B1 * Y)	-0.00148	-0.00155	-0.00154
	(!A2 * A3 * !A4 * B1 * !Y)	0.00143	0.00144	0.00143
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00147	-0.00155	-0.00154
	(!A2 * !A3 * A4 * B1 * !Y)	0.00143	0.00144	0.00143
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00146	-0.00153	-0.00151
	(!A2 * !A3 * A4 * !B1 * Y)	0.00143	0.00144	0.00143
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00146	-0.00153	-0.00151
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00131	0.00131	0.00131
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00166	-0.00166	-0.00166

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00276	0.00278	0.00275
	(A2 * A4 * B1 * !Y)	-0.00314	-0.00322	-0.00322
	(A2 * A3 * !A4 * B1 * !Y)	0.00276	0.00278	0.00275
	(A2 * A3 * !A4 * B1 * !Y)	-0.00314	-0.00322	-0.00322
	(A2 * !B1 * Y)	0.00276	0.00278	0.00275
	(A2 * !B1 * Y)	-0.00314	-0.00322	-0.00322
	(A2 * !A3 * !A4 * B1 * !Y)	0.00276	0.00278	0.00275
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00312	-0.00322	-0.00322
	(!A2 * A3 * A4 * B1 * !Y)	0.00276	0.00278	0.00275
	(!A2 * A3 * A4 * B1 * !Y)	-0.00292	-0.00308	-0.00305
	(!A2 * A3 * !B1 * Y)	0.00276	0.00278	0.00275
	(!A2 * A3 * !B1 * Y)	-0.00292	-0.00308	-0.00305
	(!A2 * A3 * !A4 * B1 * !Y)	0.00276	0.00278	0.00275
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00292	-0.00308	-0.00304
	(!A2 * !A3 * A4 * B1 * !Y)	0.00276	0.00277	0.00275
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00289	-0.00304	-0.00300
	(!A2 * !A3 * A4 * !B1 * Y)	0.00275	0.00277	0.00275
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00290	-0.00304	-0.00300
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00252	0.00254	0.00251
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00332	-0.00334	-0.00332

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	-0.00072	-0.00072	-0.00072
	(A2 * A4 * B1 * !Y)	0.00082	0.00082	0.00081
	(A2 * A3 * !A4 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(A2 * A3 * !A4 * B1 * !Y)	0.00082	0.00082	0.00081
	(A2 * !B1 * Y)	-0.00072	-0.00072	-0.00072
	(A2 * !B1 * Y)	0.00082	0.00082	0.00081
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(A2 * !A3 * !A4 * B1 * !Y)	0.00082	0.00082	0.00081
	(!A2 * A3 * A4 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(!A2 * A3 * A4 * B1 * !Y)	0.00078	0.00079	0.00078
	(!A2 * A3 * !B1 * Y)	-0.00072	-0.00072	-0.00072
	(!A2 * A3 * !B1 * Y)	0.00078	0.00079	0.00078
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(!A2 * A3 * !A4 * B1 * !Y)	0.00078	0.00079	0.00078
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(!A2 * !A3 * A4 * B1 * !Y)	0.00077	0.00078	0.00077
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00072	-0.00072	-0.00072
	(!A2 * !A3 * A4 * !B1 * Y)	0.00077	0.00077	0.00077
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00063	-0.00066	-0.00066
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00143	-0.00143	-0.00143
	(A2 * A4 * B1 * !Y)	0.00162	0.00162	0.00161
	(A2 * A3 * !A4 * B1 * !Y)	-0.00143	-0.00143	-0.00143
	(A2 * A3 * !A4 * B1 * !Y)	0.00162	0.00162	0.00161
	(A2 * !B1 * Y)	-0.00143	-0.00143	-0.00143
	(A2 * !B1 * Y)	0.00162	0.00162	0.00161
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00143	-0.00143	-0.00143
	(A2 * !A3 * !A4 * B1 * !Y)	0.00162	0.00162	0.00161
	(!A2 * A3 * A4 * B1 * !Y)	-0.00143	-0.00144	-0.00143
	(!A2 * A3 * A4 * B1 * !Y)	0.00154	0.00155	0.00154
	(!A2 * A3 * !B1 * Y)	-0.00143	-0.00144	-0.00143
	(!A2 * A3 * !B1 * Y)	0.00154	0.00155	0.00154
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00143	-0.00144	-0.00143
	(!A2 * A3 * !A4 * B1 * !Y)	0.00154	0.00155	0.00154
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00143	-0.00144	-0.00143
	(!A2 * !A3 * A4 * B1 * !Y)	0.00152	0.00153	0.00151
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00142	-0.00144	-0.00143
	(!A2 * !A3 * A4 * !B1 * Y)	0.00151	0.00153	0.00151
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00124	-0.00131	-0.00131
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00167	0.00169	0.00167

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00275	-0.00275	-0.00274
	(A2 * A4 * B1 * !Y)	0.00322	0.00322	0.00322
	(A2 * A3 * !A4 * B1 * !Y)	-0.00275	-0.00275	-0.00274
	(A2 * A3 * !A4 * B1 * !Y)	0.00322	0.00322	0.00322
	(A2 * !B1 * Y)	-0.00275	-0.00275	-0.00274
	(A2 * !B1 * Y)	0.00323	0.00322	0.00322
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00275	-0.00275	-0.00274
	(A2 * !A3 * !A4 * B1 * !Y)	0.00322	0.00322	0.00322
	(!A2 * A3 * A4 * B1 * !Y)	-0.00275	-0.00276	-0.00274
	(!A2 * A3 * A4 * B1 * !Y)	0.00306	0.00308	0.00305
	(!A2 * A3 * !B1 * Y)	-0.00273	-0.00276	-0.00274
	(!A2 * A3 * !B1 * Y)	0.00303	0.00308	0.00305
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00275	-0.00276	-0.00274
	(!A2 * A3 * !A4 * B1 * !Y)	0.00306	0.00308	0.00304
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00274	-0.00276	-0.00274
	(!A2 * !A3 * A4 * B1 * !Y)	0.00299	0.00304	0.00300
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00274	-0.00276	-0.00274
	(!A2 * !A3 * A4 * !B1 * Y)	0.00299	0.00304	0.00300
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00239	-0.00254	-0.00251
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00333	0.00337	0.00333

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A1 * A3 * A4 * B1 * !Y)**	0.00070	0.00071	0.00070
	(A1 * A3 * A4 * B1 * !Y)	-0.00061	-0.00062	-0.00061
	(A1 * A3 * !B1 * Y)	0.00070	0.00071	0.00070
	(A1 * A3 * !B1 * Y)	-0.00062	-0.00063	-0.00062
	(A1 * A3 * !A4 * B1 * !Y)	0.00070	0.00071	0.00070
	(A1 * A3 * !A4 * B1 * !Y)	-0.00059	-0.00060	-0.00059
	(A1 * !A3 * A4 * B1 * !Y)	0.00070	0.00070	0.00070
	(A1 * !A3 * A4 * B1 * !Y)	-0.00058	-0.00059	-0.00058
	(A1 * !A3 * A4 * !B1 * Y)	0.00070	0.00070	0.00070
	(A1 * !A3 * A4 * !B1 * Y)	-0.00061	-0.00061	-0.00061
	(A1 * !A3 * !A4 * B1 * !Y)	0.00071	0.00071	0.00070
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00053	-0.00053	-0.00052
	(A1 * !A3 * !A4 * !B1 * Y)	0.00070	0.00070	0.00070
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00078	-0.00079	-0.00079
	(!A1 * A3 * A4 * B1 * !Y)	0.00070	0.00070	0.00070
	(!A1 * A3 * A4 * B1 * !Y)	-0.00077	-0.00079	-0.00079
	(!A1 * A3 * !B1 * Y)	0.00070	0.00070	0.00070
	(!A1 * A3 * !B1 * Y)	-0.00077	-0.00079	-0.00079
	(!A1 * A3 * !A4 * B1 * !Y)	0.00070	0.00070	0.00070
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00077	-0.00079	-0.00079
	(!A1 * !A3 * A4 * B1 * !Y)	0.00070	0.00070	0.00070
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00071	-0.00075	-0.00074
	(!A1 * !A3 * A4 * !B1 * Y)	0.00069	0.00070	0.00070
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00071	-0.00075	-0.00074
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00064	0.00063	0.00064
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00081	-0.00081	-0.00081

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00144	0.00146	0.00143
	(A1 * A3 * A4 * B1 * !Y)	-0.00126	-0.00128	-0.00127
	(A1 * A3 * !B1 * Y)	0.00143	0.00146	0.00143
	(A1 * A3 * !B1 * Y)	-0.00128	-0.00130	-0.00128
	(A1 * A3 * !A4 * B1 * !Y)	0.00144	0.00146	0.00143
	(A1 * A3 * !A4 * B1 * !Y)	-0.00123	-0.00124	-0.00123
	(A1 * !A3 * A4 * B1 * !Y)	0.00143	0.00145	0.00144
	(A1 * !A3 * A4 * B1 * !Y)	-0.00122	-0.00122	-0.00121
	(A1 * !A3 * A4 * !B1 * Y)	0.00143	0.00144	0.00143
	(A1 * !A3 * A4 * !B1 * Y)	-0.00129	-0.00129	-0.00128
	(A1 * !A3 * !A4 * B1 * !Y)	0.00145	0.00145	0.00143
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00111	-0.00110	-0.00109
	(A1 * !A3 * !A4 * !B1 * Y)	0.00142	0.00144	0.00143
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00158	-0.00163	-0.00162
	(!A1 * A3 * A4 * B1 * !Y)	0.00144	0.00144	0.00143
	(!A1 * A3 * A4 * B1 * !Y)	-0.00162	-0.00166	-0.00165
	(!A1 * A3 * !B1 * Y)	0.00144	0.00144	0.00143
	(!A1 * A3 * !B1 * Y)	-0.00162	-0.00166	-0.00165
	(!A1 * A3 * !A4 * B1 * !Y)	0.00145	0.00144	0.00143
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00161	-0.00166	-0.00165
	(!A1 * !A3 * A4 * B1 * !Y)	0.00144	0.00144	0.00143
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00151	-0.00157	-0.00156
	(!A1 * !A3 * A4 * !B1 * Y)	0.00143	0.00144	0.00143
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00151	-0.00157	-0.00156
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00130	0.00131	0.00131
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00169	-0.00170	-0.00169

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00273	0.00277	0.00272
	(A1 * A3 * A4 * B1 * !Y)	-0.00242	-0.00243	-0.00240
	(A1 * A3 * !B1 * Y)	0.00272	0.00277	0.00272
	(A1 * A3 * !B1 * Y)	-0.00242	-0.00247	-0.00244
	(A1 * A3 * !A4 * B1 * !Y)	0.00273	0.00277	0.00272
	(A1 * A3 * !A4 * B1 * !Y)	-0.00234	-0.00236	-0.00234
	(A1 * !A3 * A4 * B1 * !Y)	0.00272	0.00275	0.00273
	(A1 * !A3 * A4 * B1 * !Y)	-0.00233	-0.00234	-0.00232
	(A1 * !A3 * A4 * !B1 * Y)	0.00272	0.00274	0.00272
	(A1 * !A3 * A4 * !B1 * Y)	-0.00246	-0.00247	-0.00244
	(A1 * !A3 * !A4 * B1 * !Y)	0.00276	0.00276	0.00272
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00212	-0.00211	-0.00208
	(A1 * !A3 * !A4 * !B1 * Y)	0.00275	0.00274	0.00272
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00314	-0.00319	-0.00318
	(!A1 * A3 * A4 * B1 * !Y)	0.00275	0.00274	0.00272
	(!A1 * A3 * A4 * B1 * !Y)	-0.00311	-0.00319	-0.00318
	(!A1 * A3 * !B1 * Y)	0.00275	0.00274	0.00272
	(!A1 * A3 * !B1 * Y)	-0.00312	-0.00319	-0.00318
	(!A1 * A3 * !A4 * B1 * !Y)	0.00275	0.00274	0.00272
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00310	-0.00318	-0.00319
	(!A1 * !A3 * A4 * B1 * !Y)	0.00273	0.00274	0.00272
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00288	-0.00303	-0.00300
	(!A1 * !A3 * A4 * !B1 * Y)	0.00272	0.00273	0.00272
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00290	-0.00303	-0.00300
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00248	0.00250	0.00249
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00330	-0.00331	-0.00331

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A1 * A3 * A4 * B1 * !Y)**	-0.00070	-0.00070	-0.00069
	(A1 * A3 * A4 * B1 * !Y)	0.00061	0.00062	0.00061
	(A1 * A3 * !B1 * Y)	-0.00069	-0.00070	-0.00069
	(A1 * A3 * !B1 * Y)	0.00062	0.00063	0.00062
	(A1 * A3 * !A4 * B1 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * A3 * !A4 * B1 * !Y)	0.00059	0.00060	0.00059
	(A1 * !A3 * A4 * B1 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * !A3 * A4 * B1 * !Y)	0.00058	0.00059	0.00058
	(A1 * !A3 * A4 * !B1 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * A4 * !B1 * Y)	0.00061	0.00061	0.00061
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * !A3 * !A4 * B1 * !Y)	0.00053	0.00053	0.00053
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A3 * !A4 * !B1 * Y)	0.00079	0.00079	0.00079
	(!A1 * A3 * A4 * B1 * !Y)	-0.00070	-0.00070	-0.00069
	(!A1 * A3 * A4 * B1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * A3 * !B1 * Y)	-0.00070	-0.00070	-0.00069
	(!A1 * A3 * !B1 * Y)	0.00079	0.00079	0.00079
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00070	-0.00070	-0.00069
	(!A1 * A3 * !A4 * B1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00070	-0.00070	-0.00069
	(!A1 * !A3 * A4 * B1 * !Y)	0.00074	0.00075	0.00074
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00069	-0.00070	-0.00069
	(!A1 * !A3 * A4 * !B1 * Y)	0.00074	0.00075	0.00074
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00060	-0.00063	-0.00064
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00081	0.00082	0.00081

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00142	-0.00144	-0.00143
	(A1 * A3 * A4 * B1 * !Y)	0.00126	0.00128	0.00127
	(A1 * A3 * !B1 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * A3 * !B1 * Y)	0.00128	0.00130	0.00128
	(A1 * A3 * !A4 * B1 * !Y)	-0.00143	-0.00144	-0.00143
	(A1 * A3 * !A4 * B1 * !Y)	0.00123	0.00124	0.00123
	(A1 * !A3 * A4 * B1 * !Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A3 * A4 * B1 * !Y)	0.00122	0.00122	0.00121
	(A1 * !A3 * A4 * !B1 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A3 * A4 * !B1 * Y)	0.00129	0.00129	0.00128
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A3 * !A4 * B1 * !Y)	0.00111	0.00111	0.00111
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00142	-0.00143	-0.00143
	(A1 * !A3 * !A4 * !B1 * Y)	0.00163	0.00163	0.00162
	(!A1 * A3 * A4 * B1 * !Y)	-0.00143	-0.00143	-0.00143
	(!A1 * A3 * A4 * B1 * !Y)	0.00165	0.00166	0.00165
	(!A1 * A3 * !B1 * Y)	-0.00143	-0.00143	-0.00143
	(!A1 * A3 * !B1 * Y)	0.00165	0.00166	0.00165
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00143	-0.00143	-0.00143
	(!A1 * A3 * !A4 * B1 * !Y)	0.00165	0.00166	0.00165
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00144	-0.00144	-0.00143
	(!A1 * !A3 * A4 * B1 * !Y)	0.00156	0.00157	0.00156
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00142	-0.00144	-0.00143
	(!A1 * !A3 * A4 * !B1 * Y)	0.00155	0.00157	0.00156
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00123	-0.00131	-0.00131
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00169	0.00171	0.00169

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00272	-0.00273	-0.00272
	(A1 * A3 * A4 * B1 * !Y)	0.00242	0.00243	0.00240
	(A1 * A3 * !B1 * Y)	-0.00270	-0.00273	-0.00272
	(A1 * A3 * !B1 * Y)	0.00242	0.00247	0.00244
	(A1 * A3 * !A4 * B1 * !Y)	-0.00272	-0.00273	-0.00272
	(A1 * A3 * !A4 * B1 * !Y)	0.00234	0.00236	0.00234
	(A1 * !A3 * A4 * B1 * !Y)	-0.00272	-0.00273	-0.00272
	(A1 * !A3 * A4 * B1 * !Y)	0.00233	0.00234	0.00232
	(A1 * !A3 * A4 * !B1 * Y)	-0.00272	-0.00273	-0.00272
	(A1 * !A3 * A4 * !B1 * Y)	0.00246	0.00247	0.00244
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00271	-0.00273	-0.00271
	(A1 * !A3 * !A4 * B1 * !Y)	0.00213	0.00214	0.00212
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00272	-0.00273	-0.00271
	(A1 * !A3 * !A4 * !B1 * Y)	0.00319	0.00319	0.00318
	(!A1 * A3 * A4 * B1 * !Y)	-0.00272	-0.00272	-0.00272
	(!A1 * A3 * A4 * B1 * !Y)	0.00319	0.00319	0.00318
	(!A1 * A3 * !B1 * Y)	-0.00272	-0.00272	-0.00272
	(!A1 * A3 * !B1 * Y)	0.00319	0.00319	0.00318
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00272	-0.00272	-0.00272
	(!A1 * A3 * !A4 * B1 * !Y)	0.00319	0.00318	0.00319
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00272	-0.00273	-0.00271
	(!A1 * !A3 * A4 * B1 * !Y)	0.00301	0.00303	0.00300
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00270	-0.00273	-0.00271
	(!A1 * !A3 * A4 * !B1 * Y)	0.00298	0.00303	0.00300
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00236	-0.00250	-0.00249
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00332	0.00331	0.00332

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	0.00073	0.00074	0.00072
	(A2 * A4 * B1 * !Y)	-0.00057	-0.00058	-0.00057
	(A2 * A4 * !B1 * Y)	0.00070	0.00071	0.00070
	(A2 * A4 * !B1 * Y)	-0.00063	-0.00064	-0.00064
	(A2 * !A4 * B1 * !Y)	0.00073	0.00074	0.00072
	(A2 * !A4 * B1 * !Y)	-0.00052	-0.00052	-0.00051
	(A2 * !A4 * !B1 * Y)	0.00070	0.00070	0.00070
	(A2 * !A4 * !B1 * Y)	-0.00080	-0.00081	-0.00081
	(A1 * !A2 * A4 * B1 * !Y)	0.00074	0.00073	0.00072
	(A1 * !A2 * A4 * B1 * !Y)	-0.00059	-0.00060	-0.00059
	(A1 * !A2 * A4 * !B1 * Y)	0.00070	0.00070	0.00070
	(A1 * !A2 * A4 * !B1 * Y)	-0.00064	-0.00063	-0.00063
	(A1 * !A2 * !A4 * B1 * !Y)	0.00074	0.00074	0.00073
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00052	-0.00052	-0.00051
	(A1 * !A2 * !A4 * !B1 * Y)	0.00070	0.00070	0.00070
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00074	-0.00076	-0.00076
	(!A1 * !A2 * A4 * B1 * !Y)	0.00080	0.00073	0.00073
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00071	-0.00078	-0.00079
	(!A1 * !A2 * A4 * !B1 * Y)	0.00070	0.00070	0.00070
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00080	-0.00081	-0.00081
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00064	0.00065	0.00064
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00083	-0.00084	-0.00083

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00137	0.00138	0.00136
	(A2 * A4 * B1 * !Y)	-0.00117	-0.00117	-0.00116
	(A2 * A4 * !B1 * Y)	0.00135	0.00137	0.00135
	(A2 * A4 * !B1 * Y)	-0.00126	-0.00128	-0.00127
	(A2 * !A4 * B1 * !Y)	0.00135	0.00138	0.00136
	(A2 * !A4 * B1 * !Y)	-0.00105	-0.00107	-0.00105
	(A2 * !A4 * !B1 * Y)	0.00135	0.00136	0.00135
	(A2 * !A4 * !B1 * Y)	-0.00157	-0.00161	-0.00160
	(A1 * !A2 * A4 * B1 * !Y)	0.00136	0.00137	0.00136
	(A1 * !A2 * A4 * B1 * !Y)	-0.00119	-0.00121	-0.00119
	(A1 * !A2 * A4 * !B1 * Y)	0.00135	0.00136	0.00135
	(A1 * !A2 * A4 * !B1 * Y)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * !A4 * B1 * !Y)	0.00138	0.00138	0.00136
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00106	-0.00106	-0.00105
	(A1 * !A2 * !A4 * !B1 * Y)	0.00135	0.00136	0.00135
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00146	-0.00152	-0.00150
	(!A1 * !A2 * A4 * B1 * !Y)	0.00145	0.00137	0.00135
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00146	-0.00160	-0.00159
	(!A1 * !A2 * A4 * !B1 * Y)	0.00135	0.00136	0.00135
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00156	-0.00160	-0.00159
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00123	0.00124	0.00124
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00164	-0.00165	-0.00165

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00281	0.00283	0.00278
	(A2 * A4 * B1 * !Y)	-0.00233	-0.00235	-0.00233
	(A2 * A4 * !B1 * Y)	0.00278	0.00282	0.00277
	(A2 * A4 * !B1 * Y)	-0.00250	-0.00253	-0.00250
	(A2 * !A4 * B1 * !Y)	0.00276	0.00282	0.00278
	(A2 * !A4 * B1 * !Y)	-0.00212	-0.00216	-0.00213
	(A2 * !A4 * !B1 * Y)	0.00277	0.00279	0.00277
	(A2 * !A4 * !B1 * Y)	-0.00314	-0.00322	-0.00321
	(A1 * !A2 * A4 * B1 * !Y)	0.00281	0.00280	0.00278
	(A1 * !A2 * A4 * B1 * !Y)	-0.00242	-0.00244	-0.00240
	(A1 * !A2 * A4 * !B1 * Y)	0.00278	0.00279	0.00277
	(A1 * !A2 * A4 * !B1 * Y)	-0.00249	-0.00252	-0.00249
	(A1 * !A2 * !A4 * B1 * !Y)	0.00278	0.00282	0.00278
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00212	-0.00215	-0.00212
	(A1 * !A2 * !A4 * !B1 * Y)	0.00277	0.00279	0.00277
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00293	-0.00303	-0.00298
	(!A1 * !A2 * A4 * B1 * !Y)	0.00303	0.00281	0.00277
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00296	-0.00327	-0.00328
	(!A1 * !A2 * A4 * !B1 * Y)	0.00277	0.00279	0.00277
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00320	-0.00328	-0.00326
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00252	0.00253	0.00252
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00336	-0.00337	-0.00336

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	-0.00072	-0.00073	-0.00072
	(A2 * A4 * B1 * !Y)	0.00057	0.00058	0.00057
	(A2 * A4 * !B1 * Y)	-0.00069	-0.00070	-0.00070
	(A2 * A4 * !B1 * Y)	0.00063	0.00064	0.00064
	(A2 * !A4 * B1 * !Y)	-0.00072	-0.00072	-0.00071
	(A2 * !A4 * B1 * !Y)	0.00053	0.00053	0.00053
	(A2 * !A4 * !B1 * Y)	-0.00070	-0.00070	-0.00070
	(A2 * !A4 * !B1 * Y)	0.00081	0.00081	0.00081
	(A1 * !A2 * A4 * B1 * !Y)	-0.00072	-0.00073	-0.00072
	(A1 * !A2 * A4 * B1 * !Y)	0.00059	0.00060	0.00059
	(A1 * !A2 * A4 * !B1 * Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * A4 * !B1 * Y)	0.00064	0.00063	0.00063
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00066	-0.00067	-0.00071
	(A1 * !A2 * !A4 * B1 * !Y)	0.00056	0.00056	0.00053
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !A4 * !B1 * Y)	0.00076	0.00076	0.00076
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * A4 * B1 * !Y)	0.00078	0.00078	0.00079
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00070	-0.00070	-0.00070
	(!A1 * !A2 * A4 * !B1 * Y)	0.00081	0.00081	0.00081
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00061	-0.00065	-0.00064
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00136	-0.00136	-0.00135
	(A2 * A4 * B1 * !Y)	0.00117	0.00117	0.00116
	(A2 * A4 * !B1 * Y)	-0.00134	-0.00135	-0.00135
	(A2 * A4 * !B1 * Y)	0.00126	0.00128	0.00127
	(A2 * !A4 * B1 * !Y)	-0.00135	-0.00135	-0.00135
	(A2 * !A4 * B1 * !Y)	0.00108	0.00108	0.00108
	(A2 * !A4 * !B1 * Y)	-0.00135	-0.00135	-0.00135
	(A2 * !A4 * !B1 * Y)	0.00161	0.00161	0.00160
	(A1 * !A2 * A4 * B1 * !Y)	-0.00135	-0.00137	-0.00136
	(A1 * !A2 * A4 * B1 * !Y)	0.00119	0.00121	0.00119
	(A1 * !A2 * A4 * !B1 * Y)	-0.00134	-0.00135	-0.00135
	(A1 * !A2 * A4 * !B1 * Y)	0.00125	0.00126	0.00125
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00122	-0.00124	-0.00129
	(A1 * !A2 * !A4 * B1 * !Y)	0.00114	0.00114	0.00110
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00134	-0.00136	-0.00135
	(A1 * !A2 * !A4 * !B1 * Y)	0.00149	0.00152	0.00150
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00135	-0.00136	-0.00134
	(!A1 * !A2 * A4 * B1 * !Y)	0.00159	0.00160	0.00159
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00135	-0.00135	-0.00135
	(!A1 * !A2 * A4 * !B1 * Y)	0.00160	0.00160	0.00159
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00117	-0.00124	-0.00124
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00165	0.00165	0.00165

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00278	-0.00279	-0.00277
	(A2 * A4 * B1 * !Y)	0.00233	0.00235	0.00233
	(A2 * A4 * !B1 * Y)	-0.00276	-0.00278	-0.00277
	(A2 * A4 * !B1 * Y)	0.00250	0.00253	0.00250
	(A2 * !A4 * B1 * !Y)	-0.00276	-0.00278	-0.00276
	(A2 * !A4 * B1 * !Y)	0.00216	0.00217	0.00217
	(A2 * !A4 * !B1 * Y)	-0.00277	-0.00277	-0.00276
	(A2 * !A4 * !B1 * Y)	0.00322	0.00322	0.00321
	(A1 * !A2 * A4 * B1 * !Y)	-0.00278	-0.00280	-0.00277
	(A1 * !A2 * A4 * B1 * !Y)	0.00242	0.00244	0.00240
	(A1 * !A2 * A4 * !B1 * Y)	-0.00276	-0.00278	-0.00277
	(A1 * !A2 * A4 * !B1 * Y)	0.00249	0.00252	0.00249
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00252	-0.00255	-0.00267
	(A1 * !A2 * !A4 * B1 * !Y)	0.00230	0.00229	0.00221
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00276	-0.00279	-0.00276
	(A1 * !A2 * !A4 * !B1 * Y)	0.00298	0.00303	0.00298
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00277	-0.00277	-0.00275
	(!A1 * !A2 * A4 * B1 * !Y)	0.00327	0.00327	0.00328
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00277	-0.00277	-0.00276
	(!A1 * !A2 * A4 * !B1 * Y)	0.00327	0.00328	0.00326
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00239	-0.00253	-0.00252
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00337	0.00337	0.00337

Passive power(pJ) for A4 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00080	0.00081	0.00080
	(A3 * B1 * !Y)	-0.00046	-0.00046	-0.00046
	(A3 * !B1 * Y)	0.00070	0.00070	0.00069
	(A3 * !B1 * Y)	-0.00080	-0.00082	-0.00081
	(A2 * !A3 * B1 * !Y)	0.00079	0.00081	0.00080
	(A2 * !A3 * B1 * !Y)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * !B1 * Y)	0.00069	0.00069	0.00069
	(A2 * !A3 * !B1 * Y)	-0.00074	-0.00077	-0.00077
	(A1 * !A2 * !A3 * B1 * !Y)	0.00079	0.00081	0.00080
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * !A3 * !B1 * Y)	0.00070	0.00070	0.00069
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00074	-0.00076	-0.00075
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00063	0.00064	0.00064
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00083	-0.00084	-0.00083
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00154	0.00156	0.00154
	(A3 * B1 * !Y)	-0.00094	-0.00095	-0.00094
	(A3 * !B1 * Y)	0.00138	0.00138	0.00137
	(A3 * !B1 * Y)	-0.00159	-0.00163	-0.00162
	(A2 * !A3 * B1 * !Y)	0.00154	0.00156	0.00154
	(A2 * !A3 * B1 * !Y)	-0.00094	-0.00095	-0.00094
	(A2 * !A3 * !B1 * Y)	0.00137	0.00137	0.00137
	(A2 * !A3 * !B1 * Y)	-0.00148	-0.00155	-0.00152
	(A1 * !A2 * !A3 * B1 * !Y)	0.00154	0.00156	0.00154
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * !A2 * !A3 * !B1 * Y)	0.00136	0.00138	0.00137
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00145	-0.00150	-0.00149
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00167	-0.00167	-0.00167

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00318	0.00322	0.00317
	(A3 * B1 * !Y)	-0.00183	-0.00184	-0.00182
	(A3 * !B1 * Y)	0.00280	0.00280	0.00278
	(A3 * !B1 * Y)	-0.00316	-0.00323	-0.00322
	(A2 * !A3 * B1 * !Y)	0.00317	0.00322	0.00317
	(A2 * !A3 * B1 * !Y)	-0.00182	-0.00184	-0.00181
	(A2 * !A3 * !B1 * Y)	0.00277	0.00278	0.00278
	(A2 * !A3 * !B1 * Y)	-0.00290	-0.00298	-0.00299
	(A1 * !A2 * !A3 * B1 * !Y)	0.00316	0.00316	0.00317
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00181	-0.00181	-0.00181
	(A1 * !A2 * !A3 * !B1 * Y)	0.00276	0.00280	0.00277
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00286	-0.00292	-0.00292
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00252	0.00254	0.00253
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00331	-0.00332	-0.00331

Passive power(pJ) for A4 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00075	-0.00076	-0.00079
	(A3 * B1 * !Y)	0.00050	0.00050	0.00047
	(A3 * !B1 * Y)	-0.00069	-0.00069	-0.00069
	(A3 * !B1 * Y)	0.00081	0.00082	0.00081
	(A2 * !A3 * B1 * !Y)	-0.00069	-0.00069	-0.00077
	(A2 * !A3 * B1 * !Y)	0.00054	0.00054	0.00048
	(A2 * !A3 * !B1 * Y)	-0.00069	-0.00069	-0.00069
	(A2 * !A3 * !B1 * Y)	0.00077	0.00077	0.00077
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00060	-0.00061	-0.00075
	(A1 * !A2 * !A3 * B1 * !Y)	0.00060	0.00059	0.00049
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * !A3 * !B1 * Y)	0.00075	0.00076	0.00075
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00060	-0.00064	-0.00064
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00083	0.00084	0.00084
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00140	-0.00142	-0.00152
	(A3 * B1 * !Y)	0.00106	0.00106	0.00097
	(A3 * !B1 * Y)	-0.00137	-0.00137	-0.00137
	(A3 * !B1 * Y)	0.00162	0.00163	0.00162
	(A2 * !A3 * B1 * !Y)	-0.00126	-0.00129	-0.00149
	(A2 * !A3 * B1 * !Y)	0.00114	0.00114	0.00099
	(A2 * !A3 * !B1 * Y)	-0.00136	-0.00137	-0.00137
	(A2 * !A3 * !B1 * Y)	0.00151	0.00155	0.00152
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00107	-0.00109	-0.00143
	(A1 * !A2 * !A3 * B1 * !Y)	0.00128	0.00127	0.00103
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00136	-0.00137	-0.00137
	(A1 * !A2 * !A3 * !B1 * Y)	0.00148	0.00150	0.00149
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00119	-0.00126	-0.00125
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00167	0.00167	0.00167

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	-0.00292	-0.00297	-0.00314
	(A3 * B1 * !Y)	0.00202	0.00204	0.00188
	(A3 * !B1 * Y)	-0.00278	-0.00278	-0.00277
	(A3 * !B1 * Y)	0.00322	0.00323	0.00322
	(A2 * !A3 * B1 * !Y)	-0.00266	-0.00271	-0.00308
	(A2 * !A3 * B1 * !Y)	0.00218	0.00218	0.00190
	(A2 * !A3 * !B1 * Y)	-0.00276	-0.00277	-0.00277
	(A2 * !A3 * !B1 * Y)	0.00297	0.00298	0.00299
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00227	-0.00233	-0.00296
	(A1 * !A2 * !A3 * B1 * !Y)	0.00242	0.00243	0.00198
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00276	-0.00277	-0.00277
	(A1 * !A2 * !A3 * !B1 * Y)	0.00291	0.00292	0.00292
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00240	-0.00254	-0.00253
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00332	0.00334	0.00332

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00034	0.00034	0.00030
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00095	-0.00096	-0.00103
sky130_fd_sc_hs__o41ai_2	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00078	0.00079	0.00071
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00180	-0.00183	-0.00197
sky130_fd_sc_hs__o41ai_4	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00118	0.00117	0.00103
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00198	-0.00199	-0.00226

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00105	0.00104	0.00104
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00068	-0.00068	-0.00067
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00200	0.00202	0.00199
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00098	-0.00098	-0.00097
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00230	0.00232	0.00229

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	X
0	0	0	0	x	0
0	0	x	1	0	0
0	0	x	1	1	1
0	x	1	x	0	0
0	x	1	x	1	1
x	1	x	x	0	0
x	1	x	x	1	1
1	x	x	x	0	0
1	x	x	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41a_1	14.38560
sky130_fd_sc_hs__o41a_2	15.98400
sky130_fd_sc_hs__o41a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__o41a_1	0.00236	0.00246	0.00246	0.00250	0.00231	0.43511
sky130_fd_sc_hs__o41a_2	0.00250	0.00263	0.00270	0.00259	0.00263	0.89115
sky130_fd_sc_hs__o41a_4	0.00449	0.00489	0.00494	0.00461	0.00430	1.66380

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.03108	0.05842
sky130_fd_sc_hs__o41a_2	0.00000	0.02860	0.04184
sky130_fd_sc_hs__o41a_4	0.00000	0.07626	0.12237

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (RR)	0.19336	1.19938	8.88678
	A2->X (RR)	0.18959	1.18385	8.80052
	A3->X (RR)	0.18155	1.16387	8.69011
	A4->X (RR)	0.16694	1.13599	8.55892
	B1->X (RR)	0.17619	1.16869	8.54282
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.19199	1.06336	9.02083
	A2->X (RR)	0.18945	1.05230	8.95854
	A3->X (RR)	0.18373	1.03712	8.87836
	A4->X (RR)	0.16731	1.01175	8.76983
	B1->X (RR)	0.17584	1.04754	8.75517
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.20632	0.98047	9.08031
	A2->X (RR)	0.20308	0.96796	9.00791
	A3->X (RR)	0.18826	0.94556	8.90777
	A4->X (RR)	0.17848	0.92154	8.78575
	B1->X (RR)	0.18882	0.96957	8.81706

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	1.01197	1.82056	7.04743
	A2->X (FF)	0.97296	1.76008	7.03821
	A3->X (FF)	0.88327	1.65574	6.92695
	A4->X (FF)	0.74887	1.45973	6.25869
	B1->X (FF)	0.18017	0.91846	5.52079
sky130_fd_sc_hs__o41a_2	A1->X (FF)	1.27243	2.10609	7.62937
	A2->X (FF)	1.24072	2.05504	7.68742
	A3->X (FF)	1.15737	1.95403	7.66395
	A4->X (FF)	0.99948	1.73744	7.01752
	B1->X (FF)	0.20742	0.94863	5.98566
sky130_fd_sc_hs__o41a_4	A1->X (FF)	1.24232	2.02983	7.57266
	A2->X (FF)	1.20250	1.96722	7.58857
	A3->X (FF)	1.08682	1.83346	7.50508
	A4->X (FF)	0.92585	1.61245	6.83255
	B1->X (FF)	0.21985	0.91508	5.87445

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.00640	0.00641	0.00637
	A1	0.00290	0.00291	0.00290
	A2	0.00567	0.00567	0.00562
	A2	0.00252	0.00252	0.00249
	A3	0.00489	0.00489	0.00484
	A3	0.00208	0.00209	0.00205
	A4	0.00416	0.00413	0.00411
	A4	0.00166	0.00162	0.00163
	B1	0.00570	0.00567	0.00575
	B1	0.00306	0.00306	0.00312
sky130_fd_sc_hs__o41a_2	A1	0.00785	0.00799	0.00800
	A1	0.00406	0.00421	0.00424
	A2	0.00719	0.00732	0.00731
	A2	0.00373	0.00388	0.00391
	A3	0.00644	0.00658	0.00655
	A3	0.00329	0.00343	0.00346
	A4	0.00559	0.00571	0.00571
	A4	0.00281	0.00293	0.00300
	B1	0.00705	0.00712	0.00719
	B1	0.00415	0.00422	0.00430

sky130_fd_sc_hs__o41a_4	**A1**	0.01514	0.01539	0.01543
	A1	0.00820	0.00846	0.00860
	A2	0.01407	0.01433	0.01434
	A2	0.00748	0.00775	0.00781
	A3	0.01229	0.01258	0.01259
	A3	0.00645	0.00674	0.00683
	A4	0.01037	0.01064	0.01069
	A4	0.00545	0.00573	0.00590
	B1	0.01366	0.01382	0.01411
	B1	0.00845	0.00863	0.00900

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00213	0.00220	0.00253
	A1	0.00561	0.00568	0.00565
	A2	0.00214	0.00222	0.00220
	A2	0.00524	0.00531	0.00527
	A3	0.00215	0.00222	0.00230
	A3	0.00486	0.00493	0.00490
	A4	0.00213	0.00216	0.00234
	A4	0.00452	0.00455	0.00470
	B1	0.00153	0.00146	0.00195
	B1	0.00426	0.00418	0.00456

sky130_fd_sc_hs__o41a_2	**A1**	0.00319	0.00338	0.00344
	A1	0.00693	0.00712	0.00716
	A2	0.00321	0.00340	0.00391
	A2	0.00658	0.00677	0.00680
	A3	0.00321	0.00338	0.00343
	A3	0.00624	0.00641	0.00644
	A4	0.00320	0.00334	0.00365
	A4	0.00583	0.00599	0.00619
	B1	0.00259	0.00263	0.00337
	B1	0.00559	0.00562	0.00591
sky130_fd_sc_hs__o41a_4	**A1**	0.00626	0.00665	0.00686
	A1	0.01320	0.01359	0.01376
	A2	0.00592	0.00633	0.00673
	A2	0.01242	0.01283	0.01300
	A3	0.00601	0.00637	0.00655
	A3	0.01167	0.01202	0.01216
	A4	0.00623	0.00655	0.00862
	A4	0.01094	0.01124	0.01171
	B1	0.00520	0.00533	0.00692
	B1	0.01062	0.01077	0.01157

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	0.00063	0.00064	0.00063
	(A2 * A4 * B1 * X)	-0.00081	-0.00083	-0.00083
	(A2 * A3 * !A4 * B1 * X)	0.00063	0.00064	0.00063
	(A2 * A3 * !A4 * B1 * X)	-0.00081	-0.00083	-0.00083
	(A2 * !B1 * !X)	0.00063	0.00064	0.00063
	(A2 * !B1 * !X)	-0.00081	-0.00083	-0.00083
	(A2 * !A3 * !A4 * B1 * X)	0.00063	0.00064	0.00063
	(A2 * !A3 * !A4 * B1 * X)	-0.00080	-0.00083	-0.00083
	(!A2 * A3 * A4 * B1 * X)	0.00063	0.00064	0.00063
	(!A2 * A3 * A4 * B1 * X)	-0.00076	-0.00080	-0.00079
	(!A2 * A3 * !B1 * !X)	0.00063	0.00064	0.00063
	(!A2 * A3 * !B1 * !X)	-0.00076	-0.00080	-0.00079
	(!A2 * A3 * !A4 * B1 * X)	0.00063	0.00064	0.00063
	(!A2 * A3 * !A4 * B1 * X)	-0.00076	-0.00080	-0.00079
	(!A2 * !A3 * A4 * B1 * X)	0.00064	0.00064	0.00063
	(!A2 * !A3 * A4 * B1 * X)	-0.00075	-0.00079	-0.00078
	(!A2 * !A3 * A4 * !B1 * !X)	0.00064	0.00064	0.00063
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00076	-0.00079	-0.00078
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00058	0.00059	0.00058
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00084	-0.00085	-0.00084

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00072	0.00073	0.00072
	(A2 * A4 * B1 * X)	-0.00079	-0.00081	-0.00081
	(A2 * A3 * !A4 * B1 * X)	0.00072	0.00073	0.00072
	(A2 * A3 * !A4 * B1 * X)	-0.00079	-0.00081	-0.00081
	(A2 * !B1 * !X)	0.00072	0.00073	0.00072
	(A2 * !B1 * !X)	-0.00079	-0.00081	-0.00081
	(A2 * !A3 * !A4 * B1 * X)	0.00072	0.00073	0.00072
	(A2 * !A3 * !A4 * B1 * X)	-0.00079	-0.00081	-0.00081
	(!A2 * A3 * A4 * B1 * X)	0.00072	0.00073	0.00072
	(!A2 * A3 * A4 * B1 * X)	-0.00074	-0.00078	-0.00077
	(!A2 * A3 * !B1 * !X)	0.00072	0.00073	0.00072
	(!A2 * A3 * !B1 * !X)	-0.00074	-0.00078	-0.00077
	(!A2 * A3 * !A4 * B1 * X)	0.00072	0.00073	0.00072
	(!A2 * A3 * !A4 * B1 * X)	-0.00074	-0.00078	-0.00077
	(!A2 * !A3 * A4 * B1 * X)	0.00072	0.00073	0.00072
	(!A2 * !A3 * A4 * B1 * X)	-0.00073	-0.00077	-0.00076
	(!A2 * !A3 * A4 * !B1 * !X)	0.00072	0.00073	0.00072
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00073	-0.00077	-0.00076
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00066	0.00067	0.00066
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00082	-0.00083	-0.00082

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00117	0.00117	0.00116
	(A2 * A4 * B1 * X)	-0.00157	-0.00161	-0.00161
	(A2 * A3 * !A4 * B1 * X)	0.00117	0.00117	0.00116
	(A2 * A3 * !A4 * B1 * X)	-0.00157	-0.00161	-0.00161
	(A2 * !B1 * !X)	0.00116	0.00117	0.00116
	(A2 * !B1 * !X)	-0.00157	-0.00161	-0.00161
	(A2 * !A3 * !A4 * B1 * X)	0.00117	0.00117	0.00116
	(A2 * !A3 * !A4 * B1 * X)	-0.00156	-0.00160	-0.00160
	(!A2 * A3 * A4 * B1 * X)	0.00117	0.00117	0.00116
	(!A2 * A3 * A4 * B1 * X)	-0.00146	-0.00154	-0.00152
	(!A2 * A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(!A2 * A3 * !B1 * !X)	-0.00147	-0.00154	-0.00153
	(!A2 * A3 * !A4 * B1 * X)	0.00117	0.00117	0.00116
	(!A2 * A3 * !A4 * B1 * X)	-0.00146	-0.00154	-0.00152
	(!A2 * !A3 * A4 * B1 * X)	0.00117	0.00117	0.00116
	(!A2 * !A3 * A4 * B1 * X)	-0.00145	-0.00151	-0.00150
	(!A2 * !A3 * A4 * !B1 * !X)	0.00117	0.00117	0.00116
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00145	-0.00151	-0.00150
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00106	0.00106	0.00106
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00166	-0.00166	-0.00166

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	-0.00063	-0.00063	-0.00063
	(A2 * A4 * B1 * X)	0.00083	0.00083	0.00083
	(A2 * A3 * !A4 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A2 * A3 * !A4 * B1 * X)	0.00083	0.00083	0.00083
	(A2 * !B1 * !X)	-0.00063	-0.00063	-0.00063
	(A2 * !B1 * !X)	0.00083	0.00083	0.00083
	(A2 * !A3 * !A4 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A2 * !A3 * !A4 * B1 * X)	0.00083	0.00083	0.00083
	(!A2 * A3 * A4 * B1 * X)	-0.00063	-0.00063	-0.00063
	(!A2 * A3 * A4 * B1 * X)	0.00079	0.00080	0.00079
	(!A2 * A3 * !B1 * !X)	-0.00063	-0.00063	-0.00063
	(!A2 * A3 * !B1 * !X)	0.00079	0.00080	0.00079
	(!A2 * A3 * !A4 * B1 * X)	-0.00063	-0.00063	-0.00063
	(!A2 * A3 * !A4 * B1 * X)	0.00079	0.00080	0.00079
	(!A2 * !A3 * A4 * B1 * X)	-0.00063	-0.00063	-0.00063
	(!A2 * !A3 * A4 * B1 * X)	0.00078	0.00079	0.00078
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00063	-0.00063	-0.00063
	(!A2 * !A3 * A4 * !B1 * !X)	0.00078	0.00079	0.00078
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00056	-0.00059	-0.00058
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00084	0.00085	0.00084

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00072	-0.00072	-0.00072
	(A2 * A4 * B1 * X)	0.00081	0.00081	0.00081
	(A2 * A3 * !A4 * B1 * X)	-0.00072	-0.00072	-0.00072
	(A2 * A3 * !A4 * B1 * X)	0.00081	0.00081	0.00081
	(A2 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * !B1 * !X)	0.00081	0.00081	0.00081
	(A2 * !A3 * !A4 * B1 * X)	-0.00072	-0.00072	-0.00072
	(A2 * !A3 * !A4 * B1 * X)	0.00081	0.00081	0.00081
	(!A2 * A3 * A4 * B1 * X)	-0.00072	-0.00072	-0.00072
	(!A2 * A3 * A4 * B1 * X)	0.00077	0.00078	0.00077
	(!A2 * A3 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(!A2 * A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A2 * A3 * !A4 * B1 * X)	-0.00072	-0.00072	-0.00072
	(!A2 * A3 * !A4 * B1 * X)	0.00077	0.00078	0.00077
	(!A2 * !A3 * A4 * B1 * X)	-0.00072	-0.00072	-0.00072
	(!A2 * !A3 * A4 * B1 * X)	0.00076	0.00077	0.00076
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(!A2 * !A3 * A4 * !B1 * !X)	0.00076	0.00077	0.00076
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00063	-0.00067	-0.00066
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00116	-0.00116	-0.00116
	(A2 * A4 * B1 * X)	0.00161	0.00161	0.00161
	(A2 * A3 * !A4 * B1 * X)	-0.00116	-0.00116	-0.00116
	(A2 * A3 * !A4 * B1 * X)	0.00162	0.00161	0.00161
	(A2 * !B1 * !X)	-0.00116	-0.00115	-0.00115
	(A2 * !B1 * !X)	0.00162	0.00161	0.00161
	(A2 * !A3 * !A4 * B1 * X)	-0.00116	-0.00116	-0.00116
	(A2 * !A3 * !A4 * B1 * X)	0.00161	0.00160	0.00160
	(!A2 * A3 * A4 * B1 * X)	-0.00116	-0.00116	-0.00116
	(!A2 * A3 * A4 * B1 * X)	0.00153	0.00154	0.00152
	(!A2 * A3 * !B1 * !X)	-0.00116	-0.00116	-0.00115
	(!A2 * A3 * !B1 * !X)	0.00153	0.00154	0.00153
	(!A2 * A3 * !A4 * B1 * X)	-0.00116	-0.00116	-0.00116
	(!A2 * A3 * !A4 * B1 * X)	0.00153	0.00154	0.00152
	(!A2 * !A3 * A4 * B1 * X)	-0.00116	-0.00116	-0.00116
	(!A2 * !A3 * A4 * B1 * X)	0.00150	0.00151	0.00150
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(!A2 * !A3 * A4 * !B1 * !X)	0.00149	0.00151	0.00150
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00100	-0.00106	-0.00106
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00166	0.00168	0.00166

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A1 * A3 * A4 * B1 * X)**	0.00061	0.00062	0.00061
	(A1 * A3 * A4 * B1 * X)	-0.00063	-0.00063	-0.00062
	(A1 * A3 * !B1 * !X)	0.00061	0.00062	0.00061
	(A1 * A3 * !B1 * !X)	-0.00064	-0.00064	-0.00063
	(A1 * A3 * !A4 * B1 * X)	0.00061	0.00062	0.00061
	(A1 * A3 * !A4 * B1 * X)	-0.00061	-0.00061	-0.00060
	(A1 * !A3 * A4 * B1 * X)	0.00061	0.00061	0.00061
	(A1 * !A3 * A4 * B1 * X)	-0.00060	-0.00060	-0.00059
	(A1 * !A3 * A4 * !B1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A3 * A4 * !B1 * !X)	-0.00063	-0.00062	-0.00062
	(A1 * !A3 * !A4 * B1 * X)	0.00062	0.00062	0.00061
	(A1 * !A3 * !A4 * B1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * !A3 * !A4 * !B1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * A3 * A4 * B1 * X)	0.00061	0.00061	0.00061
	(!A1 * A3 * A4 * B1 * X)	-0.00079	-0.00081	-0.00080
	(!A1 * A3 * !B1 * !X)	0.00061	0.00061	0.00061
	(!A1 * A3 * !B1 * !X)	-0.00079	-0.00081	-0.00080
	(!A1 * A3 * !A4 * B1 * X)	0.00061	0.00061	0.00061
	(!A1 * A3 * !A4 * B1 * X)	-0.00078	-0.00081	-0.00080
	(!A1 * !A3 * A4 * B1 * X)	0.00061	0.00061	0.00061
	(!A1 * !A3 * A4 * B1 * X)	-0.00072	-0.00076	-0.00076
	(!A1 * !A3 * A4 * !B1 * !X)	0.00061	0.00061	0.00061
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00073	-0.00076	-0.00076
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00056	0.00057	0.00056
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00082	-0.00083	-0.00082

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00069	0.00070	0.00069
	(A1 * A3 * A4 * B1 * X)	-0.00062	-0.00062	-0.00061
	(A1 * A3 * !B1 * !X)	0.00069	0.00070	0.00069
	(A1 * A3 * !B1 * !X)	-0.00062	-0.00063	-0.00062
	(A1 * A3 * !A4 * B1 * X)	0.00069	0.00070	0.00069
	(A1 * A3 * !A4 * B1 * X)	-0.00060	-0.00060	-0.00059
	(A1 * !A3 * A4 * B1 * X)	0.00069	0.00070	0.00069
	(A1 * !A3 * A4 * B1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A3 * A4 * !B1 * !X)	0.00069	0.00069	0.00069
	(A1 * !A3 * A4 * !B1 * !X)	-0.00061	-0.00062	-0.00062
	(A1 * !A3 * !A4 * B1 * X)	0.00070	0.00070	0.00069
	(A1 * !A3 * !A4 * B1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * !A3 * !A4 * !B1 * !X)	0.00070	0.00070	0.00069
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * A3 * A4 * B1 * X)	0.00070	0.00069	0.00069
	(!A1 * A3 * A4 * B1 * X)	-0.00079	-0.00080	-0.00080
	(!A1 * A3 * !B1 * !X)	0.00070	0.00069	0.00069
	(!A1 * A3 * !B1 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * A3 * !A4 * B1 * X)	0.00070	0.00069	0.00069
	(!A1 * A3 * !A4 * B1 * X)	-0.00078	-0.00080	-0.00080
	(!A1 * !A3 * A4 * B1 * X)	0.00069	0.00069	0.00069
	(!A1 * !A3 * A4 * B1 * X)	-0.00072	-0.00076	-0.00075
	(!A1 * !A3 * A4 * !B1 * !X)	0.00069	0.00069	0.00069
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00072	-0.00076	-0.00075
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00063	0.00064	0.00063
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00082	-0.00083	-0.00082

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00147	0.00148	0.00147
	(A1 * A3 * A4 * B1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * A3 * !B1 * !X)	0.00145	0.00147	0.00146
	(A1 * A3 * !B1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * A3 * !A4 * B1 * X)	0.00147	0.00148	0.00147
	(A1 * A3 * !A4 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * !A3 * A4 * B1 * X)	0.00146	0.00149	0.00146
	(A1 * !A3 * A4 * B1 * X)	-0.00114	-0.00115	-0.00115
	(A1 * !A3 * A4 * !B1 * !X)	0.00146	0.00148	0.00146
	(A1 * !A3 * A4 * !B1 * !X)	-0.00121	-0.00122	-0.00122
	(A1 * !A3 * !A4 * B1 * X)	0.00146	0.00147	0.00146
	(A1 * !A3 * !A4 * B1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * !A3 * !A4 * !B1 * !X)	0.00145	0.00147	0.00146
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00155	-0.00158	-0.00157
	(!A1 * A3 * A4 * B1 * X)	0.00147	0.00148	0.00146
	(!A1 * A3 * A4 * B1 * X)	-0.00151	-0.00158	-0.00156
	(!A1 * A3 * !B1 * !X)	0.00146	0.00147	0.00146
	(!A1 * A3 * !B1 * !X)	-0.00153	-0.00159	-0.00157
	(!A1 * A3 * !A4 * B1 * X)	0.00147	0.00148	0.00146
	(!A1 * A3 * !A4 * B1 * X)	-0.00151	-0.00158	-0.00156
	(!A1 * !A3 * A4 * B1 * X)	0.00146	0.00147	0.00146
	(!A1 * !A3 * A4 * B1 * X)	-0.00142	-0.00148	-0.00148
	(!A1 * !A3 * A4 * !B1 * !X)	0.00145	0.00147	0.00146
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00143	-0.00149	-0.00148
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00135	0.00137	0.00136
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00162	-0.00163	-0.00162

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A1 * A3 * A4 * B1 * X)**	-0.00061	-0.00061	-0.00061
	(A1 * A3 * A4 * B1 * X)	0.00063	0.00063	0.00062
	(A1 * A3 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * A3 * !B1 * !X)	0.00064	0.00064	0.00063
	(A1 * A3 * !A4 * B1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A3 * !A4 * B1 * X)	0.00061	0.00061	0.00060
	(A1 * !A3 * A4 * B1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * !A3 * A4 * B1 * X)	0.00060	0.00060	0.00059
	(A1 * !A3 * A4 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * !A3 * A4 * !B1 * !X)	0.00063	0.00062	0.00062
	(A1 * !A3 * !A4 * B1 * X)	-0.00060	-0.00061	-0.00061
	(A1 * !A3 * !A4 * B1 * X)	0.00054	0.00055	0.00054
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * !A3 * !A4 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * A3 * A4 * B1 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * A3 * A4 * B1 * X)	0.00080	0.00081	0.00080
	(!A1 * A3 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(!A1 * A3 * !B1 * !X)	0.00080	0.00081	0.00080
	(!A1 * A3 * !A4 * B1 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * A3 * !A4 * B1 * X)	0.00080	0.00081	0.00080
	(!A1 * !A3 * A4 * B1 * X)	-0.00061	-0.00061	-0.00060
	(!A1 * !A3 * A4 * B1 * X)	0.00076	0.00076	0.00076
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(!A1 * !A3 * A4 * !B1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00053	-0.00057	-0.00056
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00082	0.00083	0.00082

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00069	-0.00069	-0.00069
	(A1 * A3 * A4 * B1 * X)	0.00062	0.00062	0.00061
	(A1 * A3 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * A3 * !B1 * !X)	0.00062	0.00063	0.00062
	(A1 * A3 * !A4 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A3 * !A4 * B1 * X)	0.00060	0.00060	0.00059
	(A1 * !A3 * A4 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * A4 * B1 * X)	0.00059	0.00059	0.00059
	(A1 * !A3 * A4 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * A4 * !B1 * !X)	0.00061	0.00062	0.00062
	(A1 * !A3 * !A4 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * !A4 * B1 * X)	0.00054	0.00054	0.00054
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * !A4 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * A3 * A4 * B1 * X)	-0.00069	-0.00069	-0.00069
	(!A1 * A3 * A4 * B1 * X)	0.00080	0.00080	0.00080
	(!A1 * A3 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * A3 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * A3 * !A4 * B1 * X)	-0.00069	-0.00069	-0.00069
	(!A1 * A3 * !A4 * B1 * X)	0.00080	0.00080	0.00080
	(!A1 * !A3 * A4 * B1 * X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A3 * A4 * B1 * X)	0.00076	0.00076	0.00075
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A3 * A4 * !B1 * !X)	0.00076	0.00076	0.00075
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00060	-0.00064	-0.00063
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00082	0.00083	0.00083

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00146	-0.00147	-0.00146
	(A1 * A3 * A4 * B1 * X)	0.00121	0.00122	0.00121
	(A1 * A3 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * A3 * !B1 * !X)	0.00124	0.00125	0.00124
	(A1 * A3 * !A4 * B1 * X)	-0.00146	-0.00147	-0.00146
	(A1 * A3 * !A4 * B1 * X)	0.00116	0.00117	0.00116
	(A1 * !A3 * A4 * B1 * X)	-0.00146	-0.00146	-0.00146
	(A1 * !A3 * A4 * B1 * X)	0.00114	0.00115	0.00115
	(A1 * !A3 * A4 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !A3 * A4 * !B1 * !X)	0.00121	0.00122	0.00122
	(A1 * !A3 * !A4 * B1 * X)	-0.00146	-0.00146	-0.00146
	(A1 * !A3 * !A4 * B1 * X)	0.00105	0.00106	0.00105
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !A3 * !A4 * !B1 * !X)	0.00158	0.00158	0.00157
	(!A1 * A3 * A4 * B1 * X)	-0.00146	-0.00147	-0.00146
	(!A1 * A3 * A4 * B1 * X)	0.00156	0.00158	0.00156
	(!A1 * A3 * !B1 * !X)	-0.00146	-0.00147	-0.00145
	(!A1 * A3 * !B1 * !X)	0.00158	0.00159	0.00157
	(!A1 * A3 * !A4 * B1 * X)	-0.00146	-0.00147	-0.00146
	(!A1 * A3 * !A4 * B1 * X)	0.00156	0.00158	0.00156
	(!A1 * !A3 * A4 * B1 * X)	-0.00145	-0.00146	-0.00146
	(!A1 * !A3 * A4 * B1 * X)	0.00147	0.00148	0.00148
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(!A1 * !A3 * A4 * !B1 * !X)	0.00147	0.00149	0.00148
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00130	-0.00137	-0.00136
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00163	0.00164	0.00163

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	0.00061	0.00062	0.00060
	(A2 * A4 * B1 * X)	-0.00057	-0.00057	-0.00057
	(A2 * A4 * !B1 * !X)	0.00060	0.00061	0.00060
	(A2 * A4 * !B1 * !X)	-0.00061	-0.00061	-0.00060
	(A2 * !A4 * B1 * X)	0.00061	0.00061	0.00060
	(A2 * !A4 * B1 * X)	-0.00051	-0.00052	-0.00051
	(A2 * !A4 * !B1 * !X)	0.00061	0.00061	0.00060
	(A2 * !A4 * !B1 * !X)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * A4 * B1 * X)	0.00062	0.00061	0.00060
	(A1 * !A2 * A4 * B1 * X)	-0.00059	-0.00059	-0.00058
	(A1 * !A2 * A4 * !B1 * !X)	0.00060	0.00061	0.00060
	(A1 * !A2 * A4 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * !A2 * !A4 * B1 * X)	0.00062	0.00062	0.00060
	(A1 * !A2 * !A4 * B1 * X)	-0.00052	-0.00051	-0.00051
	(A1 * !A2 * !A4 * !B1 * !X)	0.00060	0.00061	0.00060
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00070	-0.00073	-0.00072
	(!A1 * !A2 * A4 * B1 * X)	0.00067	0.00061	0.00060
	(!A1 * !A2 * A4 * B1 * X)	-0.00069	-0.00078	-0.00078
	(!A1 * !A2 * A4 * !B1 * !X)	0.00060	0.00061	0.00060
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00076	-0.00078	-0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00080	-0.00080	-0.00080

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00073	0.00074	0.00073
	(A2 * A4 * B1 * X)	-0.00058	-0.00058	-0.00058
	(A2 * A4 * !B1 * !X)	0.00070	0.00071	0.00070
	(A2 * A4 * !B1 * !X)	-0.00064	-0.00065	-0.00065
	(A2 * !A4 * B1 * X)	0.00074	0.00074	0.00073
	(A2 * !A4 * B1 * X)	-0.00052	-0.00053	-0.00052
	(A2 * !A4 * !B1 * !X)	0.00071	0.00070	0.00070
	(A2 * !A4 * !B1 * !X)	-0.00080	-0.00082	-0.00082
	(A1 * !A2 * A4 * B1 * X)	0.00074	0.00074	0.00073
	(A1 * !A2 * A4 * B1 * X)	-0.00059	-0.00060	-0.00059
	(A1 * !A2 * A4 * !B1 * !X)	0.00070	0.00070	0.00070
	(A1 * !A2 * A4 * !B1 * !X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * !A4 * B1 * X)	0.00074	0.00074	0.00073
	(A1 * !A2 * !A4 * B1 * X)	-0.00053	-0.00052	-0.00052
	(A1 * !A2 * !A4 * !B1 * !X)	0.00070	0.00071	0.00070
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00074	-0.00077	-0.00077
	(!A1 * !A2 * A4 * B1 * X)	0.00081	0.00074	0.00073
	(!A1 * !A2 * A4 * B1 * X)	-0.00072	-0.00079	-0.00079
	(!A1 * !A2 * A4 * !B1 * !X)	0.00071	0.00071	0.00070
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00064	0.00065	0.00064
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00084	-0.00084	-0.00084

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00146	0.00147	0.00146
	(A2 * A4 * B1 * X)	-0.00114	-0.00115	-0.00114
	(A2 * A4 * !B1 * !X)	0.00143	0.00144	0.00143
	(A2 * A4 * !B1 * !X)	-0.00124	-0.00125	-0.00124
	(A2 * !A4 * B1 * X)	0.00145	0.00146	0.00145
	(A2 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(A2 * !A4 * !B1 * !X)	0.00143	0.00145	0.00143
	(A2 * !A4 * !B1 * !X)	-0.00152	-0.00155	-0.00156
	(A1 * !A2 * A4 * B1 * X)	0.00147	0.00147	0.00145
	(A1 * !A2 * A4 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * A4 * !B1 * !X)	0.00143	0.00145	0.00143
	(A1 * !A2 * A4 * !B1 * !X)	-0.00121	-0.00123	-0.00122
	(A1 * !A2 * !A4 * B1 * X)	0.00146	0.00146	0.00145
	(A1 * !A2 * !A4 * B1 * X)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * !A4 * !B1 * !X)	0.00143	0.00145	0.00143
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00142	-0.00147	-0.00146
	(!A1 * !A2 * A4 * B1 * X)	0.00156	0.00146	0.00144
	(!A1 * !A2 * A4 * B1 * X)	-0.00142	-0.00157	-0.00157
	(!A1 * !A2 * A4 * !B1 * !X)	0.00143	0.00145	0.00143
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00154	-0.00158	-0.00157
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00133	0.00133	0.00132
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00162	-0.00162	-0.00162

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	-0.00060	-0.00061	-0.00060
	(A2 * A4 * B1 * X)	0.00057	0.00057	0.00057
	(A2 * A4 * !B1 * !X)	-0.00060	-0.00061	-0.00060
	(A2 * A4 * !B1 * !X)	0.00061	0.00061	0.00060
	(A2 * !A4 * B1 * X)	-0.00060	-0.00060	-0.00059
	(A2 * !A4 * B1 * X)	0.00053	0.00053	0.00053
	(A2 * !A4 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(A2 * !A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(A1 * !A2 * A4 * B1 * X)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * A4 * B1 * X)	0.00059	0.00059	0.00058
	(A1 * !A2 * A4 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * !A2 * A4 * !B1 * !X)	0.00060	0.00060	0.00060
	(A1 * !A2 * !A4 * B1 * X)	-0.00053	-0.00054	-0.00059
	(A1 * !A2 * !A4 * B1 * X)	0.00056	0.00056	0.00053
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * !A4 * !B1 * !X)	0.00073	0.00073	0.00072
	(!A1 * !A2 * A4 * B1 * X)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * A4 * B1 * X)	0.00078	0.00078	0.00078
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00053	-0.00056	-0.00056
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00080	0.00081	0.00080

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00073	-0.00073	-0.00073
	(A2 * A4 * B1 * X)	0.00058	0.00058	0.00058
	(A2 * A4 * !B1 * !X)	-0.00069	-0.00070	-0.00070
	(A2 * A4 * !B1 * !X)	0.00064	0.00065	0.00065
	(A2 * !A4 * B1 * X)	-0.00072	-0.00073	-0.00072
	(A2 * !A4 * B1 * X)	0.00053	0.00053	0.00053
	(A2 * !A4 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(A2 * !A4 * !B1 * !X)	0.00082	0.00082	0.00082
	(A1 * !A2 * A4 * B1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * !A2 * A4 * B1 * X)	0.00059	0.00060	0.00059
	(A1 * !A2 * A4 * !B1 * !X)	-0.00069	-0.00070	-0.00070
	(A1 * !A2 * A4 * !B1 * !X)	0.00064	0.00064	0.00064
	(A1 * !A2 * !A4 * B1 * X)	-0.00067	-0.00068	-0.00071
	(A1 * !A2 * !A4 * B1 * X)	0.00056	0.00056	0.00054
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !A4 * !B1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A2 * A4 * B1 * X)	-0.00073	-0.00073	-0.00072
	(!A1 * !A2 * A4 * B1 * X)	0.00079	0.00079	0.00079
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(!A1 * !A2 * A4 * !B1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00061	-0.00065	-0.00064
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00084	0.00085	0.00084

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00145	-0.00146	-0.00145
	(A2 * A4 * B1 * X)	0.00114	0.00115	0.00114
	(A2 * A4 * !B1 * !X)	-0.00143	-0.00144	-0.00143
	(A2 * A4 * !B1 * !X)	0.00124	0.00125	0.00124
	(A2 * !A4 * B1 * X)	-0.00142	-0.00142	-0.00141
	(A2 * !A4 * B1 * X)	0.00106	0.00106	0.00106
	(A2 * !A4 * !B1 * !X)	-0.00143	-0.00143	-0.00143
	(A2 * !A4 * !B1 * !X)	0.00156	0.00155	0.00156
	(A1 * !A2 * A4 * B1 * X)	-0.00144	-0.00145	-0.00144
	(A1 * !A2 * A4 * B1 * X)	0.00116	0.00117	0.00116
	(A1 * !A2 * A4 * !B1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * A4 * !B1 * !X)	0.00121	0.00123	0.00122
	(A1 * !A2 * !A4 * B1 * X)	-0.00128	-0.00131	-0.00140
	(A1 * !A2 * !A4 * B1 * X)	0.00112	0.00112	0.00105
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * !A4 * !B1 * !X)	0.00145	0.00147	0.00146
	(!A1 * !A2 * A4 * B1 * X)	-0.00144	-0.00144	-0.00143
	(!A1 * !A2 * A4 * B1 * X)	0.00157	0.00157	0.00157
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00143	-0.00143	-0.00143
	(!A1 * !A2 * A4 * !B1 * !X)	0.00157	0.00158	0.00157
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00127	-0.00133	-0.00132
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00162	0.00163	0.00162

Passive power(pJ) for A4 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00070	0.00071	0.00070
	(A3 * B1 * X)	-0.00046	-0.00046	-0.00046
	(A3 * !B1 * !X)	0.00062	0.00062	0.00061
	(A3 * !B1 * !X)	-0.00078	-0.00080	-0.00079
	(A2 * !A3 * B1 * X)	0.00070	0.00071	0.00070
	(A2 * !A3 * B1 * X)	-0.00046	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !X)	0.00061	0.00062	0.00061
	(A2 * !A3 * !B1 * !X)	-0.00072	-0.00075	-0.00075
	(A1 * !A2 * !A3 * B1 * X)	0.00070	0.00071	0.00070
	(A1 * !A2 * !A3 * B1 * X)	-0.00046	-0.00046	-0.00045
	(A1 * !A2 * !A3 * !B1 * !X)	0.00062	0.00062	0.00061
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00057	0.00057	0.00057
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00078	0.00079	0.00078
	(A3 * B1 * X)	-0.00046	-0.00046	-0.00046
	(A3 * !B1 * !X)	0.00071	0.00070	0.00070
	(A3 * !B1 * !X)	-0.00078	-0.00079	-0.00079
	(A2 * !A3 * B1 * X)	0.00078	0.00079	0.00078
	(A2 * !A3 * B1 * X)	-0.00046	-0.00046	-0.00046
	(A2 * !A3 * !B1 * !X)	0.00070	0.00070	0.00070
	(A2 * !A3 * !B1 * !X)	-0.00072	-0.00075	-0.00075
	(A1 * !A2 * !A3 * B1 * X)	0.00079	0.00079	0.00078
	(A1 * !A2 * !A3 * B1 * X)	-0.00047	-0.00046	-0.00046
	(A1 * !A2 * !A3 * !B1 * !X)	0.00070	0.00070	0.00070
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00081	-0.00081	-0.00081

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00132	0.00133	0.00131
	(A3 * B1 * X)	-0.00094	-0.00094	-0.00092
	(A3 * !B1 * !X)	0.00117	0.00117	0.00116
	(A3 * !B1 * !X)	-0.00155	-0.00159	-0.00159
	(A2 * !A3 * B1 * X)	0.00132	0.00133	0.00131
	(A2 * !A3 * B1 * X)	-0.00093	-0.00094	-0.00092
	(A2 * !A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A2 * !A3 * !B1 * !X)	-0.00145	-0.00150	-0.00149
	(A1 * !A2 * !A3 * B1 * X)	0.00133	0.00133	0.00131
	(A1 * !A2 * !A3 * B1 * X)	-0.00094	-0.00094	-0.00092
	(A1 * !A2 * !A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00142	-0.00146	-0.00145
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00106	0.00106	0.00106
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00163	-0.00164	-0.00164

Passive power(pJ) for A4 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00065	-0.00066	-0.00069
	(A3 * B1 * X)	0.00049	0.00050	0.00047
	(A3 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(A3 * !B1 * !X)	0.00079	0.00080	0.00079
	(A2 * !A3 * B1 * X)	-0.00059	-0.00060	-0.00068
	(A2 * !A3 * B1 * X)	0.00053	0.00054	0.00047
	(A2 * !A3 * !B1 * !X)	-0.00061	-0.00062	-0.00061
	(A2 * !A3 * !B1 * !X)	0.00075	0.00075	0.00075
	(A1 * !A2 * !A3 * B1 * X)	-0.00050	-0.00051	-0.00065
	(A1 * !A2 * !A3 * B1 * X)	0.00059	0.00059	0.00049
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00062	-0.00062	-0.00061
	(A1 * !A2 * !A3 * !B1 * !X)	0.00073	0.00074	0.00073
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00054	-0.00057	-0.00057
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00081	0.00082	0.00082
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00072	-0.00073	-0.00077
	(A3 * B1 * X)	0.00050	0.00050	0.00047
	(A3 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(A3 * !B1 * !X)	0.00079	0.00079	0.00079
	(A2 * !A3 * B1 * X)	-0.00066	-0.00067	-0.00075
	(A2 * !A3 * B1 * X)	0.00054	0.00055	0.00048
	(A2 * !A3 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(A2 * !A3 * !B1 * !X)	0.00075	0.00075	0.00075
	(A1 * !A2 * !A3 * B1 * X)	-0.00058	-0.00059	-0.00073
	(A1 * !A2 * !A3 * B1 * X)	0.00059	0.00059	0.00049
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !A3 * !B1 * !X)	0.00073	0.00074	0.00073
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00060	-0.00064	-0.00064
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00081	0.00082	0.00081

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00122	-0.00123	-0.00130
	(A3 * B1 * X)	0.00102	0.00102	0.00095
	(A3 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A3 * !B1 * !X)	0.00159	0.00159	0.00159
	(A2 * !A3 * B1 * X)	-0.00104	-0.00106	-0.00126
	(A2 * !A3 * B1 * X)	0.00111	0.00112	0.00097
	(A2 * !A3 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A2 * !A3 * !B1 * !X)	0.00149	0.00150	0.00149
	(A1 * !A2 * !A3 * B1 * X)	-0.00088	-0.00090	-0.00121
	(A1 * !A2 * !A3 * B1 * X)	0.00122	0.00122	0.00100
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !A3 * !B1 * !X)	0.00146	0.00146	0.00145
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00100	-0.00106	-0.00106
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00164	0.00165	0.00164

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00028	0.00028	0.00024
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00078	-0.00079	-0.00085
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00031	0.00031	0.00027
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00090	-0.00090	-0.00097
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00052	0.00052	0.00045
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00148	-0.00149	-0.00161

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00023	-0.00023	-0.00023
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00086	0.00087	0.00086
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00026	-0.00026	-0.00025
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00099	0.00100	0.00098
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00162	0.00165	0.00163

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B_N	X
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2b_1	11.18880
sky130_fd_sc_hs__or2b_2	11.18880
sky130_fd_sc_hs__or2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	X
sky130_fd_sc_hs__or2b_1	0.00234	0.00220	0.43378
sky130_fd_sc_hs__or2b_2	0.00243	0.00212	0.80912
sky130_fd_sc_hs__or2b_4	0.00460	0.00265	1.67422

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.03824	0.05900
sky130_fd_sc_hs__or2b_2	0.00000	0.04400	0.07368
sky130_fd_sc_hs__or2b_4	0.00000	0.05607	0.08319

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (RR)	0.13035	1.07688	8.28294
	B_N->X (FR)	0.26882	1.38413	9.63020
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.12403	0.96222	8.45872
	B_N->X (FR)	0.28386	1.28628	9.86930
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.11411	0.82722	8.38827
	B_N->X (FR)	0.31405	1.23764	10.42650

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.33638	1.08406	5.86346
	B_N->X (RF)	0.33837	0.84103	3.34527
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.46209	1.21172	6.27237
	B_N->X (RF)	0.47918	0.97806	3.42257
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.44163	1.16058	6.32333
	B_N->X (RF)	0.44028	0.93142	3.61447

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00355	0.00344	0.00348
	A	0.00188	0.00177	0.00180
	B_N	0.00327	0.00321	0.00350
	B_N	0.00471	0.00464	0.00495
sky130_fd_sc_hs__or2b_2	A	0.00494	0.00495	0.00504
	A	0.00315	0.00317	0.00327
	B_N	0.00462	0.00469	0.00496
	B_N	0.00604	0.00611	0.00645
sky130_fd_sc_hs__or2b_4	A	0.00935	0.00940	0.00963
	A	0.00608	0.00612	0.00636
	B_N	0.00864	0.00893	0.00916
	B_N	0.01023	0.01051	0.01083

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00200	0.00199	0.00199
	A	0.00368	0.00368	0.00367
	B_N	0.00467	0.00458	0.00471
	B_N	0.00325	0.00315	0.00327
sky130_fd_sc_hs__or2b_2	A	0.00311	0.00321	0.00356
	A	0.00490	0.00504	0.00504
	B_N	0.00615	0.00598	0.00620
	B_N	0.00473	0.00468	0.00476
sky130_fd_sc_hs__or2b_4	A	0.00615	0.00650	0.00666
	A	0.00946	0.00988	0.00995
	B_N	0.01009	0.01030	0.01070
	B_N	0.00851	0.00886	0.00906

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00068	0.00063	0.00062
	(!B_N * X)	-0.00074	-0.00080	-0.00080
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00073	0.00068	0.00067
	(!B_N * X)	-0.00078	-0.00084	-0.00084
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00137	0.00131	0.00129
	(!B_N * X)	-0.00143	-0.00153	-0.00153

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00062	-0.00062	-0.00062
	(!B_N * X)	0.00081	0.00080	0.00080
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00067	-0.00066	-0.00066
	(!B_N * X)	0.00085	0.00084	0.00085
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00128	-0.00129	-0.00128
	(!B_N * X)	0.00152	0.00154	0.00153

Passive power(pJ) for B_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00206	0.00191	0.00205
	(A * X)	0.00039	0.00024	0.00039
sky130_fd_sc_hs__or2b_2	(A * X)	0.00218	0.00204	0.00217
	(A * X)	0.00052	0.00037	0.00051
sky130_fd_sc_hs__or2b_4	(A * X)	0.00283	0.00267	0.00274
	(A * X)	0.00088	0.00070	0.00078

Passive power(pJ) for B_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00063	0.00055	0.00091
	(A * X)	0.00229	0.00221	0.00257
sky130_fd_sc_hs__or2b_2	(A * X)	0.00061	0.00053	0.00089
	(A * X)	0.00228	0.00219	0.00255
sky130_fd_sc_hs__or2b_4	(A * X)	0.00158	0.00146	0.00171
	(A * X)	0.00353	0.00340	0.00366

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	X
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2_1	7.99200
sky130_fd_sc_hs__or2_2	7.99200
sky130_fd_sc_hs__or2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__or2_1	0.00213	0.00204	0.44418
sky130_fd_sc_hs__or2_2	0.00264	0.00230	0.80747
sky130_fd_sc_hs__or2_4	0.00418	0.00360	1.68068

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.02125	0.04759
sky130_fd_sc_hs__or2_2	0.00000	0.02077	0.03100
sky130_fd_sc_hs__or2_4	0.00000	0.03932	0.06200

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (RR)	0.12654	1.07666	8.39972
	B->X (RR)	0.12129	1.05507	8.28109
sky130_fd_sc_hs__or2_2	A->X (RR)	0.12518	0.96318	8.42152
	B->X (RR)	0.11862	0.94441	8.30246
sky130_fd_sc_hs__or2_4	A->X (RR)	0.15587	0.93461	8.99453
	B->X (RR)	0.13918	0.89980	8.83306

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.35549	1.10314	5.81520
	B->X (FF)	0.31617	1.01261	5.17629
sky130_fd_sc_hs__or2_2	A->X (FF)	0.45762	1.20411	6.24396
	B->X (FF)	0.40964	1.10665	5.70787
sky130_fd_sc_hs__or2_4	A->X (FF)	0.41144	1.13003	6.28378
	B->X (FF)	0.36266	1.03539	5.69187

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00374	0.00364	0.00369
	A	0.00187	0.00177	0.00182
	B	0.00321	0.00311	0.00326
	B	0.00160	0.00150	0.00166
sky130_fd_sc_hs__or2_2	A	0.00536	0.00533	0.00540
	A	0.00311	0.00308	0.00316
	B	0.00463	0.00464	0.00480
	B	0.00277	0.00279	0.00295
sky130_fd_sc_hs__or2_4	A	0.00955	0.00959	0.00971
	A	0.00592	0.00597	0.00617
	B	0.00789	0.00799	0.00828
	B	0.00512	0.00523	0.00560

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00157	0.00145	0.00163
	A	0.00345	0.00345	0.00347
	B	0.00149	0.00151	0.00186
	B	0.00310	0.00312	0.00345
sky130_fd_sc_hs__or2_2	A	0.00250	0.00262	0.00289
	A	0.00477	0.00489	0.00490
	B	0.00245	0.00227	0.00320
	B	0.00431	0.00444	0.00472
sky130_fd_sc_hs__or2_4	A	0.00540	0.00572	0.00594
	A	0.00906	0.00949	0.00956
	B	0.00540	0.00570	0.00666
	B	0.00816	0.00855	0.00906

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00067	0.00063	0.00061
	(B * X)	-0.00053	-0.00059	-0.00060
sky130_fd_sc_hs__or2_2	(B * X)	0.00082	0.00077	0.00075
	(B * X)	-0.00064	-0.00070	-0.00071
sky130_fd_sc_hs__or2_4	(B * X)	0.00102	0.00093	0.00091
	(B * X)	-0.00132	-0.00145	-0.00145

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00061	-0.00061	-0.00061
	(B * X)	0.00060	0.00060	0.00060
sky130_fd_sc_hs__or2_2	(B * X)	-0.00075	-0.00075	-0.00075
	(B * X)	0.00071	0.00070	0.00071
sky130_fd_sc_hs__or2_4	(B * X)	-0.00091	-0.00091	-0.00090
	(B * X)	0.00146	0.00145	0.00145

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00067	0.00067	0.00066
	(A * X)	-0.00034	-0.00034	-0.00034
sky130_fd_sc_hs__or2_2	(A * X)	0.00071	0.00072	0.00071
	(A * X)	-0.00042	-0.00042	-0.00042
sky130_fd_sc_hs__or2_4	(A * X)	0.00083	0.00084	0.00083
	(A * X)	-0.00085	-0.00085	-0.00084

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00063	-0.00064	-0.00066
	(A * X)	0.00037	0.00037	0.00035
sky130_fd_sc_hs__or2_2	(A * X)	-0.00067	-0.00068	-0.00070
	(A * X)	0.00045	0.00045	0.00043
sky130_fd_sc_hs__or2_4	(A * X)	-0.00073	-0.00074	-0.00081
	(A * X)	0.00092	0.00092	0.00086

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C_N	X
0	x	0	1
0	0	1	0
x	1	1	1
1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3b_1	12.78720
sky130_fd_sc_hs__or3b_2	12.78720
sky130_fd_sc_hs__or3b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	X
sky130_fd_sc_hs__or3b_1	0.00229	0.00252	0.00213	0.43481
sky130_fd_sc_hs__or3b_2	0.00243	0.00236	0.00212	0.80676
sky130_fd_sc_hs__or3b_4	0.00431	0.00392	0.00247	1.64888

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.03384	0.06057
sky130_fd_sc_hs__or3b_2	0.00000	0.03834	0.07727
sky130_fd_sc_hs__or3b_4	0.00000	0.04310	0.07711

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (RR)	0.14068	1.11297	8.50254
	B->X (RR)	0.13816	1.09994	8.40716
	C_N->X (FR)	0.27359	1.39079	9.67229
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.13213	0.98717	8.55582
	B->X (RR)	0.12934	0.97616	8.48518
	C_N->X (FR)	0.28553	1.28696	9.83407
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.16346	0.95219	8.94345
	B->X (RR)	0.15709	0.93330	8.84352
	C_N->X (FR)	0.32697	1.24446	10.28790

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.60246	1.38159	6.40129
	B->X (FF)	0.57576	1.34410	6.33356
	C_N->X (RF)	0.54235	1.07377	3.53742
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.78663	1.57376	6.80357
	B->X (FF)	0.74440	1.52206	6.80225
	C_N->X (RF)	0.71657	1.26621	3.74840
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.67991	1.41881	6.67204
	B->X (FF)	0.63829	1.36655	6.62849
	C_N->X (RF)	0.59664	1.10415	3.67163

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00423	0.00414	0.00414
	A	0.00218	0.00210	0.00211
	B	0.00374	0.00366	0.00368
	B	0.00186	0.00178	0.00180
	C_N	0.00335	0.00332	0.00359
	C_N	0.00456	0.00453	0.00480
sky130_fd_sc_hs__or3b_2	A	0.00562	0.00562	0.00566
	A	0.00351	0.00351	0.00358
	B	0.00501	0.00507	0.00516
	B	0.00318	0.00325	0.00335
	C_N	0.00460	0.00472	0.00498
	C_N	0.00590	0.00601	0.00627
sky130_fd_sc_hs__or3b_4	A	0.01028	0.01036	0.01042
	A	0.00662	0.00671	0.00686
	B	0.00888	0.00905	0.00922
	B	0.00594	0.00611	0.00638
	C_N	0.00787	0.00824	0.00850
	C_N	0.00933	0.00969	0.01006

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00237	0.00240	0.00239
	A	0.00444	0.00448	0.00446
	B	0.00229	0.00231	0.00231
	B	0.00417	0.00421	0.00419
	C_N	0.00502	0.00490	0.00508
	C_N	0.00383	0.00372	0.00385
sky130_fd_sc_hs__or3b_2	A	0.00332	0.00345	0.00416
	A	0.00546	0.00560	0.00559
	B	0.00323	0.00340	0.00412
	B	0.00507	0.00523	0.00525
	C_N	0.00626	0.00616	0.00640
	C_N	0.00496	0.00495	0.00506
sky130_fd_sc_hs__or3b_4	A	0.00614	0.00660	0.00808
	A	0.00986	0.01034	0.01044
	B	0.00615	0.00663	0.00783
	B	0.00910	0.00959	0.00971
	C_N	0.00982	0.01021	0.01063
	C_N	0.00834	0.00874	0.00901

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * C_N * X)	0.00060	0.00060	0.00059
	(B * C_N * X)	-0.00070	-0.00072	-0.00072
	(B * !C_N * X)	0.00059	0.00060	0.00059
	(B * !C_N * X)	-0.00071	-0.00072	-0.00072
	(!B * !C_N * X)	0.00059	0.00060	0.00059
	(!B * !C_N * X)	-0.00066	-0.00070	-0.00069
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00070	0.00070	0.00069
	(B * C_N * X)	-0.00071	-0.00073	-0.00073
	(B * !C_N * X)	0.00066	0.00067	0.00066
	(B * !C_N * X)	-0.00074	-0.00075	-0.00075
	(!B * !C_N * X)	0.00066	0.00067	0.00066
	(!B * !C_N * X)	-0.00070	-0.00073	-0.00073
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00103	0.00103	0.00102
	(B * C_N * X)	-0.00137	-0.00142	-0.00142
	(B * !C_N * X)	0.00091	0.00091	0.00090
	(B * !C_N * X)	-0.00150	-0.00153	-0.00153
	(!B * !C_N * X)	0.00091	0.00091	0.00090
	(!B * !C_N * X)	-0.00143	-0.00150	-0.00148

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * C_N * X)	-0.00059	-0.00059	-0.00059
	(B * C_N * X)	0.00073	0.00072	0.00072
	(B * !C_N * X)	-0.00059	-0.00059	-0.00059
	(B * !C_N * X)	0.00072	0.00072	0.00072
	(!B * !C_N * X)	-0.00059	-0.00059	-0.00059
	(!B * !C_N * X)	0.00069	0.00070	0.00069
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00069	-0.00069	-0.00069
	(B * C_N * X)	0.00073	0.00073	0.00073
	(B * !C_N * X)	-0.00066	-0.00066	-0.00066
	(B * !C_N * X)	0.00076	0.00075	0.00075
	(!B * !C_N * X)	-0.00066	-0.00066	-0.00066
	(!B * !C_N * X)	0.00073	0.00073	0.00073
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00102	-0.00102	-0.00102
	(B * C_N * X)	0.00142	0.00142	0.00142
	(B * !C_N * X)	-0.00091	-0.00091	-0.00090
	(B * !C_N * X)	0.00154	0.00153	0.00153
	(!B * !C_N * X)	-0.00090	-0.00091	-0.00090
	(!B * !C_N * X)	0.00149	0.00150	0.00148

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(A * C_N * X)	0.00071	0.00072	0.00071
	(A * C_N * X)	-0.00049	-0.00049	-0.00049
	(A * !C_N * X)	0.00065	0.00066	0.00063
	(A * !C_N * X)	-0.00062	-0.00063	-0.00062
	(!A * !C_N * X)	0.00071	0.00064	0.00063
	(!A * !C_N * X)	-0.00073	-0.00081	-0.00081
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00073	0.00074	0.00073
	(A * C_N * X)	-0.00045	-0.00046	-0.00045
	(A * !C_N * X)	0.00062	0.00063	0.00061
	(A * !C_N * X)	-0.00064	-0.00064	-0.00063
	(!A * !C_N * X)	0.00067	0.00061	0.00060
	(!A * !C_N * X)	-0.00075	-0.00082	-0.00082
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00090	0.00092	0.00090
	(A * C_N * X)	-0.00095	-0.00096	-0.00095
	(A * !C_N * X)	0.00078	0.00079	0.00076
	(A * !C_N * X)	-0.00123	-0.00124	-0.00122
	(!A * !C_N * X)	0.00088	0.00075	0.00074
	(!A * !C_N * X)	-0.00148	-0.00161	-0.00162

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(A * C_N * X)	-0.00070	-0.00070	-0.00070
	(A * C_N * X)	0.00050	0.00051	0.00050
	(A * !C_N * X)	-0.00063	-0.00063	-0.00063
	(A * !C_N * X)	0.00062	0.00063	0.00062
	(!A * !C_N * X)	-0.00063	-0.00063	-0.00062
	(!A * !C_N * X)	0.00081	0.00082	0.00082
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00071	-0.00072	-0.00071
	(A * C_N * X)	0.00047	0.00047	0.00047
	(A * !C_N * X)	-0.00060	-0.00060	-0.00060
	(A * !C_N * X)	0.00064	0.00064	0.00063
	(!A * !C_N * X)	-0.00060	-0.00060	-0.00060
	(!A * !C_N * X)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00088	-0.00088	-0.00088
	(A * C_N * X)	0.00098	0.00099	0.00099
	(A * !C_N * X)	-0.00075	-0.00075	-0.00075
	(A * !C_N * X)	0.00123	0.00124	0.00122
	(!A * !C_N * X)	-0.00074	-0.00073	-0.00073
	(!A * !C_N * X)	0.00162	0.00161	0.00162

Passive power(pJ) for C_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00200	0.00187	0.00202
	(B * X)	0.00039	0.00025	0.00040
	(A * !B * X)	0.00206	0.00192	0.00205
	(A * !B * X)	0.00042	0.00028	0.00042
sky130_fd_sc_hs__or3b_2	(B * X)	0.00224	0.00210	0.00224
	(B * X)	0.00057	0.00042	0.00056
	(A * !B * X)	0.00230	0.00216	0.00227
	(A * !B * X)	0.00059	0.00045	0.00057
sky130_fd_sc_hs__or3b_4	(B * X)	0.00287	0.00273	0.00285
	(B * X)	0.00086	0.00071	0.00084
	(A * !B * X)	0.00299	0.00284	0.00292
	(A * !B * X)	0.00092	0.00077	0.00087

Passive power(pJ) for C_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00052	0.00044	0.00081
	(B * X)	0.00212	0.00206	0.00243
	(A * !B * X)	0.00052	0.00044	0.00081
	(A * !B * X)	0.00213	0.00206	0.00243
sky130_fd_sc_hs__or3b_2	(B * X)	0.00054	0.00046	0.00083
	(B * X)	0.00222	0.00214	0.00250
	(A * !B * X)	0.00054	0.00046	0.00083
	(A * !B * X)	0.00222	0.00214	0.00250
sky130_fd_sc_hs__or3b_4	(B * X)	0.00070	0.00060	0.00088
	(B * X)	0.00271	0.00261	0.00289
	(A * !B * X)	0.00070	0.00060	0.00088
	(A * !B * X)	0.00271	0.00262	0.00289

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	0
0	x	1	1
x	1	x	1
1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3_1	9.59040
sky130_fd_sc_hs__or3_2	11.18880
sky130_fd_sc_hs__or3_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__or3_1	0.00237	0.00235	0.00231	0.44355
sky130_fd_sc_hs__or3_2	0.00241	0.00245	0.00252	0.87141
sky130_fd_sc_hs__or3_4	0.00452	0.00399	0.00389	1.66866

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	0.01061	0.02824
sky130_fd_sc_hs__or3_2	0.00000	0.01511	0.03245
sky130_fd_sc_hs__or3_4	0.00000	0.02857	0.06200

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (RR)	0.14075	1.11657	8.57304
	B->X (RR)	0.13764	1.10194	8.47367
	C->X (RR)	0.13158	1.07800	8.37435
sky130_fd_sc_hs__or3_2	A->X (RR)	0.13146	0.97797	8.62820
	B->X (RR)	0.12825	0.96566	8.55395
	C->X (RR)	0.12398	0.94960	8.45595
sky130_fd_sc_hs__or3_4	A->X (RR)	0.16393	0.95628	9.03064
	B->X (RR)	0.15767	0.93748	8.92901
	C->X (RR)	0.14793	0.91353	8.79755

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.62062	1.40590	6.48835
	B->X (FF)	0.58061	1.35711	6.40547
	C->X (FF)	0.49894	1.21173	5.76916
sky130_fd_sc_hs__or3_2	A->X (FF)	0.77249	1.56196	6.90125
	B->X (FF)	0.72852	1.50909	6.89825
	C->X (FF)	0.65687	1.37029	6.30848
sky130_fd_sc_hs__or3_4	A->X (FF)	0.68251	1.42311	6.70042
	B->X (FF)	0.63939	1.37025	6.65607
	C->X (FF)	0.54780	1.21666	5.99816

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00488	0.00478	0.00476
	A	0.00230	0.00220	0.00219
	B	0.00419	0.00413	0.00415
	B	0.00196	0.00189	0.00192
	C	0.00353	0.00344	0.00351
	C	0.00156	0.00147	0.00184
sky130_fd_sc_hs__or3_2	A	0.00613	0.00613	0.00617
	A	0.00353	0.00354	0.00360
	B	0.00539	0.00545	0.00554
	B	0.00312	0.00318	0.00328
	C	0.00479	0.00480	0.00494
	C	0.00276	0.00278	0.00293
sky130_fd_sc_hs__or3_4	A	0.01118	0.01126	0.01132
	A	0.00664	0.00672	0.00687
	B	0.00956	0.00972	0.00989
	B	0.00592	0.00609	0.00635
	C	0.00811	0.00824	0.00850
	C	0.00502	0.00515	0.00549

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00187	0.00189	0.00203
	A	0.00449	0.00452	0.00450
	B	0.00188	0.00191	0.00194
	B	0.00413	0.00418	0.00416
	C	0.00185	0.00187	0.00211
	C	0.00381	0.00383	0.00406
sky130_fd_sc_hs__or3_2	A	0.00293	0.00313	0.00386
	A	0.00557	0.00578	0.00580
	B	0.00295	0.00316	0.00391
	B	0.00524	0.00546	0.00549
	C	0.00292	0.00307	0.00336
	C	0.00494	0.00511	0.00538
sky130_fd_sc_hs__or3_4	A	0.00529	0.00575	0.00762
	A	0.00993	0.01040	0.01051
	B	0.00550	0.00599	0.00753
	B	0.00917	0.00967	0.00979
	C	0.00537	0.00568	0.00713
	C	0.00847	0.00888	0.00940

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00065	0.00065	0.00064
	(B * C * X)	-0.00070	-0.00072	-0.00072
	(B * !C * X)	0.00065	0.00065	0.00064
	(B * !C * X)	-0.00070	-0.00072	-0.00072
	(!B * C * X)	0.00064	0.00065	0.00064
	(!B * C * X)	-0.00065	-0.00069	-0.00068
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00067	0.00068	0.00067
	(B * C * X)	-0.00070	-0.00072	-0.00072
	(B * !C * X)	0.00067	0.00068	0.00067
	(B * !C * X)	-0.00070	-0.00072	-0.00072
	(!B * C * X)	0.00067	0.00068	0.00067
	(!B * C * X)	-0.00066	-0.00070	-0.00069
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00108	0.00108	0.00107
	(B * C * X)	-0.00139	-0.00143	-0.00142
	(B * !C * X)	0.00108	0.00108	0.00107
	(B * !C * X)	-0.00138	-0.00143	-0.00142
	(!B * C * X)	0.00108	0.00108	0.00107
	(!B * C * X)	-0.00131	-0.00138	-0.00137

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00065	-0.00064	-0.00064
	(B * C * X)	0.00072	0.00072	0.00072
	(B * !C * X)	-0.00064	-0.00064	-0.00064
	(B * !C * X)	0.00072	0.00072	0.00072
	(!B * C * X)	-0.00064	-0.00065	-0.00064
	(!B * C * X)	0.00069	0.00069	0.00068
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00067	-0.00067	-0.00067
	(B * C * X)	0.00072	0.00072	0.00072
	(B * !C * X)	-0.00067	-0.00067	-0.00067
	(B * !C * X)	0.00073	0.00072	0.00072
	(!B * C * X)	-0.00067	-0.00067	-0.00067
	(!B * C * X)	0.00070	0.00070	0.00069
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00108	-0.00108	-0.00107
	(B * C * X)	0.00144	0.00143	0.00142
	(B * !C * X)	-0.00108	-0.00108	-0.00107
	(B * !C * X)	0.00144	0.00143	0.00142
	(!B * C * X)	-0.00107	-0.00108	-0.00107
	(!B * C * X)	0.00137	0.00138	0.00137

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00061	0.00062	0.00060
	(A * C * X)	-0.00052	-0.00052	-0.00052
	(A * !C * X)	0.00060	0.00060	0.00059
	(A * !C * X)	-0.00046	-0.00046	-0.00046
	(!A * C * X)	0.00067	0.00060	0.00059
	(!A * C * X)	-0.00062	-0.00070	-0.00070
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00062	0.00063	0.00061
	(A * C * X)	-0.00057	-0.00057	-0.00057
	(A * !C * X)	0.00061	0.00061	0.00060
	(A * !C * X)	-0.00051	-0.00052	-0.00051
	(!A * C * X)	0.00068	0.00061	0.00060
	(!A * C * X)	-0.00067	-0.00075	-0.00076
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00078	0.00079	0.00076
	(A * C * X)	-0.00107	-0.00108	-0.00107
	(A * !C * X)	0.00076	0.00076	0.00075
	(A * !C * X)	-0.00097	-0.00097	-0.00096
	(!A * C * X)	0.00087	0.00075	0.00074
	(!A * C * X)	-0.00131	-0.00146	-0.00147

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00059	-0.00060	-0.00059
	(A * C * X)	0.00052	0.00052	0.00052
	(A * !C * X)	-0.00058	-0.00058	-0.00058
	(A * !C * X)	0.00048	0.00048	0.00048
	(!A * C * X)	-0.00059	-0.00059	-0.00058
	(!A * C * X)	0.00070	0.00070	0.00070
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00060	-0.00060	-0.00060
	(A * C * X)	0.00057	0.00057	0.00057
	(A * !C * X)	-0.00059	-0.00059	-0.00059
	(A * !C * X)	0.00053	0.00053	0.00053
	(!A * C * X)	-0.00060	-0.00060	-0.00060
	(!A * C * X)	0.00075	0.00076	0.00076
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00075	-0.00075	-0.00075
	(A * C * X)	0.00107	0.00108	0.00107
	(A * !C * X)	-0.00072	-0.00073	-0.00072
	(A * !C * X)	0.00099	0.00100	0.00100
	(!A * C * X)	-0.00074	-0.00073	-0.00073
	(!A * C * X)	0.00147	0.00146	0.00147

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00066	0.00067	0.00066
	(B * X)	-0.00042	-0.00043	-0.00042
	(A * !B * X)	0.00066	0.00067	0.00066
	(A * !B * X)	-0.00042	-0.00043	-0.00042
sky130_fd_sc_hs__or3_2	(B * X)	0.00075	0.00075	0.00074
	(B * X)	-0.00044	-0.00044	-0.00043
	(A * !B * X)	0.00075	0.00075	0.00074
	(A * !B * X)	-0.00043	-0.00044	-0.00043
sky130_fd_sc_hs__or3_4	(B * X)	0.00094	0.00096	0.00094
	(B * X)	-0.00085	-0.00086	-0.00085
	(A * !B * X)	0.00094	0.00096	0.00094
	(A * !B * X)	-0.00085	-0.00086	-0.00085

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00063	-0.00063	-0.00066
	(B * X)	0.00046	0.00046	0.00043
	(A * !B * X)	-0.00057	-0.00058	-0.00065
	(A * !B * X)	0.00050	0.00050	0.00044
sky130_fd_sc_hs__or3_2	(B * X)	-0.00070	-0.00071	-0.00074
	(B * X)	0.00046	0.00047	0.00044
	(A * !B * X)	-0.00065	-0.00066	-0.00073
	(A * !B * X)	0.00050	0.00050	0.00045
sky130_fd_sc_hs__or3_4	(B * X)	-0.00085	-0.00086	-0.00093
	(B * X)	0.00094	0.00094	0.00088
	(A * !B * X)	-0.00074	-0.00075	-0.00091
	(A * !B * X)	0.00101	0.00101	0.00089

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	X
0	x	0	x	1
0	x	1	0	1
0	0	1	1	0
x	1	1	1	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4bb_1	15.98400
sky130_fd_sc_hs__or4bb_2	15.98400
sky130_fd_sc_hs__or4bb_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	X
sky130_fd_sc_hs__or4bb_1	0.00233	0.00230	0.00218	0.00221	0.43831
sky130_fd_sc_hs__or4bb_2	0.00231	0.00245	0.00214	0.00212	0.80214
sky130_fd_sc_hs__or4bb_4	0.00362	0.00370	0.00237	0.00234	1.55259

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	0.05409	0.10704
sky130_fd_sc_hs__or4bb_2	0.00000	0.05784	0.12569
sky130_fd_sc_hs__or4bb_4	0.00000	0.05073	0.10535

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (RR)	0.14356	1.13480	8.65841
	B->X (RR)	0.14256	1.12316	8.58761
	C_N->X (FR)	0.30575	1.43635	9.86407
	D_N->X (FR)	0.28163	1.40217	9.73540
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.13326	0.99981	8.60554
	B->X (RR)	0.13436	0.99739	8.55100
	C_N->X (FR)	0.27649	1.27362	9.73434
	D_N->X (FR)	0.28507	1.28521	9.82884
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.17756	1.00271	9.24208
	B->X (RR)	0.18054	0.99601	9.16835
	C_N->X (FR)	0.37186	1.30807	10.54170
	D_N->X (FR)	0.38634	1.32611	10.63350

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.90561	1.72441	6.85696
	B->X (FF)	0.85440	1.65449	6.81540
	C_N->X (RF)	0.84124	1.44066	4.04146
	D_N->X (RF)	0.69306	1.26993	3.77106
sky130_fd_sc_hs__or4bb_2	A->X (FF)	1.11834	1.95804	7.21653
	B->X (FF)	1.09158	1.90804	7.24817
	C_N->X (RF)	1.06407	1.67042	4.18393
	D_N->X (RF)	0.95154	1.54532	4.04220
sky130_fd_sc_hs__or4bb_4	A->X (FF)	1.16399	1.97599	7.29188
	B->X (FF)	1.13139	1.91184	7.29949
	C_N->X (RF)	1.10940	1.68530	4.26940
	D_N->X (RF)	0.92193	1.49584	4.10159

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00454	0.00445	0.00440
	A	0.00257	0.00247	0.00244
	B	0.00396	0.00393	0.00393
	B	0.00220	0.00217	0.00218
	C_N	0.00373	0.00372	0.00396
	C_N	0.00512	0.00510	0.00535
	D_N	0.00327	0.00325	0.00351
	D_N	0.00449	0.00447	0.00474
sky130_fd_sc_hs__or4bb_2	A	0.00568	0.00575	0.00583
	A	0.00369	0.00377	0.00386
	B	0.00523	0.00531	0.00537
	B	0.00339	0.00357	0.00356
	C_N	0.00475	0.00491	0.00522
	C_N	0.00609	0.00625	0.00657
	D_N	0.00463	0.00467	0.00490
	D_N	0.00585	0.00588	0.00611
sky130_fd_sc_hs__or4bb_4	A	0.01135	0.01151	0.01164
	A	0.00787	0.00803	0.00828
	B	0.00986	0.01003	0.01014
	B	0.00699	0.00716	0.00739
	C_N	0.00970	0.01008	0.01029
	C_N	0.01093	0.01127	0.01154
	D_N	0.00862	0.00892	0.00905
	D_N	0.00987	0.01015	0.01043

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00289	0.00291	0.00343
	A	0.00490	0.00493	0.00491
	B	0.00278	0.00283	0.00332
	B	0.00454	0.00459	0.00459
	C_N	0.00579	0.00570	0.00586
	C_N	0.00440	0.00431	0.00442
	D_N	0.00517	0.00508	0.00523
	D_N	0.00396	0.00387	0.00401
sky130_fd_sc_hs__or4bb_2	A	0.00380	0.00400	0.00407
	A	0.00583	0.00603	0.00608
	B	0.00365	0.00385	0.00391
	B	0.00550	0.00571	0.00576
	C_N	0.00657	0.00664	0.00690
	C_N	0.00524	0.00530	0.00551
	D_N	0.00633	0.00632	0.00654
	D_N	0.00511	0.00510	0.00525
sky130_fd_sc_hs__or4bb_4	A	0.00805	0.00847	0.00879
	A	0.01165	0.01207	0.01229
	B	0.00812	0.00853	0.01035
	B	0.01102	0.01143	0.01164
	C_N	0.01158	0.01184	0.01227
	C_N	0.01035	0.01060	0.01092
	D_N	0.01126	0.01145	0.01181
	D_N	0.01001	0.01020	0.01039

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4bb_1	**(B * C_N * D_N * X)**	0.00061	0.00062	0.00061
	(B * C_N * D_N * X)	-0.00070	-0.00072	-0.00072
	(B * !D_N * X)	0.00061	0.00062	0.00061
	(B * !D_N * X)	-0.00070	-0.00072	-0.00072
	(B * !C_N * D_N * X)	0.00061	0.00062	0.00061
	(B * !C_N * D_N * X)	-0.00070	-0.00072	-0.00072
	(!B * C_N * !D_N * X)	0.00065	0.00063	0.00062
	(!B * C_N * !D_N * X)	-0.00066	-0.00069	-0.00068
	(!B * !C_N * D_N * X)	0.00061	0.00061	0.00061
	(!B * !C_N * D_N * X)	-0.00067	-0.00070	-0.00069
	(!B * !C_N * !D_N * X)	0.00061	0.00061	0.00061
	(!B * !C_N * !D_N * X)	-0.00067	-0.00070	-0.00069
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00065	0.00065	0.00065
	(B * C_N * D_N * X)	-0.00070	-0.00071	-0.00072
	(B * !D_N * X)	0.00065	0.00065	0.00065
	(B * !D_N * X)	-0.00070	-0.00071	-0.00072
	(B * !C_N * D_N * X)	0.00057	0.00058	0.00057
	(B * !C_N * D_N * X)	-0.00077	-0.00079	-0.00079
	(!B * C_N * !D_N * X)	0.00068	0.00067	0.00066
	(!B * C_N * !D_N * X)	-0.00065	-0.00068	-0.00068
	(!B * !C_N * D_N * X)	0.00057	0.00058	0.00057
	(!B * !C_N * D_N * X)	-0.00073	-0.00077	-0.00076
	(!B * !C_N * !D_N * X)	0.00057	0.00058	0.00057
	(!B * !C_N * !D_N * X)	-0.00073	-0.00077	-0.00076

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00081	0.00080	0.00079
	(B * C_N * D_N * X)	-0.00143	-0.00148	-0.00148
	(B * !D_N * X)	0.00080	0.00080	0.00079
	(B * !D_N * X)	-0.00143	-0.00148	-0.00148
	(B * !C_N * D_N * X)	0.00079	0.00080	0.00079
	(B * !C_N * D_N * X)	-0.00144	-0.00148	-0.00148
	(!B * C_N * !D_N * X)	0.00088	0.00085	0.00082
	(!B * C_N * !D_N * X)	-0.00135	-0.00141	-0.00139
	(!B * !C_N * D_N * X)	0.00079	0.00080	0.00079
	(!B * !C_N * D_N * X)	-0.00136	-0.00143	-0.00141
	(!B * !C_N * !D_N * X)	0.00079	0.00080	0.00079
	(!B * !C_N * !D_N * X)	-0.00136	-0.00143	-0.00141

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4bb_1	**(B * C_N * D_N * X)**	-0.00061	-0.00061	-0.00061
	(B * C_N * D_N * X)	0.00073	0.00072	0.00072
	(B * !D_N * X)	-0.00061	-0.00061	-0.00061
	(B * !D_N * X)	0.00073	0.00072	0.00072
	(B * !C_N * D_N * X)	-0.00061	-0.00061	-0.00061
	(B * !C_N * D_N * X)	0.00073	0.00072	0.00072
	(!B * C_N * !D_N * X)	-0.00064	-0.00063	-0.00062
	(!B * C_N * !D_N * X)	0.00068	0.00069	0.00068
	(!B * !C_N * D_N * X)	-0.00061	-0.00061	-0.00061
	(!B * !C_N * D_N * X)	0.00070	0.00070	0.00069
	(!B * !C_N * !D_N * X)	-0.00061	-0.00061	-0.00061
	(!B * !C_N * !D_N * X)	0.00070	0.00070	0.00069

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00064	-0.00064	-0.00064
	(B * C_N * D_N * X)	0.00072	0.00071	0.00072
	(B * !D_N * X)	-0.00064	-0.00064	-0.00064
	(B * !D_N * X)	0.00072	0.00071	0.00072
	(B * !C_N * D_N * X)	-0.00057	-0.00057	-0.00057
	(B * !C_N * D_N * X)	0.00079	0.00079	0.00079
	(!B * C_N * !D_N * X)	-0.00067	-0.00067	-0.00066
	(!B * C_N * !D_N * X)	0.00068	0.00068	0.00068
	(!B * !C_N * D_N * X)	-0.00057	-0.00057	-0.00057
	(!B * !C_N * D_N * X)	0.00076	0.00077	0.00076
	(!B * !C_N * !D_N * X)	-0.00057	-0.00058	-0.00057
	(!B * !C_N * !D_N * X)	0.00076	0.00077	0.00076
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00079	-0.00079	-0.00079
	(B * C_N * D_N * X)	0.00147	0.00148	0.00148
	(B * !D_N * X)	-0.00079	-0.00079	-0.00079
	(B * !D_N * X)	0.00147	0.00148	0.00148
	(B * !C_N * D_N * X)	-0.00079	-0.00079	-0.00079
	(B * !C_N * D_N * X)	0.00148	0.00148	0.00148
	(!B * C_N * !D_N * X)	-0.00085	-0.00085	-0.00082
	(!B * C_N * !D_N * X)	0.00139	0.00141	0.00139
	(!B * !C_N * D_N * X)	-0.00079	-0.00080	-0.00079
	(!B * !C_N * D_N * X)	0.00141	0.00143	0.00141
	(!B * !C_N * !D_N * X)	-0.00079	-0.00080	-0.00079
	(!B * !C_N * !D_N * X)	0.00141	0.00143	0.00141

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4bb_1	**(A * C_N * D_N * X)**	0.00066	0.00067	0.00066
	(A * C_N * D_N * X)	-0.00051	-0.00051	-0.00051
	(A * C_N * !D_N * X)	0.00071	0.00074	0.00074
	(A * C_N * !D_N * X)	-0.00057	-0.00057	-0.00056
	(A * !C_N * D_N * X)	0.00052	0.00053	0.00052
	(A * !C_N * D_N * X)	-0.00071	-0.00071	-0.00071
	(A * !C_N * !D_N * X)	0.00052	0.00053	0.00052
	(A * !C_N * !D_N * X)	-0.00072	-0.00073	-0.00072
	(!A * C_N * !D_N * X)	0.00072	0.00068	0.00067
	(!A * C_N * !D_N * X)	-0.00068	-0.00072	-0.00071
	(!A * !C_N * D_N * X)	0.00054	0.00053	0.00052
	(!A * !C_N * D_N * X)	-0.00087	-0.00088	-0.00088
	(!A * !C_N * !D_N * X)	0.00053	0.00052	0.00052
	(!A * !C_N * !D_N * X)	-0.00088	-0.00088	-0.00088
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00080	0.00081	0.00080
	(A * C_N * D_N * X)	-0.00046	-0.00047	-0.00046
	(A * C_N * !D_N * X)	0.00086	0.00089	0.00088
	(A * C_N * !D_N * X)	-0.00051	-0.00052	-0.00051
	(A * !C_N * D_N * X)	0.00072	0.00072	0.00071
	(A * !C_N * D_N * X)	-0.00061	-0.00061	-0.00061
	(A * !C_N * !D_N * X)	0.00072	0.00072	0.00071
	(A * !C_N * !D_N * X)	-0.00062	-0.00063	-0.00063
	(!A * C_N * !D_N * X)	0.00087	0.00083	0.00081
	(!A * C_N * !D_N * X)	-0.00064	-0.00066	-0.00066
	(!A * !C_N * D_N * X)	0.00073	0.00072	0.00071
	(!A * !C_N * D_N * X)	-0.00078	-0.00079	-0.00079
	(!A * !C_N * !D_N * X)	0.00072	0.00072	0.00071
	(!A * !C_N * !D_N * X)	-0.00079	-0.00079	-0.00079

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00081	0.00082	0.00081
	(A * C_N * D_N * X)	-0.00099	-0.00099	-0.00098
	(A * C_N * !D_N * X)	0.00092	0.00095	0.00095
	(A * C_N * !D_N * X)	-0.00111	-0.00112	-0.00111
	(A * !C_N * D_N * X)	0.00078	0.00079	0.00078
	(A * !C_N * D_N * X)	-0.00116	-0.00116	-0.00115
	(A * !C_N * !D_N * X)	0.00078	0.00079	0.00077
	(A * !C_N * !D_N * X)	-0.00119	-0.00119	-0.00118
	(!A * C_N * !D_N * X)	0.00093	0.00086	0.00082
	(!A * C_N * !D_N * X)	-0.00135	-0.00141	-0.00140
	(!A * !C_N * D_N * X)	0.00079	0.00077	0.00077
	(!A * !C_N * D_N * X)	-0.00149	-0.00151	-0.00151
	(!A * !C_N * !D_N * X)	0.00078	0.00077	0.00077
	(!A * !C_N * !D_N * X)	-0.00150	-0.00151	-0.00151

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4bb_1	**(A * C_N * D_N * X)**	-0.00065	-0.00065	-0.00065
	(A * C_N * D_N * X)	0.00052	0.00052	0.00052
	(A * C_N * !D_N * X)	-0.00070	-0.00070	-0.00070
	(A * C_N * !D_N * X)	0.00057	0.00057	0.00056
	(A * !C_N * D_N * X)	-0.00052	-0.00052	-0.00052
	(A * !C_N * D_N * X)	0.00071	0.00071	0.00071
	(A * !C_N * !D_N * X)	-0.00052	-0.00052	-0.00052
	(A * !C_N * !D_N * X)	0.00072	0.00073	0.00072
	(!A * C_N * !D_N * X)	-0.00070	-0.00068	-0.00067
	(!A * C_N * !D_N * X)	0.00071	0.00072	0.00071
	(!A * !C_N * D_N * X)	-0.00052	-0.00052	-0.00052
	(!A * !C_N * D_N * X)	0.00089	0.00088	0.00088
	(!A * !C_N * !D_N * X)	-0.00052	-0.00052	-0.00052
	(!A * !C_N * !D_N * X)	0.00088	0.00088	0.00088
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00080	-0.00079	-0.00080
	(A * C_N * D_N * X)	0.00047	0.00047	0.00047
	(A * C_N * !D_N * X)	-0.00084	-0.00084	-0.00084
	(A * C_N * !D_N * X)	0.00051	0.00052	0.00051
	(A * !C_N * D_N * X)	-0.00071	-0.00071	-0.00071
	(A * !C_N * D_N * X)	0.00061	0.00061	0.00061
	(A * !C_N * !D_N * X)	-0.00071	-0.00071	-0.00071
	(A * !C_N * !D_N * X)	0.00062	0.00063	0.00063
	(!A * C_N * !D_N * X)	-0.00084	-0.00083	-0.00081
	(!A * C_N * !D_N * X)	0.00066	0.00066	0.00066
	(!A * !C_N * D_N * X)	-0.00071	-0.00071	-0.00071
	(!A * !C_N * D_N * X)	0.00079	0.00079	0.00079
	(!A * !C_N * !D_N * X)	-0.00071	-0.00071	-0.00071
	(!A * !C_N * !D_N * X)	0.00079	0.00079	0.00079

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	-0.00078	-0.00079	-0.00080
	(A * C_N * D_N * X)	0.00100	0.00102	0.00100
	(A * C_N * !D_N * X)	-0.00089	-0.00089	-0.00089
	(A * C_N * !D_N * X)	0.00111	0.00112	0.00111
	(A * !C_N * D_N * X)	-0.00077	-0.00078	-0.00077
	(A * !C_N * D_N * X)	0.00116	0.00116	0.00115
	(A * !C_N * !D_N * X)	-0.00077	-0.00077	-0.00077
	(A * !C_N * !D_N * X)	0.00119	0.00119	0.00118
	(!A * C_N * !D_N * X)	-0.00089	-0.00086	-0.00082
	(!A * C_N * !D_N * X)	0.00140	0.00141	0.00140
	(!A * !C_N * D_N * X)	-0.00077	-0.00077	-0.00077
	(!A * !C_N * D_N * X)	0.00151	0.00151	0.00151
	(!A * !C_N * !D_N * X)	-0.00077	-0.00077	-0.00077
	(!A * !C_N * !D_N * X)	0.00151	0.00151	0.00151

Passive power(pJ) for C_N rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4bb_1	**(B * X)**	0.00229	0.00215	0.00230
	(B * X)	0.00057	0.00043	0.00058
	(A * !B * X) + (!A * !B * !D_N * X)	0.00235	0.00221	0.00233
	(A * !B * X) + (!A * !B * !D_N * X)	0.00060	0.00045	0.00058
sky130_fd_sc_hs__or4bb_2	**(B * X)**	0.00209	0.00196	0.00211
	(B * X)	0.00044	0.00029	0.00045
	(A * !B * X) + (!A * !B * !D_N * X)	0.00215	0.00201	0.00214
	(A * !B * X) + (!A * !B * !D_N * X)	0.00046	0.00031	0.00045
sky130_fd_sc_hs__or4bb_4	**(B * X)**	0.00255	0.00241	0.00256
	(B * X)	0.00080	0.00065	0.00081
	(A * !B * X) + (!A * !B * !D_N * X)	0.00270	0.00255	0.00266
	(A * !B * X) + (!A * !B * !D_N * X)	0.00087	0.00072	0.00085

Passive power(pJ) for C_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00060	0.00051	0.00087
	(B * X)	0.00232	0.00223	0.00258
	(A * !B * X) + (!A * !B * !D_N * X)	0.00060	0.00052	0.00087
	(A * !B * X) + (!A * !B * !D_N * X)	0.00232	0.00224	0.00259
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00053	0.00045	0.00082
	(B * X)	0.00218	0.00211	0.00247
	(A * !B * X) + (!A * !B * !D_N * X)	0.00053	0.00046	0.00082
	(A * !B * X) + (!A * !B * !D_N * X)	0.00219	0.00211	0.00248
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00096	0.00088	0.00116
	(B * X)	0.00271	0.00262	0.00290
	(A * !B * X) + (!A * !B * !D_N * X)	0.00097	0.00088	0.00116
	(A * !B * X) + (!A * !B * !D_N * X)	0.00271	0.00262	0.00290

Passive power(pJ) for D_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * C_N * X)	0.00203	0.00189	0.00202
	(B * C_N * X)	0.00049	0.00034	0.00048
	(A * !B * C_N * X)	0.00210	0.00196	0.00207
	(A * !B * C_N * X)	0.00053	0.00039	0.00051
	(!C_N * X)	0.00206	0.00192	0.00207
	(!C_N * X)	0.00053	0.00039	0.00053
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00206	0.00192	0.00204
	(B * C_N * X)	0.00052	0.00038	0.00051
	(A * !B * C_N * X)	0.00212	0.00198	0.00208
	(A * !B * C_N * X)	0.00056	0.00042	0.00054
	(!C_N * X)	0.00210	0.00196	0.00209
	(!C_N * X)	0.00057	0.00043	0.00057
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00298	0.00283	0.00290
	(B * C_N * X)	0.00122	0.00107	0.00115
	(A * !B * C_N * X)	0.00315	0.00300	0.00301
	(A * !B * C_N * X)	0.00134	0.00119	0.00123
	(!C_N * X)	0.00312	0.00297	0.00307
	(!C_N * X)	0.00138	0.00123	0.00133

Passive power(pJ) for D_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * C_N * X)	0.00061	0.00053	0.00090
	(B * C_N * X)	0.00214	0.00207	0.00243
	(A * !B * C_N * X)	0.00061	0.00053	0.00090
	(A * !B * C_N * X)	0.00214	0.00207	0.00243
	(!C_N * X)	0.00054	0.00046	0.00083
	(!C_N * X)	0.00207	0.00200	0.00236
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00072	0.00064	0.00100
	(B * C_N * X)	0.00224	0.00217	0.00253
	(A * !B * C_N * X)	0.00072	0.00064	0.00100
	(A * !B * C_N * X)	0.00224	0.00217	0.00253
	(!C_N * X)	0.00064	0.00056	0.00093
	(!C_N * X)	0.00217	0.00209	0.00245
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00116	0.00107	0.00134
	(B * C_N * X)	0.00290	0.00281	0.00307
	(A * !B * C_N * X)	0.00117	0.00107	0.00134
	(A * !B * C_N * X)	0.00290	0.00281	0.00307
	(!C_N * X)	0.00095	0.00086	0.00112
	(!C_N * X)	0.00269	0.00260	0.00285

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	X
0	0	x	0	1
0	0	0	1	0
0	x	1	1	1
x	1	x	x	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4b_1	14.38560
sky130_fd_sc_hs__or4b_2	14.38560
sky130_fd_sc_hs__or4b_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	X
sky130_fd_sc_hs__or4b_1	0.00238	0.00227	0.00235	0.00223	0.43338
sky130_fd_sc_hs__or4b_2	0.00245	0.00236	0.00237	0.00212	0.80711
sky130_fd_sc_hs__or4b_4	0.00358	0.00410	0.00412	0.00231	1.68793

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.03086	0.06221
sky130_fd_sc_hs__or4b_2	0.00000	0.03461	0.08087
sky130_fd_sc_hs__or4b_4	0.00000	0.03619	0.07987

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (RR)	0.14958	1.15435	8.75481
	B->X (RR)	0.14841	1.14275	8.68120
	C->X (RR)	0.14447	1.12803	8.60087
	D_N->X (FR)	0.28298	1.41102	9.79122
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.13535	1.00528	8.65100
	B->X (RR)	0.13524	0.99713	8.60431
	C->X (RR)	0.13241	0.98484	8.53377
	D_N->X (FR)	0.29734	1.30346	9.90726
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.17739	0.99232	9.22328
	B->X (RR)	0.17861	0.98418	9.15919
	C->X (RR)	0.16879	0.96086	9.04580
	D_N->X (FR)	0.34687	1.27279	10.48720

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.95345	1.78044	6.93475
	B->X (FF)	0.90178	1.71003	6.90616
	C->X (FF)	0.83130	1.62568	6.80458
	D_N->X (RF)	0.73194	1.32852	3.81249
sky130_fd_sc_hs__or4b_2	A->X (FF)	1.17684	2.01798	7.31745
	B->X (FF)	1.12834	1.95276	7.34127
	C->X (FF)	1.04077	1.85043	7.28406
	D_N->X (RF)	0.97354	1.58250	4.13419
sky130_fd_sc_hs__or4b_4	A->X (FF)	1.12967	1.94102	7.38811
	B->X (FF)	1.10410	1.88861	7.39467
	C->X (FF)	0.98364	1.74914	7.27090
	D_N->X (RF)	0.87982	1.44853	4.11586

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00513	0.00504	0.00498
	A	0.00265	0.00255	0.00250
	B	0.00445	0.00442	0.00441
	B	0.00234	0.00231	0.00232
	C	0.00390	0.00386	0.00386
	C	0.00197	0.00194	0.00194
	D_N	0.00353	0.00350	0.00376
	D_N	0.00464	0.00462	0.00489
sky130_fd_sc_hs__or4b_2	A	0.00643	0.00643	0.00643
	A	0.00390	0.00391	0.00393
	B	0.00576	0.00584	0.00589
	B	0.00361	0.00369	0.00376
	C	0.00518	0.00526	0.00533
	C	0.00321	0.00329	0.00336
	D_N	0.00486	0.00498	0.00523
	D_N	0.00605	0.00617	0.00642
sky130_fd_sc_hs__or4b_4	A	0.01171	0.01191	0.01206
	A	0.00750	0.00770	0.00798
	B	0.01067	0.01086	0.01096
	B	0.00683	0.00703	0.00726
	C	0.00917	0.00939	0.00951
	C	0.00582	0.00604	0.00625
	D_N	0.00837	0.00880	0.00902
	D_N	0.00943	0.00983	0.01019

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00253	0.00253	0.00287
	A	0.00508	0.00508	0.00506
	B	0.00253	0.00257	0.00303
	B	0.00467	0.00471	0.00471
	C	0.00248	0.00250	0.00298
	C	0.00440	0.00444	0.00444
	D_N	0.00516	0.00504	0.00524
	D_N	0.00405	0.00398	0.00413
sky130_fd_sc_hs__or4b_2	A	0.00338	0.00350	0.00464
	A	0.00596	0.00608	0.00608
	B	0.00340	0.00353	0.00391
	B	0.00559	0.00571	0.00574
	C	0.00329	0.00343	0.00424
	C	0.00527	0.00541	0.00545
	D_N	0.00643	0.00641	0.00655
	D_N	0.00524	0.00522	0.00533
sky130_fd_sc_hs__or4b_4	A	0.00724	0.00773	0.00816
	A	0.01162	0.01211	0.01234
	B	0.00716	0.00762	0.00894
	B	0.01111	0.01157	0.01178
	C	0.00692	0.00736	0.00844
	C	0.01028	0.01073	0.01092
	D_N	0.01072	0.01103	0.01166
	D_N	0.00966	0.00997	0.01032

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4b_1	**(B * C * D_N * X)**	0.00064	0.00064	0.00064
	(B * C * D_N * X)	-0.00070	-0.00071	-0.00071
	(B * !D_N * X)	0.00064	0.00064	0.00064
	(B * !D_N * X)	-0.00070	-0.00071	-0.00071
	(B * !C * D_N * X)	0.00064	0.00064	0.00064
	(B * !C * D_N * X)	-0.00069	-0.00071	-0.00071
	(!B * C * D_N * X)	0.00064	0.00064	0.00064
	(!B * C * D_N * X)	-0.00065	-0.00069	-0.00068
	(!B * C * !D_N * X)	0.00064	0.00064	0.00064
	(!B * C * !D_N * X)	-0.00065	-0.00069	-0.00068
	(!B * !C * !D_N * X)	0.00064	0.00064	0.00064
	(!B * !C * !D_N * X)	-0.00065	-0.00068	-0.00067
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00070	0.00070	0.00069
	(B * C * D_N * X)	-0.00071	-0.00072	-0.00072
	(B * !D_N * X)	0.00067	0.00067	0.00067
	(B * !D_N * X)	-0.00073	-0.00075	-0.00075
	(B * !C * D_N * X)	0.00070	0.00070	0.00069
	(B * !C * D_N * X)	-0.00070	-0.00072	-0.00072
	(!B * C * D_N * X)	0.00069	0.00070	0.00069
	(!B * C * D_N * X)	-0.00066	-0.00070	-0.00069
	(!B * C * !D_N * X)	0.00067	0.00067	0.00067
	(!B * C * !D_N * X)	-0.00068	-0.00072	-0.00071
	(!B * !C * !D_N * X)	0.00067	0.00067	0.00067
	(!B * !C * !D_N * X)	-0.00068	-0.00071	-0.00071

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00069	0.00069	0.00068
	(B * C * D_N * X)	-0.00143	-0.00146	-0.00146
	(B * !D_N * X)	0.00068	0.00069	0.00068
	(B * !D_N * X)	-0.00143	-0.00147	-0.00146
	(B * !C * D_N * X)	0.00069	0.00069	0.00068
	(B * !C * D_N * X)	-0.00142	-0.00146	-0.00146
	(!B * C * D_N * X)	0.00069	0.00069	0.00068
	(!B * C * D_N * X)	-0.00133	-0.00140	-0.00139
	(!B * C * !D_N * X)	0.00068	0.00069	0.00068
	(!B * C * !D_N * X)	-0.00134	-0.00141	-0.00139
	(!B * !C * !D_N * X)	0.00068	0.00068	0.00068
	(!B * !C * !D_N * X)	-0.00133	-0.00139	-0.00138

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4b_1	**(B * C * D_N * X)**	-0.00064	-0.00064	-0.00063
	(B * C * D_N * X)	0.00071	0.00071	0.00071
	(B * !D_N * X)	-0.00064	-0.00064	-0.00064
	(B * !D_N * X)	0.00072	0.00071	0.00071
	(B * !C * D_N * X)	-0.00064	-0.00063	-0.00063
	(B * !C * D_N * X)	0.00072	0.00071	0.00071
	(!B * C * D_N * X)	-0.00063	-0.00064	-0.00063
	(!B * C * D_N * X)	0.00068	0.00069	0.00068
	(!B * C * !D_N * X)	-0.00064	-0.00064	-0.00063
	(!B * C * !D_N * X)	0.00068	0.00069	0.00068
	(!B * !C * !D_N * X)	-0.00063	-0.00064	-0.00063
	(!B * !C * !D_N * X)	0.00067	0.00068	0.00067

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00069	-0.00069	-0.00069
	(B * C * D_N * X)	0.00072	0.00072	0.00072
	(B * !D_N * X)	-0.00067	-0.00067	-0.00067
	(B * !D_N * X)	0.00075	0.00075	0.00075
	(B * !C * D_N * X)	-0.00069	-0.00069	-0.00069
	(B * !C * D_N * X)	0.00072	0.00072	0.00072
	(!B * C * D_N * X)	-0.00069	-0.00070	-0.00069
	(!B * C * D_N * X)	0.00069	0.00070	0.00069
	(!B * C * !D_N * X)	-0.00067	-0.00067	-0.00067
	(!B * C * !D_N * X)	0.00071	0.00072	0.00071
	(!B * !C * !D_N * X)	-0.00067	-0.00067	-0.00067
	(!B * !C * !D_N * X)	0.00071	0.00071	0.00071
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00068	-0.00068	-0.00068
	(B * C * D_N * X)	0.00147	0.00146	0.00146
	(B * !D_N * X)	-0.00068	-0.00068	-0.00068
	(B * !D_N * X)	0.00147	0.00147	0.00146
	(B * !C * D_N * X)	-0.00068	-0.00068	-0.00068
	(B * !C * D_N * X)	0.00147	0.00146	0.00146
	(!B * C * D_N * X)	-0.00068	-0.00069	-0.00068
	(!B * C * D_N * X)	0.00139	0.00140	0.00139
	(!B * C * !D_N * X)	-0.00068	-0.00068	-0.00068
	(!B * C * !D_N * X)	0.00139	0.00141	0.00139
	(!B * !C * !D_N * X)	-0.00068	-0.00068	-0.00068
	(!B * !C * !D_N * X)	0.00138	0.00139	0.00138

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4b_1	**(A * C * D_N * X)**	0.00056	0.00057	0.00056
	(A * C * D_N * X)	-0.00052	-0.00052	-0.00051
	(A * C * !D_N * X)	0.00055	0.00056	0.00056
	(A * C * !D_N * X)	-0.00053	-0.00053	-0.00053
	(A * !C * D_N * X)	0.00056	0.00056	0.00055
	(A * !C * D_N * X)	-0.00046	-0.00046	-0.00045
	(A * !C * !D_N * X)	0.00055	0.00056	0.00055
	(A * !C * !D_N * X)	-0.00051	-0.00052	-0.00051
	(!A * C * D_N * X)	0.00057	0.00055	0.00055
	(!A * C * D_N * X)	-0.00067	-0.00069	-0.00069
	(!A * C * !D_N * X)	0.00056	0.00055	0.00055
	(!A * C * !D_N * X)	-0.00068	-0.00069	-0.00069
	(!A * !C * !D_N * X)	0.00055	0.00055	0.00055
	(!A * !C * !D_N * X)	-0.00062	-0.00066	-0.00065
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00062	0.00063	0.00062
	(A * C * D_N * X)	-0.00052	-0.00052	-0.00052
	(A * C * !D_N * X)	0.00060	0.00061	0.00060
	(A * C * !D_N * X)	-0.00056	-0.00056	-0.00056
	(A * !C * D_N * X)	0.00062	0.00063	0.00062
	(A * !C * D_N * X)	-0.00047	-0.00047	-0.00046
	(A * !C * !D_N * X)	0.00060	0.00060	0.00060
	(A * !C * !D_N * X)	-0.00054	-0.00055	-0.00054
	(!A * C * D_N * X)	0.00063	0.00062	0.00062
	(!A * C * D_N * X)	-0.00068	-0.00070	-0.00070
	(!A * C * !D_N * X)	0.00060	0.00060	0.00060
	(!A * C * !D_N * X)	-0.00071	-0.00072	-0.00072
	(!A * !C * !D_N * X)	0.00060	0.00060	0.00060
	(!A * !C * !D_N * X)	-0.00066	-0.00069	-0.00068

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00088	0.00089	0.00088
	(A * C * D_N * X)	-0.00110	-0.00111	-0.00110
	(A * C * !D_N * X)	0.00086	0.00087	0.00086
	(A * C * !D_N * X)	-0.00115	-0.00116	-0.00115
	(A * !C * D_N * X)	0.00087	0.00088	0.00086
	(A * !C * D_N * X)	-0.00099	-0.00099	-0.00098
	(A * !C * !D_N * X)	0.00085	0.00086	0.00085
	(A * !C * !D_N * X)	-0.00110	-0.00112	-0.00110
	(!A * C * D_N * X)	0.00088	0.00087	0.00086
	(!A * C * D_N * X)	-0.00141	-0.00146	-0.00146
	(!A * C * !D_N * X)	0.00086	0.00086	0.00085
	(!A * C * !D_N * X)	-0.00143	-0.00147	-0.00147
	(!A * !C * !D_N * X)	0.00086	0.00085	0.00085
	(!A * !C * !D_N * X)	-0.00134	-0.00141	-0.00140

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4b_1	**(A * C * D_N * X)**	-0.00055	-0.00056	-0.00055
	(A * C * D_N * X)	0.00052	0.00052	0.00051
	(A * C * !D_N * X)	-0.00055	-0.00056	-0.00055
	(A * C * !D_N * X)	0.00053	0.00053	0.00053
	(A * !C * D_N * X)	-0.00054	-0.00055	-0.00055
	(A * !C * D_N * X)	0.00046	0.00047	0.00046
	(A * !C * !D_N * X)	-0.00055	-0.00056	-0.00055
	(A * !C * !D_N * X)	0.00051	0.00052	0.00051
	(!A * C * D_N * X)	-0.00055	-0.00055	-0.00055
	(!A * C * D_N * X)	0.00069	0.00069	0.00069
	(!A * C * !D_N * X)	-0.00055	-0.00055	-0.00055
	(!A * C * !D_N * X)	0.00069	0.00069	0.00069
	(!A * !C * !D_N * X)	-0.00055	-0.00055	-0.00055
	(!A * !C * !D_N * X)	0.00065	0.00066	0.00065
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00062	-0.00062	-0.00062
	(A * C * D_N * X)	0.00052	0.00052	0.00052
	(A * C * !D_N * X)	-0.00060	-0.00060	-0.00060
	(A * C * !D_N * X)	0.00056	0.00056	0.00056
	(A * !C * D_N * X)	-0.00061	-0.00062	-0.00061
	(A * !C * D_N * X)	0.00047	0.00047	0.00047
	(A * !C * !D_N * X)	-0.00060	-0.00060	-0.00060
	(A * !C * !D_N * X)	0.00054	0.00055	0.00054
	(!A * C * D_N * X)	-0.00062	-0.00061	-0.00062
	(!A * C * D_N * X)	0.00070	0.00070	0.00070
	(!A * C * !D_N * X)	-0.00060	-0.00060	-0.00060
	(!A * C * !D_N * X)	0.00072	0.00072	0.00072
	(!A * !C * !D_N * X)	-0.00060	-0.00060	-0.00059
	(!A * !C * !D_N * X)	0.00068	0.00069	0.00068

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	-0.00087	-0.00087	-0.00087
	(A * C * D_N * X)	0.00110	0.00111	0.00110
	(A * C * !D_N * X)	-0.00086	-0.00086	-0.00085
	(A * C * !D_N * X)	0.00115	0.00116	0.00115
	(A * !C * D_N * X)	-0.00086	-0.00086	-0.00086
	(A * !C * D_N * X)	0.00101	0.00101	0.00100
	(A * !C * !D_N * X)	-0.00085	-0.00086	-0.00085
	(A * !C * !D_N * X)	0.00110	0.00112	0.00110
	(!A * C * D_N * X)	-0.00086	-0.00086	-0.00086
	(!A * C * D_N * X)	0.00145	0.00146	0.00146
	(!A * C * !D_N * X)	-0.00085	-0.00085	-0.00085
	(!A * C * !D_N * X)	0.00146	0.00147	0.00147
	(!A * !C * !D_N * X)	-0.00085	-0.00085	-0.00085
	(!A * !C * !D_N * X)	0.00140	0.00141	0.00140

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4b_1	**(B * D_N * X)**	0.00066	0.00067	0.00066
	(B * D_N * X)	-0.00045	-0.00046	-0.00045
	(B * !D_N * X)	0.00062	0.00062	0.00061
	(B * !D_N * X)	-0.00056	-0.00056	-0.00055
	(A * !B * D_N * X)	0.00067	0.00067	0.00066
	(A * !B * D_N * X)	-0.00045	-0.00045	-0.00045
	(A * !B * !D_N * X)	0.00063	0.00061	0.00061
	(A * !B * !D_N * X)	-0.00058	-0.00058	-0.00057
	(!A * !B * !D_N * X)	0.00068	0.00062	0.00060
	(!A * !B * !D_N * X)	-0.00066	-0.00075	-0.00075

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00073	0.00074	0.00073
	(B * D_N * X)	-0.00046	-0.00047	-0.00046
	(B * !D_N * X)	0.00059	0.00061	0.00059
	(B * !D_N * X)	-0.00066	-0.00066	-0.00065
	(A * !B * D_N * X)	0.00073	0.00074	0.00073
	(A * !B * D_N * X)	-0.00046	-0.00047	-0.00046
	(A * !B * !D_N * X)	0.00061	0.00060	0.00059
	(A * !B * !D_N * X)	-0.00067	-0.00067	-0.00067
	(!A * !B * !D_N * X)	0.00067	0.00060	0.00059
	(!A * !B * !D_N * X)	-0.00077	-0.00084	-0.00084
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00108	0.00109	0.00108
	(B * D_N * X)	-0.00095	-0.00096	-0.00095
	(B * !D_N * X)	0.00089	0.00088	0.00087
	(B * !D_N * X)	-0.00129	-0.00130	-0.00128
	(A * !B * D_N * X)	0.00108	0.00110	0.00108
	(A * !B * D_N * X)	-0.00095	-0.00096	-0.00095
	(A * !B * !D_N * X)	0.00089	0.00088	0.00087
	(A * !B * !D_N * X)	-0.00131	-0.00132	-0.00130
	(!A * !B * !D_N * X)	0.00101	0.00088	0.00087
	(!A * !B * !D_N * X)	-0.00153	-0.00166	-0.00166

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4b_1	**(B * D_N * X)**	-0.00065	-0.00066	-0.00065
	(B * D_N * X)	0.00046	0.00046	0.00046
	(B * !D_N * X)	-0.00061	-0.00061	-0.00061
	(B * !D_N * X)	0.00056	0.00056	0.00055
	(A * !B * D_N * X)	-0.00060	-0.00060	-0.00065
	(A * !B * D_N * X)	0.00049	0.00049	0.00046
	(A * !B * !D_N * X)	-0.00061	-0.00061	-0.00061
	(A * !B * !D_N * X)	0.00058	0.00058	0.00057
	(!A * !B * !D_N * X)	-0.00060	-0.00060	-0.00060
	(!A * !B * !D_N * X)	0.00075	0.00075	0.00075
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00072	-0.00072	-0.00072
	(B * D_N * X)	0.00048	0.00048	0.00048
	(B * !D_N * X)	-0.00059	-0.00059	-0.00059
	(B * !D_N * X)	0.00066	0.00066	0.00065
	(A * !B * D_N * X)	-0.00066	-0.00067	-0.00071
	(A * !B * D_N * X)	0.00050	0.00050	0.00048
	(A * !B * !D_N * X)	-0.00059	-0.00059	-0.00059
	(A * !B * !D_N * X)	0.00067	0.00067	0.00067
	(!A * !B * !D_N * X)	-0.00059	-0.00059	-0.00058
	(!A * !B * !D_N * X)	0.00084	0.00084	0.00085
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00104	-0.00105	-0.00105
	(B * D_N * X)	0.00099	0.00100	0.00099
	(B * !D_N * X)	-0.00087	-0.00088	-0.00087
	(B * !D_N * X)	0.00129	0.00130	0.00128
	(A * !B * D_N * X)	-0.00091	-0.00093	-0.00104
	(A * !B * D_N * X)	0.00105	0.00105	0.00098
	(A * !B * !D_N * X)	-0.00087	-0.00088	-0.00087
	(A * !B * !D_N * X)	0.00131	0.00132	0.00130
	(!A * !B * !D_N * X)	-0.00086	-0.00086	-0.00085
	(!A * !B * !D_N * X)	0.00167	0.00167	0.00167

Passive power(pJ) for D_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00208	0.00192	0.00207
	(C * X)	0.00041	0.00026	0.00040
	(B * !C * X)	0.00213	0.00198	0.00210
	(B * !C * X)	0.00044	0.00028	0.00042
	(A * !B * !C * X)	0.00220	0.00205	0.00215
	(A * !B * !C * X)	0.00049	0.00033	0.00045
sky130_fd_sc_hs__or4b_2	(C * X)	0.00232	0.00219	0.00231
	(C * X)	0.00062	0.00047	0.00060
	(B * !C * X)	0.00238	0.00224	0.00235
	(B * !C * X)	0.00065	0.00050	0.00062
	(A * !B * !C * X)	0.00245	0.00231	0.00239
	(A * !B * !C * X)	0.00069	0.00054	0.00065
sky130_fd_sc_hs__or4b_4	(C * X)	0.00278	0.00264	0.00277
	(C * X)	0.00093	0.00078	0.00091
	(B * !C * X)	0.00294	0.00280	0.00287
	(B * !C * X)	0.00101	0.00086	0.00096
	(A * !B * !C * X)	0.00308	0.00294	0.00297
	(A * !B * !C * X)	0.00110	0.00095	0.00101

Passive power(pJ) for D_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00052	0.00044	0.00080
	(C * X)	0.00218	0.00210	0.00246
	(B * !C * X)	0.00052	0.00044	0.00080
	(B * !C * X)	0.00218	0.00210	0.00246
	(A * !B * !C * X)	0.00052	0.00044	0.00080
	(A * !B * !C * X)	0.00219	0.00210	0.00246
sky130_fd_sc_hs__or4b_2	(C * X)	0.00061	0.00053	0.00088
	(C * X)	0.00232	0.00223	0.00258
	(B * !C * X)	0.00061	0.00053	0.00088
	(B * !C * X)	0.00232	0.00223	0.00259
	(A * !B * !C * X)	0.00061	0.00053	0.00088
	(A * !B * !C * X)	0.00232	0.00223	0.00259
sky130_fd_sc_hs__or4b_4	(C * X)	0.00092	0.00083	0.00110
	(C * X)	0.00277	0.00268	0.00296
	(B * !C * X)	0.00092	0.00083	0.00111
	(B * !C * X)	0.00277	0.00269	0.00296
	(A * !B * !C * X)	0.00092	0.00083	0.00111
	(A * !B * !C * X)	0.00277	0.00269	0.00296

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D	X
0	0	0	0	0
0	0	x	1	1
0	x	1	x	1
x	1	x	x	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4_1	11.18880
sky130_fd_sc_hs__or4_2	12.78720
sky130_fd_sc_hs__or4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__or4_1	0.00236	0.00224	0.00229	0.00223	0.42732
sky130_fd_sc_hs__or4_2	0.00245	0.00242	0.00254	0.00252	0.86279
sky130_fd_sc_hs__or4_4	0.00353	0.00413	0.00419	0.00393	1.67937

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.00763	0.02824
sky130_fd_sc_hs__or4_2	0.00000	0.01138	0.03604
sky130_fd_sc_hs__or4_4	0.00000	0.02165	0.06200

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (RR)	0.14412	1.14183	8.65525
	B->X (RR)	0.14398	1.13097	8.58795
	C->X (RR)	0.14012	1.11431	8.48636
	D->X (RR)	0.13268	1.09111	8.37380
sky130_fd_sc_hs__or4_2	A->X (RR)	0.13267	0.98880	8.62988
	B->X (RR)	0.13220	0.97873	8.57393
	C->X (RR)	0.12989	0.96783	8.50746
	D->X (RR)	0.12485	0.95212	8.41761
sky130_fd_sc_hs__or4_4	A->X (RR)	0.16448	0.96974	9.15109
	B->X (RR)	0.17052	0.96846	9.09280
	C->X (RR)	0.16005	0.94267	8.96815
	D->X (RR)	0.15134	0.91925	8.84734

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.91500	1.73182	6.81574
	B->X (FF)	0.86600	1.66320	6.78816
	C->X (FF)	0.78083	1.56462	6.64488
	D->X (FF)	0.63936	1.36377	5.94923
sky130_fd_sc_hs__or4_2	A->X (FF)	1.13791	1.97789	7.35306
	B->X (FF)	1.08822	1.90815	7.36227
	C->X (FF)	1.01638	1.82182	7.32182
	D->X (FF)	0.88506	1.62180	6.67157
sky130_fd_sc_hs__or4_4	A->X (FF)	1.07517	1.87024	7.27195
	B->X (FF)	1.05459	1.82109	7.26661
	C->X (FF)	0.93981	1.68807	7.13625
	D->X (FF)	0.76647	1.45575	6.40796

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00561	0.00552	0.00546
	A	0.00267	0.00258	0.00254
	B	0.00494	0.00490	0.00489
	B	0.00235	0.00231	0.00231
	C	0.00425	0.00421	0.00421
	C	0.00194	0.00189	0.00191
	D	0.00358	0.00351	0.00357
	D	0.00153	0.00146	0.00159
sky130_fd_sc_hs__or4_2	A	0.00688	0.00688	0.00687
	A	0.00379	0.00382	0.00381
	B	0.00616	0.00623	0.00629
	B	0.00341	0.00348	0.00355
	C	0.00556	0.00563	0.00569
	C	0.00308	0.00315	0.00323
	D	0.00490	0.00494	0.00504
	D	0.00267	0.00271	0.00282
sky130_fd_sc_hs__or4_4	A	0.01279	0.01296	0.01309
	A	0.00776	0.00794	0.00821
	B	0.01175	0.01183	0.01182
	B	0.00706	0.00713	0.00723
	C	0.01011	0.01028	0.01038
	C	0.00606	0.00623	0.00641
	D	0.00861	0.00876	0.00900
	D	0.00517	0.00532	0.00564

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00178	0.00179	0.00218
	A	0.00480	0.00481	0.00478
	B	0.00179	0.00182	0.00221
	B	0.00442	0.00446	0.00445
	C	0.00180	0.00183	0.00218
	C	0.00412	0.00416	0.00416
	D	0.00175	0.00175	0.00204
	D	0.00380	0.00383	0.00405
sky130_fd_sc_hs__or4_2	A	0.00288	0.00304	0.00308
	A	0.00605	0.00621	0.00624
	B	0.00289	0.00307	0.00349
	B	0.00569	0.00587	0.00592
	C	0.00288	0.00305	0.00362
	C	0.00538	0.00555	0.00561
	D	0.00285	0.00300	0.00390
	D	0.00508	0.00523	0.00550
sky130_fd_sc_hs__or4_4	A	0.00563	0.00614	0.00711
	A	0.01086	0.01137	0.01160
	B	0.00557	0.00603	0.00700
	B	0.01040	0.01085	0.01106
	C	0.00561	0.00603	0.00621
	C	0.00970	0.01012	0.01030
	D	0.00542	0.00581	0.00694
	D	0.00886	0.00929	0.00982

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00063	0.00063	0.00063
	(B * D * X)	-0.00070	-0.00072	-0.00072
	(B * C * !D * X)	0.00063	0.00063	0.00063
	(B * C * !D * X)	-0.00070	-0.00072	-0.00072
	(B * !C * !D * X)	0.00063	0.00063	0.00063
	(B * !C * !D * X)	-0.00070	-0.00072	-0.00072
	(!B * C * D * X)	0.00062	0.00063	0.00063
	(!B * C * D * X)	-0.00066	-0.00070	-0.00069
	(!B * C * !D * X)	0.00062	0.00063	0.00063
	(!B * C * !D * X)	-0.00066	-0.00070	-0.00069
	(!B * !C * D * X)	0.00063	0.00063	0.00063
	(!B * !C * D * X)	-0.00066	-0.00069	-0.00068
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00068	0.00069	0.00068
	(B * D * X)	-0.00071	-0.00073	-0.00073
	(B * C * !D * X)	0.00068	0.00069	0.00068
	(B * C * !D * X)	-0.00071	-0.00073	-0.00073
	(B * !C * !D * X)	0.00068	0.00069	0.00068
	(B * !C * !D * X)	-0.00071	-0.00073	-0.00073
	(!B * C * D * X)	0.00068	0.00069	0.00068
	(!B * C * D * X)	-0.00067	-0.00071	-0.00070
	(!B * C * !D * X)	0.00068	0.00069	0.00068
	(!B * C * !D * X)	-0.00067	-0.00071	-0.00070
	(!B * !C * D * X)	0.00069	0.00069	0.00068
	(!B * !C * D * X)	-0.00067	-0.00070	-0.00069

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00069	0.00069	0.00068
	(B * D * X)	-0.00142	-0.00145	-0.00144
	(B * C * !D * X)	0.00069	0.00069	0.00068
	(B * C * !D * X)	-0.00141	-0.00145	-0.00144
	(B * !C * !D * X)	0.00069	0.00069	0.00068
	(B * !C * !D * X)	-0.00140	-0.00145	-0.00144
	(!B * C * D * X)	0.00069	0.00069	0.00068
	(!B * C * D * X)	-0.00132	-0.00139	-0.00137
	(!B * C * !D * X)	0.00069	0.00069	0.00068
	(!B * C * !D * X)	-0.00132	-0.00139	-0.00137
	(!B * !C * D * X)	0.00069	0.00069	0.00068
	(!B * !C * D * X)	-0.00130	-0.00137	-0.00135

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00063	-0.00063	-0.00062
	(B * D * X)	0.00072	0.00072	0.00072
	(B * C * !D * X)	-0.00063	-0.00063	-0.00062
	(B * C * !D * X)	0.00072	0.00072	0.00072
	(B * !C * !D * X)	-0.00063	-0.00062	-0.00062
	(B * !C * !D * X)	0.00072	0.00072	0.00072
	(!B * C * D * X)	-0.00062	-0.00063	-0.00062
	(!B * C * D * X)	0.00069	0.00070	0.00069
	(!B * C * !D * X)	-0.00062	-0.00063	-0.00062
	(!B * C * !D * X)	0.00069	0.00070	0.00069
	(!B * !C * D * X)	-0.00062	-0.00063	-0.00062
	(!B * !C * D * X)	0.00068	0.00069	0.00068

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00068	-0.00068	-0.00068
	(B * D * X)	0.00074	0.00073	0.00073
	(B * C * !D * X)	-0.00068	-0.00068	-0.00068
	(B * C * !D * X)	0.00074	0.00073	0.00073
	(B * !C * !D * X)	-0.00068	-0.00068	-0.00068
	(B * !C * !D * X)	0.00074	0.00073	0.00073
	(!B * C * D * X)	-0.00068	-0.00069	-0.00068
	(!B * C * D * X)	0.00070	0.00071	0.00070
	(!B * C * !D * X)	-0.00068	-0.00069	-0.00068
	(!B * C * !D * X)	0.00071	0.00071	0.00070
	(!B * !C * D * X)	-0.00068	-0.00068	-0.00068
	(!B * !C * D * X)	0.00070	0.00070	0.00069
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00068	-0.00068	-0.00068
	(B * D * X)	0.00145	0.00145	0.00144
	(B * C * !D * X)	-0.00068	-0.00068	-0.00068
	(B * C * !D * X)	0.00145	0.00145	0.00144
	(B * !C * !D * X)	-0.00068	-0.00068	-0.00068
	(B * !C * !D * X)	0.00145	0.00145	0.00144
	(!B * C * D * X)	-0.00068	-0.00069	-0.00068
	(!B * C * D * X)	0.00138	0.00139	0.00137
	(!B * C * !D * X)	-0.00068	-0.00069	-0.00068
	(!B * C * !D * X)	0.00138	0.00139	0.00137
	(!B * !C * D * X)	-0.00068	-0.00069	-0.00068
	(!B * !C * D * X)	0.00135	0.00137	0.00135

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4_1	**(A * C * D * X)**	0.00055	0.00056	0.00055
	(A * C * D * X)	-0.00055	-0.00056	-0.00055
	(A * C * !D * X)	0.00055	0.00056	0.00055
	(A * C * !D * X)	-0.00054	-0.00054	-0.00054
	(A * !C * D * X)	0.00055	0.00055	0.00055
	(A * !C * D * X)	-0.00053	-0.00053	-0.00052
	(A * !C * !D * X)	0.00055	0.00056	0.00055
	(A * !C * !D * X)	-0.00048	-0.00048	-0.00047
	(!A * C * D * X)	0.00055	0.00055	0.00055
	(!A * C * D * X)	-0.00069	-0.00071	-0.00071
	(!A * C * !D * X)	0.00055	0.00055	0.00055
	(!A * C * !D * X)	-0.00069	-0.00071	-0.00071
	(!A * !C * D * X)	0.00055	0.00055	0.00055
	(!A * !C * D * X)	-0.00064	-0.00067	-0.00067
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00060	0.00062	0.00061
	(A * C * D * X)	-0.00059	-0.00059	-0.00058
	(A * C * !D * X)	0.00060	0.00062	0.00061
	(A * C * !D * X)	-0.00057	-0.00057	-0.00057
	(A * !C * D * X)	0.00061	0.00061	0.00060
	(A * !C * D * X)	-0.00056	-0.00057	-0.00056
	(A * !C * !D * X)	0.00061	0.00061	0.00061
	(A * !C * !D * X)	-0.00051	-0.00052	-0.00051
	(!A * C * D * X)	0.00061	0.00061	0.00061
	(!A * C * D * X)	-0.00074	-0.00075	-0.00075
	(!A * C * !D * X)	0.00061	0.00061	0.00061
	(!A * C * !D * X)	-0.00073	-0.00075	-0.00075
	(!A * !C * D * X)	0.00061	0.00061	0.00061
	(!A * !C * D * X)	-0.00067	-0.00071	-0.00071

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00089	0.00090	0.00089
	(A * C * D * X)	-0.00114	-0.00115	-0.00114
	(A * C * !D * X)	0.00089	0.00090	0.00089
	(A * C * !D * X)	-0.00110	-0.00111	-0.00110
	(A * !C * D * X)	0.00088	0.00089	0.00088
	(A * !C * D * X)	-0.00109	-0.00110	-0.00108
	(A * !C * !D * X)	0.00089	0.00089	0.00088
	(A * !C * !D * X)	-0.00099	-0.00099	-0.00098
	(!A * C * D * X)	0.00089	0.00088	0.00088
	(!A * C * D * X)	-0.00141	-0.00145	-0.00145
	(!A * C * !D * X)	0.00089	0.00088	0.00088
	(!A * C * !D * X)	-0.00141	-0.00145	-0.00145
	(!A * !C * D * X)	0.00089	0.00088	0.00088
	(!A * !C * D * X)	-0.00132	-0.00139	-0.00138

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4_1	**(A * C * D * X)**	-0.00055	-0.00055	-0.00055
	(A * C * D * X)	0.00055	0.00056	0.00055
	(A * C * !D * X)	-0.00055	-0.00055	-0.00055
	(A * C * !D * X)	0.00054	0.00054	0.00054
	(A * !C * D * X)	-0.00055	-0.00055	-0.00055
	(A * !C * D * X)	0.00053	0.00053	0.00052
	(A * !C * !D * X)	-0.00055	-0.00055	-0.00055
	(A * !C * !D * X)	0.00048	0.00048	0.00048
	(!A * C * D * X)	-0.00055	-0.00055	-0.00055
	(!A * C * D * X)	0.00071	0.00071	0.00071
	(!A * C * !D * X)	-0.00055	-0.00055	-0.00055
	(!A * C * !D * X)	0.00071	0.00071	0.00071
	(!A * !C * D * X)	-0.00055	-0.00055	-0.00055
	(!A * !C * D * X)	0.00067	0.00067	0.00067
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00060	-0.00061	-0.00060
	(A * C * D * X)	0.00059	0.00059	0.00058
	(A * C * !D * X)	-0.00060	-0.00061	-0.00060
	(A * C * !D * X)	0.00057	0.00057	0.00057
	(A * !C * D * X)	-0.00060	-0.00061	-0.00060
	(A * !C * D * X)	0.00056	0.00057	0.00056
	(A * !C * !D * X)	-0.00060	-0.00060	-0.00060
	(A * !C * !D * X)	0.00052	0.00052	0.00052
	(!A * C * D * X)	-0.00060	-0.00060	-0.00060
	(!A * C * D * X)	0.00075	0.00075	0.00075
	(!A * C * !D * X)	-0.00061	-0.00060	-0.00060
	(!A * C * !D * X)	0.00075	0.00075	0.00075
	(!A * !C * D * X)	-0.00060	-0.00061	-0.00060
	(!A * !C * D * X)	0.00071	0.00071	0.00071

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	-0.00089	-0.00089	-0.00089
	(A * C * D * X)	0.00114	0.00115	0.00114
	(A * C * !D * X)	-0.00088	-0.00089	-0.00088
	(A * C * !D * X)	0.00110	0.00111	0.00110
	(A * !C * D * X)	-0.00088	-0.00089	-0.00088
	(A * !C * D * X)	0.00109	0.00110	0.00108
	(A * !C * !D * X)	-0.00088	-0.00088	-0.00088
	(A * !C * !D * X)	0.00099	0.00100	0.00099
	(!A * C * D * X)	-0.00088	-0.00088	-0.00088
	(!A * C * D * X)	0.00145	0.00145	0.00145
	(!A * C * !D * X)	-0.00088	-0.00088	-0.00088
	(!A * C * !D * X)	0.00145	0.00145	0.00145
	(!A * !C * D * X)	-0.00088	-0.00088	-0.00088
	(!A * !C * D * X)	0.00138	0.00139	0.00138

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00057	0.00058	0.00056
	(B * D * X)	-0.00052	-0.00052	-0.00052
	(B * !D * X)	0.00057	0.00057	0.00056
	(B * !D * X)	-0.00047	-0.00047	-0.00046
	(A * !B * D * X)	0.00058	0.00057	0.00056
	(A * !B * D * X)	-0.00053	-0.00054	-0.00053
	(A * !B * !D * X)	0.00057	0.00057	0.00056
	(A * !B * !D * X)	-0.00047	-0.00047	-0.00046
	(!A * !B * D * X)	0.00064	0.00057	0.00056
	(!A * !B * D * X)	-0.00063	-0.00070	-0.00071

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00066	0.00067	0.00065
	(B * D * X)	-0.00052	-0.00052	-0.00052
	(B * !D * X)	0.00065	0.00066	0.00065
	(B * !D * X)	-0.00048	-0.00048	-0.00047
	(A * !B * D * X)	0.00067	0.00066	0.00065
	(A * !B * D * X)	-0.00054	-0.00054	-0.00054
	(A * !B * !D * X)	0.00066	0.00066	0.00065
	(A * !B * !D * X)	-0.00047	-0.00048	-0.00047
	(!A * !B * D * X)	0.00073	0.00066	0.00065
	(!A * !B * D * X)	-0.00062	-0.00071	-0.00072
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00092	0.00093	0.00091
	(B * D * X)	-0.00109	-0.00109	-0.00108
	(B * !D * X)	0.00091	0.00092	0.00090
	(B * !D * X)	-0.00098	-0.00098	-0.00097
	(A * !B * D * X)	0.00093	0.00091	0.00090
	(A * !B * D * X)	-0.00111	-0.00111	-0.00110
	(A * !B * !D * X)	0.00091	0.00092	0.00090
	(A * !B * !D * X)	-0.00097	-0.00098	-0.00096
	(!A * !B * D * X)	0.00104	0.00091	0.00090
	(!A * !B * D * X)	-0.00133	-0.00146	-0.00147

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00056	-0.00057	-0.00056
	(B * D * X)	0.00052	0.00052	0.00052
	(B * !D * X)	-0.00055	-0.00056	-0.00055
	(B * !D * X)	0.00048	0.00048	0.00048
	(A * !B * D * X)	-0.00056	-0.00056	-0.00056
	(A * !B * D * X)	0.00053	0.00054	0.00053
	(A * !B * !D * X)	-0.00050	-0.00051	-0.00055
	(A * !B * !D * X)	0.00051	0.00051	0.00048
	(!A * !B * D * X)	-0.00056	-0.00056	-0.00055
	(!A * !B * D * X)	0.00070	0.00070	0.00071
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00065	-0.00065	-0.00065
	(B * D * X)	0.00052	0.00052	0.00052
	(B * !D * X)	-0.00064	-0.00065	-0.00064
	(B * !D * X)	0.00048	0.00049	0.00049
	(A * !B * D * X)	-0.00065	-0.00065	-0.00065
	(A * !B * D * X)	0.00054	0.00054	0.00054
	(A * !B * !D * X)	-0.00059	-0.00060	-0.00063
	(A * !B * !D * X)	0.00051	0.00051	0.00049
	(!A * !B * D * X)	-0.00064	-0.00065	-0.00064
	(!A * !B * D * X)	0.00071	0.00072	0.00072
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00091	-0.00091	-0.00090
	(B * D * X)	0.00109	0.00109	0.00108
	(B * !D * X)	-0.00087	-0.00087	-0.00087
	(B * !D * X)	0.00101	0.00102	0.00101
	(A * !B * D * X)	-0.00090	-0.00091	-0.00090
	(A * !B * D * X)	0.00111	0.00111	0.00110
	(A * !B * !D * X)	-0.00075	-0.00077	-0.00086
	(A * !B * !D * X)	0.00107	0.00107	0.00100
	(!A * !B * D * X)	-0.00089	-0.00089	-0.00088
	(!A * !B * D * X)	0.00147	0.00146	0.00147

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00063	0.00064	0.00063
	(C * X)	-0.00044	-0.00044	-0.00044
	(B * !C * X)	0.00062	0.00064	0.00063
	(B * !C * X)	-0.00043	-0.00044	-0.00044
	(A * !B * !C * X)	0.00063	0.00064	0.00063
	(A * !B * !C * X)	-0.00044	-0.00044	-0.00044
sky130_fd_sc_hs__or4_2	(C * X)	0.00074	0.00076	0.00075
	(C * X)	-0.00043	-0.00044	-0.00043
	(B * !C * X)	0.00074	0.00076	0.00075
	(B * !C * X)	-0.00043	-0.00044	-0.00043
	(A * !B * !C * X)	0.00074	0.00076	0.00075
	(A * !B * !C * X)	-0.00043	-0.00044	-0.00043
sky130_fd_sc_hs__or4_4	(C * X)	0.00103	0.00103	0.00103
	(C * X)	-0.00086	-0.00086	-0.00085
	(B * !C * X)	0.00103	0.00103	0.00103
	(B * !C * X)	-0.00085	-0.00085	-0.00085
	(A * !B * !C * X)	0.00103	0.00103	0.00103
	(A * !B * !C * X)	-0.00085	-0.00085	-0.00085

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00059	-0.00060	-0.00062
	(C * X)	0.00047	0.00047	0.00045
	(B * !C * X)	-0.00054	-0.00054	-0.00061
	(B * !C * X)	0.00051	0.00051	0.00045
	(A * !B * !C * X)	-0.00046	-0.00047	-0.00059
	(A * !B * !C * X)	0.00056	0.00056	0.00047
sky130_fd_sc_hs__or4_2	(C * X)	-0.00071	-0.00071	-0.00074
	(C * X)	0.00047	0.00047	0.00044
	(B * !C * X)	-0.00066	-0.00066	-0.00073
	(B * !C * X)	0.00050	0.00050	0.00045
	(A * !B * !C * X)	-0.00058	-0.00059	-0.00071
	(A * !B * !C * X)	0.00055	0.00055	0.00047
sky130_fd_sc_hs__or4_4	(C * X)	-0.00094	-0.00095	-0.00102
	(C * X)	0.00093	0.00093	0.00088
	(B * !C * X)	-0.00078	-0.00080	-0.00098
	(B * !C * X)	0.00103	0.00103	0.00090
	(A * !B * !C * X)	-0.00064	-0.00066	-0.00094
	(A * !B * !C * X)	0.00113	0.00112	0.00092

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT						OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
0	**0**	**x**	**1**	**1**	**F**	**0**	**1**
0	**1**	**0**	**1**	**1**	**F**	**0**	**1**
x	**1**	**1**	**1**	**1**	**F**	**1**	**0**
1	**x**	**0**	**1**	**1**	**F**	**1**	**0**
1	**0**	**1**	**1**	**1**	**F**	**0**	**1**
x	**x**	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**0**	**1**	**x**	**0**	**1**
x	**x**	**x**	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbn_1	55.94400
sky130_fd_sc_hs__sdfbbn_2	60.73920

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfbbn_1	0.00185	0.00163	0.00391	0.00170	0.00518	0.00277	0.43890	0.43452
sky130_fd_sc_hs__sdfbbn_2	0.00186	0.00164	0.00395	0.00157	0.00511	0.00274	0.87848	0.88150

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbn_1	0.00000	0.21745	0.39130
sky130_fd_sc_hs__sdfbbn_2	0.00000	0.22022	0.40685

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q (FR)	1.07835	2.24403	11.52950
	SET_B->Q (FR)	0.46960	1.63838	11.17450
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	1.23356	2.23273	11.65840
	SET_B->Q (FR)	0.55453	1.56668	11.39580

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q (FF)	1.02418	1.76564	6.30286
	RESET_B->Q (FF)	0.59794	1.32778	5.85742
	SET_B->Q (RF)	0.32380	0.86304	3.91124
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	1.09330	1.80364	6.38630
	RESET_B->Q (FF)	0.68121	1.38014	5.97992
	SET_B->Q (RF)	0.40737	0.93219	4.18678

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q_N (FR)	0.94268	2.14025	11.32870
	RESET_B->Q_N (FR)	0.51707	1.71047	10.91110
	SET_B->Q_N (RR)	0.24272	1.25231	9.03565
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.92923	1.99649	11.33630
	RESET_B->Q_N (FR)	0.51831	1.57469	10.94640
	SET_B->Q_N (RR)	0.24499	1.13318	9.20144

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q_N (FF)	0.92020	1.79557	6.49164
	SET_B->Q_N (FF)	0.34074	1.15687	6.40374
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.99585	1.87182	6.61895
	SET_B->Q_N (FF)	0.37060	1.15650	6.59986

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.00094	0.06829	1.46551
	setup	CLK_N (F)	0.39824	0.28920	-1.35938
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.00537	0.06189	1.42319
	setup	CLK_N (F)	0.40684	0.29578	-1.31338

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.69939	-0.73003	-2.01722
	setup	CLK_N (F)	0.79154	0.80510	2.16569
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.75149	-0.77770	-2.14439
	setup	CLK_N (F)	0.85222	0.86195	2.30222

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.00094	0.06829	1.46551
	setup	CLK_N (F)	0.39824	0.28920	-1.35938
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.00537	0.06189	1.42319
	setup	CLK_N (F)	0.40684	0.29578	-1.31338

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.69939	-0.73003	-2.01722
	setup	CLK_N (F)	0.79154	0.80510	2.16569
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.75149	-0.77770	-2.14439
	setup	CLK_N (F)	0.85222	0.86195	2.30222

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.02725	0.05271	1.22789
	setup	CLK_N (F)	0.42887	0.31305	-1.12733
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03026	0.04336	1.19256
	setup	CLK_N (F)	0.43817	0.32178	-1.09238

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.85348	-0.94071	-2.82334
	setup	CLK_N (F)	0.96675	1.02727	2.99465
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.90921	-0.99150	-2.94151
	setup	CLK_N (F)	1.02746	1.08326	3.11231

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.02725	0.05271	1.22789
	hold	CLK_N (F)	-0.02862	0.04985	1.20754
	setup	CLK_N (F)	0.42821	0.31156	-1.14211
	setup	CLK_N (F)	0.42887	0.31305	-1.12733
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03026	0.04336	1.19256
	hold	CLK_N (F)	-0.03428	0.04252	1.17394
	setup	CLK_N (F)	0.43817	0.31998	-1.10704
	setup	CLK_N (F)	0.43765	0.32178	-1.09238

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.85348	-0.94071	-2.82334
	hold	CLK_N (F)	-0.86127	-0.94236	-2.85857
	setup	CLK_N (F)	0.95181	1.01614	2.95247
	setup	CLK_N (F)	0.96675	1.02727	2.99465
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.90921	-0.99150	-2.94151
	hold	CLK_N (F)	-0.91384	-0.99398	-2.97717
	setup	CLK_N (F)	1.01453	1.07468	3.07335
	setup	CLK_N (F)	1.02746	1.08326	3.11231

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.00635	0.05925	1.36736
	setup	CLK_N (F)	0.91722	0.87130	-0.22508
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.00994	0.05136	1.33480
	setup	CLK_N (F)	0.97859	0.92478	-0.14273

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.15422	-0.15137	0.42769
	setup	CLK_N (F)	0.79804	0.84540	2.58245
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.15733	-0.16062	0.41251
	setup	CLK_N (F)	0.85832	0.90348	2.71032

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.81878	-0.79245	0.33419
	hold	CLK_N (F)	-0.00635	0.05925	1.36736
	setup	CLK_N (F)	0.91722	0.87130	-0.22508
	setup	CLK_N (F)	0.41029	0.30596	-1.26013
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.87348	-0.84562	0.25850
	hold	CLK_N (F)	-0.00994	0.05136	1.33480
	setup	CLK_N (F)	0.97859	0.92478	-0.14273
	setup	CLK_N (F)	0.41945	0.31145	-1.21993

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.15422	-0.15137	0.42769
	hold	CLK_N (F)	-0.70237	-0.76979	-2.45001
	setup	CLK_N (F)	0.55307	0.50601	-0.38070
	setup	CLK_N (F)	0.79804	0.84540	2.58245
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.15733	-0.16062	0.41251
	hold	CLK_N (F)	-0.75618	-0.81885	-2.57536
	setup	CLK_N (F)	0.56242	0.51568	-0.36371
	setup	CLK_N (F)	0.85832	0.90348	2.71032

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	recovery	CLK_N (F)	0.30139	0.18505	-1.78502
	removal	CLK_N (F)	0.11925	0.19776	1.93071
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.29863	0.17978	-1.80427
	removal	CLK_N (F)	0.12754	0.20669	1.95492

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	recovery	CLK_N (F)	0.30075	0.18505	-1.78551
	recovery	CLK_N (F)	0.30127	0.18502	-1.78560
	recovery	CLK_N (F)	0.30139	0.18492	-1.78502
	removal	CLK_N (F)	0.11783	0.19776	1.93071
	removal	CLK_N (F)	0.11925	0.19746	1.92920
	removal	CLK_N (F)	0.11783	0.19776	1.93071
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.29863	0.17970	-1.80427
	recovery	CLK_N (F)	0.29861	0.17971	-1.80531
	recovery	CLK_N (F)	0.29859	0.17978	-1.80535
	removal	CLK_N (F)	0.12671	0.20669	1.95492
	removal	CLK_N (F)	0.12754	0.20669	1.95409
	removal	CLK_N (F)	0.12754	0.20669	1.95409

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	min_pulse_width	RESET_B ()	0.55967	0.98145	16.50020
	min_pulse_width	RESET_B ()	0.47676	0.98145	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.55246	0.98145	16.50020
	min_pulse_width	RESET_B ()	0.48397	0.98145	16.50020

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	recovery	CLK_N (F)	-0.11181	-0.22961	-1.93967
	removal	CLK_N (F)	0.14971	0.27369	2.19918
	hold	RESET_B (R)	-0.13011	-0.24102	-1.17674
	setup	RESET_B (R)	0.31405	0.36211	1.48052
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.10315	-0.22176	-1.82674
	removal	CLK_N (F)	0.14473	0.26378	2.14980
	hold	RESET_B (R)	-0.16791	-0.28702	-1.42282
	setup	RESET_B (R)	0.30316	0.38189	1.77594

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	recovery	CLK_N (F)	-0.11372	-0.22961	-1.94102
	recovery	CLK_N (F)	-0.11269	-0.23158	-1.94119
	recovery	CLK_N (F)	-0.11181	-0.23124	-1.93967
	removal	CLK_N (F)	0.14971	0.27369	2.19918
	removal	CLK_N (F)	0.14971	0.27369	2.19918
	removal	CLK_N (F)	0.14571	0.27369	2.19918
	hold	RESET_B (R)	-0.13316	-0.24102	-1.17731
	hold	RESET_B (R)	-0.13011	-0.24118	-1.17674
	setup	RESET_B (R)	0.31405	0.36211	1.48052
	setup	RESET_B (R)	0.21656	0.30760	1.47515
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.10337	-0.22184	-1.82996
	recovery	CLK_N (F)	-0.10315	-0.22183	-1.82695
	recovery	CLK_N (F)	-0.10572	-0.22176	-1.82674
	removal	CLK_N (F)	0.14473	0.26378	2.14980
	removal	CLK_N (F)	0.14473	0.26378	2.14980
	removal	CLK_N (F)	0.14333	0.26378	2.14980
	hold	RESET_B (R)	-0.17561	-0.29903	-1.46366
	hold	RESET_B (R)	-0.16791	-0.28702	-1.42282
	setup	RESET_B (R)	0.30316	0.38189	1.77594
	setup	RESET_B (R)	0.22439	0.36656	1.74832

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	min_pulse_width	SET_B ()	0.37755	0.99714	16.50020
	min_pulse_width	SET_B ()	0.34814	1.00892	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.43455	1.07171	16.50020
	min_pulse_width	SET_B ()	0.40925	1.05601	16.50020

Constraints(ns) for CLK_N rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	min_pulse_width	CLK_N ()	0.51641	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.37943	0.98145	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.52362	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.40466	0.98145	16.50020

Constraints(ns) for CLK_N falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	min_pulse_width	CLK_N ()	0.54525	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.60293	0.98145	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.60654	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.60293	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00642	0.00643	0.00643
	CLK_N	0.00742	0.00742	0.00742
	SET_B	0.00664	0.00653	0.00666
	SET_B	0.00851	0.00840	0.00850
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00753	0.00768	0.00824
	CLK_N	0.00848	0.00863	0.00870
	SET_B	0.00780	0.00785	0.00800
	SET_B	0.00963	0.00967	0.00979

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00686	0.00687	0.00680
	CLK_N	0.00771	0.00772	0.00765
	RESET_B	0.00817	0.00821	0.00800
	RESET_B	0.00871	0.00875	0.00853
	SET_B	0.00853	0.00844	0.00827
	SET_B	0.00665	0.00657	0.00637
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00800	0.00815	0.00809
	CLK_N	0.00887	0.00902	0.00896
	RESET_B	0.00953	0.00972	0.00959
	RESET_B	0.01008	0.01027	0.01005
	SET_B	0.00984	0.00991	0.00971
	SET_B	0.00801	0.00808	0.00786

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00687	0.00687	0.00729
	CLK_N	0.00772	0.00773	0.00777
	RESET_B	0.00818	0.00822	0.00813
	RESET_B	0.00872	0.00876	0.00866
	SET_B	0.00854	0.00847	0.00838
	SET_B	0.00666	0.00657	0.00649
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00801	0.00816	0.00826
	CLK_N	0.00888	0.00903	0.00911
	RESET_B	0.00954	0.00973	0.01014
	RESET_B	0.01009	0.01028	0.01024
	SET_B	0.00985	0.00991	0.00995
	SET_B	0.00802	0.00809	0.00805

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00641	0.00642	0.00637
	CLK_N	0.00740	0.00741	0.00732
	SET_B	0.00661	0.00650	0.00650
	SET_B	0.00847	0.00836	0.00835
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00751	0.00766	0.00806
	CLK_N	0.00846	0.00861	0.00853
	SET_B	0.00777	0.00781	0.00815
	SET_B	0.00959	0.00963	0.00960

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * SCD * SCE)**	0.00055	0.00055	0.00055
	(CLK_N * SCD * SCE)	-0.00029	-0.00030	-0.00029
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00547	0.00535	0.00533
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00428	0.00416	0.00414
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00378	0.00369	0.00370
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00237	0.00228	0.00230
	(CLK_N * !SCD * SCE)	0.00025	0.00025	0.00024
	(CLK_N * !SCD * SCE)	-0.00063	-0.00065	-0.00065
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00326	0.00317	0.00317
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00187	0.00178	0.00178
	(!CLK_N * SCD * SCE)	0.00055	0.00055	0.00055
	(!CLK_N * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK_N * !SCE)	0.00216	0.00205	0.00211
	(!CLK_N * !SCE)	0.00077	0.00066	0.00072
	(!CLK_N * !SCD * SCE)	0.00025	0.00024	0.00024
	(!CLK_N * !SCD * SCE)	-0.00064	-0.00064	-0.00065

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00057	0.00057	0.00057
	(CLK_N * SCD * SCE)	-0.00029	-0.00030	-0.00029
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00553	0.00541	0.00538
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00430	0.00418	0.00415
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00385	0.00376	0.00377
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00242	0.00234	0.00234
	(CLK_N * !SCD * SCE)	0.00026	0.00026	0.00025
	(CLK_N * !SCD * SCE)	-0.00063	-0.00065	-0.00065
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00329	0.00320	0.00320
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00187	0.00179	0.00178
	(!CLK_N * SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK_N * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK_N * !SCE)	0.00214	0.00203	0.00208
	(!CLK_N * !SCE)	0.00072	0.00061	0.00066
	(!CLK_N * !SCD * SCE)	0.00026	0.00026	0.00025
	(!CLK_N * !SCD * SCE)	-0.00064	-0.00064	-0.00065

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * SCD * SCE)**	-0.00051	-0.00053	-0.00055
	(CLK_N * SCD * SCE)	0.00032	0.00032	0.00030
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00515	0.00502	0.00512
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00635	0.00621	0.00631
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00168	0.00157	0.00170
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00310	0.00298	0.00310
	(CLK_N * !SCD * SCE)	-0.00023	-0.00023	-0.00023
	(CLK_N * !SCD * SCE)	0.00066	0.00066	0.00065
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00215	0.00205	0.00220
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00355	0.00344	0.00359
	(!CLK_N * SCD * SCE)	-0.00051	-0.00053	-0.00055
	(!CLK_N * SCD * SCE)	0.00032	0.00032	0.00031
	(!CLK_N * !SCE)	0.00109	0.00099	0.00117
	(!CLK_N * !SCE)	0.00249	0.00239	0.00256
	(!CLK_N * !SCD * SCE)	-0.00022	-0.00023	-0.00023
	(!CLK_N * !SCD * SCE)	0.00065	0.00065	0.00065

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00053	-0.00054	-0.00056
	(CLK_N * SCD * SCE)	0.00032	0.00032	0.00030
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00559	0.00545	0.00554
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00682	0.00669	0.00677
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00183	0.00172	0.00184
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00328	0.00316	0.00328
	(CLK_N * !SCD * SCE)	-0.00024	-0.00024	-0.00024
	(CLK_N * !SCD * SCE)	0.00066	0.00066	0.00065
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00235	0.00224	0.00239
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00377	0.00365	0.00381
	(!CLK_N * SCD * SCE)	-0.00053	-0.00055	-0.00056
	(!CLK_N * SCD * SCE)	0.00032	0.00032	0.00030
	(!CLK_N * !SCE)	0.00122	0.00112	0.00129
	(!CLK_N * !SCE)	0.00264	0.00253	0.00271
	(!CLK_N * !SCD * SCE)	-0.00024	-0.00024	-0.00024
	(!CLK_N * !SCD * SCE)	0.00065	0.00066	0.00065

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00447	0.00442	0.00436
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00269	0.00263	0.00258
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00615	0.00608	0.00600
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00458	0.00450	0.00443
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00395	0.00390	0.00384
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00218	0.00212	0.00207
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00478	0.00472	0.00465
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00295	0.00289	0.00283
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00647	0.00639	0.00629
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00485	0.00478	0.00468
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00426	0.00421	0.00412
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00244	0.00239	0.00231
	(!CLK_N * D * SCE)	0.00286	0.00280	0.00275
	(!CLK_N * D * SCE)	0.00109	0.00102	0.00098
	(!CLK_N * !D * SCE)	0.00317	0.00311	0.00304
	(!CLK_N * !D * SCE)	0.00135	0.00129	0.00123
	!SCE	0.00044	0.00042	0.00041
	!SCE	-0.00051	-0.00054	-0.00054

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00452	0.00447	0.00442
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00274	0.00269	0.00264
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00620	0.00612	0.00604
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00461	0.00454	0.00446
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00396	0.00391	0.00385
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00219	0.00214	0.00208
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00483	0.00477	0.00470
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00300	0.00295	0.00288
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00650	0.00643	0.00632
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00487	0.00480	0.00470
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00427	0.00421	0.00413
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00245	0.00240	0.00233
	(!CLK_N * D * SCE)	0.00281	0.00275	0.00271
	(!CLK_N * D * SCE)	0.00105	0.00098	0.00095
	(!CLK_N * !D * SCE)	0.00312	0.00306	0.00299
	(!CLK_N * !D * SCE)	0.00130	0.00124	0.00119
	!SCE	0.00043	0.00041	0.00041
	!SCE	-0.00052	-0.00055	-0.00055

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00229	0.00224	0.00221
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00408	0.00405	0.00399
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00574	0.00569	0.00563
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00732	0.00728	0.00719
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00276	0.00272	0.00271
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00454	0.00450	0.00447
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00210	0.00206	0.00205
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00394	0.00390	0.00387
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00556	0.00552	0.00548
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00718	0.00714	0.00708
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00258	0.00253	0.00255
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00439	0.00436	0.00436
	(!CLK_N * D * SCE)	0.00171	0.00166	0.00166
	(!CLK_N * D * SCE)	0.00348	0.00344	0.00343
	(!CLK_N * !D * SCE)	0.00152	0.00148	0.00150
	(!CLK_N * !D * SCE)	0.00334	0.00330	0.00331
	!SCE	-0.00040	-0.00041	-0.00041
	!SCE	0.00054	0.00055	0.00054

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00244	0.00240	0.00237
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00423	0.00419	0.00414
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00618	0.00614	0.00608
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00777	0.00773	0.00765
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00296	0.00291	0.00291
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00473	0.00469	0.00467
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00226	0.00222	0.00220
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00409	0.00405	0.00402
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00600	0.00596	0.00590
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00763	0.00759	0.00752
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00277	0.00273	0.00275
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00458	0.00454	0.00455
	(!CLK_N * D * SCE)	0.00183	0.00179	0.00179
	(!CLK_N * D * SCE)	0.00361	0.00357	0.00355
	(!CLK_N * !D * SCE)	0.00165	0.00161	0.00163
	(!CLK_N * !D * SCE)	0.00346	0.00342	0.00343
	!SCE	-0.00040	-0.00041	-0.00041
	!SCE	0.00055	0.00056	0.00055

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00235	0.00220	0.00228
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00014	-0.00031	-0.00022
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00831	0.00823	0.00826
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00630	0.00621	0.00623
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00485	0.00477	0.00480
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00307	0.00297	0.00298
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00533	0.00525	0.00529
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00352	0.00343	0.00345
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00589	0.00570	0.00578
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00280	0.00260	0.00270
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00759	0.00737	0.00742
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00470	0.00448	0.00454
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00231	0.00220	0.00230
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00004	-0.00016	-0.00005
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00538	0.00518	0.00525
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00229	0.00210	0.00218
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00240	0.00225	0.00234
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00009	-0.00026	-0.00016
	(!CLK_N * D * !SCD)	0.00437	0.00425	0.00428
	(!CLK_N * D * !SCD)	0.00256	0.00243	0.00245
	(!CLK_N * !D * SCD)	0.00434	0.00413	0.00423
	(!CLK_N * !D * SCD)	0.00125	0.00104	0.00116

sky130_fd_sc_hs__sdfbbn_2	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00238	0.00223	0.00232
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00014	-0.00031	-0.00021
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00877	0.00870	0.00874
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00676	0.00667	0.00670
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00503	0.00496	0.00499
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00322	0.00313	0.00315
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00555	0.00548	0.00552
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00372	0.00363	0.00366
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00599	0.00580	0.00588
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00285	0.00266	0.00275
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00767	0.00744	0.00749
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00473	0.00450	0.00456
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00234	0.00222	0.00232
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00004	-0.00017	-0.00006
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00543	0.00524	0.00531
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00231	0.00211	0.00219
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00244	0.00228	0.00237
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00009	-0.00025	-0.00016
	(!CLK_N * D * !SCD)	0.00452	0.00441	0.00445
	(!CLK_N * D * !SCD)	0.00269	0.00257	0.00259
	(!CLK_N * !D * SCD)	0.00433	0.00412	0.00423
	(!CLK_N * !D * SCD)	0.00121	0.00099	0.00112

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)**	-0.00021	-0.00027	-0.00004
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00227	0.00222	0.00244
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00516	0.00511	0.00522
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00718	0.00713	0.00725
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00347	0.00342	0.00356
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00528	0.00523	0.00537
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00295	0.00291	0.00303
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00477	0.00472	0.00486
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00171	0.00156	0.00176
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00480	0.00465	0.00485
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00519	0.00502	0.00518
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00805	0.00789	0.00806
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00011	-0.00017	0.00004
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00224	0.00218	0.00240
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00219	0.00203	0.00226
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00526	0.00511	0.00534
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00026	-0.00032	-0.00009
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00222	0.00217	0.00239
	(!CLK_N * D * !SCD)	0.00182	0.00175	0.00188
	(!CLK_N * D * !SCD)	0.00365	0.00357	0.00371
	(!CLK_N * !D * SCD)	0.00107	0.00092	0.00117
	(!CLK_N * !D * SCD)	0.00415	0.00400	0.00424

sky130_fd_sc_hs__sdfbbn_2	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00025	-0.00031	-0.00008
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00227	0.00222	0.00244
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00518	0.00513	0.00524
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00721	0.00716	0.00727
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00350	0.00346	0.00360
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00533	0.00528	0.00542
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00294	0.00290	0.00303
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00478	0.00473	0.00487
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00184	0.00169	0.00189
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00498	0.00482	0.00502
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00560	0.00542	0.00559
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00853	0.00835	0.00851
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00014	-0.00020	0.00001
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00225	0.00219	0.00241
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00236	0.00220	0.00243
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00547	0.00532	0.00555
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00030	-0.00036	-0.00014
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00221	0.00216	0.00239
	(!CLK_N * D * !SCD)	0.00176	0.00168	0.00182
	(!CLK_N * D * !SCD)	0.00360	0.00352	0.00365
	(!CLK_N * !D * SCD)	0.00117	0.00101	0.00126
	(!CLK_N * !D * SCD)	0.00429	0.00413	0.00438

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00547	0.00532	0.00534
	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00425	0.00410	0.00413
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00322	0.00314	0.00320
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00180	0.00171	0.00178
	(!SET_B * Q * !Q_N)	0.00322	0.00313	0.00320
	(!SET_B * Q * !Q_N)	0.00177	0.00168	0.00175

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)**	0.00533	0.00517	0.00519
	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00414	0.00398	0.00400
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00306	0.00298	0.00304
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00169	0.00160	0.00167
	(!SET_B * Q * !Q_N)	0.00314	0.00305	0.00311
	(!SET_B * Q * !Q_N)	0.00174	0.00165	0.00171

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)**	0.00481	0.00469	0.00476
	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00603	0.00590	0.00598
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00155	0.00146	0.00161
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00296	0.00289	0.00303
	(!SET_B * Q * !Q_N)	0.00118	0.00111	0.00123
	(!SET_B * Q * !Q_N)	0.00264	0.00257	0.00269

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)**	0.00511	0.00498	0.00506
	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00630	0.00617	0.00625
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00163	0.00154	0.00169
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00301	0.00292	0.00306
	(!SET_B * Q * !Q_N)	0.00119	0.00112	0.00124
	(!SET_B * Q * !Q_N)	0.00261	0.00253	0.00265

Passive power(pJ) for SET_B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	0.00146	0.00147	0.00146
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00176	-0.00176	-0.00176
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00503	0.00491	0.00493
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00154	0.00142	0.00145

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	0.00150	0.00152	0.00151
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00169	-0.00170	-0.00169
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00532	0.00520	0.00523
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00187	0.00175	0.00178

Passive power(pJ) for SET_B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	-0.00144	-0.00145	-0.00146
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00178	0.00177	0.00177
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00071	0.00058	0.00079
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00421	0.00407	0.00428

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	-0.00148	-0.00150	-0.00150
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00170	0.00170	0.00170
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00065	0.00051	0.00072
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00409	0.00397	0.00418

Passive power(pJ) for CLK_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00930	0.00909	0.00935
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00765	0.00744	0.00770
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00582	0.00558	0.00560
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00397	0.00373	0.00375
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00935	0.00914	0.00939
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00770	0.00749	0.00774
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00586	0.00562	0.00564
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00401	0.00377	0.00379
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01002	0.00971	0.00966
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00798	0.00768	0.00762
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00568	0.00541	0.00544
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00382	0.00355	0.00359
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00636	0.00605	0.00604
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00452	0.00420	0.00420
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00712	0.00691	0.00714
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00526	0.00505	0.00529
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00715	0.00694	0.00718
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00530	0.00509	0.00533
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00930	0.00909	0.00935
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00765	0.00744	0.00770
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00582	0.00558	0.00560
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00397	0.00373	0.00375
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01004	0.00973	0.00968
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.00799	0.00768	0.00762
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01002	0.00971	0.00965
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00797	0.00767	0.00760
	(!D * !SCE * SET_B * !Q * Q_N)	0.00571	0.00545	0.00548
	(!D * !SCE * SET_B * !Q * Q_N)	0.00386	0.00359	0.00362
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00639	0.00609	0.00608
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00455	0.00425	0.00423
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00568	0.00541	0.00544
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00382	0.00355	0.00358
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00636	0.00605	0.00604
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00452	0.00420	0.00419
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00712	0.00691	0.00714
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00526	0.00505	0.00529

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00942	0.00921	0.00945
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00778	0.00757	0.00781
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00578	0.00553	0.00556
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00396	0.00371	0.00373
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00946	0.00925	0.00949
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00782	0.00761	0.00785
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00581	0.00557	0.00560
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00399	0.00374	0.00377
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01024	0.00993	0.00987
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00824	0.00793	0.00787
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00566	0.00540	0.00542
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00383	0.00357	0.00359
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00630	0.00599	0.00598
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00449	0.00418	0.00417
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00718	0.00697	0.00719
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00535	0.00514	0.00537
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00721	0.00700	0.00722
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00539	0.00517	0.00540
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00942	0.00921	0.00945
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00778	0.00757	0.00781
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00578	0.00553	0.00556
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00396	0.00371	0.00373
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01026	0.00995	0.00989
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.00824	0.00793	0.00787
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01024	0.00993	0.00986
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00823	0.00793	0.00786
	(!D * !SCE * SET_B * !Q * Q_N)	0.00569	0.00543	0.00545
	(!D * !SCE * SET_B * !Q * Q_N)	0.00387	0.00360	0.00362
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00634	0.00602	0.00602
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00452	0.00421	0.00420
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00566	0.00540	0.00542
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00383	0.00356	0.00359
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00630	0.00599	0.00598
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00449	0.00418	0.00416
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00718	0.00697	0.00719
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00535	0.00514	0.00537

Passive power(pJ) for CLK_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00458	0.00436	0.00445
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00643	0.00621	0.00631
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00454	0.00432	0.00441
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00639	0.00617	0.00627
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00473	0.00451	0.00461
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00658	0.00636	0.00647
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00621	0.00595	0.00600
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00805	0.00780	0.00784
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00627	0.00605	0.00607
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00812	0.00790	0.00793
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00624	0.00601	0.00603
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00809	0.00786	0.00789
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00458	0.00436	0.00445
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00643	0.00621	0.00631
	(!D * !SCE * SET_B * !Q * Q_N)	0.00470	0.00448	0.00457
	(!D * !SCE * SET_B * !Q * Q_N)	0.00654	0.00632	0.00643
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00617	0.00592	0.00596
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00801	0.00776	0.00780
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00474	0.00451	0.00461
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00658	0.00636	0.00647
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00621	0.00595	0.00600
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00805	0.00779	0.00784
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00628	0.00605	0.00607
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00812	0.00790	0.00793

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00457	0.00435	0.00444
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00640	0.00617	0.00627
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00454	0.00432	0.00441
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00636	0.00614	0.00624
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00470	0.00448	0.00458
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00653	0.00631	0.00641
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00620	0.00595	0.00599
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00802	0.00776	0.00781
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00636	0.00613	0.00615
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00818	0.00795	0.00798
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00632	0.00610	0.00611
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00815	0.00792	0.00794
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00457	0.00435	0.00444
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00640	0.00617	0.00627
	(!D * !SCE * SET_B * !Q * Q_N)	0.00467	0.00445	0.00454
	(!D * !SCE * SET_B * !Q * Q_N)	0.00649	0.00627	0.00637
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00617	0.00591	0.00595
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00799	0.00773	0.00777
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00470	0.00448	0.00458
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00653	0.00631	0.00641
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00620	0.00595	0.00599
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00802	0.00776	0.00781
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00636	0.00613	0.00615
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00818	0.00795	0.00798

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT						OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**0**	**1**	**x**	**0**	**1**
x	**x**	**x**	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbp_1	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfbbp_1	0.00184	0.00165	0.00381	0.00158	0.00591	0.00272	0.43211	0.41665

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbp_1	0.00000	0.21745	0.39129

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RR)	1.01223	1.96907	9.38642
	SET_B->Q (FR)	0.43866	1.61781	11.06880

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.72029	1.22731	3.91239
	RESET_B->Q (FF)	0.56954	1.29348	5.68638
	SET_B->Q (RF)	0.33149	0.85356	3.82687

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q_N (RR)	0.63876	1.61781	9.05104
	RESET_B->Q_N (FR)	0.48807	1.69369	10.85660
	SET_B->Q_N (RR)	0.25002	1.25722	9.05651

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q_N (RF)	0.85352	1.50166	4.25848
	SET_B->Q_N (FF)	0.30937	1.10425	6.21783

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.17255	-0.28314	-1.40185
	setup	CLK (R)	0.33337	0.37178	1.53449

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.66035	-0.70233	-3.01359
	setup	CLK (R)	0.87506	0.89230	3.19349

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.17255	-0.28314	-1.40185
	setup	CLK (R)	0.33337	0.37178	1.53449

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.66035	-0.70233	-3.01359
	setup	CLK (R)	0.87506	0.89230	3.19349

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.19875	-0.30536	-1.70635
	setup	CLK (R)	0.36693	0.39546	1.83120

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.82758	-0.91683	-3.76395
	setup	CLK (R)	1.06176	1.12717	3.90620

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.19875	-0.30536	-1.70635
	hold	CLK (R)	-0.20030	-0.30577	-1.71271
	setup	CLK (R)	0.36693	0.39525	1.82180
	setup	CLK (R)	0.36584	0.39546	1.83120

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.82758	-0.91683	-3.76395
	hold	CLK (R)	-0.83810	-0.91909	-3.76459
	setup	CLK (R)	1.04486	1.11050	3.89238
	setup	CLK (R)	1.06176	1.12717	3.90620

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.18298	-0.30555	-0.69106
	setup	CLK (R)	1.01138	0.97037	1.68051

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.32828	-0.50021	-2.53104
	setup	CLK (R)	0.88063	0.93137	3.51835

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.79288	-0.77318	-0.69106
	hold	CLK (R)	-0.18298	-0.30555	-1.55241
	setup	CLK (R)	1.01138	0.97037	0.76998
	setup	CLK (R)	0.35209	0.39361	1.68051

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.32828	-0.50021	-2.53104
	hold	CLK (R)	-0.66454	-0.74008	-3.36603
	setup	CLK (R)	0.49155	0.59093	2.62410
	setup	CLK (R)	0.88063	0.93137	3.51835

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	recovery	CLK (R)	0.23643	0.24826	0.49825
	removal	CLK (R)	-0.07631	-0.09792	-0.30737

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	recovery	CLK (R)	0.23643	0.24826	0.49812
	recovery	CLK (R)	0.23424	0.24776	0.49825
	recovery	CLK (R)	0.23421	0.24788	0.49810
	removal	CLK (R)	-0.07631	-0.10033	-0.30737
	removal	CLK (R)	-0.07657	-0.09792	-0.30979
	removal	CLK (R)	-0.07657	-0.09792	-0.30979

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	min_pulse_width	RESET_B ()	0.47316	0.98145	16.50020
	min_pulse_width	RESET_B ()	0.48758	0.98145	16.50020

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	recovery	CLK (R)	0.03104	0.00000	0.73443
	removal	CLK (R)	0.18309	0.21876	0.52470
	hold	RESET_B (R)	-0.13933	-0.27270	-1.32410
	setup	RESET_B (R)	0.26867	0.37672	1.71576

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	recovery	CLK (R)	0.03089	0.00000	0.72906
	recovery	CLK (R)	0.03104	0.00000	0.73443
	recovery	CLK (R)	0.02882	0.00000	0.72017
	removal	CLK (R)	0.18309	0.21876	0.52470
	removal	CLK (R)	0.18309	0.21876	0.52470
	removal	CLK (R)	0.18309	0.21876	0.52470
	hold	RESET_B (R)	-0.13933	-0.27270	-1.32410
	hold	RESET_B (R)	-0.14103	-0.27320	-1.32782
	setup	RESET_B (R)	0.25176	0.35740	1.68047
	setup	RESET_B (R)	0.26867	0.37672	1.71576

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	min_pulse_width	SET_B ()	0.31094	0.98145	16.50020
	min_pulse_width	SET_B ()	0.33256	0.98145	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	min_pulse_width	CLK ()	0.24244	0.98145	16.50020
	min_pulse_width	CLK ()	0.33977	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	min_pulse_width	CLK ()	0.50199	0.98145	16.50020
	min_pulse_width	CLK ()	0.80481	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00745	0.00750	0.00759
	CLK	0.00650	0.00655	0.00662
	SET_B	0.00650	0.00640	0.00664
	SET_B	0.00851	0.00842	0.00851

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00739	0.00734	0.00721
	CLK	0.00635	0.00630	0.00616
	RESET_B	0.00747	0.00749	0.00734
	RESET_B	0.00796	0.00798	0.00774
	SET_B	0.00806	0.00793	0.00770
	SET_B	0.00603	0.00590	0.00566

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00740	0.00736	0.00735
	CLK	0.00636	0.00631	0.00631
	RESET_B	0.00748	0.00750	0.00755
	RESET_B	0.00797	0.00799	0.00789
	SET_B	0.00807	0.00794	0.00784
	SET_B	0.00604	0.00591	0.00581

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00743	0.00748	0.00746
	CLK	0.00648	0.00654	0.00650
	SET_B	0.00646	0.00637	0.00645
	SET_B	0.00847	0.00837	0.00835

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00056	0.00056	0.00056
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCE)	0.00210	0.00198	0.00206
	(CLK * !SCE)	0.00070	0.00058	0.00066
	(CLK * !SCD * SCE)	0.00025	0.00025	0.00024
	(CLK * !SCD * SCE)	-0.00064	-0.00064	-0.00065
	(!CLK * SCD * SCE)	0.00056	0.00056	0.00056
	(!CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00548	0.00535	0.00533
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00417	0.00405	0.00402
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00360	0.00351	0.00353
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00207	0.00198	0.00200
	(!CLK * !SCD * SCE)	0.00025	0.00025	0.00024
	(!CLK * !SCD * SCE)	-0.00064	-0.00064	-0.00065
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00315	0.00307	0.00307
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00163	0.00155	0.00155

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00052	-0.00053	-0.00055
	(CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(CLK * !SCE)	0.00058	0.00048	0.00068
	(CLK * !SCE)	0.00198	0.00189	0.00208
	(CLK * !SCD * SCE)	-0.00023	-0.00023	-0.00023
	(CLK * !SCD * SCE)	0.00065	0.00065	0.00065
	(!CLK * SCD * SCE)	-0.00052	-0.00053	-0.00055
	(!CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00410	0.00396	0.00407
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00540	0.00527	0.00537
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00162	0.00151	0.00163
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00315	0.00304	0.00316
	(!CLK * !SCD * SCE)	-0.00023	-0.00023	-0.00023
	(!CLK * !SCD * SCE)	0.00065	0.00066	0.00065
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00200	0.00189	0.00205
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00352	0.00342	0.00357

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00281	0.00275	0.00271
	(CLK * D * SCE)	0.00103	0.00096	0.00093
	(CLK * !D * SCE)	0.00312	0.00305	0.00299
	(CLK * !D * SCE)	0.00129	0.00123	0.00117
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00431	0.00425	0.00420
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00240	0.00234	0.00230
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00618	0.00610	0.00600
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00449	0.00441	0.00432
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00386	0.00380	0.00374
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00196	0.00190	0.00184
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00461	0.00456	0.00449
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00266	0.00260	0.00254
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00649	0.00641	0.00629
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00476	0.00468	0.00457
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00417	0.00411	0.00403
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00222	0.00216	0.00209
	!SCE	0.00044	0.00042	0.00041
	!SCE	-0.00051	-0.00054	-0.00055

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00118	0.00114	0.00114
	(CLK * D * SCE)	0.00297	0.00293	0.00292
	(CLK * !D * SCE)	0.00101	0.00096	0.00099
	(CLK * !D * SCE)	0.00283	0.00279	0.00280
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00221	0.00217	0.00213
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00413	0.00409	0.00403
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00467	0.00462	0.00457
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00636	0.00632	0.00624
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00259	0.00255	0.00255
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00450	0.00447	0.00444
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00204	0.00200	0.00198
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00399	0.00395	0.00392
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00450	0.00445	0.00442
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00623	0.00618	0.00614
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00242	0.00238	0.00239
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00436	0.00432	0.00433
	!SCE	-0.00040	-0.00041	-0.00041
	!SCE	0.00055	0.00056	0.00055

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00232	0.00217	0.00226
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00012	-0.00028	-0.00020
	(CLK * D * !SCD)	0.00378	0.00366	0.00369
	(CLK * D * !SCD)	0.00204	0.00189	0.00191
	(CLK * !D * SCD)	0.00421	0.00400	0.00411
	(CLK * !D * SCD)	0.00116	0.00094	0.00108
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00241	0.00227	0.00235
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00003	-0.00020	-0.00010
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00731	0.00722	0.00726
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00547	0.00537	0.00539
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00485	0.00476	0.00480
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00324	0.00314	0.00314
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00524	0.00515	0.00520
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00361	0.00351	0.00353
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00580	0.00560	0.00569
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00262	0.00243	0.00253
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00767	0.00744	0.00749
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00472	0.00449	0.00455
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00239	0.00227	0.00237
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00009	-0.00004	0.00006
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00535	0.00515	0.00523
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00218	0.00199	0.00207

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00017	-0.00022	0.00000
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00228	0.00222	0.00245
	(CLK * D * !SCD)	0.00186	0.00177	0.00191
	(CLK * D * !SCD)	0.00363	0.00354	0.00367
	(CLK * !D * SCD)	0.00065	0.00050	0.00076
	(CLK * !D * SCD)	0.00369	0.00354	0.00380
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00026	-0.00032	-0.00009
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00218	0.00213	0.00234
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00512	0.00506	0.00516
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00698	0.00692	0.00703
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00324	0.00319	0.00333
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00488	0.00483	0.00497
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00280	0.00275	0.00287
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00444	0.00439	0.00452
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00160	0.00144	0.00165
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00476	0.00461	0.00482
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00407	0.00391	0.00409
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00701	0.00685	0.00702
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00017	-0.00023	-0.00001
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00215	0.00208	0.00230
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00198	0.00183	0.00206
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00513	0.00498	0.00522

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * D * !SCD * SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N)	0.00268	0.00259	0.00267
	(CLK * SET_B * !Q * Q_N) + (!CLK * D * !SCD * SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N)	0.00151	0.00142	0.00150
	(!SET_B * Q * !Q_N)	0.00293	0.00283	0.00291
	(!SET_B * Q * !Q_N)	0.00173	0.00163	0.00171
	(!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * !SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00511	0.00493	0.00497
	(!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * !SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00416	0.00399	0.00402

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * D * !SCD * SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N)	0.00145	0.00137	0.00152
	(CLK * SET_B * !Q * Q_N) + (!CLK * D * !SCD * SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N)	0.00263	0.00254	0.00269
	(!SET_B * Q * !Q_N)	0.00084	0.00077	0.00091
	(!SET_B * Q * !Q_N)	0.00206	0.00198	0.00211
	(!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * !SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00391	0.00377	0.00383
	(!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * !SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00486	0.00472	0.00478

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	0.00153	0.00154	0.00153
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	-0.00212	-0.00214	-0.00213
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00401	0.00388	0.00392
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00007	-0.00007	-0.00002

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	-0.00150	-0.00153	-0.00153
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	0.00214	0.00214	0.00213
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00096	0.00082	0.00103
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00489	0.00476	0.00498

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00671	0.00646	0.00647
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00471	0.00448	0.00449
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00681	0.00657	0.00658
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00482	0.00459	0.00460
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00662	0.00636	0.00638
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00463	0.00438	0.00440
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00843	0.00820	0.00824
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00632	0.00609	0.00614
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00801	0.00772	0.00771
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00614	0.00585	0.00584
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00812	0.00783	0.00782
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00625	0.00596	0.00595
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00671	0.00646	0.00647
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00471	0.00448	0.00449
	(!D * !SCE * SET_B * !Q * Q_N)	0.00672	0.00647	0.00649
	(!D * !SCE * SET_B * !Q * Q_N)	0.00474	0.00449	0.00450
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00854	0.00830	0.00835
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00642	0.00619	0.00624
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00662	0.00636	0.00638
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00463	0.00438	0.00440
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00844	0.00820	0.00824
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00633	0.00609	0.00613
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00802	0.00772	0.00771
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00615	0.00585	0.00584

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00717	0.00692	0.00689
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00925	0.00900	0.00898
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00370	0.00348	0.00359
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00568	0.00546	0.00558
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00707	0.00682	0.00679
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00915	0.00890	0.00887
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00359	0.00337	0.00348
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00557	0.00535	0.00547
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00770	0.00750	0.00779
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00961	0.00940	0.00970
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00377	0.00356	0.00367
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00576	0.00554	0.00565
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00512	0.00492	0.00517
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00723	0.00703	0.00729
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00467	0.00443	0.00448
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00653	0.00629	0.00634
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00456	0.00432	0.00437
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00643	0.00618	0.00624
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00717	0.00692	0.00689
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00925	0.00900	0.00898
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00370	0.00348	0.00359
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00568	0.00546	0.00558
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.00757	0.00737	0.00766
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.00947	0.00926	0.00956
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00770	0.00750	0.00778
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00960	0.00940	0.00969
	(!D * !SCE * SET_B * !Q * Q_N)	0.00367	0.00346	0.00356
	(!D * !SCE * SET_B * !Q * Q_N)	0.00565	0.00544	0.00554
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00501	0.00481	0.00507
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00713	0.00692	0.00718
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00377	0.00356	0.00367
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00576	0.00554	0.00565
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00513	0.00493	0.00518
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00724	0.00704	0.00729
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00467	0.00443	0.00448
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00653	0.00629	0.00635

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**0**	**x**	**0**	**1**
x	**x**	**x**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrbp_1	46.35360
sky130_fd_sc_hs__sdfrbp_2	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfrbp_1	0.00176	0.00180	0.00399	0.00561	0.00286	0.44007	0.44051
sky130_fd_sc_hs__sdfrbp_2	0.00178	0.00182	0.00410	0.00562	0.00280	0.88365	0.87849

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.13908	0.25085
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.14753	0.24783

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RR)	0.64691	1.58518	8.96695
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.79157	1.57797	9.33587

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.50747	1.02076	3.70534
	RESET_B->Q (FF)	0.73941	1.49402	6.79022
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.58307	1.07280	3.84838
	RESET_B->Q (FF)	0.82152	1.55337	6.94640

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q_N (RR)	0.42473	1.39862	8.74053
	RESET_B->Q_N (FR)	0.65697	1.86512	11.81450
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.42574	1.27369	8.77328
	RESET_B->Q_N (FR)	0.66563	1.74853	11.86070

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q_N (RF)	0.49006	1.15011	3.97711
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.56155	1.21278	4.05928

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.17930	-0.32033	-1.61098
	setup	CLK (R)	0.43598	0.48296	1.85900
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.18665	-0.32969	-1.66281
	setup	CLK (R)	0.40544	0.46949	1.91565

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.15762	-0.31752	-2.80990
	setup	CLK (R)	0.88304	0.90887	3.37900
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.22680	-0.40084	-2.92364
	setup	CLK (R)	0.92089	0.94402	3.45718

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.17930	-0.32033	-1.61102
	hold	CLK (R)	-0.18367	-0.32033	-1.61098
	setup	CLK (R)	0.43257	0.48296	1.85865
	setup	CLK (R)	0.43598	0.48296	1.85900
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.18665	-0.32969	-1.66352
	hold	CLK (R)	-0.18827	-0.33021	-1.66281
	setup	CLK (R)	0.40544	0.46938	1.91533
	setup	CLK (R)	0.40530	0.46949	1.91565

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.15762	-0.31761	-2.80990
	hold	CLK (R)	-0.15772	-0.31752	-2.81069
	setup	CLK (R)	0.88253	0.90880	3.37900
	setup	CLK (R)	0.88304	0.90887	3.37887
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.22680	-0.40097	-2.92382
	hold	CLK (R)	-0.22698	-0.40084	-2.92364
	setup	CLK (R)	0.92026	0.94402	3.45665
	setup	CLK (R)	0.92089	0.94348	3.45718

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.22071	-0.35323	-1.93092
	setup	CLK (R)	0.47455	0.51508	2.13435
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.22380	-0.35989	-1.95983
	setup	CLK (R)	0.44557	0.49869	2.18003

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.22337	-0.41664	-3.60121
	setup	CLK (R)	1.05750	1.11662	4.03124
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.29070	-0.49933	-3.68214
	setup	CLK (R)	1.08949	1.15025	4.09244

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.22071	-0.35323	-1.93308
	hold	CLK (R)	-0.22183	-0.35471	-1.93092
	setup	CLK (R)	0.47455	0.51508	2.13178
	setup	CLK (R)	0.47398	0.51345	2.13435
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.22380	-0.35989	-1.95983
	hold	CLK (R)	-0.23125	-0.36068	-1.97033
	setup	CLK (R)	0.44557	0.49798	2.16916
	setup	CLK (R)	0.44258	0.49869	2.18003

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.24069	-0.43771	-3.63089
	hold	CLK (R)	-0.22337	-0.41664	-3.60121
	setup	CLK (R)	1.04142	1.09767	4.02251
	setup	CLK (R)	1.05750	1.11662	4.03124
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.31535	-0.52382	-3.70925
	hold	CLK (R)	-0.29070	-0.49933	-3.68214
	setup	CLK (R)	1.07164	1.13052	4.07958
	setup	CLK (R)	1.08949	1.15025	4.09244

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.18384	-0.32506	-0.79389
	setup	CLK (R)	1.01897	0.99405	1.93385
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.18863	-0.33160	-0.79651
	setup	CLK (R)	1.04921	1.02801	1.97739

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.18906	-0.37618	-2.86526
	setup	CLK (R)	0.91380	0.97034	3.74935
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.25115	-0.45056	-2.81440
	setup	CLK (R)	0.94471	1.00329	3.81175

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.21822	-0.33667	-0.79389
	hold	CLK (R)	-0.18384	-0.32506	-1.69587
	setup	CLK (R)	1.01897	0.99405	1.05447
	setup	CLK (R)	0.43540	0.48296	1.93385
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.29787	-0.42172	-0.79651
	hold	CLK (R)	-0.18863	-0.33160	-1.73073
	setup	CLK (R)	1.04921	1.02801	1.03699
	setup	CLK (R)	0.40423	0.47052	1.97739

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.37245	-0.57613	-2.86526
	hold	CLK (R)	-0.18906	-0.37618	-3.31987
	setup	CLK (R)	0.62379	0.73703	3.00556
	setup	CLK (R)	0.91380	0.97034	3.74935
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.37160	-0.57600	-2.81440
	hold	CLK (R)	-0.25115	-0.45056	-3.42034
	setup	CLK (R)	0.58618	0.71781	2.96677
	setup	CLK (R)	0.94471	1.00329	3.81175

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	recovery	CLK (R)	0.50943	0.53089	2.14157
	removal	CLK (R)	-0.35768	-0.42689	-1.94876
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.47714	0.51670	2.17752
	removal	CLK (R)	-0.37244	-0.44134	-1.99143

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	recovery	CLK (R)	0.50943	0.52995	2.13761
	recovery	CLK (R)	0.49701	0.51894	2.06357
	recovery	CLK (R)	0.48816	0.50221	2.00370
	recovery	CLK (R)	0.50455	0.53089	2.14157
	removal	CLK (R)	-0.37115	-0.45404	-2.08746
	removal	CLK (R)	-0.36325	-0.44134	-2.00628
	removal	CLK (R)	-0.35768	-0.42689	-1.94876
	removal	CLK (R)	-0.37606	-0.45568	-2.08793
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.47415	0.51565	2.17182
	recovery	CLK (R)	0.46943	0.50578	2.09555
	recovery	CLK (R)	0.46083	0.49136	2.03968
	recovery	CLK (R)	0.47714	0.51670	2.17752
	removal	CLK (R)	-0.38532	-0.46309	-2.12256
	removal	CLK (R)	-0.37799	-0.45582	-2.04593
	removal	CLK (R)	-0.37244	-0.44134	-1.99143
	removal	CLK (R)	-0.38538	-0.46663	-2.12711

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	min_pulse_width	RESET_B ()	0.41217	1.07563	16.50020
	min_pulse_width	RESET_B ()	0.32536	0.98145	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.41752	1.07955	16.50020
	min_pulse_width	RESET_B ()	0.35059	0.98145	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	min_pulse_width	CLK ()	0.41187	0.98145	16.50020
	min_pulse_width	CLK ()	0.18837	0.98145	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.54886	0.98145	16.50020
	min_pulse_width	CLK ()	0.21721	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	min_pulse_width	CLK ()	0.52723	0.98145	16.50020
	min_pulse_width	CLK ()	0.79039	0.98145	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.48758	0.98145	16.50020
	min_pulse_width	CLK ()	0.79039	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00676	0.00673	0.00674
	CLK	0.00574	0.00571	0.00570
sky130_fd_sc_hs__sdfrbp_2	CLK	0.00790	0.00803	0.00812
	CLK	0.00686	0.00700	0.00706

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00691	0.00689	0.00697
	CLK	0.00591	0.00589	0.00597
	RESET_B	0.00579	0.00570	0.00562
	RESET_B	0.00815	0.00806	0.00793
sky130_fd_sc_hs__sdfrbp_2	CLK	0.00800	0.00812	0.00824
	CLK	0.00707	0.00721	0.00728
	RESET_B	0.00694	0.00702	0.00703
	RESET_B	0.00936	0.00944	0.00929

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00691	0.00689	0.00707
	CLK	0.00591	0.00590	0.00606
	RESET_B	0.00581	0.00572	0.00579
	RESET_B	0.00818	0.00809	0.00806
sky130_fd_sc_hs__sdfrbp_2	CLK	0.00801	0.00813	0.00839
	CLK	0.00708	0.00722	0.00744
	RESET_B	0.00696	0.00704	0.00751
	RESET_B	0.00938	0.00946	0.00949

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00675	0.00672	0.00663
	CLK	0.00574	0.00571	0.00560
sky130_fd_sc_hs__sdfrbp_2	CLK	0.00789	0.00803	0.00799
	CLK	0.00685	0.00699	0.00691

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	0.00054	0.00055	0.00055
	(CLK * RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * RESET_B * SCD * !SCE)	0.00245	0.00235	0.00243
	(CLK * RESET_B * SCD * !SCE)	0.00089	0.00079	0.00086
	(CLK * RESET_B * !SCD * !SCE)	0.00245	0.00235	0.00243
	(CLK * RESET_B * !SCD * !SCE)	0.00089	0.00079	0.00087
	(CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00057
	(CLK * !RESET_B * SCD * SCE)	0.00029	0.00029	0.00029
	(CLK * !RESET_B * SCD * SCE)	-0.00056	-0.00057	-0.00057
	(CLK * !RESET_B * SCD * !SCE)	0.00023	0.00023	0.00019
	(CLK * !RESET_B * SCD * !SCE)	-0.00063	-0.00063	-0.00068
	(CLK * !RESET_B * !SCD * !SCE)	0.00022	0.00022	0.00019
	(CLK * !RESET_B * !SCD * !SCE)	-0.00065	-0.00065	-0.00069
	(!CLK * RESET_B * SCD * SCE)	0.00054	0.00055	0.00055
	(!CLK * RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00552	0.00544	0.00543
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00388	0.00380	0.00378
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00552	0.00544	0.00543
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00388	0.00380	0.00378
	(!CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(!CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00057
	(!CLK * !RESET_B * SCD * SCE)	0.00029	0.00029	0.00029
	(!CLK * !RESET_B * SCD * SCE)	-0.00056	-0.00057	-0.00057
	(!CLK * !RESET_B * SCD * !SCE)	0.00023	0.00023	0.00019
	(!CLK * !RESET_B * SCD * !SCE)	-0.00063	-0.00063	-0.00068
	(!CLK * !RESET_B * !SCD * !SCE)	0.00022	0.00022	0.00019
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00065	-0.00065	-0.00069

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	0.00056	0.00056	0.00056
	(CLK * RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * RESET_B * SCD * !SCE)	0.00261	0.00250	0.00257
	(CLK * RESET_B * SCD * !SCE)	0.00102	0.00092	0.00098
	(CLK * RESET_B * !SCD * !SCE)	0.00261	0.00250	0.00257
	(CLK * RESET_B * !SCD * !SCE)	0.00102	0.00092	0.00098
	(CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00058
	(CLK * !RESET_B * SCD * SCE)	0.00030	0.00030	0.00029
	(CLK * !RESET_B * SCD * SCE)	-0.00058	-0.00058	-0.00058
	(CLK * !RESET_B * SCD * !SCE)	0.00022	0.00022	0.00018
	(CLK * !RESET_B * SCD * !SCE)	-0.00065	-0.00065	-0.00070
	(CLK * !RESET_B * !SCD * !SCE)	0.00021	0.00021	0.00018
	(CLK * !RESET_B * !SCD * !SCE)	-0.00067	-0.00067	-0.00071
	(!CLK * RESET_B * SCD * SCE)	0.00056	0.00056	0.00056
	(!CLK * RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00570	0.00561	0.00560
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00402	0.00394	0.00392
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00570	0.00562	0.00560
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00402	0.00394	0.00392
	(!CLK * !SCD * SCE)	0.00032	0.00031	0.00030
	(!CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00058
	(!CLK * !RESET_B * SCD * SCE)	0.00029	0.00030	0.00029
	(!CLK * !RESET_B * SCD * SCE)	-0.00057	-0.00058	-0.00058
	(!CLK * !RESET_B * SCD * !SCE)	0.00022	0.00022	0.00018
	(!CLK * !RESET_B * SCD * !SCE)	-0.00065	-0.00065	-0.00070
	(!CLK * !RESET_B * !SCD * !SCE)	0.00021	0.00021	0.00018
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00067	-0.00067	-0.00071

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	-0.00051	-0.00052	-0.00054
	(CLK * RESET_B * SCD * SCE)	0.00031	0.00031	0.00029
	(CLK * RESET_B * SCD * !SCE)	0.00035	0.00026	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00191	0.00182	0.00200
	(CLK * RESET_B * !SCD * !SCE)	0.00035	0.00026	0.00045
	(CLK * RESET_B * !SCD * !SCE)	0.00191	0.00182	0.00200
	(CLK * !SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCD * SCE)	0.00057	0.00057	0.00057
	(CLK * !RESET_B * SCD * SCE)	-0.00028	-0.00029	-0.00028
	(CLK * !RESET_B * SCD * SCE)	0.00057	0.00057	0.00057
	(CLK * !RESET_B * SCD * !SCE)	-0.00018	-0.00018	-0.00017
	(CLK * !RESET_B * SCD * !SCE)	0.00069	0.00070	0.00070
	(CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00018	-0.00017
	(CLK * !RESET_B * !SCD * !SCE)	0.00069	0.00070	0.00070
	(!CLK * RESET_B * SCD * SCE)	-0.00051	-0.00052	-0.00054
	(!CLK * RESET_B * SCD * SCE)	0.00031	0.00031	0.00029
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00313	0.00303	0.00318
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00478	0.00468	0.00483
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00313	0.00303	0.00318
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00478	0.00468	0.00483
	(!CLK * !SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK * !RESET_B * SCD * SCE)	-0.00028	-0.00029	-0.00028
	(!CLK * !RESET_B * SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK * !RESET_B * SCD * !SCE)	-0.00018	-0.00018	-0.00017
	(!CLK * !RESET_B * SCD * !SCE)	0.00070	0.00070	0.00070
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00018	-0.00017
	(!CLK * !RESET_B * !SCD * !SCE)	0.00069	0.00070	0.00070

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00052	-0.00054	-0.00056
	(CLK * RESET_B * SCD * SCE)	0.00031	0.00031	0.00029
	(CLK * RESET_B * SCD * !SCE)	0.00040	0.00031	0.00049
	(CLK * RESET_B * SCD * !SCE)	0.00199	0.00190	0.00208
	(CLK * RESET_B * !SCD * !SCE)	0.00040	0.00031	0.00049
	(CLK * RESET_B * !SCD * !SCE)	0.00199	0.00190	0.00208
	(CLK * !SCD * SCE)	-0.00029	-0.00030	-0.00029
	(CLK * !SCD * SCE)	0.00058	0.00058	0.00058
	(CLK * !RESET_B * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !RESET_B * SCD * SCE)	0.00058	0.00058	0.00058
	(CLK * !RESET_B * SCD * !SCE)	-0.00017	-0.00017	-0.00017
	(CLK * !RESET_B * SCD * !SCE)	0.00071	0.00072	0.00072
	(CLK * !RESET_B * !SCD * !SCE)	-0.00017	-0.00017	-0.00017
	(CLK * !RESET_B * !SCD * !SCE)	0.00071	0.00072	0.00072
	(!CLK * RESET_B * SCD * SCE)	-0.00052	-0.00053	-0.00055
	(!CLK * RESET_B * SCD * SCE)	0.00031	0.00031	0.00029
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00319	0.00308	0.00323
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00487	0.00477	0.00491
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00319	0.00308	0.00323
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00487	0.00476	0.00491
	(!CLK * !SCD * SCE)	-0.00029	-0.00030	-0.00029
	(!CLK * !SCD * SCE)	0.00058	0.00058	0.00058
	(!CLK * !RESET_B * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !RESET_B * SCD * SCE)	0.00058	0.00058	0.00058
	(!CLK * !RESET_B * SCD * !SCE)	-0.00017	-0.00017	-0.00017
	(!CLK * !RESET_B * SCD * !SCE)	0.00071	0.00072	0.00072
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00017	-0.00017	-0.00017
	(!CLK * !RESET_B * !SCD * !SCE)	0.00071	0.00072	0.00072

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00310	0.00302	0.00300
	(CLK * D * RESET_B * SCE)	0.00115	0.00107	0.00106
	(CLK * D * RESET_B * !SCE)	0.00049	0.00046	0.00045
	(CLK * D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00054
	(CLK * D * !RESET_B * SCE)	0.00027	0.00027	0.00026
	(CLK * D * !RESET_B * SCE)	-0.00060	-0.00060	-0.00059
	(CLK * D * !RESET_B * !SCE)	0.00019	0.00020	0.00020
	(CLK * D * !RESET_B * !SCE)	-0.00065	-0.00066	-0.00065
	(CLK * !D * RESET_B * SCE)	0.00341	0.00333	0.00329
	(CLK * !D * RESET_B * SCE)	0.00142	0.00135	0.00130
	(CLK * !D * !RESET_B * SCE)	0.00028	0.00028	0.00026
	(CLK * !D * !RESET_B * SCE)	-0.00060	-0.00060	-0.00059
	(!D * RESET_B * !SCE)	0.00035	0.00036	0.00035
	(!D * RESET_B * !SCE)	-0.00063	-0.00064	-0.00064
	(!D * !RESET_B * !SCE)	0.00022	0.00022	0.00022
	(!D * !RESET_B * !SCE)	-0.00067	-0.00068	-0.00068
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00617	0.00610	0.00603
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00414	0.00407	0.00400
	(!CLK * D * RESET_B * !SCE)	0.00049	0.00046	0.00045
	(!CLK * D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00054
	(!CLK * D * !RESET_B * SCE)	0.00027	0.00027	0.00026
	(!CLK * D * !RESET_B * SCE)	-0.00060	-0.00060	-0.00059
	(!CLK * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(!CLK * D * !RESET_B * !SCE)	-0.00065	-0.00066	-0.00065
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00648	0.00641	0.00633
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00440	0.00434	0.00426
	(!CLK * !D * !RESET_B * SCE)	0.00028	0.00028	0.00026
	(!CLK * !D * !RESET_B * SCE)	-0.00060	-0.00060	-0.00059

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCE)**	0.00321	0.00313	0.00312
	(CLK * D * RESET_B * SCE)	0.00124	0.00116	0.00114
	(CLK * D * RESET_B * !SCE)	0.00050	0.00047	0.00046
	(CLK * D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00055
	(CLK * D * !RESET_B * SCE)	0.00029	0.00028	0.00027
	(CLK * D * !RESET_B * SCE)	-0.00060	-0.00060	-0.00059
	(CLK * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(CLK * D * !RESET_B * !SCE)	-0.00065	-0.00066	-0.00066
	(CLK * !D * RESET_B * SCE)	0.00352	0.00345	0.00340
	(CLK * !D * RESET_B * SCE)	0.00150	0.00143	0.00139
	(CLK * !D * !RESET_B * SCE)	0.00029	0.00029	0.00027
	(CLK * !D * !RESET_B * SCE)	-0.00060	-0.00060	-0.00060
	(!D * RESET_B * !SCE)	0.00036	0.00037	0.00036
	(!D * RESET_B * !SCE)	-0.00064	-0.00065	-0.00064
	(!D * !RESET_B * !SCE)	0.00023	0.00023	0.00022
	(!D * !RESET_B * !SCE)	-0.00068	-0.00069	-0.00068
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00630	0.00623	0.00617
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00424	0.00417	0.00410
	(!CLK * D * RESET_B * !SCE)	0.00050	0.00047	0.00046
	(!CLK * D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00055
	(!CLK * D * !RESET_B * SCE)	0.00029	0.00028	0.00027
	(!CLK * D * !RESET_B * SCE)	-0.00060	-0.00060	-0.00059
	(!CLK * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(!CLK * D * !RESET_B * !SCE)	-0.00065	-0.00066	-0.00066
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00661	0.00655	0.00646
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00450	0.00444	0.00435
	(!CLK * !D * !RESET_B * SCE)	0.00029	0.00029	0.00028
	(!CLK * !D * !RESET_B * SCE)	-0.00060	-0.00060	-0.00060

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00092	0.00082	0.00081
	(CLK * D * RESET_B * SCE)	0.00286	0.00277	0.00274
	(CLK * D * RESET_B * !SCE)	-0.00043	-0.00045	-0.00045
	(CLK * D * RESET_B * !SCE)	0.00055	0.00055	0.00055
	(CLK * D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(CLK * D * !RESET_B * SCE)	0.00061	0.00062	0.00060
	(CLK * D * !RESET_B * !SCE)	-0.00019	-0.00019	-0.00019
	(CLK * D * !RESET_B * !SCE)	0.00066	0.00066	0.00066
	(CLK * !D * RESET_B * SCE)	0.00070	0.00061	0.00062
	(CLK * !D * RESET_B * SCE)	0.00269	0.00260	0.00260
	(CLK * !D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(CLK * !D * !RESET_B * SCE)	0.00061	0.00062	0.00060
	(!D * RESET_B * !SCE)	-0.00034	-0.00035	-0.00035
	(!D * RESET_B * !SCE)	0.00065	0.00064	0.00064
	(!D * !RESET_B * !SCE)	-0.00022	-0.00022	-0.00022
	(!D * !RESET_B * !SCE)	0.00068	0.00069	0.00069
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00369	0.00360	0.00356
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00572	0.00564	0.00558
	(!CLK * D * RESET_B * !SCE)	-0.00043	-0.00045	-0.00045
	(!CLK * D * RESET_B * !SCE)	0.00055	0.00055	0.00055
	(!CLK * D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(!CLK * D * !RESET_B * SCE)	0.00061	0.00062	0.00060
	(!CLK * D * !RESET_B * !SCE)	-0.00019	-0.00019	-0.00019
	(!CLK * D * !RESET_B * !SCE)	0.00066	0.00066	0.00066
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00348	0.00339	0.00339
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00555	0.00547	0.00545
	(!CLK * !D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(!CLK * !D * !RESET_B * SCE)	0.00061	0.00062	0.00060

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCE)**	0.00095	0.00086	0.00084
	(CLK * D * RESET_B * SCE)	0.00293	0.00284	0.00281
	(CLK * D * RESET_B * !SCE)	-0.00044	-0.00046	-0.00046
	(CLK * D * RESET_B * !SCE)	0.00055	0.00056	0.00055
	(CLK * D * !RESET_B * SCE)	-0.00025	-0.00026	-0.00026
	(CLK * D * !RESET_B * SCE)	0.00061	0.00062	0.00060
	(CLK * D * !RESET_B * !SCE)	-0.00020	-0.00020	-0.00020
	(CLK * D * !RESET_B * !SCE)	0.00067	0.00067	0.00066
	(CLK * !D * RESET_B * SCE)	0.00077	0.00068	0.00068
	(CLK * !D * RESET_B * SCE)	0.00279	0.00269	0.00269
	(CLK * !D * !RESET_B * SCE)	-0.00025	-0.00026	-0.00026
	(CLK * !D * !RESET_B * SCE)	0.00061	0.00062	0.00060
	(!D * RESET_B * !SCE)	-0.00034	-0.00036	-0.00036
	(!D * RESET_B * !SCE)	0.00065	0.00065	0.00064
	(!D * !RESET_B * !SCE)	-0.00023	-0.00023	-0.00022
	(!D * !RESET_B * !SCE)	0.00069	0.00070	0.00070
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00373	0.00364	0.00360
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00580	0.00571	0.00566
	(!CLK * D * RESET_B * !SCE)	-0.00044	-0.00046	-0.00046
	(!CLK * D * RESET_B * !SCE)	0.00055	0.00056	0.00055
	(!CLK * D * !RESET_B * SCE)	-0.00025	-0.00026	-0.00026
	(!CLK * D * !RESET_B * SCE)	0.00061	0.00062	0.00060
	(!CLK * D * !RESET_B * !SCE)	-0.00020	-0.00020	-0.00020
	(!CLK * D * !RESET_B * !SCE)	0.00067	0.00067	0.00066
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00354	0.00346	0.00345
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00565	0.00557	0.00554
	(!CLK * !D * !RESET_B * SCE)	-0.00025	-0.00026	-0.00026
	(!CLK * !D * !RESET_B * SCE)	0.00061	0.00062	0.00060

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00281	0.00261	0.00268
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00013	-0.00009	-0.00002
	(CLK * D * RESET_B * !SCD)	0.00397	0.00382	0.00382
	(CLK * D * RESET_B * !SCD)	0.00215	0.00199	0.00198
	(CLK * !D * RESET_B * SCD)	0.00516	0.00491	0.00500
	(CLK * !D * RESET_B * SCD)	0.00170	0.00144	0.00155
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00281	0.00261	0.00268
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00013	-0.00009	-0.00002
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00669	0.00658	0.00659
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00496	0.00484	0.00483
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00277	0.00260	0.00268
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00020	0.00002	0.00010
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00823	0.00799	0.00802
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00469	0.00444	0.00448

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00261	0.00240	0.00247
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00017	-0.00039	-0.00032
	(CLK * D * RESET_B * !SCD)	0.00383	0.00368	0.00368
	(CLK * D * RESET_B * !SCD)	0.00195	0.00177	0.00176
	(CLK * !D * RESET_B * SCD)	0.00508	0.00483	0.00492
	(CLK * !D * RESET_B * SCD)	0.00151	0.00125	0.00135
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00261	0.00240	0.00247
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00017	-0.00039	-0.00032
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00656	0.00644	0.00646
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00476	0.00462	0.00463
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00259	0.00242	0.00250
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00007	-0.00026	-0.00017
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00817	0.00791	0.00795
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00451	0.00426	0.00430

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00009	-0.00020	0.00000
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00259	0.00249	0.00269
	(CLK * D * RESET_B * !SCD)	0.00232	0.00215	0.00229
	(CLK * D * RESET_B * !SCD)	0.00414	0.00397	0.00412
	(CLK * !D * RESET_B * SCD)	0.00060	0.00039	0.00062
	(CLK * !D * RESET_B * SCD)	0.00405	0.00384	0.00408
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00009	-0.00021	0.00000
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00259	0.00248	0.00269
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00537	0.00524	0.00537
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00711	0.00697	0.00710
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00009	-0.00022	-0.00001
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00248	0.00236	0.00256
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00338	0.00317	0.00337
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00692	0.00672	0.00692

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00007	-0.00018	0.00003
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00270	0.00261	0.00281
	(CLK * D * RESET_B * !SCD)	0.00250	0.00234	0.00247
	(CLK * D * RESET_B * !SCD)	0.00440	0.00423	0.00437
	(CLK * !D * RESET_B * SCD)	0.00064	0.00043	0.00067
	(CLK * !D * RESET_B * SCD)	0.00422	0.00401	0.00424
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00007	-0.00018	0.00003
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00271	0.00260	0.00281
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00557	0.00543	0.00556
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00738	0.00724	0.00737
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00009	-0.00021	-0.00000
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00258	0.00246	0.00266
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00343	0.00322	0.00343
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00709	0.00688	0.00709

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00445	0.00436	0.00436
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00007	-0.00019	-0.00019
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00429	0.00419	0.00421
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00009	-0.00021	-0.00018
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00152	0.00152	0.00151
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00191	-0.00191	-0.00190
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00413	0.00402	0.00404
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00009	-0.00021	-0.00019
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00476	0.00468	0.00465
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00020	0.00008	0.00006
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00150	0.00150	0.00149
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00192	-0.00192	-0.00191
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00152	0.00152	0.00151
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00191	-0.00191	-0.00190
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00150	0.00151	0.00150
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00192	-0.00193	-0.00192
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00782	0.00760	0.00751
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00321	0.00299	0.00289
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00766	0.00743	0.00736
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00320	0.00297	0.00289
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00152	0.00152	0.00151
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00191	-0.00191	-0.00190
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00748	0.00726	0.00719
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00320	0.00297	0.00289
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00813	0.00793	0.00780
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00348	0.00327	0.00314
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00150	0.00150	0.00149
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00192	-0.00192	-0.00191
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00152	0.00151	0.00151
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00191	-0.00190	-0.00190
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00150	0.00151	0.00150
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00192	-0.00192	-0.00192

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00451	0.00441	0.00440
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00005	-0.00015	-0.00015
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00440	0.00430	0.00431
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00001	-0.00013	-0.00011
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00146	0.00147	0.00145
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00196	-0.00196	-0.00195
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00423	0.00412	0.00414
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00001	-0.00012	-0.00010
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00482	0.00473	0.00470
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00022	0.00012	0.00010
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00144	0.00145	0.00143
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00197	-0.00197	-0.00196
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00146	0.00147	0.00145
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00196	-0.00196	-0.00195
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00144	0.00145	0.00144
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00197	-0.00198	-0.00197
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00787	0.00766	0.00757
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00324	0.00303	0.00293
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00776	0.00754	0.00746
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00328	0.00306	0.00297
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00146	0.00146	0.00145
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00196	-0.00196	-0.00195
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00759	0.00737	0.00730
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00329	0.00306	0.00298
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00818	0.00798	0.00786
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00351	0.00331	0.00318
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00144	0.00144	0.00143
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00197	-0.00197	-0.00196
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00146	0.00146	0.00145
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00196	-0.00196	-0.00195
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00144	0.00145	0.00144
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00197	-0.00198	-0.00197

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00021	0.00009	0.00020
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00477	0.00465	0.00475
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00016	-0.00029	-0.00018
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00425	0.00413	0.00422
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00149	-0.00152	-0.00151
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00192	0.00192	0.00191
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00029	-0.00040	-0.00029
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00394	0.00382	0.00394
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00000	-0.00012	0.00003
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00459	0.00447	0.00460
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00146	-0.00150	-0.00149
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00194	0.00193	0.00192
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00149	-0.00152	-0.00151
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00192	0.00192	0.00191
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00147	-0.00151	-0.00150
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00194	0.00194	0.00192
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00332	0.00304	0.00297
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00795	0.00767	0.00759
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00295	0.00266	0.00258
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00743	0.00714	0.00706
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00149	-0.00152	-0.00151
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00192	0.00192	0.00191
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00283	0.00254	0.00248
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00712	0.00685	0.00677
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00311	0.00283	0.00278
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00777	0.00749	0.00744
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00146	-0.00150	-0.00149
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00193	0.00193	0.00191
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00149	-0.00151	-0.00151
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00192	0.00192	0.00191
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00147	-0.00151	-0.00150
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00194	0.00193	0.00192

sky130_fd_sc_hs__sdfrbp_2	(CLK * D * SCD * SCE * !Q * Q_N)	0.00030	0.00018	0.00029
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00487	0.00475	0.00485
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00009	-0.00022	-0.00012
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00433	0.00420	0.00430
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00143	-0.00146	-0.00145
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00197	0.00197	0.00196
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00022	-0.00034	-0.00021
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00403	0.00391	0.00401
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00012	0.00000	0.00013
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00472	0.00460	0.00473
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00140	-0.00145	-0.00143
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00198	0.00198	0.00196
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00143	-0.00146	-0.00145
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00197	0.00197	0.00196
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00141	-0.00145	-0.00144
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00199	0.00198	0.00197
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00343	0.00314	0.00307
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00806	0.00779	0.00770
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00303	0.00275	0.00266
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00753	0.00724	0.00716
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00143	-0.00146	-0.00145
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00197	0.00197	0.00196
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00291	0.00263	0.00255
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00722	0.00695	0.00688
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00325	0.00296	0.00291
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00792	0.00765	0.00758
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00140	-0.00144	-0.00143
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00199	0.00198	0.00197
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00143	-0.00146	-0.00145
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00197	0.00197	0.00196
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00141	-0.00145	-0.00144
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00199	0.00199	0.00197

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00648	0.00622	0.00624
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00446	0.00420	0.00422
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00648	0.00622	0.00624
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00446	0.00420	0.00422
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00648	0.00622	0.00624
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00446	0.00420	0.00422
	(D * !SCD * SCE * !Q * Q_N)	0.00670	0.00643	0.00645
	(D * !SCD * SCE * !Q * Q_N)	0.00468	0.00441	0.00443
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00670	0.00643	0.00645
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00468	0.00441	0.00444
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00669	0.00643	0.00645
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00468	0.00441	0.00444
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00669	0.00643	0.00645
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00468	0.00441	0.00444
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00648	0.00622	0.00624
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00446	0.00420	0.00422
	(!D * !SCE * !Q * Q_N)	0.00670	0.00643	0.00645
	(!D * !SCE * !Q * Q_N)	0.00468	0.00441	0.00443
	(!D * !SCD * SCE * !Q * Q_N)	0.00670	0.00643	0.00645
	(!D * !SCD * SCE * !Q * Q_N)	0.00468	0.00441	0.00443
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00670	0.00643	0.00645
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00468	0.00441	0.00444

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00651	0.00623	0.00625
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00453	0.00425	0.00428
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00651	0.00623	0.00625
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00453	0.00425	0.00428
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00651	0.00623	0.00625
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00453	0.00425	0.00428
	(D * !SCD * SCE * !Q * Q_N)	0.00669	0.00641	0.00643
	(D * !SCD * SCE * !Q * Q_N)	0.00471	0.00443	0.00445
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00669	0.00641	0.00643
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00471	0.00443	0.00445
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00669	0.00641	0.00643
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00471	0.00443	0.00445
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00669	0.00641	0.00643
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00471	0.00443	0.00445
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00651	0.00623	0.00625
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00453	0.00425	0.00428
	(!D * !SCE * !Q * Q_N)	0.00669	0.00641	0.00643
	(!D * !SCE * !Q * Q_N)	0.00471	0.00443	0.00445
	(!D * !SCD * SCE * !Q * Q_N)	0.00669	0.00641	0.00643
	(!D * !SCD * SCE * !Q * Q_N)	0.00471	0.00443	0.00445
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00669	0.00641	0.00643
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00471	0.00443	0.00445

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00359	0.00339	0.00350
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00561	0.00540	0.00552
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00652	0.00628	0.00630
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00845	0.00820	0.00823
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00359	0.00339	0.00350
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00561	0.00541	0.00552
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00649	0.00624	0.00626
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00842	0.00817	0.00820
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00676	0.00658	0.00688
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00889	0.00869	0.00901
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00359	0.00339	0.00350
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00561	0.00541	0.00552
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00649	0.00624	0.00626
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00842	0.00817	0.00820
	(D * !SCD * SCE * !Q * Q_N)	0.00334	0.00313	0.00325
	(D * !SCD * SCE * !Q * Q_N)	0.00536	0.00515	0.00527
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00335	0.00314	0.00325
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00536	0.00515	0.00527
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00335	0.00314	0.00325
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00536	0.00515	0.00527
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00335	0.00314	0.00325
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00536	0.00515	0.00527
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00359	0.00339	0.00350
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00561	0.00541	0.00552
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00655	0.00630	0.00632
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00847	0.00822	0.00825
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00675	0.00656	0.00686
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00885	0.00866	0.00897
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00675	0.00657	0.00688
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00887	0.00868	0.00899
	(!D * !SCE * !Q * Q_N)	0.00334	0.00313	0.00325
	(!D * !SCE * !Q * Q_N)	0.00536	0.00515	0.00526
	(!D * !SCD * SCE * !Q * Q_N)	0.00334	0.00313	0.00325
	(!D * !SCD * SCE * !Q * Q_N)	0.00536	0.00515	0.00527
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00335	0.00314	0.00325
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00536	0.00515	0.00527

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00357	0.00337	0.00348
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00554	0.00534	0.00546
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00654	0.00630	0.00631
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00842	0.00818	0.00820
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00357	0.00337	0.00348
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00554	0.00534	0.00546
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00651	0.00627	0.00629
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00839	0.00815	0.00818
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00673	0.00656	0.00687
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00881	0.00864	0.00895
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00357	0.00337	0.00348
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00554	0.00534	0.00546
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00651	0.00627	0.00629
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00839	0.00815	0.00818
	(D * !SCD * SCE * !Q * Q_N)	0.00336	0.00316	0.00327
	(D * !SCD * SCE * !Q * Q_N)	0.00533	0.00513	0.00525
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00336	0.00316	0.00327
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00533	0.00513	0.00525
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00336	0.00316	0.00327
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00533	0.00513	0.00525
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00336	0.00316	0.00327
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00533	0.00513	0.00525
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00357	0.00337	0.00348
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00554	0.00534	0.00546
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00656	0.00632	0.00634
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00843	0.00819	0.00822
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00671	0.00653	0.00685
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00877	0.00859	0.00892
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00672	0.00655	0.00687
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00879	0.00862	0.00894
	(!D * !SCE * !Q * Q_N)	0.00336	0.00316	0.00326
	(!D * !SCE * !Q * Q_N)	0.00533	0.00513	0.00525
	(!D * !SCD * SCE * !Q * Q_N)	0.00336	0.00316	0.00327
	(!D * !SCD * SCE * !Q * Q_N)	0.00533	0.00513	0.00525
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00336	0.00316	0.00327
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00533	0.00513	0.00525

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK_N	Q
0	0	x	1	F	0
0	1	0	1	F	0
x	1	1	1	F	1
1	x	0	1	F	1
1	0	1	1	F	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtn_1	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK_N	Q
sky130_fd_sc_hs__sdfrtn_1	0.00186	0.00179	0.00393	0.00558	0.00267	0.44166

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.13363	0.24002

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtn_1	CLK_N->Q (FR)	0.72106	1.90832	11.16440

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtn_1	CLK_N->Q (FF)	0.52053	1.26034	5.94886
	RESET_B->Q (FF)	0.71305	1.46862	6.74831

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	0.02354	0.08567	1.29880
	setup	CLK_N (F)	0.27999	0.17958	-1.06002

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.26780	-0.30639	-1.48728
	setup	CLK_N (F)	1.08226	1.04922	2.52553

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	0.02354	0.08567	1.29880
	hold	CLK_N (F)	0.02289	0.08500	1.29595
	setup	CLK_N (F)	0.27979	0.17958	-1.06389
	setup	CLK_N (F)	0.27999	0.17755	-1.06002

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.26852	-0.31311	-1.48728
	hold	CLK_N (F)	-0.26780	-0.30639	-1.48760
	setup	CLK_N (F)	1.08155	1.04788	2.52553
	setup	CLK_N (F)	1.08226	1.04922	2.52454

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.00998	0.05993	1.07535
	setup	CLK_N (F)	0.31925	0.20844	-0.86459

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.34632	-0.43241	-2.29571
	setup	CLK_N (F)	1.24336	1.24921	3.26248

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.00998	0.05993	1.07535
	hold	CLK_N (F)	-0.01525	0.04960	1.04767
	setup	CLK_N (F)	0.31813	0.20437	-0.88510
	setup	CLK_N (F)	0.31925	0.20844	-0.86459

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.37944	-0.47400	-2.37816
	hold	CLK_N (F)	-0.34632	-0.43241	-2.29571
	setup	CLK_N (F)	1.22046	1.22175	3.22217
	setup	CLK_N (F)	1.24336	1.24921	3.26248

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	0.02000	0.08032	1.22960
	setup	CLK_N (F)	1.20211	1.11913	0.14572

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.15705	-0.16400	0.24708
	setup	CLK_N (F)	1.11544	1.11448	2.98162

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.37081	-0.36030	0.47780
	hold	CLK_N (F)	0.02000	0.08032	1.22960
	setup	CLK_N (F)	1.20211	1.11913	0.14572
	setup	CLK_N (F)	0.27936	0.17837	-1.00260

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.15705	-0.16400	0.24708
	hold	CLK_N (F)	-0.30343	-0.37694	-2.11222
	setup	CLK_N (F)	0.46527	0.42656	-0.14694
	setup	CLK_N (F)	1.11544	1.11448	2.98162

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	recovery	CLK_N (F)	0.35357	0.22279	-0.91325
	removal	CLK_N (F)	-0.19025	-0.08169	1.09259

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	recovery	CLK_N (F)	0.35342	0.22226	-0.93189
	recovery	CLK_N (F)	0.34467	0.21234	-0.99839
	recovery	CLK_N (F)	0.33468	0.20099	-1.04650
	recovery	CLK_N (F)	0.35357	0.22279	-0.91325
	removal	CLK_N (F)	-0.20588	-0.10468	0.97419
	removal	CLK_N (F)	-0.19684	-0.09425	1.04479
	removal	CLK_N (F)	-0.19025	-0.08169	1.09259
	removal	CLK_N (F)	-0.20670	-0.10685	0.95357

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	min_pulse_width	RESET_B ()	0.31454	0.98145	16.50020
	min_pulse_width	RESET_B ()	0.40820	1.07563	16.50020

Constraints(ns) for CLK_N rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	min_pulse_width	CLK_N ()	0.35419	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.71829	0.98145	16.50020

Constraints(ns) for CLK_N falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	min_pulse_width	CLK_N ()	0.46234	0.98145	16.50020
	min_pulse_width	CLK_N ()	0.35059	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01076	0.01068	0.01122
	CLK_N	0.01281	0.01273	0.01329

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01010	0.00991	0.00986
	CLK_N	0.01188	0.01169	0.01162
	RESET_B	0.01065	0.01036	0.01075
	RESET_B	0.01513	0.01485	0.01472

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * RESET_B * SCD * SCE)**	0.00056	0.00057	0.00056
	(CLK_N * RESET_B * SCD * SCE)	-0.00033	-0.00033	-0.00033
	(CLK_N * RESET_B * SCD * !SCE)	0.00586	0.00579	0.00577
	(CLK_N * RESET_B * SCD * !SCE)	0.00425	0.00418	0.00416
	(CLK_N * RESET_B * !SCD * !SCE)	0.00586	0.00579	0.00577
	(CLK_N * RESET_B * !SCD * !SCE)	0.00425	0.00418	0.00416
	(CLK_N * !SCD * SCE)	0.00035	0.00034	0.00033
	(CLK_N * !SCD * SCE)	-0.00058	-0.00059	-0.00060
	(CLK_N * !RESET_B * SCD * SCE)	0.00033	0.00033	0.00033
	(CLK_N * !RESET_B * SCD * SCE)	-0.00059	-0.00060	-0.00060
	(CLK_N * !RESET_B * SCD * !SCE)	0.00019	0.00019	0.00016
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00072	-0.00073	-0.00077
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00019	0.00019	0.00016
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00075	-0.00075	-0.00078
	(!CLK_N * RESET_B * SCD * SCE)	0.00056	0.00057	0.00056
	(!CLK_N * RESET_B * SCD * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK_N * RESET_B * SCD * !SCE)	0.00258	0.00248	0.00255
	(!CLK_N * RESET_B * SCD * !SCE)	0.00095	0.00086	0.00092
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00258	0.00248	0.00255
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00096	0.00086	0.00092
	(!CLK_N * !SCD * SCE)	0.00034	0.00034	0.00033
	(!CLK_N * !SCD * SCE)	-0.00058	-0.00059	-0.00060
	(!CLK_N * !RESET_B * SCD * SCE)	0.00032	0.00033	0.00033
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00059	-0.00060	-0.00060
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00019	0.00019	0.00016
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00073	-0.00073	-0.00077
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00019	0.00019	0.00016
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00075	-0.00075	-0.00078

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * RESET_B * SCD * SCE)**	-0.00053	-0.00054	-0.00056
	(CLK_N * RESET_B * SCD * SCE)	0.00035	0.00035	0.00034
	(CLK_N * RESET_B * SCD * !SCE)	0.00374	0.00365	0.00379
	(CLK_N * RESET_B * SCD * !SCE)	0.00535	0.00526	0.00540
	(CLK_N * RESET_B * !SCD * !SCE)	0.00375	0.00364	0.00379
	(CLK_N * RESET_B * !SCD * !SCE)	0.00535	0.00525	0.00540
	(CLK_N * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(CLK_N * !SCD * SCE)	0.00060	0.00060	0.00060
	(CLK_N * !RESET_B * SCD * SCE)	-0.00032	-0.00032	-0.00032
	(CLK_N * !RESET_B * SCD * SCE)	0.00060	0.00060	0.00060
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00015	-0.00015	-0.00015
	(CLK_N * !RESET_B * SCD * !SCE)	0.00079	0.00079	0.00079
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00015	-0.00015	-0.00015
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00079	0.00079	0.00079
	(!CLK_N * RESET_B * SCD * SCE)	-0.00053	-0.00054	-0.00056
	(!CLK_N * RESET_B * SCD * SCE)	0.00035	0.00035	0.00034
	(!CLK_N * RESET_B * SCD * !SCE)	0.00060	0.00051	0.00069
	(!CLK_N * RESET_B * SCD * !SCE)	0.00223	0.00214	0.00231
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00060	0.00051	0.00069
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00223	0.00214	0.00231
	(!CLK_N * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK_N * !SCD * SCE)	0.00060	0.00060	0.00060
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00032	-0.00032	-0.00032
	(!CLK_N * !RESET_B * SCD * SCE)	0.00060	0.00060	0.00060
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00015	-0.00015	-0.00015
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00079	0.00079	0.00079
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00015	-0.00015	-0.00015
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00079	0.00079	0.00079

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * D * RESET_B * SCE)**	0.00649	0.00644	0.00638
	(CLK_N * D * RESET_B * SCE)	0.00456	0.00450	0.00444
	(CLK_N * D * RESET_B * !SCE)	0.00046	0.00043	0.00042
	(CLK_N * D * RESET_B * !SCE)	-0.00054	-0.00058	-0.00059
	(CLK_N * D * !RESET_B * SCE)	0.00031	0.00031	0.00030
	(CLK_N * D * !RESET_B * SCE)	-0.00057	-0.00057	-0.00057
	(CLK_N * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(CLK_N * D * !RESET_B * !SCE)	-0.00066	-0.00066	-0.00066
	(CLK_N * !D * RESET_B * SCE)	0.00680	0.00675	0.00667
	(CLK_N * !D * RESET_B * SCE)	0.00482	0.00476	0.00469
	(CLK_N * !D * !RESET_B * SCE)	0.00031	0.00031	0.00030
	(CLK_N * !D * !RESET_B * SCE)	-0.00057	-0.00057	-0.00057
	(!D * RESET_B * !SCE)	0.00036	0.00037	0.00036
	(!D * RESET_B * !SCE)	-0.00064	-0.00064	-0.00064
	(!D * !RESET_B * !SCE)	0.00022	0.00022	0.00022
	(!D * !RESET_B * !SCE)	-0.00068	-0.00069	-0.00069
	(!CLK_N * D * RESET_B * SCE)	0.00322	0.00315	0.00314
	(!CLK_N * D * RESET_B * SCE)	0.00126	0.00119	0.00118
	(!CLK_N * D * RESET_B * !SCE)	0.00046	0.00043	0.00042
	(!CLK_N * D * RESET_B * !SCE)	-0.00054	-0.00058	-0.00059
	(!CLK_N * D * !RESET_B * SCE)	0.00031	0.00031	0.00030
	(!CLK_N * D * !RESET_B * SCE)	-0.00057	-0.00057	-0.00057
	(!CLK_N * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(!CLK_N * D * !RESET_B * !SCE)	-0.00066	-0.00066	-0.00066
	(!CLK_N * !D * RESET_B * SCE)	0.00352	0.00346	0.00342
	(!CLK_N * !D * RESET_B * SCE)	0.00152	0.00146	0.00142
	(!CLK_N * !D * !RESET_B * SCE)	0.00031	0.00031	0.00030
	(!CLK_N * !D * !RESET_B * SCE)	-0.00057	-0.00057	-0.00057

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * D * RESET_B * SCE)**	0.00422	0.00415	0.00412
	(CLK_N * D * RESET_B * SCE)	0.00617	0.00610	0.00605
	(CLK_N * D * RESET_B * !SCE)	-0.00040	-0.00042	-0.00042
	(CLK_N * D * RESET_B * !SCE)	0.00059	0.00060	0.00059
	(CLK_N * D * !RESET_B * SCE)	-0.00028	-0.00029	-0.00029
	(CLK_N * D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(CLK_N * D * !RESET_B * !SCE)	-0.00020	-0.00020	-0.00019
	(CLK_N * D * !RESET_B * !SCE)	0.00067	0.00067	0.00066
	(CLK_N * !D * RESET_B * SCE)	0.00405	0.00397	0.00397
	(CLK_N * !D * RESET_B * SCE)	0.00603	0.00596	0.00594
	(CLK_N * !D * !RESET_B * SCE)	-0.00028	-0.00029	-0.00029
	(CLK_N * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!D * RESET_B * !SCE)	-0.00034	-0.00036	-0.00036
	(!D * RESET_B * !SCE)	0.00065	0.00065	0.00064
	(!D * !RESET_B * !SCE)	-0.00022	-0.00022	-0.00022
	(!D * !RESET_B * !SCE)	0.00069	0.00070	0.00070
	(!CLK_N * D * RESET_B * SCE)	0.00109	0.00101	0.00100
	(!CLK_N * D * RESET_B * SCE)	0.00305	0.00297	0.00294
	(!CLK_N * D * RESET_B * !SCE)	-0.00040	-0.00041	-0.00042
	(!CLK_N * D * RESET_B * !SCE)	0.00059	0.00059	0.00059
	(!CLK_N * D * !RESET_B * SCE)	-0.00028	-0.00029	-0.00029
	(!CLK_N * D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!CLK_N * D * !RESET_B * !SCE)	-0.00019	-0.00020	-0.00019
	(!CLK_N * D * !RESET_B * !SCE)	0.00066	0.00067	0.00066
	(!CLK_N * !D * RESET_B * SCE)	0.00091	0.00083	0.00084
	(!CLK_N * !D * RESET_B * SCE)	0.00291	0.00283	0.00283
	(!CLK_N * !D * !RESET_B * SCE)	-0.00028	-0.00029	-0.00029
	(!CLK_N * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	(CLK_N * D * RESET_B * SCD)	0.00256	0.00237	0.00244
	(CLK_N * D * RESET_B * SCD)	-0.00015	-0.00036	-0.00028
	(CLK_N * D * RESET_B * !SCD)	0.00701	0.00691	0.00694
	(CLK_N * D * RESET_B * !SCD)	0.00516	0.00505	0.00506
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00252	0.00237	0.00246
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00007	-0.00025	-0.00015
	(CLK_N * !D * RESET_B * SCD)	0.00832	0.00809	0.00812
	(CLK_N * !D * RESET_B * SCD)	0.00485	0.00462	0.00466
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00256	0.00236	0.00244
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00015	-0.00035	-0.00028
	(!CLK_N * D * RESET_B * !SCD)	0.00392	0.00379	0.00380
	(!CLK_N * D * RESET_B * !SCD)	0.00209	0.00195	0.00194
	(!CLK_N * !D * RESET_B * SCD)	0.00504	0.00479	0.00489
	(!CLK_N * !D * RESET_B * SCD)	0.00156	0.00131	0.00142

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	(CLK_N * D * RESET_B * SCD)	-0.00008	-0.00018	0.00004
	(CLK_N * D * RESET_B * SCD)	0.00263	0.00253	0.00275
	(CLK_N * D * RESET_B * !SCD)	0.00578	0.00567	0.00580
	(CLK_N * D * RESET_B * !SCD)	0.00763	0.00752	0.00767
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00009	-0.00019	0.00001
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00251	0.00241	0.00261
	(CLK_N * !D * RESET_B * SCD)	0.00397	0.00377	0.00397
	(CLK_N * !D * RESET_B * SCD)	0.00743	0.00724	0.00744
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00008	-0.00017	0.00004
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00263	0.00254	0.00275
	(!CLK_N * D * RESET_B * !SCD)	0.00251	0.00238	0.00251
	(!CLK_N * D * RESET_B * !SCD)	0.00435	0.00422	0.00436
	(!CLK_N * !D * RESET_B * SCD)	0.00082	0.00062	0.00086
	(!CLK_N * !D * RESET_B * SCD)	0.00430	0.00411	0.00434

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00835	0.00813	0.00802
	(CLK_N * D * SCD * SCE * !Q)	0.00381	0.00360	0.00348
	(CLK_N * D * SCD * !SCE * !Q)	0.00824	0.00803	0.00793
	(CLK_N * D * SCD * !SCE * !Q)	0.00386	0.00363	0.00354
	(CLK_N * D * !SCD * SCE * !Q)	0.00174	0.00174	0.00173
	(CLK_N * D * !SCD * SCE * !Q)	-0.00171	-0.00171	-0.00170
	(CLK_N * D * !SCD * !SCE * !Q)	0.00807	0.00785	0.00776
	(CLK_N * D * !SCD * !SCE * !Q)	0.00386	0.00363	0.00353
	(CLK_N * !D * SCD * SCE * !Q)	0.00865	0.00845	0.00831
	(CLK_N * !D * SCD * SCE * !Q)	0.00407	0.00387	0.00373
	(CLK_N * !D * SCD * !SCE * !Q)	0.00171	0.00172	0.00171
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00172	-0.00172	-0.00171
	(CLK_N * !D * !SCD * SCE * !Q)	0.00173	0.00174	0.00173
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00171	-0.00171	-0.00170
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00172	0.00172	0.00171
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00173	-0.00173	-0.00172
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00476	0.00466	0.00465
	(!CLK_N * D * SCD * SCE * !Q)	0.00020	0.00009	0.00009
	(!CLK_N * D * SCD * !SCE * !Q)	0.00465	0.00455	0.00456
	(!CLK_N * D * SCD * !SCE * !Q)	0.00024	0.00012	0.00014
	(!CLK_N * D * !SCD * SCE * !Q)	0.00169	0.00169	0.00168
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00175	-0.00176	-0.00175
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00449	0.00438	0.00439
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00024	0.00012	0.00014
	(!CLK_N * !D * SCD * SCE * !Q)	0.00506	0.00497	0.00494
	(!CLK_N * !D * SCD * SCE * !Q)	0.00046	0.00036	0.00033
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00165	0.00167	0.00166
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00176	-0.00177	-0.00176
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00167	0.00169	0.00168
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00175	-0.00176	-0.00175
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00166	0.00168	0.00166
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00176	-0.00177	-0.00177

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00367	0.00339	0.00331
	(CLK_N * D * SCD * SCE * !Q)	0.00822	0.00794	0.00785
	(CLK_N * D * SCD * !SCE * !Q)	0.00327	0.00299	0.00290
	(CLK_N * D * SCD * !SCE * !Q)	0.00768	0.00739	0.00730
	(CLK_N * D * !SCD * SCE * !Q)	-0.00170	-0.00174	-0.00173
	(CLK_N * D * !SCD * SCE * !Q)	0.00172	0.00172	0.00171
	(CLK_N * D * !SCD * !SCE * !Q)	0.00315	0.00287	0.00279
	(CLK_N * D * !SCD * !SCE * !Q)	0.00737	0.00709	0.00702
	(CLK_N * !D * SCD * SCE * !Q)	0.00350	0.00321	0.00315
	(CLK_N * !D * SCD * SCE * !Q)	0.00809	0.00780	0.00774
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00167	-0.00172	-0.00171
	(CLK_N * !D * SCD * !SCE * !Q)	0.00173	0.00173	0.00171
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00170	-0.00174	-0.00173
	(CLK_N * !D * !SCD * SCE * !Q)	0.00172	0.00172	0.00171
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00168	-0.00172	-0.00171
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00174	0.00173	0.00172
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00018	0.00006	0.00017
	(!CLK_N * D * SCD * SCE * !Q)	0.00476	0.00463	0.00474
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00022	-0.00035	-0.00024
	(!CLK_N * D * SCD * !SCE * !Q)	0.00422	0.00409	0.00418
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00166	-0.00169	-0.00168
	(!CLK_N * D * !SCD * SCE * !Q)	0.00177	0.00177	0.00176
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00034	-0.00047	-0.00034
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00391	0.00379	0.00390
	(!CLK_N * !D * SCD * SCE * !Q)	0.00001	-0.00012	0.00002
	(!CLK_N * !D * SCD * SCE * !Q)	0.00462	0.00450	0.00463
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00163	-0.00167	-0.00166
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00178	0.00177	0.00176
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00166	-0.00169	-0.00168
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00177	0.00177	0.00176
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00163	-0.00168	-0.00166
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00179	0.00178	0.00177

Passive power(pJ) for CLK_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(D * RESET_B * SCD * SCE * Q)**	0.00599	0.00567	0.00569
	(D * RESET_B * SCD * SCE * Q)	0.00407	0.00376	0.00377
	(D * RESET_B * SCD * SCE * !Q)	0.00951	0.00922	0.00930
	(D * RESET_B * SCD * SCE * !Q)	0.00760	0.00732	0.00739
	(D * RESET_B * SCD * !SCE * Q)	0.00599	0.00567	0.00568
	(D * RESET_B * SCD * !SCE * Q)	0.00407	0.00376	0.00377
	(D * RESET_B * SCD * !SCE * !Q)	0.00948	0.00919	0.00928
	(D * RESET_B * SCD * !SCE * !Q)	0.00758	0.00730	0.00737
	(D * RESET_B * !SCD * SCE * Q)	0.00907	0.00869	0.00862
	(D * RESET_B * !SCD * SCE * Q)	0.00716	0.00677	0.00671
	(D * RESET_B * !SCD * !SCE * Q)	0.00599	0.00567	0.00569
	(D * RESET_B * !SCD * !SCE * Q)	0.00407	0.00376	0.00377
	(D * RESET_B * !SCD * !SCE * !Q)	0.00948	0.00919	0.00928
	(D * RESET_B * !SCD * !SCE * !Q)	0.00758	0.00730	0.00737
	(D * !SCD * SCE * !Q)	0.00590	0.00559	0.00560
	(D * !SCD * SCE * !Q)	0.00398	0.00367	0.00368
	(D * !RESET_B * SCD * SCE * !Q)	0.00590	0.00560	0.00561
	(D * !RESET_B * SCD * SCE * !Q)	0.00398	0.00368	0.00369
	(D * !RESET_B * SCD * !SCE * !Q)	0.00590	0.00559	0.00561
	(D * !RESET_B * SCD * !SCE * !Q)	0.00398	0.00368	0.00369
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00590	0.00559	0.00561
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00398	0.00368	0.00369
	(!D * RESET_B * SCD * SCE * Q)	0.00599	0.00567	0.00569
	(!D * RESET_B * SCD * SCE * Q)	0.00407	0.00376	0.00377
	(!D * RESET_B * SCD * SCE * !Q)	0.00953	0.00924	0.00933
	(!D * RESET_B * SCD * SCE * !Q)	0.00762	0.00734	0.00741
	(!D * RESET_B * !SCE * Q)	0.00906	0.00867	0.00861
	(!D * RESET_B * !SCE * Q)	0.00712	0.00674	0.00667
	(!D * RESET_B * !SCD * SCE * Q)	0.00908	0.00869	0.00861
	(!D * RESET_B * !SCD * SCE * Q)	0.00715	0.00677	0.00669
	(!D * !SCE * !Q)	0.00590	0.00559	0.00560
	(!D * !SCE * !Q)	0.00398	0.00367	0.00368
	(!D * !SCD * SCE * !Q)	0.00590	0.00559	0.00560
	(!D * !SCD * SCE * !Q)	0.00398	0.00367	0.00368
	(!D * !RESET_B * SCD * SCE * !Q)	0.00590	0.00560	0.00561
	(!D * !RESET_B * SCD * SCE * !Q)	0.00398	0.00368	0.00369

Passive power(pJ) for CLK_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	(D * RESET_B * SCD * SCE * Q)	0.00438	0.00416	0.00424
	(D * RESET_B * SCD * SCE * Q)	0.00630	0.00607	0.00616
	(D * RESET_B * SCD * !SCE * Q)	0.00438	0.00416	0.00424
	(D * RESET_B * SCD * !SCE * Q)	0.00630	0.00607	0.00616
	(D * RESET_B * !SCD * !SCE * Q)	0.00438	0.00416	0.00424
	(D * RESET_B * !SCD * !SCE * Q)	0.00630	0.00607	0.00616
	(D * !SCD * SCE * !Q)	0.00442	0.00419	0.00428
	(D * !SCD * SCE * !Q)	0.00634	0.00610	0.00620
	(D * !RESET_B * SCD * SCE * !Q)	0.00442	0.00419	0.00428
	(D * !RESET_B * SCD * SCE * !Q)	0.00634	0.00610	0.00620
	(D * !RESET_B * SCD * !SCE * !Q)	0.00442	0.00419	0.00428
	(D * !RESET_B * SCD * !SCE * !Q)	0.00634	0.00610	0.00620
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00442	0.00419	0.00428
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00634	0.00610	0.00620
	(!D * RESET_B * SCD * SCE * Q)	0.00438	0.00416	0.00424
	(!D * RESET_B * SCD * SCE * Q)	0.00630	0.00607	0.00616
	(!D * !SCE * !Q)	0.00442	0.00419	0.00428
	(!D * !SCE * !Q)	0.00634	0.00610	0.00620
	(!D * !SCD * SCE * !Q)	0.00442	0.00419	0.00428
	(!D * !SCD * SCE * !Q)	0.00634	0.00610	0.00620
	(!D * !RESET_B * SCD * SCE * !Q)	0.00442	0.00419	0.00428
	(!D * !RESET_B * SCD * SCE * !Q)	0.00634	0.00611	0.00620

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**
0	**0**	**x**	**1**	**R**	**0**
0	**1**	**0**	**1**	**R**	**0**
x	**1**	**1**	**1**	**R**	**1**
1	**x**	**0**	**1**	**R**	**1**
1	**0**	**1**	**1**	**R**	**0**
x	**x**	**x**	**0**	**x**	**0**
x	**x**	**x**	**1**	**x**	**IQ**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtp_1	44.75520
sky130_fd_sc_hs__sdfrtp_2	47.95200
sky130_fd_sc_hs__sdfrtp_4	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**
sky130_fd_sc_hs__sdfrtp_1	0.00178	0.00183	0.00394	0.00550	0.00287	0.44063
sky130_fd_sc_hs__sdfrtp_2	0.00172	0.00185	0.00402	0.00559	0.00287	0.87887
sky130_fd_sc_hs__sdfrtp_4	0.00172	0.00182	0.00405	0.00550	0.00286	1.66997

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.13363	0.24002
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.13621	0.24064
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.17347	0.29229

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RR)	0.50477	1.45918	8.82410
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.54301	1.35690	8.88118
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.62618	1.33825	8.93370

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.48552	0.99612	3.67528
	RESET_B->Q (FF)	0.71045	1.46177	6.74967
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.51699	1.01010	3.73685
	RESET_B->Q (FF)	0.75127	1.48419	6.84841
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.52882	0.99513	3.70467
	RESET_B->Q (FF)	0.76023	1.46817	6.81329

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.20657	-0.34990	-1.74707
	setup	CLK (R)	0.49483	0.53416	1.99508
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.19606	-0.33368	-1.66519
	setup	CLK (R)	0.49667	0.52904	1.93078
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.19447	-0.33427	-1.67009
	setup	CLK (R)	0.47018	0.51108	1.91546

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.13819	-0.29523	-2.77649
	setup	CLK (R)	0.94730	0.96834	3.52522
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13408	-0.28706	-2.69692
	setup	CLK (R)	0.90597	0.92897	3.43220
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14972	-0.30700	-2.79347
	setup	CLK (R)	0.89915	0.92196	3.42616

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.20657	-0.34990	-1.74878
	hold	CLK (R)	-0.20716	-0.35003	-1.74707
	setup	CLK (R)	0.49230	0.53235	1.99299
	setup	CLK (R)	0.49483	0.53416	1.99508
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.19606	-0.33368	-1.66519
	hold	CLK (R)	-0.19658	-0.33404	-1.66861
	setup	CLK (R)	0.49667	0.52904	1.91987
	setup	CLK (R)	0.49412	0.52884	1.93078
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.19523	-0.33427	-1.67063
	hold	CLK (R)	-0.19447	-0.33465	-1.67009
	setup	CLK (R)	0.47003	0.51108	1.91546
	setup	CLK (R)	0.47018	0.51108	1.91452

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.13819	-0.29528	-2.77680
	hold	CLK (R)	-0.14206	-0.29523	-2.77649
	setup	CLK (R)	0.94537	0.96834	3.52238
	setup	CLK (R)	0.94730	0.96515	3.52522
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13445	-0.28706	-2.69775
	hold	CLK (R)	-0.13408	-0.28762	-2.69692
	setup	CLK (R)	0.90597	0.92892	3.43213
	setup	CLK (R)	0.90284	0.92897	3.43220
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14972	-0.31068	-2.79490
	hold	CLK (R)	-0.15085	-0.30700	-2.79347
	setup	CLK (R)	0.89915	0.92196	3.42593
	setup	CLK (R)	0.89837	0.91952	3.42616

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.24241	-0.37813	-2.03207
	setup	CLK (R)	0.53204	0.56471	2.23841
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.23477	-0.36560	-1.97595
	setup	CLK (R)	0.53623	0.56485	2.18826
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.23090	-0.36678	-1.98124
	setup	CLK (R)	0.50895	0.54721	2.17667

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.19694	-0.38664	-3.58299
	setup	CLK (R)	1.11850	1.17366	4.15077
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.20022	-0.39157	-3.53063
	setup	CLK (R)	1.09023	1.14518	4.08484
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.21305	-0.40813	-3.60632
	setup	CLK (R)	1.07956	1.13808	4.07734

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.24241	-0.37813	-2.03207
	hold	CLK (R)	-0.24735	-0.37921	-2.03667
	setup	CLK (R)	0.53204	0.56471	2.23111
	setup	CLK (R)	0.52889	0.56299	2.23841
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.23477	-0.36560	-1.97595
	hold	CLK (R)	-0.23823	-0.37095	-1.98268
	setup	CLK (R)	0.53623	0.56306	2.18145
	setup	CLK (R)	0.53523	0.56485	2.18826
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.23090	-0.36678	-1.98124
	hold	CLK (R)	-0.23538	-0.36910	-1.98267
	setup	CLK (R)	0.50895	0.54721	2.17463
	setup	CLK (R)	0.50819	0.54402	2.17667

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.21020	-0.40309	-3.64705
	hold	CLK (R)	-0.19694	-0.38664	-3.58299
	setup	CLK (R)	1.09760	1.15331	4.13630
	setup	CLK (R)	1.11850	1.17366	4.15077
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.21638	-0.40798	-3.57021
	hold	CLK (R)	-0.20022	-0.39157	-3.53063
	setup	CLK (R)	1.06777	1.12637	4.06920
	setup	CLK (R)	1.09023	1.14518	4.08484
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.23261	-0.42700	-3.63484
	hold	CLK (R)	-0.21305	-0.40813	-3.60632
	setup	CLK (R)	1.06296	1.12058	4.07398
	setup	CLK (R)	1.07956	1.13808	4.07734

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.19268	-0.30766	-0.73689
	setup	CLK (R)	1.07639	1.04911	2.04804
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.18640	-0.29860	-0.68873
	setup	CLK (R)	1.04071	1.00795	1.99566
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.19748	-0.31882	-0.71601
	setup	CLK (R)	1.03488	1.00525	1.98957

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.16509	-0.34612	-2.83724
	setup	CLK (R)	0.96996	1.02485	3.87183
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16338	-0.34728	-2.77940
	setup	CLK (R)	0.93115	0.98667	3.79363
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.17758	-0.36532	-2.78134
	setup	CLK (R)	0.92336	0.98240	3.79064

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.19268	-0.30766	-0.73689
	hold	CLK (R)	-0.20539	-0.35143	-1.81184
	setup	CLK (R)	1.07639	1.04911	1.05409
	setup	CLK (R)	0.48858	0.53374	2.04804
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.18640	-0.29860	-0.68873
	hold	CLK (R)	-0.19906	-0.33975	-1.74872
	setup	CLK (R)	1.04071	1.00795	0.99656
	setup	CLK (R)	0.49739	0.53382	1.99566
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.20515	-0.31882	-0.71601
	hold	CLK (R)	-0.19748	-0.33920	-1.74984
	setup	CLK (R)	1.03488	1.00525	0.99068
	setup	CLK (R)	0.46807	0.51595	1.98957

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.38220	-0.58970	-2.83724
	hold	CLK (R)	-0.16509	-0.34612	-3.32261
	setup	CLK (R)	0.67025	0.77534	2.97486
	setup	CLK (R)	0.96996	1.02485	3.87183
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.36623	-0.57071	-2.77940
	hold	CLK (R)	-0.16338	-0.34728	-3.26081
	setup	CLK (R)	0.66829	0.76733	2.92751
	setup	CLK (R)	0.93115	0.98667	3.79363
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.36720	-0.57208	-2.78134
	hold	CLK (R)	-0.17758	-0.36532	-3.32228
	setup	CLK (R)	0.64321	0.75316	2.91889
	setup	CLK (R)	0.92336	0.98240	3.79064

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	recovery	CLK (R)	0.56310	0.58185	2.23666
	removal	CLK (R)	-0.36897	-0.44860	-2.01874
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.56886	0.58031	2.18979
	removal	CLK (R)	-0.36418	-0.43583	-1.96746
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.54351	0.56050	2.18071
	removal	CLK (R)	-0.36724	-0.43597	-1.97549

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	recovery	CLK (R)	0.56310	0.58185	2.23006
	recovery	CLK (R)	0.55389	0.57094	2.16059
	recovery	CLK (R)	0.54797	0.55729	2.10672
	recovery	CLK (R)	0.56287	0.57954	2.23666
	removal	CLK (R)	-0.38408	-0.47020	-2.14607
	removal	CLK (R)	-0.37806	-0.45940	-2.07597
	removal	CLK (R)	-0.36897	-0.44860	-2.01874
	removal	CLK (R)	-0.38716	-0.47397	-2.15441
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.56886	0.57745	2.18465
	recovery	CLK (R)	0.55722	0.57020	2.11046
	recovery	CLK (R)	0.55113	0.55263	2.05384
	recovery	CLK (R)	0.56793	0.58031	2.18979
	removal	CLK (R)	-0.38164	-0.46258	-2.10647
	removal	CLK (R)	-0.36961	-0.45018	-2.02811
	removal	CLK (R)	-0.36418	-0.43583	-1.96746
	removal	CLK (R)	-0.38474	-0.46480	-2.11351
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.54351	0.56050	2.17889
	recovery	CLK (R)	0.53205	0.55146	2.09987
	recovery	CLK (R)	0.52609	0.53524	2.04470
	recovery	CLK (R)	0.53840	0.56037	2.18071
	removal	CLK (R)	-0.38289	-0.46287	-2.11447
	removal	CLK (R)	-0.37131	-0.45036	-2.03312
	removal	CLK (R)	-0.36724	-0.43597	-1.97549
	removal	CLK (R)	-0.38244	-0.46126	-2.11423

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	min_pulse_width	RESET_B ()	0.40685	1.07171	16.50020
	min_pulse_width	RESET_B ()	0.30373	0.98145	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.41490	1.08348	16.50020
	min_pulse_width	RESET_B ()	0.31094	0.98145	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.41354	1.07955	16.50020
	min_pulse_width	RESET_B ()	0.30733	0.98145	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	min_pulse_width	CLK ()	0.27849	0.98145	16.50020
	min_pulse_width	CLK ()	0.18116	0.98145	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.31815	0.98145	16.50020
	min_pulse_width	CLK ()	0.18477	0.98145	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.18837	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	min_pulse_width	CLK ()	0.55607	0.98145	16.50020
	min_pulse_width	CLK ()	0.78678	0.98145	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.58491	0.98145	16.50020
	min_pulse_width	CLK ()	0.81202	0.98145	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.55607	0.98145	16.50020
	min_pulse_width	CLK ()	0.80120	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.01214	0.01195	0.01190
	CLK	0.01010	0.00992	0.00988
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01367	0.01362	0.01363
	CLK	0.01157	0.01152	0.01157
sky130_fd_sc_hs__sdfrtp_4	CLK	0.01640	0.01655	0.01666
	CLK	0.01435	0.01450	0.01466

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.01259	0.01245	0.01274
	CLK	0.01060	0.01047	0.01075
	RESET_B	0.01034	0.01001	0.01053
	RESET_B	0.01504	0.01472	0.01461
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01382	0.01387	0.01422
	CLK	0.01187	0.01193	0.01220
	RESET_B	0.01179	0.01165	0.01229
	RESET_B	0.01652	0.01638	0.01626
sky130_fd_sc_hs__sdfrtp_4	CLK	0.01704	0.01743	0.01793
	CLK	0.01505	0.01544	0.01576
	RESET_B	0.01502	0.01523	0.01663
	RESET_B	0.01970	0.01990	0.01983

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * RESET_B * SCD * SCE)**	0.00056	0.00056	0.00056
	(CLK * RESET_B * SCD * SCE)	-0.00030	-0.00030	-0.00030
	(CLK * RESET_B * SCD * !SCE)	0.00287	0.00277	0.00284
	(CLK * RESET_B * SCD * !SCE)	0.00127	0.00117	0.00123
	(CLK * RESET_B * !SCD * !SCE)	0.00288	0.00277	0.00284
	(CLK * RESET_B * !SCD * !SCE)	0.00127	0.00118	0.00123
	(CLK * !SCD * SCE)	0.00032	0.00031	0.00030
	(CLK * !SCD * SCE)	-0.00058	-0.00058	-0.00060
	(CLK * !RESET_B * SCD * SCE)	0.00030	0.00030	0.00030
	(CLK * !RESET_B * SCD * SCE)	-0.00059	-0.00060	-0.00060
	(CLK * !RESET_B * SCD * !SCE)	0.00023	0.00023	0.00020
	(CLK * !RESET_B * SCD * !SCE)	-0.00065	-0.00065	-0.00071
	(CLK * !RESET_B * !SCD * !SCE)	0.00023	0.00023	0.00020
	(CLK * !RESET_B * !SCD * !SCE)	-0.00068	-0.00068	-0.00072
	(!CLK * RESET_B * SCD * SCE)	0.00056	0.00056	0.00056
	(!CLK * RESET_B * SCD * SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * RESET_B * SCD * !SCE)	0.00598	0.00590	0.00588
	(!CLK * RESET_B * SCD * !SCE)	0.00429	0.00421	0.00419
	(!CLK * RESET_B * !SCD * !SCE)	0.00598	0.00590	0.00588
	(!CLK * RESET_B * !SCD * !SCE)	0.00429	0.00421	0.00419
	(!CLK * !SCD * SCE)	0.00032	0.00032	0.00031
	(!CLK * !SCD * SCE)	-0.00058	-0.00059	-0.00060
	(!CLK * !RESET_B * SCD * SCE)	0.00029	0.00030	0.00030
	(!CLK * !RESET_B * SCD * SCE)	-0.00059	-0.00060	-0.00060
	(!CLK * !RESET_B * SCD * !SCE)	0.00023	0.00023	0.00020
	(!CLK * !RESET_B * SCD * !SCE)	-0.00065	-0.00065	-0.00071
	(!CLK * !RESET_B * !SCD * !SCE)	0.00023	0.00023	0.00020
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00068	-0.00068	-0.00072

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00053	0.00053	0.00053
	(CLK * RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * RESET_B * SCD * !SCE)	0.00244	0.00234	0.00241
	(CLK * RESET_B * SCD * !SCE)	0.00090	0.00081	0.00088
	(CLK * RESET_B * !SCD * !SCE)	0.00244	0.00234	0.00241
	(CLK * RESET_B * !SCD * !SCE)	0.00090	0.00081	0.00088
	(CLK * !SCD * SCE)	0.00031	0.00030	0.00030
	(CLK * !SCD * SCE)	-0.00054	-0.00055	-0.00056
	(CLK * !RESET_B * SCD * SCE)	0.00029	0.00029	0.00029
	(CLK * !RESET_B * SCD * SCE)	-0.00055	-0.00056	-0.00056
	(CLK * !RESET_B * SCD * !SCE)	0.00023	0.00022	0.00019
	(CLK * !RESET_B * SCD * !SCE)	-0.00061	-0.00062	-0.00067
	(CLK * !RESET_B * !SCD * !SCE)	0.00022	0.00022	0.00019
	(CLK * !RESET_B * !SCD * !SCE)	-0.00064	-0.00064	-0.00068
	(!CLK * RESET_B * SCD * SCE)	0.00053	0.00053	0.00053
	(!CLK * RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * RESET_B * SCD * !SCE)	0.00567	0.00559	0.00557
	(!CLK * RESET_B * SCD * !SCE)	0.00405	0.00397	0.00396
	(!CLK * RESET_B * !SCD * !SCE)	0.00567	0.00559	0.00558
	(!CLK * RESET_B * !SCD * !SCE)	0.00406	0.00398	0.00396
	(!CLK * !SCD * SCE)	0.00031	0.00030	0.00030
	(!CLK * !SCD * SCE)	-0.00054	-0.00055	-0.00056
	(!CLK * !RESET_B * SCD * SCE)	0.00029	0.00029	0.00029
	(!CLK * !RESET_B * SCD * SCE)	-0.00055	-0.00056	-0.00056
	(!CLK * !RESET_B * SCD * !SCE)	0.00022	0.00022	0.00019
	(!CLK * !RESET_B * SCD * !SCE)	-0.00061	-0.00062	-0.00067
	(!CLK * !RESET_B * !SCD * !SCE)	0.00022	0.00022	0.00019
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00064	-0.00064	-0.00068

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00053	0.00053	0.00053
	(CLK * RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * RESET_B * SCD * !SCE)	0.00247	0.00237	0.00244
	(CLK * RESET_B * SCD * !SCE)	0.00092	0.00082	0.00089
	(CLK * RESET_B * !SCD * !SCE)	0.00247	0.00237	0.00244
	(CLK * RESET_B * !SCD * !SCE)	0.00092	0.00082	0.00089
	(CLK * !SCD * SCE)	0.00030	0.00030	0.00029
	(CLK * !SCD * SCE)	-0.00055	-0.00055	-0.00056
	(CLK * !RESET_B * SCD * SCE)	0.00028	0.00029	0.00028
	(CLK * !RESET_B * SCD * SCE)	-0.00055	-0.00057	-0.00057
	(CLK * !RESET_B * SCD * !SCE)	0.00023	0.00023	0.00019
	(CLK * !RESET_B * SCD * !SCE)	-0.00061	-0.00061	-0.00066
	(CLK * !RESET_B * !SCD * !SCE)	0.00022	0.00022	0.00019
	(CLK * !RESET_B * !SCD * !SCE)	-0.00064	-0.00064	-0.00067
	(!CLK * RESET_B * SCD * SCE)	0.00053	0.00054	0.00053
	(!CLK * RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * RESET_B * SCD * !SCE)	0.00571	0.00563	0.00561
	(!CLK * RESET_B * SCD * !SCE)	0.00407	0.00399	0.00397
	(!CLK * RESET_B * !SCD * !SCE)	0.00571	0.00563	0.00561
	(!CLK * RESET_B * !SCD * !SCE)	0.00407	0.00399	0.00398
	(!CLK * !SCD * SCE)	0.00031	0.00030	0.00029
	(!CLK * !SCD * SCE)	-0.00055	-0.00055	-0.00057
	(!CLK * !RESET_B * SCD * SCE)	0.00028	0.00028	0.00028
	(!CLK * !RESET_B * SCD * SCE)	-0.00056	-0.00057	-0.00057
	(!CLK * !RESET_B * SCD * !SCE)	0.00023	0.00023	0.00019
	(!CLK * !RESET_B * SCD * !SCE)	-0.00061	-0.00061	-0.00066
	(!CLK * !RESET_B * !SCD * !SCE)	0.00022	0.00022	0.00019
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00064	-0.00064	-0.00067

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * RESET_B * SCD * SCE)**	-0.00053	-0.00054	-0.00056
	(CLK * RESET_B * SCD * SCE)	0.00033	0.00033	0.00031
	(CLK * RESET_B * SCD * !SCE)	0.00038	0.00029	0.00047
	(CLK * RESET_B * SCD * !SCE)	0.00199	0.00189	0.00207
	(CLK * RESET_B * !SCD * !SCE)	0.00038	0.00029	0.00047
	(CLK * RESET_B * !SCD * !SCE)	0.00199	0.00189	0.00207
	(CLK * !SCD * SCE)	-0.00030	-0.00030	-0.00030
	(CLK * !SCD * SCE)	0.00059	0.00060	0.00060
	(CLK * !RESET_B * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !RESET_B * SCD * SCE)	0.00060	0.00060	0.00060
	(CLK * !RESET_B * SCD * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK * !RESET_B * SCD * !SCE)	0.00072	0.00073	0.00072
	(CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00019	-0.00018
	(CLK * !RESET_B * !SCD * !SCE)	0.00072	0.00073	0.00072
	(!CLK * RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00056
	(!CLK * RESET_B * SCD * SCE)	0.00033	0.00033	0.00031
	(!CLK * RESET_B * SCD * !SCE)	0.00319	0.00309	0.00324
	(!CLK * RESET_B * SCD * !SCE)	0.00489	0.00479	0.00493
	(!CLK * RESET_B * !SCD * !SCE)	0.00320	0.00309	0.00324
	(!CLK * RESET_B * !SCD * !SCE)	0.00489	0.00479	0.00493
	(!CLK * !SCD * SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * !SCD * SCE)	0.00060	0.00060	0.00060
	(!CLK * !RESET_B * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !RESET_B * SCD * SCE)	0.00060	0.00060	0.00060
	(!CLK * !RESET_B * SCD * !SCE)	-0.00018	-0.00019	-0.00018
	(!CLK * !RESET_B * SCD * !SCE)	0.00072	0.00073	0.00072
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00019	-0.00018
	(!CLK * !RESET_B * !SCD * !SCE)	0.00072	0.00073	0.00072

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00050	-0.00051	-0.00053
	(CLK * RESET_B * SCD * SCE)	0.00031	0.00031	0.00029
	(CLK * RESET_B * SCD * !SCE)	0.00041	0.00032	0.00051
	(CLK * RESET_B * SCD * !SCE)	0.00194	0.00185	0.00204
	(CLK * RESET_B * !SCD * !SCE)	0.00041	0.00032	0.00051
	(CLK * RESET_B * !SCD * !SCE)	0.00194	0.00185	0.00203
	(CLK * !SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCD * SCE)	0.00056	0.00056	0.00056
	(CLK * !RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B * SCD * SCE)	0.00056	0.00056	0.00056
	(CLK * !RESET_B * SCD * !SCE)	-0.00018	-0.00018	-0.00017
	(CLK * !RESET_B * SCD * !SCE)	0.00068	0.00069	0.00068
	(CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00018	-0.00017
	(CLK * !RESET_B * !SCD * !SCE)	0.00068	0.00069	0.00068
	(!CLK * RESET_B * SCD * SCE)	-0.00050	-0.00051	-0.00053
	(!CLK * RESET_B * SCD * SCE)	0.00031	0.00031	0.00029
	(!CLK * RESET_B * SCD * !SCE)	0.00350	0.00341	0.00355
	(!CLK * RESET_B * SCD * !SCE)	0.00512	0.00502	0.00516
	(!CLK * RESET_B * !SCD * !SCE)	0.00351	0.00341	0.00355
	(!CLK * RESET_B * !SCD * !SCE)	0.00512	0.00502	0.00516
	(!CLK * !SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !SCD * SCE)	0.00056	0.00056	0.00056
	(!CLK * !RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B * SCD * SCE)	0.00056	0.00056	0.00056
	(!CLK * !RESET_B * SCD * !SCE)	-0.00018	-0.00018	-0.00017
	(!CLK * !RESET_B * SCD * !SCE)	0.00068	0.00069	0.00068
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00018	-0.00017
	(!CLK * !RESET_B * !SCD * !SCE)	0.00068	0.00069	0.00068

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00050	-0.00051	-0.00053
	(CLK * RESET_B * SCD * SCE)	0.00031	0.00031	0.00029
	(CLK * RESET_B * SCD * !SCE)	0.00038	0.00029	0.00048
	(CLK * RESET_B * SCD * !SCE)	0.00193	0.00184	0.00203
	(CLK * RESET_B * !SCD * !SCE)	0.00038	0.00029	0.00048
	(CLK * RESET_B * !SCD * !SCE)	0.00193	0.00184	0.00203
	(CLK * !SCD * SCE)	-0.00028	-0.00029	-0.00028
	(CLK * !SCD * SCE)	0.00056	0.00057	0.00056
	(CLK * !RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B * SCD * SCE)	0.00057	0.00057	0.00057
	(CLK * !RESET_B * SCD * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK * !RESET_B * SCD * !SCE)	0.00068	0.00069	0.00068
	(CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK * !RESET_B * !SCD * !SCE)	0.00068	0.00069	0.00068
	(!CLK * RESET_B * SCD * SCE)	-0.00050	-0.00051	-0.00053
	(!CLK * RESET_B * SCD * SCE)	0.00031	0.00031	0.00029
	(!CLK * RESET_B * SCD * !SCE)	0.00332	0.00322	0.00336
	(!CLK * RESET_B * SCD * !SCE)	0.00495	0.00486	0.00499
	(!CLK * RESET_B * !SCD * !SCE)	0.00332	0.00322	0.00336
	(!CLK * RESET_B * !SCD * !SCE)	0.00495	0.00486	0.00499
	(!CLK * !SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK * !RESET_B * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B * SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK * !RESET_B * SCD * !SCE)	-0.00018	-0.00018	-0.00018
	(!CLK * !RESET_B * SCD * !SCE)	0.00068	0.00069	0.00068
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00018	-0.00018	-0.00018
	(!CLK * !RESET_B * !SCD * !SCE)	0.00068	0.00069	0.00068

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * D * RESET_B * SCE)**	0.00346	0.00339	0.00337
	(CLK * D * RESET_B * SCE)	0.00148	0.00141	0.00139
	(CLK * D * RESET_B * !SCE)	0.00051	0.00047	0.00046
	(CLK * D * RESET_B * !SCE)	-0.00051	-0.00055	-0.00055
	(CLK * D * !RESET_B * SCE)	0.00029	0.00029	0.00028
	(CLK * D * !RESET_B * SCE)	-0.00061	-0.00061	-0.00060
	(CLK * D * !RESET_B * !SCE)	0.00020	0.00021	0.00020
	(CLK * D * !RESET_B * !SCE)	-0.00066	-0.00067	-0.00067
	(CLK * !D * RESET_B * SCE)	0.00377	0.00370	0.00365
	(CLK * !D * RESET_B * SCE)	0.00175	0.00168	0.00163
	(CLK * !D * !RESET_B * SCE)	0.00029	0.00029	0.00028
	(CLK * !D * !RESET_B * SCE)	-0.00061	-0.00061	-0.00060
	(!D * RESET_B * !SCE)	0.00037	0.00037	0.00037
	(!D * RESET_B * !SCE)	-0.00065	-0.00065	-0.00065
	(!D * !RESET_B * !SCE)	0.00023	0.00023	0.00023
	(!D * !RESET_B * !SCE)	-0.00069	-0.00069	-0.00069
	(!CLK * D * RESET_B * SCE)	0.00656	0.00650	0.00643
	(!CLK * D * RESET_B * SCE)	0.00449	0.00443	0.00436
	(!CLK * D * RESET_B * !SCE)	0.00051	0.00047	0.00046
	(!CLK * D * RESET_B * !SCE)	-0.00051	-0.00055	-0.00055
	(!CLK * D * !RESET_B * SCE)	0.00029	0.00029	0.00028
	(!CLK * D * !RESET_B * SCE)	-0.00061	-0.00060	-0.00060
	(!CLK * D * !RESET_B * !SCE)	0.00020	0.00021	0.00020
	(!CLK * D * !RESET_B * !SCE)	-0.00066	-0.00067	-0.00067
	(!CLK * !D * RESET_B * SCE)	0.00687	0.00681	0.00672
	(!CLK * !D * RESET_B * SCE)	0.00476	0.00470	0.00462
	(!CLK * !D * !RESET_B * SCE)	0.00029	0.00029	0.00028
	(!CLK * !D * !RESET_B * SCE)	-0.00061	-0.00060	-0.00060

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00311	0.00303	0.00301
	(CLK * D * RESET_B * SCE)	0.00116	0.00108	0.00106
	(CLK * D * RESET_B * !SCE)	0.00051	0.00048	0.00047
	(CLK * D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00054
	(CLK * D * !RESET_B * SCE)	0.00028	0.00027	0.00026
	(CLK * D * !RESET_B * SCE)	-0.00062	-0.00062	-0.00061
	(CLK * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(CLK * D * !RESET_B * !SCE)	-0.00066	-0.00067	-0.00067
	(CLK * !D * RESET_B * SCE)	0.00342	0.00335	0.00330
	(CLK * !D * RESET_B * SCE)	0.00143	0.00135	0.00131
	(CLK * !D * !RESET_B * SCE)	0.00028	0.00028	0.00027
	(CLK * !D * !RESET_B * SCE)	-0.00062	-0.00062	-0.00061
	(!D * RESET_B * !SCE)	0.00036	0.00036	0.00036
	(!D * RESET_B * !SCE)	-0.00065	-0.00066	-0.00065
	(!D * !RESET_B * !SCE)	0.00022	0.00022	0.00022
	(!D * !RESET_B * !SCE)	-0.00069	-0.00070	-0.00070
	(!CLK * D * RESET_B * SCE)	0.00634	0.00627	0.00620
	(!CLK * D * RESET_B * SCE)	0.00431	0.00424	0.00416
	(!CLK * D * RESET_B * !SCE)	0.00051	0.00048	0.00047
	(!CLK * D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00055
	(!CLK * D * !RESET_B * SCE)	0.00028	0.00027	0.00026
	(!CLK * D * !RESET_B * SCE)	-0.00062	-0.00062	-0.00061
	(!CLK * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(!CLK * D * !RESET_B * !SCE)	-0.00066	-0.00067	-0.00067
	(!CLK * !D * RESET_B * SCE)	0.00665	0.00658	0.00648
	(!CLK * !D * RESET_B * SCE)	0.00457	0.00451	0.00441
	(!CLK * !D * !RESET_B * SCE)	0.00028	0.00028	0.00027
	(!CLK * !D * !RESET_B * SCE)	-0.00062	-0.00062	-0.00061

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00312	0.00304	0.00302
	(CLK * D * RESET_B * SCE)	0.00117	0.00109	0.00107
	(CLK * D * RESET_B * !SCE)	0.00050	0.00046	0.00046
	(CLK * D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00054
	(CLK * D * !RESET_B * SCE)	0.00027	0.00027	0.00026
	(CLK * D * !RESET_B * SCE)	-0.00061	-0.00061	-0.00060
	(CLK * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(CLK * D * !RESET_B * !SCE)	-0.00065	-0.00066	-0.00066
	(CLK * !D * RESET_B * SCE)	0.00343	0.00336	0.00331
	(CLK * !D * RESET_B * SCE)	0.00143	0.00136	0.00132
	(CLK * !D * !RESET_B * SCE)	0.00027	0.00027	0.00026
	(CLK * !D * !RESET_B * SCE)	-0.00061	-0.00061	-0.00060
	(!D * RESET_B * !SCE)	0.00036	0.00036	0.00036
	(!D * RESET_B * !SCE)	-0.00064	-0.00064	-0.00064
	(!D * !RESET_B * !SCE)	0.00022	0.00022	0.00022
	(!D * !RESET_B * !SCE)	-0.00068	-0.00068	-0.00068
	(!CLK * D * RESET_B * SCE)	0.00636	0.00630	0.00622
	(!CLK * D * RESET_B * SCE)	0.00432	0.00425	0.00418
	(!CLK * D * RESET_B * !SCE)	0.00050	0.00047	0.00046
	(!CLK * D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00054
	(!CLK * D * !RESET_B * SCE)	0.00027	0.00027	0.00026
	(!CLK * D * !RESET_B * SCE)	-0.00061	-0.00061	-0.00060
	(!CLK * D * !RESET_B * !SCE)	0.00020	0.00020	0.00020
	(!CLK * D * !RESET_B * !SCE)	-0.00065	-0.00066	-0.00066
	(!CLK * !D * RESET_B * SCE)	0.00667	0.00661	0.00652
	(!CLK * !D * RESET_B * SCE)	0.00458	0.00452	0.00443
	(!CLK * !D * !RESET_B * SCE)	0.00027	0.00027	0.00026
	(!CLK * !D * !RESET_B * SCE)	-0.00061	-0.00061	-0.00060

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	(CLK * D * RESET_B * SCE)	0.00095	0.00086	0.00084
	(CLK * D * RESET_B * SCE)	0.00294	0.00284	0.00281
	(CLK * D * RESET_B * !SCE)	-0.00045	-0.00046	-0.00046
	(CLK * D * RESET_B * !SCE)	0.00056	0.00056	0.00056
	(CLK * D * !RESET_B * SCE)	-0.00026	-0.00027	-0.00027
	(CLK * D * !RESET_B * SCE)	0.00062	0.00062	0.00061
	(CLK * D * !RESET_B * !SCE)	-0.00020	-0.00020	-0.00020
	(CLK * D * !RESET_B * !SCE)	0.00067	0.00067	0.00067
	(CLK * !D * RESET_B * SCE)	0.00077	0.00067	0.00068
	(CLK * !D * RESET_B * SCE)	0.00279	0.00270	0.00269
	(CLK * !D * !RESET_B * SCE)	-0.00026	-0.00027	-0.00027
	(CLK * !D * !RESET_B * SCE)	0.00062	0.00062	0.00061
	(!D * RESET_B * !SCE)	-0.00035	-0.00037	-0.00037
	(!D * RESET_B * !SCE)	0.00066	0.00065	0.00065
	(!D * !RESET_B * !SCE)	-0.00023	-0.00023	-0.00023
	(!D * !RESET_B * !SCE)	0.00070	0.00070	0.00070
	(!CLK * D * RESET_B * SCE)	0.00375	0.00366	0.00363
	(!CLK * D * RESET_B * SCE)	0.00583	0.00575	0.00569
	(!CLK * D * RESET_B * !SCE)	-0.00045	-0.00046	-0.00046
	(!CLK * D * RESET_B * !SCE)	0.00056	0.00056	0.00056
	(!CLK * D * !RESET_B * SCE)	-0.00026	-0.00027	-0.00027
	(!CLK * D * !RESET_B * SCE)	0.00062	0.00062	0.00061
	(!CLK * D * !RESET_B * !SCE)	-0.00020	-0.00020	-0.00020
	(!CLK * D * !RESET_B * !SCE)	0.00067	0.00067	0.00067
	(!CLK * !D * RESET_B * SCE)	0.00357	0.00348	0.00347
	(!CLK * !D * RESET_B * SCE)	0.00568	0.00560	0.00558
	(!CLK * !D * !RESET_B * SCE)	-0.00026	-0.00027	-0.00027
	(!CLK * !D * !RESET_B * SCE)	0.00062	0.00062	0.00061

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00094	0.00084	0.00083
	(CLK * D * RESET_B * SCE)	0.00290	0.00280	0.00277
	(CLK * D * RESET_B * !SCE)	-0.00045	-0.00047	-0.00047
	(CLK * D * RESET_B * !SCE)	0.00055	0.00055	0.00055
	(CLK * D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(CLK * D * !RESET_B * SCE)	0.00063	0.00064	0.00062
	(CLK * D * !RESET_B * !SCE)	-0.00020	-0.00020	-0.00019
	(CLK * D * !RESET_B * !SCE)	0.00068	0.00068	0.00067
	(CLK * !D * RESET_B * SCE)	0.00076	0.00066	0.00067
	(CLK * !D * RESET_B * SCE)	0.00275	0.00265	0.00265
	(CLK * !D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(CLK * !D * !RESET_B * SCE)	0.00063	0.00064	0.00062
	(!D * RESET_B * !SCE)	-0.00034	-0.00036	-0.00036
	(!D * RESET_B * !SCE)	0.00066	0.00066	0.00066
	(!D * !RESET_B * !SCE)	-0.00022	-0.00022	-0.00022
	(!D * !RESET_B * !SCE)	0.00070	0.00071	0.00071
	(!CLK * D * RESET_B * SCE)	0.00403	0.00394	0.00389
	(!CLK * D * RESET_B * SCE)	0.00607	0.00598	0.00591
	(!CLK * D * RESET_B * !SCE)	-0.00045	-0.00047	-0.00047
	(!CLK * D * RESET_B * !SCE)	0.00055	0.00055	0.00055
	(!CLK * D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(!CLK * D * !RESET_B * SCE)	0.00063	0.00064	0.00062
	(!CLK * D * !RESET_B * !SCE)	-0.00020	-0.00020	-0.00019
	(!CLK * D * !RESET_B * !SCE)	0.00068	0.00068	0.00067
	(!CLK * !D * RESET_B * SCE)	0.00384	0.00375	0.00374
	(!CLK * !D * RESET_B * SCE)	0.00592	0.00583	0.00580
	(!CLK * !D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(!CLK * !D * !RESET_B * SCE)	0.00063	0.00064	0.00062

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00095	0.00086	0.00084
	(CLK * D * RESET_B * SCE)	0.00291	0.00282	0.00279
	(CLK * D * RESET_B * !SCE)	-0.00044	-0.00045	-0.00046
	(CLK * D * RESET_B * !SCE)	0.00055	0.00055	0.00055
	(CLK * D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(CLK * D * !RESET_B * SCE)	0.00062	0.00063	0.00061
	(CLK * D * !RESET_B * !SCE)	-0.00020	-0.00019	-0.00019
	(CLK * D * !RESET_B * !SCE)	0.00066	0.00066	0.00066
	(CLK * !D * RESET_B * SCE)	0.00074	0.00064	0.00065
	(CLK * !D * RESET_B * SCE)	0.00273	0.00264	0.00264
	(CLK * !D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(CLK * !D * !RESET_B * SCE)	0.00062	0.00063	0.00061
	(!D * RESET_B * !SCE)	-0.00034	-0.00036	-0.00036
	(!D * RESET_B * !SCE)	0.00065	0.00065	0.00064
	(!D * !RESET_B * !SCE)	-0.00022	-0.00022	-0.00022
	(!D * !RESET_B * !SCE)	0.00069	0.00069	0.00069
	(!CLK * D * RESET_B * SCE)	0.00388	0.00379	0.00375
	(!CLK * D * RESET_B * SCE)	0.00593	0.00584	0.00578
	(!CLK * D * RESET_B * !SCE)	-0.00044	-0.00045	-0.00046
	(!CLK * D * RESET_B * !SCE)	0.00055	0.00055	0.00055
	(!CLK * D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(!CLK * D * !RESET_B * SCE)	0.00062	0.00063	0.00061
	(!CLK * D * !RESET_B * !SCE)	-0.00020	-0.00019	-0.00019
	(!CLK * D * !RESET_B * !SCE)	0.00066	0.00066	0.00066
	(!CLK * !D * RESET_B * SCE)	0.00366	0.00358	0.00356
	(!CLK * !D * RESET_B * SCE)	0.00575	0.00567	0.00564
	(!CLK * !D * !RESET_B * SCE)	-0.00024	-0.00025	-0.00025
	(!CLK * !D * !RESET_B * SCE)	0.00062	0.00063	0.00061

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00254	0.00234	0.00242
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00013	-0.00034	-0.00027
	(CLK * D * RESET_B * !SCD)	0.00378	0.00363	0.00364
	(CLK * D * RESET_B * !SCD)	0.00199	0.00183	0.00182
	(CLK * !D * RESET_B * SCD)	0.00526	0.00501	0.00510
	(CLK * !D * RESET_B * SCD)	0.00179	0.00154	0.00166
	(!CLK * D * RESET_B * SCD)	0.00254	0.00234	0.00242
	(!CLK * D * RESET_B * SCD)	-0.00013	-0.00035	-0.00027
	(!CLK * D * RESET_B * !SCD)	0.00653	0.00642	0.00644
	(!CLK * D * RESET_B * !SCD)	0.00483	0.00470	0.00471
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00254	0.00237	0.00246
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00002	-0.00020	-0.00011
	(!CLK * !D * RESET_B * SCD)	0.00836	0.00812	0.00815
	(!CLK * !D * RESET_B * SCD)	0.00481	0.00457	0.00461

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00256	0.00236	0.00244
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00015	-0.00037	-0.00029
	(CLK * D * RESET_B * !SCD)	0.00374	0.00359	0.00361
	(CLK * D * RESET_B * !SCD)	0.00189	0.00173	0.00173
	(CLK * !D * RESET_B * SCD)	0.00490	0.00466	0.00476
	(CLK * !D * RESET_B * SCD)	0.00143	0.00118	0.00129
	(!CLK * D * RESET_B * SCD)	0.00256	0.00236	0.00244
	(!CLK * D * RESET_B * SCD)	-0.00015	-0.00037	-0.00029
	(!CLK * D * RESET_B * !SCD)	0.00678	0.00666	0.00669
	(!CLK * D * RESET_B * !SCD)	0.00501	0.00488	0.00490
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00252	0.00235	0.00244
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00007	-0.00025	-0.00016
	(!CLK * !D * RESET_B * SCD)	0.00813	0.00788	0.00792
	(!CLK * !D * RESET_B * SCD)	0.00458	0.00434	0.00438

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00256	0.00236	0.00244
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00015	-0.00036	-0.00029
	(CLK * D * RESET_B * !SCD)	0.00375	0.00360	0.00362
	(CLK * D * RESET_B * !SCD)	0.00191	0.00175	0.00175
	(CLK * !D * RESET_B * SCD)	0.00493	0.00468	0.00478
	(CLK * !D * RESET_B * SCD)	0.00143	0.00118	0.00130
	(!CLK * D * RESET_B * SCD)	0.00257	0.00237	0.00244
	(!CLK * D * RESET_B * SCD)	-0.00015	-0.00037	-0.00029
	(!CLK * D * RESET_B * !SCD)	0.00662	0.00651	0.00654
	(!CLK * D * RESET_B * !SCD)	0.00487	0.00475	0.00477
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00251	0.00235	0.00244
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00008	-0.00026	-0.00017
	(!CLK * !D * RESET_B * SCD)	0.00817	0.00792	0.00797
	(!CLK * !D * RESET_B * SCD)	0.00458	0.00434	0.00439

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfrtp_1	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00006	-0.00016	0.00005
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00261	0.00252	0.00273
	(CLK * D * RESET_B * !SCD)	0.00276	0.00260	0.00274
	(CLK * D * RESET_B * !SCD)	0.00456	0.00441	0.00456
	(CLK * !D * RESET_B * SCD)	0.00063	0.00043	0.00067
	(CLK * !D * RESET_B * SCD)	0.00410	0.00389	0.00412
	(!CLK * D * RESET_B * SCD)	-0.00006	-0.00016	0.00005
	(!CLK * D * RESET_B * SCD)	0.00262	0.00252	0.00273
	(!CLK * D * RESET_B * !SCD)	0.00585	0.00571	0.00585
	(!CLK * D * RESET_B * !SCD)	0.00756	0.00742	0.00757
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00009	-0.00021	0.00000
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00247	0.00236	0.00256
	(!CLK * !D * RESET_B * SCD)	0.00345	0.00325	0.00346
	(!CLK * !D * RESET_B * SCD)	0.00699	0.00680	0.00701

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00011	-0.00021	-0.00000
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00259	0.00250	0.00271
	(CLK * D * RESET_B * !SCD)	0.00229	0.00213	0.00228
	(CLK * D * RESET_B * !SCD)	0.00415	0.00400	0.00415
	(CLK * !D * RESET_B * SCD)	0.00063	0.00043	0.00067
	(CLK * !D * RESET_B * SCD)	0.00410	0.00390	0.00414
	(!CLK * D * RESET_B * SCD)	-0.00011	-0.00022	-0.00000
	(!CLK * D * RESET_B * SCD)	0.00260	0.00250	0.00271
	(!CLK * D * RESET_B * !SCD)	0.00551	0.00537	0.00551
	(!CLK * D * RESET_B * !SCD)	0.00728	0.00715	0.00730
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00011	-0.00023	-0.00002
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00248	0.00236	0.00257
	(!CLK * !D * RESET_B * SCD)	0.00373	0.00353	0.00373
	(!CLK * !D * RESET_B * SCD)	0.00728	0.00708	0.00728

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00013	-0.00022	-0.00002
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00258	0.00249	0.00270
	(CLK * D * RESET_B * !SCD)	0.00230	0.00215	0.00229
	(CLK * D * RESET_B * !SCD)	0.00415	0.00400	0.00415
	(CLK * !D * RESET_B * SCD)	0.00060	0.00040	0.00064
	(CLK * !D * RESET_B * SCD)	0.00410	0.00389	0.00413
	(!CLK * D * RESET_B * SCD)	-0.00013	-0.00023	-0.00001
	(!CLK * D * RESET_B * SCD)	0.00259	0.00249	0.00270
	(!CLK * D * RESET_B * !SCD)	0.00553	0.00540	0.00554
	(!CLK * D * RESET_B * !SCD)	0.00729	0.00716	0.00730
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00012	-0.00023	-0.00002
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00248	0.00236	0.00257
	(!CLK * !D * RESET_B * SCD)	0.00354	0.00334	0.00354
	(!CLK * !D * RESET_B * SCD)	0.00711	0.00692	0.00712

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * D * SCD * SCE * !Q)**	0.00477	0.00467	0.00467
	(CLK * D * SCD * SCE * !Q)	0.00026	0.00015	0.00014
	(CLK * D * SCD * !SCE * !Q)	0.00467	0.00457	0.00458
	(CLK * D * SCD * !SCE * !Q)	0.00030	0.00019	0.00021
	(CLK * D * !SCD * SCE * !Q)	0.00147	0.00148	0.00147
	(CLK * D * !SCD * SCE * !Q)	-0.00190	-0.00191	-0.00190
	(CLK * D * !SCD * !SCE * !Q)	0.00450	0.00440	0.00441
	(CLK * D * !SCD * !SCE * !Q)	0.00031	0.00019	0.00021
	(CLK * !D * SCD * SCE * !Q)	0.00508	0.00500	0.00496
	(CLK * !D * SCD * SCE * !Q)	0.00052	0.00042	0.00040
	(CLK * !D * SCD * !SCE * !Q)	0.00145	0.00145	0.00145
	(CLK * !D * SCD * !SCE * !Q)	-0.00192	-0.00191	-0.00191
	(CLK * !D * !SCD * SCE * !Q)	0.00147	0.00148	0.00147
	(CLK * !D * !SCD * SCE * !Q)	-0.00190	-0.00191	-0.00190
	(CLK * !D * !SCD * !SCE * !Q)	0.00146	0.00147	0.00145
	(CLK * !D * !SCD * !SCE * !Q)	-0.00192	-0.00192	-0.00191
	(!CLK * D * SCD * SCE * !Q)	0.00816	0.00796	0.00785
	(!CLK * D * SCD * SCE * !Q)	0.00357	0.00335	0.00324
	(!CLK * D * SCD * !SCE * !Q)	0.00807	0.00784	0.00775
	(!CLK * D * SCD * !SCE * !Q)	0.00362	0.00339	0.00331
	(!CLK * D * !SCD * SCE * !Q)	0.00148	0.00148	0.00148
	(!CLK * D * !SCD * SCE * !Q)	-0.00190	-0.00189	-0.00189
	(!CLK * D * !SCD * !SCE * !Q)	0.00789	0.00766	0.00758
	(!CLK * D * !SCD * !SCE * !Q)	0.00362	0.00340	0.00330
	(!CLK * !D * SCD * SCE * !Q)	0.00847	0.00827	0.00814
	(!CLK * !D * SCD * SCE * !Q)	0.00384	0.00363	0.00350
	(!CLK * !D * SCD * !SCE * !Q)	0.00146	0.00146	0.00146
	(!CLK * !D * SCD * !SCE * !Q)	-0.00191	-0.00190	-0.00190
	(!CLK * !D * !SCD * SCE * !Q)	0.00148	0.00149	0.00148
	(!CLK * !D * !SCD * SCE * !Q)	-0.00190	-0.00190	-0.00189
	(!CLK * !D * !SCD * !SCE * !Q)	0.00147	0.00147	0.00146
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00191	-0.00191	-0.00191

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00441	0.00432	0.00432
	(CLK * D * SCD * SCE * !Q)	-0.00009	-0.00020	-0.00019
	(CLK * D * SCD * !SCE * !Q)	0.00424	0.00413	0.00415
	(CLK * D * SCD * !SCE * !Q)	-0.00011	-0.00022	-0.00019
	(CLK * D * !SCD * SCE * !Q)	0.00148	0.00149	0.00147
	(CLK * D * !SCD * SCE * !Q)	-0.00192	-0.00192	-0.00191
	(CLK * D * !SCD * !SCE * !Q)	0.00407	0.00397	0.00399
	(CLK * D * !SCD * !SCE * !Q)	-0.00011	-0.00022	-0.00020
	(CLK * !D * SCD * SCE * !Q)	0.00472	0.00463	0.00461
	(CLK * !D * SCD * SCE * !Q)	0.00018	0.00008	0.00005
	(CLK * !D * SCD * !SCE * !Q)	0.00146	0.00146	0.00145
	(CLK * !D * SCD * !SCE * !Q)	-0.00193	-0.00193	-0.00192
	(CLK * !D * !SCD * SCE * !Q)	0.00148	0.00149	0.00147
	(CLK * !D * !SCD * SCE * !Q)	-0.00192	-0.00192	-0.00191
	(CLK * !D * !SCD * !SCE * !Q)	0.00146	0.00147	0.00146
	(CLK * !D * !SCD * !SCE * !Q)	-0.00193	-0.00194	-0.00193
	(!CLK * D * SCD * SCE * !Q)	0.00796	0.00775	0.00764
	(!CLK * D * SCD * SCE * !Q)	0.00339	0.00317	0.00305
	(!CLK * D * SCD * !SCE * !Q)	0.00779	0.00756	0.00749
	(!CLK * D * SCD * !SCE * !Q)	0.00337	0.00314	0.00305
	(!CLK * D * !SCD * SCE * !Q)	0.00147	0.00148	0.00147
	(!CLK * D * !SCD * SCE * !Q)	-0.00192	-0.00192	-0.00191
	(!CLK * D * !SCD * !SCE * !Q)	0.00762	0.00739	0.00730
	(!CLK * D * !SCD * !SCE * !Q)	0.00337	0.00314	0.00305
	(!CLK * !D * SCD * SCE * !Q)	0.00827	0.00807	0.00792
	(!CLK * !D * SCD * SCE * !Q)	0.00365	0.00344	0.00331
	(!CLK * !D * SCD * !SCE * !Q)	0.00145	0.00146	0.00145
	(!CLK * !D * SCD * !SCE * !Q)	-0.00193	-0.00193	-0.00193
	(!CLK * !D * !SCD * SCE * !Q)	0.00147	0.00147	0.00147
	(!CLK * !D * !SCD * SCE * !Q)	-0.00192	-0.00192	-0.00191
	(!CLK * !D * !SCD * !SCE * !Q)	0.00146	0.00146	0.00145
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00194	-0.00194	-0.00193

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00442	0.00433	0.00433
	(CLK * D * SCD * SCE * !Q)	-0.00005	-0.00017	-0.00017
	(CLK * D * SCD * !SCE * !Q)	0.00426	0.00416	0.00417
	(CLK * D * SCD * !SCE * !Q)	-0.00008	-0.00020	-0.00017
	(CLK * D * !SCD * SCE * !Q)	0.00146	0.00146	0.00145
	(CLK * D * !SCD * SCE * !Q)	-0.00191	-0.00191	-0.00190
	(CLK * D * !SCD * !SCE * !Q)	0.00409	0.00398	0.00400
	(CLK * D * !SCD * !SCE * !Q)	-0.00007	-0.00019	-0.00017
	(CLK * !D * SCD * SCE * !Q)	0.00474	0.00464	0.00461
	(CLK * !D * SCD * SCE * !Q)	0.00022	0.00011	0.00008
	(CLK * !D * SCD * !SCE * !Q)	0.00144	0.00144	0.00143
	(CLK * !D * SCD * !SCE * !Q)	-0.00192	-0.00192	-0.00191
	(CLK * !D * !SCD * SCE * !Q)	0.00145	0.00146	0.00145
	(CLK * !D * !SCD * SCE * !Q)	-0.00190	-0.00191	-0.00190
	(CLK * !D * !SCD * !SCE * !Q)	0.00144	0.00145	0.00144
	(CLK * !D * !SCD * !SCE * !Q)	-0.00192	-0.00192	-0.00191
	(!CLK * D * SCD * SCE * !Q)	0.00793	0.00773	0.00763
	(!CLK * D * SCD * SCE * !Q)	0.00339	0.00316	0.00305
	(!CLK * D * SCD * !SCE * !Q)	0.00777	0.00754	0.00747
	(!CLK * D * SCD * !SCE * !Q)	0.00336	0.00313	0.00304
	(!CLK * D * !SCD * SCE * !Q)	0.00145	0.00145	0.00144
	(!CLK * D * !SCD * SCE * !Q)	-0.00191	-0.00191	-0.00191
	(!CLK * D * !SCD * !SCE * !Q)	0.00760	0.00737	0.00729
	(!CLK * D * !SCD * !SCE * !Q)	0.00336	0.00313	0.00304
	(!CLK * !D * SCD * SCE * !Q)	0.00824	0.00805	0.00791
	(!CLK * !D * SCD * SCE * !Q)	0.00365	0.00344	0.00330
	(!CLK * !D * SCD * !SCE * !Q)	0.00143	0.00143	0.00142
	(!CLK * !D * SCD * !SCE * !Q)	-0.00192	-0.00192	-0.00192
	(!CLK * !D * !SCD * SCE * !Q)	0.00145	0.00146	0.00144
	(!CLK * !D * !SCD * SCE * !Q)	-0.00191	-0.00192	-0.00191
	(!CLK * !D * !SCD * !SCE * !Q)	0.00143	0.00143	0.00143
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00193	-0.00192	-0.00192

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * D * SCD * SCE * !Q)**	0.00030	0.00018	0.00029
	(CLK * D * SCD * SCE * !Q)	0.00484	0.00471	0.00481
	(CLK * D * SCD * !SCE * !Q)	-0.00010	-0.00023	-0.00013
	(CLK * D * SCD * !SCE * !Q)	0.00428	0.00416	0.00425
	(CLK * D * !SCD * SCE * !Q)	-0.00145	-0.00148	-0.00147
	(CLK * D * !SCD * SCE * !Q)	0.00192	0.00192	0.00190
	(CLK * D * !SCD * !SCE * !Q)	-0.00023	-0.00035	-0.00024
	(CLK * D * !SCD * !SCE * !Q)	0.00397	0.00385	0.00397
	(CLK * !D * SCD * SCE * !Q)	0.00012	-0.00000	0.00013
	(CLK * !D * SCD * SCE * !Q)	0.00469	0.00457	0.00469
	(CLK * !D * SCD * !SCE * !Q)	-0.00142	-0.00145	-0.00145
	(CLK * !D * SCD * !SCE * !Q)	0.00193	0.00193	0.00191
	(CLK * !D * !SCD * SCE * !Q)	-0.00145	-0.00148	-0.00147
	(CLK * !D * !SCD * SCE * !Q)	0.00192	0.00192	0.00190
	(CLK * !D * !SCD * !SCE * !Q)	-0.00142	-0.00147	-0.00145
	(CLK * !D * !SCD * !SCE * !Q)	0.00194	0.00193	0.00191
	(!CLK * D * SCD * SCE * !Q)	0.00346	0.00318	0.00309
	(!CLK * D * SCD * SCE * !Q)	0.00807	0.00778	0.00770
	(!CLK * D * SCD * !SCE * !Q)	0.00306	0.00276	0.00268
	(!CLK * D * SCD * !SCE * !Q)	0.00752	0.00722	0.00713
	(!CLK * D * !SCD * SCE * !Q)	-0.00145	-0.00148	-0.00148
	(!CLK * D * !SCD * SCE * !Q)	0.00191	0.00191	0.00190
	(!CLK * D * !SCD * !SCE * !Q)	0.00294	0.00265	0.00257
	(!CLK * D * !SCD * !SCE * !Q)	0.00721	0.00693	0.00685
	(!CLK * !D * SCD * SCE * !Q)	0.00328	0.00300	0.00293
	(!CLK * !D * SCD * SCE * !Q)	0.00793	0.00764	0.00757
	(!CLK * !D * SCD * !SCE * !Q)	-0.00142	-0.00146	-0.00146
	(!CLK * !D * SCD * !SCE * !Q)	0.00192	0.00192	0.00190
	(!CLK * !D * !SCD * SCE * !Q)	-0.00145	-0.00149	-0.00148
	(!CLK * !D * !SCD * SCE * !Q)	0.00191	0.00192	0.00190
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00143	-0.00147	-0.00146
	(!CLK * !D * !SCD * !SCE * !Q)	0.00193	0.00192	0.00191

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00025	0.00014	0.00025
	(CLK * D * SCD * SCE * !Q)	0.00477	0.00465	0.00476
	(CLK * D * SCD * !SCE * !Q)	-0.00011	-0.00024	-0.00012
	(CLK * D * SCD * !SCE * !Q)	0.00426	0.00414	0.00423
	(CLK * D * !SCD * SCE * !Q)	-0.00145	-0.00148	-0.00147
	(CLK * D * !SCD * SCE * !Q)	0.00193	0.00193	0.00192
	(CLK * D * !SCD * !SCE * !Q)	-0.00024	-0.00036	-0.00023
	(CLK * D * !SCD * !SCE * !Q)	0.00395	0.00384	0.00396
	(CLK * !D * SCD * SCE * !Q)	0.00007	-0.00005	0.00010
	(CLK * !D * SCD * SCE * !Q)	0.00462	0.00450	0.00463
	(CLK * !D * SCD * !SCE * !Q)	-0.00142	-0.00146	-0.00145
	(CLK * !D * SCD * !SCE * !Q)	0.00195	0.00194	0.00192
	(CLK * !D * !SCD * SCE * !Q)	-0.00145	-0.00148	-0.00147
	(CLK * !D * !SCD * SCE * !Q)	0.00193	0.00193	0.00192
	(CLK * !D * !SCD * !SCE * !Q)	-0.00143	-0.00147	-0.00146
	(CLK * !D * !SCD * !SCE * !Q)	0.00195	0.00194	0.00193
	(!CLK * D * SCD * SCE * !Q)	0.00370	0.00341	0.00332
	(!CLK * D * SCD * SCE * !Q)	0.00828	0.00799	0.00790
	(!CLK * D * SCD * !SCE * !Q)	0.00333	0.00303	0.00294
	(!CLK * D * SCD * !SCE * !Q)	0.00777	0.00747	0.00737
	(!CLK * D * !SCD * SCE * !Q)	-0.00145	-0.00148	-0.00147
	(!CLK * D * !SCD * SCE * !Q)	0.00193	0.00193	0.00192
	(!CLK * D * !SCD * !SCE * !Q)	0.00321	0.00292	0.00283
	(!CLK * D * !SCD * !SCE * !Q)	0.00747	0.00718	0.00710
	(!CLK * !D * SCD * SCE * !Q)	0.00352	0.00322	0.00316
	(!CLK * !D * SCD * SCE * !Q)	0.00814	0.00785	0.00778
	(!CLK * !D * SCD * !SCE * !Q)	-0.00142	-0.00146	-0.00145
	(!CLK * !D * SCD * !SCE * !Q)	0.00195	0.00194	0.00193
	(!CLK * !D * !SCD * SCE * !Q)	-0.00144	-0.00147	-0.00147
	(!CLK * !D * !SCD * SCE * !Q)	0.00193	0.00193	0.00192
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00142	-0.00146	-0.00145
	(!CLK * !D * !SCD * !SCE * !Q)	0.00195	0.00195	0.00193

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00026	0.00014	0.00026
	(CLK * D * SCD * SCE * !Q)	0.00477	0.00464	0.00475
	(CLK * D * SCD * !SCE * !Q)	-0.00010	-0.00023	-0.00012
	(CLK * D * SCD * !SCE * !Q)	0.00425	0.00413	0.00422
	(CLK * D * !SCD * SCE * !Q)	-0.00142	-0.00146	-0.00145
	(CLK * D * !SCD * SCE * !Q)	0.00192	0.00192	0.00191
	(CLK * D * !SCD * !SCE * !Q)	-0.00023	-0.00035	-0.00023
	(CLK * D * !SCD * !SCE * !Q)	0.00394	0.00383	0.00394
	(CLK * !D * SCD * SCE * !Q)	0.00005	-0.00007	0.00008
	(CLK * !D * SCD * SCE * !Q)	0.00459	0.00447	0.00459
	(CLK * !D * SCD * !SCE * !Q)	-0.00140	-0.00144	-0.00143
	(CLK * !D * SCD * !SCE * !Q)	0.00193	0.00193	0.00191
	(CLK * !D * !SCD * SCE * !Q)	-0.00142	-0.00146	-0.00145
	(CLK * !D * !SCD * SCE * !Q)	0.00192	0.00192	0.00191
	(CLK * !D * !SCD * !SCE * !Q)	-0.00140	-0.00145	-0.00144
	(CLK * !D * !SCD * !SCE * !Q)	0.00194	0.00193	0.00191
	(!CLK * D * SCD * SCE * !Q)	0.00356	0.00327	0.00319
	(!CLK * D * SCD * SCE * !Q)	0.00813	0.00785	0.00776
	(!CLK * D * SCD * !SCE * !Q)	0.00320	0.00290	0.00281
	(!CLK * D * SCD * !SCE * !Q)	0.00762	0.00733	0.00724
	(!CLK * D * !SCD * SCE * !Q)	-0.00142	-0.00145	-0.00144
	(!CLK * D * !SCD * SCE * !Q)	0.00192	0.00192	0.00191
	(!CLK * D * !SCD * !SCE * !Q)	0.00307	0.00278	0.00270
	(!CLK * D * !SCD * !SCE * !Q)	0.00732	0.00703	0.00696
	(!CLK * !D * SCD * SCE * !Q)	0.00335	0.00306	0.00300
	(!CLK * !D * SCD * SCE * !Q)	0.00796	0.00767	0.00762
	(!CLK * !D * SCD * !SCE * !Q)	-0.00139	-0.00143	-0.00142
	(!CLK * !D * SCD * !SCE * !Q)	0.00194	0.00193	0.00192
	(!CLK * !D * !SCD * SCE * !Q)	-0.00142	-0.00146	-0.00144
	(!CLK * !D * !SCD * SCE * !Q)	0.00192	0.00193	0.00191
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00140	-0.00143	-0.00143
	(!CLK * !D * !SCD * !SCE * !Q)	0.00194	0.00194	0.00192

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	(D * RESET_B * SCD * SCE * Q)	0.00658	0.00631	0.00634
	(D * RESET_B * SCD * SCE * Q)	0.00457	0.00430	0.00432
	(D * RESET_B * SCD * !SCE * Q)	0.00658	0.00631	0.00634
	(D * RESET_B * SCD * !SCE * Q)	0.00457	0.00430	0.00433
	(D * RESET_B * !SCD * !SCE * Q)	0.00658	0.00631	0.00634
	(D * RESET_B * !SCD * !SCE * Q)	0.00457	0.00430	0.00433
	(D * !SCD * SCE * !Q)	0.00679	0.00652	0.00654
	(D * !SCD * SCE * !Q)	0.00477	0.00450	0.00453
	(D * !RESET_B * SCD * SCE * !Q)	0.00679	0.00652	0.00655
	(D * !RESET_B * SCD * SCE * !Q)	0.00477	0.00451	0.00453
	(D * !RESET_B * SCD * !SCE * !Q)	0.00678	0.00652	0.00655
	(D * !RESET_B * SCD * !SCE * !Q)	0.00477	0.00451	0.00453
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00678	0.00652	0.00655
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00477	0.00451	0.00453
	(!D * RESET_B * SCD * SCE * Q)	0.00658	0.00632	0.00634
	(!D * RESET_B * SCD * SCE * Q)	0.00457	0.00430	0.00433
	(!D * !SCE * !Q)	0.00679	0.00652	0.00654
	(!D * !SCE * !Q)	0.00477	0.00450	0.00453
	(!D * !SCD * SCE * !Q)	0.00679	0.00652	0.00654
	(!D * !SCD * SCE * !Q)	0.00477	0.00450	0.00453
	(!D * !RESET_B * SCD * SCE * !Q)	0.00679	0.00652	0.00654
	(!D * !RESET_B * SCD * SCE * !Q)	0.00477	0.00451	0.00454

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00657	0.00630	0.00632
	(D * RESET_B * SCD * SCE * Q)	0.00454	0.00427	0.00429
	(D * RESET_B * SCD * !SCE * Q)	0.00657	0.00630	0.00632
	(D * RESET_B * SCD * !SCE * Q)	0.00454	0.00427	0.00429
	(D * RESET_B * !SCD * !SCE * Q)	0.00657	0.00630	0.00632
	(D * RESET_B * !SCD * !SCE * Q)	0.00454	0.00427	0.00429
	(D * !SCD * SCE * !Q)	0.00680	0.00653	0.00656
	(D * !SCD * SCE * !Q)	0.00477	0.00450	0.00453
	(D * !RESET_B * SCD * SCE * !Q)	0.00680	0.00653	0.00656
	(D * !RESET_B * SCD * SCE * !Q)	0.00477	0.00450	0.00453
	(D * !RESET_B * SCD * !SCE * !Q)	0.00680	0.00653	0.00656
	(D * !RESET_B * SCD * !SCE * !Q)	0.00477	0.00450	0.00453
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00680	0.00653	0.00656
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00477	0.00450	0.00453
	(!D * RESET_B * SCD * SCE * Q)	0.00657	0.00630	0.00632
	(!D * RESET_B * SCD * SCE * Q)	0.00454	0.00427	0.00429
	(!D * !SCE * !Q)	0.00680	0.00653	0.00656
	(!D * !SCE * !Q)	0.00477	0.00450	0.00453
	(!D * !SCD * SCE * !Q)	0.00680	0.00653	0.00656
	(!D * !SCD * SCE * !Q)	0.00477	0.00450	0.00453
	(!D * !RESET_B * SCD * SCE * !Q)	0.00680	0.00653	0.00656
	(!D * !RESET_B * SCD * SCE * !Q)	0.00477	0.00450	0.00453

sky130_fd_sc_hs__sdfrtp_4	(D * RESET_B * SCD * SCE * Q)	0.00647	0.00621	0.00623
	(D * RESET_B * SCD * SCE * Q)	0.00445	0.00418	0.00421
	(D * RESET_B * SCD * !SCE * Q)	0.00647	0.00621	0.00623
	(D * RESET_B * SCD * !SCE * Q)	0.00445	0.00418	0.00421
	(D * RESET_B * !SCD * !SCE * Q)	0.00647	0.00621	0.00624
	(D * RESET_B * !SCD * !SCE * Q)	0.00445	0.00418	0.00421
	(D * !SCD * SCE * !Q)	0.00670	0.00643	0.00646
	(D * !SCD * SCE * !Q)	0.00467	0.00440	0.00443
	(D * !RESET_B * SCD * SCE * !Q)	0.00670	0.00643	0.00646
	(D * !RESET_B * SCD * SCE * !Q)	0.00467	0.00441	0.00444
	(D * !RESET_B * SCD * !SCE * !Q)	0.00669	0.00643	0.00646
	(D * !RESET_B * SCD * !SCE * !Q)	0.00467	0.00441	0.00444
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00669	0.00643	0.00646
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00467	0.00441	0.00444
	(!D * RESET_B * SCD * SCE * Q)	0.00647	0.00621	0.00624
	(!D * RESET_B * SCD * SCE * Q)	0.00445	0.00418	0.00421
	(!D * !SCE * !Q)	0.00670	0.00643	0.00646
	(!D * !SCE * !Q)	0.00467	0.00440	0.00443
	(!D * !SCD * SCE * !Q)	0.00670	0.00643	0.00646
	(!D * !SCD * SCE * !Q)	0.00467	0.00440	0.00443
	(!D * !RESET_B * SCD * SCE * !Q)	0.00670	0.00643	0.00646
	(!D * !RESET_B * SCD * SCE * !Q)	0.00467	0.00441	0.00444

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(D * RESET_B * SCD * SCE * Q)**	0.00359	0.00339	0.00350
	(D * RESET_B * SCD * SCE * Q)	0.00560	0.00539	0.00551
	(D * RESET_B * SCD * SCE * !Q)	0.00655	0.00631	0.00632
	(D * RESET_B * SCD * SCE * !Q)	0.00847	0.00822	0.00824
	(D * RESET_B * SCD * !SCE * Q)	0.00359	0.00338	0.00350
	(D * RESET_B * SCD * !SCE * Q)	0.00560	0.00539	0.00551
	(D * RESET_B * SCD * !SCE * !Q)	0.00652	0.00628	0.00629
	(D * RESET_B * SCD * !SCE * !Q)	0.00844	0.00819	0.00822
	(D * RESET_B * !SCD * SCE * Q)	0.00680	0.00662	0.00693
	(D * RESET_B * !SCD * SCE * Q)	0.00891	0.00873	0.00905
	(D * RESET_B * !SCD * !SCE * Q)	0.00359	0.00339	0.00350
	(D * RESET_B * !SCD * !SCE * Q)	0.00560	0.00539	0.00551
	(D * RESET_B * !SCD * !SCE * !Q)	0.00652	0.00628	0.00629
	(D * RESET_B * !SCD * !SCE * !Q)	0.00843	0.00819	0.00822
	(D * !SCD * SCE * !Q)	0.00335	0.00314	0.00325
	(D * !SCD * SCE * !Q)	0.00536	0.00515	0.00527
	(D * !RESET_B * SCD * SCE * !Q)	0.00335	0.00315	0.00325
	(D * !RESET_B * SCD * SCE * !Q)	0.00536	0.00515	0.00527
	(D * !RESET_B * SCD * !SCE * !Q)	0.00335	0.00315	0.00325
	(D * !RESET_B * SCD * !SCE * !Q)	0.00536	0.00515	0.00527
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00335	0.00315	0.00325
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00536	0.00515	0.00527
	(!D * RESET_B * SCD * SCE * Q)	0.00359	0.00339	0.00350
	(!D * RESET_B * SCD * SCE * Q)	0.00560	0.00539	0.00551
	(!D * RESET_B * SCD * SCE * !Q)	0.00658	0.00633	0.00635
	(!D * RESET_B * SCD * SCE * !Q)	0.00848	0.00824	0.00826
	(!D * RESET_B * !SCE * Q)	0.00678	0.00660	0.00691
	(!D * RESET_B * !SCE * Q)	0.00888	0.00870	0.00902
	(!D * RESET_B * !SCD * SCE * Q)	0.00679	0.00661	0.00692
	(!D * RESET_B * !SCD * SCE * Q)	0.00890	0.00871	0.00904
	(!D * !SCE * !Q)	0.00335	0.00314	0.00325
	(!D * !SCE * !Q)	0.00536	0.00515	0.00527
	(!D * !SCD * SCE * !Q)	0.00335	0.00314	0.00325
	(!D * !SCD * SCE * !Q)	0.00536	0.00515	0.00527
	(!D * !RESET_B * SCD * SCE * !Q)	0.00335	0.00315	0.00325
	(!D * !RESET_B * SCD * SCE * !Q)	0.00536	0.00515	0.00527

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00360	0.00339	0.00350
	(D * RESET_B * SCD * SCE * Q)	0.00562	0.00541	0.00554
	(D * RESET_B * SCD * SCE * !Q)	0.00671	0.00647	0.00647
	(D * RESET_B * SCD * SCE * !Q)	0.00865	0.00840	0.00841
	(D * RESET_B * SCD * !SCE * Q)	0.00360	0.00339	0.00350
	(D * RESET_B * SCD * !SCE * Q)	0.00562	0.00541	0.00554
	(D * RESET_B * SCD * !SCE * !Q)	0.00667	0.00643	0.00644
	(D * RESET_B * SCD * !SCE * !Q)	0.00861	0.00837	0.00839
	(D * RESET_B * !SCD * SCE * Q)	0.00708	0.00691	0.00721
	(D * RESET_B * !SCD * SCE * Q)	0.00920	0.00903	0.00934
	(D * RESET_B * !SCD * !SCE * Q)	0.00360	0.00339	0.00350
	(D * RESET_B * !SCD * !SCE * Q)	0.00562	0.00541	0.00554
	(D * RESET_B * !SCD * !SCE * !Q)	0.00667	0.00643	0.00644
	(D * RESET_B * !SCD * !SCE * !Q)	0.00861	0.00837	0.00839
	(D * !SCD * SCE * !Q)	0.00336	0.00316	0.00326
	(D * !SCD * SCE * !Q)	0.00539	0.00518	0.00529
	(D * !RESET_B * SCD * SCE * !Q)	0.00336	0.00316	0.00327
	(D * !RESET_B * SCD * SCE * !Q)	0.00539	0.00518	0.00529
	(D * !RESET_B * SCD * !SCE * !Q)	0.00336	0.00316	0.00327
	(D * !RESET_B * SCD * !SCE * !Q)	0.00539	0.00518	0.00529
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00336	0.00316	0.00327
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00539	0.00518	0.00529
	(!D * RESET_B * SCD * SCE * Q)	0.00360	0.00339	0.00350
	(!D * RESET_B * SCD * SCE * Q)	0.00562	0.00541	0.00554
	(!D * RESET_B * SCD * SCE * !Q)	0.00673	0.00649	0.00650
	(!D * RESET_B * SCD * SCE * !Q)	0.00866	0.00842	0.00843
	(!D * RESET_B * !SCE * Q)	0.00707	0.00689	0.00720
	(!D * RESET_B * !SCE * Q)	0.00917	0.00900	0.00931
	(!D * RESET_B * !SCD * SCE * Q)	0.00708	0.00690	0.00721
	(!D * RESET_B * !SCD * SCE * Q)	0.00919	0.00901	0.00933
	(!D * !SCE * !Q)	0.00336	0.00316	0.00326
	(!D * !SCE * !Q)	0.00539	0.00518	0.00529
	(!D * !SCD * SCE * !Q)	0.00336	0.00316	0.00326
	(!D * !SCD * SCE * !Q)	0.00539	0.00518	0.00529
	(!D * !RESET_B * SCD * SCE * !Q)	0.00336	0.00316	0.00327
	(!D * !RESET_B * SCD * SCE * !Q)	0.00539	0.00518	0.00529

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00358	0.00338	0.00349
	(D * RESET_B * SCD * SCE * Q)	0.00560	0.00540	0.00552
	(D * RESET_B * SCD * SCE * !Q)	0.00664	0.00640	0.00641
	(D * RESET_B * SCD * SCE * !Q)	0.00857	0.00833	0.00835
	(D * RESET_B * SCD * !SCE * Q)	0.00358	0.00338	0.00349
	(D * RESET_B * SCD * !SCE * Q)	0.00560	0.00540	0.00552
	(D * RESET_B * SCD * !SCE * !Q)	0.00660	0.00636	0.00637
	(D * RESET_B * SCD * !SCE * !Q)	0.00853	0.00829	0.00831
	(D * RESET_B * !SCD * SCE * Q)	0.00690	0.00671	0.00703
	(D * RESET_B * !SCD * SCE * Q)	0.00903	0.00884	0.00916
	(D * RESET_B * !SCD * !SCE * Q)	0.00358	0.00338	0.00349
	(D * RESET_B * !SCD * !SCE * Q)	0.00560	0.00540	0.00552
	(D * RESET_B * !SCD * !SCE * !Q)	0.00660	0.00636	0.00637
	(D * RESET_B * !SCD * !SCE * !Q)	0.00853	0.00829	0.00831
	(D * !SCD * SCE * !Q)	0.00332	0.00312	0.00322
	(D * !SCD * SCE * !Q)	0.00534	0.00514	0.00525
	(D * !RESET_B * SCD * SCE * !Q)	0.00332	0.00312	0.00323
	(D * !RESET_B * SCD * SCE * !Q)	0.00534	0.00514	0.00526
	(D * !RESET_B * SCD * !SCE * !Q)	0.00332	0.00312	0.00323
	(D * !RESET_B * SCD * !SCE * !Q)	0.00534	0.00514	0.00526
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00332	0.00312	0.00323
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00534	0.00514	0.00526
	(!D * RESET_B * SCD * SCE * Q)	0.00358	0.00338	0.00349
	(!D * RESET_B * SCD * SCE * Q)	0.00560	0.00540	0.00552
	(!D * RESET_B * SCD * SCE * !Q)	0.00666	0.00642	0.00643
	(!D * RESET_B * SCD * SCE * !Q)	0.00858	0.00834	0.00836
	(!D * RESET_B * !SCE * Q)	0.00688	0.00670	0.00701
	(!D * RESET_B * !SCE * Q)	0.00899	0.00881	0.00913
	(!D * RESET_B * !SCD * SCE * Q)	0.00689	0.00671	0.00702
	(!D * RESET_B * !SCD * SCE * Q)	0.00901	0.00883	0.00915
	(!D * !SCE * !Q)	0.00332	0.00312	0.00322
	(!D * !SCE * !Q)	0.00534	0.00514	0.00525
	(!D * !SCD * SCE * !Q)	0.00332	0.00311	0.00322
	(!D * !SCD * SCE * !Q)	0.00534	0.00514	0.00525
	(!D * !RESET_B * SCD * SCE * !Q)	0.00332	0.00312	0.00323
	(!D * !RESET_B * SCD * SCE * !Q)	0.00534	0.00514	0.00526

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT	
D	**SCD**	**SCE**	**SET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfsbp_1	47.95200
sky130_fd_sc_hs__sdfsbp_2	59.14080

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	**SCD**	**SCE**	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfsbp_1	0.00179	0.00196	0.00379	0.00325	0.00276	0.43249	0.41414
sky130_fd_sc_hs__sdfsbp_2	0.00185	0.00190	0.00398	0.00332	0.00279	0.88126	0.87394

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.13163	0.19076
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.14317	0.25106

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RR)	0.75214	1.69411	9.07911
	SET_B->Q (FR)	0.72668	1.91675	12.29870
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.74696	1.55157	9.24347
	SET_B->Q (FR)	0.99662	2.01501	12.89710

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.54574	1.05849	3.74343
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.62828	1.13716	4.04853

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q_N (RR)	0.46211	1.46288	8.86606
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.47259	1.33195	9.00193

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q_N (RF)	0.59685	1.26038	3.91248
	SET_B->Q_N (FF)	0.56886	1.48468	7.29183
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.54477	1.16712	4.12290
	SET_B->Q_N (FF)	0.72152	1.66249	7.92805

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.15585	-0.29520	-1.66930
	setup	CLK (R)	0.31118	0.39421	1.75879
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19563	-0.32783	-1.73650
	setup	CLK (R)	0.39682	0.46308	1.86685

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.16436	-0.32162	-2.63911
	setup	CLK (R)	0.95702	0.96452	3.42144
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18587	-0.33843	-2.59461
	setup	CLK (R)	1.15466	1.15365	3.62114

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.15585	-0.29520	-1.66930
	setup	CLK (R)	0.31118	0.39421	1.75879
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19563	-0.32783	-1.73650
	setup	CLK (R)	0.39682	0.46308	1.86685

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.16436	-0.32162	-2.63911
	setup	CLK (R)	0.95702	0.96452	3.42144
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18587	-0.33843	-2.59461
	setup	CLK (R)	1.15466	1.15365	3.62114

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.18641	-0.31506	-1.91559
	setup	CLK (R)	0.34416	0.41290	1.99278
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.22456	-0.34633	-1.94544
	setup	CLK (R)	0.42796	0.48250	2.05843

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.22372	-0.41285	-3.47871
	setup	CLK (R)	1.11977	1.16548	4.07678
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.24088	-0.42957	-3.44190
	setup	CLK (R)	1.32105	1.36116	4.23188

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.18641	-0.31506	-1.91559
	hold	CLK (R)	-0.18821	-0.31824	-1.92271
	setup	CLK (R)	0.34416	0.41198	1.98445
	setup	CLK (R)	0.34391	0.41290	1.99278
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.22456	-0.34633	-1.94544
	hold	CLK (R)	-0.22539	-0.34870	-1.95217
	setup	CLK (R)	0.42796	0.48029	2.04863
	setup	CLK (R)	0.42397	0.48250	2.05843

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.23704	-0.43325	-3.50447
	hold	CLK (R)	-0.22372	-0.41285	-3.47871
	setup	CLK (R)	1.09944	1.14758	4.05798
	setup	CLK (R)	1.11977	1.16548	4.07678
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.25326	-0.44561	-3.46253
	hold	CLK (R)	-0.24088	-0.42957	-3.44190
	setup	CLK (R)	1.30567	1.34079	4.21629
	setup	CLK (R)	1.32105	1.36116	4.23188

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.16752	-0.30817	-0.60796
	setup	CLK (R)	1.07369	1.02694	1.83996
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.20320	-0.32966	-0.51187
	setup	CLK (R)	1.27719	1.22168	1.94415

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.19658	-0.37978	-2.78007
	setup	CLK (R)	0.98760	1.03232	3.79749
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.21563	-0.39347	-2.72130
	setup	CLK (R)	1.18245	1.21518	3.97899

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.21175	-0.32067	-0.60796
	hold	CLK (R)	-0.16752	-0.30817	-1.75258
	setup	CLK (R)	1.07369	1.02694	0.97380
	setup	CLK (R)	0.32239	0.40339	1.83996
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.22494	-0.32966	-0.51187
	hold	CLK (R)	-0.20320	-0.34070	-1.81679
	setup	CLK (R)	1.27719	1.22168	1.00511
	setup	CLK (R)	0.40578	0.47596	1.94415

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.32250	-0.52795	-2.78007
	hold	CLK (R)	-0.19658	-0.37978	-3.19592
	setup	CLK (R)	0.47651	0.62270	2.82155
	setup	CLK (R)	0.98760	1.03232	3.79749
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.35699	-0.55603	-2.72130
	hold	CLK (R)	-0.21563	-0.39347	-3.17660
	setup	CLK (R)	0.55957	0.69163	2.78564
	setup	CLK (R)	1.18245	1.21518	3.97899

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	recovery	CLK (R)	-0.21553	-0.28007	-0.84417
	removal	CLK (R)	0.25599	0.31610	0.88201
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.28994	-0.37080	-1.15591
	removal	CLK (R)	0.32674	0.40059	1.25454

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	recovery	CLK (R)	-0.21554	-0.28007	-0.84417
	recovery	CLK (R)	-0.21553	-0.28007	-0.84450
	recovery	CLK (R)	-0.21567	-0.28024	-0.84662
	removal	CLK (R)	0.25447	0.31610	0.88201
	removal	CLK (R)	0.25599	0.31610	0.88201
	removal	CLK (R)	0.25518	0.31610	0.88102
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.28996	-0.37187	-1.15607
	recovery	CLK (R)	-0.28994	-0.37190	-1.15609
	recovery	CLK (R)	-0.29010	-0.37080	-1.15591
	removal	CLK (R)	0.32674	0.40059	1.25454
	removal	CLK (R)	0.32674	0.40059	1.25454
	removal	CLK (R)	0.32674	0.40059	1.25361

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	min_pulse_width	SET_B ()	0.57161	1.22083	16.50020
	min_pulse_width	SET_B ()	0.57955	1.26008	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.64142	1.25223	16.50020
	min_pulse_width	SET_B ()	0.81355	1.49554	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	min_pulse_width	CLK ()	0.50560	0.98145	16.50020
	min_pulse_width	CLK ()	0.20639	0.98145	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.48758	0.98145	16.50020
	min_pulse_width	CLK ()	0.24605	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	min_pulse_width	CLK ()	0.46234	0.98145	16.50020
	min_pulse_width	CLK ()	0.96312	1.04816	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.58851	0.98145	16.50020
	min_pulse_width	CLK ()	1.22646	1.29147	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00686	0.00683	0.00684
	CLK	0.00591	0.00588	0.00588
	SET_B	0.00644	0.00651	0.00652
	SET_B	0.00749	0.00756	0.00742
sky130_fd_sc_hs__sdfsbp_2	CLK	0.00960	0.00968	0.00975
	CLK	0.00860	0.00870	0.00870
	SET_B	0.00893	0.00912	0.00949
	SET_B	0.01002	0.01021	0.01003

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00728	0.00725	0.00722
	CLK	0.00627	0.00624	0.00620
sky130_fd_sc_hs__sdfsbp_2	CLK	0.00970	0.00983	0.00985
	CLK	0.00870	0.00883	0.00881

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00731	0.00726	0.00736
	CLK	0.00629	0.00627	0.00634
sky130_fd_sc_hs__sdfsbp_2	CLK	0.00973	0.00986	0.01004
	CLK	0.00873	0.00886	0.00902

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00685	0.00682	0.00673
	CLK	0.00590	0.00587	0.00577
	SET_B	0.00642	0.00649	0.00646
	SET_B	0.00747	0.00753	0.00730
sky130_fd_sc_hs__sdfsbp_2	CLK	0.00957	0.00966	0.00955
	CLK	0.00858	0.00867	0.00851
	SET_B	0.00890	0.00909	0.00899
	SET_B	0.00999	0.01018	0.00983

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00055	0.00055	0.00055
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCE)	0.00194	0.00183	0.00193
	(CLK * !SCE)	0.00052	0.00041	0.00051
	(CLK * !SCD * SCE)	0.00032	0.00032	0.00031
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00058
	(!CLK * SCD * SCE)	0.00055	0.00055	0.00055
	(!CLK * SCD * SCE)	-0.00030	-0.00030	-0.00029
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00510	0.00502	0.00500
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00352	0.00343	0.00341
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00404	0.00397	0.00398
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00240	0.00233	0.00235
	(!CLK * !SCD * SCE)	0.00032	0.00031	0.00031
	(!CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00058

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00059	0.00059	0.00059
	(CLK * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !SCE)	0.00203	0.00192	0.00201
	(CLK * !SCE)	0.00058	0.00047	0.00056
	(CLK * !SCD * SCE)	0.00033	0.00033	0.00032
	(CLK * !SCD * SCE)	-0.00057	-0.00058	-0.00059
	(!CLK * SCD * SCE)	0.00059	0.00059	0.00059
	(!CLK * SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00569	0.00562	0.00558
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00415	0.00408	0.00404
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00466	0.00460	0.00460
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00307	0.00300	0.00300
	(!CLK * !SCD * SCE)	0.00033	0.00033	0.00032
	(!CLK * !SCD * SCE)	-0.00057	-0.00058	-0.00059

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00051	-0.00053	-0.00055
	(CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(CLK * !SCE)	0.00042	0.00035	0.00055
	(CLK * !SCE)	0.00184	0.00177	0.00197
	(CLK * !SCD * SCE)	-0.00030	-0.00030	-0.00030
	(CLK * !SCD * SCE)	0.00058	0.00058	0.00058
	(!CLK * SCD * SCE)	-0.00051	-0.00053	-0.00055
	(!CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00335	0.00327	0.00339
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00494	0.00485	0.00498
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00203	0.00195	0.00209
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00367	0.00359	0.00373
	(!CLK * !SCD * SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * !SCD * SCE)	0.00058	0.00058	0.00058

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00055	-0.00057	-0.00058
	(CLK * SCD * SCE)	0.00031	0.00031	0.00029
	(CLK * !SCE)	0.00050	0.00042	0.00062
	(CLK * !SCE)	0.00195	0.00187	0.00206
	(CLK * !SCD * SCE)	-0.00031	-0.00031	-0.00031
	(CLK * !SCD * SCE)	0.00059	0.00059	0.00059
	(!CLK * SCD * SCE)	-0.00055	-0.00056	-0.00058
	(!CLK * SCD * SCE)	0.00031	0.00031	0.00029
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00431	0.00423	0.00434
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00586	0.00577	0.00588
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00293	0.00284	0.00296
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00453	0.00444	0.00456
	(!CLK * !SCD * SCE)	-0.00031	-0.00032	-0.00032
	(!CLK * !SCD * SCE)	0.00059	0.00059	0.00059

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00269	0.00260	0.00258
	(CLK * D * SCE)	0.00075	0.00066	0.00065
	(CLK * !D * SCE)	0.00300	0.00292	0.00287
	(CLK * !D * SCE)	0.00102	0.00093	0.00090
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00578	0.00570	0.00563
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00368	0.00360	0.00352
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00472	0.00466	0.00461
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00257	0.00250	0.00245
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00609	0.00602	0.00591
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00395	0.00387	0.00377
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00503	0.00497	0.00490
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00283	0.00277	0.00270
	!SCE	0.00065	0.00061	0.00060
	!SCE	-0.00050	-0.00054	-0.00055

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00270	0.00262	0.00261
	(CLK * D * SCE)	0.00080	0.00072	0.00071
	(CLK * !D * SCE)	0.00301	0.00294	0.00290
	(CLK * !D * SCE)	0.00106	0.00099	0.00096
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00631	0.00625	0.00618
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00431	0.00425	0.00418
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00528	0.00522	0.00519
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00323	0.00317	0.00313
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00662	0.00656	0.00647
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00458	0.00452	0.00443
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00559	0.00554	0.00548
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00349	0.00344	0.00338
	!SCE	0.00061	0.00057	0.00056
	!SCE	-0.00051	-0.00055	-0.00055

Passive power(pJ) for SCD falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00086	0.00078	0.00077
	(CLK * D * SCE)	0.00280	0.00272	0.00270
	(CLK * !D * SCE)	0.00068	0.00060	0.00061
	(CLK * !D * SCE)	0.00266	0.00258	0.00258
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00384	0.00377	0.00373
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00595	0.00589	0.00582
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00253	0.00246	0.00243
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00469	0.00462	0.00457
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00366	0.00359	0.00357
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00581	0.00574	0.00571
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00235	0.00227	0.00227
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00455	0.00448	0.00446
	!SCE	-0.00058	-0.00060	-0.00060
	!SCE	0.00055	0.00055	0.00055

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00097	0.00089	0.00088
	(CLK * D * SCE)	0.00288	0.00281	0.00278
	(CLK * !D * SCE)	0.00078	0.00071	0.00072
	(CLK * !D * SCE)	0.00273	0.00266	0.00266
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00482	0.00476	0.00472
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00682	0.00677	0.00671
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00343	0.00337	0.00334
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00550	0.00544	0.00539
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00464	0.00457	0.00456
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00668	0.00662	0.00659
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00325	0.00319	0.00318
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00536	0.00530	0.00527
	!SCE	-0.00054	-0.00056	-0.00056
	!SCE	0.00055	0.00056	0.00056

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00239	0.00221	0.00229
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00016	-0.00036	-0.00027
	(CLK * D * !SCD)	0.00367	0.00350	0.00353
	(CLK * D * !SCD)	0.00183	0.00166	0.00167
	(CLK * !D * SCD)	0.00421	0.00397	0.00409
	(CLK * !D * SCD)	0.00105	0.00079	0.00093
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00239	0.00221	0.00229
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00016	-0.00036	-0.00027
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00651	0.00640	0.00645
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00484	0.00472	0.00475
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00519	0.00509	0.00513
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00358	0.00346	0.00348
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00738	0.00714	0.00717
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00403	0.00380	0.00385
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00632	0.00610	0.00616
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00292	0.00270	0.00279
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00235	0.00220	0.00229
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00006	-0.00022	-0.00013

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00251	0.00231	0.00240
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00014	-0.00034	-0.00025
	(CLK * D * !SCD)	0.00385	0.00369	0.00372
	(CLK * D * !SCD)	0.00193	0.00176	0.00176
	(CLK * !D * SCD)	0.00438	0.00413	0.00424
	(CLK * !D * SCD)	0.00111	0.00085	0.00098
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00251	0.00232	0.00240
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00014	-0.00034	-0.00026
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00756	0.00747	0.00752
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00574	0.00562	0.00566
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00618	0.00608	0.00613
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00441	0.00429	0.00433
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00805	0.00781	0.00783
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00468	0.00445	0.00448
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00702	0.00679	0.00685
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00360	0.00337	0.00344
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00243	0.00227	0.00236
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00008	-0.00024	-0.00016

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00008	-0.00017	0.00005
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00246	0.00239	0.00260
	(CLK * D * !SCD)	0.00187	0.00173	0.00187
	(CLK * D * !SCD)	0.00371	0.00357	0.00371
	(CLK * !D * SCD)	0.00063	0.00045	0.00070
	(CLK * !D * SCD)	0.00379	0.00362	0.00387
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00008	-0.00017	0.00005
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00246	0.00238	0.00260
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00501	0.00490	0.00503
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00668	0.00659	0.00671
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00394	0.00384	0.00398
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00557	0.00547	0.00562
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00356	0.00338	0.00359
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00689	0.00671	0.00693
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00224	0.00206	0.00229
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00562	0.00545	0.00567
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00007	-0.00003	0.00018
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00248	0.00238	0.00260

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00016	-0.00026	-0.00004
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00247	0.00239	0.00260
	(CLK * D * !SCD)	0.00182	0.00167	0.00182
	(CLK * D * !SCD)	0.00376	0.00360	0.00375
	(CLK * !D * SCD)	0.00071	0.00052	0.00076
	(CLK * !D * SCD)	0.00397	0.00379	0.00402
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00016	-0.00026	-0.00004
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00247	0.00239	0.00261
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00545	0.00535	0.00549
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00730	0.00720	0.00733
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00443	0.00432	0.00447
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00621	0.00611	0.00627
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00452	0.00434	0.00454
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00788	0.00770	0.00789
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00313	0.00295	0.00316
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00655	0.00637	0.00658
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00002	-0.00008	0.00013
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00253	0.00243	0.00264

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(CLK * Q * !Q_N)	0.00118	0.00120	0.00119
	(CLK * Q * !Q_N)	-0.00099	-0.00100	-0.00099
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00126	0.00127	0.00127
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00091	-0.00092	-0.00091
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00231	0.00227	0.00228
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00005	-0.00001	0.00001
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00121	0.00122	0.00121
	(CLK * Q * !Q_N)	-0.00103	-0.00104	-0.00103
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00126	0.00127	0.00126
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00098	-0.00098	-0.00098
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00244	0.00240	0.00241
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00011	0.00005	0.00007

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(CLK * Q * !Q_N)	-0.00117	-0.00119	-0.00119
	(CLK * Q * !Q_N)	0.00100	0.00100	0.00100
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00125	-0.00127	-0.00127
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00092	0.00092	0.00092
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00000	-0.00005	0.00001
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00227	0.00221	0.00227
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00119	-0.00121	-0.00121
	(CLK * Q * !Q_N)	0.00104	0.00104	0.00104
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00124	-0.00126	-0.00126
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00099	0.00099	0.00098
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00010	-0.00015	-0.00010
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00224	0.00217	0.00224

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(D * SCD * SCE * Q * !Q_N)	0.00663	0.00636	0.00638
	(D * SCD * SCE * Q * !Q_N)	0.00467	0.00439	0.00441
	(D * !SCE * Q * !Q_N)	0.00663	0.00636	0.00638
	(D * !SCE * Q * !Q_N)	0.00467	0.00439	0.00441
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00663	0.00634	0.00635
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00467	0.00438	0.00438
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01123	0.01102	0.01125
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00905	0.00884	0.00906
	(!D * SCD * SCE * Q * !Q_N)	0.00663	0.00636	0.00638
	(!D * SCD * SCE * Q * !Q_N)	0.00467	0.00439	0.00441
	(!D * !SCE * SET_B * !Q * Q_N)	0.00663	0.00634	0.00635
	(!D * !SCE * SET_B * !Q * Q_N)	0.00467	0.00438	0.00438
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01123	0.01102	0.01125
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00905	0.00884	0.00906
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00663	0.00635	0.00635
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00467	0.00438	0.00438
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01127	0.01104	0.01125
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00909	0.00885	0.00906

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00867	0.00836	0.00832
	(D * SCD * SCE * Q * !Q_N)	0.00667	0.00637	0.00632
	(D * !SCE * Q * !Q_N)	0.00866	0.00836	0.00832
	(D * !SCE * Q * !Q_N)	0.00667	0.00637	0.00632
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00861	0.00830	0.00825
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00663	0.00631	0.00626
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01708	0.01689	0.01731
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01493	0.01475	0.01517
	(!D * SCD * SCE * Q * !Q_N)	0.00867	0.00836	0.00832
	(!D * SCD * SCE * Q * !Q_N)	0.00667	0.00637	0.00632
	(!D * !SCE * SET_B * !Q * Q_N)	0.00861	0.00830	0.00825
	(!D * !SCE * SET_B * !Q * Q_N)	0.00663	0.00631	0.00626
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01708	0.01689	0.01731
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01493	0.01475	0.01517
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00861	0.00830	0.00825
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00663	0.00631	0.00626
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01713	0.01692	0.01731
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01498	0.01478	0.01517

Passive power(pJ) for CLK falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfsbp_1	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.00699	0.00676	0.00675
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.00879	0.00855	0.00855
	(D * SCD * SCE * Q * !Q_N)	0.00388	0.00369	0.00380
	(D * SCD * SCE * Q * !Q_N)	0.00584	0.00565	0.00576
	(D * !SCE * SET_B * !Q * Q_N)	0.00696	0.00673	0.00672
	(D * !SCE * SET_B * !Q * Q_N)	0.00876	0.00853	0.00853
	(D * !SCE * Q * !Q_N)	0.00388	0.00369	0.00380
	(D * !SCE * Q * !Q_N)	0.00584	0.00565	0.00576
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.00756	0.00739	0.00765
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.00971	0.00953	0.00980
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00395	0.00376	0.00384
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00592	0.00572	0.00581
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00621	0.00603	0.00629
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00840	0.00821	0.00848
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.00701	0.00678	0.00678
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.00881	0.00857	0.00857
	(!D * SCD * SCE * Q * !Q_N)	0.00388	0.00369	0.00380
	(!D * SCD * SCE * Q * !Q_N)	0.00584	0.00565	0.00576
	(!D * !SCE * SET_B * Q * !Q_N)	0.00754	0.00737	0.00764
	(!D * !SCE * SET_B * Q * !Q_N)	0.00967	0.00950	0.00978
	(!D * !SCE * SET_B * !Q * Q_N)	0.00395	0.00376	0.00384
	(!D * !SCE * SET_B * !Q * Q_N)	0.00592	0.00572	0.00581
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00621	0.00603	0.00629
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00840	0.00821	0.00848
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.00756	0.00738	0.00765
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.00970	0.00952	0.00979
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00396	0.00376	0.00384
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00592	0.00572	0.00581
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00622	0.00604	0.00630
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00840	0.00822	0.00848

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.00830	0.00804	0.00799
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01020	0.00993	0.00989
	(D * SCD * SCE * Q * !Q_N)	0.00463	0.00440	0.00447
	(D * SCD * SCE * Q * !Q_N)	0.00662	0.00639	0.00646
	(D * !SCE * SET_B * !Q * Q_N)	0.00827	0.00801	0.00797
	(D * !SCE * SET_B * !Q * Q_N)	0.01017	0.00991	0.00987
	(D * !SCE * Q * !Q_N)	0.00463	0.00440	0.00447
	(D * !SCE * Q * !Q_N)	0.00662	0.00639	0.00646
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.00948	0.00924	0.00949
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01158	0.01133	0.01159
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00477	0.00454	0.00460
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00676	0.00653	0.00658
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00800	0.00777	0.00804
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01014	0.00991	0.01019
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.00833	0.00806	0.00802
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01022	0.00995	0.00991
	(!D * SCD * SCE * Q * !Q_N)	0.00463	0.00440	0.00447
	(!D * SCD * SCE * Q * !Q_N)	0.00662	0.00639	0.00646
	(!D * !SCE * SET_B * Q * !Q_N)	0.00947	0.00922	0.00947
	(!D * !SCE * SET_B * Q * !Q_N)	0.01155	0.01130	0.01156
	(!D * !SCE * SET_B * !Q * Q_N)	0.00477	0.00454	0.00460
	(!D * !SCE * SET_B * !Q * Q_N)	0.00676	0.00653	0.00658
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00801	0.00778	0.00804
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01016	0.00992	0.01019
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.00948	0.00923	0.00949
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01157	0.01132	0.01158
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00477	0.00454	0.00460
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00676	0.00653	0.00658
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00802	0.00778	0.00805
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01016	0.00992	0.01019

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	SET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	1
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfstp_1	46.35360
sky130_fd_sc_hs__sdfstp_2	49.55040
sky130_fd_sc_hs__sdfstp_4	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	SET_B	CLK	Q
sky130_fd_sc_hs__sdfstp_1	0.00177	0.00197	0.00377	0.00316	0.00275	0.43411
sky130_fd_sc_hs__sdfstp_2	0.00177	0.00193	0.00377	0.00326	0.00275	0.86312
sky130_fd_sc_hs__sdfstp_4	0.00178	0.00197	0.00383	0.00327	0.00274	1.68591

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.12348	0.17992
sky130_fd_sc_hs__sdfstp_2	0.00000	0.12688	0.24554
sky130_fd_sc_hs__sdfstp_4	0.00000	0.18029	0.26638

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RR)	0.60690	1.56767	8.96566
	SET_B->Q (FR)	0.61397	1.82166	12.04190
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.50155	1.32293	8.82145
	SET_B->Q (FR)	0.70819	1.76858	12.22220
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.56971	1.29169	8.98130
	SET_B->Q (FR)	0.80016	1.75938	12.49320

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.52542	1.03891	3.73157
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.57336	1.07542	3.88100
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.57688	1.06049	3.95126

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.16268	-0.29775	-1.67094
	setup	CLK (R)	0.32142	0.39809	1.75254
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18801	-0.32277	-1.74267
	setup	CLK (R)	0.40805	0.46711	1.89888
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.18899	-0.32726	-1.76716
	setup	CLK (R)	0.38927	0.45588	1.89789

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.13587	-0.28704	-2.52841
	setup	CLK (R)	0.92930	0.93846	3.38166
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12537	-0.27140	-2.38199
	setup	CLK (R)	1.08091	1.08646	3.57789
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14150	-0.29571	-2.47020
	setup	CLK (R)	1.09046	1.09288	3.60679

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.16268	-0.29775	-1.67094
	setup	CLK (R)	0.32142	0.39809	1.75254
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18801	-0.32277	-1.74267
	setup	CLK (R)	0.40805	0.46711	1.89888
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.18899	-0.32726	-1.76716
	setup	CLK (R)	0.38927	0.45588	1.89789

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.13587	-0.28704	-2.52841
	setup	CLK (R)	0.92930	0.93846	3.38166
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12537	-0.27140	-2.38199
	setup	CLK (R)	1.08091	1.08646	3.57789
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14150	-0.29571	-2.47020
	setup	CLK (R)	1.09046	1.09288	3.60679

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.19161	-0.32033	-1.91695
	setup	CLK (R)	0.35656	0.41999	1.99062
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.21838	-0.34320	-1.96917
	setup	CLK (R)	0.44488	0.48974	2.09842
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.21959	-0.34487	-1.98443
	setup	CLK (R)	0.42569	0.47862	2.09736

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.19211	-0.38388	-3.39457
	setup	CLK (R)	1.09099	1.13789	4.04484
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18290	-0.36722	-3.30127
	setup	CLK (R)	1.24838	1.29070	4.20638
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.20013	-0.38688	-3.38125
	setup	CLK (R)	1.25415	1.29801	4.22796

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.19161	-0.32088	-1.91695
	hold	CLK (R)	-0.19343	-0.32033	-1.92714
	setup	CLK (R)	0.35656	0.41999	1.98087
	setup	CLK (R)	0.35260	0.41891	1.99062
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.21838	-0.34320	-1.96917
	hold	CLK (R)	-0.22407	-0.34596	-1.97627
	setup	CLK (R)	0.44488	0.48643	2.09090
	setup	CLK (R)	0.44397	0.48974	2.09842
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.21959	-0.34487	-1.98443
	hold	CLK (R)	-0.22040	-0.34658	-1.99132
	setup	CLK (R)	0.42569	0.47535	2.09127
	setup	CLK (R)	0.42450	0.47862	2.09736

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.20432	-0.39944	-3.42755
	hold	CLK (R)	-0.19211	-0.38388	-3.39457
	setup	CLK (R)	1.07349	1.11729	4.02905
	setup	CLK (R)	1.09099	1.13789	4.04484
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.19104	-0.38214	-3.34262
	hold	CLK (R)	-0.18290	-0.36722	-3.30127
	setup	CLK (R)	1.23081	1.27011	4.18639
	setup	CLK (R)	1.24838	1.29070	4.20638
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.21017	-0.40116	-3.41402
	hold	CLK (R)	-0.20013	-0.38688	-3.38125
	setup	CLK (R)	1.23441	1.27703	4.21147
	setup	CLK (R)	1.25415	1.29801	4.22796

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.17233	-0.28505	-0.58160
	setup	CLK (R)	1.04473	1.00025	1.83205
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16860	-0.26928	-0.50848
	setup	CLK (R)	1.20272	1.15290	1.97232
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.18403	-0.29152	-0.53387
	setup	CLK (R)	1.20679	1.15610	1.97080

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.16689	-0.35006	-2.79583
	setup	CLK (R)	0.95798	0.99858	3.76617
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.15976	-0.33543	-2.78988
	setup	CLK (R)	1.11339	1.14941	3.93592
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17620	-0.35516	-2.79380
	setup	CLK (R)	1.11962	1.15827	3.97249

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.17793	-0.28505	-0.58160
	hold	CLK (R)	-0.17233	-0.30932	-1.75309
	setup	CLK (R)	1.04473	1.00025	0.96279
	setup	CLK (R)	0.33413	0.41098	1.83205
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16860	-0.26928	-0.50848
	hold	CLK (R)	-0.19976	-0.33596	-1.82253
	setup	CLK (R)	1.20272	1.15290	1.03800
	setup	CLK (R)	0.42084	0.47918	1.97232
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.18403	-0.29152	-0.53387
	hold	CLK (R)	-0.19893	-0.33845	-1.84087
	setup	CLK (R)	1.20679	1.15610	1.04839
	setup	CLK (R)	0.40271	0.46891	1.97080

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.33062	-0.53120	-2.79583
	hold	CLK (R)	-0.16689	-0.35006	-3.10763
	setup	CLK (R)	0.49073	0.62852	2.83266
	setup	CLK (R)	0.95798	0.99858	3.76617
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.35808	-0.55736	-2.78988
	hold	CLK (R)	-0.15976	-0.33543	-3.02227
	setup	CLK (R)	0.57642	0.69836	2.85933
	setup	CLK (R)	1.11339	1.14941	3.93592
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.35734	-0.55443	-2.79380
	hold	CLK (R)	-0.17620	-0.35516	-3.11492
	setup	CLK (R)	0.55805	0.68544	2.85572
	setup	CLK (R)	1.11962	1.15827	3.97249

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	recovery	CLK (R)	-0.22434	-0.29517	-0.89463
	removal	CLK (R)	0.26115	0.32191	0.96032
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.29655	-0.36534	-1.00786
	removal	CLK (R)	0.32525	0.38432	1.30970
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.28729	-0.35798	-1.02052
	removal	CLK (R)	0.31225	0.37676	1.24991

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	recovery	CLK (R)	-0.22445	-0.29518	-0.89737
	recovery	CLK (R)	-0.22445	-0.29517	-0.89738
	recovery	CLK (R)	-0.22434	-0.29647	-0.89463
	removal	CLK (R)	0.26115	0.32191	0.96032
	removal	CLK (R)	0.26115	0.32191	0.96032
	removal	CLK (R)	0.25963	0.32191	0.96032
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.29655	-0.36534	-1.00884
	recovery	CLK (R)	-0.29655	-0.36534	-1.00884
	recovery	CLK (R)	-0.29929	-0.36534	-1.00786
	removal	CLK (R)	0.32178	0.38432	1.30970
	removal	CLK (R)	0.32178	0.38432	1.30970
	removal	CLK (R)	0.32525	0.38432	1.30775
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.28730	-0.35799	-1.02076
	recovery	CLK (R)	-0.28729	-0.35798	-1.02077
	recovery	CLK (R)	-0.28782	-0.35824	-1.02052
	removal	CLK (R)	0.31225	0.37676	1.24991
	removal	CLK (R)	0.31225	0.37676	1.24991
	removal	CLK (R)	0.31225	0.37676	1.24893

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	min_pulse_width	SET_B ()	0.50579	1.15412	16.50020
	min_pulse_width	SET_B ()	0.47089	1.15804	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.52638	1.14234	16.50020
	min_pulse_width	SET_B ()	0.55950	1.24045	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.53830	1.15019	16.50020
	min_pulse_width	SET_B ()	0.61483	1.29147	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	min_pulse_width	CLK ()	0.37582	0.98145	16.50020
	min_pulse_width	CLK ()	0.19918	0.98145	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.28210	0.98145	16.50020
	min_pulse_width	CLK ()	0.22442	0.98145	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.32536	0.98145	16.50020
	min_pulse_width	CLK ()	0.22442	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	min_pulse_width	CLK ()	0.46595	0.98145	16.50020
	min_pulse_width	CLK ()	0.94116	1.03246	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.59212	0.98145	16.50020
	min_pulse_width	CLK ()	1.14309	1.21298	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.56688	0.98145	16.50020
	min_pulse_width	CLK ()	1.12834	1.19729	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.01229	0.01207	0.01200
	CLK	0.01045	0.01022	0.01017
	SET_B	0.01126	0.01121	0.01088
	SET_B	0.01333	0.01328	0.01294
sky130_fd_sc_hs__sdfstp_2	CLK	0.01520	0.01507	0.01496
	CLK	0.01336	0.01324	0.01317
	SET_B	0.01459	0.01473	0.01426
	SET_B	0.01669	0.01684	0.01638
sky130_fd_sc_hs__sdfstp_4	CLK	0.01797	0.01812	0.01811
	CLK	0.01617	0.01628	0.01641
	SET_B	0.01739	0.01777	0.01741
	SET_B	0.01952	0.01991	0.01961

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.01331	0.01311	0.01321
	CLK	0.01129	0.01110	0.01116
sky130_fd_sc_hs__sdfstp_2	CLK	0.01626	0.01623	0.01634
	CLK	0.01427	0.01426	0.01434
sky130_fd_sc_hs__sdfstp_4	CLK	0.01930	0.01963	0.01999
	CLK	0.01727	0.01761	0.01770

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00054	0.00055	0.00055
	(CLK * SCD * SCE)	-0.00029	-0.00030	-0.00029
	(CLK * !SCE)	0.00196	0.00186	0.00195
	(CLK * !SCE)	0.00055	0.00044	0.00054
	(CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00057
	(!CLK * SCD * SCE)	0.00054	0.00055	0.00055
	(!CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !SCE * SET_B)	0.00494	0.00486	0.00484
	(!CLK * !SCE * SET_B)	0.00340	0.00332	0.00329
	(!CLK * !SCE * !SET_B * Q)	0.00394	0.00388	0.00389
	(!CLK * !SCE * !SET_B * Q)	0.00236	0.00229	0.00230
	(!CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(!CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00057
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00054	0.00054	0.00055
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCE)	0.00194	0.00183	0.00193
	(CLK * !SCE)	0.00053	0.00042	0.00052
	(CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00058
	(!CLK * SCD * SCE)	0.00054	0.00055	0.00054
	(!CLK * SCD * SCE)	-0.00030	-0.00030	-0.00029
	(!CLK * !SCE * SET_B)	0.00562	0.00554	0.00552
	(!CLK * !SCE * SET_B)	0.00401	0.00394	0.00391
	(!CLK * !SCE * !SET_B * Q)	0.00456	0.00451	0.00450
	(!CLK * !SCE * !SET_B * Q)	0.00291	0.00285	0.00285
	(!CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(!CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00057

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00054	0.00055	0.00054
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCE)	0.00201	0.00191	0.00200
	(CLK * !SCE)	0.00060	0.00049	0.00059
	(CLK * !SCD * SCE)	0.00032	0.00031	0.00030
	(CLK * !SCD * SCE)	-0.00056	-0.00056	-0.00057
	(!CLK * SCD * SCE)	0.00054	0.00055	0.00054
	(!CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !SCE * SET_B)	0.00557	0.00550	0.00547
	(!CLK * !SCE * SET_B)	0.00400	0.00393	0.00390
	(!CLK * !SCE * !SET_B * Q)	0.00453	0.00448	0.00447
	(!CLK * !SCE * !SET_B * Q)	0.00292	0.00286	0.00286
	(!CLK * !SCD * SCE)	0.00032	0.00031	0.00030
	(!CLK * !SCD * SCE)	-0.00056	-0.00056	-0.00057

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00051	-0.00052	-0.00054
	(CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(CLK * !SCE)	0.00037	0.00029	0.00050
	(CLK * !SCE)	0.00178	0.00171	0.00191
	(CLK * !SCD * SCE)	-0.00029	-0.00030	-0.00030
	(CLK * !SCD * SCE)	0.00057	0.00058	0.00057
	(!CLK * SCD * SCE)	-0.00051	-0.00052	-0.00054
	(!CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(!CLK * !SCE * SET_B)	0.00331	0.00323	0.00336
	(!CLK * !SCE * SET_B)	0.00487	0.00478	0.00491
	(!CLK * !SCE * !SET_B * Q)	0.00209	0.00200	0.00214
	(!CLK * !SCE * !SET_B * Q)	0.00368	0.00359	0.00373
	(!CLK * !SCD * SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * !SCD * SCE)	0.00058	0.00058	0.00057
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00051	-0.00052	-0.00054
	(CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(CLK * !SCE)	0.00039	0.00032	0.00052
	(CLK * !SCE)	0.00180	0.00173	0.00193
	(CLK * !SCD * SCE)	-0.00029	-0.00030	-0.00029
	(CLK * !SCD * SCE)	0.00058	0.00058	0.00058
	(!CLK * SCD * SCE)	-0.00051	-0.00052	-0.00054
	(!CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(!CLK * !SCE * SET_B)	0.00385	0.00377	0.00389
	(!CLK * !SCE * SET_B)	0.00546	0.00538	0.00550
	(!CLK * !SCE * !SET_B * Q)	0.00256	0.00248	0.00261
	(!CLK * !SCE * !SET_B * Q)	0.00422	0.00414	0.00426
	(!CLK * !SCD * SCE)	-0.00029	-0.00030	-0.00030
	(!CLK * !SCD * SCE)	0.00058	0.00058	0.00057

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00051	-0.00052	-0.00054
	(CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(CLK * !SCE)	0.00046	0.00037	0.00058
	(CLK * !SCE)	0.00186	0.00179	0.00199
	(CLK * !SCD * SCE)	-0.00030	-0.00030	-0.00030
	(CLK * !SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK * SCD * SCE)	-0.00051	-0.00052	-0.00054
	(!CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(!CLK * !SCE * SET_B)	0.00390	0.00382	0.00394
	(!CLK * !SCE * SET_B)	0.00547	0.00539	0.00551
	(!CLK * !SCE * !SET_B * Q)	0.00263	0.00255	0.00268
	(!CLK * !SCE * !SET_B * Q)	0.00424	0.00417	0.00429
	(!CLK * !SCD * SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * !SCD * SCE)	0.00057	0.00057	0.00057

Passive power(pJ) for SCD rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00270	0.00262	0.00260
	(CLK * D * SCE)	0.00077	0.00068	0.00066
	(CLK * !D * SCE)	0.00301	0.00294	0.00289
	(CLK * !D * SCE)	0.00104	0.00095	0.00091
	(!CLK * D * SCE * SET_B)	0.00562	0.00554	0.00547
	(!CLK * D * SCE * SET_B)	0.00355	0.00347	0.00340
	(!CLK * D * SCE * !SET_B * Q)	0.00462	0.00456	0.00451
	(!CLK * D * SCE * !SET_B * Q)	0.00251	0.00244	0.00240
	(!CLK * !D * SCE * SET_B)	0.00593	0.00585	0.00576
	(!CLK * !D * SCE * SET_B)	0.00382	0.00374	0.00365
	(!CLK * !D * SCE * !SET_B * Q)	0.00493	0.00487	0.00480
	(!CLK * !D * SCE * !SET_B * Q)	0.00278	0.00271	0.00265
	!SCE	0.00064	0.00060	0.00059
	!SCE	-0.00051	-0.00055	-0.00055
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00267	0.00258	0.00257
	(CLK * D * SCE)	0.00075	0.00066	0.00065
	(CLK * !D * SCE)	0.00298	0.00290	0.00285
	(CLK * !D * SCE)	0.00102	0.00093	0.00090
	(!CLK * D * SCE * SET_B)	0.00628	0.00622	0.00614
	(!CLK * D * SCE * SET_B)	0.00417	0.00409	0.00402
	(!CLK * D * SCE * !SET_B * Q)	0.00523	0.00517	0.00512
	(!CLK * D * SCE * !SET_B * Q)	0.00307	0.00300	0.00296
	(!CLK * !D * SCE * SET_B)	0.00659	0.00653	0.00642
	(!CLK * !D * SCE * SET_B)	0.00443	0.00436	0.00427
	(!CLK * !D * SCE * !SET_B * Q)	0.00553	0.00548	0.00541
	(!CLK * !D * SCE * !SET_B * Q)	0.00334	0.00327	0.00321
	!SCE	0.00063	0.00059	0.00058
	!SCE	-0.00051	-0.00055	-0.00055

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00275	0.00266	0.00265
	(CLK * D * SCE)	0.00082	0.00073	0.00071
	(CLK * !D * SCE)	0.00306	0.00299	0.00294
	(CLK * !D * SCE)	0.00109	0.00100	0.00096
	(!CLK * D * SCE * SET_B)	0.00625	0.00618	0.00610
	(!CLK * D * SCE * SET_B)	0.00415	0.00408	0.00400
	(!CLK * D * SCE * !SET_B * Q)	0.00521	0.00515	0.00510
	(!CLK * D * SCE * !SET_B * Q)	0.00307	0.00301	0.00296
	(!CLK * !D * SCE * SET_B)	0.00656	0.00650	0.00639
	(!CLK * !D * SCE * SET_B)	0.00442	0.00435	0.00425
	(!CLK * !D * SCE * !SET_B * Q)	0.00552	0.00547	0.00539
	(!CLK * !D * SCE * !SET_B * Q)	0.00334	0.00328	0.00321
	!SCE	0.00064	0.00060	0.00059
	!SCE	-0.00051	-0.00055	-0.00055

Passive power(pJ) for SCD falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00081	0.00073	0.00072
	(CLK * D * SCE)	0.00276	0.00267	0.00265
	(CLK * !D * SCE)	0.00063	0.00055	0.00056
	(CLK * !D * SCE)	0.00261	0.00253	0.00253
	(!CLK * D * SCE * SET_B)	0.00381	0.00373	0.00370
	(!CLK * D * SCE * SET_B)	0.00589	0.00582	0.00576
	(!CLK * D * SCE * !SET_B * Q)	0.00258	0.00251	0.00248
	(!CLK * D * SCE * !SET_B * Q)	0.00471	0.00464	0.00459
	(!CLK * !D * SCE * SET_B)	0.00363	0.00355	0.00354
	(!CLK * !D * SCE * SET_B)	0.00574	0.00568	0.00565
	(!CLK * !D * SCE * !SET_B * Q)	0.00240	0.00233	0.00232
	(!CLK * !D * SCE * !SET_B * Q)	0.00456	0.00449	0.00447
	!SCE	-0.00058	-0.00059	-0.00059
	!SCE	0.00056	0.00056	0.00056
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00087	0.00079	0.00077
	(CLK * D * SCE)	0.00279	0.00271	0.00269
	(CLK * !D * SCE)	0.00068	0.00060	0.00061
	(CLK * !D * SCE)	0.00264	0.00257	0.00257
	(!CLK * D * SCE * SET_B)	0.00437	0.00430	0.00426
	(!CLK * D * SCE * SET_B)	0.00650	0.00643	0.00637
	(!CLK * D * SCE * !SET_B * Q)	0.00309	0.00302	0.00299
	(!CLK * D * SCE * !SET_B * Q)	0.00526	0.00519	0.00514
	(!CLK * !D * SCE * SET_B)	0.00419	0.00412	0.00411
	(!CLK * !D * SCE * SET_B)	0.00635	0.00629	0.00626
	(!CLK * !D * SCE * !SET_B * Q)	0.00291	0.00284	0.00283
	(!CLK * !D * SCE * !SET_B * Q)	0.00511	0.00505	0.00502
	!SCE	-0.00056	-0.00058	-0.00058
	!SCE	0.00055	0.00056	0.00056

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00090	0.00081	0.00080
	(CLK * D * SCE)	0.00284	0.00276	0.00274
	(CLK * !D * SCE)	0.00071	0.00063	0.00065
	(CLK * !D * SCE)	0.00270	0.00262	0.00261
	(!CLK * D * SCE * SET_B)	0.00440	0.00433	0.00429
	(!CLK * D * SCE * SET_B)	0.00650	0.00643	0.00638
	(!CLK * D * SCE * !SET_B * Q)	0.00313	0.00306	0.00303
	(!CLK * D * SCE * !SET_B * Q)	0.00528	0.00521	0.00516
	(!CLK * !D * SCE * SET_B)	0.00422	0.00415	0.00413
	(!CLK * !D * SCE * SET_B)	0.00635	0.00628	0.00625
	(!CLK * !D * SCE * !SET_B * Q)	0.00295	0.00288	0.00287
	(!CLK * !D * SCE * !SET_B * Q)	0.00514	0.00507	0.00504
	!SCE	-0.00058	-0.00059	-0.00059
	!SCE	0.00055	0.00056	0.00056

Passive power(pJ) for SCE rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00240	0.00221	0.00230
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00015	-0.00034	-0.00025
	(CLK * D * !SCD)	0.00362	0.00346	0.00349
	(CLK * D * !SCD)	0.00180	0.00162	0.00163
	(CLK * !D * SCD)	0.00424	0.00399	0.00412
	(CLK * !D * SCD)	0.00108	0.00083	0.00096
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00240	0.00221	0.00230
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00015	-0.00034	-0.00025
	(!CLK * D * !SCD * SET_B)	0.00648	0.00638	0.00643
	(!CLK * D * !SCD * SET_B)	0.00479	0.00467	0.00470
	(!CLK * D * !SCD * !SET_B * Q)	0.00525	0.00515	0.00519
	(!CLK * D * !SCD * !SET_B * Q)	0.00361	0.00349	0.00351
	(!CLK * !D * SCD * SET_B)	0.00722	0.00698	0.00702
	(!CLK * !D * SCD * SET_B)	0.00392	0.00369	0.00374
	(!CLK * !D * SCD * !SET_B * Q)	0.00623	0.00600	0.00607
	(!CLK * !D * SCD * !SET_B * Q)	0.00288	0.00266	0.00275
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00236	0.00221	0.00230
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00004	-0.00020	-0.00011

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00240	0.00222	0.00230
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00015	-0.00035	-0.00025
	(CLK * D * !SCD)	0.00367	0.00351	0.00353
	(CLK * D * !SCD)	0.00183	0.00167	0.00167
	(CLK * !D * SCD)	0.00423	0.00397	0.00410
	(CLK * !D * SCD)	0.00106	0.00081	0.00094
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00240	0.00221	0.00230
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00015	-0.00034	-0.00025
	(!CLK * D * !SCD * SET_B)	0.00703	0.00693	0.00699
	(!CLK * D * !SCD * SET_B)	0.00539	0.00528	0.00532
	(!CLK * D * !SCD * !SET_B * Q)	0.00574	0.00565	0.00570
	(!CLK * D * !SCD * !SET_B * Q)	0.00416	0.00404	0.00408
	(!CLK * !D * SCD * SET_B)	0.00790	0.00767	0.00770
	(!CLK * !D * SCD * SET_B)	0.00454	0.00431	0.00435
	(!CLK * !D * SCD * !SET_B * Q)	0.00685	0.00663	0.00669
	(!CLK * !D * SCD * !SET_B * Q)	0.00344	0.00322	0.00329
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00237	0.00222	0.00231
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00004	-0.00020	-0.00011

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00242	0.00223	0.00232
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00015	-0.00035	-0.00026
	(CLK * D * !SCD)	0.00373	0.00357	0.00360
	(CLK * D * !SCD)	0.00188	0.00170	0.00171
	(CLK * !D * SCD)	0.00432	0.00407	0.00418
	(CLK * !D * SCD)	0.00113	0.00087	0.00101
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00242	0.00224	0.00232
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00015	-0.00035	-0.00026
	(!CLK * D * !SCD * SET_B)	0.00708	0.00698	0.00703
	(!CLK * D * !SCD * SET_B)	0.00540	0.00527	0.00530
	(!CLK * D * !SCD * !SET_B * Q)	0.00581	0.00572	0.00577
	(!CLK * D * !SCD * !SET_B * Q)	0.00418	0.00405	0.00408
	(!CLK * !D * SCD * SET_B)	0.00788	0.00765	0.00767
	(!CLK * !D * SCD * SET_B)	0.00453	0.00430	0.00434
	(!CLK * !D * SCD * !SET_B * Q)	0.00684	0.00662	0.00668
	(!CLK * !D * SCD * !SET_B * Q)	0.00345	0.00323	0.00330
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00239	0.00223	0.00232
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00005	-0.00021	-0.00012

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00007	-0.00016	0.00006
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00247	0.00239	0.00260
	(CLK * D * !SCD)	0.00190	0.00176	0.00190
	(CLK * D * !SCD)	0.00374	0.00360	0.00374
	(CLK * !D * SCD)	0.00058	0.00040	0.00065
	(CLK * !D * SCD)	0.00373	0.00356	0.00381
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00007	-0.00016	0.00006
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00246	0.00239	0.00261
	(!CLK * D * !SCD * SET_B)	0.00486	0.00475	0.00488
	(!CLK * D * !SCD * SET_B)	0.00656	0.00647	0.00659
	(!CLK * D * !SCD * !SET_B * Q)	0.00386	0.00376	0.00390
	(!CLK * D * !SCD * !SET_B * Q)	0.00553	0.00542	0.00557
	(!CLK * !D * SCD * SET_B)	0.00353	0.00335	0.00356
	(!CLK * !D * SCD * SET_B)	0.00682	0.00664	0.00685
	(!CLK * !D * SCD * !SET_B * Q)	0.00230	0.00212	0.00234
	(!CLK * !D * SCD * !SET_B * Q)	0.00563	0.00546	0.00568
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00007	-0.00003	0.00019
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00248	0.00238	0.00260

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00007	-0.00016	0.00006
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00247	0.00239	0.00260
	(CLK * D * !SCD)	0.00187	0.00172	0.00187
	(CLK * D * !SCD)	0.00372	0.00357	0.00372
	(CLK * !D * SCD)	0.00060	0.00042	0.00068
	(CLK * !D * SCD)	0.00375	0.00359	0.00383
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00007	-0.00016	0.00006
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00247	0.00239	0.00261
	(!CLK * D * !SCD * SET_B)	0.00553	0.00543	0.00556
	(!CLK * D * !SCD * SET_B)	0.00718	0.00708	0.00722
	(!CLK * D * !SCD * !SET_B * Q)	0.00447	0.00437	0.00452
	(!CLK * D * !SCD * !SET_B * Q)	0.00608	0.00598	0.00612
	(!CLK * !D * SCD * SET_B)	0.00406	0.00388	0.00409
	(!CLK * !D * SCD * SET_B)	0.00741	0.00725	0.00745
	(!CLK * !D * SCD * !SET_B * Q)	0.00277	0.00260	0.00282
	(!CLK * !D * SCD * !SET_B * Q)	0.00617	0.00600	0.00622
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00006	-0.00004	0.00018
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00248	0.00238	0.00260

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00009	-0.00018	0.00004
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00247	0.00239	0.00261
	(CLK * D * !SCD)	0.00192	0.00178	0.00192
	(CLK * D * !SCD)	0.00380	0.00365	0.00379
	(CLK * !D * SCD)	0.00065	0.00047	0.00072
	(CLK * !D * SCD)	0.00383	0.00366	0.00390
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00009	-0.00018	0.00004
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00248	0.00239	0.00261
	(!CLK * D * !SCD * SET_B)	0.00546	0.00536	0.00549
	(!CLK * D * !SCD * SET_B)	0.00718	0.00707	0.00720
	(!CLK * D * !SCD * !SET_B * Q)	0.00442	0.00432	0.00446
	(!CLK * D * !SCD * !SET_B * Q)	0.00609	0.00599	0.00613
	(!CLK * !D * SCD * SET_B)	0.00409	0.00392	0.00412
	(!CLK * !D * SCD * SET_B)	0.00743	0.00726	0.00747
	(!CLK * !D * SCD * !SET_B * Q)	0.00282	0.00265	0.00287
	(!CLK * !D * SCD * !SET_B * Q)	0.00621	0.00604	0.00626
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00005	-0.00005	0.00016
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00249	0.00239	0.00260

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00109	0.00110	0.00109
	(CLK * Q)	-0.00100	-0.00101	-0.00100
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00119	0.00120	0.00119
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00090	-0.00090	-0.00090
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00220	0.00217	0.00218
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00004	-0.00002	0.00000
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00121	0.00122	0.00122
	(CLK * Q)	-0.00097	-0.00097	-0.00097
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00133	0.00134	0.00134
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00086	-0.00086	-0.00086
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00232	0.00229	0.00230
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00006	-0.00000	0.00003

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00112	0.00114	0.00113
	(CLK * Q)	-0.00102	-0.00103	-0.00102
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00124	0.00124	0.00124
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00091	-0.00091	-0.00091
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00226	0.00221	0.00223
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00003	-0.00002	-0.00000

Passive power(pJ) for SET_B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00108	-0.00109	-0.00109
	(CLK * Q)	0.00101	0.00101	0.00101
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00118	-0.00120	-0.00119
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00091	0.00091	0.00091
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00001	-0.00007	-0.00001
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00216	0.00211	0.00217

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00120	-0.00122	-0.00122
	(CLK * Q)	0.00098	0.00098	0.00098
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00132	-0.00134	-0.00134
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00087	0.00087	0.00086
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00004	-0.00010	-0.00004
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00223	0.00218	0.00224
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00111	-0.00113	-0.00113
	(CLK * Q)	0.00104	0.00104	0.00103
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00122	-0.00124	-0.00124
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00092	0.00092	0.00092
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00000	-0.00006	-0.00000
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00223	0.00218	0.00223

Passive power(pJ) for CLK rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(D * SCD * SCE * Q)**	0.00668	0.00641	0.00643
	(D * SCD * SCE * Q)	0.00475	0.00448	0.00450
	(D * !SCE * Q)	0.00668	0.00640	0.00643
	(D * !SCE * Q)	0.00475	0.00448	0.00449
	(D * !SCD * SCE * SET_B * !Q)	0.00662	0.00634	0.00634
	(D * !SCD * SCE * SET_B * !Q)	0.00469	0.00441	0.00441
	(D * !SCD * SCE * !SET_B * Q)	0.01123	0.01103	0.01126
	(D * !SCD * SCE * !SET_B * Q)	0.00912	0.00892	0.00915
	(!D * SCD * SCE * Q)	0.00668	0.00640	0.00643
	(!D * SCD * SCE * Q)	0.00475	0.00448	0.00450
	(!D * !SCE * SET_B * !Q)	0.00662	0.00634	0.00634
	(!D * !SCE * SET_B * !Q)	0.00469	0.00441	0.00441
	(!D * !SCE * !SET_B * Q)	0.01123	0.01103	0.01126
	(!D * !SCE * !SET_B * Q)	0.00912	0.00892	0.00915
	(!D * !SCD * SCE * SET_B * !Q)	0.00662	0.00634	0.00635
	(!D * !SCD * SCE * SET_B * !Q)	0.00469	0.00441	0.00441
	(!D * !SCD * SCE * !SET_B * Q)	0.01126	0.01104	0.01125
	(!D * !SCD * SCE * !SET_B * Q)	0.00916	0.00893	0.00914

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.00767	0.00739	0.00737
	(D * SCD * SCE * Q)	0.00576	0.00548	0.00546
	(D * !SCE * Q)	0.00767	0.00739	0.00737
	(D * !SCE * Q)	0.00576	0.00548	0.00546
	(D * !SCD * SCE * SET_B * !Q)	0.00784	0.00756	0.00753
	(D * !SCD * SCE * SET_B * !Q)	0.00592	0.00563	0.00560
	(D * !SCD * SCE * !SET_B * Q)	0.01548	0.01528	0.01567
	(D * !SCD * SCE * !SET_B * Q)	0.01335	0.01315	0.01354
	(!D * SCD * SCE * Q)	0.00767	0.00739	0.00737
	(!D * SCD * SCE * Q)	0.00576	0.00548	0.00546
	(!D * !SCE * SET_B * !Q)	0.00784	0.00756	0.00753
	(!D * !SCE * SET_B * !Q)	0.00592	0.00563	0.00560
	(!D * !SCE * !SET_B * Q)	0.01548	0.01528	0.01569
	(!D * !SCE * !SET_B * Q)	0.01335	0.01315	0.01356
	(!D * !SCD * SCE * SET_B * !Q)	0.00785	0.00756	0.00752
	(!D * !SCD * SCE * SET_B * !Q)	0.00593	0.00563	0.00561
	(!D * !SCD * SCE * !SET_B * Q)	0.01553	0.01530	0.01567
	(!D * !SCD * SCE * !SET_B * Q)	0.01340	0.01317	0.01354

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.00757	0.00730	0.00729
	(D * SCD * SCE * Q)	0.00566	0.00538	0.00537
	(D * !SCE * Q)	0.00757	0.00730	0.00728
	(D * !SCE * Q)	0.00566	0.00538	0.00537
	(D * !SCD * SCE * SET_B * !Q)	0.00778	0.00749	0.00746
	(D * !SCD * SCE * SET_B * !Q)	0.00585	0.00557	0.00555
	(D * !SCD * SCE * !SET_B * Q)	0.01511	0.01493	0.01535
	(D * !SCD * SCE * !SET_B * Q)	0.01301	0.01283	0.01325
	(!D * SCD * SCE * Q)	0.00757	0.00730	0.00728
	(!D * SCD * SCE * Q)	0.00566	0.00538	0.00537
	(!D * !SCE * SET_B * !Q)	0.00777	0.00749	0.00746
	(!D * !SCE * SET_B * !Q)	0.00585	0.00557	0.00555
	(!D * !SCE * !SET_B * Q)	0.01511	0.01493	0.01535
	(!D * !SCE * !SET_B * Q)	0.01301	0.01283	0.01325
	(!D * !SCD * SCE * SET_B * !Q)	0.00778	0.00749	0.00747
	(!D * !SCD * SCE * SET_B * !Q)	0.00586	0.00557	0.00554
	(!D * !SCD * SCE * !SET_B * Q)	0.01516	0.01495	0.01536
	(!D * !SCD * SCE * !SET_B * Q)	0.01306	0.01285	0.01325

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(D * SCD * SCE * SET_B * !Q)**	0.00684	0.00660	0.00660
	(D * SCD * SCE * SET_B * !Q)	0.00864	0.00840	0.00841
	(D * SCD * SCE * Q)	0.00386	0.00367	0.00378
	(D * SCD * SCE * Q)	0.00579	0.00559	0.00571
	(D * !SCE * SET_B * !Q)	0.00681	0.00658	0.00658
	(D * !SCE * SET_B * !Q)	0.00862	0.00838	0.00839
	(D * !SCE * Q)	0.00386	0.00367	0.00378
	(D * !SCE * Q)	0.00579	0.00559	0.00571
	(D * !SCD * SCE * SET_B * Q)	0.00760	0.00742	0.00769
	(D * !SCD * SCE * SET_B * Q)	0.00968	0.00949	0.00977
	(D * !SCD * SCE * SET_B * !Q)	0.00399	0.00379	0.00388
	(D * !SCD * SCE * SET_B * !Q)	0.00592	0.00572	0.00581
	(D * !SCD * SCE * !SET_B * Q)	0.00633	0.00616	0.00641
	(D * !SCD * SCE * !SET_B * Q)	0.00844	0.00826	0.00852
	(!D * SCD * SCE * SET_B * !Q)	0.00686	0.00663	0.00663
	(!D * SCD * SCE * SET_B * !Q)	0.00866	0.00842	0.00843
	(!D * SCD * SCE * Q)	0.00386	0.00367	0.00378
	(!D * SCD * SCE * Q)	0.00579	0.00559	0.00571
	(!D * !SCE * SET_B * Q)	0.00759	0.00742	0.00767
	(!D * !SCE * SET_B * Q)	0.00965	0.00948	0.00974
	(!D * !SCE * SET_B * !Q)	0.00399	0.00379	0.00388
	(!D * !SCE * SET_B * !Q)	0.00592	0.00572	0.00581
	(!D * !SCE * !SET_B * Q)	0.00633	0.00616	0.00641
	(!D * !SCE * !SET_B * Q)	0.00844	0.00826	0.00852
	(!D * !SCD * SCE * SET_B * Q)	0.00760	0.00742	0.00769
	(!D * !SCD * SCE * SET_B * Q)	0.00967	0.00949	0.00976
	(!D * !SCD * SCE * SET_B * !Q)	0.00399	0.00379	0.00388
	(!D * !SCD * SCE * SET_B * !Q)	0.00592	0.00572	0.00581
	(!D * !SCD * SCE * !SET_B * Q)	0.00633	0.00616	0.00641
	(!D * !SCD * SCE * !SET_B * Q)	0.00845	0.00826	0.00853

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.00800	0.00777	0.00777
	(D * SCD * SCE * SET_B * !Q)	0.00972	0.00949	0.00950
	(D * SCD * SCE * Q)	0.00447	0.00428	0.00437
	(D * SCD * SCE * Q)	0.00638	0.00619	0.00628
	(D * !SCE * SET_B * !Q)	0.00797	0.00775	0.00775
	(D * !SCE * SET_B * !Q)	0.00969	0.00947	0.00948
	(D * !SCE * Q)	0.00447	0.00428	0.00437
	(D * !SCE * Q)	0.00638	0.00619	0.00628
	(D * !SCD * SCE * SET_B * Q)	0.00891	0.00872	0.00901
	(D * !SCD * SCE * SET_B * Q)	0.01101	0.01082	0.01111
	(D * !SCD * SCE * SET_B * !Q)	0.00438	0.00418	0.00427
	(D * !SCD * SCE * SET_B * !Q)	0.00630	0.00610	0.00619
	(D * !SCD * SCE * !SET_B * Q)	0.00754	0.00736	0.00766
	(D * !SCD * SCE * !SET_B * Q)	0.00968	0.00949	0.00980
	(!D * SCD * SCE * SET_B * !Q)	0.00802	0.00780	0.00780
	(!D * SCD * SCE * SET_B * !Q)	0.00973	0.00951	0.00952
	(!D * SCD * SCE * Q)	0.00447	0.00428	0.00437
	(!D * SCD * SCE * Q)	0.00638	0.00619	0.00628
	(!D * !SCE * SET_B * Q)	0.00890	0.00870	0.00899
	(!D * !SCE * SET_B * Q)	0.01098	0.01079	0.01107
	(!D * !SCE * SET_B * !Q)	0.00438	0.00418	0.00427
	(!D * !SCE * SET_B * !Q)	0.00630	0.00610	0.00619
	(!D * !SCE * !SET_B * Q)	0.00755	0.00736	0.00766
	(!D * !SCE * !SET_B * Q)	0.00969	0.00950	0.00980
	(!D * !SCD * SCE * SET_B * Q)	0.00891	0.00871	0.00900
	(!D * !SCD * SCE * SET_B * Q)	0.01100	0.01081	0.01110
	(!D * !SCD * SCE * SET_B * !Q)	0.00438	0.00418	0.00427
	(!D * !SCD * SCE * SET_B * !Q)	0.00630	0.00610	0.00619
	(!D * !SCD * SCE * !SET_B * Q)	0.00755	0.00736	0.00767
	(!D * !SCD * SCE * !SET_B * Q)	0.00969	0.00950	0.00980

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.00779	0.00756	0.00757
	(D * SCD * SCE * SET_B * !Q)	0.00955	0.00933	0.00934
	(D * SCD * SCE * Q)	0.00438	0.00419	0.00428
	(D * SCD * SCE * Q)	0.00630	0.00611	0.00620
	(D * !SCE * SET_B * !Q)	0.00777	0.00754	0.00755
	(D * !SCE * SET_B * !Q)	0.00953	0.00930	0.00932
	(D * !SCE * Q)	0.00438	0.00419	0.00428
	(D * !SCE * Q)	0.00630	0.00611	0.00620
	(D * !SCD * SCE * SET_B * Q)	0.00873	0.00854	0.00882
	(D * !SCD * SCE * SET_B * Q)	0.01080	0.01061	0.01090
	(D * !SCD * SCE * SET_B * !Q)	0.00426	0.00407	0.00415
	(D * !SCD * SCE * SET_B * !Q)	0.00619	0.00598	0.00608
	(D * !SCD * SCE * !SET_B * Q)	0.00738	0.00719	0.00749
	(D * !SCD * SCE * !SET_B * Q)	0.00948	0.00930	0.00960
	(!D * SCD * SCE * SET_B * !Q)	0.00782	0.00759	0.00760
	(!D * SCD * SCE * SET_B * !Q)	0.00957	0.00934	0.00936
	(!D * SCD * SCE * Q)	0.00438	0.00419	0.00428
	(!D * SCD * SCE * Q)	0.00630	0.00611	0.00620
	(!D * !SCE * SET_B * Q)	0.00872	0.00852	0.00880
	(!D * !SCE * SET_B * Q)	0.01077	0.01058	0.01086
	(!D * !SCE * SET_B * !Q)	0.00426	0.00406	0.00415
	(!D * !SCE * SET_B * !Q)	0.00619	0.00598	0.00608
	(!D * !SCE * !SET_B * Q)	0.00738	0.00719	0.00749
	(!D * !SCE * !SET_B * Q)	0.00949	0.00930	0.00960
	(!D * !SCD * SCE * SET_B * Q)	0.00873	0.00853	0.00882
	(!D * !SCD * SCE * SET_B * Q)	0.01079	0.01060	0.01089
	(!D * !SCD * SCE * SET_B * !Q)	0.00426	0.00407	0.00415
	(!D * !SCD * SCE * SET_B * !Q)	0.00619	0.00598	0.00608
	(!D * !SCD * SCE * !SET_B * Q)	0.00739	0.00720	0.00749
	(!D * !SCD * SCE * !SET_B * Q)	0.00949	0.00931	0.00960

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT	
D	SCD	SCE	CLK	Q	Q_N
0	0	x	R	0	1
0	1	0	R	0	1
x	1	1	R	1	0
1	x	0	R	1	0
1	0	1	R	0	1
x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxbp_1	41.55840
sky130_fd_sc_hs__sdfxbp_2	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sdfxbp_1	0.00178	0.00179	0.00383	0.00275	0.43647	0.42840
sky130_fd_sc_hs__sdfxbp_2	0.00176	0.00175	0.00389	0.00275	0.88119	0.86886

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.16222	0.23445
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.16671	0.22983

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RR)	0.50349	1.45067	8.70053
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.49155	1.31052	8.84149

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.55011	1.08990	3.74098
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.59695	1.12981	3.86289

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q_N (RR)	0.65190	1.59998	8.88221
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.75009	1.54364	9.02642

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q_N (RF)	0.58695	1.08774	3.70371
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.63935	1.12094	3.86164

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.12374	-0.25193	-1.41586
	setup	CLK (R)	0.32573	0.37458	1.62450
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12505	-0.24815	-1.40195
	setup	CLK (R)	0.32585	0.37514	1.61292

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.12891	-0.28905	-2.51116
	setup	CLK (R)	0.78122	0.81103	3.25054
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12946	-0.28944	-2.52522
	setup	CLK (R)	0.79792	0.82887	3.26326

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.12374	-0.25193	-1.41586
	setup	CLK (R)	0.32573	0.37458	1.62450
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12505	-0.24815	-1.40195
	setup	CLK (R)	0.32585	0.37514	1.61292

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.12891	-0.28905	-2.51116
	setup	CLK (R)	0.78122	0.81103	3.25054
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12946	-0.28944	-2.52522
	setup	CLK (R)	0.79792	0.82887	3.26326

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.15467	-0.27497	-1.72080
	setup	CLK (R)	0.36299	0.40178	1.90394
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.15451	-0.27205	-1.70133
	setup	CLK (R)	0.36213	0.39896	1.88342

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.19379	-0.38951	-3.35679
	setup	CLK (R)	0.95257	1.02276	3.90987
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.19139	-0.38699	-3.36100
	setup	CLK (R)	0.96616	1.03104	3.90964

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.15467	-0.27497	-1.72080
	hold	CLK (R)	-0.15767	-0.27639	-1.72760
	setup	CLK (R)	0.36299	0.40142	1.89671
	setup	CLK (R)	0.36265	0.40178	1.90394
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.15480	-0.27205	-1.70133
	hold	CLK (R)	-0.15451	-0.27274	-1.70904
	setup	CLK (R)	0.36213	0.39896	1.87714
	setup	CLK (R)	0.35920	0.39875	1.88342

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.20895	-0.40981	-3.40533
	hold	CLK (R)	-0.19379	-0.38951	-3.35679
	setup	CLK (R)	0.93421	1.00291	3.89456
	setup	CLK (R)	0.95257	1.02276	3.90987
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.20825	-0.40923	-3.42225
	hold	CLK (R)	-0.19139	-0.38699	-3.36100
	setup	CLK (R)	0.94707	1.01596	3.89920
	setup	CLK (R)	0.96616	1.03104	3.90964

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.13733	-0.26583	-0.57573
	setup	CLK (R)	0.90458	0.87826	1.72939
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13822	-0.26166	-0.58283
	setup	CLK (R)	0.91877	0.89639	1.71630

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.16865	-0.35636	-2.67463
	setup	CLK (R)	0.81939	0.87846	3.61828
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.16998	-0.35489	-2.68611
	setup	CLK (R)	0.83623	0.89728	3.63235

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.17384	-0.29490	-0.57573
	hold	CLK (R)	-0.13733	-0.26583	-1.52016
	setup	CLK (R)	0.90458	0.87826	0.87222
	setup	CLK (R)	0.34264	0.39307	1.72939
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.17552	-0.29531	-0.58283
	hold	CLK (R)	-0.13822	-0.26166	-1.50311
	setup	CLK (R)	0.91877	0.89639	0.88994
	setup	CLK (R)	0.34131	0.39105	1.71630

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.29207	-0.48478	-2.67463
	hold	CLK (R)	-0.16865	-0.35636	-3.08395
	setup	CLK (R)	0.49280	0.60564	2.78708
	setup	CLK (R)	0.81939	0.87846	3.61828
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.29514	-0.49027	-2.68611
	hold	CLK (R)	-0.16998	-0.35489	-3.10780
	setup	CLK (R)	0.49510	0.61103	2.79868
	setup	CLK (R)	0.83623	0.89728	3.63235

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	min_pulse_width	CLK ()	0.25686	0.98145	16.50020
	min_pulse_width	CLK ()	0.17755	0.98145	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.26047	0.98145	16.50020
	min_pulse_width	CLK ()	0.18477	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	min_pulse_width	CLK ()	0.46955	0.98145	16.50020
	min_pulse_width	CLK ()	0.74352	0.98145	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.47676	0.98145	16.50020
	min_pulse_width	CLK ()	0.75794	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00679	0.00672	0.00671
	CLK	0.00582	0.00575	0.00574
sky130_fd_sc_hs__sdfxbp_2	CLK	0.00812	0.00823	0.00825
	CLK	0.00716	0.00726	0.00727

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00694	0.00692	0.00701
	CLK	0.00597	0.00596	0.00603
sky130_fd_sc_hs__sdfxbp_2	CLK	0.00823	0.00839	0.00844
	CLK	0.00726	0.00742	0.00746

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00694	0.00693	0.00710
	CLK	0.00597	0.00597	0.00612
sky130_fd_sc_hs__sdfxbp_2	CLK	0.00823	0.00839	0.00863
	CLK	0.00727	0.00743	0.00764

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00679	0.00671	0.00661
	CLK	0.00582	0.00575	0.00563
sky130_fd_sc_hs__sdfxbp_2	CLK	0.00812	0.00822	0.00813
	CLK	0.00715	0.00725	0.00713

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00059	0.00059	0.00059
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCE)	0.00199	0.00189	0.00198
	(CLK * !SCE)	0.00051	0.00041	0.00050
	(CLK * !SCD * SCE)	0.00036	0.00036	0.00035
	(CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00057
	(!CLK * SCD * SCE)	0.00059	0.00059	0.00059
	(!CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00461	0.00452	0.00452
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00313	0.00304	0.00305
	(!CLK * !SCD * SCE)	0.00036	0.00036	0.00035
	(!CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00057
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00060	0.00060	0.00060
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00028
	(CLK * !SCE)	0.00195	0.00185	0.00194
	(CLK * !SCE)	0.00049	0.00039	0.00048
	(CLK * !SCD * SCE)	0.00038	0.00037	0.00037
	(CLK * !SCD * SCE)	-0.00054	-0.00055	-0.00056
	(!CLK * SCD * SCE)	0.00059	0.00060	0.00059
	(!CLK * SCD * SCE)	-0.00029	-0.00029	-0.00028
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00463	0.00455	0.00455
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00317	0.00308	0.00309
	(!CLK * !SCD * SCE)	0.00038	0.00037	0.00037
	(!CLK * !SCD * SCE)	-0.00054	-0.00054	-0.00056

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00055	-0.00056	-0.00058
	(CLK * SCD * SCE)	0.00031	0.00032	0.00030
	(CLK * !SCE)	0.00048	0.00040	0.00060
	(CLK * !SCE)	0.00196	0.00188	0.00209
	(CLK * !SCD * SCE)	-0.00034	-0.00035	-0.00034
	(CLK * !SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK * SCD * SCE)	-0.00055	-0.00056	-0.00059
	(!CLK * SCD * SCE)	0.00032	0.00032	0.00030
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00328	0.00319	0.00335
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00477	0.00467	0.00483
	(!CLK * !SCD * SCE)	-0.00034	-0.00035	-0.00034
	(!CLK * !SCD * SCE)	0.00057	0.00057	0.00057
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00056	-0.00057	-0.00059
	(CLK * SCD * SCE)	0.00031	0.00031	0.00029
	(CLK * !SCE)	0.00053	0.00046	0.00066
	(CLK * !SCE)	0.00200	0.00193	0.00213
	(CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCD * SCE)	0.00055	0.00056	0.00056
	(!CLK * SCD * SCE)	-0.00056	-0.00057	-0.00059
	(!CLK * SCD * SCE)	0.00031	0.00031	0.00029
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00328	0.00320	0.00334
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00475	0.00466	0.00481
	(!CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCD * SCE)	0.00056	0.00056	0.00056

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00269	0.00261	0.00259
	(CLK * D * SCE)	0.00085	0.00076	0.00075
	(CLK * !D * SCE)	0.00300	0.00293	0.00288
	(CLK * !D * SCE)	0.00112	0.00104	0.00100
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00530	0.00523	0.00516
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00346	0.00338	0.00332
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00561	0.00555	0.00545
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00373	0.00366	0.00357
	!SCE	0.00051	0.00048	0.00047
	!SCE	-0.00051	-0.00055	-0.00055
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00264	0.00256	0.00255
	(CLK * D * SCE)	0.00082	0.00074	0.00073
	(CLK * !D * SCE)	0.00295	0.00288	0.00283
	(CLK * !D * SCE)	0.00109	0.00102	0.00098
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00532	0.00525	0.00518
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00350	0.00343	0.00337
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00563	0.00556	0.00548
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00377	0.00370	0.00362
	!SCE	0.00050	0.00046	0.00046
	!SCE	-0.00052	-0.00056	-0.00056

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00098	0.00090	0.00089
	(CLK * D * SCE)	0.00282	0.00275	0.00273
	(CLK * !D * SCE)	0.00079	0.00071	0.00073
	(CLK * !D * SCE)	0.00267	0.00260	0.00261
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00376	0.00369	0.00365
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00562	0.00555	0.00549
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00358	0.00351	0.00350
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00547	0.00540	0.00538
	!SCE	-0.00046	-0.00047	-0.00047
	!SCE	0.00056	0.00057	0.00056
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00102	0.00095	0.00094
	(CLK * D * SCE)	0.00285	0.00278	0.00275
	(CLK * !D * SCE)	0.00084	0.00077	0.00078
	(CLK * !D * SCE)	0.00270	0.00263	0.00263
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00376	0.00369	0.00365
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00558	0.00552	0.00546
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00357	0.00351	0.00349
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00543	0.00537	0.00534
	!SCE	-0.00044	-0.00045	-0.00045
	!SCE	0.00056	0.00057	0.00057

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00254	0.00235	0.00243
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00013	-0.00032	-0.00024
	(CLK * D * !SCD)	0.00378	0.00362	0.00366
	(CLK * D * !SCD)	0.00186	0.00170	0.00171
	(CLK * !D * SCD)	0.00446	0.00421	0.00431
	(CLK * !D * SCD)	0.00114	0.00089	0.00103
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00254	0.00235	0.00243
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00013	-0.00032	-0.00024
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00650	0.00640	0.00645
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00459	0.00447	0.00450
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00707	0.00683	0.00688
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00376	0.00352	0.00358
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00244	0.00228	0.00237
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00008	-0.00024	-0.00016

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00264	0.00245	0.00253
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00008	-0.00028	-0.00020
	(CLK * D * !SCD)	0.00393	0.00377	0.00380
	(CLK * D * !SCD)	0.00193	0.00177	0.00177
	(CLK * !D * SCD)	0.00453	0.00427	0.00438
	(CLK * !D * SCD)	0.00117	0.00093	0.00104
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00264	0.00245	0.00253
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00008	-0.00028	-0.00020
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00660	0.00649	0.00653
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00460	0.00449	0.00451
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00721	0.00696	0.00701
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00385	0.00361	0.00367
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00254	0.00238	0.00246
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00005	-0.00022	-0.00013

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfxbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00017	-0.00026	-0.00004
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00249	0.00241	0.00262
	(CLK * D * !SCD)	0.00183	0.00169	0.00184
	(CLK * D * !SCD)	0.00376	0.00362	0.00377
	(CLK * !D * SCD)	0.00066	0.00047	0.00072
	(CLK * !D * SCD)	0.00396	0.00378	0.00402
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00017	-0.00026	-0.00004
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00249	0.00240	0.00262
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00443	0.00432	0.00444
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00636	0.00624	0.00638
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00347	0.00327	0.00348
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00677	0.00658	0.00678
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00003	-0.00007	0.00014
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00256	0.00247	0.00267

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00019	-0.00028	-0.00007
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00253	0.00244	0.00265
	(CLK * D * !SCD)	0.00178	0.00164	0.00178
	(CLK * D * !SCD)	0.00379	0.00364	0.00379
	(CLK * !D * SCD)	0.00071	0.00051	0.00075
	(CLK * !D * SCD)	0.00405	0.00386	0.00409
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00019	-0.00028	-0.00007
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00253	0.00244	0.00265
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00444	0.00433	0.00446
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00645	0.00633	0.00646
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00346	0.00326	0.00346
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00680	0.00661	0.00681
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00002	-0.00008	0.00012
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00261	0.00251	0.00271

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(D * SCD * SCE * Q * !Q_N)	0.00624	0.00595	0.00597
	(D * SCD * SCE * Q * !Q_N)	0.00430	0.00401	0.00403
	(D * !SCE * Q * !Q_N)	0.00624	0.00594	0.00597
	(D * !SCE * Q * !Q_N)	0.00429	0.00400	0.00403
	(D * !SCD * SCE * !Q * Q_N)	0.00618	0.00588	0.00591
	(D * !SCD * SCE * !Q * Q_N)	0.00424	0.00394	0.00397
	(!D * SCD * SCE * Q * !Q_N)	0.00624	0.00595	0.00597
	(!D * SCD * SCE * Q * !Q_N)	0.00430	0.00401	0.00403
	(!D * !SCE * !Q * Q_N)	0.00618	0.00588	0.00591
	(!D * !SCE * !Q * Q_N)	0.00424	0.00394	0.00397
	(!D * !SCD * SCE * !Q * Q_N)	0.00618	0.00588	0.00591
	(!D * !SCD * SCE * !Q * Q_N)	0.00424	0.00394	0.00397
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.00638	0.00609	0.00611
	(D * SCD * SCE * Q * !Q_N)	0.00444	0.00415	0.00417
	(D * !SCE * Q * !Q_N)	0.00637	0.00609	0.00611
	(D * !SCE * Q * !Q_N)	0.00443	0.00415	0.00417
	(D * !SCD * SCE * !Q * Q_N)	0.00633	0.00603	0.00606
	(D * !SCD * SCE * !Q * Q_N)	0.00439	0.00409	0.00412
	(!D * SCD * SCE * Q * !Q_N)	0.00638	0.00609	0.00612
	(!D * SCD * SCE * Q * !Q_N)	0.00444	0.00415	0.00418
	(!D * !SCE * !Q * Q_N)	0.00633	0.00603	0.00606
	(!D * !SCE * !Q * Q_N)	0.00439	0.00409	0.00412
	(!D * !SCD * SCE * !Q * Q_N)	0.00633	0.00603	0.00606
	(!D * !SCD * SCE * !Q * Q_N)	0.00439	0.00409	0.00412

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxbp_1	**(D * SCD * SCE * Q * !Q_N)**	0.00360	0.00337	0.00349
	(D * SCD * SCE * Q * !Q_N)	0.00554	0.00531	0.00543
	(D * SCD * SCE * !Q * Q_N)	0.00617	0.00589	0.00589
	(D * SCD * SCE * !Q * Q_N)	0.00810	0.00782	0.00783
	(D * !SCE * Q * !Q_N)	0.00360	0.00337	0.00349
	(D * !SCE * Q * !Q_N)	0.00554	0.00531	0.00543
	(D * !SCE * !Q * Q_N)	0.00614	0.00586	0.00586
	(D * !SCE * !Q * Q_N)	0.00807	0.00780	0.00780
	(D * !SCD * SCE * Q * !Q_N)	0.00698	0.00675	0.00705
	(D * !SCD * SCE * Q * !Q_N)	0.00893	0.00870	0.00901
	(D * !SCD * SCE * !Q * Q_N)	0.00363	0.00340	0.00351
	(D * !SCD * SCE * !Q * Q_N)	0.00556	0.00533	0.00545
	(!D * SCD * SCE * Q * !Q_N)	0.00360	0.00337	0.00349
	(!D * SCD * SCE * Q * !Q_N)	0.00554	0.00531	0.00543
	(!D * SCD * SCE * !Q * Q_N)	0.00619	0.00591	0.00592
	(!D * SCD * SCE * !Q * Q_N)	0.00812	0.00784	0.00785
	(!D * !SCE * Q * !Q_N)	0.00696	0.00673	0.00704
	(!D * !SCE * Q * !Q_N)	0.00890	0.00867	0.00897
	(!D * !SCE * !Q * Q_N)	0.00362	0.00340	0.00351
	(!D * !SCE * !Q * Q_N)	0.00556	0.00533	0.00545
	(!D * !SCD * SCE * Q * !Q_N)	0.00698	0.00674	0.00703
	(!D * !SCD * SCE * Q * !Q_N)	0.00892	0.00869	0.00899
	(!D * !SCD * SCE * !Q * Q_N)	0.00363	0.00340	0.00351
	(!D * !SCD * SCE * !Q * Q_N)	0.00556	0.00533	0.00545

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00365	0.00343	0.00355
	(D * SCD * SCE * Q * !Q_N)	0.00559	0.00537	0.00549
	(D * SCD * SCE * !Q * Q_N)	0.00627	0.00600	0.00600
	(D * SCD * SCE * !Q * Q_N)	0.00821	0.00793	0.00794
	(D * !SCE * Q * !Q_N)	0.00365	0.00343	0.00355
	(D * !SCE * Q * !Q_N)	0.00559	0.00537	0.00549
	(D * !SCE * !Q * Q_N)	0.00624	0.00597	0.00598
	(D * !SCE * !Q * Q_N)	0.00818	0.00791	0.00791
	(D * !SCD * SCE * Q * !Q_N)	0.00698	0.00675	0.00705
	(D * !SCD * SCE * Q * !Q_N)	0.00893	0.00870	0.00901
	(D * !SCD * SCE * !Q * Q_N)	0.00367	0.00344	0.00355
	(D * !SCD * SCE * !Q * Q_N)	0.00560	0.00538	0.00549
	(!D * SCD * SCE * Q * !Q_N)	0.00365	0.00343	0.00355
	(!D * SCD * SCE * Q * !Q_N)	0.00559	0.00537	0.00549
	(!D * SCD * SCE * !Q * Q_N)	0.00630	0.00603	0.00603
	(!D * SCD * SCE * !Q * Q_N)	0.00823	0.00795	0.00796
	(!D * !SCE * Q * !Q_N)	0.00696	0.00673	0.00703
	(!D * !SCE * Q * !Q_N)	0.00890	0.00867	0.00897
	(!D * !SCE * !Q * Q_N)	0.00367	0.00344	0.00355
	(!D * !SCE * !Q * Q_N)	0.00560	0.00537	0.00549
	(!D * !SCD * SCE * Q * !Q_N)	0.00697	0.00675	0.00705
	(!D * !SCD * SCE * Q * !Q_N)	0.00892	0.00869	0.00900
	(!D * !SCD * SCE * !Q * Q_N)	0.00367	0.00344	0.00355
	(!D * !SCD * SCE * !Q * Q_N)	0.00560	0.00538	0.00549

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT				OUTPUT
D	SCD	SCE	CLK	Q
0	0	x	R	0
0	1	0	R	0
x	1	1	R	1
1	x	0	R	1
1	0	1	R	0
x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxtp_1	36.76320
sky130_fd_sc_hs__sdfxtp_2	39.96000
sky130_fd_sc_hs__sdfxtp_4	41.55840

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	D	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sdfxtp_1	0.00180	0.00188	0.00398	0.00272	0.44208
sky130_fd_sc_hs__sdfxtp_2	0.00183	0.00184	0.00385	0.00275	0.87167
sky130_fd_sc_hs__sdfxtp_4	0.00181	0.00182	0.00397	0.00273	1.66827

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.14089	0.20920
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.13857	0.19883
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.18426	0.26231

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RR)**	0.47316	1.42695	8.79346
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.47924	1.29429	8.79015
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.57154	1.28347	8.87727

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.51563	1.03779	3.70167
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.54722	1.05659	3.78441
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.53843	1.01282	3.77430

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.12788	-0.25325	-1.43655
	setup	CLK (R)	0.32257	0.37820	1.65222
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12978	-0.26056	-1.45390
	setup	CLK (R)	0.34461	0.39247	1.67090
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12260	-0.24896	-1.42068
	setup	CLK (R)	0.32676	0.37604	1.61611

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.13326	-0.29701	-2.54312
	setup	CLK (R)	0.80720	0.84132	3.30447
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13901	-0.30664	-2.63639
	setup	CLK (R)	0.85071	0.88267	3.36460
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13964	-0.30579	-2.55928
	setup	CLK (R)	0.80194	0.83241	3.27183

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.12788	-0.25325	-1.43655
	setup	CLK (R)	0.32257	0.37820	1.65222
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12978	-0.26056	-1.45390
	setup	CLK (R)	0.34461	0.39247	1.67090
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12260	-0.24896	-1.42068
	setup	CLK (R)	0.32676	0.37604	1.61611

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.13326	-0.29701	-2.54312
	setup	CLK (R)	0.80720	0.84132	3.30447
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13901	-0.30664	-2.63639
	setup	CLK (R)	0.85071	0.88267	3.36460
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13964	-0.30579	-2.55928
	setup	CLK (R)	0.80194	0.83241	3.27183

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.15801	-0.27730	-1.73858
	setup	CLK (R)	0.36577	0.40651	1.92717
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.16118	-0.28115	-1.74698
	setup	CLK (R)	0.38404	0.41842	1.93698
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.15569	-0.27504	-1.72236
	setup	CLK (R)	0.36385	0.40314	1.89061

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.20117	-0.39680	-3.39498
	setup	CLK (R)	0.98200	1.05057	3.95487
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.20343	-0.39956	-3.42171
	setup	CLK (R)	1.02063	1.09041	3.99387
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.20963	-0.40405	-3.39799
	setup	CLK (R)	0.97278	1.04112	3.92992

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.15801	-0.27730	-1.73858
	hold	CLK (R)	-0.16069	-0.27781	-1.74555
	setup	CLK (R)	0.36577	0.40651	1.91606
	setup	CLK (R)	0.36347	0.40559	1.92717
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.16118	-0.28115	-1.74698
	hold	CLK (R)	-0.16372	-0.28225	-1.75163
	setup	CLK (R)	0.38380	0.41834	1.92790
	setup	CLK (R)	0.38404	0.41842	1.93698
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.15569	-0.27504	-1.72236
	hold	CLK (R)	-0.15846	-0.27583	-1.72857
	setup	CLK (R)	0.36385	0.40305	1.88689
	setup	CLK (R)	0.36284	0.40314	1.89061

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.21666	-0.41633	-3.45546
	hold	CLK (R)	-0.20117	-0.39680	-3.39498
	setup	CLK (R)	0.96405	1.03007	3.93857
	setup	CLK (R)	0.98200	1.05057	3.95487
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.22049	-0.42165	-3.47738
	hold	CLK (R)	-0.20343	-0.39956	-3.42171
	setup	CLK (R)	1.00218	1.07371	3.97800
	setup	CLK (R)	1.02063	1.09041	3.99387
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.22566	-0.42401	-3.44273
	hold	CLK (R)	-0.20963	-0.40405	-3.39799
	setup	CLK (R)	0.95565	1.01994	3.91135
	setup	CLK (R)	0.97278	1.04112	3.92992

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.13889	-0.26792	-0.61212
	setup	CLK (R)	0.93264	0.91211	1.75885
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14258	-0.27310	-0.58776
	setup	CLK (R)	0.97621	0.95247	1.76795
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13810	-0.26371	-0.61886
	setup	CLK (R)	0.92579	0.90281	1.71548

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.17436	-0.36467	-2.73588
	setup	CLK (R)	0.84606	0.91058	3.66331
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.17723	-0.36271	-2.69552
	setup	CLK (R)	0.88483	0.95083	3.71037
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.18544	-0.36906	-2.72014
	setup	CLK (R)	0.83747	0.89907	3.64339

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.18023	-0.30593	-0.61212
	hold	CLK (R)	-0.13889	-0.26792	-1.54139
	setup	CLK (R)	0.93264	0.91211	0.92702
	setup	CLK (R)	0.34351	0.39702	1.75885
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.18774	-0.30799	-0.58776
	hold	CLK (R)	-0.14258	-0.27310	-1.54742
	setup	CLK (R)	0.97621	0.95247	0.90942
	setup	CLK (R)	0.36278	0.40951	1.76795
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.19231	-0.31434	-0.61886
	hold	CLK (R)	-0.13810	-0.26371	-1.52397
	setup	CLK (R)	0.92579	0.90281	0.92053
	setup	CLK (R)	0.34382	0.39536	1.71548

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.30284	-0.49790	-2.73588
	hold	CLK (R)	-0.17436	-0.36467	-3.12280
	setup	CLK (R)	0.50193	0.61797	2.85405
	setup	CLK (R)	0.84606	0.91058	3.66331
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.29993	-0.49609	-2.69552
	hold	CLK (R)	-0.17723	-0.36271	-3.16679
	setup	CLK (R)	0.51513	0.62428	2.81587
	setup	CLK (R)	0.88483	0.95083	3.71037
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.29876	-0.49582	-2.72014
	hold	CLK (R)	-0.18544	-0.36906	-3.12571
	setup	CLK (R)	0.50382	0.61668	2.82994
	setup	CLK (R)	0.83747	0.89907	3.64339

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	min_pulse_width	CLK ()	0.24244	0.98145	16.50020
	min_pulse_width	CLK ()	0.17755	0.98145	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.26047	0.98145	16.50020
	min_pulse_width	CLK ()	0.18116	0.98145	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.32896	0.98145	16.50020
	min_pulse_width	CLK ()	0.18477	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	min_pulse_width	CLK ()	0.46955	0.98145	16.50020
	min_pulse_width	CLK ()	0.74713	0.98145	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.49839	0.98145	16.50020
	min_pulse_width	CLK ()	0.77957	0.98145	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.47316	0.98145	16.50020
	min_pulse_width	CLK ()	0.75434	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01051	0.01030	0.01027
	CLK	0.00859	0.00839	0.00837
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01201	0.01194	0.01193
	CLK	0.01007	0.01001	0.01003
sky130_fd_sc_hs__sdfxtp_4	CLK	0.01491	0.01506	0.01517
	CLK	0.01299	0.01313	0.01335

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01099	0.01086	0.01121
	CLK	0.00907	0.00895	0.00926
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01239	0.01244	0.01279
	CLK	0.01045	0.01051	0.01084
sky130_fd_sc_hs__sdfxtp_4	CLK	0.01539	0.01571	0.01625
	CLK	0.01346	0.01383	0.01417

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00060	0.00061	0.00061
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCE)	0.00200	0.00190	0.00199
	(CLK * !SCE)	0.00048	0.00038	0.00047
	(CLK * !SCD * SCE)	0.00038	0.00038	0.00037
	(CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00057
	(!CLK * SCD * SCE)	0.00060	0.00061	0.00061
	(!CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !SCE)	0.00471	0.00462	0.00463
	(!CLK * !SCE)	0.00319	0.00310	0.00310
	(!CLK * !SCD * SCE)	0.00038	0.00038	0.00037
	(!CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00057
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00062	0.00063	0.00063
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCE)	0.00217	0.00206	0.00215
	(CLK * !SCE)	0.00062	0.00051	0.00060
	(CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(CLK * !SCD * SCE)	-0.00056	-0.00056	-0.00057
	(!CLK * SCD * SCE)	0.00062	0.00063	0.00062
	(!CLK * SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !SCE)	0.00511	0.00503	0.00503
	(!CLK * !SCE)	0.00357	0.00348	0.00348
	(!CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(!CLK * !SCD * SCE)	-0.00056	-0.00056	-0.00057

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00062	0.00062	0.00062
	(CLK * SCD * SCE)	-0.00029	-0.00029	-0.00028
	(CLK * !SCE)	0.00200	0.00190	0.00199
	(CLK * !SCE)	0.00049	0.00039	0.00048
	(CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(CLK * !SCD * SCE)	-0.00055	-0.00055	-0.00056
	(!CLK * SCD * SCE)	0.00062	0.00062	0.00062
	(!CLK * SCD * SCE)	-0.00029	-0.00029	-0.00028
	(!CLK * !SCE)	0.00473	0.00464	0.00465
	(!CLK * !SCE)	0.00322	0.00313	0.00313
	(!CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(!CLK * !SCD * SCE)	-0.00055	-0.00055	-0.00056

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00057	-0.00058	-0.00060
	(CLK * SCD * SCE)	0.00031	0.00031	0.00030
	(CLK * !SCE)	0.00052	0.00044	0.00064
	(CLK * !SCE)	0.00205	0.00197	0.00216
	(CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK * SCD * SCE)	-0.00057	-0.00058	-0.00060
	(!CLK * SCD * SCE)	0.00031	0.00031	0.00030
	(!CLK * !SCE)	0.00318	0.00309	0.00324
	(!CLK * !SCE)	0.00470	0.00461	0.00476
	(!CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCD * SCE)	0.00057	0.00057	0.00057

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00059	-0.00060	-0.00062
	(CLK * SCD * SCE)	0.00032	0.00031	0.00030
	(CLK * !SCE)	0.00055	0.00047	0.00066
	(CLK * !SCE)	0.00210	0.00202	0.00221
	(CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(CLK * !SCD * SCE)	0.00057	0.00057	0.00057
	(!CLK * SCD * SCE)	-0.00059	-0.00060	-0.00062
	(!CLK * SCD * SCE)	0.00031	0.00031	0.00030
	(!CLK * !SCE)	0.00327	0.00318	0.00333
	(!CLK * !SCE)	0.00482	0.00473	0.00488
	(!CLK * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !SCD * SCE)	0.00057	0.00058	0.00057
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00058	-0.00059	-0.00061
	(CLK * SCD * SCE)	0.00031	0.00031	0.00030
	(CLK * !SCE)	0.00050	0.00043	0.00063
	(CLK * !SCE)	0.00202	0.00194	0.00214
	(CLK * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !SCD * SCE)	0.00056	0.00056	0.00056
	(!CLK * SCD * SCE)	-0.00058	-0.00059	-0.00061
	(!CLK * SCD * SCE)	0.00031	0.00031	0.00030
	(!CLK * !SCE)	0.00338	0.00329	0.00344
	(!CLK * !SCE)	0.00490	0.00481	0.00496
	(!CLK * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !SCD * SCE)	0.00056	0.00057	0.00056

Passive power(pJ) for SCD rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00275	0.00266	0.00264
	(CLK * D * SCE)	0.00084	0.00074	0.00073
	(CLK * !D * SCE)	0.00306	0.00298	0.00293
	(CLK * !D * SCE)	0.00110	0.00102	0.00098
	(!CLK * D * SCE)	0.00545	0.00538	0.00531
	(!CLK * D * SCE)	0.00354	0.00346	0.00339
	(!CLK * !D * SCE)	0.00576	0.00569	0.00560
	(!CLK * !D * SCE)	0.00381	0.00373	0.00365
	!SCE	0.00052	0.00049	0.00048
	!SCE	-0.00055	-0.00058	-0.00059
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00283	0.00275	0.00273
	(CLK * D * SCE)	0.00094	0.00085	0.00083
	(CLK * !D * SCE)	0.00314	0.00306	0.00302
	(CLK * !D * SCE)	0.00120	0.00113	0.00108
	(!CLK * D * SCE)	0.00578	0.00570	0.00564
	(!CLK * D * SCE)	0.00388	0.00381	0.00374
	(!CLK * !D * SCE)	0.00609	0.00602	0.00593
	(!CLK * !D * SCE)	0.00415	0.00408	0.00399
	!SCE	0.00053	0.00050	0.00049
	!SCE	-0.00051	-0.00055	-0.00055
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00272	0.00264	0.00263
	(CLK * D * SCE)	0.00086	0.00077	0.00075
	(CLK * !D * SCE)	0.00304	0.00296	0.00292
	(CLK * !D * SCE)	0.00112	0.00105	0.00100
	(!CLK * D * SCE)	0.00545	0.00537	0.00531
	(!CLK * D * SCE)	0.00358	0.00350	0.00344
	(!CLK * !D * SCE)	0.00576	0.00569	0.00560
	(!CLK * !D * SCE)	0.00385	0.00378	0.00369
	!SCE	0.00051	0.00048	0.00047
	!SCE	-0.00053	-0.00057	-0.00057

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00099	0.00090	0.00089
	(CLK * D * SCE)	0.00290	0.00282	0.00280
	(CLK * !D * SCE)	0.00080	0.00072	0.00073
	(CLK * !D * SCE)	0.00275	0.00268	0.00267
	(!CLK * D * SCE)	0.00363	0.00355	0.00351
	(!CLK * D * SCE)	0.00555	0.00548	0.00542
	(!CLK * !D * SCE)	0.00345	0.00337	0.00335
	(!CLK * !D * SCE)	0.00540	0.00533	0.00530
	!SCE	-0.00047	-0.00048	-0.00048
	!SCE	0.00059	0.00059	0.00059
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00106	0.00097	0.00096
	(CLK * D * SCE)	0.00296	0.00288	0.00285
	(CLK * !D * SCE)	0.00087	0.00079	0.00080
	(CLK * !D * SCE)	0.00281	0.00273	0.00273
	(!CLK * D * SCE)	0.00377	0.00369	0.00365
	(!CLK * D * SCE)	0.00567	0.00560	0.00554
	(!CLK * !D * SCE)	0.00358	0.00350	0.00349
	(!CLK * !D * SCE)	0.00552	0.00545	0.00542
	!SCE	-0.00047	-0.00049	-0.00049
	!SCE	0.00056	0.00056	0.00056

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00098	0.00090	0.00089
	(CLK * D * SCE)	0.00285	0.00278	0.00275
	(CLK * !D * SCE)	0.00079	0.00072	0.00073
	(CLK * !D * SCE)	0.00271	0.00263	0.00263
	(!CLK * D * SCE)	0.00384	0.00377	0.00373
	(!CLK * D * SCE)	0.00572	0.00565	0.00559
	(!CLK * !D * SCE)	0.00366	0.00359	0.00357
	(!CLK * !D * SCE)	0.00558	0.00551	0.00547
	!SCE	-0.00046	-0.00047	-0.00047
	!SCE	0.00057	0.00058	0.00058

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00269	0.00250	0.00257
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00013	-0.00033	-0.00026
	(CLK * D * !SCD)	0.00397	0.00381	0.00383
	(CLK * D * !SCD)	0.00193	0.00175	0.00175
	(CLK * !D * SCD)	0.00462	0.00436	0.00446
	(CLK * !D * SCD)	0.00112	0.00086	0.00098
	(!CLK * D * SCD)	0.00269	0.00249	0.00257
	(!CLK * D * SCD)	-0.00013	-0.00033	-0.00026
	(!CLK * D * !SCD)	0.00655	0.00644	0.00647
	(!CLK * D * !SCD)	0.00451	0.00438	0.00440
	(!CLK * !D * SCD)	0.00732	0.00706	0.00711
	(!CLK * !D * SCD)	0.00383	0.00358	0.00364
	(!CLK * !D * !SCD)	0.00259	0.00242	0.00250
	(!CLK * !D * !SCD)	-0.00010	-0.00026	-0.00018

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00258	0.00239	0.00247
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00013	-0.00033	-0.00024
	(CLK * D * !SCD)	0.00392	0.00377	0.00379
	(CLK * D * !SCD)	0.00199	0.00183	0.00184
	(CLK * !D * SCD)	0.00464	0.00438	0.00449
	(CLK * !D * SCD)	0.00125	0.00100	0.00112
	(!CLK * D * SCD)	0.00258	0.00239	0.00247
	(!CLK * D * SCD)	-0.00013	-0.00033	-0.00024
	(!CLK * D * !SCD)	0.00656	0.00647	0.00650
	(!CLK * D * !SCD)	0.00464	0.00453	0.00454
	(!CLK * !D * SCD)	0.00759	0.00734	0.00739
	(!CLK * !D * SCD)	0.00420	0.00396	0.00402
	(!CLK * !D * !SCD)	0.00250	0.00234	0.00242
	(!CLK * !D * !SCD)	-0.00007	-0.00023	-0.00015
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00268	0.00249	0.00256
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00012	-0.00033	-0.00025
	(CLK * D * !SCD)	0.00394	0.00378	0.00380
	(CLK * D * !SCD)	0.00190	0.00172	0.00172
	(CLK * !D * SCD)	0.00462	0.00436	0.00446
	(CLK * !D * SCD)	0.00115	0.00089	0.00101
	(!CLK * D * SCD)	0.00268	0.00249	0.00256
	(!CLK * D * SCD)	-0.00012	-0.00033	-0.00025
	(!CLK * D * !SCD)	0.00674	0.00663	0.00666
	(!CLK * D * !SCD)	0.00470	0.00456	0.00459
	(!CLK * !D * SCD)	0.00735	0.00709	0.00713
	(!CLK * !D * SCD)	0.00388	0.00363	0.00368
	(!CLK * !D * !SCD)	0.00258	0.00241	0.00249
	(!CLK * !D * !SCD)	-0.00009	-0.00026	-0.00018

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00018	-0.00028	-0.00007
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00263	0.00254	0.00275
	(CLK * D * !SCD)	0.00185	0.00170	0.00183
	(CLK * D * !SCD)	0.00390	0.00375	0.00389
	(CLK * !D * SCD)	0.00069	0.00049	0.00072
	(CLK * !D * SCD)	0.00417	0.00397	0.00421
	(!CLK * D * SCD)	-0.00018	-0.00028	-0.00007
	(!CLK * D * SCD)	0.00263	0.00254	0.00275
	(!CLK * D * !SCD)	0.00453	0.00442	0.00454
	(!CLK * D * !SCD)	0.00659	0.00647	0.00659
	(!CLK * !D * SCD)	0.00335	0.00314	0.00335
	(!CLK * !D * SCD)	0.00683	0.00663	0.00682
	(!CLK * !D * !SCD)	0.00003	-0.00008	0.00012
	(!CLK * !D * !SCD)	0.00270	0.00261	0.00280

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00017	-0.00026	-0.00005
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00253	0.00244	0.00265
	(CLK * D * !SCD)	0.00199	0.00185	0.00199
	(CLK * D * !SCD)	0.00393	0.00378	0.00393
	(CLK * !D * SCD)	0.00072	0.00053	0.00077
	(CLK * !D * SCD)	0.00410	0.00391	0.00415
	(!CLK * D * SCD)	-0.00017	-0.00027	-0.00005
	(!CLK * D * SCD)	0.00253	0.00244	0.00265
	(!CLK * D * !SCD)	0.00492	0.00480	0.00493
	(!CLK * D * !SCD)	0.00685	0.00673	0.00687
	(!CLK * !D * SCD)	0.00345	0.00325	0.00345
	(!CLK * !D * SCD)	0.00683	0.00663	0.00683
	(!CLK * !D * !SCD)	0.00001	-0.00009	0.00012
	(!CLK * !D * !SCD)	0.00258	0.00248	0.00269
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00017	-0.00027	-0.00006
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00263	0.00255	0.00275
	(CLK * D * !SCD)	0.00186	0.00171	0.00185
	(CLK * D * !SCD)	0.00392	0.00378	0.00391
	(CLK * !D * SCD)	0.00069	0.00049	0.00072
	(CLK * !D * SCD)	0.00414	0.00395	0.00418
	(!CLK * D * SCD)	-0.00016	-0.00026	-0.00006
	(!CLK * D * SCD)	0.00263	0.00254	0.00275
	(!CLK * D * !SCD)	0.00457	0.00444	0.00457
	(!CLK * D * !SCD)	0.00663	0.00651	0.00664
	(!CLK * !D * SCD)	0.00357	0.00336	0.00356
	(!CLK * !D * SCD)	0.00703	0.00683	0.00703
	(!CLK * !D * !SCD)	0.00004	-0.00007	0.00013
	(!CLK * !D * !SCD)	0.00271	0.00261	0.00281

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(D * SCD * SCE * Q)	0.00617	0.00588	0.00591
	(D * SCD * SCE * Q)	0.00425	0.00396	0.00399
	(D * !SCE * Q)	0.00617	0.00588	0.00591
	(D * !SCE * Q)	0.00425	0.00396	0.00399
	(D * !SCD * SCE * !Q)	0.00617	0.00588	0.00592
	(D * !SCD * SCE * !Q)	0.00425	0.00396	0.00399
	(!D * SCD * SCE * Q)	0.00617	0.00588	0.00591
	(!D * SCD * SCE * Q)	0.00425	0.00396	0.00399
	(!D * !SCE * !Q)	0.00617	0.00588	0.00591
	(!D * !SCE * !Q)	0.00425	0.00396	0.00399
	(!D * !SCD * SCE * !Q)	0.00617	0.00588	0.00591
	(!D * !SCD * SCE * !Q)	0.00425	0.00396	0.00399
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.00629	0.00600	0.00602
	(D * SCD * SCE * Q)	0.00435	0.00406	0.00408
	(D * !SCE * Q)	0.00628	0.00600	0.00602
	(D * !SCE * Q)	0.00434	0.00406	0.00408
	(D * !SCD * SCE * !Q)	0.00635	0.00606	0.00609
	(D * !SCD * SCE * !Q)	0.00441	0.00412	0.00415
	(!D * SCD * SCE * Q)	0.00629	0.00600	0.00602
	(!D * SCD * SCE * Q)	0.00435	0.00406	0.00408
	(!D * !SCE * !Q)	0.00635	0.00606	0.00608
	(!D * !SCE * !Q)	0.00441	0.00412	0.00414
	(!D * !SCD * SCE * !Q)	0.00635	0.00606	0.00608
	(!D * !SCD * SCE * !Q)	0.00442	0.00412	0.00415

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00624	0.00595	0.00598
	(D * SCD * SCE * Q)	0.00432	0.00403	0.00405
	(D * !SCE * Q)	0.00624	0.00595	0.00598
	(D * !SCE * Q)	0.00431	0.00402	0.00405
	(D * !SCD * SCE * !Q)	0.00622	0.00592	0.00596
	(D * !SCD * SCE * !Q)	0.00429	0.00400	0.00403
	(!D * SCD * SCE * Q)	0.00624	0.00595	0.00598
	(!D * SCD * SCE * Q)	0.00432	0.00403	0.00405
	(!D * !SCE * !Q)	0.00622	0.00592	0.00595
	(!D * !SCE * !Q)	0.00429	0.00400	0.00403
	(!D * !SCD * SCE * !Q)	0.00622	0.00593	0.00595
	(!D * !SCD * SCE * !Q)	0.00429	0.00400	0.00402

Passive power(pJ) for CLK falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfxtp_1	**(D * SCD * SCE * Q)**	0.00366	0.00344	0.00356
	(D * SCD * SCE * Q)	0.00558	0.00535	0.00547
	(D * SCD * SCE * !Q)	0.00626	0.00598	0.00598
	(D * SCD * SCE * !Q)	0.00817	0.00789	0.00790
	(D * !SCE * Q)	0.00366	0.00344	0.00356
	(D * !SCE * Q)	0.00558	0.00535	0.00547
	(D * !SCE * !Q)	0.00623	0.00595	0.00596
	(D * !SCE * !Q)	0.00814	0.00786	0.00788
	(D * !SCD * SCE * Q)	0.00688	0.00667	0.00696
	(D * !SCD * SCE * Q)	0.00882	0.00860	0.00889
	(D * !SCD * SCE * !Q)	0.00362	0.00340	0.00351
	(D * !SCD * SCE * !Q)	0.00554	0.00531	0.00543
	(!D * SCD * SCE * Q)	0.00366	0.00344	0.00356
	(!D * SCD * SCE * Q)	0.00558	0.00535	0.00548
	(!D * SCD * SCE * !Q)	0.00628	0.00600	0.00601
	(!D * SCD * SCE * !Q)	0.00819	0.00791	0.00792
	(!D * !SCE * Q)	0.00687	0.00664	0.00694
	(!D * !SCE * Q)	0.00878	0.00855	0.00886
	(!D * !SCE * !Q)	0.00362	0.00339	0.00351
	(!D * !SCE * !Q)	0.00554	0.00531	0.00543
	(!D * !SCD * SCE * Q)	0.00688	0.00665	0.00693
	(!D * !SCD * SCE * Q)	0.00881	0.00858	0.00887
	(!D * !SCD * SCE * !Q)	0.00362	0.00339	0.00351
	(!D * !SCD * SCE * !Q)	0.00554	0.00531	0.00543

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00382	0.00360	0.00370
	(D * SCD * SCE * Q)	0.00575	0.00553	0.00564
	(D * SCD * SCE * !Q)	0.00663	0.00636	0.00633
	(D * SCD * SCE * !Q)	0.00857	0.00829	0.00828
	(D * !SCE * Q)	0.00382	0.00360	0.00370
	(D * !SCE * Q)	0.00575	0.00553	0.00564
	(D * !SCE * !Q)	0.00661	0.00633	0.00631
	(D * !SCE * !Q)	0.00854	0.00826	0.00826
	(D * !SCD * SCE * Q)	0.00710	0.00687	0.00717
	(D * !SCD * SCE * Q)	0.00905	0.00882	0.00913
	(D * !SCD * SCE * !Q)	0.00372	0.00349	0.00359
	(D * !SCD * SCE * !Q)	0.00565	0.00542	0.00553
	(!D * SCD * SCE * Q)	0.00382	0.00360	0.00370
	(!D * SCD * SCE * Q)	0.00575	0.00553	0.00564
	(!D * SCD * SCE * !Q)	0.00666	0.00638	0.00636
	(!D * SCD * SCE * !Q)	0.00858	0.00830	0.00830
	(!D * !SCE * Q)	0.00708	0.00685	0.00715
	(!D * !SCE * Q)	0.00902	0.00879	0.00910
	(!D * !SCE * !Q)	0.00372	0.00348	0.00359
	(!D * !SCE * !Q)	0.00565	0.00542	0.00553
	(!D * !SCD * SCE * Q)	0.00709	0.00686	0.00717
	(!D * !SCD * SCE * Q)	0.00904	0.00881	0.00912
	(!D * !SCD * SCE * !Q)	0.00372	0.00349	0.00359
	(!D * !SCD * SCE * !Q)	0.00565	0.00542	0.00553

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00364	0.00342	0.00353
	(D * SCD * SCE * Q)	0.00556	0.00534	0.00546
	(D * SCD * SCE * !Q)	0.00629	0.00601	0.00601
	(D * SCD * SCE * !Q)	0.00821	0.00793	0.00793
	(D * !SCE * Q)	0.00364	0.00342	0.00353
	(D * !SCE * Q)	0.00556	0.00534	0.00546
	(D * !SCE * !Q)	0.00626	0.00598	0.00598
	(D * !SCE * !Q)	0.00818	0.00790	0.00791
	(D * !SCD * SCE * Q)	0.00709	0.00686	0.00717
	(D * !SCD * SCE * Q)	0.00903	0.00880	0.00911
	(D * !SCD * SCE * !Q)	0.00362	0.00339	0.00351
	(D * !SCD * SCE * !Q)	0.00555	0.00532	0.00543
	(!D * SCD * SCE * Q)	0.00364	0.00342	0.00353
	(!D * SCD * SCE * Q)	0.00556	0.00534	0.00546
	(!D * SCD * SCE * !Q)	0.00631	0.00604	0.00604
	(!D * SCD * SCE * !Q)	0.00823	0.00794	0.00795
	(!D * !SCE * Q)	0.00707	0.00685	0.00715
	(!D * !SCE * Q)	0.00899	0.00877	0.00908
	(!D * !SCE * !Q)	0.00362	0.00339	0.00351
	(!D * !SCE * !Q)	0.00554	0.00531	0.00543
	(!D * !SCD * SCE * Q)	0.00708	0.00686	0.00715
	(!D * !SCD * SCE * Q)	0.00902	0.00879	0.00908
	(!D * !SCD * SCE * !Q)	0.00362	0.00340	0.00351
	(!D * !SCD * SCE * !Q)	0.00555	0.00532	0.00543

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
GATE	SCE	CLK	GCLK
x	x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdlclkp_1	25.57440
sky130_fd_sc_hs__sdlclkp_2	27.17280
sky130_fd_sc_hs__sdlclkp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	GATE	SCE	CLK	GCLK
sky130_fd_sc_hs__sdlclkp_1	0.00221	0.00201	0.00432	0.43338
sky130_fd_sc_hs__sdlclkp_2	0.00221	0.00200	0.00457	0.86861
sky130_fd_sc_hs__sdlclkp_4	0.00209	0.00189	0.00465	1.68319

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.12683	0.19475
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.12165	0.17482
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.12818	0.19649

Delay Information

Delay(ns) to GCLK rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (RR)**	0.16106	1.09947	8.37440
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (RR)**	0.16408	0.98491	8.62665
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (RR)**	0.21150	0.96865	9.03189

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (FF)**	0.20613	0.90700	5.02557
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (FF)**	0.24848	0.96566	5.66958
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (FF)**	0.33863	1.06631	6.37155

Constraint Information

Constraints(ns) for GATE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.09261	-0.21837	-1.38690
	setup	CLK (R)	0.32164	0.36633	2.18163
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09274	-0.21572	-1.38240
	setup	CLK (R)	0.31241	0.34326	1.78818
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09664	-0.22180	-1.40923
	setup	CLK (R)	0.31144	0.32973	1.60955

Constraints(ns) for GATE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.50249	-0.55838	-2.85304
	setup	CLK (R)	0.60955	0.68534	3.19820
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.49375	-0.54961	-2.85529
	setup	CLK (R)	0.59201	0.65745	3.03047
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.51026	-0.57015	-2.90024
	setup	CLK (R)	0.60574	0.65019	3.05625

Constraints(ns) for GATE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.09261	-0.21837	-1.38690
	setup	CLK (R)	0.32164	0.36633	2.18163
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09274	-0.21572	-1.38240
	setup	CLK (R)	0.31241	0.34326	1.78818
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09664	-0.22180	-1.40923
	setup	CLK (R)	0.31144	0.32973	1.60955

Constraints(ns) for GATE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.50249	-0.55838	-2.85304
	setup	CLK (R)	0.60955	0.68534	3.19820
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.49375	-0.54961	-2.85529
	setup	CLK (R)	0.59201	0.65745	3.03047
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.51026	-0.57015	-2.90024
	setup	CLK (R)	0.60574	0.65019	3.05625

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.09720	-0.22711	-1.46310
	setup	CLK (R)	0.32505	0.37489	2.24157
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09694	-0.22484	-1.46002
	setup	CLK (R)	0.31710	0.35260	1.85688
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09731	-0.23056	-1.48441
	setup	CLK (R)	0.31537	0.33861	1.67947

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.52348	-0.62422	-3.46701
	setup	CLK (R)	0.63441	0.75380	3.77084
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.51446	-0.61627	-3.46100
	setup	CLK (R)	0.61509	0.72550	3.58800
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.53715	-0.63923	-3.48709
	setup	CLK (R)	0.62930	0.71804	3.58362

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.09720	-0.22711	-1.46310
	setup	CLK (R)	0.32505	0.37489	2.24157
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09694	-0.22484	-1.46002
	setup	CLK (R)	0.31710	0.35260	1.85688
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09731	-0.23056	-1.48441
	setup	CLK (R)	0.31537	0.33861	1.67947

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.52348	-0.62422	-3.46701
	setup	CLK (R)	0.63441	0.75380	3.77084
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.51446	-0.61627	-3.46100
	setup	CLK (R)	0.61509	0.72550	3.58800
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.53715	-0.63923	-3.48709
	setup	CLK (R)	0.62930	0.71804	3.58362

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	min_pulse_width	CLK ()	0.11988	0.98145	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.13069	0.98145	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.17755	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	**min_pulse_width**	**CLK ()**	0.50199	0.98145	16.50020
	min_pulse_width	**CLK ()**	0.55967	0.98145	16.50020
sky130_fd_sc_hs__sdlclkp_2	**min_pulse_width**	**CLK ()**	0.48758	0.98145	16.50020
	min_pulse_width	**CLK ()**	0.54525	0.98145	16.50020
sky130_fd_sc_hs__sdlclkp_4	**min_pulse_width**	**CLK ()**	0.49118	0.98145	16.50020
	min_pulse_width	**CLK ()**	0.54370	0.98537	16.50020

Power Information

Internal switching power(pJ) to GCLK rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.00774	0.00751	0.00775
	CLK	0.00469	0.00446	0.00480
sky130_fd_sc_hs__sdlclkp_2	CLK	0.00924	0.00914	0.00936
	CLK	0.00601	0.00591	0.00614
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01195	0.01206	0.01240
	CLK	0.00864	0.00876	0.00918

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.00906	0.00890	0.00974
	CLK	0.01191	0.01174	0.01256
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01005	0.01004	0.01112
	CLK	0.01306	0.01304	0.01381
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01299	0.01318	0.01458
	CLK	0.01608	0.01636	0.01713

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00066	0.00067	0.00066
	(CLK * SCE)	-0.00037	-0.00037	-0.00036
	(CLK * !SCE)	0.00216	0.00200	0.00215
	(CLK * !SCE)	0.00056	0.00039	0.00055
	(!CLK * SCE * !GCLK)	0.00064	0.00065	0.00064
	(!CLK * SCE * !GCLK)	-0.00038	-0.00039	-0.00038
	(!CLK * !SCE * !GCLK)	0.00545	0.00530	0.00528
	(!CLK * !SCE * !GCLK)	0.00404	0.00388	0.00386
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00066	0.00067	0.00066
	(CLK * SCE)	-0.00037	-0.00037	-0.00036
	(CLK * !SCE)	0.00214	0.00198	0.00213
	(CLK * !SCE)	0.00054	0.00038	0.00053
	(!CLK * SCE * !GCLK)	0.00064	0.00065	0.00064
	(!CLK * SCE * !GCLK)	-0.00038	-0.00039	-0.00038
	(!CLK * !SCE * !GCLK)	0.00537	0.00521	0.00519
	(!CLK * !SCE * !GCLK)	0.00397	0.00382	0.00379
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00063	0.00064	0.00063
	(CLK * SCE)	-0.00035	-0.00036	-0.00035
	(CLK * !SCE)	0.00207	0.00192	0.00207
	(CLK * !SCE)	0.00055	0.00040	0.00055
	(!CLK * SCE * !GCLK)	0.00063	0.00063	0.00062
	(!CLK * SCE * !GCLK)	-0.00037	-0.00037	-0.00036
	(!CLK * !SCE * !GCLK)	0.00539	0.00524	0.00523
	(!CLK * !SCE * !GCLK)	0.00406	0.00391	0.00389

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00063	-0.00063	-0.00065
	(CLK * SCE)	0.00040	0.00040	0.00038
	(CLK * !SCE)	0.00045	0.00036	0.00071
	(CLK * !SCE)	0.00205	0.00197	0.00231
	(!CLK * SCE * !GCLK)	-0.00061	-0.00062	-0.00064
	(!CLK * SCE * !GCLK)	0.00041	0.00041	0.00039
	(!CLK * !SCE * !GCLK)	0.00461	0.00449	0.00473
	(!CLK * !SCE * !GCLK)	0.00603	0.00591	0.00615
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00063	-0.00063	-0.00065
	(CLK * SCE)	0.00040	0.00040	0.00038
	(CLK * !SCE)	0.00047	0.00038	0.00073
	(CLK * !SCE)	0.00206	0.00198	0.00232
	(!CLK * SCE * !GCLK)	-0.00061	-0.00061	-0.00064
	(!CLK * SCE * !GCLK)	0.00041	0.00041	0.00039
	(!CLK * !SCE * !GCLK)	0.00463	0.00451	0.00475
	(!CLK * !SCE * !GCLK)	0.00603	0.00591	0.00616
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00060	-0.00060	-0.00062
	(CLK * SCE)	0.00038	0.00038	0.00036
	(CLK * !SCE)	0.00060	0.00052	0.00086
	(CLK * !SCE)	0.00212	0.00204	0.00238
	(!CLK * SCE * !GCLK)	-0.00059	-0.00059	-0.00061
	(!CLK * SCE * !GCLK)	0.00039	0.00039	0.00037
	(!CLK * !SCE * !GCLK)	0.00477	0.00466	0.00490
	(!CLK * !SCE * !GCLK)	0.00611	0.00600	0.00624

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00061	0.00056	0.00055
	(CLK * GATE)	-0.00058	-0.00065	-0.00065
	(CLK * !GATE)	0.00265	0.00255	0.00258
	(CLK * !GATE)	0.00082	0.00072	0.00076
	(!CLK * GATE * !GCLK)	0.00061	0.00056	0.00055
	(!CLK * GATE * !GCLK)	-0.00059	-0.00065	-0.00066
	(!CLK * !GATE * !GCLK)	0.00595	0.00583	0.00577
	(!CLK * !GATE * !GCLK)	0.00431	0.00419	0.00414
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00061	0.00056	0.00055
	(CLK * GATE)	-0.00058	-0.00065	-0.00065
	(CLK * !GATE)	0.00263	0.00252	0.00256
	(CLK * !GATE)	0.00081	0.00070	0.00075
	(!CLK * GATE * !GCLK)	0.00061	0.00056	0.00055
	(!CLK * GATE * !GCLK)	-0.00058	-0.00065	-0.00065
	(!CLK * !GATE * !GCLK)	0.00586	0.00574	0.00569
	(!CLK * !GATE * !GCLK)	0.00425	0.00413	0.00408
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00058	0.00053	0.00052
	(CLK * GATE)	-0.00057	-0.00063	-0.00064
	(CLK * !GATE)	0.00257	0.00247	0.00251
	(CLK * !GATE)	0.00083	0.00073	0.00077
	(!CLK * GATE * !GCLK)	0.00058	0.00053	0.00052
	(!CLK * GATE * !GCLK)	-0.00057	-0.00064	-0.00064
	(!CLK * !GATE * !GCLK)	0.00589	0.00577	0.00572
	(!CLK * !GATE * !GCLK)	0.00433	0.00422	0.00417

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00055	-0.00055	-0.00054
	(CLK * GATE)	0.00066	0.00066	0.00066
	(CLK * !GATE)	0.00046	0.00039	0.00043
	(CLK * !GATE)	0.00229	0.00222	0.00226
	(!CLK * GATE * !GCLK)	-0.00055	-0.00055	-0.00054
	(!CLK * GATE * !GCLK)	0.00066	0.00066	0.00066
	(!CLK * !GATE * !GCLK)	0.00459	0.00451	0.00448
	(!CLK * !GATE * !GCLK)	0.00623	0.00615	0.00613
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00054	-0.00054	-0.00054
	(CLK * GATE)	0.00066	0.00066	0.00066
	(CLK * !GATE)	0.00048	0.00041	0.00045
	(CLK * !GATE)	0.00229	0.00223	0.00227
	(!CLK * GATE * !GCLK)	-0.00054	-0.00054	-0.00054
	(!CLK * GATE * !GCLK)	0.00065	0.00066	0.00066
	(!CLK * !GATE * !GCLK)	0.00461	0.00453	0.00450
	(!CLK * !GATE * !GCLK)	0.00623	0.00615	0.00612
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00051	-0.00051	-0.00051
	(CLK * GATE)	0.00065	0.00064	0.00064
	(CLK * !GATE)	0.00061	0.00055	0.00059
	(CLK * !GATE)	0.00235	0.00229	0.00232
	(!CLK * GATE * !GCLK)	-0.00051	-0.00051	-0.00051
	(!CLK * GATE * !GCLK)	0.00064	0.00064	0.00064
	(!CLK * !GATE * !GCLK)	0.00476	0.00468	0.00466
	(!CLK * !GATE * !GCLK)	0.00631	0.00624	0.00622

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00483	0.00461	0.00476
	(!GATE * !SCE * !GCLK)	0.00193	0.00171	0.00186
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00489	0.00466	0.00482
	(!GATE * !SCE * !GCLK)	0.00183	0.00159	0.00176
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00496	0.00473	0.00489
	(!GATE * !SCE * !GCLK)	0.00184	0.00160	0.00177

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.00551	0.00527	0.00549
	(GATE * SCE * !GCLK)	0.00866	0.00841	0.00862
	(GATE * !SCE * !GCLK)	0.00550	0.00526	0.00548
	(GATE * !SCE * !GCLK)	0.00865	0.00839	0.00862
	(!GATE * SCE * !GCLK)	0.00554	0.00530	0.00552
	(!GATE * SCE * !GCLK)	0.00868	0.00842	0.00864
	(!GATE * !SCE * !GCLK)	0.00218	0.00200	0.00233
	(!GATE * !SCE * !GCLK)	0.00508	0.00490	0.00524
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.00534	0.00510	0.00531
	(GATE * SCE * !GCLK)	0.00867	0.00841	0.00863
	(GATE * !SCE * !GCLK)	0.00533	0.00509	0.00531
	(GATE * !SCE * !GCLK)	0.00866	0.00840	0.00863
	(!GATE * SCE * !GCLK)	0.00536	0.00512	0.00535
	(!GATE * SCE * !GCLK)	0.00869	0.00843	0.00865
	(!GATE * !SCE * !GCLK)	0.00206	0.00189	0.00222
	(!GATE * !SCE * !GCLK)	0.00512	0.00495	0.00529
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.00555	0.00530	0.00551
	(GATE * SCE * !GCLK)	0.00893	0.00866	0.00888
	(GATE * !SCE * !GCLK)	0.00553	0.00529	0.00550
	(GATE * !SCE * !GCLK)	0.00892	0.00865	0.00887
	(!GATE * SCE * !GCLK)	0.00557	0.00532	0.00554
	(!GATE * SCE * !GCLK)	0.00894	0.00868	0.00889
	(!GATE * !SCE * !GCLK)	0.00218	0.00200	0.00233
	(!GATE * !SCE * !GCLK)	0.00530	0.00512	0.00546

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT					OUTPUT	
D	DE	SCD	SCE	CLK	Q	Q_N
x	0	x	0	R	IQ	IQ_N
x	x	0	1	R	0	1
x	x	1	1	R	1	0
0	1	0	x	R	0	1
0	1	1	0	R	0	1
1	1	x	0	R	1	0
x	x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxbp_1	54.34560
sky130_fd_sc_hs__sedfxbp_2	57.54240

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	DE	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sedfxbp_1	0.00188	0.00358	0.00164	0.00362	0.00260	0.43602	0.43479
sky130_fd_sc_hs__sedfxbp_2	0.00197	0.00362	0.00166	0.00370	0.00260	0.80715	0.83307

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxbp_1	0.00000	0.19378	0.34842
sky130_fd_sc_hs__sedfxbp_2	0.00000	0.19963	0.34737

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RR)	0.44736	1.41761	8.72787
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.45744	1.31083	8.78687

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.48411	1.11213	3.84998
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.57801	1.19644	3.85896

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q_N (RR)	0.70652	1.63293	8.91405
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.86834	1.64624	9.14956

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q_N (RF)	0.65334	1.20960	3.90339
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.72488	1.25040	3.95152

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.33417	-0.47266	-2.20961
	setup	CLK (R)	0.43831	0.53406	2.31062
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.34015	-0.47580	-2.21552
	setup	CLK (R)	0.44150	0.53596	2.31366

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-1.36037	-1.42368	-4.38087
	setup	CLK (R)	1.62537	1.66580	4.48881
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-1.35255	-1.42010	-4.37011
	setup	CLK (R)	1.61540	1.65367	4.47815

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.33417	-0.47266	-2.20961
	setup	CLK (R)	0.43831	0.53406	2.31062
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.34015	-0.47580	-2.21552
	setup	CLK (R)	0.44150	0.53596	2.31366

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-1.36037	-1.42368	-4.38087
	setup	CLK (R)	1.62537	1.66580	4.48881
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-1.35255	-1.42010	-4.37011
	setup	CLK (R)	1.61540	1.65367	4.47815

Constraints(ns) for DE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.08795	-0.09921	-0.41220
	setup	CLK (R)	1.70235	1.69678	2.31244
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08976	-0.10241	-0.41151
	setup	CLK (R)	1.68936	1.68206	2.31438

Constraints(ns) for DE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.50671	-0.70472	-2.98154
	setup	CLK (R)	1.41898	1.50764	4.66080
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.50790	-0.70512	-2.97573
	setup	CLK (R)	1.41348	1.49988	4.65372

Constraints(ns) for DE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.08795	-0.09921	-0.41220
	hold	CLK (R)	-0.40661	-0.49456	-1.06325
	setup	CLK (R)	0.43820	0.52044	2.31244
	setup	CLK (R)	1.70235	1.69678	1.68762
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08976	-0.10241	-0.41151
	hold	CLK (R)	-0.40721	-0.49431	-1.05872
	setup	CLK (R)	0.43967	0.52110	2.31438
	setup	CLK (R)	1.68936	1.68206	1.66883

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-1.34282	-1.44632	-4.63276
	hold	CLK (R)	-0.50671	-0.70472	-2.98154
	setup	CLK (R)	1.41898	1.50764	4.66080
	setup	CLK (R)	0.55411	0.73706	3.02265
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-1.33685	-1.44407	-4.62187
	hold	CLK (R)	-0.50790	-0.70512	-2.97573
	setup	CLK (R)	1.41348	1.49988	4.65372
	setup	CLK (R)	0.55429	0.73860	3.01455

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.18864	-0.30551	-1.79692
	setup	CLK (R)	0.25892	0.35758	1.89993
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19157	-0.31286	-1.79883
	setup	CLK (R)	0.25932	0.35596	1.90422

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.81517	-0.91397	-3.85602
	setup	CLK (R)	1.06048	1.13126	4.00216
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.81513	-0.91444	-3.85819
	setup	CLK (R)	1.04816	1.12051	3.98836

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.18864	-0.30551	-1.79692
	setup	CLK (R)	0.25892	0.35758	1.89993
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19157	-0.31286	-1.79883
	setup	CLK (R)	0.25932	0.35596	1.90422

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.81517	-0.91397	-3.85602
	setup	CLK (R)	1.06048	1.13126	4.00216
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.81513	-0.91444	-3.85819
	setup	CLK (R)	1.04816	1.12051	3.98836

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	0.00085	0.03553	0.48965
	setup	CLK (R)	1.08248	1.06123	1.68079
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.00130	0.03671	0.48514
	setup	CLK (R)	1.07606	1.05640	1.67767

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.36867	-0.57187	-2.92812
	setup	CLK (R)	1.21379	1.25251	3.72809
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.38199	-0.58324	-2.97046
	setup	CLK (R)	1.20395	1.24242	3.71670

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.84030	-0.84357	-0.92769
	hold	CLK (R)	0.00085	0.03553	0.48965
	hold	CLK (R)	-0.16356	-0.29431	-1.56559
	hold	CLK (R)	-0.28347	-0.36074	-0.58266
	setup	CLK (R)	1.08248	1.06083	1.04248
	setup	CLK (R)	0.23419	0.34239	1.68074
	setup	CLK (R)	0.23395	0.34236	1.68079
	setup	CLK (R)	1.08103	1.06123	1.04238
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.83898	-0.84909	-0.95315
	hold	CLK (R)	-0.00130	0.03671	0.48514
	hold	CLK (R)	-0.16785	-0.29484	-1.56753
	hold	CLK (R)	-0.28686	-0.36547	-0.62093
	setup	CLK (R)	1.07436	1.05428	1.05797
	setup	CLK (R)	0.23693	0.34233	1.67757
	setup	CLK (R)	0.23682	0.34233	1.67767
	setup	CLK (R)	1.07606	1.05640	1.05886

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.37920	-0.58367	-2.94025
	hold	CLK (R)	-0.91573	-0.98421	-3.51163
	hold	CLK (R)	-0.91524	-0.97669	-3.52453
	hold	CLK (R)	-0.36867	-0.57187	-2.92812
	setup	CLK (R)	0.48105	0.64270	3.03351
	setup	CLK (R)	0.99046	1.03884	3.53685
	setup	CLK (R)	1.21379	1.25251	3.72809
	setup	CLK (R)	0.41637	0.60221	2.96086
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.39028	-0.59171	-2.98760
	hold	CLK (R)	-0.91594	-0.98229	-3.50554
	hold	CLK (R)	-0.91161	-0.97840	-3.52197
	hold	CLK (R)	-0.38199	-0.58324	-2.97046
	setup	CLK (R)	0.49204	0.65231	3.08194
	setup	CLK (R)	0.99132	1.03618	3.53760
	setup	CLK (R)	1.20395	1.24242	3.71670
	setup	CLK (R)	0.42743	0.61245	3.01216

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	min_pulse_width	CLK ()	0.19918	0.98145	16.50020
	min_pulse_width	CLK ()	0.19918	0.98145	16.50020
	min_pulse_width	CLK ()	0.39024	0.98145	16.50020
	min_pulse_width	CLK ()	0.19918	0.98145	16.50020
	min_pulse_width	CLK ()	0.39385	0.98145	16.50020
	min_pulse_width	CLK ()	0.19918	0.98145	16.50020
	min_pulse_width	CLK ()	0.39024	0.98145	16.50020
	min_pulse_width	CLK ()	0.39024	0.98145	16.50020
	min_pulse_width	CLK ()	0.19918	0.98145	16.50020
	min_pulse_width	CLK ()	0.39385	0.98145	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.21360	0.98145	16.50020
	min_pulse_width	CLK ()	0.21360	0.98145	16.50020
	min_pulse_width	CLK ()	0.54165	0.98145	16.50020
	min_pulse_width	CLK ()	0.21360	0.98145	16.50020
	min_pulse_width	CLK ()	0.54165	0.98145	16.50020
	min_pulse_width	CLK ()	0.21360	0.98145	16.50020
	min_pulse_width	CLK ()	0.54165	0.98145	16.50020
	min_pulse_width	CLK ()	0.54165	0.98145	16.50020
	min_pulse_width	CLK ()	0.21360	0.98145	16.50020
	min_pulse_width	CLK ()	0.54165	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	min_pulse_width	CLK ()	0.38303	0.98145	16.50020
	min_pulse_width	CLK ()	0.41548	0.98145	16.50020
	min_pulse_width	CLK ()	0.81562	0.98145	16.50020
	min_pulse_width	CLK ()	0.38303	0.98145	16.50020
	min_pulse_width	CLK ()	0.81562	0.98145	16.50020
	min_pulse_width	CLK ()	0.38303	0.98145	16.50020
	min_pulse_width	CLK ()	0.95391	1.06386	16.50020
	min_pulse_width	CLK ()	0.81562	0.98145	16.50020
	min_pulse_width	CLK ()	0.38303	0.98145	16.50020
	min_pulse_width	CLK ()	0.81562	0.98145	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.38303	0.98145	16.50020
	min_pulse_width	CLK ()	0.41548	0.98145	16.50020
	min_pulse_width	CLK ()	0.79760	0.98145	16.50020
	min_pulse_width	CLK ()	0.38303	0.98145	16.50020
	min_pulse_width	CLK ()	0.79760	0.98145	16.50020
	min_pulse_width	CLK ()	0.38303	0.98145	16.50020
	min_pulse_width	CLK ()	0.93643	1.04424	16.50020
	min_pulse_width	CLK ()	0.79760	0.98145	16.50020
	min_pulse_width	CLK ()	0.38303	0.98145	16.50020
	min_pulse_width	CLK ()	0.79760	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00835	0.00832	0.00838
	CLK	0.00721	0.00718	0.00723
sky130_fd_sc_hs__sedfxbp_2	CLK	0.00950	0.00959	0.00970
	CLK	0.00836	0.00846	0.00856

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00758	0.00750	0.00739
	CLK	0.00687	0.00680	0.00666
sky130_fd_sc_hs__sedfxbp_2	CLK	0.00870	0.00879	0.00863
	CLK	0.00798	0.00808	0.00791

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00759	0.00751	0.00749
	CLK	0.00688	0.00681	0.00677
sky130_fd_sc_hs__sedfxbp_2	CLK	0.00871	0.00880	0.00883
	CLK	0.00800	0.00810	0.00812

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00832	0.00829	0.00826
	CLK	0.00718	0.00715	0.00711
sky130_fd_sc_hs__sedfxbp_2	CLK	0.00946	0.00956	0.00950
	CLK	0.00833	0.00843	0.00836

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00230	0.00217	0.00225
	(DE * SCE)	0.00089	0.00076	0.00085
	(CLK * DE * !SCE)	0.00471	0.00462	0.00463
	(CLK * DE * !SCE)	0.00290	0.00282	0.00283
	(CLK * !DE * !SCE)	0.00052	0.00052	0.00052
	(CLK * !DE * !SCE)	-0.00040	-0.00040	-0.00040
	(!DE * SCE)	0.00052	0.00052	0.00052
	(!DE * SCE)	-0.00040	-0.00040	-0.00040
	(!CLK * DE * !SCE * Q * !Q_N)	0.00809	0.00801	0.00797
	(!CLK * DE * !SCE * Q * !Q_N)	0.00628	0.00621	0.00617
	(!CLK * DE * !SCE * !Q * Q_N)	0.00791	0.00784	0.00777
	(!CLK * DE * !SCE * !Q * Q_N)	0.00608	0.00601	0.00595
	(!CLK * !DE * !SCE)	0.00052	0.00052	0.00052
	(!CLK * !DE * !SCE)	-0.00040	-0.00040	-0.00040
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00233	0.00220	0.00228
	(DE * SCE)	0.00087	0.00073	0.00082
	(CLK * DE * !SCE)	0.00479	0.00471	0.00471
	(CLK * DE * !SCE)	0.00292	0.00283	0.00284
	(CLK * !DE * !SCE)	0.00054	0.00054	0.00054
	(CLK * !DE * !SCE)	-0.00042	-0.00042	-0.00041
	(!DE * SCE)	0.00054	0.00054	0.00054
	(!DE * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * DE * !SCE * Q * !Q_N)	0.00813	0.00806	0.00801
	(!CLK * DE * !SCE * Q * !Q_N)	0.00626	0.00618	0.00613
	(!CLK * DE * !SCE * !Q * Q_N)	0.00793	0.00786	0.00780
	(!CLK * DE * !SCE * !Q * Q_N)	0.00604	0.00597	0.00591
	(!CLK * !DE * !SCE)	0.00054	0.00054	0.00054
	(!CLK * !DE * !SCE)	-0.00042	-0.00042	-0.00041

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00085	0.00075	0.00096
	(DE * SCE)	0.00227	0.00218	0.00238
	(CLK * DE * !SCE)	0.00158	0.00146	0.00162
	(CLK * DE * !SCE)	0.00339	0.00329	0.00344
	(CLK * !DE * !SCE)	-0.00017	-0.00018	-0.00017
	(CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(!DE * SCE)	-0.00018	-0.00017	-0.00017
	(!DE * SCE)	0.00078	0.00078	0.00077
	(!CLK * DE * !SCE * Q * !Q_N)	0.00457	0.00446	0.00459
	(!CLK * DE * !SCE * Q * !Q_N)	0.00637	0.00627	0.00639
	(!CLK * DE * !SCE * !Q * Q_N)	0.00487	0.00477	0.00491
	(!CLK * DE * !SCE * !Q * Q_N)	0.00669	0.00660	0.00673
	(!CLK * !DE * !SCE)	-0.00017	-0.00017	-0.00017
	(!CLK * !DE * !SCE)	0.00077	0.00077	0.00077
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00074	0.00064	0.00085
	(DE * SCE)	0.00222	0.00212	0.00232
	(CLK * DE * !SCE)	0.00151	0.00139	0.00155
	(CLK * DE * !SCE)	0.00340	0.00329	0.00344
	(CLK * !DE * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK * !DE * !SCE)	0.00082	0.00081	0.00081
	(!DE * SCE)	-0.00018	-0.00018	-0.00018
	(!DE * SCE)	0.00082	0.00082	0.00081
	(!CLK * DE * !SCE * Q * !Q_N)	0.00448	0.00436	0.00449
	(!CLK * DE * !SCE * Q * !Q_N)	0.00635	0.00624	0.00637
	(!CLK * DE * !SCE * !Q * Q_N)	0.00479	0.00468	0.00482
	(!CLK * DE * !SCE * !Q * Q_N)	0.00668	0.00658	0.00672
	(!CLK * !DE * !SCE)	-0.00018	-0.00018	-0.00018
	(!CLK * !DE * !SCE)	0.00082	0.00081	0.00081

Passive power(pJ) for DE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00375	0.00355	0.00361
	SCE	0.00174	0.00152	0.00158
	(CLK * !SCE)	0.00655	0.00634	0.00641
	(CLK * !SCE)	0.00310	0.00289	0.00295
	(!CLK * D * !SCE * Q * !Q_N)	0.00258	0.00239	0.00248
	(!CLK * D * !SCE * Q * !Q_N)	0.00004	-0.00016	-0.00007
	(!CLK * D * !SCE * !Q * Q_N)	0.00994	0.00974	0.00978
	(!CLK * D * !SCE * !Q * Q_N)	0.00649	0.00628	0.00632
	(!CLK * !D * !SCE * Q * !Q_N)	0.00767	0.00750	0.00756
	(!CLK * !D * !SCE * Q * !Q_N)	0.00604	0.00585	0.00593
	(!CLK * !D * !SCE * !Q * Q_N)	0.00256	0.00241	0.00250
	(!CLK * !D * !SCE * !Q * Q_N)	0.00005	-0.00011	-0.00002
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00424	0.00403	0.00411
	SCE	0.00113	0.00089	0.00099
	(CLK * !SCE)	0.00662	0.00642	0.00649
	(CLK * !SCE)	0.00310	0.00289	0.00295
	(!CLK * D * !SCE * Q * !Q_N)	0.00256	0.00238	0.00247
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00022	-0.00012
	(!CLK * D * !SCE * !Q * Q_N)	0.00994	0.00973	0.00978
	(!CLK * D * !SCE * !Q * Q_N)	0.00641	0.00620	0.00624
	(!CLK * !D * !SCE * Q * !Q_N)	0.00759	0.00742	0.00749
	(!CLK * !D * !SCE * Q * !Q_N)	0.00594	0.00576	0.00584
	(!CLK * !D * !SCE * !Q * Q_N)	0.00257	0.00241	0.00250
	(!CLK * !D * !SCE * !Q * Q_N)	0.00001	-0.00015	-0.00005

Passive power(pJ) for DE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00234	0.00218	0.00230
	SCE	0.00435	0.00420	0.00435
	(CLK * !SCE)	0.00474	0.00459	0.00473
	(CLK * !SCE)	0.00636	0.00621	0.00637
	(!CLK * D * !SCE * Q * !Q_N)	0.00001	-0.00011	0.00009
	(!CLK * D * !SCE * Q * !Q_N)	0.00254	0.00243	0.00262
	(!CLK * D * !SCE * !Q * Q_N)	0.00526	0.00510	0.00529
	(!CLK * D * !SCE * !Q * Q_N)	0.00872	0.00856	0.00874
	(!CLK * !D * !SCE * Q * !Q_N)	0.00812	0.00797	0.00810
	(!CLK * !D * !SCE * Q * !Q_N)	0.00974	0.00960	0.00975
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00005	-0.00016	0.00004
	(!CLK * !D * !SCE * !Q * Q_N)	0.00246	0.00235	0.00256
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00232	0.00216	0.00229
	SCE	0.00436	0.00421	0.00436
	(CLK * !SCE)	0.00477	0.00463	0.00477
	(CLK * !SCE)	0.00640	0.00627	0.00642
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00014	0.00007
	(!CLK * D * !SCE * Q * !Q_N)	0.00256	0.00245	0.00264
	(!CLK * D * !SCE * !Q * Q_N)	0.00517	0.00501	0.00521
	(!CLK * D * !SCE * !Q * Q_N)	0.00870	0.00855	0.00873
	(!CLK * !D * !SCE * Q * !Q_N)	0.00811	0.00797	0.00810
	(!CLK * !D * !SCE * Q * !Q_N)	0.00974	0.00962	0.00976
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00008	-0.00020	0.00001
	(!CLK * !D * !SCE * !Q * Q_N)	0.00247	0.00237	0.00257

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00259	0.00253	0.00252
	(CLK * SCE)	0.00114	0.00108	0.00107
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00599	0.00594	0.00587
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00454	0.00449	0.00442
	!SCE	0.00046	0.00042	0.00041
	!SCE	-0.00052	-0.00056	-0.00056
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00265	0.00259	0.00258
	(CLK * SCE)	0.00117	0.00110	0.00109
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00597	0.00592	0.00586
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00449	0.00444	0.00437
	!SCE	0.00045	0.00042	0.00041
	!SCE	-0.00054	-0.00058	-0.00058

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00134	0.00129	0.00129
	(CLK * SCE)	0.00279	0.00274	0.00274
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00465	0.00460	0.00457
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00611	0.00606	0.00602
	!SCE	-0.00039	-0.00041	-0.00041
	!SCE	0.00057	0.00057	0.00057
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00132	0.00127	0.00128
	(CLK * SCE)	0.00281	0.00276	0.00276
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00462	0.00457	0.00454
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00611	0.00606	0.00602
	!SCE	-0.00039	-0.00040	-0.00041
	!SCE	0.00059	0.00059	0.00059

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00415	0.00400	0.00400
	(CLK * D)	0.00227	0.00211	0.00210
	(CLK * !D)	0.00416	0.00400	0.00400
	(CLK * !D)	0.00228	0.00211	0.00210
	(!CLK * D * SCD * Q * !Q_N)	0.00233	0.00220	0.00230
	(!CLK * D * SCD * Q * !Q_N)	0.00005	-0.00008	0.00002
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00224	0.00212	0.00221
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00004	-0.00016	-0.00007
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00741	0.00732	0.00731
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00553	0.00543	0.00541
	(!CLK * D * !SCD * Q * !Q_N)	0.00742	0.00733	0.00733
	(!CLK * D * !SCD * Q * !Q_N)	0.00554	0.00544	0.00543
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00738	0.00717	0.00727
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00471	0.00450	0.00459
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00252	0.00240	0.00250
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00024	0.00010	0.00021
	(!CLK * !D * SCD * !Q * Q_N)	0.00738	0.00717	0.00727
	(!CLK * !D * SCD * !Q * Q_N)	0.00470	0.00450	0.00459
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00755	0.00734	0.00743
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00488	0.00467	0.00475
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00260	0.00249	0.00259
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00033	0.00019	0.00029
	(!CLK * !D * !SCD * !Q * Q_N)	0.00252	0.00239	0.00250
	(!CLK * !D * !SCD * !Q * Q_N)	0.00024	0.00011	0.00021
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00233	0.00220	0.00230
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00005	-0.00008	0.00002
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00742	0.00733	0.00733
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00554	0.00544	0.00543

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00424	0.00407	0.00406
	(CLK * D)	0.00230	0.00213	0.00211
	(CLK * !D)	0.00424	0.00407	0.00406
	(CLK * !D)	0.00231	0.00213	0.00211
	(!CLK * D * SCD * Q * !Q_N)	0.00237	0.00225	0.00233
	(!CLK * D * SCD * Q * !Q_N)	0.00002	-0.00011	-0.00001
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00229	0.00217	0.00225
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00006	-0.00019	-0.00009
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00747	0.00738	0.00737
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00555	0.00544	0.00541
	(!CLK * D * !SCD * Q * !Q_N)	0.00746	0.00736	0.00735
	(!CLK * D * !SCD * Q * !Q_N)	0.00552	0.00541	0.00540
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00737	0.00716	0.00725
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00461	0.00440	0.00449
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00259	0.00247	0.00257
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00025	0.00011	0.00021
	(!CLK * !D * SCD * !Q * Q_N)	0.00737	0.00716	0.00725
	(!CLK * !D * SCD * !Q * Q_N)	0.00461	0.00440	0.00449
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00756	0.00734	0.00743
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00480	0.00459	0.00466
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00267	0.00255	0.00265
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00033	0.00019	0.00029
	(!CLK * !D * !SCD * !Q * Q_N)	0.00260	0.00247	0.00257
	(!CLK * !D * !SCD * !Q * Q_N)	0.00025	0.00011	0.00021
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00237	0.00225	0.00233
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00002	-0.00011	-0.00001
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00746	0.00736	0.00735
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00553	0.00541	0.00539

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00252	0.00265	0.00328
	(CLK * D)	0.00440	0.00454	0.00518
	(CLK * !D)	0.00251	0.00265	0.00328
	(CLK * !D)	0.00440	0.00453	0.00517
	(!CLK * D * SCD * Q * !Q_N)	0.00007	-0.00000	0.00021
	(!CLK * D * SCD * Q * !Q_N)	0.00234	0.00228	0.00249
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00016	0.00009	0.00030
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00243	0.00237	0.00258
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00587	0.00598	0.00659
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00776	0.00786	0.00849
	(!CLK * D * !SCD * Q * !Q_N)	0.00587	0.00597	0.00657
	(!CLK * D * !SCD * Q * !Q_N)	0.00775	0.00786	0.00847
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00400	0.00382	0.00419
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00667	0.00650	0.00687
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00009	-0.00017	0.00004
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00219	0.00212	0.00232
	(!CLK * !D * SCD * !Q * Q_N)	0.00400	0.00383	0.00419
	(!CLK * !D * SCD * !Q * Q_N)	0.00667	0.00650	0.00687
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00383	0.00366	0.00404
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00650	0.00634	0.00671
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00018	-0.00026	-0.00005
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00210	0.00203	0.00224
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00009	-0.00017	0.00004
	(!CLK * !D * !SCD * !Q * Q_N)	0.00219	0.00212	0.00232
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00007	-0.00000	0.00021
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00234	0.00228	0.00249
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00587	0.00597	0.00658
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00775	0.00786	0.00846

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00262	0.00276	0.00339
	(CLK * D)	0.00456	0.00470	0.00534
	(CLK * !D)	0.00262	0.00275	0.00339
	(CLK * !D)	0.00456	0.00469	0.00533
	(!CLK * D * SCD * Q * !Q_N)	0.00012	0.00004	0.00025
	(!CLK * D * SCD * Q * !Q_N)	0.00246	0.00239	0.00260
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00020	0.00012	0.00033
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00254	0.00247	0.00268
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00590	0.00601	0.00663
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00784	0.00795	0.00858
	(!CLK * D * !SCD * Q * !Q_N)	0.00593	0.00604	0.00664
	(!CLK * D * !SCD * Q * !Q_N)	0.00787	0.00797	0.00859
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00401	0.00383	0.00419
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00676	0.00658	0.00695
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00008	-0.00016	0.00004
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00227	0.00219	0.00240
	(!CLK * !D * SCD * !Q * Q_N)	0.00401	0.00383	0.00419
	(!CLK * !D * SCD * !Q * Q_N)	0.00676	0.00658	0.00695
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00382	0.00364	0.00402
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00658	0.00640	0.00678
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00016	-0.00024	-0.00004
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00219	0.00211	0.00232
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00008	-0.00016	0.00004
	(!CLK * !D * !SCD * !Q * Q_N)	0.00227	0.00219	0.00240
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00012	0.00004	0.00025
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00246	0.00239	0.00260
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00593	0.00604	0.00664
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00787	0.00798	0.00859

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(SCD * SCE * Q * !Q_N)	0.00679	0.00651	0.00651
	(SCD * SCE * Q * !Q_N)	0.00492	0.00464	0.00465
	(D * !SCE * Q * !Q_N)	0.00678	0.00650	0.00650
	(D * !SCE * Q * !Q_N)	0.00492	0.00464	0.00464
	(D * !DE * !SCE * !Q * Q_N)	0.00672	0.00642	0.00644
	(D * !DE * !SCE * !Q * Q_N)	0.00486	0.00455	0.00458
	(!SCD * SCE * !Q * Q_N)	0.00673	0.00642	0.00644
	(!SCD * SCE * !Q * Q_N)	0.00486	0.00456	0.00458
	(!D * !SCE * !Q * Q_N)	0.00672	0.00642	0.00644
	(!D * !SCE * !Q * Q_N)	0.00486	0.00456	0.00458
	(!D * !DE * !SCE * Q * !Q_N)	0.00678	0.00650	0.00650
	(!D * !DE * !SCE * Q * !Q_N)	0.00492	0.00464	0.00464
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.00675	0.00646	0.00647
	(SCD * SCE * Q * !Q_N)	0.00489	0.00460	0.00461
	(D * !SCE * Q * !Q_N)	0.00674	0.00646	0.00646
	(D * !SCE * Q * !Q_N)	0.00488	0.00459	0.00460
	(D * !DE * !SCE * !Q * Q_N)	0.00674	0.00643	0.00645
	(D * !DE * !SCE * !Q * Q_N)	0.00488	0.00457	0.00459
	(!SCD * SCE * !Q * Q_N)	0.00675	0.00644	0.00646
	(!SCD * SCE * !Q * Q_N)	0.00489	0.00458	0.00460
	(!D * !SCE * !Q * Q_N)	0.00674	0.00643	0.00645
	(!D * !SCE * !Q * Q_N)	0.00488	0.00457	0.00459
	(!D * !DE * !SCE * Q * !Q_N)	0.00674	0.00646	0.00646
	(!D * !DE * !SCE * Q * !Q_N)	0.00488	0.00459	0.00460

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(SCD * SCE * Q * !Q_N)	0.00376	0.00353	0.00363
	(SCD * SCE * Q * !Q_N)	0.00561	0.00539	0.00550
	(SCD * SCE * !Q * Q_N)	0.00719	0.00693	0.00691
	(SCD * SCE * !Q * Q_N)	0.00905	0.00878	0.00877
	(D * DE * !SCE * !Q * Q_N)	0.00717	0.00691	0.00690
	(D * DE * !SCE * !Q * Q_N)	0.00902	0.00876	0.00875
	(D * !SCE * Q * !Q_N)	0.00376	0.00353	0.00364
	(D * !SCE * Q * !Q_N)	0.00562	0.00539	0.00550
	(D * !DE * !SCE * !Q * Q_N)	0.00373	0.00351	0.00362
	(D * !DE * !SCE * !Q * Q_N)	0.00559	0.00537	0.00548
	(!SCD * SCE * Q * !Q_N)	0.00766	0.00745	0.00778
	(!SCD * SCE * Q * !Q_N)	0.00952	0.00932	0.00965
	(!SCD * SCE * !Q * Q_N)	0.00373	0.00351	0.00362
	(!SCD * SCE * !Q * Q_N)	0.00559	0.00537	0.00548
	(!D * DE * !SCE * Q * !Q_N)	0.00766	0.00746	0.00778
	(!D * DE * !SCE * Q * !Q_N)	0.00952	0.00932	0.00964
	(!D * !SCE * !Q * Q_N)	0.00373	0.00351	0.00362
	(!D * !SCE * !Q * Q_N)	0.00559	0.00537	0.00548
	(!D * !DE * !SCE * Q * !Q_N)	0.00376	0.00353	0.00364
	(!D * !DE * !SCE * Q * !Q_N)	0.00562	0.00538	0.00550

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00382	0.00359	0.00370
	(SCD * SCE * Q * !Q_N)	0.00567	0.00544	0.00556
	(SCD * SCE * !Q * Q_N)	0.00713	0.00689	0.00686
	(SCD * SCE * !Q * Q_N)	0.00898	0.00874	0.00871
	(D * DE * !SCE * !Q * Q_N)	0.00711	0.00687	0.00685
	(D * DE * !SCE * !Q * Q_N)	0.00896	0.00872	0.00871
	(D * !SCE * Q * !Q_N)	0.00383	0.00360	0.00371
	(D * !SCE * Q * !Q_N)	0.00568	0.00545	0.00557
	(D * !DE * !SCE * !Q * Q_N)	0.00374	0.00354	0.00363
	(D * !DE * !SCE * !Q * Q_N)	0.00560	0.00539	0.00549
	(!SCD * SCE * Q * !Q_N)	0.00770	0.00748	0.00782
	(!SCD * SCE * Q * !Q_N)	0.00956	0.00934	0.00968
	(!SCD * SCE * !Q * Q_N)	0.00374	0.00353	0.00363
	(!SCD * SCE * !Q * Q_N)	0.00559	0.00539	0.00549
	(!D * DE * !SCE * Q * !Q_N)	0.00771	0.00749	0.00783
	(!D * DE * !SCE * Q * !Q_N)	0.00956	0.00934	0.00969
	(!D * !SCE * !Q * Q_N)	0.00374	0.00354	0.00363
	(!D * !SCE * !Q * Q_N)	0.00560	0.00539	0.00549
	(!D * !DE * !SCE * Q * !Q_N)	0.00382	0.00360	0.00371
	(!D * !DE * !SCE * Q * !Q_N)	0.00568	0.00545	0.00557

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT					OUTPUT
D	DE	SCD	SCE	CLK	Q
x	0	x	0	R	IQ
x	x	0	1	R	0
x	x	1	1	R	1
0	1	0	x	R	0
0	1	1	0	R	0
1	1	x	0	R	1
x	x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxtp_1	51.14880
sky130_fd_sc_hs__sedfxtp_2	54.34560
sky130_fd_sc_hs__sedfxtp_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	DE	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sedfxtp_1	0.00189	0.00365	0.00168	0.00357	0.00258	0.44156
sky130_fd_sc_hs__sedfxtp_2	0.00199	0.00367	0.00170	0.00362	0.00260	0.87392
sky130_fd_sc_hs__sedfxtp_4	0.00199	0.00365	0.00170	0.00360	0.00270	1.68784

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxtp_1	0.00000	0.20008	0.37469
sky130_fd_sc_hs__sedfxtp_2	0.00000	0.20688	0.38553
sky130_fd_sc_hs__sedfxtp_4	0.00000	0.22047	0.40720

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RR)**	0.43847	1.40854	8.79290
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.44795	1.29224	8.82783
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.49763	1.24715	8.88525

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.45351	1.05576	3.76521
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.54564	1.15592	3.93760
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.74457	1.37312	4.27362

Constraint Information

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.33537	-0.47526	-2.21540
	setup	CLK (R)	0.43593	0.53686	2.32329
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.33952	-0.47917	-2.22786
	setup	CLK (R)	0.43939	0.53873	2.32211
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.33999	-0.47992	-2.23596
	setup	CLK (R)	0.43961	0.53717	2.33240

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-1.35390	-1.42102	-4.37348
	setup	CLK (R)	1.62018	1.65929	4.49595
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-1.35523	-1.41967	-4.37160
	setup	CLK (R)	1.61787	1.65594	4.48392
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-1.36700	-1.43112	-4.39775
	setup	CLK (R)	1.60849	1.64861	4.49610

Constraints(ns) for DE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.08614	-0.09866	-0.41263
	setup	CLK (R)	1.69815	1.68954	2.32170
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.08851	-0.10241	-0.41059
	setup	CLK (R)	1.68978	1.68517	2.32450
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.08614	-0.09866	-0.42433
	setup	CLK (R)	1.68001	1.67679	2.33256

Constraints(ns) for DE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.50918	-0.71164	-3.00041
	setup	CLK (R)	1.42009	1.50711	4.66885
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.51254	-0.71397	-2.99723
	setup	CLK (R)	1.42049	1.50375	4.66608
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.51573	-0.71466	-2.99825
	setup	CLK (R)	1.42768	1.51549	4.68932

Constraints(ns) for DE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.08614	-0.09866	-0.41263
	hold	CLK (R)	-0.40137	-0.50348	-1.08400
	setup	CLK (R)	0.43810	0.52179	2.32170
	setup	CLK (R)	1.69815	1.68954	1.69783
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.08851	-0.10241	-0.41059
	hold	CLK (R)	-0.40216	-0.48898	-1.06343
	setup	CLK (R)	0.44025	0.52524	2.32450
	setup	CLK (R)	1.68978	1.68517	1.68060
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.08614	-0.09866	-0.42433
	hold	CLK (R)	-0.40481	-0.49623	-1.08830
	setup	CLK (R)	0.43731	0.52024	2.33256
	setup	CLK (R)	1.68001	1.67679	1.68320

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-1.34741	-1.45498	-4.63805
	hold	CLK (R)	-0.50918	-0.71164	-3.00041
	setup	CLK (R)	1.42009	1.50711	4.66885
	setup	CLK (R)	0.55767	0.74278	3.04031
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-1.34323	-1.44989	-4.63164
	hold	CLK (R)	-0.51254	-0.71397	-2.99723
	setup	CLK (R)	1.42049	1.50375	4.66608
	setup	CLK (R)	0.55997	0.74539	3.03481
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-1.35272	-1.46289	-4.65240
	hold	CLK (R)	-0.51573	-0.71466	-2.99825
	setup	CLK (R)	1.42768	1.51549	4.68932
	setup	CLK (R)	0.55878	0.74247	3.03651

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.18755	-0.30925	-1.81466
	setup	CLK (R)	0.25894	0.35758	1.91654
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.18910	-0.31075	-1.80988
	setup	CLK (R)	0.26079	0.35821	1.90894
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.19167	-0.31550	-1.82857
	setup	CLK (R)	0.25776	0.35770	1.92851

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.81994	-0.92247	-3.87296
	setup	CLK (R)	1.06257	1.13566	4.02085
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.81481	-0.90732	-3.85161
	setup	CLK (R)	1.05288	1.12509	3.99565
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.82724	-0.92392	-3.89424
	setup	CLK (R)	1.04504	1.11962	4.02318

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	0.00059	0.03671	0.51996
	setup	CLK (R)	1.09102	1.07328	1.69182
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.00126	0.03671	0.51108
	setup	CLK (R)	1.08079	1.05846	1.68605
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00133	0.03671	0.49408
	setup	CLK (R)	1.07284	1.05208	1.71018

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.37498	-0.58126	-2.97354
	setup	CLK (R)	1.21470	1.25553	3.74649
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.37950	-0.58145	-2.97062
	setup	CLK (R)	1.20380	1.24074	3.72032
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.37987	-0.58327	-2.97664
	setup	CLK (R)	1.19905	1.24253	3.74643

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.85031	-0.85585	-0.95991
	hold	CLK (R)	0.00059	0.03671	0.51996
	hold	CLK (R)	-0.16336	-0.29390	-1.57579
	hold	CLK (R)	-0.28841	-0.37547	-0.61921
	setup	CLK (R)	1.09102	1.07114	1.07703
	setup	CLK (R)	0.23608	0.34233	1.69179
	setup	CLK (R)	0.23588	0.34233	1.69182
	setup	CLK (R)	1.08851	1.07328	1.07730
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.84188	-0.84980	-0.94442
	hold	CLK (R)	-0.00126	0.03671	0.51108
	hold	CLK (R)	-0.16391	-0.29414	-1.57130
	hold	CLK (R)	-0.28807	-0.36383	-0.60359
	setup	CLK (R)	1.08079	1.05800	1.04731
	setup	CLK (R)	0.23637	0.34633	1.68601
	setup	CLK (R)	0.23630	0.34633	1.68605
	setup	CLK (R)	1.07728	1.05846	1.04724
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.85540	-0.85919	-0.96789
	hold	CLK (R)	0.00133	0.03671	0.49408
	hold	CLK (R)	-0.16906	-0.30004	-1.60108
	hold	CLK (R)	-0.29128	-0.37125	-0.63164
	setup	CLK (R)	1.07145	1.05204	1.05842
	setup	CLK (R)	0.23176	0.34233	1.71018
	setup	CLK (R)	0.23169	0.34233	1.70995
	setup	CLK (R)	1.07284	1.05208	1.04919

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.38396	-0.59048	-2.99571
	hold	CLK (R)	-0.92233	-0.98935	-3.51423
	hold	CLK (R)	-0.91893	-0.98698	-3.53164
	hold	CLK (R)	-0.37498	-0.58126	-2.97354
	setup	CLK (R)	0.48951	0.65060	3.08891
	setup	CLK (R)	0.99461	1.04881	3.55384
	setup	CLK (R)	1.21470	1.25553	3.74649
	setup	CLK (R)	0.42075	0.61241	3.01854
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.38815	-0.58934	-2.99166
	hold	CLK (R)	-0.90892	-0.97679	-3.49984
	hold	CLK (R)	-0.90852	-0.97269	-3.51313
	hold	CLK (R)	-0.37950	-0.58145	-2.97062
	setup	CLK (R)	0.48927	0.65275	3.08324
	setup	CLK (R)	0.98586	1.03218	3.53468
	setup	CLK (R)	1.20380	1.24074	3.72032
	setup	CLK (R)	0.42371	0.61236	3.01237
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.38986	-0.59292	-2.99838
	hold	CLK (R)	-0.92949	-0.99727	-3.54471
	hold	CLK (R)	-0.92614	-0.99568	-3.54934
	hold	CLK (R)	-0.37987	-0.58327	-2.97664
	setup	CLK (R)	0.48772	0.64858	3.08841
	setup	CLK (R)	0.99933	1.04927	3.57692
	setup	CLK (R)	1.19905	1.24253	3.74643
	setup	CLK (R)	0.42286	0.61403	3.01630

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**min_pulse_width**	**CLK** ()	0.19558	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.19558	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.36861	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.19558	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.36861	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.19558	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.36501	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.36501	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.19558	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.36861	0.98145	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK** ()	0.20639	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.20639	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.50921	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.20639	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.51281	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.20639	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.50560	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.50560	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.20639	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.51281	0.98145	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.23163	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.23163	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.76515	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.23523	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.76515	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.23523	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.76155	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.76155	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.23523	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.76515	0.98145	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.41548	0.98145	16.50020
	min_pulse_width	CLK ()	0.80481	0.98145	16.50020
	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.80481	0.98145	16.50020
	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.94342	1.05208	16.50020
	min_pulse_width	CLK ()	0.80481	0.98145	16.50020
	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.80481	0.98145	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.41548	0.98145	16.50020
	min_pulse_width	CLK ()	0.79760	0.98145	16.50020
	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.79760	0.98145	16.50020
	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.93258	1.04424	16.50020
	min_pulse_width	CLK ()	0.79760	0.98145	16.50020
	min_pulse_width	CLK ()	0.37943	0.98145	16.50020
	min_pulse_width	CLK ()	0.79760	0.98145	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.37222	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.40466	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.76876	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.37222	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.76876	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.37222	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.90043	1.02069	16.50020
	min_pulse_width	**CLK** ()	0.76876	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.37222	0.98145	16.50020
	min_pulse_width	**CLK** ()	0.76876	0.98145	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.01449	0.01436	0.01445
	CLK	0.01228	0.01215	0.01226
sky130_fd_sc_hs__sedfxtp_2	CLK	0.01585	0.01586	0.01604
	CLK	0.01361	0.01362	0.01384
sky130_fd_sc_hs__sedfxtp_4	CLK	0.01838	0.01863	0.01897
	CLK	0.01608	0.01630	0.01676

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.01311	0.01291	0.01288
	CLK	0.01166	0.01146	0.01139
sky130_fd_sc_hs__sedfxtp_2	CLK	0.01439	0.01430	0.01447
	CLK	0.01294	0.01293	0.01292
sky130_fd_sc_hs__sedfxtp_4	CLK	0.01641	0.01669	0.01695
	CLK	0.01489	0.01519	0.01538

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00227	0.00214	0.00222
	(DE * SCE)	0.00085	0.00073	0.00081
	(CLK * DE * !SCE)	0.00470	0.00462	0.00463
	(CLK * DE * !SCE)	0.00288	0.00280	0.00281
	(CLK * !DE * !SCE)	0.00052	0.00053	0.00052
	(CLK * !DE * !SCE)	-0.00040	-0.00041	-0.00040
	(!DE * SCE)	0.00052	0.00053	0.00052
	(!DE * SCE)	-0.00040	-0.00040	-0.00040
	(!CLK * DE * !SCE * Q)	0.00810	0.00802	0.00798
	(!CLK * DE * !SCE * Q)	0.00628	0.00621	0.00616
	(!CLK * DE * !SCE * !Q)	0.00790	0.00783	0.00777
	(!CLK * DE * !SCE * !Q)	0.00606	0.00600	0.00593
	(!CLK * !DE * !SCE)	0.00052	0.00052	0.00052
	(!CLK * !DE * !SCE)	-0.00040	-0.00040	-0.00040
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00234	0.00221	0.00229
	(DE * SCE)	0.00086	0.00073	0.00081
	(CLK * DE * !SCE)	0.00478	0.00469	0.00469
	(CLK * DE * !SCE)	0.00289	0.00280	0.00280
	(CLK * !DE * !SCE)	0.00054	0.00055	0.00054
	(CLK * !DE * !SCE)	-0.00042	-0.00043	-0.00042
	(!DE * SCE)	0.00054	0.00054	0.00054
	(!DE * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * DE * !SCE * Q)	0.00815	0.00808	0.00802
	(!CLK * DE * !SCE * Q)	0.00626	0.00619	0.00613
	(!CLK * DE * !SCE * !Q)	0.00798	0.00791	0.00785
	(!CLK * DE * !SCE * !Q)	0.00608	0.00600	0.00594
	(!CLK * !DE * !SCE)	0.00054	0.00055	0.00054
	(!CLK * !DE * !SCE)	-0.00042	-0.00043	-0.00042

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00235	0.00222	0.00230
	(DE * SCE)	0.00087	0.00073	0.00082
	(CLK * DE * !SCE)	0.00481	0.00472	0.00472
	(CLK * DE * !SCE)	0.00292	0.00283	0.00283
	(CLK * !DE * !SCE)	0.00055	0.00055	0.00055
	(CLK * !DE * !SCE)	-0.00042	-0.00043	-0.00042
	(!DE * SCE)	0.00055	0.00055	0.00055
	(!DE * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * DE * !SCE * Q)	0.00810	0.00802	0.00797
	(!CLK * DE * !SCE * Q)	0.00621	0.00613	0.00608
	(!CLK * DE * !SCE * !Q)	0.00790	0.00783	0.00777
	(!CLK * DE * !SCE * !Q)	0.00599	0.00592	0.00586
	(!CLK * !DE * !SCE)	0.00055	0.00055	0.00055
	(!CLK * !DE * !SCE)	-0.00042	-0.00043	-0.00042

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00080	0.00070	0.00091
	(DE * SCE)	0.00223	0.00213	0.00233
	(CLK * DE * !SCE)	0.00153	0.00142	0.00158
	(CLK * DE * !SCE)	0.00337	0.00326	0.00342
	(CLK * !DE * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK * !DE * !SCE)	0.00078	0.00078	0.00078
	(!DE * SCE)	-0.00018	-0.00018	-0.00017
	(!DE * SCE)	0.00078	0.00078	0.00078
	(!CLK * DE * !SCE * Q)	0.00448	0.00437	0.00450
	(!CLK * DE * !SCE * Q)	0.00630	0.00619	0.00632
	(!CLK * DE * !SCE * !Q)	0.00478	0.00469	0.00483
	(!CLK * DE * !SCE * !Q)	0.00662	0.00653	0.00666
	(!CLK * !DE * !SCE)	-0.00017	-0.00017	-0.00018
	(!CLK * !DE * !SCE)	0.00077	0.00078	0.00078
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00078	0.00067	0.00088
	(DE * SCE)	0.00227	0.00217	0.00238
	(CLK * DE * !SCE)	0.00150	0.00138	0.00154
	(CLK * DE * !SCE)	0.00341	0.00329	0.00345
	(CLK * !DE * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK * !DE * !SCE)	0.00083	0.00082	0.00082
	(!DE * SCE)	-0.00018	-0.00018	-0.00017
	(!DE * SCE)	0.00083	0.00083	0.00082
	(!CLK * DE * !SCE * Q)	0.00445	0.00434	0.00446
	(!CLK * DE * !SCE * Q)	0.00634	0.00623	0.00636
	(!CLK * DE * !SCE * !Q)	0.00473	0.00462	0.00477
	(!CLK * DE * !SCE * !Q)	0.00665	0.00654	0.00668
	(!CLK * !DE * !SCE)	-0.00018	-0.00018	-0.00018
	(!CLK * !DE * !SCE)	0.00083	0.00083	0.00082

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00074	0.00064	0.00085
	(DE * SCE)	0.00224	0.00214	0.00234
	(CLK * DE * !SCE)	0.00160	0.00148	0.00163
	(CLK * DE * !SCE)	0.00350	0.00339	0.00354
	(CLK * !DE * !SCE)	-0.00018	-0.00018	-0.00018
	(CLK * !DE * !SCE)	0.00083	0.00083	0.00082
	(!DE * SCE)	-0.00018	-0.00018	-0.00017
	(!DE * SCE)	0.00083	0.00083	0.00083
	(!CLK * DE * !SCE * Q)	0.00449	0.00438	0.00451
	(!CLK * DE * !SCE * Q)	0.00639	0.00627	0.00640
	(!CLK * DE * !SCE * !Q)	0.00480	0.00470	0.00484
	(!CLK * DE * !SCE * !Q)	0.00672	0.00661	0.00675
	(!CLK * !DE * !SCE)	-0.00018	-0.00018	-0.00018
	(!CLK * !DE * !SCE)	0.00083	0.00083	0.00082

Passive power(pJ) for DE rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00375	0.00355	0.00360
	SCE	0.00168	0.00146	0.00152
	(CLK * !SCE)	0.00658	0.00637	0.00643
	(CLK * !SCE)	0.00307	0.00285	0.00292
	(!CLK * D * !SCE * Q)	0.00260	0.00241	0.00250
	(!CLK * D * !SCE * Q)	0.00002	-0.00019	-0.00009
	(!CLK * D * !SCE * !Q)	0.00996	0.00975	0.00979
	(!CLK * D * !SCE * !Q)	0.00645	0.00624	0.00628
	(!CLK * !D * !SCE * Q)	0.00760	0.00743	0.00750
	(!CLK * !D * !SCE * Q)	0.00593	0.00575	0.00582
	(!CLK * !D * !SCE * !Q)	0.00258	0.00243	0.00252
	(!CLK * !D * !SCE * !Q)	0.00003	-0.00014	-0.00004

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00376	0.00356	0.00362
	SCE	0.00167	0.00146	0.00152
	(CLK * !SCE)	0.00667	0.00645	0.00653
	(CLK * !SCE)	0.00309	0.00288	0.00294
	(!CLK * D * !SCE * Q)	0.00262	0.00242	0.00251
	(!CLK * D * !SCE * Q)	-0.00001	-0.00021	-0.00012
	(!CLK * D * !SCE * !Q)	0.01003	0.00982	0.00986
	(!CLK * D * !SCE * !Q)	0.00645	0.00624	0.00628
	(!CLK * !D * !SCE * Q)	0.00760	0.00743	0.00750
	(!CLK * !D * !SCE * Q)	0.00593	0.00574	0.00581
	(!CLK * !D * !SCE * !Q)	0.00260	0.00244	0.00253
	(!CLK * !D * !SCE * !Q)	0.00001	-0.00016	-0.00007
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00428	0.00406	0.00415
	SCE	0.00114	0.00090	0.00099
	(CLK * !SCE)	0.00668	0.00647	0.00654
	(CLK * !SCE)	0.00312	0.00290	0.00297
	(!CLK * D * !SCE * Q)	0.00261	0.00241	0.00251
	(!CLK * D * !SCE * Q)	-0.00000	-0.00021	-0.00011
	(!CLK * D * !SCE * !Q)	0.00994	0.00973	0.00977
	(!CLK * D * !SCE * !Q)	0.00637	0.00616	0.00621
	(!CLK * !D * !SCE * Q)	0.00763	0.00747	0.00754
	(!CLK * !D * !SCE * Q)	0.00598	0.00579	0.00586
	(!CLK * !D * !SCE * !Q)	0.00260	0.00244	0.00253
	(!CLK * !D * !SCE * !Q)	0.00001	-0.00015	-0.00006

Passive power(pJ) for DE falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00228	0.00212	0.00225
	SCE	0.00435	0.00420	0.00434
	(CLK * !SCE)	0.00471	0.00457	0.00470
	(CLK * !SCE)	0.00637	0.00624	0.00637
	(!CLK * D * !SCE * Q)	-0.00000	-0.00013	0.00007
	(!CLK * D * !SCE * Q)	0.00257	0.00246	0.00265
	(!CLK * D * !SCE * !Q)	0.00518	0.00501	0.00522
	(!CLK * D * !SCE * !Q)	0.00869	0.00853	0.00872
	(!CLK * !D * !SCE * Q)	0.00810	0.00796	0.00809
	(!CLK * !D * !SCE * Q)	0.00976	0.00963	0.00977
	(!CLK * !D * !SCE * !Q)	-0.00006	-0.00017	0.00002
	(!CLK * !D * !SCE * !Q)	0.00250	0.00239	0.00259
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00231	0.00214	0.00227
	SCE	0.00439	0.00423	0.00438
	(CLK * !SCE)	0.00473	0.00459	0.00471
	(CLK * !SCE)	0.00640	0.00627	0.00641
	(!CLK * D * !SCE * Q)	-0.00001	-0.00014	0.00006
	(!CLK * D * !SCE * Q)	0.00260	0.00248	0.00268
	(!CLK * D * !SCE * !Q)	0.00514	0.00498	0.00518
	(!CLK * D * !SCE * !Q)	0.00872	0.00856	0.00875
	(!CLK * !D * !SCE * Q)	0.00810	0.00796	0.00809
	(!CLK * !D * !SCE * Q)	0.00977	0.00964	0.00979
	(!CLK * !D * !SCE * !Q)	-0.00007	-0.00019	0.00001
	(!CLK * !D * !SCE * !Q)	0.00253	0.00242	0.00262

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00232	0.00215	0.00228
	SCE	0.00438	0.00422	0.00437
	(CLK * !SCE)	0.00476	0.00462	0.00476
	(CLK * !SCE)	0.00641	0.00629	0.00643
	(!CLK * D * !SCE * Q)	-0.00001	-0.00014	0.00006
	(!CLK * D * !SCE * Q)	0.00259	0.00247	0.00266
	(!CLK * D * !SCE * !Q)	0.00521	0.00505	0.00525
	(!CLK * D * !SCE * !Q)	0.00878	0.00862	0.00881
	(!CLK * !D * !SCE * Q)	0.00805	0.00790	0.00804
	(!CLK * !D * !SCE * Q)	0.00970	0.00957	0.00972
	(!CLK * !D * !SCE * !Q)	-0.00007	-0.00019	0.00001
	(!CLK * !D * !SCE * !Q)	0.00251	0.00240	0.00261

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00259	0.00254	0.00253
	(CLK * SCE)	0.00110	0.00104	0.00104
	(!CLK * SCE)	0.00599	0.00593	0.00587
	(!CLK * SCE)	0.00450	0.00444	0.00438
	!SCE	0.00045	0.00041	0.00040
	!SCE	-0.00055	-0.00059	-0.00060
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00265	0.00260	0.00258
	(CLK * SCE)	0.00114	0.00108	0.00107
	(!CLK * SCE)	0.00602	0.00597	0.00591
	(!CLK * SCE)	0.00452	0.00446	0.00440
	!SCE	0.00046	0.00042	0.00041
	!SCE	-0.00056	-0.00060	-0.00060
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00265	0.00260	0.00259
	(CLK * SCE)	0.00115	0.00109	0.00108
	(!CLK * SCE)	0.00592	0.00588	0.00581
	(!CLK * SCE)	0.00443	0.00437	0.00431
	!SCE	0.00046	0.00042	0.00041
	!SCE	-0.00056	-0.00060	-0.00060

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00135	0.00130	0.00131
	(CLK * SCE)	0.00284	0.00280	0.00279
	(!CLK * SCE)	0.00462	0.00457	0.00455
	(!CLK * SCE)	0.00611	0.00607	0.00603
	!SCE	-0.00039	-0.00040	-0.00040
	!SCE	0.00060	0.00061	0.00061
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00131	0.00126	0.00126
	(CLK * SCE)	0.00282	0.00277	0.00277
	(!CLK * SCE)	0.00456	0.00451	0.00448
	(!CLK * SCE)	0.00607	0.00603	0.00599
	!SCE	-0.00040	-0.00041	-0.00041
	!SCE	0.00061	0.00061	0.00061
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00146	0.00141	0.00141
	(CLK * SCE)	0.00297	0.00292	0.00291
	(!CLK * SCE)	0.00468	0.00463	0.00461
	(!CLK * SCE)	0.00619	0.00614	0.00611
	!SCE	-0.00039	-0.00041	-0.00041
	!SCE	0.00061	0.00061	0.00061

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00419	0.00403	0.00402
	(CLK * D)	0.00234	0.00217	0.00215
	(CLK * !D)	0.00418	0.00401	0.00400
	(CLK * !D)	0.00233	0.00215	0.00214
	(!CLK * D * SCD * Q)	0.00226	0.00214	0.00224
	(!CLK * D * SCD * Q)	-0.00000	-0.00012	-0.00003
	(!CLK * D * DE * SCD * !Q)	0.00219	0.00207	0.00217
	(!CLK * D * DE * SCD * !Q)	-0.00007	-0.00019	-0.00010
	(!CLK * D * DE * !SCD * !Q)	0.00740	0.00732	0.00729
	(!CLK * D * DE * !SCD * !Q)	0.00556	0.00545	0.00543
	(!CLK * D * !SCD * Q)	0.00738	0.00729	0.00727
	(!CLK * D * !SCD * Q)	0.00553	0.00542	0.00541
	(!CLK * D * !DE * SCD * !Q)	0.00731	0.00710	0.00720
	(!CLK * D * !DE * SCD * !Q)	0.00464	0.00444	0.00453
	(!CLK * D * !DE * !SCD * !Q)	0.00251	0.00238	0.00249
	(!CLK * D * !DE * !SCD * !Q)	0.00025	0.00012	0.00022
	(!CLK * !D * SCD * !Q)	0.00731	0.00710	0.00720
	(!CLK * !D * SCD * !Q)	0.00464	0.00444	0.00453
	(!CLK * !D * DE * SCD * Q)	0.00748	0.00728	0.00736
	(!CLK * !D * DE * SCD * Q)	0.00481	0.00461	0.00469
	(!CLK * !D * DE * !SCD * Q)	0.00258	0.00245	0.00256
	(!CLK * !D * DE * !SCD * Q)	0.00032	0.00019	0.00029
	(!CLK * !D * !SCD * !Q)	0.00251	0.00238	0.00249
	(!CLK * !D * !SCD * !Q)	0.00025	0.00012	0.00022
	(!CLK * !D * !DE * SCD * Q)	0.00226	0.00214	0.00224
	(!CLK * !D * !DE * SCD * Q)	-0.00000	-0.00012	-0.00003
	(!CLK * !D * !DE * !SCD * Q)	0.00738	0.00728	0.00727
	(!CLK * !D * !DE * !SCD * Q)	0.00553	0.00542	0.00541

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00419	0.00403	0.00402
	(CLK * D)	0.00230	0.00214	0.00212
	(CLK * !D)	0.00420	0.00403	0.00403
	(CLK * !D)	0.00232	0.00214	0.00212
	(!CLK * D * SCD * Q)	0.00229	0.00217	0.00226
	(!CLK * D * SCD * Q)	-0.00001	-0.00013	-0.00004
	(!CLK * D * DE * SCD * !Q)	0.00223	0.00210	0.00220
	(!CLK * D * DE * SCD * !Q)	-0.00007	-0.00020	-0.00010
	(!CLK * D * DE * !SCD * !Q)	0.00738	0.00729	0.00727
	(!CLK * D * DE * !SCD * !Q)	0.00550	0.00539	0.00537
	(!CLK * D * !SCD * Q)	0.00737	0.00728	0.00727
	(!CLK * D * !SCD * Q)	0.00550	0.00538	0.00537
	(!CLK * D * !DE * SCD * !Q)	0.00736	0.00715	0.00725
	(!CLK * D * !DE * SCD * !Q)	0.00465	0.00444	0.00453
	(!CLK * D * !DE * !SCD * !Q)	0.00254	0.00241	0.00252
	(!CLK * D * !DE * !SCD * !Q)	0.00024	0.00011	0.00021
	(!CLK * !D * SCD * !Q)	0.00736	0.00715	0.00725
	(!CLK * !D * SCD * !Q)	0.00465	0.00444	0.00454
	(!CLK * !D * DE * SCD * Q)	0.00750	0.00729	0.00738
	(!CLK * !D * DE * SCD * Q)	0.00479	0.00459	0.00467
	(!CLK * !D * DE * !SCD * Q)	0.00260	0.00247	0.00258
	(!CLK * !D * DE * !SCD * Q)	0.00030	0.00018	0.00027
	(!CLK * !D * !SCD * !Q)	0.00254	0.00242	0.00252
	(!CLK * !D * !SCD * !Q)	0.00024	0.00010	0.00021
	(!CLK * !D * !DE * SCD * Q)	0.00229	0.00217	0.00226
	(!CLK * !D * !DE * SCD * Q)	-0.00001	-0.00013	-0.00004
	(!CLK * !D * !DE * !SCD * Q)	0.00738	0.00728	0.00727
	(!CLK * !D * !DE * !SCD * Q)	0.00550	0.00538	0.00537

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00431	0.00415	0.00415
	(CLK * D)	0.00244	0.00229	0.00227
	(CLK * !D)	0.00432	0.00415	0.00415
	(CLK * !D)	0.00245	0.00229	0.00226
	(!CLK * D * SCD * Q)	0.00227	0.00216	0.00225
	(!CLK * D * SCD * Q)	-0.00001	-0.00013	-0.00003
	(!CLK * D * DE * SCD * !Q)	0.00221	0.00209	0.00218
	(!CLK * D * DE * SCD * !Q)	-0.00007	-0.00019	-0.00010
	(!CLK * D * DE * !SCD * !Q)	0.00748	0.00739	0.00737
	(!CLK * D * DE * !SCD * !Q)	0.00562	0.00552	0.00549
	(!CLK * D * !SCD * Q)	0.00745	0.00736	0.00735
	(!CLK * D * !SCD * Q)	0.00559	0.00548	0.00547
	(!CLK * D * !DE * SCD * !Q)	0.00726	0.00706	0.00715
	(!CLK * D * !DE * SCD * !Q)	0.00457	0.00437	0.00446
	(!CLK * D * !DE * !SCD * !Q)	0.00252	0.00241	0.00251
	(!CLK * D * !DE * !SCD * !Q)	0.00024	0.00011	0.00022
	(!CLK * !D * SCD * !Q)	0.00726	0.00706	0.00715
	(!CLK * !D * SCD * !Q)	0.00457	0.00437	0.00446
	(!CLK * !D * DE * SCD * Q)	0.00742	0.00722	0.00730
	(!CLK * !D * DE * SCD * Q)	0.00474	0.00454	0.00461
	(!CLK * !D * DE * !SCD * Q)	0.00259	0.00246	0.00257
	(!CLK * !D * DE * !SCD * Q)	0.00031	0.00019	0.00028
	(!CLK * !D * !SCD * !Q)	0.00252	0.00241	0.00251
	(!CLK * !D * !SCD * !Q)	0.00024	0.00011	0.00022
	(!CLK * !D * !DE * SCD * Q)	0.00227	0.00216	0.00225
	(!CLK * !D * !DE * SCD * Q)	-0.00001	-0.00013	-0.00003
	(!CLK * !D * !DE * !SCD * Q)	0.00746	0.00737	0.00735
	(!CLK * !D * !DE * !SCD * Q)	0.00559	0.00548	0.00547

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00262	0.00276	0.00340
	(CLK * D)	0.00448	0.00462	0.00526
	(CLK * !D)	0.00264	0.00277	0.00341
	(CLK * !D)	0.00449	0.00463	0.00527
	(!CLK * D * SCD * Q)	0.00017	0.00010	0.00031
	(!CLK * D * SCD * Q)	0.00242	0.00236	0.00257
	(!CLK * D * DE * SCD * !Q)	0.00024	0.00017	0.00038
	(!CLK * D * DE * SCD * !Q)	0.00249	0.00244	0.00265
	(!CLK * D * DE * !SCD * !Q)	0.00597	0.00609	0.00670
	(!CLK * D * DE * !SCD * !Q)	0.00783	0.00794	0.00857
	(!CLK * D * !SCD * Q)	0.00600	0.00612	0.00672
	(!CLK * D * !SCD * Q)	0.00786	0.00797	0.00859
	(!CLK * D * !DE * SCD * !Q)	0.00400	0.00382	0.00420
	(!CLK * D * !DE * SCD * !Q)	0.00667	0.00650	0.00687
	(!CLK * D * !DE * !SCD * !Q)	-0.00006	-0.00013	0.00008
	(!CLK * D * !DE * !SCD * !Q)	0.00220	0.00214	0.00235
	(!CLK * !D * SCD * !Q)	0.00400	0.00383	0.00420
	(!CLK * !D * SCD * !Q)	0.00667	0.00650	0.00687
	(!CLK * !D * DE * SCD * Q)	0.00383	0.00366	0.00404
	(!CLK * !D * DE * SCD * Q)	0.00650	0.00633	0.00671
	(!CLK * !D * DE * !SCD * Q)	-0.00013	-0.00020	0.00001
	(!CLK * !D * DE * !SCD * Q)	0.00213	0.00207	0.00228
	(!CLK * !D * !SCD * !Q)	-0.00006	-0.00013	0.00008
	(!CLK * !D * !SCD * !Q)	0.00221	0.00214	0.00235
	(!CLK * !D * !DE * SCD * Q)	0.00016	0.00010	0.00031
	(!CLK * !D * !DE * SCD * Q)	0.00242	0.00236	0.00257
	(!CLK * !D * !DE * !SCD * Q)	0.00600	0.00612	0.00672
	(!CLK * !D * !DE * !SCD * Q)	0.00786	0.00797	0.00859

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00263	0.00277	0.00340
	(CLK * D)	0.00452	0.00466	0.00530
	(CLK * !D)	0.00262	0.00275	0.00339
	(CLK * !D)	0.00451	0.00464	0.00529
	(!CLK * D * SCD * Q)	0.00015	0.00008	0.00029
	(!CLK * D * SCD * Q)	0.00244	0.00238	0.00259
	(!CLK * D * DE * SCD * !Q)	0.00022	0.00015	0.00036
	(!CLK * D * DE * SCD * !Q)	0.00251	0.00245	0.00266
	(!CLK * D * DE * !SCD * !Q)	0.00596	0.00607	0.00669
	(!CLK * D * DE * !SCD * !Q)	0.00785	0.00796	0.00859
	(!CLK * D * !SCD * Q)	0.00597	0.00608	0.00669
	(!CLK * D * !SCD * Q)	0.00786	0.00797	0.00859
	(!CLK * D * !DE * SCD * !Q)	0.00395	0.00378	0.00415
	(!CLK * D * !DE * SCD * !Q)	0.00666	0.00649	0.00686
	(!CLK * D * !DE * !SCD * !Q)	-0.00007	-0.00014	0.00006
	(!CLK * D * !DE * !SCD * !Q)	0.00223	0.00215	0.00237
	(!CLK * !D * SCD * !Q)	0.00396	0.00378	0.00415
	(!CLK * !D * SCD * !Q)	0.00666	0.00649	0.00686
	(!CLK * !D * DE * SCD * Q)	0.00381	0.00364	0.00402
	(!CLK * !D * DE * SCD * Q)	0.00652	0.00635	0.00673
	(!CLK * !D * DE * !SCD * Q)	-0.00013	-0.00021	-0.00000
	(!CLK * !D * DE * !SCD * Q)	0.00216	0.00209	0.00230
	(!CLK * !D * !SCD * !Q)	-0.00007	-0.00014	0.00006
	(!CLK * !D * !SCD * !Q)	0.00223	0.00215	0.00237
	(!CLK * !D * !DE * SCD * Q)	0.00015	0.00008	0.00029
	(!CLK * !D * !DE * SCD * Q)	0.00244	0.00238	0.00259
	(!CLK * !D * !DE * !SCD * Q)	0.00597	0.00608	0.00669
	(!CLK * !D * !DE * !SCD * Q)	0.00786	0.00797	0.00858

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00265	0.00279	0.00343
	(CLK * D)	0.00453	0.00467	0.00531
	(CLK * !D)	0.00265	0.00279	0.00342
	(CLK * !D)	0.00452	0.00466	0.00531
	(!CLK * D * SCD * Q)	0.00016	0.00010	0.00031
	(!CLK * D * SCD * Q)	0.00243	0.00238	0.00259
	(!CLK * D * DE * SCD * !Q)	0.00023	0.00016	0.00037
	(!CLK * D * DE * SCD * !Q)	0.00250	0.00245	0.00266
	(!CLK * D * DE * !SCD * !Q)	0.00588	0.00599	0.00661
	(!CLK * D * DE * !SCD * !Q)	0.00776	0.00787	0.00849
	(!CLK * D * !SCD * Q)	0.00591	0.00602	0.00663
	(!CLK * D * !SCD * Q)	0.00779	0.00790	0.00851
	(!CLK * D * !DE * SCD * !Q)	0.00407	0.00390	0.00427
	(!CLK * D * !DE * SCD * !Q)	0.00676	0.00658	0.00696
	(!CLK * D * !DE * !SCD * !Q)	-0.00006	-0.00014	0.00007
	(!CLK * D * !DE * !SCD * !Q)	0.00222	0.00215	0.00236
	(!CLK * !D * SCD * !Q)	0.00408	0.00390	0.00427
	(!CLK * !D * SCD * !Q)	0.00676	0.00658	0.00696
	(!CLK * !D * DE * SCD * Q)	0.00391	0.00374	0.00412
	(!CLK * !D * DE * SCD * Q)	0.00660	0.00642	0.00681
	(!CLK * !D * DE * !SCD * Q)	-0.00012	-0.00020	0.00001
	(!CLK * !D * DE * !SCD * Q)	0.00215	0.00209	0.00230
	(!CLK * !D * !SCD * !Q)	-0.00006	-0.00014	0.00007
	(!CLK * !D * !SCD * !Q)	0.00222	0.00215	0.00236
	(!CLK * !D * !DE * SCD * Q)	0.00016	0.00010	0.00031
	(!CLK * !D * !DE * SCD * Q)	0.00243	0.00238	0.00259
	(!CLK * !D * !DE * !SCD * Q)	0.00591	0.00602	0.00663
	(!CLK * !D * !DE * !SCD * Q)	0.00779	0.00790	0.00851

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.00661	0.00633	0.00633
	(SCD * SCE * Q)	0.00477	0.00449	0.00449
	(D * !SCE * Q)	0.00661	0.00633	0.00633
	(D * !SCE * Q)	0.00476	0.00448	0.00449
	(D * !DE * !SCE * !Q)	0.00667	0.00636	0.00638
	(D * !DE * !SCE * !Q)	0.00482	0.00452	0.00454
	(!SCD * SCE * !Q)	0.00668	0.00637	0.00639
	(!SCD * SCE * !Q)	0.00483	0.00453	0.00455
	(!D * !SCE * !Q)	0.00667	0.00637	0.00638
	(!D * !SCE * !Q)	0.00482	0.00452	0.00454
	(!D * !DE * !SCE * Q)	0.00661	0.00633	0.00633
	(!D * !DE * !SCE * Q)	0.00476	0.00448	0.00449
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.00669	0.00642	0.00642
	(SCD * SCE * Q)	0.00484	0.00456	0.00457
	(D * !SCE * Q)	0.00669	0.00641	0.00642
	(D * !SCE * Q)	0.00484	0.00456	0.00456
	(D * !DE * !SCE * !Q)	0.00675	0.00645	0.00647
	(D * !DE * !SCE * !Q)	0.00490	0.00460	0.00462
	(!SCD * SCE * !Q)	0.00676	0.00646	0.00648
	(!SCD * SCE * !Q)	0.00490	0.00460	0.00463
	(!D * !SCE * !Q)	0.00675	0.00645	0.00647
	(!D * !SCE * !Q)	0.00490	0.00460	0.00462
	(!D * !DE * !SCE * Q)	0.00669	0.00641	0.00642
	(!D * !DE * !SCE * Q)	0.00484	0.00456	0.00456

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00669	0.00641	0.00640
	(SCD * SCE * Q)	0.00478	0.00448	0.00448
	(D * !SCE * Q)	0.00669	0.00640	0.00639
	(D * !SCE * Q)	0.00477	0.00448	0.00448
	(D * !DE * !SCE * !Q)	0.00669	0.00638	0.00639
	(D * !DE * !SCE * !Q)	0.00477	0.00445	0.00447
	(!SCD * SCE * !Q)	0.00670	0.00638	0.00640
	(!SCD * SCE * !Q)	0.00477	0.00446	0.00448
	(!D * !SCE * !Q)	0.00669	0.00638	0.00639
	(!D * !SCE * !Q)	0.00477	0.00446	0.00447
	(!D * !DE * !SCE * Q)	0.00669	0.00640	0.00639
	(!D * !DE * !SCE * Q)	0.00477	0.00448	0.00447

Passive power(pJ) for CLK falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00379	0.00357	0.00367
	(SCD * SCE * Q)	0.00563	0.00540	0.00551
	(SCD * SCE * !Q)	0.00710	0.00684	0.00683
	(SCD * SCE * !Q)	0.00894	0.00868	0.00867
	(D * DE * !SCE * !Q)	0.00708	0.00682	0.00682
	(D * DE * !SCE * !Q)	0.00892	0.00866	0.00866
	(D * !SCE * Q)	0.00380	0.00357	0.00368
	(D * !SCE * Q)	0.00563	0.00541	0.00552
	(D * !DE * !SCE * !Q)	0.00365	0.00343	0.00354
	(D * !DE * !SCE * !Q)	0.00549	0.00527	0.00538
	(!SCD * SCE * Q)	0.00763	0.00742	0.00776
	(!SCD * SCE * Q)	0.00947	0.00927	0.00961
	(!SCD * SCE * !Q)	0.00365	0.00343	0.00354
	(!SCD * SCE * !Q)	0.00548	0.00527	0.00538
	(!D * DE * !SCE * Q)	0.00764	0.00743	0.00777
	(!D * DE * !SCE * Q)	0.00947	0.00927	0.00961
	(!D * !SCE * !Q)	0.00365	0.00344	0.00354
	(!D * !SCE * !Q)	0.00549	0.00527	0.00538
	(!D * !DE * !SCE * Q)	0.00380	0.00357	0.00368
	(!D * !DE * !SCE * Q)	0.00563	0.00541	0.00552

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00382	0.00360	0.00370
	(SCD * SCE * Q)	0.00567	0.00545	0.00556
	(SCD * SCE * !Q)	0.00710	0.00684	0.00683
	(SCD * SCE * !Q)	0.00895	0.00869	0.00869
	(D * DE * !SCE * !Q)	0.00708	0.00682	0.00682
	(D * DE * !SCE * !Q)	0.00893	0.00867	0.00867
	(D * !SCE * Q)	0.00383	0.00360	0.00371
	(D * !SCE * Q)	0.00568	0.00545	0.00556
	(D * !DE * !SCE * !Q)	0.00368	0.00346	0.00357
	(D * !DE * !SCE * !Q)	0.00553	0.00531	0.00542
	(!SCD * SCE * Q)	0.00767	0.00746	0.00779
	(!SCD * SCE * Q)	0.00953	0.00932	0.00964
	(!SCD * SCE * !Q)	0.00368	0.00346	0.00357
	(!SCD * SCE * !Q)	0.00553	0.00531	0.00542
	(!D * DE * !SCE * Q)	0.00768	0.00747	0.00779
	(!D * DE * !SCE * Q)	0.00953	0.00932	0.00965
	(!D * !SCE * !Q)	0.00368	0.00346	0.00357
	(!D * !SCE * !Q)	0.00553	0.00531	0.00542
	(!D * !DE * !SCE * Q)	0.00383	0.00360	0.00371
	(!D * !DE * !SCE * Q)	0.00568	0.00545	0.00556

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00371	0.00349	0.00359
	(SCD * SCE * Q)	0.00563	0.00540	0.00551
	(SCD * SCE * !Q)	0.00698	0.00671	0.00669
	(SCD * SCE * !Q)	0.00889	0.00862	0.00861
	(D * DE * !SCE * !Q)	0.00696	0.00669	0.00668
	(D * DE * !SCE * !Q)	0.00887	0.00860	0.00860
	(D * !SCE * Q)	0.00372	0.00349	0.00360
	(D * !SCE * Q)	0.00563	0.00540	0.00551
	(D * !DE * !SCE * !Q)	0.00364	0.00342	0.00352
	(D * !DE * !SCE * !Q)	0.00555	0.00533	0.00544
	(!SCD * SCE * Q)	0.00752	0.00730	0.00762
	(!SCD * SCE * Q)	0.00944	0.00922	0.00955
	(!SCD * SCE * !Q)	0.00363	0.00341	0.00351
	(!SCD * SCE * !Q)	0.00555	0.00532	0.00543
	(!D * DE * !SCE * Q)	0.00753	0.00731	0.00763
	(!D * DE * !SCE * Q)	0.00944	0.00923	0.00955
	(!D * !SCE * !Q)	0.00364	0.00342	0.00352
	(!D * !SCE * !Q)	0.00555	0.00533	0.00544
	(!D * !DE * !SCE * Q)	0.00372	0.00349	0.00360
	(!D * !DE * !SCE * Q)	0.00563	0.00540	0.00551

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor2_1	11.18880
sky130_fd_sc_hs__xnor2_2	17.58240
sky130_fd_sc_hs__xnor2_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__xnor2_1	0.00463	0.00482	0.19493
sky130_fd_sc_hs__xnor2_2	0.00771	0.00774	0.38614
sky130_fd_sc_hs__xnor2_4	0.01368	0.01411	0.67811

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor2_1	0.00000	0.03549	0.09241
sky130_fd_sc_hs__xnor2_2	0.00000	0.03676	0.05648
sky130_fd_sc_hs__xnor2_4	0.00000	0.08275	0.19035

Delay Information

Delay(ns) to Y rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__xnor2_1	A->Y (RR)	B	0.16281	0.86372	4.61321
	A->Y (FR)	!B	0.26395	1.70584	12.80130
	B->Y (RR)	A	0.15508	0.84157	4.35754
	B->Y (FR)	!A	0.23072	1.61911	12.44460
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.17857	0.82374	4.92011
	A->Y (FR)	!B	0.26008	1.50832	12.89990
	B->Y (RR)	A	0.17222	0.81488	4.72206
	B->Y (FR)	!A	0.21864	1.41509	12.51190
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.21009	1.00156	7.56706
	A->Y (FR)	!B	0.25065	1.35023	12.73080
	B->Y (RR)	A	0.20064	0.97214	7.30447
	B->Y (FR)	!A	0.20820	1.25985	12.38790

Delay(ns) to Y falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__xnor2_1	A->Y (FF)	B	0.21684	0.91621	4.66053
	A->Y (RF)	!B	0.07083	0.65218	5.25677
	B->Y (FF)	A	0.20722	0.90087	4.62830
	B->Y (RF)	!A	0.05910	0.63305	5.20684
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.26957	0.98976	5.42053
	A->Y (RF)	!B	0.06900	0.59731	5.24792
	B->Y (FF)	A	0.24552	0.94237	5.17391
	B->Y (RF)	!A	0.06249	0.58825	5.26355
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.24443	0.91759	5.10550
	A->Y (RF)	!B	0.06928	0.54721	5.12330
	B->Y (FF)	A	0.22232	0.87188	4.82066
	B->Y (RF)	!A	0.06306	0.53582	5.14383

Power Information

Internal switching power(pJ) to Y rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xnor2_1	A	B	0.00454	0.00450	0.00459
	A	B	0.00094	0.00088	0.00098
	A	!B	-0.00033	-0.00041	-0.00044
	A	!B	0.00316	0.00309	0.00284
	B	A	0.00422	0.00407	0.00425
	B	A	0.00122	0.00107	0.00128
	B	!A	0.00010	0.00005	0.00007
	B	!A	0.00305	0.00299	0.00302
sky130_fd_sc_hs__xnor2_2	A	B	0.00718	0.00715	0.00719
	A	B	0.00198	0.00191	0.00205
	A	!B	0.00009	-0.00008	-0.00010
	A	!B	0.00622	0.00609	0.00593
	B	A	0.00692	0.00674	0.00686
	B	A	0.00249	0.00234	0.00265
	B	!A	0.00038	0.00025	0.00029
	B	!A	0.00569	0.00553	0.00561
sky130_fd_sc_hs__xnor2_4	A	B	0.01160	0.01160	0.01178
	A	B	0.00231	0.00227	0.00241
	A	!B	-0.00028	-0.00060	-0.00063
	A	!B	0.01142	0.01113	0.01110
	B	A	0.01129	0.01089	0.01126
	B	A	0.00350	0.00312	0.00349
	B	!A	0.00019	-0.00010	0.00003
	B	!A	0.01035	0.01004	0.01020

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xnor2_1	A	B	0.00124	0.00120	0.00156
	A	B	0.00482	0.00479	0.00513
	A	!B	0.00406	0.00403	0.00407
	A	!B	0.00050	0.00045	0.00042
	B	A	0.00181	0.00144	0.00176
	B	A	0.00476	0.00439	0.00469
	B	!A	0.00287	0.00284	0.00285
	B	!A	-0.00005	-0.00007	-0.00009
sky130_fd_sc_hs__xnor2_2	A	B	0.00249	0.00244	0.00277
	A	B	0.00770	0.00765	0.00790
	A	!B	0.00769	0.00756	0.00766
	A	!B	0.00145	0.00131	0.00127
	B	A	0.00365	0.00308	0.00316
	B	A	0.00795	0.00738	0.00741
	B	!A	0.00569	0.00564	0.00567
	B	!A	0.00038	0.00032	0.00032
sky130_fd_sc_hs__xnor2_4	A	B	0.00407	0.00390	0.00465
	A	B	0.01340	0.01322	0.01386
	A	!B	0.01406	0.01378	0.01385
	A	!B	0.00220	0.00188	0.00183
	B	A	0.00545	0.00464	0.00497
	B	A	0.01302	0.01221	0.01250
	B	!A	0.01051	0.01040	0.01046
	B	!A	0.00042	0.00027	0.00035

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage 1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor3_1	27.17280
sky130_fd_sc_hs__xnor3_2	28.77120
sky130_fd_sc_hs__xnor3_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xnor3_1	0.00244	0.00671	0.00397	0.42819
sky130_fd_sc_hs__xnor3_2	0.00249	0.00673	0.00401	0.85258
sky130_fd_sc_hs__xnor3_4	0.00248	0.00671	0.00392	1.68830

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor3_1	0.00000	0.22392	0.25746
sky130_fd_sc_hs__xnor3_2	0.00000	0.23072	0.26830
sky130_fd_sc_hs__xnor3_4	0.00000	0.24432	0.28997

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-R)	0.64416	1.84229	11.17570
	B->X (-R)	0.45839	1.62981	10.45920
	C->X (-R)	0.35274	1.50693	9.94141
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.68185	1.75270	11.19970
	B->X (-R)	0.48375	1.52781	10.47040
	C->X (-R)	0.37166	1.40089	9.95656
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.77203	1.77246	11.35730
	B->X (-R)	0.58170	1.55329	10.63940
	C->X (-R)	0.45747	1.41650	10.13030

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.87361	1.72932	7.38685
	B->X (-F)	0.80837	1.64023	6.94261
	C->X (-F)	0.45420	1.19474	5.58298
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.97057	1.82520	7.56197
	B->X (-F)	0.91341	1.75686	7.27726
	C->X (-F)	0.61443	1.37190	6.16649
sky130_fd_sc_hs__xnor3_4	A->X (-F)	1.15318	2.05146	8.06902
	B->X (-F)	1.13497	2.03382	7.96657
	C->X (-F)	0.91970	1.73218	7.06720

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01120	0.01107	0.01101
	A	0.01102	0.01096	0.01107
	B	0.01038	0.01057	0.01151
	B	0.01018	0.01023	0.01157
	C	0.00511	0.00490	0.00520
	C	0.00525	0.00557	0.00652
sky130_fd_sc_hs__xnor3_2	A	0.01228	0.01227	0.01224
	A	0.01204	0.01213	0.01233
	B	0.01146	0.01178	0.01273
	B	0.01120	0.01135	0.01280
	C	0.00629	0.00623	0.00651
	C	0.00628	0.00671	0.00775
sky130_fd_sc_hs__xnor3_4	A	0.01502	0.01524	0.01529
	A	0.01460	0.01488	0.01529
	B	0.01401	0.01453	0.01560
	B	0.01374	0.01409	0.01568
	C	0.00888	0.00904	0.00941
	C	0.00882	0.00938	0.01062

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01039	0.01034	0.01034
	A	0.01112	0.01109	0.01115
	B	0.00944	0.00965	0.01062
	B	0.01046	0.01057	0.01172
	C	0.00529	0.00568	0.00678
	C	0.00463	0.00452	0.00511
sky130_fd_sc_hs__xnor3_2	A	0.01142	0.01155	0.01162
	A	0.01208	0.01221	0.01234
	B	0.01043	0.01080	0.01179
	B	0.01142	0.01168	0.01289
	C	0.00626	0.00677	0.00804
	C	0.00572	0.00577	0.00635
sky130_fd_sc_hs__xnor3_4	A	0.01412	0.01448	0.01521
	A	0.01454	0.01487	0.01514
	B	0.01293	0.01345	0.01498
	B	0.01354	0.01415	0.01570
	C	0.00866	0.00948	0.01105
	C	0.00825	0.00858	0.00922

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor2_1	12.78720
sky130_fd_sc_hs__xor2_2	15.98400
sky130_fd_sc_hs__xor2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__xor2_1	0.00472	0.00492	0.18672
sky130_fd_sc_hs__xor2_2	0.00723	0.00718	0.36140
sky130_fd_sc_hs__xor2_4	0.01462	0.01456	0.66230

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	0.01818	0.03056
sky130_fd_sc_hs__xor2_2	0.00000	0.02572	0.03287
sky130_fd_sc_hs__xor2_4	0.00000	0.05060	0.06574

Delay Information

Delay(ns) to X rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__xor2_1	A->X (RR)	!B	0.22526	1.44021	8.71507
	A->X (FR)	B	0.29194	1.75714	12.88080
	B->X (RR)	!A	0.27514	1.47738	8.82409
	B->X (FR)	A	0.23686	1.67558	12.66080
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.17573	1.21713	8.84192
	A->X (FR)	B	0.25489	1.52371	12.89990
	B->X (RR)	!A	0.21306	1.21796	8.74066
	B->X (FR)	A	0.20202	1.46701	12.84740
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.16560	1.03127	8.66364
	A->X (FR)	B	0.25384	1.35006	12.61720
	B->X (RR)	!A	0.19204	1.01736	8.39542
	B->X (FR)	A	0.20165	1.30499	12.68130

Delay(ns) to X falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__xor2_1	A->X (FF)	!B	0.35783	1.03824	4.97903
	A->X (RF)	B	0.06180	0.63101	5.08960
	B->X (FF)	!A	0.33621	0.96913	4.41499
	B->X (RF)	A	0.05220	0.64656	5.29169
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.46188	1.20555	6.00972
	A->X (RF)	B	0.05768	0.58486	5.15999
	B->X (FF)	!A	0.41412	1.10998	5.44210
	B->X (RF)	A	0.05059	0.62610	5.65690
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.44692	1.15115	5.90552
	A->X (RF)	B	0.05871	0.53783	5.06297
	B->X (FF)	!A	0.38903	1.04454	5.26877
	B->X (RF)	A	0.05154	0.56180	5.46267

Power Information

Internal switching power(pJ) to X rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xor2_1	A	B	0.00012	0.00008	0.00007
	A	B	0.00382	0.00375	0.00355
	A	!B	0.00526	0.00516	0.00520
	A	!B	0.00156	0.00145	0.00150
	B	A	0.00011	0.00006	0.00004
	B	A	0.00307	0.00301	0.00300
	B	!A	0.00479	0.00433	0.00434
	B	!A	0.00182	0.00136	0.00138
sky130_fd_sc_hs__xor2_2	A	B	0.00053	0.00044	0.00043
	A	B	0.00656	0.00647	0.00632
	A	!B	0.00703	0.00688	0.00695
	A	!B	0.00191	0.00177	0.00183
	B	A	0.00000	-0.00010	-0.00009
	B	A	0.00498	0.00489	0.00476
	B	!A	0.00690	0.00631	0.00628
	B	!A	0.00284	0.00224	0.00221
sky130_fd_sc_hs__xor2_4	A	B	0.00070	0.00043	0.00042
	A	B	0.01345	0.01319	0.01319
	A	!B	0.01398	0.01355	0.01365
	A	!B	0.00403	0.00360	0.00368
	B	A	0.00018	-0.00004	-0.00002
	B	A	0.01062	0.01043	0.01046
	B	!A	0.01251	0.01156	0.01150
	B	!A	0.00484	0.00392	0.00382

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xor2_1	A	B	0.00369	0.00359	0.00357
	A	B	0.00003	-0.00010	-0.00016
	A	!B	0.00101	0.00099	0.00101
	A	!B	0.00467	0.00467	0.00470
	B	A	0.00321	0.00313	0.00312
	B	A	0.00025	0.00017	0.00014
	B	!A	0.00155	0.00145	0.00168
	B	!A	0.00462	0.00450	0.00475
sky130_fd_sc_hs__xor2_2	A	B	0.00627	0.00607	0.00614
	A	B	0.00024	0.00004	-0.00005
	A	!B	0.00096	0.00096	0.00101
	A	!B	0.00595	0.00601	0.00604
	B	A	0.00539	0.00521	0.00516
	B	A	0.00045	0.00027	0.00023
	B	!A	0.00161	0.00133	0.00178
	B	!A	0.00593	0.00583	0.00608
sky130_fd_sc_hs__xor2_4	A	B	0.01294	0.01252	0.01259
	A	B	0.00021	-0.00025	-0.00037
	A	!B	0.00207	0.00204	0.00231
	A	!B	0.01182	0.01194	0.01197
	B	A	0.01110	0.01070	0.01089
	B	A	0.00064	0.00021	0.00017
	B	!A	0.00364	0.00343	0.00406
	B	!A	0.01175	0.01156	0.01205

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.20v_25C.ccs
Cell Library: Process , Voltage
1.20, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor3_1	30.36960
sky130_fd_sc_hs__xor3_2	31.96800
sky130_fd_sc_hs__xor3_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xor3_1	0.00244	0.00687	0.00396	0.43187
sky130_fd_sc_hs__xor3_2	0.00245	0.00692	0.00395	0.87242
sky130_fd_sc_hs__xor3_4	0.00243	0.00700	0.00391	1.69896

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	0.22392	0.25746
sky130_fd_sc_hs__xor3_2	0.00000	0.23072	0.26830
sky130_fd_sc_hs__xor3_4	0.00000	0.24432	0.28997

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-R)	0.62256	1.81149	11.10610
	B->X (-R)	0.41569	1.58577	10.35570
	C->X (-R)	0.35167	1.50756	9.99210
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.64851	1.71985	11.28410
	B->X (-R)	0.46962	1.51998	10.53790
	C->X (-R)	0.37463	1.41764	10.21690
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.73404	1.72365	11.41430
	B->X (-R)	0.56200	1.53426	10.65700
	C->X (-R)	0.44212	1.40616	10.32310

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.88114	1.72534	7.31144
	B->X (-F)	0.80640	1.63031	6.88180
	C->X (-F)	0.40817	1.13689	5.39143
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.97115	1.82966	7.60647
	B->X (-F)	0.91033	1.75910	7.32588
	C->X (-F)	0.58755	1.33858	6.13147
sky130_fd_sc_hs__xor3_4	A->X (-F)	1.18088	2.07784	8.11885
	B->X (-F)	1.15066	2.04897	8.01514
	C->X (-F)	0.89936	1.71496	7.10376

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01188	0.01174	0.01167
	A	0.01096	0.01089	0.01099
	B	0.01113	0.01133	0.01226
	B	0.01009	0.01025	0.01176
	C	0.00518	0.00499	0.00529
	C	0.00518	0.00551	0.00651
sky130_fd_sc_hs__xor3_2	A	0.01307	0.01306	0.01302
	A	0.01204	0.01212	0.01230
	B	0.01232	0.01266	0.01361
	B	0.01114	0.01141	0.01297
	C	0.00637	0.00633	0.00661
	C	0.00644	0.00686	0.00797
sky130_fd_sc_hs__xor3_4	A	0.01571	0.01593	0.01598
	A	0.01476	0.01506	0.01541
	B	0.01502	0.01558	0.01661
	B	0.01368	0.01417	0.01596
	C	0.00883	0.00902	0.00936
	C	0.00887	0.00947	0.01081

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01117	0.01111	0.01116
	A	0.01113	0.01109	0.01114
	B	0.01031	0.01053	0.01151
	B	0.01038	0.01065	0.01203
	C	0.00563	0.00603	0.00720
	C	0.00372	0.00415	0.00527
sky130_fd_sc_hs__xor3_2	A	0.01216	0.01230	0.01243
	A	0.01207	0.01218	0.01230
	B	0.01129	0.01167	0.01279
	B	0.01130	0.01173	0.01316
	C	0.00670	0.00733	0.00866
	C	0.00472	0.00537	0.00661
sky130_fd_sc_hs__xor3_4	A	0.01488	0.01525	0.01546
	A	0.01487	0.01519	0.01546
	B	0.01404	0.01459	0.01581
	B	0.01396	0.01459	0.01615
	C	0.00901	0.00991	0.01160
	C	0.00707	0.00797	0.00936