sky130_fd_sc_hs_tt_1.35v_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_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00266	0.00254	0.00266	0.00279	0.00278	0.13761
sky130_fd_sc_hs__a2111oi_2	0.00503	0.00483	0.00406	0.00408	0.00409	0.25909
sky130_fd_sc_hs__a2111oi_4	0.00999	0.00969	0.00795	0.00781	0.00800	0.49143

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111oi_1	0.00000	0.00528	0.01811
sky130_fd_sc_hs__a2111oi_2	0.00000	0.00953	0.03622
sky130_fd_sc_hs__a2111oi_4	0.00000	0.01907	0.07244

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)	0.42751	1.83822	11.41880
	A2->Y (FR)	0.50394	1.93976	11.61920
	B1->Y (FR)	0.47252	1.88223	11.84080
	C1->Y (FR)	0.41409	1.82618	12.06260
	D1->Y (FR)	0.32229	1.69312	11.55290
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.38614	1.60242	11.46950
	A2->Y (FR)	0.47984	1.70729	11.63210
	B1->Y (FR)	0.42975	1.64127	11.83710
	C1->Y (FR)	0.36739	1.58132	12.11510
	D1->Y (FR)	0.23683	1.41027	11.56470
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.36366	1.39561	11.34600
	A2->Y (FR)	0.46286	1.51005	11.57750
	B1->Y (FR)	0.41414	1.44903	11.82180
	C1->Y (FR)	0.34437	1.38194	12.10110
	D1->Y (FR)	0.21936	1.22111	11.58670

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.04439	0.47121	3.52984
	A2->Y (RF)	0.04937	0.45245	3.38476
	B1->Y (RF)	0.03322	0.39432	3.02186
	C1->Y (RF)	0.03379	0.38659	3.00402
	D1->Y (RF)	0.03066	0.37504	2.98303
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.03785	0.43498	3.60095
	A2->Y (RF)	0.04564	0.42105	3.42526
	B1->Y (RF)	0.04473	0.48402	4.11378
	C1->Y (RF)	0.04427	0.46649	4.08348
	D1->Y (RF)	0.03622	0.44866	4.05050
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.03780	0.40725	3.66828
	A2->Y (RF)	0.04483	0.38247	3.35915
	B1->Y (RF)	0.03967	0.42921	3.97713
	C1->Y (RF)	0.03977	0.41355	3.94609
	D1->Y (RF)	0.03260	0.39509	3.95908

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00038	0.00026	0.00024
	A1	0.00498	0.00486	0.00484
	A2	0.00063	0.00055	0.00054
	A2	0.00582	0.00574	0.00572
	B1	0.00073	0.00061	0.00060
	B1	0.00523	0.00512	0.00511
	C1	0.00072	0.00059	0.00060
	C1	0.00474	0.00462	0.00463
	D1	0.00068	0.00056	0.00086
	D1	0.00426	0.00415	0.00443
sky130_fd_sc_hs__a2111oi_2	A1	0.00026	0.00005	0.00004
	A1	0.00888	0.00869	0.00866
	A2	0.00116	0.00097	0.00095
	A2	0.01092	0.01073	0.01069
	B1	0.00170	0.00158	0.00156
	B1	0.00950	0.00937	0.00934
	C1	0.00177	0.00164	0.00164
	C1	0.00845	0.00832	0.00832
	D1	0.00171	0.00158	0.00194
	D1	0.00733	0.00718	0.00755

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00003	-0.00043	-0.00042
	A1	0.01730	0.01686	0.01686
	A2	0.00165	0.00126	0.00124
	A2	0.02122	0.02084	0.02080
	B1	0.00282	0.00257	0.00256
	B1	0.01839	0.01815	0.01810
	C1	0.00286	0.00263	0.00267
	C1	0.01621	0.01598	0.01602
	D1	0.00273	0.00250	0.00326
	D1	0.01396	0.01375	0.01445

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.00637	0.00623	0.00618
	A1	0.00195	0.00181	0.00181
	A2	0.00699	0.00686	0.00675
	A2	0.00195	0.00181	0.00175
	B1	0.00559	0.00550	0.00552
	B1	0.00111	0.00099	0.00104
	C1	0.00463	0.00457	0.00462
	C1	0.00058	0.00049	0.00056
	D1	0.00363	0.00363	0.00370
	D1	0.00001	-0.00002	0.00006

sky130_fd_sc_hs__a2111oi_2	**A1**	0.01181	0.01149	0.01140
	A1	0.00359	0.00327	0.00326
	A2	0.01298	0.01270	0.01249
	A2	0.00354	0.00327	0.00313
	B1	0.00967	0.00948	0.00942
	B1	0.00193	0.00170	0.00169
	C1	0.00758	0.00745	0.00746
	C1	0.00086	0.00068	0.00071
	D1	0.00504	0.00505	0.00516
	D1	-0.00069	-0.00073	-0.00061
sky130_fd_sc_hs__a2111oi_4	**A1**	0.02309	0.02247	0.02237
	A1	0.00660	0.00596	0.00598
	A2	0.02550	0.02497	0.02458
	A2	0.00655	0.00598	0.00576
	B1	0.01896	0.01849	0.01845
	B1	0.00347	0.00294	0.00300
	C1	0.01474	0.01440	0.01455
	C1	0.00136	0.00090	0.00109
	D1	0.01000	0.00995	0.01031
	D1	-0.00143	-0.00156	-0.00123

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)**	0.00088	0.00088	0.00088
	(A2 * B1 * D1 * !Y)	-0.00103	-0.00107	-0.00106
	(A2 * B1 * C1 * !D1 * !Y)	0.00088	0.00088	0.00088
	(A2 * B1 * C1 * !D1 * !Y)	-0.00103	-0.00107	-0.00106
	(A2 * B1 * !C1 * !D1 * !Y)	0.00088	0.00088	0.00088
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00103	-0.00107	-0.00106
	(A2 * !B1 * C1 * D1 * !Y)	0.00088	0.00088	0.00088
	(A2 * !B1 * C1 * D1 * !Y)	-0.00097	-0.00102	-0.00102
	(A2 * !B1 * C1 * !D1 * !Y)	0.00088	0.00088	0.00088
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00097	-0.00103	-0.00102
	(A2 * !B1 * !C1 * D1 * !Y)	0.00088	0.00089	0.00088
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00096	-0.00101	-0.00100
	(!A2 * B1 * D1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * B1 * D1 * !Y)	-0.00109	-0.00110	-0.00109
	(!A2 * B1 * C1 * !D1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00109	-0.00110	-0.00109
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00109	-0.00110	-0.00109
	(!A2 * !B1 * C1 * D1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00109	-0.00110	-0.00109
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00109	-0.00110	-0.00109
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00109	-0.00109	-0.00109
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00032	0.00032	0.00031
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00126	-0.00126	-0.00128

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00174	0.00176	0.00175
	(A2 * B1 * D1 * !Y)	-0.00204	-0.00213	-0.00212
	(A2 * B1 * C1 * !D1 * !Y)	0.00175	0.00176	0.00175
	(A2 * B1 * C1 * !D1 * !Y)	-0.00204	-0.00213	-0.00212
	(A2 * B1 * !C1 * !D1 * !Y)	0.00174	0.00176	0.00175
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00203	-0.00213	-0.00212
	(A2 * !B1 * C1 * D1 * !Y)	0.00174	0.00176	0.00175
	(A2 * !B1 * C1 * D1 * !Y)	-0.00191	-0.00204	-0.00202
	(A2 * !B1 * C1 * !D1 * !Y)	0.00174	0.00176	0.00175
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00191	-0.00204	-0.00202
	(A2 * !B1 * !C1 * D1 * !Y)	0.00175	0.00176	0.00175
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00189	-0.00201	-0.00199
	(!A2 * B1 * D1 * !Y)	0.00165	0.00165	0.00165
	(!A2 * B1 * D1 * !Y)	-0.00218	-0.00217	-0.00218
	(!A2 * B1 * C1 * !D1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00218	-0.00218	-0.00218
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00218	-0.00219	-0.00218
	(!A2 * !B1 * C1 * D1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00218	-0.00218	-0.00218
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00218	-0.00219	-0.00218
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00165	0.00167	0.00165
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00217	-0.00219	-0.00218
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00067	0.00067	0.00062
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00249	-0.00250	-0.00256

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00350	0.00353	0.00351
	(A2 * B1 * D1 * !Y)	-0.00408	-0.00426	-0.00423
	(A2 * B1 * C1 * !D1 * !Y)	0.00350	0.00353	0.00351
	(A2 * B1 * C1 * !D1 * !Y)	-0.00407	-0.00426	-0.00423
	(A2 * B1 * !C1 * !D1 * !Y)	0.00350	0.00353	0.00351
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00406	-0.00426	-0.00423
	(A2 * !B1 * C1 * D1 * !Y)	0.00350	0.00352	0.00351
	(A2 * !B1 * C1 * D1 * !Y)	-0.00385	-0.00410	-0.00406
	(A2 * !B1 * C1 * !D1 * !Y)	0.00351	0.00352	0.00351
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00386	-0.00411	-0.00406
	(A2 * !B1 * !C1 * D1 * !Y)	0.00352	0.00352	0.00352
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00379	-0.00403	-0.00399
	(!A2 * B1 * D1 * !Y)	0.00329	0.00332	0.00330
	(!A2 * B1 * D1 * !Y)	-0.00435	-0.00435	-0.00437
	(!A2 * B1 * C1 * !D1 * !Y)	0.00328	0.00332	0.00330
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00435	-0.00437	-0.00437
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00331	0.00332	0.00331
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00438	-0.00438	-0.00436
	(!A2 * !B1 * C1 * D1 * !Y)	0.00329	0.00333	0.00331
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00435	-0.00438	-0.00437
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00330	0.00332	0.00331
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00437	-0.00438	-0.00436
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00330	0.00333	0.00330
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00437	-0.00439	-0.00436
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00127	0.00128	0.00120
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00502	-0.00506	-0.00517

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)**	-0.00088	-0.00088	-0.00088
	(A2 * B1 * D1 * !Y)	0.00107	0.00107	0.00106
	(A2 * B1 * C1 * !D1 * !Y)	-0.00088	-0.00088	-0.00088
	(A2 * B1 * C1 * !D1 * !Y)	0.00106	0.00107	0.00106
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00087	-0.00088	-0.00088
	(A2 * B1 * !C1 * !D1 * !Y)	0.00105	0.00107	0.00106
	(A2 * !B1 * C1 * D1 * !Y)	-0.00087	-0.00088	-0.00088
	(A2 * !B1 * C1 * D1 * !Y)	0.00101	0.00102	0.00102
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00087	-0.00088	-0.00088
	(A2 * !B1 * C1 * !D1 * !Y)	0.00102	0.00103	0.00102
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00087	-0.00088	-0.00087
	(A2 * !B1 * !C1 * D1 * !Y)	0.00100	0.00101	0.00100
	(!A2 * B1 * D1 * !Y)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * D1 * !Y)	0.00109	0.00110	0.00109
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * C1 * !D1 * !Y)	0.00109	0.00110	0.00109
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00110	0.00110	0.00109
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00080	-0.00083	-0.00082
	(!A2 * !B1 * C1 * D1 * !Y)	0.00109	0.00110	0.00109
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00080	-0.00083	-0.00082
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00110	0.00111	0.00109
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00080	-0.00082	-0.00082
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00110	0.00111	0.00109
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00128	0.00129	0.00128

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00174	-0.00175	-0.00175
	(A2 * B1 * D1 * !Y)	0.00211	0.00213	0.00212
	(A2 * B1 * C1 * !D1 * !Y)	-0.00174	-0.00175	-0.00175
	(A2 * B1 * C1 * !D1 * !Y)	0.00211	0.00213	0.00212
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00174	-0.00175	-0.00175
	(A2 * B1 * !C1 * !D1 * !Y)	0.00211	0.00213	0.00212
	(A2 * !B1 * C1 * D1 * !Y)	-0.00174	-0.00175	-0.00175
	(A2 * !B1 * C1 * D1 * !Y)	0.00202	0.00204	0.00202
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00174	-0.00175	-0.00175
	(A2 * !B1 * C1 * !D1 * !Y)	0.00202	0.00204	0.00202
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00175	-0.00176	-0.00175
	(A2 * !B1 * !C1 * D1 * !Y)	0.00199	0.00201	0.00199
	(!A2 * B1 * D1 * !Y)	-0.00158	-0.00165	-0.00165
	(!A2 * B1 * D1 * !Y)	0.00218	0.00221	0.00218
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00158	-0.00166	-0.00165
	(!A2 * B1 * C1 * !D1 * !Y)	0.00218	0.00221	0.00218
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00158	-0.00166	-0.00165
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00219	0.00219	0.00218
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00158	-0.00166	-0.00165
	(!A2 * !B1 * C1 * D1 * !Y)	0.00218	0.00221	0.00218
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00158	-0.00166	-0.00165
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00219	0.00219	0.00218
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00158	-0.00167	-0.00165
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00219	0.00219	0.00218
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00060	-0.00060	-0.00060
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00256	0.00257	0.00256

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00350	-0.00352	-0.00351
	(A2 * B1 * D1 * !Y)	0.00424	0.00426	0.00423
	(A2 * B1 * C1 * !D1 * !Y)	-0.00350	-0.00352	-0.00351
	(A2 * B1 * C1 * !D1 * !Y)	0.00422	0.00427	0.00423
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00350	-0.00352	-0.00351
	(A2 * B1 * !C1 * !D1 * !Y)	0.00422	0.00426	0.00423
	(A2 * !B1 * C1 * D1 * !Y)	-0.00350	-0.00352	-0.00351
	(A2 * !B1 * C1 * D1 * !Y)	0.00406	0.00410	0.00406
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00350	-0.00352	-0.00351
	(A2 * !B1 * C1 * !D1 * !Y)	0.00406	0.00411	0.00406
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00351	-0.00352	-0.00351
	(A2 * !B1 * !C1 * D1 * !Y)	0.00399	0.00403	0.00399
	(!A2 * B1 * D1 * !Y)	-0.00317	-0.00332	-0.00330
	(!A2 * B1 * D1 * !Y)	0.00437	0.00435	0.00438
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00316	-0.00332	-0.00330
	(!A2 * B1 * C1 * !D1 * !Y)	0.00437	0.00437	0.00438
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00316	-0.00332	-0.00331
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00440	0.00441	0.00438
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00316	-0.00333	-0.00331
	(!A2 * !B1 * C1 * D1 * !Y)	0.00437	0.00440	0.00438
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00316	-0.00332	-0.00331
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00439	0.00441	0.00438
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00315	-0.00333	-0.00330
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00439	0.00441	0.00438
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00117	-0.00117	-0.00116
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00520	0.00520	0.00518

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)**	0.00093	0.00094	0.00093
	(A1 * B1 * D1 * !Y)	-0.00103	-0.00107	-0.00107
	(A1 * B1 * C1 * !D1 * !Y)	0.00093	0.00094	0.00093
	(A1 * B1 * C1 * !D1 * !Y)	-0.00103	-0.00107	-0.00107
	(A1 * B1 * !C1 * !D1 * !Y)	0.00093	0.00094	0.00093
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00103	-0.00107	-0.00107
	(A1 * !B1 * C1 * D1 * !Y)	0.00093	0.00093	0.00093
	(A1 * !B1 * C1 * D1 * !Y)	-0.00097	-0.00103	-0.00102
	(A1 * !B1 * C1 * !D1 * !Y)	0.00093	0.00093	0.00093
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00097	-0.00103	-0.00102
	(A1 * !B1 * !C1 * D1 * !Y)	0.00093	0.00094	0.00093
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00095	-0.00101	-0.00101
	(!A1 * B1 * !Y)	0.00087	0.00088	0.00088
	(!A1 * B1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * !B1 * C1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * !B1 * C1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00088	0.00088	0.00088
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00110	-0.00110	-0.00110

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00176	0.00177	0.00176
	(A1 * B1 * D1 * !Y)	-0.00204	-0.00212	-0.00211
	(A1 * B1 * C1 * !D1 * !Y)	0.00176	0.00177	0.00176
	(A1 * B1 * C1 * !D1 * !Y)	-0.00204	-0.00212	-0.00211
	(A1 * B1 * !C1 * !D1 * !Y)	0.00176	0.00177	0.00176
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00203	-0.00212	-0.00211
	(A1 * !B1 * C1 * D1 * !Y)	0.00176	0.00177	0.00176
	(A1 * !B1 * C1 * D1 * !Y)	-0.00192	-0.00204	-0.00202
	(A1 * !B1 * C1 * !D1 * !Y)	0.00176	0.00177	0.00176
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00192	-0.00204	-0.00202
	(A1 * !B1 * !C1 * D1 * !Y)	0.00176	0.00176	0.00176
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00189	-0.00200	-0.00199
	(!A1 * B1 * !Y)	0.00166	0.00167	0.00166
	(!A1 * B1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A1 * !B1 * C1 * !Y)	0.00166	0.00166	0.00166
	(!A1 * !B1 * C1 * !Y)	-0.00217	-0.00217	-0.00217
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00166	0.00167	0.00166
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00217	-0.00218	-0.00217
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00166	0.00167	0.00166
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00217	-0.00218	-0.00217

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00354	0.00355	0.00353
	(A1 * B1 * D1 * !Y)	-0.00408	-0.00426	-0.00423
	(A1 * B1 * C1 * !D1 * !Y)	0.00354	0.00355	0.00353
	(A1 * B1 * C1 * !D1 * !Y)	-0.00408	-0.00426	-0.00422
	(A1 * B1 * !C1 * !D1 * !Y)	0.00354	0.00355	0.00353
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00406	-0.00426	-0.00422
	(A1 * !B1 * C1 * D1 * !Y)	0.00354	0.00355	0.00353
	(A1 * !B1 * C1 * D1 * !Y)	-0.00386	-0.00408	-0.00406
	(A1 * !B1 * C1 * !D1 * !Y)	0.00354	0.00355	0.00353
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00386	-0.00408	-0.00406
	(A1 * !B1 * !C1 * D1 * !Y)	0.00357	0.00354	0.00354
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00381	-0.00401	-0.00399
	(!A1 * B1 * !Y)	0.00332	0.00334	0.00331
	(!A1 * B1 * !Y)	-0.00437	-0.00438	-0.00436
	(!A1 * !B1 * C1 * !Y)	0.00332	0.00332	0.00331
	(!A1 * !B1 * C1 * !Y)	-0.00437	-0.00437	-0.00436
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00332	0.00334	0.00331
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00437	-0.00438	-0.00436
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00333	0.00335	0.00332
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00436	-0.00438	-0.00435

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)**	-0.00093	-0.00093	-0.00093
	(A1 * B1 * D1 * !Y)	0.00107	0.00107	0.00107
	(A1 * B1 * C1 * !D1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * C1 * !D1 * !Y)	0.00107	0.00107	0.00107
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * !C1 * !D1 * !Y)	0.00107	0.00107	0.00107
	(A1 * !B1 * C1 * D1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * !B1 * C1 * D1 * !Y)	0.00103	0.00103	0.00102
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * !B1 * C1 * !D1 * !Y)	0.00103	0.00103	0.00102
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * !B1 * !C1 * D1 * !Y)	0.00101	0.00101	0.00101
	(!A1 * B1 * !Y)	-0.00085	-0.00088	-0.00088
	(!A1 * B1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * !B1 * C1 * !Y)	-0.00085	-0.00088	-0.00088
	(!A1 * !B1 * C1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00085	-0.00088	-0.00088
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00084	-0.00088	-0.00088
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00112	0.00112	0.00110

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00175	-0.00176	-0.00176
	(A1 * B1 * D1 * !Y)	0.00210	0.00213	0.00211
	(A1 * B1 * C1 * !D1 * !Y)	-0.00175	-0.00176	-0.00176
	(A1 * B1 * C1 * !D1 * !Y)	0.00210	0.00213	0.00211
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00175	-0.00176	-0.00176
	(A1 * B1 * !C1 * !D1 * !Y)	0.00210	0.00212	0.00211
	(A1 * !B1 * C1 * D1 * !Y)	-0.00175	-0.00176	-0.00176
	(A1 * !B1 * C1 * D1 * !Y)	0.00201	0.00204	0.00202
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00175	-0.00176	-0.00176
	(A1 * !B1 * C1 * !D1 * !Y)	0.00201	0.00204	0.00202
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00175	-0.00176	-0.00176
	(A1 * !B1 * !C1 * D1 * !Y)	0.00198	0.00200	0.00199
	(!A1 * B1 * !Y)	-0.00161	-0.00167	-0.00166
	(!A1 * B1 * !Y)	0.00218	0.00219	0.00217
	(!A1 * !B1 * C1 * !Y)	-0.00161	-0.00166	-0.00166
	(!A1 * !B1 * C1 * !Y)	0.00218	0.00219	0.00217
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00161	-0.00167	-0.00166
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00218	0.00219	0.00217
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00158	-0.00167	-0.00166
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00221	0.00220	0.00217

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00352	-0.00354	-0.00353
	(A1 * B1 * D1 * !Y)	0.00421	0.00426	0.00423
	(A1 * B1 * C1 * !D1 * !Y)	-0.00354	-0.00354	-0.00353
	(A1 * B1 * C1 * !D1 * !Y)	0.00424	0.00426	0.00422
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00352	-0.00354	-0.00353
	(A1 * B1 * !C1 * !D1 * !Y)	0.00421	0.00426	0.00422
	(A1 * !B1 * C1 * D1 * !Y)	-0.00352	-0.00354	-0.00353
	(A1 * !B1 * C1 * D1 * !Y)	0.00404	0.00408	0.00406
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00352	-0.00354	-0.00353
	(A1 * !B1 * C1 * !D1 * !Y)	0.00404	0.00408	0.00406
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00353	-0.00354	-0.00353
	(A1 * !B1 * !C1 * D1 * !Y)	0.00397	0.00401	0.00399
	(!A1 * B1 * !Y)	-0.00322	-0.00334	-0.00331
	(!A1 * B1 * !Y)	0.00439	0.00440	0.00437
	(!A1 * !B1 * C1 * !Y)	-0.00322	-0.00332	-0.00331
	(!A1 * !B1 * C1 * !Y)	0.00439	0.00440	0.00437
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00322	-0.00334	-0.00331
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00439	0.00440	0.00437
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00315	-0.00334	-0.00332
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00448	0.00443	0.00437

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)**	0.00092	0.00092	0.00092
	(A1 * A2 * C1 * D1 * !Y)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * C1 * !D1 * !Y)	0.00092	0.00092	0.00092
	(A1 * A2 * C1 * !D1 * !Y)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * !C1 * D1 * !Y)	0.00091	0.00092	0.00091
	(A1 * A2 * !C1 * D1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * A2 * !C1 * !D1 * !Y)	0.00092	0.00091	0.00091
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00065	-0.00065	-0.00064
	(A1 * !A2 * C1 * D1 * !Y)	0.00091	0.00092	0.00091
	(A1 * !A2 * C1 * D1 * !Y)	-0.00103	-0.00105	-0.00105
	(A1 * !A2 * C1 * !D1 * !Y)	0.00092	0.00091	0.00091
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00101	-0.00105	-0.00105
	(A1 * !A2 * !C1 * D1 * !Y)	0.00091	0.00091	0.00090
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00093	-0.00100	-0.00099
	(!A1 * C1 * D1 * !Y)	0.00091	0.00091	0.00091
	(!A1 * C1 * D1 * !Y)	-0.00103	-0.00105	-0.00105
	(!A1 * C1 * !D1 * !Y)	0.00092	0.00091	0.00091
	(!A1 * C1 * !D1 * !Y)	-0.00101	-0.00105	-0.00105
	(!A1 * !C1 * D1 * !Y)	0.00091	0.00091	0.00090
	(!A1 * !C1 * D1 * !Y)	-0.00093	-0.00100	-0.00099

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00103	0.00104	0.00104
	(A1 * A2 * C1 * D1 * !Y)	-0.00158	-0.00160	-0.00158
	(A1 * A2 * C1 * !D1 * !Y)	0.00104	0.00104	0.00104
	(A1 * A2 * C1 * !D1 * !Y)	-0.00155	-0.00156	-0.00154
	(A1 * A2 * !C1 * D1 * !Y)	0.00105	0.00106	0.00104
	(A1 * A2 * !C1 * D1 * !Y)	-0.00150	-0.00152	-0.00150
	(A1 * A2 * !C1 * !D1 * !Y)	0.00103	0.00104	0.00103
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * !A2 * C1 * D1 * !Y)	0.00103	0.00104	0.00103
	(A1 * !A2 * C1 * D1 * !Y)	-0.00202	-0.00210	-0.00209
	(A1 * !A2 * C1 * !D1 * !Y)	0.00104	0.00104	0.00103
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00200	-0.00210	-0.00209
	(A1 * !A2 * !C1 * D1 * !Y)	0.00105	0.00105	0.00103
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00188	-0.00198	-0.00198
	(!A1 * C1 * D1 * !Y)	0.00103	0.00103	0.00103
	(!A1 * C1 * D1 * !Y)	-0.00202	-0.00210	-0.00209
	(!A1 * C1 * !D1 * !Y)	0.00104	0.00103	0.00103
	(!A1 * C1 * !D1 * !Y)	-0.00200	-0.00210	-0.00209
	(!A1 * !C1 * D1 * !Y)	0.00105	0.00105	0.00103
	(!A1 * !C1 * D1 * !Y)	-0.00188	-0.00199	-0.00198

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00202	0.00200	0.00199
	(A1 * A2 * C1 * D1 * !Y)	-0.00324	-0.00326	-0.00324
	(A1 * A2 * C1 * !D1 * !Y)	0.00201	0.00200	0.00199
	(A1 * A2 * C1 * !D1 * !Y)	-0.00316	-0.00318	-0.00316
	(A1 * A2 * !C1 * D1 * !Y)	0.00200	0.00204	0.00201
	(A1 * A2 * !C1 * D1 * !Y)	-0.00307	-0.00307	-0.00305
	(A1 * A2 * !C1 * !D1 * !Y)	0.00198	0.00199	0.00198
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00266	-0.00268	-0.00267
	(A1 * !A2 * C1 * D1 * !Y)	0.00201	0.00198	0.00198
	(A1 * !A2 * C1 * D1 * !Y)	-0.00420	-0.00432	-0.00430
	(A1 * !A2 * C1 * !D1 * !Y)	0.00203	0.00198	0.00198
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00415	-0.00432	-0.00431
	(A1 * !A2 * !C1 * D1 * !Y)	0.00202	0.00201	0.00199
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00384	-0.00410	-0.00405
	(!A1 * C1 * D1 * !Y)	0.00201	0.00201	0.00198
	(!A1 * C1 * D1 * !Y)	-0.00420	-0.00432	-0.00430
	(!A1 * C1 * !D1 * !Y)	0.00203	0.00201	0.00198
	(!A1 * C1 * !D1 * !Y)	-0.00415	-0.00432	-0.00431
	(!A1 * !C1 * D1 * !Y)	0.00202	0.00201	0.00199
	(!A1 * !C1 * D1 * !Y)	-0.00385	-0.00410	-0.00406

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)**	-0.00091	-0.00092	-0.00091
	(A1 * A2 * C1 * D1 * !Y)	0.00080	0.00081	0.00080
	(A1 * A2 * C1 * !D1 * !Y)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * C1 * !D1 * !Y)	0.00078	0.00079	0.00078
	(A1 * A2 * !C1 * D1 * !Y)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * !C1 * D1 * !Y)	0.00075	0.00075	0.00075
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00083	-0.00084	-0.00084
	(A1 * A2 * !C1 * !D1 * !Y)	0.00071	0.00071	0.00070
	(A1 * !A2 * C1 * D1 * !Y)	-0.00091	-0.00091	-0.00090
	(A1 * !A2 * C1 * D1 * !Y)	0.00105	0.00105	0.00105
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00091	-0.00091	-0.00090
	(A1 * !A2 * C1 * !D1 * !Y)	0.00105	0.00105	0.00105
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * !C1 * D1 * !Y)	0.00099	0.00100	0.00099
	(!A1 * C1 * D1 * !Y)	-0.00091	-0.00091	-0.00090
	(!A1 * C1 * D1 * !Y)	0.00105	0.00105	0.00105
	(!A1 * C1 * !D1 * !Y)	-0.00091	-0.00091	-0.00090
	(!A1 * C1 * !D1 * !Y)	0.00105	0.00105	0.00105
	(!A1 * !C1 * D1 * !Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !C1 * D1 * !Y)	0.00099	0.00100	0.00099

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00103	-0.00104	-0.00103
	(A1 * A2 * C1 * D1 * !Y)	0.00158	0.00160	0.00158
	(A1 * A2 * C1 * !D1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * A2 * C1 * !D1 * !Y)	0.00155	0.00156	0.00154
	(A1 * A2 * !C1 * D1 * !Y)	-0.00104	-0.00105	-0.00104
	(A1 * A2 * !C1 * D1 * !Y)	0.00150	0.00152	0.00150
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * !C1 * !D1 * !Y)	0.00143	0.00144	0.00142
	(A1 * !A2 * C1 * D1 * !Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * C1 * D1 * !Y)	0.00207	0.00210	0.00209
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * C1 * !D1 * !Y)	0.00208	0.00210	0.00209
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * !C1 * D1 * !Y)	0.00197	0.00198	0.00198
	(!A1 * C1 * D1 * !Y)	-0.00103	-0.00103	-0.00103
	(!A1 * C1 * D1 * !Y)	0.00208	0.00210	0.00209
	(!A1 * C1 * !D1 * !Y)	-0.00103	-0.00103	-0.00103
	(!A1 * C1 * !D1 * !Y)	0.00208	0.00210	0.00209
	(!A1 * !C1 * D1 * !Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !C1 * D1 * !Y)	0.00197	0.00199	0.00198

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00198	-0.00199	-0.00198
	(A1 * A2 * C1 * D1 * !Y)	0.00324	0.00326	0.00324
	(A1 * A2 * C1 * !D1 * !Y)	-0.00198	-0.00199	-0.00198
	(A1 * A2 * C1 * !D1 * !Y)	0.00316	0.00318	0.00316
	(A1 * A2 * !C1 * D1 * !Y)	-0.00200	-0.00200	-0.00200
	(A1 * A2 * !C1 * D1 * !Y)	0.00307	0.00307	0.00305
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * A2 * !C1 * !D1 * !Y)	0.00287	0.00289	0.00289
	(A1 * !A2 * C1 * D1 * !Y)	-0.00198	-0.00198	-0.00198
	(A1 * !A2 * C1 * D1 * !Y)	0.00430	0.00432	0.00430
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00198	-0.00198	-0.00198
	(A1 * !A2 * C1 * !D1 * !Y)	0.00431	0.00432	0.00431
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * !C1 * D1 * !Y)	0.00406	0.00410	0.00405
	(!A1 * C1 * D1 * !Y)	-0.00199	-0.00198	-0.00198
	(!A1 * C1 * D1 * !Y)	0.00433	0.00432	0.00430
	(!A1 * C1 * !D1 * !Y)	-0.00199	-0.00198	-0.00198
	(!A1 * C1 * !D1 * !Y)	0.00433	0.00432	0.00431
	(!A1 * !C1 * D1 * !Y)	-0.00199	-0.00200	-0.00199
	(!A1 * !C1 * D1 * !Y)	0.00407	0.00410	0.00406

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)**	0.00098	0.00098	0.00096
	(A1 * B1 * D1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * !D1 * !Y)	0.00095	0.00096	0.00095
	(A1 * B1 * !D1 * !Y)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !B1 * D1 * !Y)	0.00102	0.00096	0.00096
	(A1 * A2 * !B1 * D1 * !Y)	-0.00073	-0.00075	-0.00075
	(A1 * A2 * !B1 * !D1 * !Y)	0.00097	0.00096	0.00095
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00062	-0.00061	-0.00061
	(A1 * !A2 * !B1 * D1 * !Y)	0.00109	0.00096	0.00095
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00088	-0.00101	-0.00102
	(!A1 * B1 * D1 * !Y)	0.00100	0.00100	0.00097
	(!A1 * B1 * D1 * !Y)	-0.00070	-0.00071	-0.00070
	(!A1 * B1 * !D1 * !Y)	0.00096	0.00096	0.00095
	(!A1 * B1 * !D1 * !Y)	-0.00061	-0.00062	-0.00062
	(!A1 * !B1 * D1 * !Y)	0.00109	0.00096	0.00095
	(!A1 * !B1 * D1 * !Y)	-0.00088	-0.00101	-0.00102

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00101	0.00102	0.00100
	(A1 * B1 * D1 * !Y)	-0.00149	-0.00149	-0.00148
	(A1 * B1 * !D1 * !Y)	0.00099	0.00099	0.00099
	(A1 * B1 * !D1 * !Y)	-0.00134	-0.00133	-0.00133
	(A1 * A2 * !B1 * D1 * !Y)	0.00105	0.00102	0.00099
	(A1 * A2 * !B1 * D1 * !Y)	-0.00157	-0.00158	-0.00157
	(A1 * A2 * !B1 * !D1 * !Y)	0.00100	0.00099	0.00099
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00134	-0.00132	-0.00132
	(A1 * !A2 * !B1 * D1 * !Y)	0.00120	0.00100	0.00098
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00191	-0.00216	-0.00216
	(!A1 * B1 * D1 * !Y)	0.00103	0.00104	0.00101
	(!A1 * B1 * D1 * !Y)	-0.00149	-0.00150	-0.00149
	(!A1 * B1 * !D1 * !Y)	0.00099	0.00099	0.00099
	(!A1 * B1 * !D1 * !Y)	-0.00132	-0.00133	-0.00133
	(!A1 * !B1 * D1 * !Y)	0.00120	0.00100	0.00098
	(!A1 * !B1 * D1 * !Y)	-0.00191	-0.00216	-0.00216

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00198	0.00198	0.00195
	(A1 * B1 * D1 * !Y)	-0.00293	-0.00293	-0.00292
	(A1 * B1 * !D1 * !Y)	0.00193	0.00193	0.00191
	(A1 * B1 * !D1 * !Y)	-0.00262	-0.00261	-0.00260
	(A1 * A2 * !B1 * D1 * !Y)	0.00212	0.00194	0.00192
	(A1 * A2 * !B1 * D1 * !Y)	-0.00306	-0.00310	-0.00307
	(A1 * A2 * !B1 * !D1 * !Y)	0.00193	0.00194	0.00191
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00257	-0.00259	-0.00259
	(A1 * !A2 * !B1 * D1 * !Y)	0.00245	0.00194	0.00190
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00360	-0.00419	-0.00422
	(!A1 * B1 * D1 * !Y)	0.00203	0.00204	0.00196
	(!A1 * B1 * D1 * !Y)	-0.00293	-0.00296	-0.00294
	(!A1 * B1 * !D1 * !Y)	0.00194	0.00193	0.00191
	(!A1 * B1 * !D1 * !Y)	-0.00262	-0.00261	-0.00261
	(!A1 * !B1 * D1 * !Y)	0.00245	0.00194	0.00190
	(!A1 * !B1 * D1 * !Y)	-0.00360	-0.00420	-0.00422

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)**	-0.00095	-0.00096	-0.00095
	(A1 * B1 * D1 * !Y)	0.00070	0.00070	0.00070
	(A1 * B1 * !D1 * !Y)	-0.00094	-0.00094	-0.00094
	(A1 * B1 * !D1 * !Y)	0.00064	0.00063	0.00064
	(A1 * A2 * !B1 * D1 * !Y)	-0.00095	-0.00096	-0.00095
	(A1 * A2 * !B1 * D1 * !Y)	0.00074	0.00075	0.00075
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00084	-0.00085	-0.00094
	(A1 * A2 * !B1 * !D1 * !Y)	0.00070	0.00070	0.00063
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00095	-0.00095	-0.00094
	(A1 * !A2 * !B1 * D1 * !Y)	0.00102	0.00102	0.00102
	(!A1 * B1 * D1 * !Y)	-0.00095	-0.00096	-0.00095
	(!A1 * B1 * D1 * !Y)	0.00070	0.00071	0.00070
	(!A1 * B1 * !D1 * !Y)	-0.00094	-0.00094	-0.00094
	(!A1 * B1 * !D1 * !Y)	0.00064	0.00064	0.00064
	(!A1 * !B1 * D1 * !Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !B1 * D1 * !Y)	0.00101	0.00102	0.00102

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00099	-0.00099	-0.00099
	(A1 * B1 * D1 * !Y)	0.00149	0.00149	0.00148
	(A1 * B1 * !D1 * !Y)	-0.00097	-0.00097	-0.00097
	(A1 * B1 * !D1 * !Y)	0.00135	0.00135	0.00136
	(A1 * A2 * !B1 * D1 * !Y)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * !B1 * D1 * !Y)	0.00157	0.00158	0.00157
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00078	-0.00079	-0.00092
	(A1 * A2 * !B1 * !D1 * !Y)	0.00147	0.00146	0.00138
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * !B1 * D1 * !Y)	0.00215	0.00216	0.00216
	(!A1 * B1 * D1 * !Y)	-0.00099	-0.00099	-0.00099
	(!A1 * B1 * D1 * !Y)	0.00149	0.00150	0.00149
	(!A1 * B1 * !D1 * !Y)	-0.00097	-0.00097	-0.00096
	(!A1 * B1 * !D1 * !Y)	0.00136	0.00136	0.00137
	(!A1 * !B1 * D1 * !Y)	-0.00098	-0.00099	-0.00098
	(!A1 * !B1 * D1 * !Y)	0.00216	0.00216	0.00216

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00192	-0.00193	-0.00192
	(A1 * B1 * D1 * !Y)	0.00293	0.00293	0.00292
	(A1 * B1 * !D1 * !Y)	-0.00187	-0.00187	-0.00185
	(A1 * B1 * !D1 * !Y)	0.00268	0.00268	0.00268
	(A1 * A2 * !B1 * D1 * !Y)	-0.00192	-0.00193	-0.00192
	(A1 * A2 * !B1 * D1 * !Y)	0.00306	0.00310	0.00307
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00157	-0.00160	-0.00180
	(A1 * A2 * !B1 * !D1 * !Y)	0.00284	0.00282	0.00269
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00190	-0.00189	-0.00188
	(A1 * !A2 * !B1 * D1 * !Y)	0.00422	0.00419	0.00422
	(!A1 * B1 * D1 * !Y)	-0.00192	-0.00193	-0.00192
	(!A1 * B1 * D1 * !Y)	0.00293	0.00296	0.00294
	(!A1 * B1 * !D1 * !Y)	-0.00186	-0.00186	-0.00183
	(!A1 * B1 * !D1 * !Y)	0.00269	0.00269	0.00270
	(!A1 * !B1 * D1 * !Y)	-0.00190	-0.00189	-0.00188
	(!A1 * !B1 * D1 * !Y)	0.00423	0.00420	0.00422

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00106	0.00107	0.00107
	(A1 * C1 * !Y)	-0.00056	-0.00057	-0.00056
	(A1 * B1 * !C1 * !Y)	0.00106	0.00107	0.00107
	(A1 * B1 * !C1 * !Y)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * !B1 * !C1 * !Y)	0.00108	0.00107	0.00107
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00057	-0.00057	-0.00056
	(!A1 * C1 * !Y)	0.00106	0.00107	0.00107
	(!A1 * C1 * !Y)	-0.00056	-0.00057	-0.00056
	(!A1 * B1 * !C1 * !Y)	0.00107	0.00107	0.00107
	(!A1 * B1 * !C1 * !Y)	-0.00056	-0.00056	-0.00056

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00121	0.00122	0.00121
	(A1 * C1 * !Y)	-0.00114	-0.00115	-0.00114
	(A1 * B1 * !C1 * !Y)	0.00121	0.00122	0.00121
	(A1 * B1 * !C1 * !Y)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * !B1 * !C1 * !Y)	0.00121	0.00122	0.00122
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00114	-0.00115	-0.00114
	(!A1 * C1 * !Y)	0.00122	0.00122	0.00121
	(!A1 * C1 * !Y)	-0.00115	-0.00115	-0.00114
	(!A1 * B1 * !C1 * !Y)	0.00122	0.00122	0.00122
	(!A1 * B1 * !C1 * !Y)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00241	0.00242	0.00241
	(A1 * C1 * !Y)	-0.00226	-0.00226	-0.00225
	(A1 * B1 * !C1 * !Y)	0.00241	0.00242	0.00241
	(A1 * B1 * !C1 * !Y)	-0.00226	-0.00225	-0.00224
	(A1 * A2 * !B1 * !C1 * !Y)	0.00241	0.00242	0.00241
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00225	-0.00226	-0.00224
	(!A1 * C1 * !Y)	0.00241	0.00242	0.00241
	(!A1 * C1 * !Y)	-0.00226	-0.00226	-0.00225
	(!A1 * B1 * !C1 * !Y)	0.00241	0.00242	0.00241
	(!A1 * B1 * !C1 * !Y)	-0.00225	-0.00226	-0.00225

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00102	-0.00103	-0.00106
	(A1 * C1 * !Y)	0.00061	0.00060	0.00058
	(A1 * B1 * !C1 * !Y)	-0.00096	-0.00096	-0.00105
	(A1 * B1 * !C1 * !Y)	0.00065	0.00064	0.00058
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00080	-0.00081	-0.00100
	(A1 * A2 * !B1 * !C1 * !Y)	0.00075	0.00075	0.00061
	(!A1 * C1 * !Y)	-0.00102	-0.00103	-0.00106
	(!A1 * C1 * !Y)	0.00061	0.00060	0.00058
	(!A1 * B1 * !C1 * !Y)	-0.00096	-0.00096	-0.00105
	(!A1 * B1 * !C1 * !Y)	0.00065	0.00064	0.00058
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00107	-0.00108	-0.00120
	(A1 * C1 * !Y)	0.00128	0.00127	0.00118
	(A1 * B1 * !C1 * !Y)	-0.00093	-0.00094	-0.00117
	(A1 * B1 * !C1 * !Y)	0.00135	0.00135	0.00118
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00064	-0.00066	-0.00108
	(A1 * A2 * !B1 * !C1 * !Y)	0.00155	0.00154	0.00125
	(!A1 * C1 * !Y)	-0.00108	-0.00108	-0.00120
	(!A1 * C1 * !Y)	0.00128	0.00128	0.00118
	(!A1 * B1 * !C1 * !Y)	-0.00093	-0.00094	-0.00117
	(!A1 * B1 * !C1 * !Y)	0.00136	0.00135	0.00119
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00216	-0.00218	-0.00238
	(A1 * C1 * !Y)	0.00248	0.00247	0.00231
	(A1 * B1 * !C1 * !Y)	-0.00187	-0.00189	-0.00231
	(A1 * B1 * !C1 * !Y)	0.00266	0.00264	0.00234
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00130	-0.00135	-0.00214
	(A1 * A2 * !B1 * !C1 * !Y)	0.00300	0.00299	0.00245
	(!A1 * C1 * !Y)	-0.00216	-0.00218	-0.00238
	(!A1 * C1 * !Y)	0.00248	0.00247	0.00231
	(!A1 * B1 * !C1 * !Y)	-0.00185	-0.00188	-0.00231
	(!A1 * B1 * !C1 * !Y)	0.00264	0.00265	0.00234

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00244	0.00255	0.00245	0.00250	0.00246	0.64603
sky130_fd_sc_hs__a2111o_2	0.00271	0.00281	0.00265	0.00274	0.00287	1.26261
sky130_fd_sc_hs__a2111o_4	0.00458	0.00448	0.00470	0.00472	0.00465	2.43147

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111o_1	0.00000	0.01552	0.04770
sky130_fd_sc_hs__a2111o_2	0.00000	0.01522	0.05068
sky130_fd_sc_hs__a2111o_4	0.00000	0.04099	0.11069

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)	0.13444	0.93377	7.61755
	A2->X (RR)	0.14033	0.93862	7.78959
	B1->X (RR)	0.10573	0.88064	7.52067
	C1->X (RR)	0.10334	0.86758	7.45127
	D1->X (RR)	0.09689	0.84697	7.38819
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.13668	0.84127	7.80290
	A2->X (RR)	0.14214	0.83607	7.92421
	B1->X (RR)	0.10271	0.77863	7.67921
	C1->X (RR)	0.09954	0.76522	7.61085
	D1->X (RR)	0.09500	0.74983	7.54757
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.14582	0.76510	7.83863
	A2->X (RR)	0.15339	0.76525	7.99384
	B1->X (RR)	0.10177	0.68644	7.69649
	C1->X (RR)	0.09935	0.67450	7.63904
	D1->X (RR)	0.09292	0.65473	7.56795

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.59892	1.27616	5.74523
	A2->X (FF)	0.65818	1.34475	5.91629
	B1->X (FF)	0.61406	1.27920	5.86939
	C1->X (FF)	0.55999	1.22987	5.84706
	D1->X (FF)	0.47634	1.10590	5.35898
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.72534	1.41162	6.23328
	A2->X (FF)	0.78052	1.47902	6.37987
	B1->X (FF)	0.73809	1.41224	6.36925
	C1->X (FF)	0.67787	1.35527	6.39180
	D1->X (FF)	0.59476	1.23542	5.95983
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.74829	1.38971	6.20447
	A2->X (FF)	0.84523	1.50050	6.39977
	B1->X (FF)	0.80955	1.44342	6.43131
	C1->X (FF)	0.74836	1.38433	6.45868
	D1->X (FF)	0.61577	1.21075	5.93249

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.00782	0.00780	0.00833
	A1	0.00370	0.00367	0.00429
	A2	0.00826	0.00825	0.00847
	A2	0.00369	0.00368	0.00397
	B1	0.00698	0.00694	0.00753
	B1	0.00292	0.00288	0.00352
	C1	0.00609	0.00604	0.00671
	C1	0.00245	0.00240	0.00312
	D1	0.00515	0.00506	0.00611
	D1	0.00193	0.00183	0.00298
sky130_fd_sc_hs__a2111o_2	A1	0.00991	0.01003	0.01053
	A1	0.00533	0.00545	0.00609
	A2	0.01051	0.01067	0.01089
	A2	0.00534	0.00550	0.00584
	B1	0.00899	0.00910	0.00964
	B1	0.00446	0.00456	0.00527
	C1	0.00792	0.00803	0.00860
	C1	0.00383	0.00394	0.00466
	D1	0.00702	0.00707	0.00786
	D1	0.00332	0.00337	0.00421

sky130_fd_sc_hs__a2111o_4	**A1**	0.01851	0.01876	0.01999
	A1	0.01052	0.01077	0.01226
	A2	0.01963	0.02001	0.02059
	A2	0.01049	0.01088	0.01163
	B1	0.01723	0.01751	0.01880
	B1	0.00900	0.00925	0.01089
	C1	0.01530	0.01558	0.01690
	C1	0.00799	0.00828	0.00985
	D1	0.01286	0.01308	0.01504
	D1	0.00652	0.00675	0.00896

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00238	0.00243	0.00280
	A1	0.00661	0.00668	0.00673
	A2	0.00274	0.00280	0.00316
	A2	0.00737	0.00746	0.00749
	B1	0.00266	0.00274	0.00291
	B1	0.00670	0.00679	0.00692
	C1	0.00266	0.00272	0.00360
	C1	0.00626	0.00634	0.00668
	D1	0.00271	0.00281	0.00420
	D1	0.00588	0.00598	0.00721

sky130_fd_sc_hs__a2111o_2	**A1**	0.00401	0.00421	0.00486
	A1	0.00875	0.00895	0.00905
	A2	0.00427	0.00451	0.00639
	A2	0.00955	0.00979	0.00989
	B1	0.00431	0.00452	0.00579
	B1	0.00884	0.00906	0.00922
	C1	0.00433	0.00452	0.00593
	C1	0.00838	0.00858	0.00890
	D1	0.00394	0.00396	0.00601
	D1	0.00790	0.00809	0.00917
sky130_fd_sc_hs__a2111o_4	**A1**	0.00761	0.00801	0.01055
	A1	0.01590	0.01630	0.01666
	A2	0.00829	0.00877	0.00943
	A2	0.01761	0.01808	0.01844
	B1	0.00744	0.00789	0.01048
	B1	0.01651	0.01696	0.01741
	C1	0.00837	0.00872	0.01056
	C1	0.01562	0.01599	0.01671
	D1	0.00835	0.00868	0.01284
	D1	0.01457	0.01495	0.01754

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)**	0.00091	0.00091	0.00091
	(A2 * B1 * D1 * X)	-0.00092	-0.00096	-0.00096
	(A2 * B1 * C1 * !D1 * X)	0.00092	0.00091	0.00091
	(A2 * B1 * C1 * !D1 * X)	-0.00093	-0.00096	-0.00096
	(A2 * B1 * !C1 * !D1 * X)	0.00091	0.00091	0.00091
	(A2 * B1 * !C1 * !D1 * X)	-0.00093	-0.00096	-0.00096
	(A2 * !B1 * C1 * D1 * X)	0.00091	0.00091	0.00091
	(A2 * !B1 * C1 * D1 * X)	-0.00088	-0.00093	-0.00092
	(A2 * !B1 * C1 * !D1 * X)	0.00091	0.00091	0.00091
	(A2 * !B1 * C1 * !D1 * X)	-0.00088	-0.00093	-0.00092
	(A2 * !B1 * !C1 * D1 * X)	0.00091	0.00091	0.00091
	(A2 * !B1 * !C1 * D1 * X)	-0.00086	-0.00091	-0.00091
	(!A2 * B1 * D1 * X)	0.00086	0.00087	0.00086
	(!A2 * B1 * D1 * X)	-0.00098	-0.00099	-0.00098
	(!A2 * B1 * C1 * !D1 * X)	0.00086	0.00087	0.00086
	(!A2 * B1 * C1 * !D1 * X)	-0.00098	-0.00099	-0.00098
	(!A2 * B1 * !C1 * !D1 * X)	0.00086	0.00087	0.00086
	(!A2 * B1 * !C1 * !D1 * X)	-0.00098	-0.00099	-0.00098
	(!A2 * !B1 * C1 * D1 * X)	0.00086	0.00086	0.00086
	(!A2 * !B1 * C1 * D1 * X)	-0.00098	-0.00098	-0.00098
	(!A2 * !B1 * C1 * !D1 * X)	0.00086	0.00086	0.00086
	(!A2 * !B1 * C1 * !D1 * X)	-0.00098	-0.00098	-0.00098
	(!A2 * !B1 * !C1 * D1 * X)	0.00086	0.00086	0.00086
	(!A2 * !B1 * !C1 * D1 * X)	-0.00098	-0.00098	-0.00098
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00114	-0.00115	-0.00117

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00093	0.00093	0.00092
	(A2 * B1 * D1 * X)	-0.00105	-0.00108	-0.00108
	(A2 * B1 * C1 * !D1 * X)	0.00093	0.00093	0.00092
	(A2 * B1 * C1 * !D1 * X)	-0.00105	-0.00108	-0.00108
	(A2 * B1 * !C1 * !D1 * X)	0.00093	0.00093	0.00092
	(A2 * B1 * !C1 * !D1 * X)	-0.00104	-0.00108	-0.00108
	(A2 * !B1 * C1 * D1 * X)	0.00092	0.00093	0.00092
	(A2 * !B1 * C1 * D1 * X)	-0.00099	-0.00104	-0.00104
	(A2 * !B1 * C1 * !D1 * X)	0.00092	0.00093	0.00092
	(A2 * !B1 * C1 * !D1 * X)	-0.00099	-0.00104	-0.00104
	(A2 * !B1 * !C1 * D1 * X)	0.00092	0.00093	0.00092
	(A2 * !B1 * !C1 * D1 * X)	-0.00097	-0.00102	-0.00102
	(!A2 * B1 * D1 * X)	0.00087	0.00087	0.00087
	(!A2 * B1 * D1 * X)	-0.00111	-0.00111	-0.00111
	(!A2 * B1 * C1 * !D1 * X)	0.00087	0.00087	0.00087
	(!A2 * B1 * C1 * !D1 * X)	-0.00111	-0.00111	-0.00111
	(!A2 * B1 * !C1 * !D1 * X)	0.00087	0.00087	0.00087
	(!A2 * B1 * !C1 * !D1 * X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * C1 * D1 * X)	0.00087	0.00088	0.00087
	(!A2 * !B1 * C1 * D1 * X)	-0.00111	-0.00110	-0.00111
	(!A2 * !B1 * C1 * !D1 * X)	0.00087	0.00087	0.00087
	(!A2 * !B1 * C1 * !D1 * X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * !C1 * D1 * X)	0.00087	0.00088	0.00087
	(!A2 * !B1 * !C1 * D1 * X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00035	0.00034	0.00033
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00129	-0.00129	-0.00131

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00154	0.00155	0.00154
	(A2 * B1 * D1 * X)	-0.00188	-0.00196	-0.00194
	(A2 * B1 * C1 * !D1 * X)	0.00154	0.00155	0.00154
	(A2 * B1 * C1 * !D1 * X)	-0.00187	-0.00196	-0.00194
	(A2 * B1 * !C1 * !D1 * X)	0.00154	0.00155	0.00154
	(A2 * B1 * !C1 * !D1 * X)	-0.00186	-0.00196	-0.00194
	(A2 * !B1 * C1 * D1 * X)	0.00154	0.00155	0.00154
	(A2 * !B1 * C1 * D1 * X)	-0.00176	-0.00188	-0.00186
	(A2 * !B1 * C1 * !D1 * X)	0.00154	0.00155	0.00154
	(A2 * !B1 * C1 * !D1 * X)	-0.00176	-0.00188	-0.00186
	(A2 * !B1 * !C1 * D1 * X)	0.00154	0.00154	0.00154
	(A2 * !B1 * !C1 * D1 * X)	-0.00174	-0.00185	-0.00184
	(!A2 * B1 * D1 * X)	0.00146	0.00146	0.00146
	(!A2 * B1 * D1 * X)	-0.00200	-0.00201	-0.00200
	(!A2 * B1 * C1 * !D1 * X)	0.00146	0.00146	0.00146
	(!A2 * B1 * C1 * !D1 * X)	-0.00201	-0.00201	-0.00200
	(!A2 * B1 * !C1 * !D1 * X)	0.00146	0.00146	0.00145
	(!A2 * B1 * !C1 * !D1 * X)	-0.00201	-0.00201	-0.00200
	(!A2 * !B1 * C1 * D1 * X)	0.00146	0.00147	0.00145
	(!A2 * !B1 * C1 * D1 * X)	-0.00201	-0.00201	-0.00200
	(!A2 * !B1 * C1 * !D1 * X)	0.00145	0.00146	0.00145
	(!A2 * !B1 * C1 * !D1 * X)	-0.00200	-0.00201	-0.00200
	(!A2 * !B1 * !C1 * D1 * X)	0.00145	0.00146	0.00145
	(!A2 * !B1 * !C1 * D1 * X)	-0.00200	-0.00201	-0.00200
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00060	0.00060	0.00056
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00229	-0.00230	-0.00235

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)**	-0.00090	-0.00091	-0.00091
	(A2 * B1 * D1 * X)	0.00095	0.00096	0.00096
	(A2 * B1 * C1 * !D1 * X)	-0.00090	-0.00091	-0.00091
	(A2 * B1 * C1 * !D1 * X)	0.00095	0.00096	0.00096
	(A2 * B1 * !C1 * !D1 * X)	-0.00090	-0.00091	-0.00091
	(A2 * B1 * !C1 * !D1 * X)	0.00095	0.00096	0.00096
	(A2 * !B1 * C1 * D1 * X)	-0.00090	-0.00091	-0.00091
	(A2 * !B1 * C1 * D1 * X)	0.00092	0.00093	0.00092
	(A2 * !B1 * C1 * !D1 * X)	-0.00090	-0.00091	-0.00091
	(A2 * !B1 * C1 * !D1 * X)	0.00092	0.00093	0.00092
	(A2 * !B1 * !C1 * D1 * X)	-0.00090	-0.00091	-0.00090
	(A2 * !B1 * !C1 * D1 * X)	0.00090	0.00091	0.00091
	(!A2 * B1 * D1 * X)	-0.00085	-0.00087	-0.00086
	(!A2 * B1 * D1 * X)	0.00099	0.00100	0.00098
	(!A2 * B1 * C1 * !D1 * X)	-0.00084	-0.00087	-0.00086
	(!A2 * B1 * C1 * !D1 * X)	0.00098	0.00100	0.00098
	(!A2 * B1 * !C1 * !D1 * X)	-0.00084	-0.00087	-0.00086
	(!A2 * B1 * !C1 * !D1 * X)	0.00099	0.00100	0.00098
	(!A2 * !B1 * C1 * D1 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * !B1 * C1 * D1 * X)	0.00098	0.00099	0.00098
	(!A2 * !B1 * C1 * !D1 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * !B1 * C1 * !D1 * X)	0.00099	0.00098	0.00098
	(!A2 * !B1 * !C1 * D1 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * !B1 * !C1 * D1 * X)	0.00099	0.00098	0.00098
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00039	-0.00039	-0.00038
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00093	-0.00093	-0.00092
	(A2 * B1 * D1 * X)	0.00108	0.00109	0.00108
	(A2 * B1 * C1 * !D1 * X)	-0.00093	-0.00093	-0.00092
	(A2 * B1 * C1 * !D1 * X)	0.00108	0.00109	0.00108
	(A2 * B1 * !C1 * !D1 * X)	-0.00092	-0.00093	-0.00092
	(A2 * B1 * !C1 * !D1 * X)	0.00108	0.00109	0.00108
	(A2 * !B1 * C1 * D1 * X)	-0.00092	-0.00092	-0.00092
	(A2 * !B1 * C1 * D1 * X)	0.00105	0.00104	0.00104
	(A2 * !B1 * C1 * !D1 * X)	-0.00092	-0.00092	-0.00092
	(A2 * !B1 * C1 * !D1 * X)	0.00104	0.00104	0.00104
	(A2 * !B1 * !C1 * D1 * X)	-0.00092	-0.00092	-0.00092
	(A2 * !B1 * !C1 * D1 * X)	0.00103	0.00102	0.00102
	(!A2 * B1 * D1 * X)	-0.00085	-0.00087	-0.00087
	(!A2 * B1 * D1 * X)	0.00111	0.00112	0.00111
	(!A2 * B1 * C1 * !D1 * X)	-0.00085	-0.00087	-0.00087
	(!A2 * B1 * C1 * !D1 * X)	0.00111	0.00111	0.00111
	(!A2 * B1 * !C1 * !D1 * X)	-0.00085	-0.00087	-0.00087
	(!A2 * B1 * !C1 * !D1 * X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * C1 * D1 * X)	-0.00085	-0.00087	-0.00087
	(!A2 * !B1 * C1 * D1 * X)	0.00111	0.00110	0.00111
	(!A2 * !B1 * C1 * !D1 * X)	-0.00085	-0.00087	-0.00087
	(!A2 * !B1 * C1 * !D1 * X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * !C1 * D1 * X)	-0.00085	-0.00088	-0.00087
	(!A2 * !B1 * !C1 * D1 * X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00131	0.00132	0.00132

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00153	-0.00154	-0.00154
	(A2 * B1 * D1 * X)	0.00194	0.00196	0.00194
	(A2 * B1 * C1 * !D1 * X)	-0.00153	-0.00154	-0.00154
	(A2 * B1 * C1 * !D1 * X)	0.00194	0.00196	0.00194
	(A2 * B1 * !C1 * !D1 * X)	-0.00154	-0.00154	-0.00154
	(A2 * B1 * !C1 * !D1 * X)	0.00194	0.00196	0.00194
	(A2 * !B1 * C1 * D1 * X)	-0.00153	-0.00154	-0.00154
	(A2 * !B1 * C1 * D1 * X)	0.00186	0.00188	0.00186
	(A2 * !B1 * C1 * !D1 * X)	-0.00153	-0.00154	-0.00154
	(A2 * !B1 * C1 * !D1 * X)	0.00186	0.00188	0.00186
	(A2 * !B1 * !C1 * D1 * X)	-0.00154	-0.00154	-0.00154
	(A2 * !B1 * !C1 * D1 * X)	0.00183	0.00185	0.00184
	(!A2 * B1 * D1 * X)	-0.00140	-0.00146	-0.00146
	(!A2 * B1 * D1 * X)	0.00200	0.00202	0.00201
	(!A2 * B1 * C1 * !D1 * X)	-0.00141	-0.00146	-0.00146
	(!A2 * B1 * C1 * !D1 * X)	0.00201	0.00203	0.00201
	(!A2 * B1 * !C1 * !D1 * X)	-0.00140	-0.00146	-0.00145
	(!A2 * B1 * !C1 * !D1 * X)	0.00202	0.00203	0.00201
	(!A2 * !B1 * C1 * D1 * X)	-0.00140	-0.00147	-0.00145
	(!A2 * !B1 * C1 * D1 * X)	0.00201	0.00203	0.00201
	(!A2 * !B1 * C1 * !D1 * X)	-0.00140	-0.00146	-0.00145
	(!A2 * !B1 * C1 * !D1 * X)	0.00202	0.00203	0.00201
	(!A2 * !B1 * !C1 * D1 * X)	-0.00140	-0.00146	-0.00145
	(!A2 * !B1 * !C1 * D1 * X)	0.00202	0.00203	0.00201
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00054	-0.00054	-0.00054
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00235	0.00236	0.00235

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)**	0.00083	0.00083	0.00083
	(A1 * B1 * D1 * X)	-0.00097	-0.00100	-0.00099
	(A1 * B1 * C1 * !D1 * X)	0.00083	0.00083	0.00083
	(A1 * B1 * C1 * !D1 * X)	-0.00097	-0.00100	-0.00099
	(A1 * B1 * !C1 * !D1 * X)	0.00083	0.00083	0.00083
	(A1 * B1 * !C1 * !D1 * X)	-0.00096	-0.00100	-0.00099
	(A1 * !B1 * C1 * D1 * X)	0.00082	0.00083	0.00083
	(A1 * !B1 * C1 * D1 * X)	-0.00091	-0.00096	-0.00096
	(A1 * !B1 * C1 * !D1 * X)	0.00083	0.00083	0.00083
	(A1 * !B1 * C1 * !D1 * X)	-0.00091	-0.00096	-0.00096
	(A1 * !B1 * !C1 * D1 * X)	0.00082	0.00084	0.00083
	(A1 * !B1 * !C1 * D1 * X)	-0.00089	-0.00094	-0.00094
	(!A1 * B1 * X)	0.00078	0.00078	0.00078
	(!A1 * B1 * X)	-0.00102	-0.00103	-0.00102
	(!A1 * !B1 * C1 * X)	0.00078	0.00079	0.00078
	(!A1 * !B1 * C1 * X)	-0.00102	-0.00103	-0.00102
	(!A1 * !B1 * !C1 * D1 * X)	0.00078	0.00078	0.00078
	(!A1 * !B1 * !C1 * D1 * X)	-0.00103	-0.00103	-0.00102
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00112	-0.00113	-0.00112

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00092	0.00094	0.00093
	(A1 * B1 * D1 * X)	-0.00104	-0.00109	-0.00108
	(A1 * B1 * C1 * !D1 * X)	0.00093	0.00094	0.00093
	(A1 * B1 * C1 * !D1 * X)	-0.00104	-0.00109	-0.00108
	(A1 * B1 * !C1 * !D1 * X)	0.00093	0.00094	0.00093
	(A1 * B1 * !C1 * !D1 * X)	-0.00104	-0.00109	-0.00108
	(A1 * !B1 * C1 * D1 * X)	0.00093	0.00093	0.00093
	(A1 * !B1 * C1 * D1 * X)	-0.00098	-0.00104	-0.00104
	(A1 * !B1 * C1 * !D1 * X)	0.00093	0.00093	0.00093
	(A1 * !B1 * C1 * !D1 * X)	-0.00098	-0.00104	-0.00104
	(A1 * !B1 * !C1 * D1 * X)	0.00093	0.00094	0.00093
	(A1 * !B1 * !C1 * D1 * X)	-0.00096	-0.00102	-0.00102
	(!A1 * B1 * X)	0.00087	0.00088	0.00087
	(!A1 * B1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * !B1 * C1 * X)	0.00088	0.00088	0.00087
	(!A1 * !B1 * C1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * !B1 * !C1 * D1 * X)	0.00088	0.00088	0.00087
	(!A1 * !B1 * !C1 * D1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00081	0.00082	0.00081
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00118	-0.00119	-0.00118

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00158	0.00159	0.00158
	(A1 * B1 * D1 * X)	-0.00189	-0.00197	-0.00196
	(A1 * B1 * C1 * !D1 * X)	0.00158	0.00159	0.00158
	(A1 * B1 * C1 * !D1 * X)	-0.00189	-0.00197	-0.00196
	(A1 * B1 * !C1 * !D1 * X)	0.00158	0.00159	0.00158
	(A1 * B1 * !C1 * !D1 * X)	-0.00188	-0.00197	-0.00196
	(A1 * !B1 * C1 * D1 * X)	0.00158	0.00159	0.00158
	(A1 * !B1 * C1 * D1 * X)	-0.00178	-0.00189	-0.00187
	(A1 * !B1 * C1 * !D1 * X)	0.00158	0.00159	0.00158
	(A1 * !B1 * C1 * !D1 * X)	-0.00178	-0.00189	-0.00187
	(A1 * !B1 * !C1 * D1 * X)	0.00159	0.00159	0.00158
	(A1 * !B1 * !C1 * D1 * X)	-0.00175	-0.00186	-0.00185
	(!A1 * B1 * X)	0.00149	0.00150	0.00149
	(!A1 * B1 * X)	-0.00201	-0.00202	-0.00201
	(!A1 * !B1 * C1 * X)	0.00149	0.00150	0.00149
	(!A1 * !B1 * C1 * X)	-0.00201	-0.00203	-0.00201
	(!A1 * !B1 * !C1 * D1 * X)	0.00149	0.00150	0.00149
	(!A1 * !B1 * !C1 * D1 * X)	-0.00202	-0.00202	-0.00201
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00149	0.00150	0.00149
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00202	-0.00202	-0.00201

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)**	-0.00083	-0.00083	-0.00082
	(A1 * B1 * D1 * X)	0.00100	0.00101	0.00099
	(A1 * B1 * C1 * !D1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * B1 * C1 * !D1 * X)	0.00100	0.00101	0.00099
	(A1 * B1 * !C1 * !D1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * B1 * !C1 * !D1 * X)	0.00100	0.00100	0.00099
	(A1 * !B1 * C1 * D1 * X)	-0.00082	-0.00083	-0.00082
	(A1 * !B1 * C1 * D1 * X)	0.00096	0.00096	0.00096
	(A1 * !B1 * C1 * !D1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * !B1 * C1 * !D1 * X)	0.00096	0.00096	0.00096
	(A1 * !B1 * !C1 * D1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * !B1 * !C1 * D1 * X)	0.00094	0.00094	0.00094
	(!A1 * B1 * X)	-0.00076	-0.00078	-0.00078
	(!A1 * B1 * X)	0.00102	0.00104	0.00103
	(!A1 * !B1 * C1 * X)	-0.00076	-0.00078	-0.00078
	(!A1 * !B1 * C1 * X)	0.00102	0.00103	0.00103
	(!A1 * !B1 * !C1 * D1 * X)	-0.00076	-0.00078	-0.00078
	(!A1 * !B1 * !C1 * D1 * X)	0.00103	0.00103	0.00103
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00064	-0.00068	-0.00068
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00116	0.00115	0.00113

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00092	-0.00093	-0.00093
	(A1 * B1 * D1 * X)	0.00108	0.00109	0.00108
	(A1 * B1 * C1 * !D1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * C1 * !D1 * X)	0.00109	0.00109	0.00108
	(A1 * B1 * !C1 * !D1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * !C1 * !D1 * X)	0.00109	0.00109	0.00108
	(A1 * !B1 * C1 * D1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * !B1 * C1 * D1 * X)	0.00104	0.00104	0.00104
	(A1 * !B1 * C1 * !D1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * !B1 * C1 * !D1 * X)	0.00104	0.00104	0.00104
	(A1 * !B1 * !C1 * D1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * !B1 * !C1 * D1 * X)	0.00102	0.00102	0.00102
	(!A1 * B1 * X)	-0.00085	-0.00088	-0.00087
	(!A1 * B1 * X)	0.00111	0.00113	0.00112
	(!A1 * !B1 * C1 * X)	-0.00085	-0.00088	-0.00087
	(!A1 * !B1 * C1 * X)	0.00111	0.00112	0.00112
	(!A1 * !B1 * !C1 * D1 * X)	-0.00085	-0.00088	-0.00087
	(!A1 * !B1 * !C1 * D1 * X)	0.00111	0.00113	0.00112
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00076	-0.00081	-0.00081
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00121	0.00121	0.00119

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00158	-0.00159	-0.00158
	(A1 * B1 * D1 * X)	0.00195	0.00197	0.00196
	(A1 * B1 * C1 * !D1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * B1 * C1 * !D1 * X)	0.00195	0.00197	0.00196
	(A1 * B1 * !C1 * !D1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * B1 * !C1 * !D1 * X)	0.00195	0.00197	0.00196
	(A1 * !B1 * C1 * D1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !B1 * C1 * D1 * X)	0.00187	0.00189	0.00187
	(A1 * !B1 * C1 * !D1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !B1 * C1 * !D1 * X)	0.00187	0.00189	0.00187
	(A1 * !B1 * !C1 * D1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !B1 * !C1 * D1 * X)	0.00184	0.00186	0.00185
	(!A1 * B1 * X)	-0.00144	-0.00150	-0.00149
	(!A1 * B1 * X)	0.00201	0.00204	0.00202
	(!A1 * !B1 * C1 * X)	-0.00144	-0.00150	-0.00149
	(!A1 * !B1 * C1 * X)	0.00201	0.00204	0.00202
	(!A1 * !B1 * !C1 * D1 * X)	-0.00144	-0.00150	-0.00149
	(!A1 * !B1 * !C1 * D1 * X)	0.00202	0.00204	0.00202
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00140	-0.00150	-0.00149
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00206	0.00205	0.00202

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)**	0.00084	0.00086	0.00085
	(A1 * A2 * C1 * D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * C1 * !D1 * X)	0.00085	0.00086	0.00085
	(A1 * A2 * C1 * !D1 * X)	-0.00071	-0.00071	-0.00070
	(A1 * A2 * !C1 * D1 * X)	0.00085	0.00086	0.00084
	(A1 * A2 * !C1 * D1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !C1 * !D1 * X)	0.00084	0.00085	0.00084
	(A1 * A2 * !C1 * !D1 * X)	-0.00058	-0.00059	-0.00058
	(A1 * !A2 * C1 * D1 * X)	0.00085	0.00085	0.00084
	(A1 * !A2 * C1 * D1 * X)	-0.00092	-0.00094	-0.00094
	(A1 * !A2 * C1 * !D1 * X)	0.00086	0.00085	0.00084
	(A1 * !A2 * C1 * !D1 * X)	-0.00090	-0.00094	-0.00094
	(A1 * !A2 * !C1 * D1 * X)	0.00086	0.00085	0.00084
	(A1 * !A2 * !C1 * D1 * X)	-0.00083	-0.00089	-0.00089
	(!A1 * C1 * D1 * X)	0.00085	0.00085	0.00084
	(!A1 * C1 * D1 * X)	-0.00092	-0.00094	-0.00094
	(!A1 * C1 * !D1 * X)	0.00086	0.00085	0.00084
	(!A1 * C1 * !D1 * X)	-0.00089	-0.00094	-0.00094
	(!A1 * !C1 * D1 * X)	0.00086	0.00085	0.00084
	(!A1 * !C1 * D1 * X)	-0.00083	-0.00089	-0.00089

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00090	0.00090	0.00090
	(A1 * A2 * C1 * D1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * C1 * !D1 * X)	0.00090	0.00090	0.00090
	(A1 * A2 * C1 * !D1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !C1 * D1 * X)	0.00089	0.00090	0.00089
	(A1 * A2 * !C1 * D1 * X)	-0.00075	-0.00075	-0.00075
	(A1 * A2 * !C1 * !D1 * X)	0.00090	0.00090	0.00090
	(A1 * A2 * !C1 * !D1 * X)	-0.00065	-0.00065	-0.00064
	(A1 * !A2 * C1 * D1 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * C1 * D1 * X)	-0.00103	-0.00105	-0.00105
	(A1 * !A2 * C1 * !D1 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * C1 * !D1 * X)	-0.00101	-0.00105	-0.00105
	(A1 * !A2 * !C1 * D1 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * !C1 * D1 * X)	-0.00093	-0.00100	-0.00099
	(!A1 * C1 * D1 * X)	0.00090	0.00090	0.00090
	(!A1 * C1 * D1 * X)	-0.00103	-0.00105	-0.00105
	(!A1 * C1 * !D1 * X)	0.00090	0.00090	0.00090
	(!A1 * C1 * !D1 * X)	-0.00101	-0.00105	-0.00105
	(!A1 * !C1 * D1 * X)	0.00090	0.00090	0.00090
	(!A1 * !C1 * D1 * X)	-0.00093	-0.00100	-0.00099

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00167	0.00166	0.00165
	(A1 * A2 * C1 * D1 * X)	-0.00147	-0.00149	-0.00148
	(A1 * A2 * C1 * !D1 * X)	0.00168	0.00167	0.00165
	(A1 * A2 * C1 * !D1 * X)	-0.00144	-0.00145	-0.00144
	(A1 * A2 * !C1 * D1 * X)	0.00166	0.00169	0.00166
	(A1 * A2 * !C1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(A1 * A2 * !C1 * !D1 * X)	0.00164	0.00166	0.00165
	(A1 * A2 * !C1 * !D1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * C1 * D1 * X)	0.00167	0.00167	0.00165
	(A1 * !A2 * C1 * D1 * X)	-0.00188	-0.00194	-0.00193
	(A1 * !A2 * C1 * !D1 * X)	0.00168	0.00167	0.00165
	(A1 * !A2 * C1 * !D1 * X)	-0.00186	-0.00193	-0.00193
	(A1 * !A2 * !C1 * D1 * X)	0.00167	0.00167	0.00165
	(A1 * !A2 * !C1 * D1 * X)	-0.00173	-0.00183	-0.00183
	(!A1 * C1 * D1 * X)	0.00167	0.00167	0.00165
	(!A1 * C1 * D1 * X)	-0.00188	-0.00194	-0.00193
	(!A1 * C1 * !D1 * X)	0.00168	0.00167	0.00165
	(!A1 * C1 * !D1 * X)	-0.00186	-0.00194	-0.00193
	(!A1 * !C1 * D1 * X)	0.00167	0.00167	0.00165
	(!A1 * !C1 * D1 * X)	-0.00173	-0.00183	-0.00183

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)**	-0.00084	-0.00084	-0.00084
	(A1 * A2 * C1 * D1 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * C1 * !D1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * C1 * !D1 * X)	0.00071	0.00071	0.00070
	(A1 * A2 * !C1 * D1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * !C1 * D1 * X)	0.00067	0.00068	0.00067
	(A1 * A2 * !C1 * !D1 * X)	-0.00077	-0.00078	-0.00079
	(A1 * A2 * !C1 * !D1 * X)	0.00065	0.00065	0.00063
	(A1 * !A2 * C1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * !A2 * C1 * D1 * X)	0.00094	0.00094	0.00094
	(A1 * !A2 * C1 * !D1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * !A2 * C1 * !D1 * X)	0.00093	0.00094	0.00094
	(A1 * !A2 * !C1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * !A2 * !C1 * D1 * X)	0.00088	0.00089	0.00089
	(!A1 * C1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * C1 * D1 * X)	0.00094	0.00094	0.00094
	(!A1 * C1 * !D1 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * C1 * !D1 * X)	0.00093	0.00094	0.00094
	(!A1 * !C1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * !C1 * D1 * X)	0.00088	0.00089	0.00089

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00089	-0.00090	-0.00089
	(A1 * A2 * C1 * D1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * C1 * !D1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * C1 * !D1 * X)	0.00078	0.00078	0.00078
	(A1 * A2 * !C1 * D1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !C1 * D1 * X)	0.00075	0.00075	0.00075
	(A1 * A2 * !C1 * !D1 * X)	-0.00082	-0.00082	-0.00083
	(A1 * A2 * !C1 * !D1 * X)	0.00072	0.00071	0.00070
	(A1 * !A2 * C1 * D1 * X)	-0.00090	-0.00090	-0.00089
	(A1 * !A2 * C1 * D1 * X)	0.00105	0.00105	0.00105
	(A1 * !A2 * C1 * !D1 * X)	-0.00090	-0.00090	-0.00089
	(A1 * !A2 * C1 * !D1 * X)	0.00105	0.00105	0.00105
	(A1 * !A2 * !C1 * D1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !C1 * D1 * X)	0.00099	0.00100	0.00099
	(!A1 * C1 * D1 * X)	-0.00090	-0.00090	-0.00089
	(!A1 * C1 * D1 * X)	0.00105	0.00105	0.00105
	(!A1 * C1 * !D1 * X)	-0.00090	-0.00090	-0.00089
	(!A1 * C1 * !D1 * X)	0.00105	0.00105	0.00105
	(!A1 * !C1 * D1 * X)	-0.00089	-0.00090	-0.00089
	(!A1 * !C1 * D1 * X)	0.00099	0.00100	0.00099

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00165	-0.00166	-0.00165
	(A1 * A2 * C1 * D1 * X)	0.00147	0.00149	0.00148
	(A1 * A2 * C1 * !D1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * C1 * !D1 * X)	0.00144	0.00145	0.00144
	(A1 * A2 * !C1 * D1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * !C1 * D1 * X)	0.00141	0.00142	0.00141
	(A1 * A2 * !C1 * !D1 * X)	-0.00152	-0.00153	-0.00152
	(A1 * A2 * !C1 * !D1 * X)	0.00134	0.00135	0.00134
	(A1 * !A2 * C1 * D1 * X)	-0.00166	-0.00165	-0.00165
	(A1 * !A2 * C1 * D1 * X)	0.00194	0.00194	0.00193
	(A1 * !A2 * C1 * !D1 * X)	-0.00165	-0.00165	-0.00165
	(A1 * !A2 * C1 * !D1 * X)	0.00194	0.00193	0.00193
	(A1 * !A2 * !C1 * D1 * X)	-0.00164	-0.00165	-0.00165
	(A1 * !A2 * !C1 * D1 * X)	0.00182	0.00183	0.00183
	(!A1 * C1 * D1 * X)	-0.00166	-0.00165	-0.00165
	(!A1 * C1 * D1 * X)	0.00194	0.00194	0.00193
	(!A1 * C1 * !D1 * X)	-0.00165	-0.00165	-0.00165
	(!A1 * C1 * !D1 * X)	0.00194	0.00194	0.00193
	(!A1 * !C1 * D1 * X)	-0.00164	-0.00165	-0.00165
	(!A1 * !C1 * D1 * X)	0.00182	0.00183	0.00183

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)**	0.00088	0.00090	0.00086
	(A1 * B1 * D1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * B1 * !D1 * X)	0.00085	0.00086	0.00085
	(A1 * B1 * !D1 * X)	-0.00057	-0.00057	-0.00057
	(A1 * A2 * !B1 * D1 * X)	0.00092	0.00086	0.00085
	(A1 * A2 * !B1 * D1 * X)	-0.00067	-0.00069	-0.00069
	(A1 * A2 * !B1 * !D1 * X)	0.00086	0.00086	0.00085
	(A1 * A2 * !B1 * !D1 * X)	-0.00057	-0.00057	-0.00057
	(A1 * !A2 * !B1 * D1 * X)	0.00099	0.00086	0.00085
	(A1 * !A2 * !B1 * D1 * X)	-0.00078	-0.00092	-0.00093
	(!A1 * B1 * D1 * X)	0.00091	0.00092	0.00087
	(!A1 * B1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * B1 * !D1 * X)	0.00085	0.00086	0.00085
	(!A1 * B1 * !D1 * X)	-0.00057	-0.00057	-0.00057
	(!A1 * !B1 * D1 * X)	0.00099	0.00086	0.00085
	(!A1 * !B1 * D1 * X)	-0.00078	-0.00092	-0.00093

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00091	0.00091	0.00089
	(A1 * B1 * D1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * B1 * !D1 * X)	0.00089	0.00089	0.00089
	(A1 * B1 * !D1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * A2 * !B1 * D1 * X)	0.00095	0.00089	0.00089
	(A1 * A2 * !B1 * D1 * X)	-0.00078	-0.00080	-0.00079
	(A1 * A2 * !B1 * !D1 * X)	0.00090	0.00090	0.00089
	(A1 * A2 * !B1 * !D1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * !A2 * !B1 * D1 * X)	0.00103	0.00090	0.00089
	(A1 * !A2 * !B1 * D1 * X)	-0.00094	-0.00108	-0.00109
	(!A1 * B1 * D1 * X)	0.00093	0.00093	0.00090
	(!A1 * B1 * D1 * X)	-0.00076	-0.00077	-0.00077
	(!A1 * B1 * !D1 * X)	0.00090	0.00089	0.00089
	(!A1 * B1 * !D1 * X)	-0.00069	-0.00068	-0.00068
	(!A1 * !B1 * D1 * X)	0.00103	0.00090	0.00089
	(!A1 * !B1 * D1 * X)	-0.00094	-0.00108	-0.00109

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00165	0.00166	0.00163
	(A1 * B1 * D1 * X)	-0.00140	-0.00140	-0.00139
	(A1 * B1 * !D1 * X)	0.00162	0.00162	0.00161
	(A1 * B1 * !D1 * X)	-0.00126	-0.00125	-0.00125
	(A1 * A2 * !B1 * D1 * X)	0.00168	0.00166	0.00162
	(A1 * A2 * !B1 * D1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * A2 * !B1 * !D1 * X)	0.00162	0.00163	0.00161
	(A1 * A2 * !B1 * !D1 * X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * !B1 * D1 * X)	0.00184	0.00163	0.00161
	(A1 * !A2 * !B1 * D1 * X)	-0.00171	-0.00199	-0.00200
	(!A1 * B1 * D1 * X)	0.00167	0.00169	0.00164
	(!A1 * B1 * D1 * X)	-0.00140	-0.00141	-0.00141
	(!A1 * B1 * !D1 * X)	0.00163	0.00162	0.00161
	(!A1 * B1 * !D1 * X)	-0.00126	-0.00125	-0.00125
	(!A1 * !B1 * D1 * X)	0.00184	0.00162	0.00161
	(!A1 * !B1 * D1 * X)	-0.00171	-0.00199	-0.00200

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)**	-0.00084	-0.00085	-0.00084
	(A1 * B1 * D1 * X)	0.00064	0.00065	0.00064
	(A1 * B1 * !D1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * B1 * !D1 * X)	0.00059	0.00059	0.00059
	(A1 * A2 * !B1 * D1 * X)	-0.00085	-0.00085	-0.00084
	(A1 * A2 * !B1 * D1 * X)	0.00069	0.00069	0.00069
	(A1 * A2 * !B1 * !D1 * X)	-0.00076	-0.00076	-0.00083
	(A1 * A2 * !B1 * !D1 * X)	0.00064	0.00064	0.00059
	(A1 * !A2 * !B1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * !A2 * !B1 * D1 * X)	0.00093	0.00093	0.00093
	(!A1 * B1 * D1 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * B1 * D1 * X)	0.00065	0.00065	0.00065
	(!A1 * B1 * !D1 * X)	-0.00084	-0.00084	-0.00083
	(!A1 * B1 * !D1 * X)	0.00059	0.00059	0.00059
	(!A1 * !B1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * !B1 * D1 * X)	0.00093	0.00093	0.00093

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00089	-0.00089	-0.00089
	(A1 * B1 * D1 * X)	0.00076	0.00076	0.00076
	(A1 * B1 * !D1 * X)	-0.00088	-0.00088	-0.00087
	(A1 * B1 * !D1 * X)	0.00069	0.00069	0.00069
	(A1 * A2 * !B1 * D1 * X)	-0.00088	-0.00089	-0.00088
	(A1 * A2 * !B1 * D1 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * !B1 * !D1 * X)	-0.00077	-0.00078	-0.00087
	(A1 * A2 * !B1 * !D1 * X)	0.00075	0.00075	0.00068
	(A1 * !A2 * !B1 * D1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * !A2 * !B1 * D1 * X)	0.00109	0.00109	0.00109
	(!A1 * B1 * D1 * X)	-0.00088	-0.00089	-0.00089
	(!A1 * B1 * D1 * X)	0.00076	0.00077	0.00077
	(!A1 * B1 * !D1 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1 * !D1 * X)	0.00070	0.00070	0.00070
	(!A1 * !B1 * D1 * X)	-0.00088	-0.00088	-0.00088
	(!A1 * !B1 * D1 * X)	0.00109	0.00109	0.00109

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00162	-0.00162	-0.00162
	(A1 * B1 * D1 * X)	0.00140	0.00140	0.00139
	(A1 * B1 * !D1 * X)	-0.00160	-0.00160	-0.00159
	(A1 * B1 * !D1 * X)	0.00127	0.00127	0.00128
	(A1 * A2 * !B1 * D1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * A2 * !B1 * D1 * X)	0.00147	0.00148	0.00147
	(A1 * A2 * !B1 * !D1 * X)	-0.00144	-0.00145	-0.00155
	(A1 * A2 * !B1 * !D1 * X)	0.00137	0.00136	0.00130
	(A1 * !A2 * !B1 * D1 * X)	-0.00161	-0.00161	-0.00159
	(A1 * !A2 * !B1 * D1 * X)	0.00199	0.00200	0.00200
	(!A1 * B1 * D1 * X)	-0.00161	-0.00162	-0.00162
	(!A1 * B1 * D1 * X)	0.00140	0.00141	0.00141
	(!A1 * B1 * !D1 * X)	-0.00159	-0.00159	-0.00158
	(!A1 * B1 * !D1 * X)	0.00128	0.00128	0.00129
	(!A1 * !B1 * D1 * X)	-0.00161	-0.00161	-0.00160
	(!A1 * !B1 * D1 * X)	0.00199	0.00200	0.00200

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00092	0.00091	0.00091
	(A1 * C1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * B1 * !C1 * X)	0.00092	0.00091	0.00091
	(A1 * B1 * !C1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * A2 * !B1 * !C1 * X)	0.00092	0.00092	0.00091
	(A1 * A2 * !B1 * !C1 * X)	-0.00054	-0.00054	-0.00053
	(!A1 * C1 * X)	0.00091	0.00091	0.00091
	(!A1 * C1 * X)	-0.00053	-0.00054	-0.00054
	(!A1 * B1 * !C1 * X)	0.00092	0.00091	0.00091
	(!A1 * B1 * !C1 * X)	-0.00054	-0.00054	-0.00053

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00109	0.00110	0.00110
	(A1 * C1 * X)	-0.00057	-0.00058	-0.00058
	(A1 * B1 * !C1 * X)	0.00109	0.00110	0.00110
	(A1 * B1 * !C1 * X)	-0.00057	-0.00058	-0.00058
	(A1 * A2 * !B1 * !C1 * X)	0.00111	0.00110	0.00110
	(A1 * A2 * !B1 * !C1 * X)	-0.00059	-0.00058	-0.00058
	(!A1 * C1 * X)	0.00109	0.00110	0.00110
	(!A1 * C1 * X)	-0.00058	-0.00058	-0.00058
	(!A1 * B1 * !C1 * X)	0.00109	0.00110	0.00110
	(!A1 * B1 * !C1 * X)	-0.00057	-0.00058	-0.00058
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00177	0.00178	0.00177
	(A1 * C1 * X)	-0.00109	-0.00109	-0.00109
	(A1 * B1 * !C1 * X)	0.00177	0.00178	0.00177
	(A1 * B1 * !C1 * X)	-0.00108	-0.00109	-0.00109
	(A1 * A2 * !B1 * !C1 * X)	0.00177	0.00178	0.00177
	(A1 * A2 * !B1 * !C1 * X)	-0.00108	-0.00109	-0.00109
	(!A1 * C1 * X)	0.00177	0.00178	0.00177
	(!A1 * C1 * X)	-0.00109	-0.00109	-0.00109
	(!A1 * B1 * !C1 * X)	0.00177	0.00178	0.00177
	(!A1 * B1 * !C1 * X)	-0.00108	-0.00109	-0.00109

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00087	-0.00087	-0.00091
	(A1 * C1 * X)	0.00058	0.00057	0.00055
	(A1 * B1 * !C1 * X)	-0.00082	-0.00082	-0.00090
	(A1 * B1 * !C1 * X)	0.00060	0.00060	0.00055
	(A1 * A2 * !B1 * !C1 * X)	-0.00068	-0.00069	-0.00085
	(A1 * A2 * !B1 * !C1 * X)	0.00070	0.00069	0.00058
	(!A1 * C1 * X)	-0.00087	-0.00087	-0.00091
	(!A1 * C1 * X)	0.00058	0.00057	0.00055
	(!A1 * B1 * !C1 * X)	-0.00082	-0.00082	-0.00090
	(!A1 * B1 * !C1 * X)	0.00060	0.00060	0.00055
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00105	-0.00106	-0.00109
	(A1 * C1 * X)	0.00062	0.00062	0.00059
	(A1 * B1 * !C1 * X)	-0.00098	-0.00099	-0.00108
	(A1 * B1 * !C1 * X)	0.00066	0.00066	0.00060
	(A1 * A2 * !B1 * !C1 * X)	-0.00083	-0.00083	-0.00103
	(A1 * A2 * !B1 * !C1 * X)	0.00077	0.00076	0.00063
	(!A1 * C1 * X)	-0.00105	-0.00106	-0.00109
	(!A1 * C1 * X)	0.00062	0.00062	0.00059
	(!A1 * B1 * !C1 * X)	-0.00098	-0.00099	-0.00108
	(!A1 * B1 * !C1 * X)	0.00066	0.00066	0.00060
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00164	-0.00165	-0.00176
	(A1 * C1 * X)	0.00122	0.00121	0.00112
	(A1 * B1 * !C1 * X)	-0.00151	-0.00152	-0.00173
	(A1 * B1 * !C1 * X)	0.00128	0.00128	0.00113
	(A1 * A2 * !B1 * !C1 * X)	-0.00124	-0.00126	-0.00164
	(A1 * A2 * !B1 * !C1 * X)	0.00146	0.00146	0.00119
	(!A1 * C1 * X)	-0.00164	-0.00165	-0.00176
	(!A1 * C1 * X)	0.00122	0.00122	0.00112
	(!A1 * B1 * !C1 * X)	-0.00151	-0.00152	-0.00172
	(!A1 * B1 * !C1 * X)	0.00129	0.00128	0.00113

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00270	0.00254	0.00269	0.00275	0.18918
sky130_fd_sc_hs__a211oi_2	0.00493	0.00514	0.00413	0.00393	0.36067
sky130_fd_sc_hs__a211oi_4	0.00992	0.00986	0.00786	0.00800	0.67401

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211oi_1	0.00000	0.00802	0.01811
sky130_fd_sc_hs__a211oi_2	0.00000	0.01469	0.03622
sky130_fd_sc_hs__a211oi_4	0.00000	0.02938	0.07244

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)	0.27372	1.57969	11.61810
	A2->Y (FR)	0.32493	1.65501	11.81450
	B1->Y (FR)	0.29190	1.61690	12.14660
	C1->Y (FR)	0.23182	1.51604	11.74670
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.23765	1.36357	11.67630
	A2->Y (FR)	0.30597	1.43307	11.73670
	B1->Y (FR)	0.26455	1.39599	12.11310
	C1->Y (FR)	0.17833	1.26921	11.69130
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.22554	1.18789	11.50430
	A2->Y (FR)	0.29749	1.27382	11.72300
	B1->Y (FR)	0.24993	1.22859	12.11870
	C1->Y (FR)	0.17048	1.11543	11.73620

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.04300	0.49613	4.09112
	A2->Y (RF)	0.04754	0.47612	3.89048
	B1->Y (RF)	0.03191	0.41177	3.48145
	C1->Y (RF)	0.02901	0.39989	3.47218
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.03745	0.45797	4.21057
	A2->Y (RF)	0.04612	0.44498	3.98372
	B1->Y (RF)	0.04324	0.50030	4.74985
	C1->Y (RF)	0.03356	0.47405	4.65663
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.03692	0.42344	4.26430
	A2->Y (RF)	0.04411	0.39842	3.87499
	B1->Y (RF)	0.04144	0.45566	4.76443
	C1->Y (RF)	0.03286	0.43444	4.73168

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00034	0.00023	0.00022
	A1	0.00422	0.00411	0.00410
	A2	0.00057	0.00050	0.00050
	A2	0.00501	0.00493	0.00491
	B1	0.00062	0.00051	0.00052
	B1	0.00444	0.00433	0.00434
	C1	0.00052	0.00043	0.00068
	C1	0.00391	0.00383	0.00407
sky130_fd_sc_hs__a211oi_2	A1	0.00001	-0.00017	-0.00015
	A1	0.00742	0.00725	0.00725
	A2	0.00102	0.00080	0.00080
	A2	0.00965	0.00946	0.00942
	B1	0.00158	0.00144	0.00145
	B1	0.00813	0.00800	0.00801
	C1	0.00150	0.00140	0.00170
	C1	0.00692	0.00674	0.00713
sky130_fd_sc_hs__a211oi_4	A1	-0.00023	-0.00058	-0.00054
	A1	0.01443	0.01408	0.01417
	A2	0.00140	0.00103	0.00104
	A2	0.01850	0.01814	0.01814
	B1	0.00265	0.00239	0.00243
	B1	0.01551	0.01524	0.01531
	C1	0.00256	0.00232	0.00297
	C1	0.01328	0.01305	0.01368

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00513	0.00499	0.00501
	A1	0.00137	0.00123	0.00125
	A2	0.00570	0.00560	0.00554
	A2	0.00135	0.00123	0.00121
	B1	0.00430	0.00423	0.00428
	B1	0.00047	0.00037	0.00043
	C1	0.00332	0.00331	0.00338
	C1	-0.00011	-0.00016	-0.00007
sky130_fd_sc_hs__a211oi_2	A1	0.00948	0.00924	0.00932
	A1	0.00233	0.00207	0.00213
	A2	0.01081	0.01055	0.01048
	A2	0.00230	0.00205	0.00199
	B1	0.00755	0.00735	0.00744
	B1	0.00095	0.00070	0.00075
	C1	0.00488	0.00487	0.00504
	C1	-0.00065	-0.00072	-0.00060
sky130_fd_sc_hs__a211oi_4	A1	0.01873	0.01812	0.01830
	A1	0.00453	0.00395	0.00409
	A2	0.02129	0.02080	0.02068
	A2	0.00451	0.00396	0.00390
	B1	0.01429	0.01388	0.01421
	B1	0.00134	0.00081	0.00100
	C1	0.00934	0.00924	0.00988
	C1	-0.00158	-0.00180	-0.00142

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)**	0.00089	0.00089	0.00088
	(A2 * B1 * C1 * !Y)	-0.00103	-0.00107	-0.00106
	(A2 * B1 * !C1 * !Y)	0.00089	0.00089	0.00088
	(A2 * B1 * !C1 * !Y)	-0.00103	-0.00107	-0.00106
	(A2 * !B1 * C1 * !Y)	0.00088	0.00088	0.00088
	(A2 * !B1 * C1 * !Y)	-0.00096	-0.00102	-0.00102
	(!A2 * B1 * C1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * B1 * C1 * !Y)	-0.00109	-0.00109	-0.00109
	(!A2 * B1 * !C1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * B1 * !C1 * !Y)	-0.00109	-0.00109	-0.00109
	(!A2 * !B1 * C1 * !Y)	0.00082	0.00083	0.00082
	(!A2 * !B1 * C1 * !Y)	-0.00109	-0.00109	-0.00109
	(!A2 * !B1 * !C1 * Y)	0.00031	0.00031	0.00029
	(!A2 * !B1 * !C1 * Y)	-0.00127	-0.00127	-0.00129
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00180	0.00181	0.00180
	(A2 * B1 * C1 * !Y)	-0.00200	-0.00209	-0.00208
	(A2 * B1 * !C1 * !Y)	0.00180	0.00181	0.00180
	(A2 * B1 * !C1 * !Y)	-0.00200	-0.00209	-0.00208
	(A2 * !B1 * C1 * !Y)	0.00181	0.00181	0.00180
	(A2 * !B1 * C1 * !Y)	-0.00191	-0.00202	-0.00201
	(!A2 * B1 * C1 * !Y)	0.00169	0.00172	0.00170
	(!A2 * B1 * C1 * !Y)	-0.00213	-0.00215	-0.00214
	(!A2 * B1 * !C1 * !Y)	0.00169	0.00171	0.00170
	(!A2 * B1 * !C1 * !Y)	-0.00213	-0.00215	-0.00214
	(!A2 * !B1 * C1 * !Y)	0.00170	0.00170	0.00170
	(!A2 * !B1 * C1 * !Y)	-0.00214	-0.00214	-0.00214
	(!A2 * !B1 * !C1 * Y)	0.00072	0.00073	0.00068
	(!A2 * !B1 * !C1 * Y)	-0.00243	-0.00246	-0.00251

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00348	0.00351	0.00349
	(A2 * B1 * C1 * !Y)	-0.00406	-0.00426	-0.00422
	(A2 * B1 * !C1 * !Y)	0.00349	0.00351	0.00349
	(A2 * B1 * !C1 * !Y)	-0.00405	-0.00419	-0.00422
	(A2 * !B1 * C1 * !Y)	0.00351	0.00351	0.00350
	(A2 * !B1 * C1 * !Y)	-0.00385	-0.00410	-0.00406
	(!A2 * B1 * C1 * !Y)	0.00326	0.00330	0.00328
	(!A2 * B1 * C1 * !Y)	-0.00434	-0.00436	-0.00436
	(!A2 * B1 * !C1 * !Y)	0.00329	0.00330	0.00329
	(!A2 * B1 * !C1 * !Y)	-0.00437	-0.00437	-0.00436
	(!A2 * !B1 * C1 * !Y)	0.00327	0.00329	0.00329
	(!A2 * !B1 * C1 * !Y)	-0.00435	-0.00437	-0.00436
	(!A2 * !B1 * !C1 * Y)	0.00126	0.00127	0.00119
	(!A2 * !B1 * !C1 * Y)	-0.00500	-0.00506	-0.00515

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)**	-0.00088	-0.00088	-0.00088
	(A2 * B1 * C1 * !Y)	0.00106	0.00107	0.00106
	(A2 * B1 * !C1 * !Y)	-0.00088	-0.00088	-0.00088
	(A2 * B1 * !C1 * !Y)	0.00106	0.00107	0.00106
	(A2 * !B1 * C1 * !Y)	-0.00088	-0.00088	-0.00088
	(A2 * !B1 * C1 * !Y)	0.00101	0.00102	0.00102
	(!A2 * B1 * C1 * !Y)	-0.00081	-0.00083	-0.00082
	(!A2 * B1 * C1 * !Y)	0.00110	0.00110	0.00109
	(!A2 * B1 * !C1 * !Y)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * !C1 * !Y)	0.00110	0.00110	0.00109
	(!A2 * !B1 * C1 * !Y)	-0.00080	-0.00083	-0.00082
	(!A2 * !B1 * C1 * !Y)	0.00109	0.00109	0.00109
	(!A2 * !B1 * !C1 * Y)	-0.00028	-0.00029	-0.00028
	(!A2 * !B1 * !C1 * Y)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00180	-0.00180	-0.00180
	(A2 * B1 * C1 * !Y)	0.00208	0.00209	0.00208
	(A2 * B1 * !C1 * !Y)	-0.00180	-0.00180	-0.00180
	(A2 * B1 * !C1 * !Y)	0.00208	0.00209	0.00208
	(A2 * !B1 * C1 * !Y)	-0.00180	-0.00181	-0.00180
	(A2 * !B1 * C1 * !Y)	0.00200	0.00202	0.00201
	(!A2 * B1 * C1 * !Y)	-0.00163	-0.00172	-0.00170
	(!A2 * B1 * C1 * !Y)	0.00214	0.00217	0.00214
	(!A2 * B1 * !C1 * !Y)	-0.00163	-0.00171	-0.00170
	(!A2 * B1 * !C1 * !Y)	0.00215	0.00216	0.00214
	(!A2 * !B1 * C1 * !Y)	-0.00163	-0.00170	-0.00170
	(!A2 * !B1 * C1 * !Y)	0.00215	0.00215	0.00214
	(!A2 * !B1 * !C1 * Y)	-0.00066	-0.00066	-0.00066
	(!A2 * !B1 * !C1 * Y)	0.00252	0.00253	0.00252

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00348	-0.00350	-0.00349
	(A2 * B1 * C1 * !Y)	0.00421	0.00426	0.00422
	(A2 * B1 * !C1 * !Y)	-0.00348	-0.00347	-0.00349
	(A2 * B1 * !C1 * !Y)	0.00421	0.00419	0.00422
	(A2 * !B1 * C1 * !Y)	-0.00349	-0.00351	-0.00349
	(A2 * !B1 * C1 * !Y)	0.00405	0.00410	0.00406
	(!A2 * B1 * C1 * !Y)	-0.00314	-0.00330	-0.00328
	(!A2 * B1 * C1 * !Y)	0.00436	0.00436	0.00437
	(!A2 * B1 * !C1 * !Y)	-0.00314	-0.00330	-0.00329
	(!A2 * B1 * !C1 * !Y)	0.00438	0.00440	0.00437
	(!A2 * !B1 * C1 * !Y)	-0.00313	-0.00329	-0.00329
	(!A2 * !B1 * C1 * !Y)	0.00438	0.00440	0.00437
	(!A2 * !B1 * !C1 * Y)	-0.00116	-0.00116	-0.00115
	(!A2 * !B1 * !C1 * Y)	0.00518	0.00519	0.00516

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)**	0.00089	0.00090	0.00089
	(A1 * B1 * C1 * !Y)	-0.00103	-0.00108	-0.00107
	(A1 * B1 * !C1 * !Y)	0.00089	0.00090	0.00089
	(A1 * B1 * !C1 * !Y)	-0.00103	-0.00107	-0.00107
	(A1 * !B1 * C1 * !Y)	0.00089	0.00089	0.00089
	(A1 * !B1 * C1 * !Y)	-0.00097	-0.00103	-0.00103
	(!A1 * B1 * !Y)	0.00084	0.00084	0.00084
	(!A1 * B1 * !Y)	-0.00110	-0.00109	-0.00110
	(!A1 * !B1 * C1 * !Y)	0.00083	0.00084	0.00084
	(!A1 * !B1 * C1 * !Y)	-0.00109	-0.00110	-0.00110
	(!A1 * !B1 * !C1 * Y)	0.00084	0.00084	0.00084
	(!A1 * !B1 * !C1 * Y)	-0.00109	-0.00110	-0.00110

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00185	0.00185	0.00184
	(A1 * B1 * C1 * !Y)	-0.00208	-0.00214	-0.00215
	(A1 * B1 * !C1 * !Y)	0.00185	0.00185	0.00184
	(A1 * B1 * !C1 * !Y)	-0.00207	-0.00214	-0.00215
	(A1 * !B1 * C1 * !Y)	0.00186	0.00186	0.00185
	(A1 * !B1 * C1 * !Y)	-0.00196	-0.00208	-0.00207
	(!A1 * B1 * !Y)	0.00176	0.00176	0.00175
	(!A1 * B1 * !Y)	-0.00222	-0.00223	-0.00222
	(!A1 * !B1 * C1 * !Y)	0.00176	0.00176	0.00175
	(!A1 * !B1 * C1 * !Y)	-0.00222	-0.00223	-0.00222
	(!A1 * !B1 * !C1 * Y)	0.00161	0.00162	0.00161
	(!A1 * !B1 * !C1 * Y)	-0.00237	-0.00237	-0.00236
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00359	0.00361	0.00359
	(A1 * B1 * C1 * !Y)	-0.00412	-0.00429	-0.00427
	(A1 * B1 * !C1 * !Y)	0.00360	0.00361	0.00359
	(A1 * B1 * !C1 * !Y)	-0.00410	-0.00430	-0.00427
	(A1 * !B1 * C1 * !Y)	0.00362	0.00361	0.00359
	(A1 * !B1 * C1 * !Y)	-0.00389	-0.00412	-0.00410
	(!A1 * B1 * !Y)	0.00336	0.00338	0.00335
	(!A1 * B1 * !Y)	-0.00442	-0.00442	-0.00441
	(!A1 * !B1 * C1 * !Y)	0.00337	0.00339	0.00336
	(!A1 * !B1 * C1 * !Y)	-0.00442	-0.00442	-0.00441
	(!A1 * !B1 * !C1 * Y)	0.00337	0.00340	0.00336
	(!A1 * !B1 * !C1 * Y)	-0.00441	-0.00443	-0.00440

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)**	-0.00089	-0.00090	-0.00089
	(A1 * B1 * C1 * !Y)	0.00107	0.00108	0.00107
	(A1 * B1 * !C1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * B1 * !C1 * !Y)	0.00107	0.00108	0.00107
	(A1 * !B1 * C1 * !Y)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * C1 * !Y)	0.00103	0.00103	0.00103
	(!A1 * B1 * !Y)	-0.00081	-0.00084	-0.00084
	(!A1 * B1 * !Y)	0.00110	0.00109	0.00110
	(!A1 * !B1 * C1 * !Y)	-0.00081	-0.00084	-0.00084
	(!A1 * !B1 * C1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * !B1 * !C1 * Y)	-0.00079	-0.00084	-0.00084
	(!A1 * !B1 * !C1 * Y)	0.00112	0.00112	0.00110
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00185	-0.00184	-0.00184
	(A1 * B1 * C1 * !Y)	0.00216	0.00214	0.00215
	(A1 * B1 * !C1 * !Y)	-0.00185	-0.00184	-0.00184
	(A1 * B1 * !C1 * !Y)	0.00216	0.00214	0.00215
	(A1 * !B1 * C1 * !Y)	-0.00184	-0.00185	-0.00184
	(A1 * !B1 * C1 * !Y)	0.00206	0.00208	0.00207
	(!A1 * B1 * !Y)	-0.00170	-0.00176	-0.00175
	(!A1 * B1 * !Y)	0.00222	0.00224	0.00222
	(!A1 * !B1 * C1 * !Y)	-0.00170	-0.00176	-0.00175
	(!A1 * !B1 * C1 * !Y)	0.00222	0.00224	0.00223
	(!A1 * !B1 * !C1 * Y)	-0.00153	-0.00162	-0.00161
	(!A1 * !B1 * !C1 * Y)	0.00239	0.00239	0.00237

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00357	-0.00359	-0.00358
	(A1 * B1 * C1 * !Y)	0.00425	0.00429	0.00427
	(A1 * B1 * !C1 * !Y)	-0.00357	-0.00360	-0.00358
	(A1 * B1 * !C1 * !Y)	0.00425	0.00430	0.00427
	(A1 * !B1 * C1 * !Y)	-0.00358	-0.00360	-0.00359
	(A1 * !B1 * C1 * !Y)	0.00408	0.00412	0.00410
	(!A1 * B1 * !Y)	-0.00327	-0.00338	-0.00335
	(!A1 * B1 * !Y)	0.00443	0.00442	0.00442
	(!A1 * !B1 * C1 * !Y)	-0.00327	-0.00338	-0.00336
	(!A1 * !B1 * C1 * !Y)	0.00443	0.00442	0.00442
	(!A1 * !B1 * !C1 * Y)	-0.00319	-0.00339	-0.00336
	(!A1 * !B1 * !C1 * Y)	0.00454	0.00448	0.00442

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)	0.00100	0.00097	0.00094
	(A1 * A2 * C1 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * !C1 * !Y)	0.00095	0.00094	0.00093
	(A1 * A2 * !C1 * !Y)	-0.00065	-0.00064	-0.00064
	(A1 * !A2 * C1 * !Y)	0.00106	0.00095	0.00093
	(A1 * !A2 * C1 * !Y)	-0.00092	-0.00105	-0.00105
	(!A1 * C1 * !Y)	0.00106	0.00095	0.00093
	(!A1 * C1 * !Y)	-0.00092	-0.00105	-0.00105
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00117	0.00116	0.00112
	(A1 * A2 * C1 * !Y)	-0.00147	-0.00149	-0.00149
	(A1 * A2 * !C1 * !Y)	0.00112	0.00111	0.00110
	(A1 * A2 * !C1 * !Y)	-0.00127	-0.00126	-0.00125
	(A1 * !A2 * C1 * !Y)	0.00129	0.00111	0.00109
	(A1 * !A2 * C1 * !Y)	-0.00184	-0.00206	-0.00206
	(!A1 * C1 * !Y)	0.00130	0.00111	0.00109
	(!A1 * C1 * !Y)	-0.00183	-0.00206	-0.00206
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00214	0.00209	0.00200
	(A1 * A2 * C1 * !Y)	-0.00307	-0.00309	-0.00307
	(A1 * A2 * !C1 * !Y)	0.00200	0.00198	0.00197
	(A1 * A2 * !C1 * !Y)	-0.00265	-0.00262	-0.00261
	(A1 * !A2 * C1 * !Y)	0.00244	0.00199	0.00196
	(A1 * !A2 * C1 * !Y)	-0.00376	-0.00425	-0.00427
	(!A1 * C1 * !Y)	0.00243	0.00200	0.00196
	(!A1 * C1 * !Y)	-0.00377	-0.00424	-0.00427

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)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * C1 * !Y)	0.00077	0.00077	0.00077
	(A1 * A2 * !C1 * !Y)	-0.00089	-0.00089	-0.00091
	(A1 * A2 * !C1 * !Y)	0.00069	0.00068	0.00067
	(A1 * !A2 * C1 * !Y)	-0.00093	-0.00093	-0.00092
	(A1 * !A2 * C1 * !Y)	0.00105	0.00105	0.00105
	(!A1 * C1 * !Y)	-0.00093	-0.00093	-0.00092
	(!A1 * C1 * !Y)	0.00105	0.00105	0.00105
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00110	-0.00111	-0.00111
	(A1 * A2 * C1 * !Y)	0.00147	0.00149	0.00149
	(A1 * A2 * !C1 * !Y)	-0.00102	-0.00103	-0.00103
	(A1 * A2 * !C1 * !Y)	0.00133	0.00132	0.00132
	(A1 * !A2 * C1 * !Y)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * C1 * !Y)	0.00205	0.00206	0.00206
	(!A1 * C1 * !Y)	-0.00109	-0.00109	-0.00109
	(!A1 * C1 * !Y)	0.00206	0.00206	0.00206
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00197	-0.00198	-0.00197
	(A1 * A2 * C1 * !Y)	0.00307	0.00309	0.00307
	(A1 * A2 * !C1 * !Y)	-0.00182	-0.00183	-0.00185
	(A1 * A2 * !C1 * !Y)	0.00276	0.00275	0.00274
	(A1 * !A2 * C1 * !Y)	-0.00195	-0.00195	-0.00194
	(A1 * !A2 * C1 * !Y)	0.00426	0.00425	0.00427
	(!A1 * C1 * !Y)	-0.00196	-0.00195	-0.00194
	(!A1 * C1 * !Y)	0.00427	0.00424	0.00427

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00111	0.00111	0.00111
	(A1 * B1 * !Y)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * !B1 * !Y)	0.00110	0.00111	0.00111
	(A1 * A2 * !B1 * !Y)	-0.00056	-0.00056	-0.00056
	(!A1 * B1 * !Y)	0.00111	0.00111	0.00111
	(!A1 * B1 * !Y)	-0.00056	-0.00056	-0.00056
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00117	0.00118	0.00117
	(A1 * B1 * !Y)	-0.00115	-0.00115	-0.00115
	(A1 * A2 * !B1 * !Y)	0.00119	0.00118	0.00117
	(A1 * A2 * !B1 * !Y)	-0.00117	-0.00115	-0.00115
	(!A1 * B1 * !Y)	0.00117	0.00118	0.00117
	(!A1 * B1 * !Y)	-0.00115	-0.00116	-0.00115
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00237	0.00238	0.00237
	(A1 * B1 * !Y)	-0.00232	-0.00232	-0.00231
	(A1 * A2 * !B1 * !Y)	0.00237	0.00238	0.00237
	(A1 * A2 * !B1 * !Y)	-0.00231	-0.00232	-0.00230
	(!A1 * B1 * !Y)	0.00237	0.00238	0.00237
	(!A1 * B1 * !Y)	-0.00232	-0.00233	-0.00231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00106	-0.00106	-0.00110
	(A1 * B1 * !Y)	0.00061	0.00061	0.00058
	(A1 * A2 * !B1 * !Y)	-0.00094	-0.00095	-0.00107
	(A1 * A2 * !B1 * !Y)	0.00069	0.00068	0.00059
	(!A1 * B1 * !Y)	-0.00106	-0.00106	-0.00110
	(!A1 * B1 * !Y)	0.00061	0.00061	0.00058
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00103	-0.00104	-0.00115
	(A1 * B1 * !Y)	0.00129	0.00128	0.00119
	(A1 * A2 * !B1 * !Y)	-0.00082	-0.00084	-0.00111
	(A1 * A2 * !B1 * !Y)	0.00141	0.00140	0.00121
	(!A1 * B1 * !Y)	-0.00103	-0.00104	-0.00115
	(!A1 * B1 * !Y)	0.00129	0.00128	0.00119
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00211	-0.00213	-0.00234
	(A1 * B1 * !Y)	0.00256	0.00254	0.00238
	(A1 * A2 * !B1 * !Y)	-0.00167	-0.00169	-0.00223
	(A1 * A2 * !B1 * !Y)	0.00283	0.00281	0.00243
	(!A1 * B1 * !Y)	-0.00210	-0.00213	-0.00234
	(!A1 * B1 * !Y)	0.00253	0.00255	0.00238

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00250	0.00234	0.00254	0.00252	0.65516
sky130_fd_sc_hs__a211o_2	0.00274	0.00272	0.00270	0.00261	1.26351
sky130_fd_sc_hs__a211o_4	0.00463	0.00474	0.00504	0.00455	2.44966

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211o_1	0.00000	0.02286	0.04770
sky130_fd_sc_hs__a211o_2	0.00000	0.02863	0.05131
sky130_fd_sc_hs__a211o_4	0.00000	0.05838	0.10263

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)	0.12600	0.90567	7.56708
	A2->X (RR)	0.13090	0.91218	7.73905
	B1->X (RR)	0.10075	0.85938	7.48810
	C1->X (RR)	0.09598	0.84001	7.42743
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.12591	0.80646	7.66454
	A2->X (RR)	0.13128	0.80472	7.79279
	B1->X (RR)	0.09706	0.75779	7.58099
	C1->X (RR)	0.09298	0.74329	7.52502
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.12923	0.71974	7.66829
	A2->X (RR)	0.13543	0.72366	7.82915
	B1->X (RR)	0.09367	0.65724	7.56278
	C1->X (RR)	0.09282	0.64854	7.51499

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.39556	1.04032	5.40327
	A2->X (FF)	0.45263	1.10650	5.60238
	B1->X (FF)	0.41221	1.05892	5.54517
	C1->X (FF)	0.35473	0.96988	5.08178
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.52061	1.16994	5.87100
	A2->X (FF)	0.59227	1.25152	6.03744
	B1->X (FF)	0.55405	1.21155	6.08243
	C1->X (FF)	0.49147	1.11125	5.64153
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.47678	1.08135	5.72016
	A2->X (FF)	0.51680	1.13077	5.86800
	B1->X (FF)	0.48668	1.09451	5.87353
	C1->X (FF)	0.41854	0.98878	5.40350

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00680	0.00669	0.00726
	A1	0.00335	0.00324	0.00387
	A2	0.00728	0.00720	0.00744
	A2	0.00334	0.00325	0.00356
	B1	0.00609	0.00603	0.00675
	B1	0.00255	0.00248	0.00327
	C1	0.00519	0.00510	0.00624
	C1	0.00207	0.00195	0.00322
sky130_fd_sc_hs__a211o_2	A1	0.00844	0.00846	0.00899
	A1	0.00466	0.00468	0.00536
	A2	0.00908	0.00913	0.00935
	A2	0.00465	0.00470	0.00506
	B1	0.00783	0.00793	0.00857
	B1	0.00395	0.00404	0.00483
	C1	0.00691	0.00697	0.00793
	C1	0.00342	0.00348	0.00453
sky130_fd_sc_hs__a211o_4	A1	0.01564	0.01585	0.01727
	A1	0.00882	0.00906	0.01076
	A2	0.01690	0.01725	0.01799
	A2	0.00885	0.00921	0.01020
	B1	0.01428	0.01439	0.01584
	B1	0.00732	0.00745	0.00916
	C1	0.01198	0.01218	0.01441
	C1	0.00614	0.00632	0.00874

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00229	0.00233	0.00244
	A1	0.00582	0.00586	0.00597
	A2	0.00252	0.00257	0.00295
	A2	0.00650	0.00661	0.00669
	B1	0.00238	0.00242	0.00333
	B1	0.00588	0.00595	0.00632
	C1	0.00235	0.00245	0.00400
	C1	0.00543	0.00552	0.00686
sky130_fd_sc_hs__a211o_2	A1	0.00365	0.00380	0.00464
	A1	0.00750	0.00769	0.00786
	A2	0.00387	0.00407	0.00437
	A2	0.00832	0.00853	0.00869
	B1	0.00359	0.00362	0.00492
	B1	0.00774	0.00796	0.00835
	C1	0.00384	0.00396	0.00627
	C1	0.00728	0.00754	0.00887
sky130_fd_sc_hs__a211o_4	A1	0.00688	0.00733	0.00783
	A1	0.01383	0.01435	0.01471
	A2	0.00701	0.00760	0.00803
	A2	0.01511	0.01573	0.01609
	B1	0.00737	0.00778	0.00977
	B1	0.01427	0.01471	0.01548
	C1	0.00735	0.00741	0.01063
	C1	0.01311	0.01359	0.01636

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)**	0.00079	0.00079	0.00078
	(A2 * B1 * C1 * X)	-0.00096	-0.00099	-0.00098
	(A2 * B1 * !C1 * X)	0.00079	0.00079	0.00078
	(A2 * B1 * !C1 * X)	-0.00095	-0.00099	-0.00098
	(A2 * !B1 * C1 * X)	0.00078	0.00078	0.00078
	(A2 * !B1 * C1 * X)	-0.00089	-0.00095	-0.00095
	(!A2 * B1 * C1 * X)	0.00074	0.00074	0.00074
	(!A2 * B1 * C1 * X)	-0.00102	-0.00103	-0.00102
	(!A2 * B1 * !C1 * X)	0.00073	0.00074	0.00074
	(!A2 * B1 * !C1 * X)	-0.00102	-0.00103	-0.00102
	(!A2 * !B1 * C1 * X)	0.00074	0.00074	0.00074
	(!A2 * !B1 * C1 * X)	-0.00102	-0.00103	-0.00102
	(!A2 * !B1 * !C1 * !X)	0.00026	0.00026	0.00024
	(!A2 * !B1 * !C1 * !X)	-0.00121	-0.00122	-0.00123
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00096	0.00096	0.00095
	(A2 * B1 * C1 * X)	-0.00091	-0.00095	-0.00094
	(A2 * B1 * !C1 * X)	0.00096	0.00096	0.00095
	(A2 * B1 * !C1 * X)	-0.00090	-0.00095	-0.00094
	(A2 * !B1 * C1 * X)	0.00096	0.00096	0.00095
	(A2 * !B1 * C1 * X)	-0.00086	-0.00091	-0.00091
	(!A2 * B1 * C1 * X)	0.00089	0.00090	0.00090
	(!A2 * B1 * C1 * X)	-0.00097	-0.00097	-0.00097
	(!A2 * B1 * !C1 * X)	0.00090	0.00090	0.00090
	(!A2 * B1 * !C1 * X)	-0.00097	-0.00098	-0.00097
	(!A2 * !B1 * C1 * X)	0.00090	0.00090	0.00090
	(!A2 * !B1 * C1 * X)	-0.00097	-0.00098	-0.00097
	(!A2 * !B1 * !C1 * !X)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !C1 * !X)	-0.00121	-0.00121	-0.00123

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00154	0.00154	0.00152
	(A2 * B1 * C1 * X)	-0.00190	-0.00197	-0.00196
	(A2 * B1 * !C1 * X)	0.00154	0.00154	0.00152
	(A2 * B1 * !C1 * X)	-0.00190	-0.00198	-0.00196
	(A2 * !B1 * C1 * X)	0.00153	0.00153	0.00152
	(A2 * !B1 * C1 * X)	-0.00179	-0.00190	-0.00189
	(!A2 * B1 * C1 * X)	0.00142	0.00144	0.00143
	(!A2 * B1 * C1 * X)	-0.00202	-0.00203	-0.00202
	(!A2 * B1 * !C1 * X)	0.00142	0.00144	0.00143
	(!A2 * B1 * !C1 * X)	-0.00202	-0.00204	-0.00202
	(!A2 * !B1 * C1 * X)	0.00142	0.00144	0.00143
	(!A2 * !B1 * C1 * X)	-0.00202	-0.00204	-0.00202
	(!A2 * !B1 * !C1 * !X)	0.00051	0.00051	0.00049
	(!A2 * !B1 * !C1 * !X)	-0.00235	-0.00237	-0.00241

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)**	-0.00078	-0.00078	-0.00078
	(A2 * B1 * C1 * X)	0.00099	0.00099	0.00098
	(A2 * B1 * !C1 * X)	-0.00078	-0.00078	-0.00078
	(A2 * B1 * !C1 * X)	0.00099	0.00099	0.00098
	(A2 * !B1 * C1 * X)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * C1 * X)	0.00096	0.00095	0.00095
	(!A2 * B1 * C1 * X)	-0.00071	-0.00074	-0.00074
	(!A2 * B1 * C1 * X)	0.00102	0.00103	0.00102
	(!A2 * B1 * !C1 * X)	-0.00071	-0.00074	-0.00074
	(!A2 * B1 * !C1 * X)	0.00102	0.00103	0.00102
	(!A2 * !B1 * C1 * X)	-0.00072	-0.00074	-0.00074
	(!A2 * !B1 * C1 * X)	0.00103	0.00103	0.00102
	(!A2 * !B1 * !C1 * !X)	-0.00023	-0.00024	-0.00023
	(!A2 * !B1 * !C1 * !X)	0.00123	0.00124	0.00124
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00096	-0.00096	-0.00095
	(A2 * B1 * C1 * X)	0.00095	0.00095	0.00094
	(A2 * B1 * !C1 * X)	-0.00096	-0.00096	-0.00095
	(A2 * B1 * !C1 * X)	0.00095	0.00095	0.00094
	(A2 * !B1 * C1 * X)	-0.00095	-0.00095	-0.00095
	(A2 * !B1 * C1 * X)	0.00091	0.00091	0.00091
	(!A2 * B1 * C1 * X)	-0.00087	-0.00090	-0.00090
	(!A2 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A2 * B1 * !C1 * X)	-0.00087	-0.00090	-0.00090
	(!A2 * B1 * !C1 * X)	0.00097	0.00098	0.00097
	(!A2 * !B1 * C1 * X)	-0.00088	-0.00090	-0.00090
	(!A2 * !B1 * C1 * X)	0.00098	0.00098	0.00097
	(!A2 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * !X)	0.00123	0.00124	0.00123

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00152	-0.00153	-0.00152
	(A2 * B1 * C1 * X)	0.00196	0.00197	0.00196
	(A2 * B1 * !C1 * X)	-0.00152	-0.00153	-0.00152
	(A2 * B1 * !C1 * X)	0.00195	0.00198	0.00196
	(A2 * !B1 * C1 * X)	-0.00151	-0.00152	-0.00152
	(A2 * !B1 * C1 * X)	0.00188	0.00190	0.00189
	(!A2 * B1 * C1 * X)	-0.00139	-0.00144	-0.00143
	(!A2 * B1 * C1 * X)	0.00204	0.00205	0.00203
	(!A2 * B1 * !C1 * X)	-0.00138	-0.00144	-0.00143
	(!A2 * B1 * !C1 * X)	0.00203	0.00206	0.00203
	(!A2 * !B1 * C1 * X)	-0.00138	-0.00144	-0.00143
	(!A2 * !B1 * C1 * X)	0.00204	0.00206	0.00203
	(!A2 * !B1 * !C1 * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * !B1 * !C1 * !X)	0.00242	0.00242	0.00241

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)**	0.00081	0.00080	0.00080
	(A1 * B1 * C1 * X)	-0.00094	-0.00098	-0.00097
	(A1 * B1 * !C1 * X)	0.00081	0.00080	0.00080
	(A1 * B1 * !C1 * X)	-0.00094	-0.00098	-0.00097
	(A1 * !B1 * C1 * X)	0.00081	0.00080	0.00080
	(A1 * !B1 * C1 * X)	-0.00089	-0.00094	-0.00094
	(!A1 * B1 * X)	0.00075	0.00076	0.00075
	(!A1 * B1 * X)	-0.00100	-0.00101	-0.00101
	(!A1 * !B1 * C1 * X)	0.00075	0.00076	0.00075
	(!A1 * !B1 * C1 * X)	-0.00100	-0.00101	-0.00101
	(!A1 * !B1 * !C1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00103	0.00103	0.00102
	(A1 * B1 * C1 * X)	-0.00092	-0.00096	-0.00095
	(A1 * B1 * !C1 * X)	0.00103	0.00103	0.00102
	(A1 * B1 * !C1 * X)	-0.00091	-0.00096	-0.00095
	(A1 * !B1 * C1 * X)	0.00103	0.00103	0.00102
	(A1 * !B1 * C1 * X)	-0.00087	-0.00092	-0.00092
	(!A1 * B1 * X)	0.00096	0.00097	0.00097
	(!A1 * B1 * X)	-0.00097	-0.00098	-0.00098
	(!A1 * !B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A1 * !B1 * C1 * X)	-0.00098	-0.00098	-0.00098
	(!A1 * !B1 * !C1 * !X)	0.00081	0.00083	0.00082
	(!A1 * !B1 * !C1 * !X)	-0.00112	-0.00113	-0.00112
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00184	0.00185	0.00184
	(A1 * B1 * C1 * X)	-0.00183	-0.00191	-0.00190
	(A1 * B1 * !C1 * X)	0.00184	0.00185	0.00184
	(A1 * B1 * !C1 * X)	-0.00182	-0.00191	-0.00190
	(A1 * !B1 * C1 * X)	0.00185	0.00185	0.00183
	(A1 * !B1 * C1 * X)	-0.00173	-0.00183	-0.00184
	(!A1 * B1 * X)	0.00174	0.00176	0.00174
	(!A1 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * !B1 * C1 * X)	0.00174	0.00176	0.00174
	(!A1 * !B1 * C1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * !B1 * !C1 * !X)	0.00171	0.00172	0.00171
	(!A1 * !B1 * !C1 * !X)	-0.00199	-0.00200	-0.00199

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)**	-0.00080	-0.00080	-0.00080
	(A1 * B1 * C1 * X)	0.00098	0.00098	0.00097
	(A1 * B1 * !C1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * !C1 * X)	0.00098	0.00098	0.00097
	(A1 * !B1 * C1 * X)	-0.00080	-0.00080	-0.00079
	(A1 * !B1 * C1 * X)	0.00094	0.00094	0.00094
	(!A1 * B1 * X)	-0.00074	-0.00076	-0.00075
	(!A1 * B1 * X)	0.00101	0.00102	0.00101
	(!A1 * !B1 * C1 * X)	-0.00073	-0.00076	-0.00075
	(!A1 * !B1 * C1 * X)	0.00100	0.00102	0.00101
	(!A1 * !B1 * !C1 * !X)	-0.00064	-0.00069	-0.00068
	(!A1 * !B1 * !C1 * !X)	0.00111	0.00110	0.00108
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00103	-0.00103	-0.00102
	(A1 * B1 * C1 * X)	0.00096	0.00096	0.00095
	(A1 * B1 * !C1 * X)	-0.00103	-0.00103	-0.00102
	(A1 * B1 * !C1 * X)	0.00096	0.00096	0.00095
	(A1 * !B1 * C1 * X)	-0.00103	-0.00102	-0.00102
	(A1 * !B1 * C1 * X)	0.00092	0.00092	0.00092
	(!A1 * B1 * X)	-0.00094	-0.00097	-0.00097
	(!A1 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * C1 * X)	-0.00094	-0.00098	-0.00097
	(!A1 * !B1 * C1 * X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !C1 * !X)	-0.00077	-0.00082	-0.00082
	(!A1 * !B1 * !C1 * !X)	0.00115	0.00115	0.00113

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00183	-0.00184	-0.00184
	(A1 * B1 * C1 * X)	0.00189	0.00191	0.00190
	(A1 * B1 * !C1 * X)	-0.00183	-0.00184	-0.00184
	(A1 * B1 * !C1 * X)	0.00189	0.00191	0.00190
	(A1 * !B1 * C1 * X)	-0.00183	-0.00183	-0.00183
	(A1 * !B1 * C1 * X)	0.00183	0.00183	0.00184
	(!A1 * B1 * X)	-0.00170	-0.00176	-0.00174
	(!A1 * B1 * X)	0.00195	0.00196	0.00196
	(!A1 * !B1 * C1 * X)	-0.00170	-0.00176	-0.00174
	(!A1 * !B1 * C1 * X)	0.00195	0.00196	0.00196
	(!A1 * !B1 * !C1 * !X)	-0.00163	-0.00172	-0.00171
	(!A1 * !B1 * !C1 * !X)	0.00203	0.00200	0.00200

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)	0.00101	0.00099	0.00095
	(A1 * A2 * C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !C1 * X)	0.00094	0.00095	0.00093
	(A1 * A2 * !C1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * C1 * X)	0.00107	0.00095	0.00093
	(A1 * !A2 * C1 * X)	-0.00081	-0.00094	-0.00095
	(!A1 * C1 * X)	0.00106	0.00094	0.00093
	(!A1 * C1 * X)	-0.00081	-0.00094	-0.00095
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00105	0.00102	0.00099
	(A1 * A2 * C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !C1 * X)	0.00098	0.00098	0.00097
	(A1 * A2 * !C1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * C1 * X)	0.00110	0.00098	0.00096
	(A1 * !A2 * C1 * X)	-0.00081	-0.00094	-0.00094
	(!A1 * C1 * X)	0.00109	0.00098	0.00096
	(!A1 * C1 * X)	-0.00081	-0.00094	-0.00094
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00184	0.00179	0.00174
	(A1 * A2 * C1 * X)	-0.00146	-0.00147	-0.00146
	(A1 * A2 * !C1 * X)	0.00174	0.00172	0.00171
	(A1 * A2 * !C1 * X)	-0.00124	-0.00123	-0.00123
	(A1 * !A2 * C1 * X)	0.00196	0.00173	0.00170
	(A1 * !A2 * C1 * X)	-0.00171	-0.00196	-0.00197
	(!A1 * C1 * X)	0.00196	0.00173	0.00170
	(!A1 * C1 * X)	-0.00170	-0.00196	-0.00197

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)	-0.00094	-0.00094	-0.00093
	(A1 * A2 * C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !C1 * X)	-0.00089	-0.00090	-0.00092
	(A1 * A2 * !C1 * X)	0.00063	0.00063	0.00060
	(A1 * !A2 * C1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * C1 * X)	0.00094	0.00095	0.00095
	(!A1 * C1 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * C1 * X)	0.00094	0.00095	0.00095
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !C1 * X)	-0.00093	-0.00094	-0.00095
	(A1 * A2 * !C1 * X)	0.00062	0.00062	0.00060
	(A1 * !A2 * C1 * X)	-0.00096	-0.00096	-0.00095
	(A1 * !A2 * C1 * X)	0.00094	0.00095	0.00094
	(!A1 * C1 * X)	-0.00096	-0.00096	-0.00095
	(!A1 * C1 * X)	0.00094	0.00095	0.00094
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00171	-0.00172	-0.00171
	(A1 * A2 * C1 * X)	0.00146	0.00147	0.00146
	(A1 * A2 * !C1 * X)	-0.00164	-0.00165	-0.00167
	(A1 * A2 * !C1 * X)	0.00131	0.00130	0.00128
	(A1 * !A2 * C1 * X)	-0.00170	-0.00169	-0.00168
	(A1 * !A2 * C1 * X)	0.00198	0.00196	0.00197
	(!A1 * C1 * X)	-0.00170	-0.00169	-0.00168
	(!A1 * C1 * X)	0.00197	0.00196	0.00197

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00103	0.00103	0.00102
	(A1 * B1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * A2 * !B1 * X)	0.00103	0.00103	0.00102
	(A1 * A2 * !B1 * X)	-0.00053	-0.00053	-0.00053
	(!A1 * B1 * X)	0.00103	0.00103	0.00102
	(!A1 * B1 * X)	-0.00053	-0.00053	-0.00053
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00102	0.00103	0.00103
	(A1 * B1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * X)	0.00104	0.00103	0.00103
	(A1 * A2 * !B1 * X)	-0.00056	-0.00055	-0.00055
	(!A1 * B1 * X)	0.00102	0.00103	0.00103
	(!A1 * B1 * X)	-0.00055	-0.00055	-0.00055
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00165	0.00167	0.00166
	(A1 * B1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * A2 * !B1 * X)	0.00165	0.00167	0.00166
	(A1 * A2 * !B1 * X)	-0.00106	-0.00107	-0.00106
	(!A1 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * B1 * X)	-0.00107	-0.00108	-0.00107

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00098	-0.00099	-0.00102
	(A1 * B1 * X)	0.00057	0.00057	0.00054
	(A1 * A2 * !B1 * X)	-0.00087	-0.00088	-0.00099
	(A1 * A2 * !B1 * X)	0.00064	0.00064	0.00056
	(!A1 * B1 * X)	-0.00098	-0.00099	-0.00102
	(!A1 * B1 * X)	0.00056	0.00057	0.00054
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00099	-0.00099	-0.00102
	(A1 * B1 * X)	0.00059	0.00059	0.00056
	(A1 * A2 * !B1 * X)	-0.00089	-0.00089	-0.00100
	(A1 * A2 * !B1 * X)	0.00066	0.00066	0.00058
	(!A1 * B1 * X)	-0.00099	-0.00099	-0.00102
	(!A1 * B1 * X)	0.00059	0.00059	0.00056
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00156	-0.00157	-0.00165
	(A1 * B1 * X)	0.00116	0.00116	0.00109
	(A1 * A2 * !B1 * X)	-0.00135	-0.00136	-0.00160
	(A1 * A2 * !B1 * X)	0.00130	0.00129	0.00112
	(!A1 * B1 * X)	-0.00156	-0.00157	-0.00165
	(!A1 * B1 * X)	0.00117	0.00117	0.00110

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00265	0.00255	0.00247	0.29594
sky130_fd_sc_hs__a21boi_2	0.00501	0.00482	0.00241	0.56919
sky130_fd_sc_hs__a21boi_4	0.00993	0.00982	0.00354	1.06133

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21boi_1	0.00000	0.05419	0.10019
sky130_fd_sc_hs__a21boi_2	0.00000	0.04690	0.07689
sky130_fd_sc_hs__a21boi_4	0.00000	0.13053	0.23318

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)	0.14468	1.33125	11.97900
	A2->Y (FR)	0.17919	1.39282	12.22560
	B1_N->Y (RR)	0.17420	1.13011	7.81906
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.12954	1.15971	12.04640
	A2->Y (FR)	0.16672	1.19602	12.05970
	B1_N->Y (RR)	0.15985	0.94890	7.68695
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.12823	1.02295	11.97790
	A2->Y (FR)	0.16452	1.05057	11.85030
	B1_N->Y (RR)	0.13686	0.84875	8.08599

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.03969	0.54224	5.08389
	A2->Y (RF)	0.04438	0.51780	4.77506
	B1_N->Y (FF)	0.11800	0.60401	3.08321
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.03647	0.49856	5.25402
	A2->Y (RF)	0.04353	0.47879	4.90181
	B1_N->Y (FF)	0.13357	0.64666	3.52713
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.03741	0.45635	5.32774
	A2->Y (RF)	0.04425	0.42654	4.79702
	B1_N->Y (FF)	0.13672	0.61590	3.28030

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00055	0.00047	0.00048
	A1	0.00297	0.00289	0.00292
	A2	0.00088	0.00082	0.00082
	A2	0.00382	0.00377	0.00379
	B1_N	0.00470	0.00451	0.00588
	B1_N	0.00315	0.00296	0.00433
sky130_fd_sc_hs__a21boi_2	A1	0.00117	0.00105	0.00109
	A1	0.00584	0.00573	0.00581
	A2	0.00217	0.00201	0.00203
	A2	0.00792	0.00775	0.00781
	B1_N	0.00705	0.00688	0.00811
	B1_N	0.00634	0.00618	0.00743
sky130_fd_sc_hs__a21boi_4	A1	0.00239	0.00213	0.00226
	A1	0.01190	0.01165	0.01183
	A2	0.00401	0.00366	0.00375
	A2	0.01572	0.01540	0.01549
	B1_N	0.01231	0.01207	0.01416
	B1_N	0.01217	0.01194	0.01405

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00325	0.00316	0.00331
	A1	0.00087	0.00076	0.00080
	A2	0.00381	0.00373	0.00372
	A2	0.00086	0.00077	0.00077
	B1_N	0.00265	0.00275	0.00455
	B1_N	0.00416	0.00423	0.00606
sky130_fd_sc_hs__a21boi_2	A1	0.00583	0.00560	0.00581
	A1	0.00122	0.00098	0.00108
	A2	0.00698	0.00678	0.00681
	A2	0.00121	0.00100	0.00102
	B1_N	0.00491	0.00516	0.00668
	B1_N	0.00551	0.00572	0.00728
sky130_fd_sc_hs__a21boi_4	A1	0.01144	0.01096	0.01152
	A1	0.00208	0.00157	0.00184
	A2	0.01390	0.01344	0.01357
	A2	0.00215	0.00165	0.00176
	B1_N	0.00993	0.01048	0.01366
	B1_N	0.00989	0.01036	0.01362

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)	0.00095	0.00091	0.00090
	(A2 * !B1_N * !Y)	-0.00106	-0.00111	-0.00111
	(!A2 * B1_N * Y)	0.00039	0.00038	0.00037
	(!A2 * B1_N * Y)	-0.00126	-0.00126	-0.00128
	(!A2 * !B1_N * !Y)	0.00085	0.00086	0.00085
	(!A2 * !B1_N * !Y)	-0.00113	-0.00113	-0.00113
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00186	0.00180	0.00178
	(A2 * !B1_N * !Y)	-0.00201	-0.00214	-0.00214
	(!A2 * B1_N * Y)	0.00070	0.00069	0.00065
	(!A2 * B1_N * Y)	-0.00251	-0.00250	-0.00257
	(!A2 * !B1_N * !Y)	0.00168	0.00169	0.00169
	(!A2 * !B1_N * !Y)	-0.00217	-0.00218	-0.00218
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00370	0.00354	0.00351
	(A2 * !B1_N * !Y)	-0.00403	-0.00431	-0.00431
	(!A2 * B1_N * Y)	0.00129	0.00129	0.00122
	(!A2 * B1_N * Y)	-0.00504	-0.00505	-0.00518
	(!A2 * !B1_N * !Y)	0.00330	0.00333	0.00331
	(!A2 * !B1_N * !Y)	-0.00438	-0.00440	-0.00439

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)	-0.00090	-0.00091	-0.00090
	(A2 * !B1_N * !Y)	0.00111	0.00112	0.00111
	(!A2 * B1_N * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * B1_N * Y)	0.00129	0.00130	0.00129
	(!A2 * !B1_N * !Y)	-0.00083	-0.00086	-0.00085
	(!A2 * !B1_N * !Y)	0.00113	0.00115	0.00113
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00178	-0.00178	-0.00178
	(A2 * !B1_N * !Y)	0.00214	0.00214	0.00214
	(!A2 * B1_N * Y)	-0.00064	-0.00064	-0.00063
	(!A2 * B1_N * Y)	0.00258	0.00261	0.00258
	(!A2 * !B1_N * !Y)	-0.00161	-0.00169	-0.00169
	(!A2 * !B1_N * !Y)	0.00218	0.00221	0.00218
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00351	-0.00351	-0.00349
	(A2 * !B1_N * !Y)	0.00433	0.00433	0.00431
	(!A2 * B1_N * Y)	-0.00118	-0.00120	-0.00118
	(!A2 * B1_N * Y)	0.00518	0.00526	0.00519
	(!A2 * !B1_N * !Y)	-0.00317	-0.00333	-0.00331
	(!A2 * !B1_N * !Y)	0.00439	0.00441	0.00440

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)	0.00099	0.00095	0.00094
	(A1 * !B1_N * !Y)	-0.00100	-0.00107	-0.00107
	(!A1 * B1_N * Y)	0.00089	0.00089	0.00089
	(!A1 * B1_N * Y)	-0.00109	-0.00109	-0.00109
	(!A1 * !B1_N * !Y)	0.00089	0.00090	0.00089
	(!A1 * !B1_N * !Y)	-0.00109	-0.00109	-0.00109
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00183	0.00176	0.00175
	(A1 * !B1_N * !Y)	-0.00201	-0.00213	-0.00213
	(!A1 * B1_N * Y)	0.00164	0.00166	0.00165
	(!A1 * B1_N * Y)	-0.00216	-0.00217	-0.00217
	(!A1 * !B1_N * !Y)	0.00165	0.00167	0.00165
	(!A1 * !B1_N * !Y)	-0.00217	-0.00218	-0.00217
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00375	0.00358	0.00355
	(A1 * !B1_N * !Y)	-0.00400	-0.00429	-0.00429
	(!A1 * B1_N * Y)	0.00320	0.00321	0.00319
	(!A1 * B1_N * Y)	-0.00454	-0.00455	-0.00453
	(!A1 * !B1_N * !Y)	0.00337	0.00338	0.00336
	(!A1 * !B1_N * !Y)	-0.00436	-0.00437	-0.00436

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)	-0.00094	-0.00095	-0.00094
	(A1 * !B1_N * !Y)	0.00107	0.00108	0.00107
	(!A1 * B1_N * Y)	-0.00085	-0.00089	-0.00089
	(!A1 * B1_N * Y)	0.00111	0.00111	0.00110
	(!A1 * !B1_N * !Y)	-0.00087	-0.00090	-0.00089
	(!A1 * !B1_N * !Y)	0.00109	0.00110	0.00109
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * !B1_N * !Y)	0.00212	0.00215	0.00213
	(!A1 * B1_N * Y)	-0.00157	-0.00166	-0.00165
	(!A1 * B1_N * Y)	0.00221	0.00220	0.00218
	(!A1 * !B1_N * !Y)	-0.00160	-0.00167	-0.00165
	(!A1 * !B1_N * !Y)	0.00217	0.00220	0.00218
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00353	-0.00355	-0.00353
	(A1 * !B1_N * !Y)	0.00427	0.00432	0.00429
	(!A1 * B1_N * Y)	-0.00303	-0.00321	-0.00319
	(!A1 * B1_N * Y)	0.00461	0.00460	0.00454
	(!A1 * !B1_N * !Y)	-0.00325	-0.00338	-0.00336
	(!A1 * !B1_N * !Y)	0.00436	0.00441	0.00438

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)	0.00290	0.00272	0.00405
	(A1 * A2 * !Y)	0.00058	0.00038	0.00172
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00345	0.00325	0.00438
	(A1 * A2 * !Y)	0.00118	0.00097	0.00212
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00535	0.00501	0.00687
	(A1 * A2 * !Y)	0.00199	0.00165	0.00353

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)	0.00060	0.00062	0.00252
	(A1 * A2 * !Y)	0.00292	0.00293	0.00484
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00172	0.00167	0.00328
	(A1 * A2 * !Y)	0.00396	0.00393	0.00553
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00364	0.00366	0.00679
	(A1 * A2 * !Y)	0.00695	0.00697	0.01010

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00246	0.00236	0.00207	0.59845
sky130_fd_sc_hs__a21bo_2	0.00263	0.00247	0.00217	1.16300
sky130_fd_sc_hs__a21bo_4	0.00454	0.00481	0.00251	2.21831

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21bo_1	0.00000	0.07609	0.12254
sky130_fd_sc_hs__a21bo_2	0.00000	0.08445	0.12724
sky130_fd_sc_hs__a21bo_4	0.00000	0.10881	0.13565

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)	0.12356	0.89924	7.38432
	A2->X (RR)	0.12787	0.91007	7.55889
	B1_N->X (FR)	0.19281	1.10886	8.72736
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.11788	0.78969	7.51965
	A2->X (RR)	0.12274	0.79216	7.65161
	B1_N->X (FR)	0.20041	1.00307	8.80932
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.12068	0.70354	7.53920
	A2->X (RR)	0.12802	0.71232	7.71264
	B1_N->X (FR)	0.22799	0.97915	9.28339

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.24270	0.86432	4.96092
	A2->X (FF)	0.27548	0.90746	5.14924
	B1_N->X (RF)	0.27071	0.64550	2.64312
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.31189	0.92763	5.29885
	A2->X (FF)	0.35462	0.98074	5.46852
	B1_N->X (RF)	0.36061	0.73253	2.75483
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.29331	0.87393	5.20716
	A2->X (FF)	0.32331	0.91229	5.37823
	B1_N->X (RF)	0.32305	0.67395	2.73740

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00513	0.00507	0.00582
	A1	0.00283	0.00278	0.00355
	A2	0.00566	0.00568	0.00606
	A2	0.00284	0.00286	0.00330
	B1_N	0.00476	0.00483	0.00669
	B1_N	0.00592	0.00599	0.00788
sky130_fd_sc_hs__a21bo_2	A1	0.00666	0.00676	0.00746
	A1	0.00426	0.00437	0.00508
	A2	0.00716	0.00734	0.00771
	A2	0.00425	0.00443	0.00493
	B1_N	0.00656	0.00670	0.00846
	B1_N	0.00775	0.00788	0.00978
sky130_fd_sc_hs__a21bo_4	A1	0.01222	0.01243	0.01407
	A1	0.00807	0.00829	0.00994
	A2	0.01361	0.01397	0.01483
	A2	0.00807	0.00842	0.00954
	B1_N	0.01159	0.01192	0.01365
	B1_N	0.01243	0.01278	0.01473

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00273	0.00273	0.00309
	A1	0.00505	0.00507	0.00536
	A2	0.00281	0.00289	0.00318
	A2	0.00561	0.00571	0.00595
	B1_N	0.00619	0.00607	0.00738
	B1_N	0.00500	0.00488	0.00615
sky130_fd_sc_hs__a21bo_2	A1	0.00391	0.00412	0.00496
	A1	0.00633	0.00654	0.00686
	A2	0.00423	0.00453	0.00482
	A2	0.00711	0.00742	0.00770
	B1_N	0.00769	0.00774	0.00895
	B1_N	0.00684	0.00681	0.00802
sky130_fd_sc_hs__a21bo_4	A1	0.00769	0.00822	0.00928
	A1	0.01189	0.01243	0.01308
	A2	0.00790	0.00836	0.00949
	A2	0.01339	0.01400	0.01457
	B1_N	0.01341	0.01403	0.01520
	B1_N	0.01246	0.01290	0.01408

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)	0.00085	0.00079	0.00078
	(A2 * !B1_N * X)	-0.00098	-0.00106	-0.00106
	(!A2 * B1_N * !X)	0.00032	0.00032	0.00031
	(!A2 * B1_N * !X)	-0.00121	-0.00121	-0.00122
	(!A2 * !B1_N * X)	0.00073	0.00073	0.00073
	(!A2 * !B1_N * X)	-0.00107	-0.00108	-0.00108
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00098	0.00094	0.00093
	(A2 * !B1_N * X)	-0.00095	-0.00103	-0.00103
	(!A2 * B1_N * !X)	0.00040	0.00040	0.00038
	(!A2 * B1_N * !X)	-0.00119	-0.00120	-0.00122
	(!A2 * !B1_N * X)	0.00087	0.00088	0.00087
	(!A2 * !B1_N * X)	-0.00105	-0.00106	-0.00105
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00160	0.00151	0.00149
	(A2 * !B1_N * X)	-0.00184	-0.00197	-0.00197
	(!A2 * B1_N * !X)	0.00051	0.00052	0.00048
	(!A2 * B1_N * !X)	-0.00230	-0.00232	-0.00236
	(!A2 * !B1_N * X)	0.00138	0.00140	0.00139
	(!A2 * !B1_N * X)	-0.00200	-0.00201	-0.00200

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)	-0.00078	-0.00078	-0.00078
	(A2 * !B1_N * X)	0.00106	0.00107	0.00106
	(!A2 * B1_N * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * B1_N * !X)	0.00122	0.00123	0.00122
	(!A2 * !B1_N * X)	-0.00071	-0.00073	-0.00073
	(!A2 * !B1_N * X)	0.00107	0.00109	0.00108
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00093	-0.00093	-0.00092
	(A2 * !B1_N * X)	0.00104	0.00104	0.00103
	(!A2 * B1_N * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * B1_N * !X)	0.00122	0.00123	0.00122
	(!A2 * !B1_N * X)	-0.00084	-0.00088	-0.00087
	(!A2 * !B1_N * X)	0.00105	0.00106	0.00105
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00149	-0.00149	-0.00148
	(A2 * !B1_N * X)	0.00197	0.00198	0.00197
	(!A2 * B1_N * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * B1_N * !X)	0.00237	0.00238	0.00236
	(!A2 * !B1_N * X)	-0.00134	-0.00140	-0.00139
	(!A2 * !B1_N * X)	0.00202	0.00201	0.00201

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)	0.00096	0.00092	0.00091
	(A1 * !B1_N * X)	-0.00090	-0.00097	-0.00097
	(!A1 * B1_N * !X)	0.00087	0.00088	0.00087
	(!A1 * B1_N * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !B1_N * X)	0.00087	0.00087	0.00087
	(!A1 * !B1_N * X)	-0.00098	-0.00099	-0.00098
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00097	0.00091	0.00090
	(A1 * !B1_N * X)	-0.00092	-0.00100	-0.00101
	(!A1 * B1_N * !X)	0.00085	0.00086	0.00085
	(!A1 * B1_N * !X)	-0.00102	-0.00103	-0.00102
	(!A1 * !B1_N * X)	0.00085	0.00086	0.00085
	(!A1 * !B1_N * X)	-0.00102	-0.00103	-0.00102
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00193	0.00187	0.00184
	(A1 * !B1_N * X)	-0.00183	-0.00196	-0.00196
	(!A1 * B1_N * !X)	0.00174	0.00176	0.00174
	(!A1 * B1_N * !X)	-0.00198	-0.00199	-0.00198
	(!A1 * !B1_N * X)	0.00174	0.00176	0.00174
	(!A1 * !B1_N * X)	-0.00198	-0.00200	-0.00199

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)	-0.00091	-0.00091	-0.00091
	(A1 * !B1_N * X)	0.00096	0.00097	0.00097
	(!A1 * B1_N * !X)	-0.00083	-0.00088	-0.00087
	(!A1 * B1_N * !X)	0.00102	0.00101	0.00099
	(!A1 * !B1_N * X)	-0.00085	-0.00087	-0.00087
	(!A1 * !B1_N * X)	0.00099	0.00099	0.00099
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00090	-0.00090	-0.00090
	(A1 * !B1_N * X)	0.00101	0.00101	0.00101
	(!A1 * B1_N * !X)	-0.00081	-0.00086	-0.00085
	(!A1 * B1_N * !X)	0.00105	0.00104	0.00103
	(!A1 * !B1_N * X)	-0.00083	-0.00086	-0.00085
	(!A1 * !B1_N * X)	0.00102	0.00104	0.00103
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00184	-0.00185	-0.00184
	(A1 * !B1_N * X)	0.00195	0.00197	0.00196
	(!A1 * B1_N * !X)	-0.00165	-0.00175	-0.00174
	(!A1 * B1_N * !X)	0.00204	0.00200	0.00199
	(!A1 * !B1_N * X)	-0.00169	-0.00176	-0.00174
	(!A1 * !B1_N * X)	0.00198	0.00200	0.00199

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)	0.00242	0.00225	0.00365
	(A1 * A2 * X)	0.00045	0.00028	0.00169
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00273	0.00255	0.00386
	(A1 * A2 * X)	0.00067	0.00048	0.00180
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00369	0.00350	0.00465
	(A1 * A2 * X)	0.00131	0.00111	0.00227

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)	0.00074	0.00077	0.00269
	(A1 * A2 * X)	0.00268	0.00272	0.00465
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00088	0.00089	0.00278
	(A1 * A2 * X)	0.00294	0.00295	0.00483
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00140	0.00133	0.00295
	(A1 * A2 * X)	0.00375	0.00368	0.00531

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00274	0.00255	0.00268	0.29575
sky130_fd_sc_hs__a21oi_2	0.00497	0.00515	0.00397	0.52447
sky130_fd_sc_hs__a21oi_4	0.01012	0.00979	0.00783	1.02650

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21oi_1	0.00000	0.01123	0.01811
sky130_fd_sc_hs__a21oi_2	0.00000	0.02111	0.03622
sky130_fd_sc_hs__a21oi_4	0.00000	0.04222	0.07244

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)	0.14505	1.33269	11.98030
	A2->Y (FR)	0.17653	1.39044	12.21730
	B1->Y (FR)	0.13937	1.32280	12.03910
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.13312	1.17845	12.00700
	A2->Y (FR)	0.17567	1.20912	11.89970
	B1->Y (FR)	0.07705	1.09526	11.79200
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.12364	1.02450	11.95170
	A2->Y (FR)	0.15998	1.05260	11.82370
	B1->Y (FR)	0.07024	0.94777	11.76790

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.03996	0.54191	5.07591
	A2->Y (RF)	0.04385	0.51766	4.77445
	B1->Y (RF)	0.02606	0.43820	4.23084
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.03637	0.49076	5.08266
	A2->Y (RF)	0.04507	0.47231	4.73228
	B1->Y (RF)	0.03099	0.51640	5.53969
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.03609	0.45092	5.24075
	A2->Y (RF)	0.04252	0.42144	4.71227
	B1->Y (RF)	0.03124	0.47978	5.77698

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00009	-0.00017	-0.00016
	A1	0.00309	0.00301	0.00304
	A2	0.00015	0.00008	0.00009
	A2	0.00385	0.00380	0.00382
	B1	0.00011	0.00006	0.00026
	B1	0.00326	0.00320	0.00341
sky130_fd_sc_hs__a21oi_2	A1	-0.00027	-0.00039	-0.00035
	A1	0.00567	0.00556	0.00561
	A2	0.00061	0.00044	0.00046
	A2	0.00784	0.00766	0.00771
	B1	0.00112	0.00102	0.00128
	B1	0.00635	0.00627	0.00652
sky130_fd_sc_hs__a21oi_4	A1	-0.00096	-0.00122	-0.00107
	A1	0.01118	0.01095	0.01115
	A2	0.00081	0.00048	0.00057
	A2	0.01528	0.01497	0.01507
	B1	0.00197	0.00180	0.00227
	B1	0.01226	0.01209	0.01257

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00393	0.00384	0.00397
	A1	0.00081	0.00070	0.00074
	A2	0.00450	0.00444	0.00441
	A2	0.00081	0.00071	0.00072
	B1	0.00307	0.00307	0.00315
	B1	-0.00012	-0.00016	-0.00009
sky130_fd_sc_hs__a21oi_2	A1	0.00702	0.00679	0.00703
	A1	0.00120	0.00096	0.00106
	A2	0.00849	0.00827	0.00842
	A2	0.00122	0.00099	0.00101
	B1	0.00461	0.00460	0.00472
	B1	-0.00090	-0.00097	-0.00083
sky130_fd_sc_hs__a21oi_4	A1	0.01409	0.01352	0.01402
	A1	0.00215	0.00158	0.00186
	A2	0.01652	0.01607	0.01647
	A2	0.00208	0.00160	0.00169
	B1	0.00899	0.00889	0.00925
	B1	-0.00156	-0.00177	-0.00140

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00097	0.00093	0.00092
	(A2 * B1 * !Y)	-0.00099	-0.00106	-0.00105
	(!A2 * B1 * !Y)	0.00086	0.00087	0.00086
	(!A2 * B1 * !Y)	-0.00109	-0.00109	-0.00109
	(!A2 * !B1 * Y)	0.00031	0.00031	0.00030
	(!A2 * !B1 * Y)	-0.00130	-0.00129	-0.00132
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00193	0.00184	0.00183
	(A2 * B1 * !Y)	-0.00193	-0.00207	-0.00206
	(!A2 * B1 * !Y)	0.00169	0.00169	0.00169
	(!A2 * B1 * !Y)	-0.00214	-0.00214	-0.00213
	(!A2 * !B1 * Y)	0.00067	0.00067	0.00063
	(!A2 * !B1 * Y)	-0.00245	-0.00245	-0.00252
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00387	0.00371	0.00368
	(A2 * B1 * !Y)	-0.00381	-0.00413	-0.00412
	(!A2 * B1 * !Y)	0.00347	0.00348	0.00347
	(!A2 * B1 * !Y)	-0.00425	-0.00425	-0.00423
	(!A2 * !B1 * Y)	0.00126	0.00126	0.00119
	(!A2 * !B1 * Y)	-0.00506	-0.00509	-0.00521

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00092	-0.00092	-0.00092
	(A2 * B1 * !Y)	0.00105	0.00106	0.00105
	(!A2 * B1 * !Y)	-0.00084	-0.00087	-0.00086
	(!A2 * B1 * !Y)	0.00109	0.00109	0.00109
	(!A2 * !B1 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * Y)	0.00131	0.00134	0.00132
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00183	-0.00183	-0.00183
	(A2 * B1 * !Y)	0.00207	0.00208	0.00206
	(!A2 * B1 * !Y)	-0.00159	-0.00169	-0.00169
	(!A2 * B1 * !Y)	0.00216	0.00215	0.00214
	(!A2 * !B1 * Y)	-0.00061	-0.00062	-0.00061
	(!A2 * !B1 * Y)	0.00253	0.00256	0.00253
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00369	-0.00369	-0.00368
	(A2 * B1 * !Y)	0.00413	0.00413	0.00412
	(!A2 * B1 * !Y)	-0.00331	-0.00348	-0.00347
	(!A2 * B1 * !Y)	0.00426	0.00428	0.00425
	(!A2 * !B1 * Y)	-0.00116	-0.00117	-0.00115
	(!A2 * !B1 * Y)	0.00523	0.00530	0.00522

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00097	0.00093	0.00092
	(A1 * B1 * !Y)	-0.00098	-0.00106	-0.00105
	(!A1 * B1 * !Y)	0.00087	0.00087	0.00087
	(!A1 * B1 * !Y)	-0.00108	-0.00108	-0.00109
	(!A1 * !B1 * Y)	0.00087	0.00087	0.00087
	(!A1 * !B1 * Y)	-0.00108	-0.00109	-0.00108
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00199	0.00191	0.00189
	(A1 * B1 * !Y)	-0.00193	-0.00208	-0.00207
	(!A1 * B1 * !Y)	0.00175	0.00176	0.00175
	(!A1 * B1 * !Y)	-0.00214	-0.00215	-0.00214
	(!A1 * !B1 * Y)	0.00167	0.00169	0.00168
	(!A1 * !B1 * Y)	-0.00221	-0.00223	-0.00222
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00381	0.00362	0.00358
	(A1 * B1 * !Y)	-0.00392	-0.00426	-0.00424
	(!A1 * B1 * !Y)	0.00335	0.00339	0.00336
	(!A1 * B1 * !Y)	-0.00436	-0.00438	-0.00437
	(!A1 * !B1 * Y)	0.00333	0.00333	0.00332
	(!A1 * !B1 * Y)	-0.00440	-0.00440	-0.00439

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00093	-0.00093	-0.00092
	(A1 * B1 * !Y)	0.00106	0.00106	0.00105
	(!A1 * B1 * !Y)	-0.00085	-0.00087	-0.00087
	(!A1 * B1 * !Y)	0.00108	0.00108	0.00109
	(!A1 * !B1 * Y)	-0.00082	-0.00087	-0.00087
	(!A1 * !B1 * Y)	0.00111	0.00111	0.00109
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00189	-0.00190	-0.00189
	(A1 * B1 * !Y)	0.00206	0.00208	0.00207
	(!A1 * B1 * !Y)	-0.00168	-0.00176	-0.00175
	(!A1 * B1 * !Y)	0.00215	0.00217	0.00214
	(!A1 * !B1 * Y)	-0.00158	-0.00169	-0.00168
	(!A1 * !B1 * Y)	0.00226	0.00225	0.00222
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00357	-0.00360	-0.00358
	(A1 * B1 * !Y)	0.00422	0.00427	0.00424
	(!A1 * B1 * !Y)	-0.00325	-0.00337	-0.00336
	(!A1 * B1 * !Y)	0.00440	0.00438	0.00438
	(!A1 * !B1 * Y)	-0.00315	-0.00333	-0.00332
	(!A1 * !B1 * Y)	0.00452	0.00447	0.00441

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00108	0.00109	0.00108
	(A1 * A2 * !Y)	-0.00057	-0.00057	-0.00057
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00120	0.00121	0.00120
	(A1 * A2 * !Y)	-0.00117	-0.00118	-0.00118
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00233	0.00234	0.00233
	(A1 * A2 * !Y)	-0.00228	-0.00228	-0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00098	-0.00099	-0.00107
	(A1 * A2 * !Y)	0.00065	0.00065	0.00059
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00102	-0.00103	-0.00118
	(A1 * A2 * !Y)	0.00135	0.00135	0.00122
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00197	-0.00199	-0.00228
	(A1 * A2 * !Y)	0.00260	0.00258	0.00235

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00230	0.00235	0.00236	0.64746
sky130_fd_sc_hs__a21o_2	0.00257	0.00246	0.00261	1.29380
sky130_fd_sc_hs__a21o_4	0.00465	0.00440	0.00475	2.47461

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21o_1	0.00000	0.03314	0.04770
sky130_fd_sc_hs__a21o_2	0.00000	0.04150	0.05131
sky130_fd_sc_hs__a21o_4	0.00000	0.08437	0.10263

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)	0.11708	0.87121	7.33252
	A2->X (RR)	0.12276	0.88492	7.51886
	B1->X (RR)	0.08879	0.81983	7.28095
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.11462	0.77574	7.60676
	A2->X (RR)	0.11961	0.77751	7.73986
	B1->X (RR)	0.08425	0.72039	7.52593
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.12831	0.70934	7.67546
	A2->X (RR)	0.13540	0.71585	7.83686
	B1->X (RR)	0.08767	0.63995	7.57854

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.23028	0.85676	5.08615
	A2->X (FF)	0.26783	0.90512	5.28068
	B1->X (FF)	0.22956	0.83304	4.81061
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.29435	0.91455	5.41848
	A2->X (FF)	0.33653	0.96618	5.60223
	B1->X (FF)	0.30052	0.90088	5.17146
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.29514	0.88596	5.46220
	A2->X (FF)	0.33752	0.93578	5.66003
	B1->X (FF)	0.29611	0.86431	5.21033

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00553	0.00548	0.00623
	A1	0.00284	0.00279	0.00357
	A2	0.00619	0.00619	0.00655
	A2	0.00284	0.00284	0.00320
	B1	0.00467	0.00451	0.00573
	B1	0.00194	0.00178	0.00313
sky130_fd_sc_hs__a21o_2	A1	0.00725	0.00735	0.00806
	A1	0.00430	0.00440	0.00525
	A2	0.00787	0.00804	0.00840
	A2	0.00429	0.00446	0.00496
	B1	0.00651	0.00649	0.00754
	B1	0.00345	0.00342	0.00459
sky130_fd_sc_hs__a21o_4	A1	0.01375	0.01394	0.01557
	A1	0.00812	0.00831	0.01021
	A2	0.01476	0.01513	0.01593
	A2	0.00810	0.00847	0.00953
	B1	0.01203	0.01209	0.01441
	B1	0.00630	0.00638	0.00895

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00205	0.00207	0.00240
	A1	0.00478	0.00480	0.00511
	A2	0.00211	0.00220	0.00258
	A2	0.00546	0.00555	0.00581
	B1	0.00228	0.00237	0.00388
	B1	0.00495	0.00506	0.00644
sky130_fd_sc_hs__a21o_2	A1	0.00329	0.00348	0.00453
	A1	0.00628	0.00652	0.00684
	A2	0.00351	0.00380	0.00476
	A2	0.00707	0.00739	0.00767
	B1	0.00322	0.00352	0.00550
	B1	0.00655	0.00685	0.00826
sky130_fd_sc_hs__a21o_4	A1	0.00664	0.00696	0.00810
	A1	0.01237	0.01287	0.01350
	A2	0.00736	0.00798	0.00911
	A2	0.01401	0.01461	0.01520
	B1	0.00731	0.00759	0.01117
	B1	0.01293	0.01347	0.01636

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00080	0.00075	0.00074
	(A2 * B1 * X)	-0.00090	-0.00097	-0.00097
	(!A2 * B1 * X)	0.00069	0.00070	0.00069
	(!A2 * B1 * X)	-0.00100	-0.00101	-0.00100
	(!A2 * !B1 * !X)	0.00028	0.00028	0.00026
	(!A2 * !B1 * !X)	-0.00113	-0.00113	-0.00115
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00094	0.00089	0.00088
	(A2 * B1 * X)	-0.00090	-0.00098	-0.00098
	(!A2 * B1 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A2 * !B1 * !X)	0.00033	0.00033	0.00032
	(!A2 * !B1 * !X)	-0.00117	-0.00117	-0.00119
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00170	0.00160	0.00159
	(A2 * B1 * X)	-0.00177	-0.00194	-0.00194
	(!A2 * B1 * X)	0.00150	0.00151	0.00150
	(!A2 * B1 * X)	-0.00201	-0.00200	-0.00200
	(!A2 * !B1 * !X)	0.00060	0.00060	0.00056
	(!A2 * !B1 * !X)	-0.00233	-0.00234	-0.00239

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00074	-0.00074	-0.00073
	(A2 * B1 * X)	0.00098	0.00098	0.00097
	(!A2 * B1 * X)	-0.00067	-0.00070	-0.00069
	(!A2 * B1 * X)	0.00100	0.00101	0.00100
	(!A2 * !B1 * !X)	-0.00025	-0.00026	-0.00025
	(!A2 * !B1 * !X)	0.00115	0.00116	0.00115
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00088	-0.00088	-0.00088
	(A2 * B1 * X)	0.00099	0.00099	0.00098
	(!A2 * B1 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * X)	0.00101	0.00103	0.00102
	(!A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !X)	0.00119	0.00120	0.00119
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * B1 * X)	0.00193	0.00196	0.00194
	(!A2 * B1 * X)	-0.00145	-0.00151	-0.00150
	(!A2 * B1 * X)	0.00202	0.00203	0.00200
	(!A2 * !B1 * !X)	-0.00054	-0.00055	-0.00054
	(!A2 * !B1 * !X)	0.00239	0.00241	0.00240

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00098	0.00094	0.00093
	(A1 * B1 * X)	-0.00088	-0.00096	-0.00096
	(!A1 * B1 * X)	0.00089	0.00089	0.00089
	(!A1 * B1 * X)	-0.00098	-0.00099	-0.00098
	(!A1 * !B1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !B1 * !X)	-0.00098	-0.00099	-0.00098
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00098	0.00094	0.00093
	(A1 * B1 * X)	-0.00090	-0.00098	-0.00098
	(!A1 * B1 * X)	0.00087	0.00089	0.00088
	(!A1 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A1 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !B1 * !X)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00166	0.00157	0.00156
	(A1 * B1 * X)	-0.00178	-0.00194	-0.00194
	(!A1 * B1 * X)	0.00147	0.00147	0.00147
	(!A1 * B1 * X)	-0.00199	-0.00200	-0.00199
	(!A1 * !B1 * !X)	0.00146	0.00147	0.00147
	(!A1 * !B1 * !X)	-0.00199	-0.00200	-0.00199

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * X)	0.00095	0.00096	0.00096
	(!A1 * B1 * X)	-0.00087	-0.00089	-0.00089
	(!A1 * B1 * X)	0.00099	0.00100	0.00099
	(!A1 * !B1 * !X)	-0.00085	-0.00089	-0.00089
	(!A1 * !B1 * !X)	0.00101	0.00100	0.00099
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * B1 * X)	-0.00085	-0.00088	-0.00088
	(!A1 * B1 * X)	0.00101	0.00102	0.00102
	(!A1 * !B1 * !X)	-0.00084	-0.00088	-0.00088
	(!A1 * !B1 * !X)	0.00103	0.00103	0.00101
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * X)	0.00193	0.00196	0.00194
	(!A1 * B1 * X)	-0.00142	-0.00147	-0.00147
	(!A1 * B1 * X)	0.00199	0.00202	0.00200
	(!A1 * !B1 * !X)	-0.00139	-0.00147	-0.00147
	(!A1 * !B1 * !X)	0.00204	0.00202	0.00200

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00089	0.00089	0.00089
	(A1 * A2 * X)	-0.00055	-0.00055	-0.00054
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00105	0.00106	0.00106
	(A1 * A2 * X)	-0.00053	-0.00054	-0.00054
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00184	0.00185	0.00184
	(A1 * A2 * X)	-0.00111	-0.00112	-0.00111

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00080	-0.00081	-0.00088
	(A1 * A2 * X)	0.00062	0.00062	0.00056
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00096	-0.00097	-0.00104
	(A1 * A2 * X)	0.00062	0.00061	0.00056
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00166	-0.00167	-0.00182
	(A1 * A2 * X)	0.00128	0.00127	0.00115

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00264	0.00257	0.00269	0.00276	0.00278	0.18257
sky130_fd_sc_hs__a221oi_2	0.00560	0.00500	0.00550	0.00496	0.00509	0.32633
sky130_fd_sc_hs__a221oi_4	0.01027	0.01012	0.01017	0.00981	0.01008	0.59313

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221oi_1	0.00000	0.01068	0.01811
sky130_fd_sc_hs__a221oi_2	0.00000	0.02135	0.03622
sky130_fd_sc_hs__a221oi_4	0.00000	0.04271	0.07245

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)	0.39658	1.73295	11.78260
	A2->Y (FR)	0.44505	1.78953	11.85420
	B1->Y (FR)	0.34596	1.66639	12.05190
	B2->Y (FR)	0.39969	1.73213	12.16820
	C1->Y (FR)	0.30458	1.59660	11.76760
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.35639	1.47155	11.34370
	A2->Y (FR)	0.44307	1.59572	11.77860
	B1->Y (FR)	0.32651	1.44776	11.86480
	B2->Y (FR)	0.39140	1.53666	12.10120
	C1->Y (FR)	0.28596	1.39818	11.73900
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.38193	1.35956	11.42680
	A2->Y (FR)	0.45610	1.44812	11.60940
	B1->Y (FR)	0.32305	1.28556	11.69290
	B2->Y (FR)	0.40116	1.38608	11.97670
	C1->Y (FR)	0.29668	1.25341	11.69370

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.04609	0.50900	4.05055
	A2->Y (RF)	0.05071	0.48526	3.85224
	B1->Y (RF)	0.04806	0.49445	4.06251
	B2->Y (RF)	0.05374	0.47752	3.87311
	C1->Y (RF)	0.03091	0.40275	3.42296
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.04043	0.45541	3.95676
	A2->Y (RF)	0.04782	0.44460	3.80138
	B1->Y (RF)	0.04176	0.43715	3.91739
	B2->Y (RF)	0.04812	0.42675	3.76553
	C1->Y (RF)	0.02765	0.35299	3.33450
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.04186	0.43053	4.01994
	A2->Y (RF)	0.04870	0.40229	3.66213
	B1->Y (RF)	0.04542	0.41255	4.00330
	B2->Y (RF)	0.05203	0.38734	3.64355
	C1->Y (RF)	0.02543	0.30885	3.18467

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00114	0.00100	0.00098
	A1	0.00573	0.00560	0.00557
	A2	0.00131	0.00123	0.00121
	A2	0.00652	0.00643	0.00642
	B1	0.00114	0.00099	0.00099
	B1	0.00505	0.00490	0.00490
	B2	0.00138	0.00128	0.00127
	B2	0.00588	0.00578	0.00577
	C1	0.00135	0.00122	0.00148
	C1	0.00529	0.00518	0.00543
sky130_fd_sc_hs__a221oi_2	A1	0.00135	0.00106	0.00104
	A1	0.01078	0.01050	0.01047
	A2	0.00221	0.00199	0.00196
	A2	0.01246	0.01222	0.01218
	B1	0.00157	0.00126	0.00128
	B1	0.00947	0.00919	0.00919
	B2	0.00221	0.00199	0.00199
	B2	0.01101	0.01079	0.01078
	C1	0.00216	0.00189	0.00246
	C1	0.00986	0.00960	0.01016

sky130_fd_sc_hs__a221oi_4	**A1**	0.00252	0.00188	0.00187
	A1	0.02119	0.02062	0.02056
	A2	0.00384	0.00340	0.00336
	A2	0.02483	0.02437	0.02431
	B1	0.00237	0.00177	0.00184
	B1	0.01839	0.01778	0.01783
	B2	0.00381	0.00339	0.00343
	B2	0.02210	0.02169	0.02168
	C1	0.00371	0.00333	0.00448
	C1	0.01915	0.01877	0.01987

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.00647	0.00636	0.00629
	A1	0.00221	0.00208	0.00205
	A2	0.00711	0.00699	0.00687
	A2	0.00220	0.00207	0.00200
	B1	0.00478	0.00472	0.00473
	B1	0.00088	0.00078	0.00081
	B2	0.00540	0.00533	0.00530
	B2	0.00087	0.00077	0.00075
	C1	0.00389	0.00390	0.00395
	C1	-0.00015	-0.00020	-0.00013

sky130_fd_sc_hs__a221oi_2	**A1**	0.01212	0.01182	0.01179
	A1	0.00337	0.00308	0.00307
	A2	0.01318	0.01292	0.01274
	A2	0.00348	0.00322	0.00310
	B1	0.00909	0.00889	0.00899
	B1	0.00119	0.00093	0.00104
	B2	0.01016	0.01001	0.00998
	B2	0.00127	0.00106	0.00107
	C1	0.00719	0.00717	0.00740
	C1	-0.00074	-0.00082	-0.00061
sky130_fd_sc_hs__a221oi_4	**A1**	0.02445	0.02383	0.02380
	A1	0.00716	0.00651	0.00654
	A2	0.02683	0.02624	0.02600
	A2	0.00711	0.00651	0.00631
	B1	0.01832	0.01784	0.01822
	B1	0.00240	0.00184	0.00218
	B2	0.02079	0.02042	0.02046
	B2	0.00241	0.00193	0.00202
	C1	0.01485	0.01480	0.01531
	C1	-0.00100	-0.00128	-0.00073

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)**	0.00087	0.00087	0.00087
	(A2 * B1 * B2 * C1 * !Y)	-0.00101	-0.00105	-0.00104
	(A2 * B1 * B2 * !C1 * !Y)	0.00087	0.00087	0.00087
	(A2 * B1 * B2 * !C1 * !Y)	-0.00101	-0.00105	-0.00104
	(A2 * B1 * !B2 * C1 * !Y)	0.00088	0.00088	0.00087
	(A2 * B1 * !B2 * C1 * !Y)	-0.00097	-0.00101	-0.00101
	(A2 * !B1 * C1 * !Y)	0.00088	0.00088	0.00087
	(A2 * !B1 * C1 * !Y)	-0.00097	-0.00101	-0.00101
	(!A2 * B1 * B2 * C1 * !Y)	0.00081	0.00082	0.00081
	(!A2 * B1 * B2 * C1 * !Y)	-0.00107	-0.00108	-0.00108
	(!A2 * B1 * B2 * !C1 * !Y)	0.00081	0.00082	0.00081
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00108	-0.00108	-0.00108
	(!A2 * B1 * !B2 * C1 * !Y)	0.00081	0.00082	0.00081
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00108	-0.00108	-0.00108
	(!A2 * B1 * !B2 * !C1 * Y)	0.00031	0.00031	0.00030
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00124	-0.00124	-0.00126
	(!A2 * !B1 * C1 * !Y)	0.00081	0.00082	0.00081
	(!A2 * !B1 * C1 * !Y)	-0.00108	-0.00108	-0.00108
	(!A2 * !B1 * !C1 * Y)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !C1 * Y)	-0.00124	-0.00124	-0.00126

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00185	0.00186	0.00185
	(A2 * B1 * B2 * C1 * !Y)	-0.00212	-0.00223	-0.00221
	(A2 * B1 * B2 * !C1 * !Y)	0.00185	0.00186	0.00185
	(A2 * B1 * B2 * !C1 * !Y)	-0.00212	-0.00222	-0.00221
	(A2 * B1 * !B2 * C1 * !Y)	0.00186	0.00186	0.00186
	(A2 * B1 * !B2 * C1 * !Y)	-0.00204	-0.00215	-0.00214
	(A2 * !B1 * C1 * !Y)	0.00186	0.00187	0.00186
	(A2 * !B1 * C1 * !Y)	-0.00204	-0.00215	-0.00214
	(!A2 * B1 * B2 * C1 * !Y)	0.00175	0.00176	0.00177
	(!A2 * B1 * B2 * C1 * !Y)	-0.00228	-0.00229	-0.00229
	(!A2 * B1 * B2 * !C1 * !Y)	0.00176	0.00178	0.00176
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00229	-0.00230	-0.00229
	(!A2 * B1 * !B2 * C1 * !Y)	0.00176	0.00176	0.00177
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00229	-0.00229	-0.00229
	(!A2 * B1 * !B2 * !C1 * Y)	0.00070	0.00071	0.00067
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00268	-0.00271	-0.00275
	(!A2 * !B1 * C1 * !Y)	0.00177	0.00177	0.00177
	(!A2 * !B1 * C1 * !Y)	-0.00229	-0.00230	-0.00229
	(!A2 * !B1 * !C1 * Y)	0.00070	0.00071	0.00067
	(!A2 * !B1 * !C1 * Y)	-0.00268	-0.00271	-0.00275

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00357	0.00359	0.00357
	(A2 * B1 * B2 * C1 * !Y)	-0.00411	-0.00425	-0.00425
	(A2 * B1 * B2 * !C1 * !Y)	0.00357	0.00359	0.00357
	(A2 * B1 * B2 * !C1 * !Y)	-0.00407	-0.00427	-0.00424
	(A2 * B1 * !B2 * C1 * !Y)	0.00358	0.00359	0.00357
	(A2 * B1 * !B2 * C1 * !Y)	-0.00387	-0.00412	-0.00408
	(A2 * !B1 * C1 * !Y)	0.00358	0.00359	0.00357
	(A2 * !B1 * C1 * !Y)	-0.00387	-0.00412	-0.00408
	(!A2 * B1 * B2 * C1 * !Y)	0.00337	0.00339	0.00338
	(!A2 * B1 * B2 * C1 * !Y)	-0.00437	-0.00439	-0.00437
	(!A2 * B1 * B2 * !C1 * !Y)	0.00337	0.00340	0.00337
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00437	-0.00439	-0.00436
	(!A2 * B1 * !B2 * C1 * !Y)	0.00337	0.00340	0.00337
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00442	-0.00444	-0.00441
	(!A2 * B1 * !B2 * !C1 * Y)	0.00127	0.00128	0.00120
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00515	-0.00520	-0.00529
	(!A2 * !B1 * C1 * !Y)	0.00337	0.00340	0.00337
	(!A2 * !B1 * C1 * !Y)	-0.00442	-0.00444	-0.00441
	(!A2 * !B1 * !C1 * Y)	0.00127	0.00127	0.00121
	(!A2 * !B1 * !C1 * Y)	-0.00515	-0.00516	-0.00529

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)**	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * C1 * !Y)	0.00105	0.00106	0.00104
	(A2 * B1 * B2 * !C1 * !Y)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * !C1 * !Y)	0.00105	0.00105	0.00104
	(A2 * B1 * !B2 * C1 * !Y)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * !B2 * C1 * !Y)	0.00101	0.00101	0.00101
	(A2 * !B1 * C1 * !Y)	-0.00087	-0.00087	-0.00087
	(A2 * !B1 * C1 * !Y)	0.00100	0.00101	0.00101
	(!A2 * B1 * B2 * C1 * !Y)	-0.00079	-0.00082	-0.00081
	(!A2 * B1 * B2 * C1 * !Y)	0.00108	0.00109	0.00108
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00079	-0.00082	-0.00081
	(!A2 * B1 * B2 * !C1 * !Y)	0.00109	0.00108	0.00108
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00080	-0.00082	-0.00081
	(!A2 * B1 * !B2 * C1 * !Y)	0.00109	0.00109	0.00108
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * B1 * !B2 * !C1 * Y)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * !Y)	-0.00079	-0.00082	-0.00081
	(!A2 * !B1 * C1 * !Y)	0.00108	0.00108	0.00108
	(!A2 * !B1 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * Y)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00185	-0.00186	-0.00185
	(A2 * B1 * B2 * C1 * !Y)	0.00220	0.00223	0.00221
	(A2 * B1 * B2 * !C1 * !Y)	-0.00185	-0.00185	-0.00185
	(A2 * B1 * B2 * !C1 * !Y)	0.00220	0.00222	0.00221
	(A2 * B1 * !B2 * C1 * !Y)	-0.00185	-0.00186	-0.00185
	(A2 * B1 * !B2 * C1 * !Y)	0.00213	0.00215	0.00214
	(A2 * !B1 * C1 * !Y)	-0.00185	-0.00186	-0.00185
	(A2 * !B1 * C1 * !Y)	0.00213	0.00215	0.00214
	(!A2 * B1 * B2 * C1 * !Y)	-0.00171	-0.00176	-0.00177
	(!A2 * B1 * B2 * C1 * !Y)	0.00231	0.00232	0.00230
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00170	-0.00178	-0.00176
	(!A2 * B1 * B2 * !C1 * !Y)	0.00231	0.00230	0.00230
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00171	-0.00176	-0.00177
	(!A2 * B1 * !B2 * C1 * !Y)	0.00231	0.00233	0.00230
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00065	-0.00065	-0.00065
	(!A2 * B1 * !B2 * !C1 * Y)	0.00277	0.00277	0.00276
	(!A2 * !B1 * C1 * !Y)	-0.00171	-0.00177	-0.00177
	(!A2 * !B1 * C1 * !Y)	0.00231	0.00233	0.00230
	(!A2 * !B1 * !C1 * Y)	-0.00065	-0.00065	-0.00065
	(!A2 * !B1 * !C1 * Y)	0.00277	0.00277	0.00276

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00356	-0.00356	-0.00357
	(A2 * B1 * B2 * C1 * !Y)	0.00424	0.00425	0.00425
	(A2 * B1 * B2 * !C1 * !Y)	-0.00356	-0.00358	-0.00357
	(A2 * B1 * B2 * !C1 * !Y)	0.00422	0.00427	0.00424
	(A2 * B1 * !B2 * C1 * !Y)	-0.00356	-0.00358	-0.00356
	(A2 * B1 * !B2 * C1 * !Y)	0.00406	0.00412	0.00408
	(A2 * !B1 * C1 * !Y)	-0.00356	-0.00358	-0.00356
	(A2 * !B1 * C1 * !Y)	0.00407	0.00412	0.00408
	(!A2 * B1 * B2 * C1 * !Y)	-0.00325	-0.00339	-0.00338
	(!A2 * B1 * B2 * C1 * !Y)	0.00438	0.00444	0.00438
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00324	-0.00340	-0.00337
	(!A2 * B1 * B2 * !C1 * !Y)	0.00439	0.00439	0.00437
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00325	-0.00340	-0.00337
	(!A2 * B1 * !B2 * C1 * !Y)	0.00445	0.00445	0.00443
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00117	-0.00117	-0.00116
	(!A2 * B1 * !B2 * !C1 * Y)	0.00532	0.00533	0.00530
	(!A2 * !B1 * C1 * !Y)	-0.00324	-0.00340	-0.00337
	(!A2 * !B1 * C1 * !Y)	0.00444	0.00445	0.00443
	(!A2 * !B1 * !C1 * Y)	-0.00118	-0.00117	-0.00116
	(!A2 * !B1 * !C1 * Y)	0.00532	0.00533	0.00530

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)**	0.00093	0.00093	0.00093
	(A1 * B1 * B2 * C1 * !Y)	-0.00103	-0.00107	-0.00106
	(A1 * B1 * B2 * !C1 * !Y)	0.00093	0.00093	0.00093
	(A1 * B1 * B2 * !C1 * !Y)	-0.00103	-0.00107	-0.00106
	(A1 * B1 * !B2 * C1 * !Y)	0.00094	0.00094	0.00093
	(A1 * B1 * !B2 * C1 * !Y)	-0.00099	-0.00103	-0.00103
	(A1 * !B1 * C1 * !Y)	0.00094	0.00094	0.00093
	(A1 * !B1 * C1 * !Y)	-0.00099	-0.00103	-0.00103
	(!A1 * B1 * B2 * !Y)	0.00087	0.00087	0.00087
	(!A1 * B1 * B2 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00087	0.00088	0.00087
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * B1 * !B2 * !C1 * Y)	0.00087	0.00089	0.00088
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00109	-0.00110	-0.00110
	(!A1 * !B1 * !C1 * Y)	0.00088	0.00088	0.00088
	(!A1 * !B1 * !C1 * Y)	-0.00109	-0.00109	-0.00110

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00176	0.00177	0.00176
	(A1 * B1 * B2 * C1 * !Y)	-0.00196	-0.00206	-0.00205
	(A1 * B1 * B2 * !C1 * !Y)	0.00176	0.00177	0.00176
	(A1 * B1 * B2 * !C1 * !Y)	-0.00195	-0.00205	-0.00205
	(A1 * B1 * !B2 * C1 * !Y)	0.00177	0.00177	0.00176
	(A1 * B1 * !B2 * C1 * !Y)	-0.00188	-0.00199	-0.00198
	(A1 * !B1 * C1 * !Y)	0.00177	0.00177	0.00176
	(A1 * !B1 * C1 * !Y)	-0.00188	-0.00199	-0.00198
	(!A1 * B1 * B2 * !Y)	0.00167	0.00169	0.00168
	(!A1 * B1 * B2 * !Y)	-0.00211	-0.00213	-0.00212
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00168	0.00168	0.00168
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00212	-0.00212	-0.00212
	(!A1 * B1 * !B2 * !C1 * Y)	0.00159	0.00161	0.00159
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00220	-0.00221	-0.00220
	(!A1 * !B1 * !C1 * Y)	0.00159	0.00160	0.00159
	(!A1 * !B1 * !C1 * Y)	-0.00220	-0.00221	-0.00220

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00362	0.00363	0.00361
	(A1 * B1 * B2 * C1 * !Y)	-0.00414	-0.00431	-0.00427
	(A1 * B1 * B2 * !C1 * !Y)	0.00362	0.00364	0.00361
	(A1 * B1 * B2 * !C1 * !Y)	-0.00410	-0.00429	-0.00426
	(A1 * B1 * !B2 * C1 * !Y)	0.00364	0.00363	0.00361
	(A1 * B1 * !B2 * C1 * !Y)	-0.00392	-0.00412	-0.00411
	(A1 * !B1 * C1 * !Y)	0.00365	0.00363	0.00361
	(A1 * !B1 * C1 * !Y)	-0.00392	-0.00412	-0.00410
	(!A1 * B1 * B2 * !Y)	0.00343	0.00344	0.00342
	(!A1 * B1 * B2 * !Y)	-0.00438	-0.00440	-0.00439
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00343	0.00346	0.00342
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00444	-0.00447	-0.00444
	(!A1 * B1 * !B2 * !C1 * Y)	0.00320	0.00322	0.00319
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00468	-0.00470	-0.00467
	(!A1 * !B1 * !C1 * Y)	0.00320	0.00320	0.00319
	(!A1 * !B1 * !C1 * Y)	-0.00468	-0.00468	-0.00467

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)**	-0.00093	-0.00093	-0.00093
	(A1 * B1 * B2 * C1 * !Y)	0.00107	0.00108	0.00106
	(A1 * B1 * B2 * !C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * B2 * !C1 * !Y)	0.00107	0.00108	0.00106
	(A1 * B1 * !B2 * C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * !B2 * C1 * !Y)	0.00103	0.00103	0.00103
	(A1 * !B1 * C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * !B1 * C1 * !Y)	0.00103	0.00103	0.00103
	(!A1 * B1 * B2 * !Y)	-0.00085	-0.00087	-0.00087
	(!A1 * B1 * B2 * !Y)	0.00110	0.00111	0.00110
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00085	-0.00088	-0.00087
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00083	-0.00089	-0.00088
	(!A1 * B1 * !B2 * !C1 * Y)	0.00112	0.00112	0.00110
	(!A1 * !B1 * !C1 * Y)	-0.00083	-0.00088	-0.00088
	(!A1 * !B1 * !C1 * Y)	0.00112	0.00112	0.00110

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00175	-0.00176	-0.00176
	(A1 * B1 * B2 * C1 * !Y)	0.00204	0.00206	0.00205
	(A1 * B1 * B2 * !C1 * !Y)	-0.00175	-0.00176	-0.00176
	(A1 * B1 * B2 * !C1 * !Y)	0.00204	0.00205	0.00205
	(A1 * B1 * !B2 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A1 * B1 * !B2 * C1 * !Y)	0.00197	0.00199	0.00198
	(A1 * !B1 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A1 * !B1 * C1 * !Y)	0.00197	0.00199	0.00198
	(!A1 * B1 * B2 * !Y)	-0.00162	-0.00169	-0.00168
	(!A1 * B1 * B2 * !Y)	0.00212	0.00214	0.00212
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00162	-0.00168	-0.00168
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00212	0.00214	0.00212
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00152	-0.00160	-0.00159
	(!A1 * B1 * !B2 * !C1 * Y)	0.00224	0.00223	0.00221
	(!A1 * !B1 * !C1 * Y)	-0.00152	-0.00160	-0.00159
	(!A1 * !B1 * !C1 * Y)	0.00224	0.00223	0.00221

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00360	-0.00363	-0.00361
	(A1 * B1 * B2 * C1 * !Y)	0.00426	0.00432	0.00427
	(A1 * B1 * B2 * !C1 * !Y)	-0.00360	-0.00363	-0.00361
	(A1 * B1 * B2 * !C1 * !Y)	0.00425	0.00431	0.00426
	(A1 * B1 * !B2 * C1 * !Y)	-0.00359	-0.00361	-0.00360
	(A1 * B1 * !B2 * C1 * !Y)	0.00408	0.00412	0.00411
	(A1 * !B1 * C1 * !Y)	-0.00360	-0.00361	-0.00360
	(A1 * !B1 * C1 * !Y)	0.00409	0.00412	0.00410
	(!A1 * B1 * B2 * !Y)	-0.00331	-0.00344	-0.00342
	(!A1 * B1 * B2 * !Y)	0.00438	0.00444	0.00440
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00331	-0.00345	-0.00342
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00444	0.00449	0.00446
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00302	-0.00321	-0.00319
	(!A1 * B1 * !B2 * !C1 * Y)	0.00474	0.00474	0.00468
	(!A1 * !B1 * !C1 * Y)	-0.00302	-0.00320	-0.00319
	(!A1 * !B1 * !C1 * Y)	0.00474	0.00474	0.00468

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)**	0.00091	0.00090	0.00090
	(A1 * A2 * B2 * C1 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * B2 * !C1 * !Y)	0.00089	0.00090	0.00089
	(A1 * A2 * B2 * !C1 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * !B2 * C1 * !Y)	0.00084	0.00085	0.00084
	(A1 * A2 * !B2 * C1 * !Y)	-0.00077	-0.00077	-0.00076
	(A1 * A2 * !B2 * !C1 * !Y)	0.00083	0.00085	0.00084
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00065	-0.00066	-0.00065
	(A1 * !A2 * B2 * C1 * !Y)	0.00094	0.00090	0.00089
	(A1 * !A2 * B2 * C1 * !Y)	-0.00099	-0.00106	-0.00105
	(A1 * !A2 * !B2 * C1 * !Y)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00108	-0.00108	-0.00108
	(A1 * !A2 * !B2 * !C1 * Y)	0.00031	0.00031	0.00030
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00127	-0.00127	-0.00129
	(!A1 * B2 * C1 * !Y)	0.00094	0.00090	0.00089
	(!A1 * B2 * C1 * !Y)	-0.00100	-0.00105	-0.00106
	(!A1 * !B2 * C1 * !Y)	0.00083	0.00084	0.00083
	(!A1 * !B2 * C1 * !Y)	-0.00109	-0.00109	-0.00108
	(!A1 * !B2 * !C1 * Y)	0.00031	0.00031	0.00030
	(!A1 * !B2 * !C1 * Y)	-0.00127	-0.00127	-0.00129

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00184	0.00184	0.00182
	(A1 * A2 * B2 * C1 * !Y)	-0.00164	-0.00165	-0.00164
	(A1 * A2 * B2 * !C1 * !Y)	0.00181	0.00181	0.00181
	(A1 * A2 * B2 * !C1 * !Y)	-0.00137	-0.00137	-0.00136
	(A1 * A2 * !B2 * C1 * !Y)	0.00172	0.00173	0.00171
	(A1 * A2 * !B2 * C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	0.00170	0.00172	0.00170
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00135	-0.00136	-0.00136
	(A1 * !A2 * B2 * C1 * !Y)	0.00193	0.00183	0.00180
	(A1 * !A2 * B2 * C1 * !Y)	-0.00204	-0.00219	-0.00219
	(A1 * !A2 * !B2 * C1 * !Y)	0.00170	0.00171	0.00170
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00226	-0.00226	-0.00225
	(A1 * !A2 * !B2 * !C1 * Y)	0.00063	0.00063	0.00060
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00265	-0.00265	-0.00270
	(!A1 * B2 * C1 * !Y)	0.00191	0.00183	0.00180
	(!A1 * B2 * C1 * !Y)	-0.00202	-0.00220	-0.00219
	(!A1 * !B2 * C1 * !Y)	0.00169	0.00171	0.00170
	(!A1 * !B2 * C1 * !Y)	-0.00224	-0.00226	-0.00225
	(!A1 * !B2 * !C1 * Y)	0.00063	0.00063	0.00060
	(!A1 * !B2 * !C1 * Y)	-0.00265	-0.00265	-0.00270

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00362	0.00362	0.00357
	(A1 * A2 * B2 * C1 * !Y)	-0.00315	-0.00315	-0.00313
	(A1 * A2 * B2 * !C1 * !Y)	0.00358	0.00358	0.00356
	(A1 * A2 * B2 * !C1 * !Y)	-0.00260	-0.00259	-0.00258
	(A1 * A2 * !B2 * C1 * !Y)	0.00334	0.00337	0.00335
	(A1 * A2 * !B2 * C1 * !Y)	-0.00296	-0.00300	-0.00296
	(A1 * A2 * !B2 * !C1 * !Y)	0.00336	0.00338	0.00335
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00258	-0.00258	-0.00258
	(A1 * !A2 * B2 * C1 * !Y)	0.00383	0.00360	0.00355
	(A1 * !A2 * B2 * C1 * !Y)	-0.00372	-0.00416	-0.00417
	(A1 * !A2 * !B2 * C1 * !Y)	0.00334	0.00336	0.00334
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00439	-0.00439	-0.00437
	(A1 * !A2 * !B2 * !C1 * Y)	0.00127	0.00126	0.00119
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00510	-0.00510	-0.00522
	(!A1 * B2 * C1 * !Y)	0.00384	0.00360	0.00355
	(!A1 * B2 * C1 * !Y)	-0.00374	-0.00419	-0.00418
	(!A1 * !B2 * C1 * !Y)	0.00334	0.00336	0.00334
	(!A1 * !B2 * C1 * !Y)	-0.00437	-0.00439	-0.00437
	(!A1 * !B2 * !C1 * Y)	0.00127	0.00126	0.00119
	(!A1 * !B2 * !C1 * Y)	-0.00510	-0.00510	-0.00522

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)**	-0.00089	-0.00090	-0.00090
	(A1 * A2 * B2 * C1 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * B2 * !C1 * !Y)	-0.00082	-0.00082	-0.00084
	(A1 * A2 * B2 * !C1 * !Y)	0.00073	0.00073	0.00071
	(A1 * A2 * !B2 * C1 * !Y)	-0.00082	-0.00085	-0.00084
	(A1 * A2 * !B2 * C1 * !Y)	0.00077	0.00077	0.00076
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00082	-0.00085	-0.00084
	(A1 * A2 * !B2 * !C1 * !Y)	0.00066	0.00066	0.00065
	(A1 * !A2 * B2 * C1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * B2 * C1 * !Y)	0.00106	0.00106	0.00105
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00081	-0.00084	-0.00083
	(A1 * !A2 * !B2 * C1 * !Y)	0.00109	0.00108	0.00109
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(A1 * !A2 * !B2 * !C1 * Y)	0.00129	0.00130	0.00129
	(!A1 * B2 * C1 * !Y)	-0.00089	-0.00089	-0.00089
	(!A1 * B2 * C1 * !Y)	0.00105	0.00105	0.00106
	(!A1 * !B2 * C1 * !Y)	-0.00081	-0.00084	-0.00083
	(!A1 * !B2 * C1 * !Y)	0.00109	0.00109	0.00109
	(!A1 * !B2 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A1 * !B2 * !C1 * Y)	0.00129	0.00130	0.00129

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00181	-0.00182	-0.00181
	(A1 * A2 * B2 * C1 * !Y)	0.00164	0.00165	0.00164
	(A1 * A2 * B2 * !C1 * !Y)	-0.00171	-0.00172	-0.00172
	(A1 * A2 * B2 * !C1 * !Y)	0.00144	0.00145	0.00145
	(A1 * A2 * !B2 * C1 * !Y)	-0.00166	-0.00172	-0.00171
	(A1 * A2 * !B2 * C1 * !Y)	0.00155	0.00155	0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00165	-0.00172	-0.00170
	(A1 * A2 * !B2 * !C1 * !Y)	0.00137	0.00136	0.00136
	(A1 * !A2 * B2 * C1 * !Y)	-0.00179	-0.00180	-0.00180
	(A1 * !A2 * B2 * C1 * !Y)	0.00217	0.00219	0.00219
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00165	-0.00171	-0.00170
	(A1 * !A2 * !B2 * C1 * !Y)	0.00227	0.00228	0.00226
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00058	-0.00059	-0.00058
	(A1 * !A2 * !B2 * !C1 * Y)	0.00270	0.00271	0.00270
	(!A1 * B2 * C1 * !Y)	-0.00180	-0.00180	-0.00180
	(!A1 * B2 * C1 * !Y)	0.00218	0.00220	0.00219
	(!A1 * !B2 * C1 * !Y)	-0.00164	-0.00171	-0.00170
	(!A1 * !B2 * C1 * !Y)	0.00226	0.00228	0.00226
	(!A1 * !B2 * !C1 * Y)	-0.00058	-0.00059	-0.00058
	(!A1 * !B2 * !C1 * Y)	0.00270	0.00271	0.00270

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00357	-0.00357	-0.00356
	(A1 * A2 * B2 * C1 * !Y)	0.00315	0.00315	0.00313
	(A1 * A2 * B2 * !C1 * !Y)	-0.00340	-0.00343	-0.00341
	(A1 * A2 * B2 * !C1 * !Y)	0.00279	0.00280	0.00274
	(A1 * A2 * !B2 * C1 * !Y)	-0.00321	-0.00337	-0.00335
	(A1 * A2 * !B2 * C1 * !Y)	0.00296	0.00300	0.00296
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00321	-0.00338	-0.00335
	(A1 * A2 * !B2 * !C1 * !Y)	0.00259	0.00258	0.00258
	(A1 * !A2 * B2 * C1 * !Y)	-0.00353	-0.00353	-0.00353
	(A1 * !A2 * B2 * C1 * !Y)	0.00416	0.00416	0.00417
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00320	-0.00336	-0.00334
	(A1 * !A2 * !B2 * C1 * !Y)	0.00440	0.00439	0.00438
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00116	-0.00116	-0.00115
	(A1 * !A2 * !B2 * !C1 * Y)	0.00524	0.00524	0.00522
	(!A1 * B2 * C1 * !Y)	-0.00353	-0.00355	-0.00353
	(!A1 * B2 * C1 * !Y)	0.00416	0.00419	0.00418
	(!A1 * !B2 * C1 * !Y)	-0.00318	-0.00336	-0.00334
	(!A1 * !B2 * C1 * !Y)	0.00437	0.00439	0.00438
	(!A1 * !B2 * !C1 * Y)	-0.00116	-0.00116	-0.00115
	(!A1 * !B2 * !C1 * Y)	0.00524	0.00524	0.00522

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)**	0.00094	0.00093	0.00093
	(A1 * A2 * B1 * C1 * !Y)	-0.00083	-0.00084	-0.00084
	(A1 * A2 * B1 * !C1 * !Y)	0.00092	0.00093	0.00092
	(A1 * A2 * B1 * !C1 * !Y)	-0.00068	-0.00069	-0.00068
	(A1 * A2 * !B1 * C1 * !Y)	0.00087	0.00089	0.00087
	(A1 * A2 * !B1 * C1 * !Y)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * !B1 * !C1 * !Y)	0.00087	0.00088	0.00087
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * B1 * C1 * !Y)	0.00098	0.00093	0.00092
	(A1 * !A2 * B1 * C1 * !Y)	-0.00102	-0.00110	-0.00109
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00086	0.00087	0.00086
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00112	-0.00112	-0.00112
	(A1 * !A2 * !B1 * !C1 * Y)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * C1 * !Y)	0.00098	0.00093	0.00092
	(!A1 * B1 * C1 * !Y)	-0.00102	-0.00110	-0.00109
	(!A1 * !B1 * !C1 * Y)	0.00080	0.00080	0.00080
	(!A1 * !B1 * !C1 * Y)	-0.00118	-0.00119	-0.00118

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00178	0.00178	0.00177
	(A1 * A2 * B1 * C1 * !Y)	-0.00154	-0.00155	-0.00154
	(A1 * A2 * B1 * !C1 * !Y)	0.00176	0.00176	0.00175
	(A1 * A2 * B1 * !C1 * !Y)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * !B1 * C1 * !Y)	0.00166	0.00169	0.00166
	(A1 * A2 * !B1 * C1 * !Y)	-0.00146	-0.00147	-0.00145
	(A1 * A2 * !B1 * !C1 * !Y)	0.00165	0.00167	0.00165
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * B1 * C1 * !Y)	0.00186	0.00177	0.00175
	(A1 * !A2 * B1 * C1 * !Y)	-0.00191	-0.00206	-0.00205
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00165	0.00165	0.00165
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00211	-0.00211	-0.00210
	(A1 * !A2 * !B1 * !C1 * Y)	0.00159	0.00160	0.00158
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00217	-0.00217	-0.00216
	(!A1 * B1 * C1 * !Y)	0.00186	0.00177	0.00175
	(!A1 * B1 * C1 * !Y)	-0.00191	-0.00206	-0.00205
	(!A1 * !B1 * !C1 * Y)	0.00159	0.00158	0.00159
	(!A1 * !B1 * !C1 * Y)	-0.00217	-0.00217	-0.00216

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00364	0.00364	0.00358
	(A1 * A2 * B1 * C1 * !Y)	-0.00313	-0.00315	-0.00313
	(A1 * A2 * B1 * !C1 * !Y)	0.00357	0.00360	0.00357
	(A1 * A2 * B1 * !C1 * !Y)	-0.00257	-0.00259	-0.00259
	(A1 * A2 * !B1 * C1 * !Y)	0.00336	0.00338	0.00334
	(A1 * A2 * !B1 * C1 * !Y)	-0.00298	-0.00298	-0.00296
	(A1 * A2 * !B1 * !C1 * !Y)	0.00335	0.00338	0.00334
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00258	-0.00259	-0.00258
	(A1 * !A2 * B1 * C1 * !Y)	0.00386	0.00361	0.00356
	(A1 * !A2 * B1 * C1 * !Y)	-0.00375	-0.00419	-0.00417
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00334	0.00334	0.00333
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00438	-0.00438	-0.00437
	(A1 * !A2 * !B1 * !C1 * Y)	0.00333	0.00335	0.00333
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00438	-0.00439	-0.00436
	(!A1 * B1 * C1 * !Y)	0.00386	0.00361	0.00356
	(!A1 * B1 * C1 * !Y)	-0.00375	-0.00419	-0.00418
	(!A1 * !B1 * !C1 * Y)	0.00334	0.00336	0.00333
	(!A1 * !B1 * !C1 * Y)	-0.00438	-0.00439	-0.00436

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)**	-0.00092	-0.00093	-0.00092
	(A1 * A2 * B1 * C1 * !Y)	0.00083	0.00084	0.00084
	(A1 * A2 * B1 * !C1 * !Y)	-0.00086	-0.00086	-0.00087
	(A1 * A2 * B1 * !C1 * !Y)	0.00075	0.00075	0.00073
	(A1 * A2 * !B1 * C1 * !Y)	-0.00085	-0.00088	-0.00087
	(A1 * A2 * !B1 * C1 * !Y)	0.00079	0.00080	0.00079
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00085	-0.00087	-0.00087
	(A1 * A2 * !B1 * !C1 * !Y)	0.00068	0.00068	0.00068
	(A1 * !A2 * B1 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * B1 * C1 * !Y)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00084	-0.00087	-0.00086
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00075	-0.00081	-0.00080
	(A1 * !A2 * !B1 * !C1 * Y)	0.00121	0.00121	0.00119
	(!A1 * B1 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * B1 * C1 * !Y)	0.00109	0.00110	0.00109
	(!A1 * !B1 * !C1 * Y)	-0.00075	-0.00080	-0.00080
	(!A1 * !B1 * !C1 * Y)	0.00121	0.00121	0.00119

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00176	-0.00177	-0.00176
	(A1 * A2 * B1 * C1 * !Y)	0.00154	0.00155	0.00154
	(A1 * A2 * B1 * !C1 * !Y)	-0.00164	-0.00165	-0.00166
	(A1 * A2 * B1 * !C1 * !Y)	0.00135	0.00135	0.00134
	(A1 * A2 * !B1 * C1 * !Y)	-0.00161	-0.00167	-0.00166
	(A1 * A2 * !B1 * C1 * !Y)	0.00146	0.00147	0.00145
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00161	-0.00167	-0.00165
	(A1 * A2 * !B1 * !C1 * !Y)	0.00125	0.00126	0.00125
	(A1 * !A2 * B1 * C1 * !Y)	-0.00174	-0.00176	-0.00175
	(A1 * !A2 * B1 * C1 * !Y)	0.00203	0.00206	0.00205
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00160	-0.00165	-0.00165
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00211	0.00211	0.00211
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00150	-0.00160	-0.00158
	(A1 * !A2 * !B1 * !C1 * Y)	0.00222	0.00219	0.00217
	(!A1 * B1 * C1 * !Y)	-0.00175	-0.00176	-0.00175
	(!A1 * B1 * C1 * !Y)	0.00204	0.00206	0.00205
	(!A1 * !B1 * !C1 * Y)	-0.00150	-0.00158	-0.00159
	(!A1 * !B1 * !C1 * Y)	0.00222	0.00219	0.00217

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00357	-0.00358	-0.00357
	(A1 * A2 * B1 * C1 * !Y)	0.00313	0.00315	0.00313
	(A1 * A2 * B1 * !C1 * !Y)	-0.00340	-0.00342	-0.00342
	(A1 * A2 * B1 * !C1 * !Y)	0.00280	0.00280	0.00274
	(A1 * A2 * !B1 * C1 * !Y)	-0.00325	-0.00337	-0.00334
	(A1 * A2 * !B1 * C1 * !Y)	0.00298	0.00298	0.00296
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00324	-0.00337	-0.00334
	(A1 * A2 * !B1 * !C1 * !Y)	0.00259	0.00259	0.00258
	(A1 * !A2 * B1 * C1 * !Y)	-0.00354	-0.00356	-0.00354
	(A1 * !A2 * B1 * C1 * !Y)	0.00416	0.00419	0.00417
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00323	-0.00334	-0.00333
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00439	0.00441	0.00438
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00315	-0.00335	-0.00333
	(A1 * !A2 * !B1 * !C1 * Y)	0.00449	0.00442	0.00438
	(!A1 * B1 * C1 * !Y)	-0.00354	-0.00356	-0.00354
	(!A1 * B1 * C1 * !Y)	0.00416	0.00419	0.00418
	(!A1 * !B1 * !C1 * Y)	-0.00316	-0.00335	-0.00333
	(!A1 * !B1 * !C1 * Y)	0.00449	0.00442	0.00438

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)	0.00107	0.00108	0.00107
	(A1 * B1 * B2 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B1 * !B2 * !Y)	0.00109	0.00108	0.00107
	(A1 * A2 * B1 * !B2 * !Y)	-0.00063	-0.00062	-0.00062
	(A1 * A2 * !B1 * !Y)	0.00109	0.00108	0.00107
	(A1 * A2 * !B1 * !Y)	-0.00063	-0.00062	-0.00062
	(!A1 * B1 * B2 * !Y)	0.00109	0.00108	0.00107
	(!A1 * B1 * B2 * !Y)	-0.00063	-0.00063	-0.00062
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00201	0.00202	0.00201
	(A1 * B1 * B2 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * B1 * !B2 * !Y)	0.00200	0.00202	0.00201
	(A1 * A2 * B1 * !B2 * !Y)	-0.00113	-0.00114	-0.00114
	(A1 * A2 * !B1 * !Y)	0.00201	0.00202	0.00201
	(A1 * A2 * !B1 * !Y)	-0.00114	-0.00115	-0.00114
	(!A1 * B1 * B2 * !Y)	0.00201	0.00202	0.00201
	(!A1 * B1 * B2 * !Y)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00396	0.00399	0.00397
	(A1 * B1 * B2 * !Y)	-0.00228	-0.00230	-0.00229
	(A1 * A2 * B1 * !B2 * !Y)	0.00396	0.00400	0.00397
	(A1 * A2 * B1 * !B2 * !Y)	-0.00229	-0.00230	-0.00229
	(A1 * A2 * !B1 * !Y)	0.00396	0.00400	0.00397
	(A1 * A2 * !B1 * !Y)	-0.00229	-0.00230	-0.00229
	(!A1 * B1 * B2 * !Y)	0.00396	0.00400	0.00397
	(!A1 * B1 * B2 * !Y)	-0.00230	-0.00231	-0.00230

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)	-0.00097	-0.00098	-0.00106
	(A1 * B1 * B2 * !Y)	0.00071	0.00071	0.00064
	(A1 * A2 * B1 * !B2 * !Y)	-0.00082	-0.00083	-0.00102
	(A1 * A2 * B1 * !B2 * !Y)	0.00082	0.00081	0.00067
	(A1 * A2 * !B1 * !Y)	-0.00082	-0.00083	-0.00102
	(A1 * A2 * !B1 * !Y)	0.00082	0.00081	0.00067
	(!A1 * B1 * B2 * !Y)	-0.00097	-0.00098	-0.00106
	(!A1 * B1 * B2 * !Y)	0.00072	0.00071	0.00065
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00182	-0.00183	-0.00198
	(A1 * B1 * B2 * !Y)	0.00132	0.00131	0.00118
	(A1 * A2 * B1 * !B2 * !Y)	-0.00155	-0.00158	-0.00192
	(A1 * A2 * B1 * !B2 * !Y)	0.00147	0.00147	0.00122
	(A1 * A2 * !B1 * !Y)	-0.00155	-0.00158	-0.00192
	(A1 * A2 * !B1 * !Y)	0.00147	0.00147	0.00122
	(!A1 * B1 * B2 * !Y)	-0.00181	-0.00183	-0.00198
	(!A1 * B1 * B2 * !Y)	0.00131	0.00132	0.00119
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00360	-0.00365	-0.00392
	(A1 * B1 * B2 * !Y)	0.00255	0.00256	0.00236
	(A1 * A2 * B1 * !B2 * !Y)	-0.00309	-0.00314	-0.00380
	(A1 * A2 * B1 * !B2 * !Y)	0.00293	0.00293	0.00246
	(A1 * A2 * !B1 * !Y)	-0.00309	-0.00314	-0.00380
	(A1 * A2 * !B1 * !Y)	0.00294	0.00293	0.00246
	(!A1 * B1 * B2 * !Y)	-0.00361	-0.00364	-0.00392
	(!A1 * B1 * B2 * !Y)	0.00257	0.00257	0.00237

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00249	0.00257	0.00246	0.00246	0.00244	0.66147
sky130_fd_sc_hs__a221o_2	0.00260	0.00266	0.00267	0.00268	0.00259	1.26064
sky130_fd_sc_hs__a221o_4	0.00457	0.00455	0.00472	0.00481	0.00467	2.13975

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.02986	0.04770
sky130_fd_sc_hs__a221o_2	0.00000	0.03684	0.05131
sky130_fd_sc_hs__a221o_4	0.00000	0.07509	0.10263

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)	0.13913	0.94274	7.77026
	A2->X (RR)	0.14482	0.94264	7.91389
	B1->X (RR)	0.13415	0.92025	7.66030
	B2->X (RR)	0.13952	0.92284	7.79874
	C1->X (RR)	0.10096	0.86158	7.56474
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.14322	0.84775	7.83434
	A2->X (RR)	0.14910	0.84019	7.93468
	B1->X (RR)	0.13913	0.83073	7.74900
	B2->X (RR)	0.14444	0.82491	7.84695
	C1->X (RR)	0.10128	0.76738	7.63349
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.16664	0.80878	7.81802
	A2->X (RR)	0.17426	0.78828	7.89954
	B1->X (RR)	0.15826	0.78000	7.68773
	B2->X (RR)	0.16663	0.76690	7.78258
	C1->X (RR)	0.10160	0.68287	7.52158

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.49895	1.15946	5.74061
	A2->X (FF)	0.54805	1.21366	5.86705
	B1->X (FF)	0.46110	1.11373	5.66097
	B2->X (FF)	0.50286	1.16594	5.82415
	C1->X (FF)	0.40659	1.03210	5.28685
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.63849	1.30747	6.21829
	A2->X (FF)	0.69258	1.36904	6.34561
	B1->X (FF)	0.61282	1.27462	6.24599
	B2->X (FF)	0.65136	1.32485	6.39416
	C1->X (FF)	0.55608	1.18854	5.89209
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.62754	1.23626	5.85430
	A2->X (FF)	0.69076	1.31036	6.01261
	B1->X (FF)	0.59543	1.20154	5.89828
	B2->X (FF)	0.64994	1.26700	6.07262
	C1->X (FF)	0.53787	1.11108	5.52929

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.00796	0.00787	0.00838
	A1	0.00388	0.00379	0.00437
	A2	0.00856	0.00847	0.00862
	A2	0.00390	0.00380	0.00402
	B1	0.00651	0.00646	0.00709
	B1	0.00286	0.00283	0.00353
	B2	0.00706	0.00702	0.00731
	B2	0.00290	0.00287	0.00325
	C1	0.00573	0.00563	0.00664
	C1	0.00198	0.00188	0.00310
sky130_fd_sc_hs__a221o_2	A1	0.00971	0.00973	0.01019
	A1	0.00537	0.00540	0.00595
	A2	0.01037	0.01040	0.01052
	A2	0.00539	0.00541	0.00564
	B1	0.00842	0.00855	0.00913
	B1	0.00436	0.00449	0.00525
	B2	0.00903	0.00920	0.00948
	B2	0.00443	0.00461	0.00504
	C1	0.00764	0.00773	0.00859
	C1	0.00352	0.00359	0.00462

sky130_fd_sc_hs__a221o_4	**A1**	0.01908	0.01922	0.02033
	A1	0.01126	0.01141	0.01280
	A2	0.02013	0.02040	0.02084
	A2	0.01127	0.01155	0.01223
	B1	0.01618	0.01644	0.01782
	B1	0.00906	0.00934	0.01100
	B2	0.01743	0.01783	0.01849
	B2	0.00912	0.00953	0.01046
	C1	0.01405	0.01421	0.01612
	C1	0.00690	0.00705	0.00942

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00269	0.00272	0.00319
	A1	0.00700	0.00704	0.00709
	A2	0.00256	0.00255	0.00298
	A2	0.00768	0.00766	0.00768
	B1	0.00269	0.00263	0.00315
	B1	0.00634	0.00632	0.00653
	B2	0.00288	0.00289	0.00340
	B2	0.00698	0.00702	0.00719
	C1	0.00249	0.00258	0.00414
	C1	0.00641	0.00646	0.00769

sky130_fd_sc_hs__a221o_2	**A1**	0.00450	0.00469	0.00544
	A1	0.00912	0.00930	0.00943
	A2	0.00468	0.00484	0.00624
	A2	0.00989	0.01004	0.01013
	B1	0.00447	0.00457	0.00501
	B1	0.00852	0.00864	0.00888
	B2	0.00439	0.00462	0.00588
	B2	0.00922	0.00939	0.00962
	C1	0.00436	0.00459	0.00652
	C1	0.00869	0.00890	0.01013
sky130_fd_sc_hs__a221o_4	**A1**	0.00805	0.00850	0.01005
	A1	0.01634	0.01679	0.01718
	A2	0.00876	0.00919	0.01000
	A2	0.01798	0.01842	0.01868
	B1	0.00816	0.00850	0.01019
	B1	0.01524	0.01556	0.01601
	B2	0.00860	0.00903	0.00995
	B2	0.01675	0.01719	0.01759
	C1	0.00894	0.00926	0.01285
	C1	0.01580	0.01618	0.01860

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)**	0.00079	0.00079	0.00079
	(A2 * B1 * B2 * C1 * X)	-0.00096	-0.00100	-0.00099
	(A2 * B1 * B2 * !C1 * X)	0.00079	0.00079	0.00079
	(A2 * B1 * B2 * !C1 * X)	-0.00095	-0.00100	-0.00099
	(A2 * B1 * !B2 * C1 * X)	0.00080	0.00080	0.00079
	(A2 * B1 * !B2 * C1 * X)	-0.00092	-0.00096	-0.00096
	(A2 * !B1 * C1 * X)	0.00080	0.00080	0.00079
	(A2 * !B1 * C1 * X)	-0.00092	-0.00096	-0.00096
	(!A2 * B1 * B2 * C1 * X)	0.00074	0.00075	0.00074
	(!A2 * B1 * B2 * C1 * X)	-0.00102	-0.00103	-0.00103
	(!A2 * B1 * B2 * !C1 * X)	0.00074	0.00074	0.00074
	(!A2 * B1 * B2 * !C1 * X)	-0.00103	-0.00103	-0.00103
	(!A2 * B1 * !B2 * C1 * X)	0.00074	0.00075	0.00074
	(!A2 * B1 * !B2 * C1 * X)	-0.00103	-0.00103	-0.00103
	(!A2 * B1 * !B2 * !C1 * !X)	0.00028	0.00028	0.00027
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00120	-0.00121
	(!A2 * !B1 * C1 * X)	0.00074	0.00075	0.00074
	(!A2 * !B1 * C1 * X)	-0.00103	-0.00103	-0.00103
	(!A2 * !B1 * !C1 * !X)	0.00028	0.00028	0.00027
	(!A2 * !B1 * !C1 * !X)	-0.00119	-0.00120	-0.00121

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00090	0.00090	0.00090
	(A2 * B1 * B2 * C1 * X)	-0.00095	-0.00099	-0.00098
	(A2 * B1 * B2 * !C1 * X)	0.00090	0.00090	0.00090
	(A2 * B1 * B2 * !C1 * X)	-0.00095	-0.00099	-0.00098
	(A2 * B1 * !B2 * C1 * X)	0.00091	0.00089	0.00090
	(A2 * B1 * !B2 * C1 * X)	-0.00091	-0.00096	-0.00095
	(A2 * !B1 * C1 * X)	0.00091	0.00089	0.00090
	(A2 * !B1 * C1 * X)	-0.00091	-0.00096	-0.00095
	(!A2 * B1 * B2 * C1 * X)	0.00083	0.00084	0.00084
	(!A2 * B1 * B2 * C1 * X)	-0.00101	-0.00102	-0.00102
	(!A2 * B1 * B2 * !C1 * X)	0.00084	0.00084	0.00084
	(!A2 * B1 * B2 * !C1 * X)	-0.00102	-0.00102	-0.00102
	(!A2 * B1 * !B2 * C1 * X)	0.00083	0.00085	0.00084
	(!A2 * B1 * !B2 * C1 * X)	-0.00101	-0.00103	-0.00102
	(!A2 * B1 * !B2 * !C1 * !X)	0.00031	0.00031	0.00030
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00120	-0.00120	-0.00122
	(!A2 * !B1 * C1 * X)	0.00084	0.00085	0.00084
	(!A2 * !B1 * C1 * X)	-0.00102	-0.00102	-0.00102
	(!A2 * !B1 * !C1 * !X)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !C1 * !X)	-0.00120	-0.00120	-0.00122

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00179	0.00178	0.00177
	(A2 * B1 * B2 * C1 * X)	-0.00186	-0.00193	-0.00192
	(A2 * B1 * B2 * !C1 * X)	0.00179	0.00178	0.00177
	(A2 * B1 * B2 * !C1 * X)	-0.00186	-0.00193	-0.00192
	(A2 * B1 * !B2 * C1 * X)	0.00178	0.00178	0.00176
	(A2 * B1 * !B2 * C1 * X)	-0.00181	-0.00190	-0.00187
	(A2 * !B1 * C1 * X)	0.00178	0.00178	0.00176
	(A2 * !B1 * C1 * X)	-0.00181	-0.00190	-0.00187
	(!A2 * B1 * B2 * C1 * X)	0.00165	0.00167	0.00166
	(!A2 * B1 * B2 * C1 * X)	-0.00199	-0.00201	-0.00200
	(!A2 * B1 * B2 * !C1 * X)	0.00166	0.00166	0.00166
	(!A2 * B1 * B2 * !C1 * X)	-0.00200	-0.00200	-0.00200
	(!A2 * B1 * !B2 * C1 * X)	0.00165	0.00167	0.00166
	(!A2 * B1 * !B2 * C1 * X)	-0.00199	-0.00200	-0.00199
	(!A2 * B1 * !B2 * !C1 * !X)	0.00087	0.00087	0.00083
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00221	-0.00222	-0.00227
	(!A2 * !B1 * C1 * X)	0.00165	0.00167	0.00166
	(!A2 * !B1 * C1 * X)	-0.00199	-0.00200	-0.00199
	(!A2 * !B1 * !C1 * !X)	0.00087	0.00087	0.00083
	(!A2 * !B1 * !C1 * !X)	-0.00221	-0.00222	-0.00227

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)**	-0.00079	-0.00079	-0.00079
	(A2 * B1 * B2 * C1 * X)	0.00100	0.00100	0.00099
	(A2 * B1 * B2 * !C1 * X)	-0.00079	-0.00079	-0.00079
	(A2 * B1 * B2 * !C1 * X)	0.00100	0.00100	0.00099
	(A2 * B1 * !B2 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A2 * B1 * !B2 * C1 * X)	0.00097	0.00096	0.00096
	(A2 * !B1 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * C1 * X)	0.00096	0.00096	0.00096
	(!A2 * B1 * B2 * C1 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * B1 * B2 * C1 * X)	0.00103	0.00104	0.00103
	(!A2 * B1 * B2 * !C1 * X)	-0.00072	-0.00074	-0.00074
	(!A2 * B1 * B2 * !C1 * X)	0.00104	0.00104	0.00103
	(!A2 * B1 * !B2 * C1 * X)	-0.00072	-0.00075	-0.00074
	(!A2 * B1 * !B2 * C1 * X)	0.00104	0.00104	0.00103
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00026	-0.00027	-0.00026
	(!A2 * B1 * !B2 * !C1 * !X)	0.00121	0.00122	0.00121
	(!A2 * !B1 * C1 * X)	-0.00072	-0.00075	-0.00074
	(!A2 * !B1 * C1 * X)	0.00104	0.00104	0.00103
	(!A2 * !B1 * !C1 * !X)	-0.00026	-0.00027	-0.00026
	(!A2 * !B1 * !C1 * !X)	0.00121	0.00122	0.00121

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00090	-0.00090	-0.00089
	(A2 * B1 * B2 * C1 * X)	0.00099	0.00099	0.00098
	(A2 * B1 * B2 * !C1 * X)	-0.00090	-0.00090	-0.00089
	(A2 * B1 * B2 * !C1 * X)	0.00099	0.00099	0.00098
	(A2 * B1 * !B2 * C1 * X)	-0.00090	-0.00089	-0.00089
	(A2 * B1 * !B2 * C1 * X)	0.00096	0.00096	0.00095
	(A2 * !B1 * C1 * X)	-0.00090	-0.00089	-0.00089
	(A2 * !B1 * C1 * X)	0.00096	0.00096	0.00095
	(!A2 * B1 * B2 * C1 * X)	-0.00082	-0.00084	-0.00084
	(!A2 * B1 * B2 * C1 * X)	0.00101	0.00104	0.00102
	(!A2 * B1 * B2 * !C1 * X)	-0.00082	-0.00084	-0.00084
	(!A2 * B1 * B2 * !C1 * X)	0.00103	0.00102	0.00102
	(!A2 * B1 * !B2 * C1 * X)	-0.00081	-0.00085	-0.00084
	(!A2 * B1 * !B2 * C1 * X)	0.00101	0.00103	0.00102
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * B1 * !B2 * !C1 * !X)	0.00122	0.00123	0.00123
	(!A2 * !B1 * C1 * X)	-0.00082	-0.00085	-0.00084
	(!A2 * !B1 * C1 * X)	0.00103	0.00103	0.00102
	(!A2 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * !X)	0.00122	0.00123	0.00123

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00178	-0.00177	-0.00177
	(A2 * B1 * B2 * C1 * X)	0.00192	0.00193	0.00192
	(A2 * B1 * B2 * !C1 * X)	-0.00177	-0.00177	-0.00177
	(A2 * B1 * B2 * !C1 * X)	0.00192	0.00193	0.00192
	(A2 * B1 * !B2 * C1 * X)	-0.00177	-0.00177	-0.00176
	(A2 * B1 * !B2 * C1 * X)	0.00188	0.00190	0.00187
	(A2 * !B1 * C1 * X)	-0.00177	-0.00177	-0.00176
	(A2 * !B1 * C1 * X)	0.00188	0.00190	0.00187
	(!A2 * B1 * B2 * C1 * X)	-0.00160	-0.00167	-0.00166
	(!A2 * B1 * B2 * C1 * X)	0.00200	0.00202	0.00200
	(!A2 * B1 * B2 * !C1 * X)	-0.00159	-0.00166	-0.00166
	(!A2 * B1 * B2 * !C1 * X)	0.00200	0.00202	0.00200
	(!A2 * B1 * !B2 * C1 * X)	-0.00160	-0.00167	-0.00166
	(!A2 * B1 * !B2 * C1 * X)	0.00201	0.00200	0.00200
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00081	-0.00082	-0.00081
	(!A2 * B1 * !B2 * !C1 * !X)	0.00228	0.00231	0.00228
	(!A2 * !B1 * C1 * X)	-0.00160	-0.00167	-0.00166
	(!A2 * !B1 * C1 * X)	0.00201	0.00200	0.00200
	(!A2 * !B1 * !C1 * !X)	-0.00081	-0.00082	-0.00081
	(!A2 * !B1 * !C1 * !X)	0.00228	0.00231	0.00228

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)**	0.00092	0.00092	0.00092
	(A1 * B1 * B2 * C1 * X)	-0.00093	-0.00097	-0.00096
	(A1 * B1 * B2 * !C1 * X)	0.00092	0.00092	0.00092
	(A1 * B1 * B2 * !C1 * X)	-0.00092	-0.00096	-0.00096
	(A1 * B1 * !B2 * C1 * X)	0.00092	0.00093	0.00092
	(A1 * B1 * !B2 * C1 * X)	-0.00088	-0.00093	-0.00093
	(A1 * !B1 * C1 * X)	0.00092	0.00093	0.00092
	(A1 * !B1 * C1 * X)	-0.00088	-0.00093	-0.00093
	(!A1 * B1 * B2 * X)	0.00087	0.00088	0.00087
	(!A1 * B1 * B2 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00087	0.00088	0.00087
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * B1 * !B2 * !C1 * !X)	0.00073	0.00074	0.00074
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00073	0.00074	0.00074
	(!A1 * !B1 * !C1 * !X)	-0.00113	-0.00113	-0.00113

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00101	0.00100	0.00100
	(A1 * B1 * B2 * C1 * X)	-0.00092	-0.00096	-0.00095
	(A1 * B1 * B2 * !C1 * X)	0.00100	0.00100	0.00100
	(A1 * B1 * B2 * !C1 * X)	-0.00091	-0.00096	-0.00095
	(A1 * B1 * !B2 * C1 * X)	0.00101	0.00102	0.00100
	(A1 * B1 * !B2 * C1 * X)	-0.00088	-0.00093	-0.00092
	(A1 * !B1 * C1 * X)	0.00101	0.00102	0.00100
	(A1 * !B1 * C1 * X)	-0.00088	-0.00093	-0.00092
	(!A1 * B1 * B2 * X)	0.00095	0.00095	0.00095
	(!A1 * B1 * B2 * X)	-0.00098	-0.00099	-0.00098
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00094	0.00096	0.00095
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00098	-0.00099	-0.00098
	(!A1 * B1 * !B2 * !C1 * !X)	0.00082	0.00082	0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(!A1 * !B1 * !C1 * !X)	0.00082	0.00081	0.00081
	(!A1 * !B1 * !C1 * !X)	-0.00112	-0.00111	-0.00112

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00175	0.00176	0.00174
	(A1 * B1 * B2 * C1 * X)	-0.00183	-0.00191	-0.00190
	(A1 * B1 * B2 * !C1 * X)	0.00175	0.00176	0.00174
	(A1 * B1 * B2 * !C1 * X)	-0.00183	-0.00191	-0.00190
	(A1 * B1 * !B2 * C1 * X)	0.00175	0.00175	0.00174
	(A1 * B1 * !B2 * C1 * X)	-0.00177	-0.00188	-0.00186
	(A1 * !B1 * C1 * X)	0.00175	0.00175	0.00174
	(A1 * !B1 * C1 * X)	-0.00177	-0.00188	-0.00186
	(!A1 * B1 * B2 * X)	0.00165	0.00165	0.00165
	(!A1 * B1 * B2 * X)	-0.00198	-0.00198	-0.00198
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00164	0.00166	0.00164
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00198	-0.00199	-0.00198
	(!A1 * B1 * !B2 * !C1 * !X)	0.00160	0.00161	0.00160
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00202	-0.00204	-0.00202
	(!A1 * !B1 * !C1 * !X)	0.00160	0.00161	0.00160
	(!A1 * !B1 * !C1 * !X)	-0.00202	-0.00204	-0.00202

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)**	-0.00092	-0.00092	-0.00092
	(A1 * B1 * B2 * C1 * X)	0.00096	0.00097	0.00096
	(A1 * B1 * B2 * !C1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * B1 * B2 * !C1 * X)	0.00096	0.00097	0.00096
	(A1 * B1 * !B2 * C1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * B1 * !B2 * C1 * X)	0.00094	0.00093	0.00093
	(A1 * !B1 * C1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * !B1 * C1 * X)	0.00094	0.00093	0.00093
	(!A1 * B1 * B2 * X)	-0.00085	-0.00088	-0.00087
	(!A1 * B1 * B2 * X)	0.00099	0.00101	0.00099
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00085	-0.00088	-0.00087
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00099	0.00101	0.00099
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00069	-0.00074	-0.00074
	(!A1 * B1 * !B2 * !C1 * !X)	0.00116	0.00115	0.00113
	(!A1 * !B1 * !C1 * !X)	-0.00069	-0.00074	-0.00074
	(!A1 * !B1 * !C1 * !X)	0.00116	0.00115	0.00113

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00100	-0.00100	-0.00100
	(A1 * B1 * B2 * C1 * X)	0.00095	0.00096	0.00095
	(A1 * B1 * B2 * !C1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * B1 * B2 * !C1 * X)	0.00095	0.00096	0.00095
	(A1 * B1 * !B2 * C1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * B1 * !B2 * C1 * X)	0.00093	0.00093	0.00092
	(A1 * !B1 * C1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !B1 * C1 * X)	0.00093	0.00093	0.00092
	(!A1 * B1 * B2 * X)	-0.00092	-0.00095	-0.00095
	(!A1 * B1 * B2 * X)	0.00098	0.00100	0.00099
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00092	-0.00096	-0.00095
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00098	0.00100	0.00099
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00082	-0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	0.00115	0.00114	0.00112
	(!A1 * !B1 * !C1 * !X)	-0.00077	-0.00081	-0.00081
	(!A1 * !B1 * !C1 * !X)	0.00115	0.00114	0.00112

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00175	-0.00175	-0.00174
	(A1 * B1 * B2 * C1 * X)	0.00191	0.00191	0.00190
	(A1 * B1 * B2 * !C1 * X)	-0.00174	-0.00175	-0.00174
	(A1 * B1 * B2 * !C1 * X)	0.00189	0.00191	0.00190
	(A1 * B1 * !B2 * C1 * X)	-0.00174	-0.00175	-0.00174
	(A1 * B1 * !B2 * C1 * X)	0.00185	0.00188	0.00186
	(A1 * !B1 * C1 * X)	-0.00174	-0.00175	-0.00174
	(A1 * !B1 * C1 * X)	0.00185	0.00188	0.00186
	(!A1 * B1 * B2 * X)	-0.00159	-0.00165	-0.00165
	(!A1 * B1 * B2 * X)	0.00198	0.00201	0.00198
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00159	-0.00166	-0.00164
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00198	0.00201	0.00198
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00152	-0.00161	-0.00160
	(!A1 * B1 * !B2 * !C1 * !X)	0.00206	0.00206	0.00203
	(!A1 * !B1 * !C1 * !X)	-0.00152	-0.00161	-0.00160
	(!A1 * !B1 * !C1 * !X)	0.00206	0.00206	0.00203

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)**	0.00081	0.00081	0.00080
	(A1 * A2 * B2 * C1 * X)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * B2 * !C1 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * B2 * !C1 * X)	-0.00062	-0.00063	-0.00062
	(A1 * A2 * !B2 * C1 * X)	0.00075	0.00076	0.00075
	(A1 * A2 * !B2 * C1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * A2 * !B2 * !C1 * X)	0.00075	0.00076	0.00075
	(A1 * A2 * !B2 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B2 * C1 * X)	0.00085	0.00080	0.00079
	(A1 * !A2 * B2 * C1 * X)	-0.00091	-0.00100	-0.00099
	(A1 * !A2 * !B2 * C1 * X)	0.00074	0.00075	0.00074
	(A1 * !A2 * !B2 * C1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * !A2 * !B2 * !C1 * !X)	0.00027	0.00027	0.00026
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00119	-0.00120	-0.00122
	(!A1 * B2 * C1 * X)	0.00085	0.00080	0.00079
	(!A1 * B2 * C1 * X)	-0.00091	-0.00100	-0.00099
	(!A1 * !B2 * C1 * X)	0.00074	0.00075	0.00074
	(!A1 * !B2 * C1 * X)	-0.00102	-0.00101	-0.00102
	(!A1 * !B2 * !C1 * !X)	0.00027	0.00027	0.00026
	(!A1 * !B2 * !C1 * !X)	-0.00119	-0.00119	-0.00122

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00098	0.00098	0.00097
	(A1 * A2 * B2 * C1 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * B2 * !C1 * X)	0.00096	0.00096	0.00096
	(A1 * A2 * B2 * !C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * A2 * !B2 * C1 * X)	0.00090	0.00092	0.00091
	(A1 * A2 * !B2 * C1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * !B2 * !C1 * X)	0.00090	0.00091	0.00090
	(A1 * A2 * !B2 * !C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * B2 * C1 * X)	0.00101	0.00097	0.00095
	(A1 * !A2 * B2 * C1 * X)	-0.00092	-0.00101	-0.00100
	(A1 * !A2 * !B2 * C1 * X)	0.00089	0.00090	0.00090
	(A1 * !A2 * !B2 * C1 * X)	-0.00102	-0.00103	-0.00103
	(A1 * !A2 * !B2 * !C1 * !X)	0.00032	0.00032	0.00031
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00126	-0.00127	-0.00128
	(!A1 * B2 * C1 * X)	0.00101	0.00097	0.00095
	(!A1 * B2 * C1 * X)	-0.00092	-0.00101	-0.00100
	(!A1 * !B2 * C1 * X)	0.00089	0.00090	0.00090
	(!A1 * !B2 * C1 * X)	-0.00102	-0.00103	-0.00103
	(!A1 * !B2 * !C1 * !X)	0.00032	0.00032	0.00031
	(!A1 * !B2 * !C1 * !X)	-0.00126	-0.00127	-0.00128

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00173	0.00174	0.00172
	(A1 * A2 * B2 * C1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * A2 * B2 * !C1 * X)	0.00172	0.00171	0.00170
	(A1 * A2 * B2 * !C1 * X)	-0.00130	-0.00128	-0.00128
	(A1 * A2 * !B2 * C1 * X)	0.00164	0.00164	0.00163
	(A1 * A2 * !B2 * C1 * X)	-0.00146	-0.00148	-0.00146
	(A1 * A2 * !B2 * !C1 * X)	0.00162	0.00163	0.00162
	(A1 * A2 * !B2 * !C1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * B2 * C1 * X)	0.00180	0.00171	0.00169
	(A1 * !A2 * B2 * C1 * X)	-0.00184	-0.00200	-0.00200
	(A1 * !A2 * !B2 * C1 * X)	0.00161	0.00162	0.00161
	(A1 * !A2 * !B2 * C1 * X)	-0.00205	-0.00205	-0.00204
	(A1 * !A2 * !B2 * !C1 * !X)	0.00068	0.00068	0.00065
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00238	-0.00239	-0.00245
	(!A1 * B2 * C1 * X)	0.00180	0.00171	0.00169
	(!A1 * B2 * C1 * X)	-0.00184	-0.00200	-0.00200
	(!A1 * !B2 * C1 * X)	0.00161	0.00162	0.00161
	(!A1 * !B2 * C1 * X)	-0.00205	-0.00205	-0.00204
	(!A1 * !B2 * !C1 * !X)	0.00068	0.00068	0.00065
	(!A1 * !B2 * !C1 * !X)	-0.00238	-0.00239	-0.00245

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)**	-0.00080	-0.00080	-0.00080
	(A1 * A2 * B2 * C1 * X)	0.00075	0.00076	0.00075
	(A1 * A2 * B2 * !C1 * X)	-0.00074	-0.00074	-0.00075
	(A1 * A2 * B2 * !C1 * X)	0.00067	0.00067	0.00067
	(A1 * A2 * !B2 * C1 * X)	-0.00073	-0.00076	-0.00075
	(A1 * A2 * !B2 * C1 * X)	0.00071	0.00071	0.00071
	(A1 * A2 * !B2 * !C1 * X)	-0.00073	-0.00075	-0.00075
	(A1 * A2 * !B2 * !C1 * X)	0.00063	0.00062	0.00062
	(A1 * !A2 * B2 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * B2 * C1 * X)	0.00100	0.00100	0.00099
	(A1 * !A2 * !B2 * C1 * X)	-0.00073	-0.00075	-0.00074
	(A1 * !A2 * !B2 * C1 * X)	0.00102	0.00103	0.00102
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00025	-0.00025	-0.00025
	(A1 * !A2 * !B2 * !C1 * !X)	0.00121	0.00122	0.00122
	(!A1 * B2 * C1 * X)	-0.00079	-0.00080	-0.00079
	(!A1 * B2 * C1 * X)	0.00099	0.00100	0.00099
	(!A1 * !B2 * C1 * X)	-0.00073	-0.00075	-0.00074
	(!A1 * !B2 * C1 * X)	0.00102	0.00101	0.00102
	(!A1 * !B2 * !C1 * !X)	-0.00025	-0.00025	-0.00025
	(!A1 * !B2 * !C1 * !X)	0.00121	0.00122	0.00122

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00096	-0.00096	-0.00096
	(A1 * A2 * B2 * C1 * X)	0.00076	0.00077	0.00076
	(A1 * A2 * B2 * !C1 * X)	-0.00091	-0.00091	-0.00092
	(A1 * A2 * B2 * !C1 * X)	0.00068	0.00068	0.00068
	(A1 * A2 * !B2 * C1 * X)	-0.00089	-0.00092	-0.00091
	(A1 * A2 * !B2 * C1 * X)	0.00072	0.00073	0.00072
	(A1 * A2 * !B2 * !C1 * X)	-0.00088	-0.00091	-0.00090
	(A1 * A2 * !B2 * !C1 * X)	0.00064	0.00064	0.00064
	(A1 * !A2 * B2 * C1 * X)	-0.00096	-0.00096	-0.00095
	(A1 * !A2 * B2 * C1 * X)	0.00101	0.00101	0.00100
	(A1 * !A2 * !B2 * C1 * X)	-0.00088	-0.00090	-0.00090
	(A1 * !A2 * !B2 * C1 * X)	0.00104	0.00104	0.00103
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * !B2 * !C1 * !X)	0.00128	0.00129	0.00128
	(!A1 * B2 * C1 * X)	-0.00096	-0.00096	-0.00095
	(!A1 * B2 * C1 * X)	0.00101	0.00101	0.00100
	(!A1 * !B2 * C1 * X)	-0.00088	-0.00090	-0.00090
	(!A1 * !B2 * C1 * X)	0.00104	0.00104	0.00103
	(!A1 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !B2 * !C1 * !X)	0.00128	0.00129	0.00128

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00171	-0.00172	-0.00171
	(A1 * A2 * B2 * C1 * X)	0.00156	0.00157	0.00156
	(A1 * A2 * B2 * !C1 * X)	-0.00160	-0.00162	-0.00162
	(A1 * A2 * B2 * !C1 * X)	0.00136	0.00137	0.00137
	(A1 * A2 * !B2 * C1 * X)	-0.00157	-0.00164	-0.00163
	(A1 * A2 * !B2 * C1 * X)	0.00146	0.00148	0.00146
	(A1 * A2 * !B2 * !C1 * X)	-0.00156	-0.00163	-0.00162
	(A1 * A2 * !B2 * !C1 * X)	0.00129	0.00128	0.00128
	(A1 * !A2 * B2 * C1 * X)	-0.00168	-0.00169	-0.00168
	(A1 * !A2 * B2 * C1 * X)	0.00199	0.00200	0.00200
	(A1 * !A2 * !B2 * C1 * X)	-0.00156	-0.00162	-0.00161
	(A1 * !A2 * !B2 * C1 * X)	0.00206	0.00207	0.00205
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B2 * !C1 * !X)	0.00247	0.00246	0.00246
	(!A1 * B2 * C1 * X)	-0.00168	-0.00169	-0.00168
	(!A1 * B2 * C1 * X)	0.00199	0.00200	0.00200
	(!A1 * !B2 * C1 * X)	-0.00156	-0.00162	-0.00161
	(!A1 * !B2 * C1 * X)	0.00206	0.00207	0.00205
	(!A1 * !B2 * !C1 * !X)	-0.00063	-0.00063	-0.00063
	(!A1 * !B2 * !C1 * !X)	0.00247	0.00246	0.00246

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)**	0.00084	0.00084	0.00083
	(A1 * A2 * B1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * A2 * B1 * !C1 * X)	0.00082	0.00083	0.00082
	(A1 * A2 * B1 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !B1 * C1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !B1 * C1 * X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * !B1 * !C1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !B1 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * B1 * C1 * X)	0.00089	0.00083	0.00082
	(A1 * !A2 * B1 * C1 * X)	-0.00088	-0.00098	-0.00097
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00107	-0.00107	-0.00107
	(!A1 * B1 * C1 * X)	0.00089	0.00083	0.00082
	(!A1 * B1 * C1 * X)	-0.00088	-0.00098	-0.00097
	(!A1 * !B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(!A1 * !B1 * !C1 * !X)	-0.00107	-0.00108	-0.00107

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00100	0.00100	0.00099
	(A1 * A2 * B1 * C1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * A2 * B1 * !C1 * X)	0.00098	0.00099	0.00098
	(A1 * A2 * B1 * !C1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !B1 * C1 * X)	0.00093	0.00095	0.00093
	(A1 * A2 * !B1 * C1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !B1 * !C1 * X)	0.00093	0.00095	0.00093
	(A1 * A2 * !B1 * !C1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * B1 * C1 * X)	0.00104	0.00099	0.00098
	(A1 * !A2 * B1 * C1 * X)	-0.00085	-0.00094	-0.00093
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00092	0.00093	0.00092
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(!A1 * B1 * C1 * X)	0.00104	0.00099	0.00098
	(!A1 * B1 * C1 * X)	-0.00085	-0.00094	-0.00093
	(!A1 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00192	0.00193	0.00191
	(A1 * A2 * B1 * C1 * X)	-0.00149	-0.00150	-0.00149
	(A1 * A2 * B1 * !C1 * X)	0.00190	0.00192	0.00189
	(A1 * A2 * B1 * !C1 * X)	-0.00121	-0.00123	-0.00121
	(A1 * A2 * !B1 * C1 * X)	0.00181	0.00183	0.00182
	(A1 * A2 * !B1 * C1 * X)	-0.00140	-0.00141	-0.00140
	(A1 * A2 * !B1 * !C1 * X)	0.00180	0.00182	0.00181
	(A1 * A2 * !B1 * !C1 * X)	-0.00120	-0.00121	-0.00121
	(A1 * !A2 * B1 * C1 * X)	0.00199	0.00190	0.00188
	(A1 * !A2 * B1 * C1 * X)	-0.00178	-0.00194	-0.00193
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00179	0.00181	0.00180
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00197	-0.00198	-0.00197
	(A1 * !A2 * !B1 * !C1 * !X)	0.00174	0.00175	0.00175
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00202	-0.00203	-0.00203
	(!A1 * B1 * C1 * X)	0.00199	0.00190	0.00188
	(!A1 * B1 * C1 * X)	-0.00178	-0.00194	-0.00193
	(!A1 * !B1 * !C1 * !X)	0.00174	0.00175	0.00175
	(!A1 * !B1 * !C1 * !X)	-0.00202	-0.00203	-0.00203

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)**	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * C1 * X)	0.00074	0.00074	0.00074
	(A1 * A2 * B1 * !C1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * B1 * !C1 * X)	0.00065	0.00065	0.00065
	(A1 * A2 * !B1 * C1 * X)	-0.00076	-0.00079	-0.00078
	(A1 * A2 * !B1 * C1 * X)	0.00069	0.00070	0.00069
	(A1 * A2 * !B1 * !C1 * X)	-0.00076	-0.00078	-0.00078
	(A1 * A2 * !B1 * !C1 * X)	0.00061	0.00061	0.00061
	(A1 * !A2 * B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00075	-0.00078	-0.00077
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00099	0.00100	0.00100
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00065	-0.00070	-0.00069
	(A1 * !A2 * !B1 * !C1 * !X)	0.00110	0.00109	0.00108
	(!A1 * B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A1 * !B1 * !C1 * !X)	-0.00065	-0.00070	-0.00069
	(!A1 * !B1 * !C1 * !X)	0.00110	0.00109	0.00108

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00099	-0.00099	-0.00099
	(A1 * A2 * B1 * C1 * X)	0.00071	0.00071	0.00071
	(A1 * A2 * B1 * !C1 * X)	-0.00093	-0.00093	-0.00094
	(A1 * A2 * B1 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * C1 * X)	-0.00091	-0.00094	-0.00093
	(A1 * A2 * !B1 * C1 * X)	0.00067	0.00068	0.00067
	(A1 * A2 * !B1 * !C1 * X)	-0.00091	-0.00094	-0.00093
	(A1 * A2 * !B1 * !C1 * X)	0.00058	0.00058	0.00058
	(A1 * !A2 * B1 * C1 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * B1 * C1 * X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00090	-0.00093	-0.00092
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00096	0.00098	0.00096
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00081	-0.00080
	(A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00110	0.00108
	(!A1 * B1 * C1 * X)	-0.00098	-0.00099	-0.00098
	(!A1 * B1 * C1 * X)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !C1 * !X)	-0.00076	-0.00081	-0.00080
	(!A1 * !B1 * !C1 * !X)	0.00111	0.00110	0.00108

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00190	-0.00190	-0.00190
	(A1 * A2 * B1 * C1 * X)	0.00149	0.00150	0.00149
	(A1 * A2 * B1 * !C1 * X)	-0.00178	-0.00179	-0.00180
	(A1 * A2 * B1 * !C1 * X)	0.00131	0.00131	0.00131
	(A1 * A2 * !B1 * C1 * X)	-0.00178	-0.00183	-0.00182
	(A1 * A2 * !B1 * C1 * X)	0.00140	0.00141	0.00140
	(A1 * A2 * !B1 * !C1 * X)	-0.00177	-0.00182	-0.00181
	(A1 * A2 * !B1 * !C1 * X)	0.00121	0.00121	0.00121
	(A1 * !A2 * B1 * C1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * B1 * C1 * X)	0.00192	0.00194	0.00193
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00176	-0.00181	-0.00180
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00197	0.00198	0.00198
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00168	-0.00175	-0.00175
	(A1 * !A2 * !B1 * !C1 * !X)	0.00206	0.00204	0.00203
	(!A1 * B1 * C1 * X)	-0.00187	-0.00188	-0.00187
	(!A1 * B1 * C1 * X)	0.00192	0.00194	0.00193
	(!A1 * !B1 * !C1 * !X)	-0.00168	-0.00175	-0.00175
	(!A1 * !B1 * !C1 * !X)	0.00206	0.00204	0.00203

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)	0.00101	0.00101	0.00100
	(A1 * B1 * B2 * X)	-0.00054	-0.00054	-0.00053
	(A1 * A2 * B1 * !B2 * X)	0.00100	0.00101	0.00100
	(A1 * A2 * B1 * !B2 * X)	-0.00053	-0.00054	-0.00053
	(A1 * A2 * !B1 * X)	0.00101	0.00101	0.00100
	(A1 * A2 * !B1 * X)	-0.00053	-0.00054	-0.00053
	(!A1 * B1 * B2 * X)	0.00101	0.00101	0.00100
	(!A1 * B1 * B2 * X)	-0.00054	-0.00054	-0.00053
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00105	0.00105	0.00105
	(A1 * B1 * B2 * X)	-0.00054	-0.00054	-0.00053
	(A1 * A2 * B1 * !B2 * X)	0.00106	0.00105	0.00105
	(A1 * A2 * B1 * !B2 * X)	-0.00054	-0.00053	-0.00053
	(A1 * A2 * !B1 * X)	0.00106	0.00105	0.00105
	(A1 * A2 * !B1 * X)	-0.00054	-0.00053	-0.00053
	(!A1 * B1 * B2 * X)	0.00106	0.00105	0.00105
	(!A1 * B1 * B2 * X)	-0.00055	-0.00054	-0.00053
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00177	0.00178	0.00177
	(A1 * B1 * B2 * X)	-0.00113	-0.00114	-0.00113
	(A1 * A2 * B1 * !B2 * X)	0.00177	0.00178	0.00177
	(A1 * A2 * B1 * !B2 * X)	-0.00113	-0.00113	-0.00113
	(A1 * A2 * !B1 * X)	0.00177	0.00178	0.00177
	(A1 * A2 * !B1 * X)	-0.00113	-0.00113	-0.00113
	(!A1 * B1 * B2 * X)	0.00177	0.00178	0.00177
	(!A1 * B1 * B2 * X)	-0.00115	-0.00115	-0.00115

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)	-0.00091	-0.00092	-0.00099
	(A1 * B1 * B2 * X)	0.00062	0.00062	0.00055
	(A1 * A2 * B1 * !B2 * X)	-0.00080	-0.00081	-0.00096
	(A1 * A2 * B1 * !B2 * X)	0.00069	0.00069	0.00057
	(A1 * A2 * !B1 * X)	-0.00080	-0.00081	-0.00096
	(A1 * A2 * !B1 * X)	0.00069	0.00069	0.00057
	(!A1 * B1 * B2 * X)	-0.00091	-0.00092	-0.00099
	(!A1 * B1 * B2 * X)	0.00062	0.00062	0.00056
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00096	-0.00097	-0.00104
	(A1 * B1 * B2 * X)	0.00061	0.00061	0.00055
	(A1 * A2 * B1 * !B2 * X)	-0.00084	-0.00085	-0.00101
	(A1 * A2 * B1 * !B2 * X)	0.00069	0.00069	0.00057
	(A1 * A2 * !B1 * X)	-0.00084	-0.00085	-0.00101
	(A1 * A2 * !B1 * X)	0.00069	0.00069	0.00057
	(!A1 * B1 * B2 * X)	-0.00096	-0.00096	-0.00104
	(!A1 * B1 * B2 * X)	0.00062	0.00062	0.00056
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00157	-0.00159	-0.00174
	(A1 * B1 * B2 * X)	0.00132	0.00131	0.00118
	(A1 * A2 * B1 * !B2 * X)	-0.00132	-0.00134	-0.00168
	(A1 * A2 * B1 * !B2 * X)	0.00149	0.00148	0.00121
	(A1 * A2 * !B1 * X)	-0.00132	-0.00134	-0.00168
	(A1 * A2 * !B1 * X)	0.00149	0.00148	0.00121
	(!A1 * B1 * B2 * X)	-0.00157	-0.00158	-0.00174
	(!A1 * B1 * B2 * X)	0.00134	0.00133	0.00119

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00252	0.00236	0.00246	0.00247	0.00249	0.00258	0.16570
sky130_fd_sc_hs__a222oi_2	0.00506	0.00443	0.00499	0.00456	0.00452	0.00514	0.29935

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.02617	0.08817
sky130_fd_sc_hs__a222oi_2	0.00000	0.05234	0.17635

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)	0.48372	1.83687	11.72570
	A2->Y (FR)	0.52832	1.89041	11.79780
	B1->Y (FR)	0.43127	1.76557	11.98450
	B2->Y (FR)	0.48364	1.82977	12.08910
	C1->Y (FR)	0.32853	1.62611	11.54520
	C2->Y (FR)	0.37786	1.67894	11.59780
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.45764	1.59398	11.42070
	A2->Y (FR)	0.51589	1.66898	11.59140
	B1->Y (FR)	0.40314	1.51394	11.59930
	B2->Y (FR)	0.47097	1.61825	11.96990
	C1->Y (FR)	0.29591	1.39467	11.39740
	C2->Y (FR)	0.36128	1.46278	11.47470

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.06461	0.54102	4.09455
	A2->Y (RF)	0.06940	0.52129	3.94670
	B1->Y (RF)	0.06021	0.51561	4.03398
	B2->Y (RF)	0.06574	0.50014	3.88798
	C1->Y (RF)	0.04700	0.49103	3.99621
	C2->Y (RF)	0.05220	0.47613	3.85176
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.06037	0.49144	4.01077
	A2->Y (RF)	0.06584	0.47883	3.89354
	B1->Y (RF)	0.05743	0.46669	3.97819
	B2->Y (RF)	0.06363	0.46103	3.87132
	C1->Y (RF)	0.03955	0.42186	3.82713
	C2->Y (RF)	0.04649	0.41834	3.71314

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00121	0.00107	0.00106
	A1	0.00611	0.00598	0.00594
	A2	0.00138	0.00130	0.00129
	A2	0.00676	0.00669	0.00665
	B1	0.00124	0.00110	0.00109
	B1	0.00544	0.00529	0.00529
	B2	0.00143	0.00133	0.00132
	B2	0.00616	0.00606	0.00605
	C1	0.00117	0.00104	0.00134
	C1	0.00487	0.00474	0.00501
	C2	0.00139	0.00130	0.00160
	C2	0.00559	0.00551	0.00578
sky130_fd_sc_hs__a222oi_2	A1	0.00196	0.00168	0.00165
	A1	0.01174	0.01144	0.01141
	A2	0.00252	0.00233	0.00230
	A2	0.01297	0.01278	0.01273
	B1	0.00201	0.00172	0.00173
	B1	0.01050	0.01020	0.01018
	B2	0.00250	0.00229	0.00230
	B2	0.01172	0.01151	0.01151
	C1	0.00189	0.00168	0.00233
	C1	0.00897	0.00867	0.00903
	C2	0.00238	0.00218	0.00279
	C2	0.01072	0.01052	0.01109

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00748	0.00737	0.00734
	A1	0.00297	0.00286	0.00285
	A2	0.00797	0.00789	0.00777
	A2	0.00295	0.00285	0.00278
	B1	0.00579	0.00573	0.00576
	B1	0.00171	0.00163	0.00168
	B2	0.00635	0.00632	0.00627
	B2	0.00172	0.00163	0.00161
	C1	0.00426	0.00428	0.00435
	C1	0.00050	0.00046	0.00054
	C2	0.00480	0.00479	0.00482
	C2	0.00049	0.00043	0.00046
sky130_fd_sc_hs__a222oi_2	A1	0.01404	0.01381	0.01377
	A1	0.00503	0.00478	0.00479
	A2	0.01480	0.01462	0.01445
	A2	0.00505	0.00484	0.00475
	B1	0.01099	0.01084	0.01093
	B1	0.00276	0.00256	0.00270
	B2	0.01196	0.01183	0.01180
	B2	0.00292	0.00275	0.00274
	C1	0.00769	0.00768	0.00791
	C1	0.00047	0.00038	0.00060
	C2	0.00901	0.00894	0.00908
	C2	0.00044	0.00029	0.00040

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)**	0.00079	0.00078	0.00078
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00095	-0.00099	-0.00098
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00079	0.00079	0.00078
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00094	-0.00099	-0.00098
	(A2 * B1 * B2 * !C1 * !Y)	0.00079	0.00079	0.00078
	(A2 * B1 * B2 * !C1 * !Y)	-0.00094	-0.00099	-0.00098
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00079	0.00079	0.00078
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00091	-0.00096	-0.00096
	(A2 * !B1 * C1 * C2 * !Y)	0.00079	0.00079	0.00078
	(A2 * !B1 * C1 * C2 * !Y)	-0.00091	-0.00096	-0.00095
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00073	0.00074	0.00073
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00102	-0.00103	-0.00102
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00073	0.00074	0.00073
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00102	-0.00102	-0.00102
	(!A2 * B1 * B2 * !C1 * !Y)	0.00073	0.00073	0.00073
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00102	-0.00102	-0.00102
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00073	0.00074	0.00073
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00102	-0.00103	-0.00102
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00030	0.00030	0.00029
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00117	-0.00117	-0.00119
	(!A2 * B1 * !B2 * !C1 * Y)	0.00030	0.00030	0.00029
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00117	-0.00117	-0.00119
	(!A2 * !B1 * C1 * C2 * !Y)	0.00073	0.00074	0.00073
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00102	-0.00102	-0.00102
	(!A2 * !B1 * C1 * !C2 * Y)	0.00030	0.00030	0.00029
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00117	-0.00117	-0.00119
	(!A2 * !B1 * !C1 * Y)	0.00030	0.00030	0.00029
	(!A2 * !B1 * !C1 * Y)	-0.00117	-0.00117	-0.00119

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00163	0.00163	0.00162
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00193	-0.00201	-0.00199
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00163	0.00163	0.00162
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00192	-0.00200	-0.00199
	(A2 * B1 * B2 * !C1 * !Y)	0.00163	0.00163	0.00162
	(A2 * B1 * B2 * !C1 * !Y)	-0.00192	-0.00201	-0.00200
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00163	0.00163	0.00162
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00183	-0.00195	-0.00193
	(A2 * !B1 * C1 * C2 * !Y)	0.00163	0.00163	0.00162
	(A2 * !B1 * C1 * C2 * !Y)	-0.00182	-0.00194	-0.00193
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00153	0.00154	0.00153
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00208	-0.00208	-0.00207
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00152	0.00154	0.00153
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00207	-0.00208	-0.00207
	(!A2 * B1 * B2 * !C1 * !Y)	0.00153	0.00154	0.00153
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00208	-0.00208	-0.00207
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00153	0.00154	0.00153
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00208	-0.00208	-0.00207
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00059	0.00059	0.00056
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00246	-0.00246	-0.00249
	(!A2 * B1 * !B2 * !C1 * Y)	0.00059	0.00059	0.00056
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00246	-0.00246	-0.00249
	(!A2 * !B1 * C1 * C2 * !Y)	0.00153	0.00154	0.00153
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00208	-0.00208	-0.00207
	(!A2 * !B1 * C1 * !C2 * Y)	0.00059	0.00059	0.00056
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00246	-0.00246	-0.00249
	(!A2 * !B1 * !C1 * Y)	0.00059	0.00059	0.00056
	(!A2 * !B1 * !C1 * Y)	-0.00246	-0.00246	-0.00249

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)	-0.00078	-0.00078	-0.00078
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00099	0.00100	0.00098
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00078	-0.00079	-0.00078
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00099	0.00099	0.00098
	(A2 * B1 * B2 * !C1 * !Y)	-0.00078	-0.00078	-0.00078
	(A2 * B1 * B2 * !C1 * !Y)	0.00099	0.00099	0.00098
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00078	-0.00078	-0.00078
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00096	0.00096	0.00096
	(A2 * !B1 * C1 * C2 * !Y)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * C1 * C2 * !Y)	0.00096	0.00096	0.00095
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00071	-0.00074	-0.00073
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00102	0.00103	0.00102
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00072	-0.00074	-0.00073
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00103	0.00102	0.00102
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00072	-0.00073	-0.00073
	(!A2 * B1 * B2 * !C1 * !Y)	0.00103	0.00102	0.00102
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00072	-0.00074	-0.00073
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00103	0.00103	0.00103
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00028	-0.00028	-0.00028
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00118	0.00119	0.00119
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00028	-0.00028	-0.00028
	(!A2 * B1 * !B2 * !C1 * Y)	0.00119	0.00119	0.00119
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00072	-0.00074	-0.00073
	(!A2 * !B1 * C1 * C2 * !Y)	0.00103	0.00102	0.00103
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00028	-0.00028	-0.00028
	(!A2 * !B1 * C1 * !C2 * Y)	0.00118	0.00119	0.00119
	(!A2 * !B1 * !C1 * Y)	-0.00028	-0.00028	-0.00028
	(!A2 * !B1 * !C1 * Y)	0.00118	0.00119	0.00119

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00161	-0.00163	-0.00162
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00199	0.00202	0.00199
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00162	-0.00162	-0.00162
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00201	0.00200	0.00199
	(A2 * B1 * B2 * !C1 * !Y)	-0.00161	-0.00163	-0.00162
	(A2 * B1 * B2 * !C1 * !Y)	0.00198	0.00202	0.00200
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00162	-0.00162	-0.00161
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00195	0.00195	0.00193
	(A2 * !B1 * C1 * C2 * !Y)	-0.00161	-0.00162	-0.00161
	(A2 * !B1 * C1 * C2 * !Y)	0.00192	0.00194	0.00193
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00149	-0.00154	-0.00153
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00209	0.00208	0.00208
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00149	-0.00154	-0.00153
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00209	0.00208	0.00208
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00148	-0.00154	-0.00153
	(!A2 * B1 * B2 * !C1 * !Y)	0.00209	0.00208	0.00208
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00148	-0.00154	-0.00153
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00209	0.00209	0.00208
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00055	-0.00055	-0.00054
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00249	0.00251	0.00250
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00055	-0.00055	-0.00054
	(!A2 * B1 * !B2 * !C1 * Y)	0.00249	0.00251	0.00250
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00148	-0.00154	-0.00153
	(!A2 * !B1 * C1 * C2 * !Y)	0.00209	0.00209	0.00208
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00055	-0.00055	-0.00054
	(!A2 * !B1 * C1 * !C2 * Y)	0.00249	0.00251	0.00250
	(!A2 * !B1 * !C1 * Y)	-0.00054	-0.00055	-0.00054
	(!A2 * !B1 * !C1 * Y)	0.00249	0.00251	0.00250

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)	0.00082	0.00081	0.00081
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00095	-0.00099	-0.00098
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00082	0.00081	0.00081
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00095	-0.00099	-0.00098
	(A1 * B1 * B2 * !C1 * !Y)	0.00081	0.00081	0.00081
	(A1 * B1 * B2 * !C1 * !Y)	-0.00094	-0.00099	-0.00098
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00082	0.00082	0.00081
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00091	-0.00096	-0.00096
	(A1 * !B1 * C1 * C2 * !Y)	0.00082	0.00082	0.00081
	(A1 * !B1 * C1 * C2 * !Y)	-0.00091	-0.00096	-0.00096
	(!A1 * B1 * B2 * !Y)	0.00076	0.00077	0.00076
	(!A1 * B1 * B2 * !Y)	-0.00102	-0.00103	-0.00102
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00076	0.00077	0.00076
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00102	-0.00102	-0.00102
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00076	0.00077	0.00077
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00101	-0.00102	-0.00102
	(!A1 * B1 * !B2 * !C1 * Y)	0.00076	0.00077	0.00077
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00101	-0.00102	-0.00102
	(!A1 * !B1 * C1 * !C2 * Y)	0.00077	0.00077	0.00077
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00102	-0.00102	-0.00102
	(!A1 * !B1 * !C1 * Y)	0.00077	0.00077	0.00077
	(!A1 * !B1 * !C1 * Y)	-0.00102	-0.00102	-0.00102

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00153	0.00152	0.00152
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00179	-0.00185	-0.00185
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00152	0.00152	0.00152
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00177	-0.00187	-0.00185
	(A1 * B1 * B2 * !C1 * !Y)	0.00152	0.00153	0.00152
	(A1 * B1 * B2 * !C1 * !Y)	-0.00177	-0.00187	-0.00185
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00153	0.00154	0.00152
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00172	-0.00181	-0.00180
	(A1 * !B1 * C1 * C2 * !Y)	0.00153	0.00154	0.00152
	(A1 * !B1 * C1 * C2 * !Y)	-0.00171	-0.00181	-0.00180
	(!A1 * B1 * B2 * !Y)	0.00143	0.00144	0.00143
	(!A1 * B1 * B2 * !Y)	-0.00192	-0.00192	-0.00191
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00144	0.00144	0.00143
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00192	-0.00192	-0.00191
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00138	0.00139	0.00138
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00197	-0.00198	-0.00197
	(!A1 * B1 * !B2 * !C1 * Y)	0.00138	0.00139	0.00138
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00197	-0.00198	-0.00197
	(!A1 * !B1 * C1 * !C2 * Y)	0.00138	0.00139	0.00138
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00197	-0.00197	-0.00197
	(!A1 * !B1 * !C1 * Y)	0.00138	0.00138	0.00138
	(!A1 * !B1 * !C1 * Y)	-0.00197	-0.00197	-0.00197

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)**	-0.00081	-0.00081	-0.00081
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00098	0.00099	0.00098
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00098	0.00099	0.00098
	(A1 * B1 * B2 * !C1 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * B1 * B2 * !C1 * !Y)	0.00098	0.00099	0.00098
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00096	0.00096	0.00096
	(A1 * !B1 * C1 * C2 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * !B1 * C1 * C2 * !Y)	0.00096	0.00096	0.00096
	(!A1 * B1 * B2 * !Y)	-0.00075	-0.00077	-0.00076
	(!A1 * B1 * B2 * !Y)	0.00102	0.00104	0.00102
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00074	-0.00077	-0.00076
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00102	0.00104	0.00102
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00073	-0.00077	-0.00077
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00105	0.00104	0.00102
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00073	-0.00077	-0.00077
	(!A1 * B1 * !B2 * !C1 * Y)	0.00105	0.00104	0.00102
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00073	-0.00077	-0.00077
	(!A1 * !B1 * C1 * !C2 * Y)	0.00105	0.00104	0.00102
	(!A1 * !B1 * !C1 * Y)	-0.00073	-0.00077	-0.00077
	(!A1 * !B1 * !C1 * Y)	0.00105	0.00104	0.00102

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00151	-0.00152	-0.00152
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00185	0.00185	0.00185
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00151	-0.00152	-0.00152
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00185	0.00187	0.00185
	(A1 * B1 * B2 * !C1 * !Y)	-0.00151	-0.00153	-0.00152
	(A1 * B1 * B2 * !C1 * !Y)	0.00185	0.00187	0.00185
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00179	0.00181	0.00180
	(A1 * !B1 * C1 * C2 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * !B1 * C1 * C2 * !Y)	0.00179	0.00181	0.00180
	(!A1 * B1 * B2 * !Y)	-0.00140	-0.00144	-0.00143
	(!A1 * B1 * B2 * !Y)	0.00193	0.00194	0.00192
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00139	-0.00144	-0.00143
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00193	0.00194	0.00192
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00131	-0.00139	-0.00138
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00203	0.00200	0.00197
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00131	-0.00139	-0.00138
	(!A1 * B1 * !B2 * !C1 * Y)	0.00203	0.00200	0.00197
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00131	-0.00139	-0.00138
	(!A1 * !B1 * C1 * !C2 * Y)	0.00203	0.00200	0.00197
	(!A1 * !B1 * !C1 * Y)	-0.00131	-0.00138	-0.00138
	(!A1 * !B1 * !C1 * Y)	0.00203	0.00200	0.00197

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)**	0.00079	0.00079	0.00079
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00079	0.00078	0.00078
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00063	-0.00062	-0.00061
	(A1 * A2 * B2 * !C1 * !Y)	0.00078	0.00078	0.00078
	(A1 * A2 * B2 * !C1 * !Y)	-0.00061	-0.00062	-0.00061
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00074	0.00075	0.00074
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00070	-0.00072	-0.00070
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00073	0.00074	0.00073
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00061	-0.00062	-0.00061
	(A1 * A2 * !B2 * !C1 * !Y)	0.00073	0.00074	0.00073
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00061	-0.00062	-0.00061
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00084	0.00079	0.00078
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00089	-0.00098	-0.00097
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00073	0.00073	0.00073
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00027	0.00028	0.00027
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00115	-0.00116	-0.00118
	(A1 * !A2 * !B2 * !C1 * Y)	0.00027	0.00028	0.00027
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00115	-0.00116	-0.00118
	(!A1 * B2 * C1 * C2 * !Y)	0.00084	0.00079	0.00078
	(!A1 * B2 * C1 * C2 * !Y)	-0.00089	-0.00098	-0.00097
	(!A1 * !B2 * C1 * C2 * !Y)	0.00073	0.00073	0.00073
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00100	-0.00100	-0.00100
	(!A1 * !B2 * C1 * !C2 * Y)	0.00027	0.00028	0.00027
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00115	-0.00116	-0.00118
	(!A1 * !B2 * !C1 * Y)	0.00027	0.00028	0.00027
	(!A1 * !B2 * !C1 * Y)	-0.00115	-0.00116	-0.00118

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00165	0.00164	0.00163
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00150	-0.00151	-0.00150
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00162	0.00163	0.00162
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00128	-0.00128	-0.00128
	(A1 * A2 * B2 * !C1 * !Y)	0.00162	0.00163	0.00162
	(A1 * A2 * B2 * !C1 * !Y)	-0.00128	-0.00128	-0.00128
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00154	0.00155	0.00154
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00142	-0.00143	-0.00143
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00153	0.00155	0.00154
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00127	-0.00127	-0.00127
	(A1 * A2 * !B2 * !C1 * !Y)	0.00153	0.00155	0.00154
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00128	-0.00127	-0.00127
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00176	0.00164	0.00161
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00183	-0.00201	-0.00201
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00152	0.00153	0.00152
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00207	-0.00207	-0.00206
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00057	0.00057	0.00054
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00245	-0.00245	-0.00250
	(A1 * !A2 * !B2 * !C1 * Y)	0.00057	0.00057	0.00054
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00245	-0.00245	-0.00250
	(!A1 * B2 * C1 * C2 * !Y)	0.00176	0.00164	0.00161
	(!A1 * B2 * C1 * C2 * !Y)	-0.00184	-0.00201	-0.00201
	(!A1 * !B2 * C1 * C2 * !Y)	0.00152	0.00152	0.00152
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00207	-0.00206	-0.00206
	(!A1 * !B2 * C1 * !C2 * Y)	0.00057	0.00057	0.00054
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00245	-0.00245	-0.00250
	(!A1 * !B2 * !C1 * Y)	0.00057	0.00057	0.00054
	(!A1 * !B2 * !C1 * Y)	-0.00245	-0.00245	-0.00250

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)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00074	0.00074	0.00074
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00070	-0.00070	-0.00073
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00069	0.00069	0.00067
	(A1 * A2 * B2 * !C1 * !Y)	-0.00070	-0.00070	-0.00073
	(A1 * A2 * B2 * !C1 * !Y)	0.00069	0.00069	0.00067
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00072	-0.00075	-0.00074
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00070	0.00072	0.00070
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00072	-0.00074	-0.00073
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00062	0.00062	0.00061
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00072	-0.00074	-0.00073
	(A1 * A2 * !B2 * !C1 * !Y)	0.00062	0.00062	0.00061
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00071	-0.00073	-0.00073
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00101	0.00102	0.00100
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00026	-0.00026	-0.00026
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00118	0.00118	0.00118
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00026	-0.00026	-0.00026
	(A1 * !A2 * !B2 * !C1 * Y)	0.00118	0.00118	0.00118
	(!A1 * B2 * C1 * C2 * !Y)	-0.00077	-0.00078	-0.00077
	(!A1 * B2 * C1 * C2 * !Y)	0.00097	0.00098	0.00097
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00071	-0.00073	-0.00073
	(!A1 * !B2 * C1 * C2 * !Y)	0.00101	0.00100	0.00100
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00026	-0.00026	-0.00026
	(!A1 * !B2 * C1 * !C2 * Y)	0.00118	0.00118	0.00118
	(!A1 * !B2 * !C1 * Y)	-0.00026	-0.00026	-0.00026
	(!A1 * !B2 * !C1 * Y)	0.00118	0.00118	0.00118

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00162	-0.00163	-0.00163
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00150	0.00151	0.00150
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00150	-0.00151	-0.00153
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00139	0.00139	0.00137
	(A1 * A2 * B2 * !C1 * !Y)	-0.00149	-0.00151	-0.00153
	(A1 * A2 * B2 * !C1 * !Y)	0.00138	0.00139	0.00137
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00149	-0.00155	-0.00154
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00142	0.00143	0.00143
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00149	-0.00155	-0.00154
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00128	0.00127	0.00127
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00149	-0.00155	-0.00154
	(A1 * A2 * !B2 * !C1 * !Y)	0.00128	0.00127	0.00127
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00161	-0.00161	-0.00160
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00202	0.00201	0.00201
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00148	-0.00153	-0.00152
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00208	0.00207	0.00207
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00250	0.00251	0.00250
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * !B2 * !C1 * Y)	0.00250	0.00251	0.00250
	(!A1 * B2 * C1 * C2 * !Y)	-0.00160	-0.00161	-0.00160
	(!A1 * B2 * C1 * C2 * !Y)	0.00200	0.00201	0.00201
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00147	-0.00152	-0.00152
	(!A1 * !B2 * C1 * C2 * !Y)	0.00208	0.00208	0.00207
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !B2 * C1 * !C2 * Y)	0.00250	0.00251	0.00250
	(!A1 * !B2 * !C1 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !B2 * !C1 * Y)	0.00250	0.00251	0.00250

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)	0.00086	0.00087	0.00086
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00085	0.00086	0.00085
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B1 * !C1 * !Y)	0.00085	0.00086	0.00085
	(A1 * A2 * B1 * !C1 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00082	0.00083	0.00081
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00071	-0.00072	-0.00071
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00092	0.00086	0.00085
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00089	-0.00098	-0.00098
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00100	-0.00101	-0.00100
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00071	0.00071	0.00071
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00110	-0.00110	-0.00110
	(A1 * !A2 * !B1 * !C1 * Y)	0.00071	0.00071	0.00071
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00110	-0.00110	-0.00110
	(!A1 * B1 * C1 * C2 * !Y)	0.00092	0.00086	0.00085
	(!A1 * B1 * C1 * C2 * !Y)	-0.00089	-0.00098	-0.00098
	(!A1 * !B1 * C1 * !C2 * Y)	0.00071	0.00071	0.00071
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00110	-0.00110	-0.00110
	(!A1 * !B1 * !C1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !B1 * !C1 * Y)	-0.00110	-0.00110	-0.00110

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	0.00159	0.00160	0.00159
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00138	-0.00140	-0.00139
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00158	0.00159	0.00158
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * A2 * B1 * !C1 * !Y)	0.00158	0.00159	0.00158
	(A1 * A2 * B1 * !C1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00149	0.00151	0.00150
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00149	0.00150	0.00149
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00116	-0.00116	-0.00115
	(A1 * A2 * !B1 * !C1 * !Y)	0.00149	0.00150	0.00149
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00116	-0.00116	-0.00115
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00171	0.00160	0.00157
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00165	-0.00185	-0.00186
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00148	0.00149	0.00148
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00192	-0.00192	-0.00191
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00141	0.00142	0.00141
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * !B1 * !C1 * Y)	0.00141	0.00142	0.00141
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00199	-0.00200	-0.00199
	(!A1 * B1 * C1 * C2 * !Y)	0.00172	0.00160	0.00157
	(!A1 * B1 * C1 * C2 * !Y)	-0.00166	-0.00185	-0.00186
	(!A1 * !B1 * C1 * !C2 * Y)	0.00141	0.00142	0.00141
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00199	-0.00200	-0.00199
	(!A1 * !B1 * !C1 * Y)	0.00141	0.00142	0.00141
	(!A1 * !B1 * !C1 * Y)	-0.00199	-0.00200	-0.00199

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)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00074	0.00074	0.00074
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00077	-0.00078	-0.00080
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00069	0.00069	0.00067
	(A1 * A2 * B1 * !C1 * !Y)	-0.00077	-0.00078	-0.00080
	(A1 * A2 * B1 * !C1 * !Y)	0.00069	0.00069	0.00067
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00079	-0.00082	-0.00081
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00071	0.00072	0.00071
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00079	-0.00082	-0.00081
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00079	-0.00082	-0.00081
	(A1 * A2 * !B1 * !C1 * !Y)	0.00062	0.00062	0.00062
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00085	-0.00085	-0.00084
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00097	0.00098	0.00098
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00078	-0.00081	-0.00080
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00100	0.00102	0.00101
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00067	-0.00071	-0.00071
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00113	0.00112	0.00110
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00067	-0.00071	-0.00071
	(A1 * !A2 * !B1 * !C1 * Y)	0.00113	0.00112	0.00110
	(!A1 * B1 * C1 * C2 * !Y)	-0.00085	-0.00085	-0.00084
	(!A1 * B1 * C1 * C2 * !Y)	0.00098	0.00098	0.00098
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00067	-0.00071	-0.00071
	(!A1 * !B1 * C1 * !C2 * Y)	0.00113	0.00112	0.00110
	(!A1 * !B1 * !C1 * Y)	-0.00067	-0.00071	-0.00071
	(!A1 * !B1 * !C1 * Y)	0.00113	0.00112	0.00110

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	-0.00158	-0.00159	-0.00158
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00138	0.00140	0.00139
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00145	-0.00146	-0.00148
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00128	0.00127	0.00125
	(A1 * A2 * B1 * !C1 * !Y)	-0.00145	-0.00146	-0.00148
	(A1 * A2 * B1 * !C1 * !Y)	0.00128	0.00127	0.00125
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00146	-0.00151	-0.00150
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00133	0.00134	0.00133
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00145	-0.00150	-0.00149
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00116	0.00116	0.00115
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00145	-0.00150	-0.00149
	(A1 * A2 * !B1 * !C1 * !Y)	0.00116	0.00116	0.00115
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00157	-0.00157	-0.00156
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00186	0.00185	0.00186
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00144	-0.00149	-0.00148
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00192	0.00192	0.00192
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00133	-0.00142	-0.00141
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00205	0.00201	0.00199
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00133	-0.00142	-0.00141
	(A1 * !A2 * !B1 * !C1 * Y)	0.00205	0.00201	0.00199
	(!A1 * B1 * C1 * C2 * !Y)	-0.00156	-0.00156	-0.00156
	(!A1 * B1 * C1 * C2 * !Y)	0.00184	0.00185	0.00186
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00133	-0.00142	-0.00141
	(!A1 * !B1 * C1 * !C2 * Y)	0.00205	0.00201	0.00199
	(!A1 * !B1 * !C1 * Y)	-0.00133	-0.00142	-0.00141
	(!A1 * !B1 * !C1 * Y)	0.00205	0.00201	0.00199

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)	0.00094	0.00094	0.00094
	(A1 * B1 * B2 * C2 * !Y)	-0.00054	-0.00054	-0.00054
	(A1 * B1 * B2 * !C2 * !Y)	0.00089	0.00091	0.00089
	(A1 * B1 * B2 * !C2 * !Y)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00094	0.00094	0.00094
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00089	0.00090	0.00089
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * !B1 * C2 * !Y)	0.00094	0.00094	0.00094
	(A1 * A2 * !B1 * C2 * !Y)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * !B1 * !C2 * !Y)	0.00089	0.00090	0.00089
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00031	0.00031	0.00030
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00119	-0.00118	-0.00121
	(A1 * !A2 * !B1 * !C2 * Y)	0.00031	0.00031	0.00030
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00119	-0.00118	-0.00121
	(!A1 * B1 * B2 * C2 * !Y)	0.00094	0.00094	0.00094
	(!A1 * B1 * B2 * C2 * !Y)	-0.00054	-0.00054	-0.00054
	(!A1 * B1 * B2 * !C2 * !Y)	0.00089	0.00090	0.00089
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00054	-0.00054	-0.00054
	(!A1 * B1 * !B2 * !C2 * Y)	0.00031	0.00031	0.00030
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00119	-0.00118	-0.00121
	(!A1 * !B1 * !C2 * Y)	0.00031	0.00031	0.00030
	(!A1 * !B1 * !C2 * Y)	-0.00119	-0.00119	-0.00121

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00165	0.00166	0.00165
	(A1 * B1 * B2 * C2 * !Y)	-0.00106	-0.00106	-0.00106
	(A1 * B1 * B2 * !C2 * !Y)	0.00156	0.00157	0.00156
	(A1 * B1 * B2 * !C2 * !Y)	-0.00105	-0.00105	-0.00105
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00165	0.00166	0.00165
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00106	-0.00106	-0.00106
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00156	0.00158	0.00156
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00105	-0.00106	-0.00105
	(A1 * A2 * !B1 * C2 * !Y)	0.00165	0.00166	0.00165
	(A1 * A2 * !B1 * C2 * !Y)	-0.00106	-0.00106	-0.00106
	(A1 * A2 * !B1 * !C2 * !Y)	0.00156	0.00156	0.00156
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00105	-0.00105	-0.00105
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00055	0.00055	0.00053
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00220	-0.00220	-0.00225
	(A1 * !A2 * !B1 * !C2 * Y)	0.00055	0.00055	0.00053
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00220	-0.00221	-0.00225
	(!A1 * B1 * B2 * C2 * !Y)	0.00165	0.00166	0.00165
	(!A1 * B1 * B2 * C2 * !Y)	-0.00106	-0.00106	-0.00106
	(!A1 * B1 * B2 * !C2 * !Y)	0.00155	0.00157	0.00156
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00105	-0.00106	-0.00106
	(!A1 * B1 * !B2 * !C2 * Y)	0.00055	0.00055	0.00053
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00220	-0.00221	-0.00225
	(!A1 * !B1 * !C2 * Y)	0.00055	0.00055	0.00053
	(!A1 * !B1 * !C2 * Y)	-0.00220	-0.00220	-0.00225

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)**	-0.00084	-0.00084	-0.00093
	(A1 * B1 * B2 * C2 * !Y)	0.00064	0.00063	0.00056
	(A1 * B1 * B2 * !C2 * !Y)	-0.00088	-0.00091	-0.00089
	(A1 * B1 * B2 * !C2 * !Y)	0.00054	0.00055	0.00054
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00069	-0.00070	-0.00089
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00075	0.00074	0.00059
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00054	0.00054	0.00054
	(A1 * A2 * !B1 * C2 * !Y)	-0.00069	-0.00070	-0.00089
	(A1 * A2 * !B1 * C2 * !Y)	0.00074	0.00074	0.00059
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * A2 * !B1 * !C2 * !Y)	0.00054	0.00054	0.00054
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00029	-0.00029	-0.00029
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00121	0.00121	0.00121
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00029	-0.00029	-0.00029
	(A1 * !A2 * !B1 * !C2 * Y)	0.00121	0.00121	0.00121
	(!A1 * B1 * B2 * C2 * !Y)	-0.00084	-0.00084	-0.00093
	(!A1 * B1 * B2 * C2 * !Y)	0.00064	0.00063	0.00056
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00088	-0.00090	-0.00089
	(!A1 * B1 * B2 * !C2 * !Y)	0.00054	0.00054	0.00054
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00029	-0.00029	-0.00029
	(!A1 * B1 * !B2 * !C2 * Y)	0.00121	0.00121	0.00121
	(!A1 * !B1 * !C2 * Y)	-0.00029	-0.00029	-0.00029
	(!A1 * !B1 * !C2 * Y)	0.00121	0.00121	0.00121

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00145	-0.00147	-0.00162
	(A1 * B1 * B2 * C2 * !Y)	0.00123	0.00123	0.00110
	(A1 * B1 * B2 * !C2 * !Y)	-0.00152	-0.00157	-0.00156
	(A1 * B1 * B2 * !C2 * !Y)	0.00106	0.00105	0.00105
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00119	-0.00122	-0.00156
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00140	0.00140	0.00114
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00152	-0.00158	-0.00156
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00106	0.00106	0.00105
	(A1 * A2 * !B1 * C2 * !Y)	-0.00119	-0.00122	-0.00156
	(A1 * A2 * !B1 * C2 * !Y)	0.00140	0.00140	0.00114
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00152	-0.00156	-0.00156
	(A1 * A2 * !B1 * !C2 * !Y)	0.00106	0.00106	0.00105
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00052	-0.00051	-0.00051
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00226	0.00226	0.00225
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00052	-0.00051	-0.00051
	(A1 * !A2 * !B1 * !C2 * Y)	0.00226	0.00226	0.00225
	(!A1 * B1 * B2 * C2 * !Y)	-0.00145	-0.00147	-0.00162
	(!A1 * B1 * B2 * C2 * !Y)	0.00123	0.00123	0.00110
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00152	-0.00157	-0.00156
	(!A1 * B1 * B2 * !C2 * !Y)	0.00106	0.00106	0.00106
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00052	-0.00051	-0.00051
	(!A1 * B1 * !B2 * !C2 * Y)	0.00226	0.00226	0.00225
	(!A1 * !B1 * !C2 * Y)	-0.00052	-0.00051	-0.00051
	(!A1 * !B1 * !C2 * Y)	0.00226	0.00226	0.00225

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)**	0.00098	0.00098	0.00098
	(A1 * B1 * B2 * C1 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * B1 * B2 * !C1 * !Y)	0.00094	0.00095	0.00093
	(A1 * B1 * B2 * !C1 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00098	0.00098	0.00098
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00094	0.00095	0.00093
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * C1 * !Y)	0.00098	0.00098	0.00098
	(A1 * A2 * !B1 * C1 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * !C1 * !Y)	0.00094	0.00095	0.00093
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00072	0.00073	0.00072
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !B1 * !C1 * Y)	0.00072	0.00073	0.00072
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * B1 * B2 * C1 * !Y)	0.00098	0.00098	0.00098
	(!A1 * B1 * B2 * C1 * !Y)	-0.00055	-0.00056	-0.00055
	(!A1 * B1 * B2 * !C1 * !Y)	0.00094	0.00095	0.00093
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00055	-0.00055	-0.00055
	(!A1 * B1 * !B2 * !C1 * Y)	0.00072	0.00073	0.00072
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * !B1 * !C1 * Y)	0.00072	0.00073	0.00072
	(!A1 * !B1 * !C1 * Y)	-0.00112	-0.00113	-0.00112

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00195	0.00197	0.00196
	(A1 * B1 * B2 * C1 * !Y)	-0.00109	-0.00110	-0.00110
	(A1 * B1 * B2 * !C1 * !Y)	0.00188	0.00189	0.00188
	(A1 * B1 * B2 * !C1 * !Y)	-0.00109	-0.00110	-0.00109
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00196	0.00197	0.00196
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00110	-0.00110	-0.00110
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00188	0.00189	0.00188
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00109	-0.00110	-0.00109
	(A1 * A2 * !B1 * C1 * !Y)	0.00196	0.00198	0.00196
	(A1 * A2 * !B1 * C1 * !Y)	-0.00110	-0.00110	-0.00110
	(A1 * A2 * !B1 * !C1 * !Y)	0.00188	0.00189	0.00188
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00109	-0.00110	-0.00109
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00143	0.00145	0.00144
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00224	-0.00226	-0.00225
	(A1 * !A2 * !B1 * !C1 * Y)	0.00143	0.00144	0.00144
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00224	-0.00225	-0.00225
	(!A1 * B1 * B2 * C1 * !Y)	0.00196	0.00197	0.00196
	(!A1 * B1 * B2 * C1 * !Y)	-0.00110	-0.00111	-0.00110
	(!A1 * B1 * B2 * !C1 * !Y)	0.00188	0.00189	0.00188
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00109	-0.00110	-0.00110
	(!A1 * B1 * !B2 * !C1 * Y)	0.00143	0.00144	0.00144
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00224	-0.00225	-0.00225
	(!A1 * !B1 * !C1 * Y)	0.00143	0.00145	0.00144
	(!A1 * !B1 * !C1 * Y)	-0.00224	-0.00225	-0.00225

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)**	-0.00088	-0.00088	-0.00096
	(A1 * B1 * B2 * C1 * !Y)	0.00064	0.00064	0.00057
	(A1 * B1 * B2 * !C1 * !Y)	-0.00092	-0.00094	-0.00093
	(A1 * B1 * B2 * !C1 * !Y)	0.00055	0.00055	0.00055
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00072	-0.00073	-0.00093
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00075	0.00075	0.00060
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00092	-0.00094	-0.00093
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00055	0.00055	0.00055
	(A1 * A2 * !B1 * C1 * !Y)	-0.00072	-0.00073	-0.00093
	(A1 * A2 * !B1 * C1 * !Y)	0.00075	0.00075	0.00060
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00092	-0.00094	-0.00093
	(A1 * A2 * !B1 * !C1 * !Y)	0.00055	0.00055	0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00068	-0.00073	-0.00072
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00115	0.00114	0.00113
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00068	-0.00073	-0.00072
	(A1 * !A2 * !B1 * !C1 * Y)	0.00115	0.00114	0.00113
	(!A1 * B1 * B2 * C1 * !Y)	-0.00088	-0.00088	-0.00096
	(!A1 * B1 * B2 * C1 * !Y)	0.00065	0.00064	0.00058
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00092	-0.00094	-0.00093
	(!A1 * B1 * B2 * !C1 * !Y)	0.00055	0.00055	0.00055
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00068	-0.00073	-0.00072
	(!A1 * B1 * !B2 * !C1 * Y)	0.00115	0.00114	0.00113
	(!A1 * !B1 * !C1 * Y)	-0.00068	-0.00073	-0.00072
	(!A1 * !B1 * !C1 * Y)	0.00115	0.00114	0.00113

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00176	-0.00177	-0.00193
	(A1 * B1 * B2 * C1 * !Y)	0.00127	0.00127	0.00114
	(A1 * B1 * B2 * !C1 * !Y)	-0.00183	-0.00189	-0.00188
	(A1 * B1 * B2 * !C1 * !Y)	0.00109	0.00110	0.00109
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00150	-0.00152	-0.00187
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00144	0.00144	0.00118
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00183	-0.00189	-0.00188
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00109	0.00110	0.00109
	(A1 * A2 * !B1 * C1 * !Y)	-0.00150	-0.00152	-0.00187
	(A1 * A2 * !B1 * C1 * !Y)	0.00144	0.00144	0.00118
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00183	-0.00189	-0.00188
	(A1 * A2 * !B1 * !C1 * !Y)	0.00109	0.00110	0.00109
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00136	-0.00145	-0.00144
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00229	0.00227	0.00225
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00136	-0.00144	-0.00144
	(A1 * !A2 * !B1 * !C1 * Y)	0.00229	0.00227	0.00225
	(!A1 * B1 * B2 * C1 * !Y)	-0.00175	-0.00177	-0.00193
	(!A1 * B1 * B2 * C1 * !Y)	0.00127	0.00127	0.00114
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00183	-0.00189	-0.00188
	(!A1 * B1 * B2 * !C1 * !Y)	0.00109	0.00110	0.00110
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00136	-0.00144	-0.00144
	(!A1 * B1 * !B2 * !C1 * Y)	0.00229	0.00227	0.00225
	(!A1 * !B1 * !C1 * Y)	-0.00136	-0.00145	-0.00144
	(!A1 * !B1 * !C1 * Y)	0.00229	0.00227	0.00225

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00242	0.00247	0.00251	0.00241	0.00250	0.00256	0.65481
sky130_fd_sc_hs__a222o_2	0.00246	0.00231	0.00245	0.00240	0.00247	0.00261	1.16386

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.03590	0.09179
sky130_fd_sc_hs__a222o_2	0.00000	0.04563	0.09540

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)	0.15909	0.98891	7.94188
	A2->X (RR)	0.16501	0.98324	8.06157
	B1->X (RR)	0.15087	0.96435	7.83328
	B2->X (RR)	0.15552	0.95942	7.94616
	C1->X (RR)	0.13800	0.92904	7.70132
	C2->X (RR)	0.14317	0.92773	7.79659
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.18035	0.93362	8.03846
	A2->X (RR)	0.18814	0.91675	8.12914
	B1->X (RR)	0.16620	0.89812	7.93926
	B2->X (RR)	0.17126	0.88931	8.03050
	C1->X (RR)	0.15255	0.87064	7.84183
	C2->X (RR)	0.15866	0.86298	7.91971

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.62125	1.31403	6.19029
	A2->X (FF)	0.66884	1.36678	6.29987
	B1->X (FF)	0.58155	1.26546	6.14166
	B2->X (FF)	0.61671	1.31132	6.27475
	C1->X (FF)	0.44932	1.09593	5.55563
	C2->X (FF)	0.48919	1.14243	5.67541
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.73378	1.41389	6.28546
	A2->X (FF)	0.76217	1.45414	6.40737
	B1->X (FF)	0.69660	1.37019	6.35400
	B2->X (FF)	0.71454	1.39411	6.41992
	C1->X (FF)	0.56692	1.19931	5.81121
	C2->X (FF)	0.62012	1.25973	5.94586

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00933	0.00920	0.00957
	A1	0.00467	0.00454	0.00498
	A2	0.00989	0.00974	0.00980
	A2	0.00469	0.00454	0.00464
	B1	0.00786	0.00784	0.00838
	B1	0.00356	0.00354	0.00419
	B2	0.00832	0.00834	0.00856
	B2	0.00362	0.00363	0.00393
	C1	0.00591	0.00585	0.00678
	C1	0.00201	0.00196	0.00305
	C2	0.00640	0.00637	0.00689
	C2	0.00204	0.00200	0.00272
sky130_fd_sc_hs__a222o_2	A1	0.01089	0.01107	0.01156
	A1	0.00639	0.00657	0.00714
	A2	0.01143	0.01167	0.01191
	A2	0.00612	0.00637	0.00666
	B1	0.00931	0.00949	0.01012
	B1	0.00512	0.00529	0.00605
	B2	0.00980	0.01004	0.01034
	B2	0.00511	0.00532	0.00576
	C1	0.00771	0.00777	0.00861
	C1	0.00389	0.00395	0.00496
	C2	0.00826	0.00832	0.00879
	C2	0.00388	0.00394	0.00455

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00326	0.00329	0.00435
	A1	0.00826	0.00829	0.00831
	A2	0.00318	0.00314	0.00411
	A2	0.00895	0.00891	0.00889
	B1	0.00324	0.00319	0.00403
	B1	0.00765	0.00761	0.00773
	B2	0.00318	0.00320	0.00392
	B2	0.00823	0.00826	0.00835
	C1	0.00291	0.00289	0.00473
	C1	0.00701	0.00699	0.00817
	C2	0.00314	0.00324	0.00483
	C2	0.00764	0.00771	0.00881
sky130_fd_sc_hs__a222o_2	A1	0.00420	0.00423	0.00523
	A1	0.00931	0.00933	0.00936
	A2	0.00495	0.00523	0.00658
	A2	0.01028	0.01057	0.01069
	B1	0.00477	0.00498	0.00616
	B1	0.00904	0.00925	0.00950
	B2	0.00500	0.00524	0.00613
	B2	0.00973	0.00997	0.01021
	C1	0.00471	0.00489	0.00661
	C1	0.00843	0.00862	0.00982
	C2	0.00464	0.00471	0.00653
	C2	0.00916	0.00940	0.01055

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)**	0.00079	0.00079	0.00079
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00095	-0.00098	-0.00098
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00079	0.00079	0.00079
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00094	-0.00098	-0.00098
	(A2 * B1 * B2 * !C1 * X)	0.00079	0.00079	0.00079
	(A2 * B1 * B2 * !C1 * X)	-0.00094	-0.00098	-0.00098
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00080	0.00080	0.00079
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00091	-0.00095	-0.00095
	(A2 * !B1 * C1 * C2 * X)	0.00080	0.00080	0.00079
	(A2 * !B1 * C1 * C2 * X)	-0.00091	-0.00095	-0.00095
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00074	0.00075	0.00074
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00100	-0.00102	-0.00101
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00074	0.00074	0.00074
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00101	-0.00101	-0.00101
	(!A2 * B1 * B2 * !C1 * X)	0.00074	0.00074	0.00074
	(!A2 * B1 * B2 * !C1 * X)	-0.00101	-0.00101	-0.00101
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00074	0.00074	0.00074
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00101	-0.00101	-0.00101
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00029	0.00029	0.00028
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00117	-0.00117	-0.00119
	(!A2 * B1 * !B2 * !C1 * !X)	0.00029	0.00029	0.00028
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00117	-0.00117	-0.00119
	(!A2 * !B1 * C1 * C2 * X)	0.00074	0.00074	0.00074
	(!A2 * !B1 * C1 * C2 * X)	-0.00101	-0.00101	-0.00101
	(!A2 * !B1 * C1 * !C2 * !X)	0.00029	0.00029	0.00028
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00117	-0.00117	-0.00119
	(!A2 * !B1 * !C1 * !X)	0.00029	0.00029	0.00028
	(!A2 * !B1 * !C1 * !X)	-0.00117	-0.00117	-0.00119

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00085	0.00085	0.00085
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00095	-0.00097	-0.00097
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00085	0.00085	0.00085
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00094	-0.00097	-0.00097
	(A2 * B1 * B2 * !C1 * X)	0.00085	0.00085	0.00085
	(A2 * B1 * B2 * !C1 * X)	-0.00094	-0.00097	-0.00097
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00086	0.00086	0.00085
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00090	-0.00094	-0.00094
	(A2 * !B1 * C1 * C2 * X)	0.00086	0.00086	0.00085
	(A2 * !B1 * C1 * C2 * X)	-0.00090	-0.00094	-0.00094
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00081	0.00081	0.00081
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00099	-0.00100	-0.00099
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00081	0.00081	0.00081
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00099	-0.00099	-0.00099
	(!A2 * B1 * B2 * !C1 * X)	0.00081	0.00081	0.00081
	(!A2 * B1 * B2 * !C1 * X)	-0.00099	-0.00099	-0.00099
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00080	0.00081	0.00081
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00100	-0.00100	-0.00100
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00034	0.00034	0.00031
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00119	-0.00119	-0.00123
	(!A2 * B1 * !B2 * !C1 * !X)	0.00034	0.00034	0.00031
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00119	-0.00123
	(!A2 * !B1 * C1 * C2 * X)	0.00080	0.00081	0.00081
	(!A2 * !B1 * C1 * C2 * X)	-0.00100	-0.00100	-0.00100
	(!A2 * !B1 * C1 * !C2 * !X)	0.00034	0.00034	0.00031
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00119	-0.00119	-0.00123
	(!A2 * !B1 * !C1 * !X)	0.00034	0.00034	0.00031
	(!A2 * !B1 * !C1 * !X)	-0.00119	-0.00119	-0.00123

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)	-0.00079	-0.00079	-0.00079
	(A2 * B1 * B2 * C1 * C2 * X)	0.00098	0.00098	0.00098
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00079	-0.00079	-0.00079
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00098	0.00099	0.00098
	(A2 * B1 * B2 * !C1 * X)	-0.00079	-0.00079	-0.00079
	(A2 * B1 * B2 * !C1 * X)	0.00098	0.00098	0.00098
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00079	-0.00079	-0.00079
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00095	0.00095	0.00095
	(A2 * !B1 * C1 * C2 * X)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * C1 * C2 * X)	0.00095	0.00095	0.00095
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00072	-0.00075	-0.00074
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00100	0.00103	0.00101
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00072	-0.00074	-0.00074
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00102	0.00103	0.00101
	(!A2 * B1 * B2 * !C1 * X)	-0.00072	-0.00074	-0.00074
	(!A2 * B1 * B2 * !C1 * X)	0.00102	0.00103	0.00101
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00072	-0.00074	-0.00074
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00102	0.00101	0.00101
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00027	-0.00027	-0.00027
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00119	0.00120	0.00119
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00027	-0.00027	-0.00027
	(!A2 * B1 * !B2 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A2 * !B1 * C1 * C2 * X)	-0.00072	-0.00074	-0.00074
	(!A2 * !B1 * C1 * C2 * X)	0.00102	0.00101	0.00101
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00027	-0.00027	-0.00027
	(!A2 * !B1 * C1 * !C2 * !X)	0.00119	0.00120	0.00119
	(!A2 * !B1 * !C1 * !X)	-0.00027	-0.00027	-0.00027
	(!A2 * !B1 * !C1 * !X)	0.00119	0.00120	0.00119

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00085	-0.00085	-0.00085
	(A2 * B1 * B2 * C1 * C2 * X)	0.00098	0.00098	0.00097
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00085	-0.00085	-0.00085
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00098	0.00098	0.00097
	(A2 * B1 * B2 * !C1 * X)	-0.00085	-0.00085	-0.00085
	(A2 * B1 * B2 * !C1 * X)	0.00098	0.00098	0.00097
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00085	-0.00085	-0.00085
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00094	0.00094	0.00094
	(A2 * !B1 * C1 * C2 * X)	-0.00085	-0.00085	-0.00085
	(A2 * !B1 * C1 * C2 * X)	0.00094	0.00094	0.00094
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00078	-0.00081	-0.00081
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00099	0.00100	0.00099
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00078	-0.00081	-0.00081
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00099	0.00100	0.00099
	(!A2 * B1 * B2 * !C1 * X)	-0.00078	-0.00081	-0.00081
	(!A2 * B1 * B2 * !C1 * X)	0.00099	0.00100	0.00099
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00078	-0.00081	-0.00081
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00100	0.00101	0.00100
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00123	0.00124	0.00123
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * B1 * !B2 * !C1 * !X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * C1 * C2 * X)	-0.00077	-0.00081	-0.00081
	(!A2 * !B1 * C1 * C2 * X)	0.00100	0.00101	0.00100
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * C1 * !C2 * !X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !C1 * !X)	0.00123	0.00124	0.00123

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)	0.00089	0.00088	0.00088
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00091	-0.00095	-0.00094
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00088	0.00088	0.00088
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00090	-0.00095	-0.00094
	(A1 * B1 * B2 * !C1 * X)	0.00088	0.00088	0.00088
	(A1 * B1 * B2 * !C1 * X)	-0.00090	-0.00095	-0.00094
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00089	0.00090	0.00088
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00088	-0.00092	-0.00092
	(A1 * !B1 * C1 * C2 * X)	0.00089	0.00090	0.00088
	(A1 * !B1 * C1 * C2 * X)	-0.00088	-0.00092	-0.00092
	(!A1 * B1 * B2 * X)	0.00083	0.00084	0.00084
	(!A1 * B1 * B2 * X)	-0.00097	-0.00097	-0.00097
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00084	0.00085	0.00084
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00097	-0.00097	-0.00097
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00071	0.00072	0.00071
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00110	-0.00111	-0.00110
	(!A1 * B1 * !B2 * !C1 * !X)	0.00071	0.00072	0.00071
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00111	-0.00110
	(!A1 * !B1 * C1 * !C2 * !X)	0.00071	0.00072	0.00071
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00110	-0.00111	-0.00110
	(!A1 * !B1 * !C1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !B1 * !C1 * !X)	-0.00110	-0.00111	-0.00110

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00083	0.00083	0.00083
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00095	-0.00098	-0.00097
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00083	0.00083	0.00083
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00094	-0.00097	-0.00097
	(A1 * B1 * B2 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * B1 * B2 * !C1 * X)	-0.00094	-0.00097	-0.00097
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00084	0.00084	0.00083
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00090	-0.00094	-0.00094
	(A1 * !B1 * C1 * C2 * X)	0.00084	0.00084	0.00083
	(A1 * !B1 * C1 * C2 * X)	-0.00090	-0.00094	-0.00094
	(!A1 * B1 * B2 * X)	0.00078	0.00079	0.00078
	(!A1 * B1 * B2 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00078	0.00079	0.00078
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00099	-0.00099	-0.00099
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00078	0.00078	0.00078
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * B1 * !B2 * !C1 * !X)	0.00078	0.00078	0.00078
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * !B1 * C1 * !C2 * !X)	0.00077	0.00078	0.00078
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * !B1 * !C1 * !X)	0.00077	0.00078	0.00078
	(!A1 * !B1 * !C1 * !X)	-0.00100	-0.00100	-0.00100

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)**	-0.00088	-0.00088	-0.00088
	(A1 * B1 * B2 * C1 * C2 * X)	0.00094	0.00095	0.00094
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00088	-0.00088	-0.00088
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00094	0.00095	0.00094
	(A1 * B1 * B2 * !C1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * B1 * B2 * !C1 * X)	0.00094	0.00095	0.00094
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00088	-0.00088	-0.00088
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00092	0.00092	0.00092
	(A1 * !B1 * C1 * C2 * X)	-0.00088	-0.00088	-0.00088
	(A1 * !B1 * C1 * C2 * X)	0.00092	0.00092	0.00092
	(!A1 * B1 * B2 * X)	-0.00082	-0.00084	-0.00084
	(!A1 * B1 * B2 * X)	0.00097	0.00098	0.00097
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00082	-0.00085	-0.00084
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00097	0.00098	0.00097
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00067	-0.00071	-0.00071
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00113	0.00112	0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00067	-0.00071	-0.00071
	(!A1 * B1 * !B2 * !C1 * !X)	0.00113	0.00112	0.00110
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00067	-0.00071	-0.00071
	(!A1 * !B1 * C1 * !C2 * !X)	0.00113	0.00112	0.00110
	(!A1 * !B1 * !C1 * !X)	-0.00067	-0.00071	-0.00071
	(!A1 * !B1 * !C1 * !X)	0.00113	0.00112	0.00110

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00083	-0.00083	-0.00082
	(A1 * B1 * B2 * C1 * C2 * X)	0.00098	0.00098	0.00097
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00083	-0.00083	-0.00082
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00098	0.00098	0.00097
	(A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * B1 * B2 * !C1 * X)	0.00098	0.00098	0.00097
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00083	-0.00083	-0.00083
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00094	0.00094	0.00094
	(A1 * !B1 * C1 * C2 * X)	-0.00082	-0.00083	-0.00083
	(A1 * !B1 * C1 * C2 * X)	0.00093	0.00094	0.00094
	(!A1 * B1 * B2 * X)	-0.00075	-0.00079	-0.00078
	(!A1 * B1 * B2 * X)	0.00099	0.00101	0.00100
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00075	-0.00079	-0.00078
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00099	0.00101	0.00100
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00074	-0.00078	-0.00078
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00101	0.00101	0.00100
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00074	-0.00078	-0.00078
	(!A1 * B1 * !B2 * !C1 * !X)	0.00101	0.00101	0.00100
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00074	-0.00078	-0.00078
	(!A1 * !B1 * C1 * !C2 * !X)	0.00101	0.00101	0.00100
	(!A1 * !B1 * !C1 * !X)	-0.00074	-0.00078	-0.00078
	(!A1 * !B1 * !C1 * !X)	0.00101	0.00101	0.00100

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)**	0.00083	0.00083	0.00082
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00077	-0.00077	-0.00076
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00082	0.00082	0.00082
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00064	-0.00065	-0.00065
	(A1 * A2 * B2 * !C1 * X)	0.00081	0.00082	0.00082
	(A1 * A2 * B2 * !C1 * X)	-0.00064	-0.00065	-0.00065
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00073	-0.00075	-0.00074
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00077	0.00078	0.00077
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00064	-0.00065	-0.00065
	(A1 * A2 * !B2 * !C1 * X)	0.00077	0.00078	0.00077
	(A1 * A2 * !B2 * !C1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00086	0.00083	0.00082
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00094	-0.00100	-0.00101
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00077	0.00077	0.00077
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00030	0.00030	0.00029
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00122	-0.00123	-0.00124
	(A1 * !A2 * !B2 * !C1 * !X)	0.00030	0.00030	0.00029
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00122	-0.00123	-0.00124
	(!A1 * B2 * C1 * C2 * X)	0.00087	0.00083	0.00082
	(!A1 * B2 * C1 * C2 * X)	-0.00095	-0.00100	-0.00101
	(!A1 * !B2 * C1 * C2 * X)	0.00077	0.00077	0.00077
	(!A1 * !B2 * C1 * C2 * X)	-0.00104	-0.00104	-0.00104
	(!A1 * !B2 * C1 * !C2 * !X)	0.00030	0.00030	0.00029
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00122	-0.00123	-0.00124
	(!A1 * !B2 * !C1 * !X)	0.00030	0.00030	0.00029
	(!A1 * !B2 * !C1 * !X)	-0.00122	-0.00123	-0.00124

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00081	0.00080	0.00080
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00059	-0.00060	-0.00060
	(A1 * A2 * B2 * !C1 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * B2 * !C1 * X)	-0.00059	-0.00060	-0.00060
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00075	0.00076	0.00075
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00068	-0.00069	-0.00069
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00075	0.00074	0.00074
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00059	-0.00059	-0.00060
	(A1 * A2 * !B2 * !C1 * X)	0.00075	0.00074	0.00074
	(A1 * A2 * !B2 * !C1 * X)	-0.00060	-0.00059	-0.00060
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00087	0.00080	0.00079
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00085	-0.00095	-0.00094
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00074	0.00074	0.00074
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00029	0.00029	0.00028
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00113	-0.00114	-0.00115
	(A1 * !A2 * !B2 * !C1 * !X)	0.00029	0.00029	0.00028
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00113	-0.00114	-0.00115
	(!A1 * B2 * C1 * C2 * X)	0.00086	0.00080	0.00079
	(!A1 * B2 * C1 * C2 * X)	-0.00085	-0.00095	-0.00094
	(!A1 * !B2 * C1 * C2 * X)	0.00074	0.00074	0.00074
	(!A1 * !B2 * C1 * C2 * X)	-0.00098	-0.00098	-0.00098
	(!A1 * !B2 * C1 * !C2 * !X)	0.00029	0.00029	0.00028
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00113	-0.00114	-0.00115
	(!A1 * !B2 * !C1 * !X)	0.00029	0.00029	0.00028
	(!A1 * !B2 * !C1 * !X)	-0.00112	-0.00114	-0.00115

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)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * B2 * C1 * C2 * X)	0.00077	0.00077	0.00076
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00076	-0.00077	-0.00077
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * B2 * !C1 * X)	-0.00076	-0.00077	-0.00077
	(A1 * A2 * B2 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00076	-0.00079	-0.00078
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00073	0.00075	0.00074
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00076	-0.00078	-0.00077
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00065	0.00066	0.00065
	(A1 * A2 * !B2 * !C1 * X)	-0.00076	-0.00078	-0.00077
	(A1 * A2 * !B2 * !C1 * X)	0.00065	0.00065	0.00065
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00082	-0.00081	-0.00081
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00101	0.00100	0.00101
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00075	-0.00077	-0.00077
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00105	0.00106	0.00104
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00028	-0.00028	-0.00028
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00124	0.00124	0.00124
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00028	-0.00028	-0.00028
	(A1 * !A2 * !B2 * !C1 * !X)	0.00124	0.00124	0.00124
	(!A1 * B2 * C1 * C2 * X)	-0.00082	-0.00081	-0.00081
	(!A1 * B2 * C1 * C2 * X)	0.00101	0.00100	0.00101
	(!A1 * !B2 * C1 * C2 * X)	-0.00075	-0.00077	-0.00077
	(!A1 * !B2 * C1 * C2 * X)	0.00105	0.00106	0.00104
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00028	-0.00028	-0.00028
	(!A1 * !B2 * C1 * !C2 * !X)	0.00124	0.00124	0.00124
	(!A1 * !B2 * !C1 * !X)	-0.00028	-0.00028	-0.00028
	(!A1 * !B2 * !C1 * !X)	0.00124	0.00124	0.00124

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00080	-0.00080	-0.00080
	(A1 * A2 * B2 * C1 * C2 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00073	-0.00073	-0.00074
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00066	0.00066	0.00065
	(A1 * A2 * B2 * !C1 * X)	-0.00073	-0.00073	-0.00074
	(A1 * A2 * B2 * !C1 * X)	0.00066	0.00066	0.00065
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00073	-0.00075	-0.00075
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00068	0.00069	0.00069
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00072	-0.00074	-0.00074
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00059	0.00060	0.00060
	(A1 * A2 * !B2 * !C1 * X)	-0.00073	-0.00074	-0.00074
	(A1 * A2 * !B2 * !C1 * X)	0.00060	0.00060	0.00060
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00095	0.00095	0.00094
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00072	-0.00074	-0.00074
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00099	0.00098	0.00098
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00027	-0.00027	-0.00027
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00027	-0.00027	-0.00027
	(A1 * !A2 * !B2 * !C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * B2 * C1 * C2 * X)	-0.00079	-0.00079	-0.00078
	(!A1 * B2 * C1 * C2 * X)	0.00094	0.00095	0.00094
	(!A1 * !B2 * C1 * C2 * X)	-0.00072	-0.00074	-0.00074
	(!A1 * !B2 * C1 * C2 * X)	0.00099	0.00098	0.00098
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00027	-0.00028	-0.00027
	(!A1 * !B2 * C1 * !C2 * !X)	0.00115	0.00116	0.00115
	(!A1 * !B2 * !C1 * !X)	-0.00027	-0.00028	-0.00027
	(!A1 * !B2 * !C1 * !X)	0.00115	0.00116	0.00115

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)	0.00080	0.00080	0.00079
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00073	-0.00073	-0.00073
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00079	0.00079	0.00079
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B1 * !C1 * X)	0.00079	0.00079	0.00079
	(A1 * A2 * B1 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00074	0.00076	0.00075
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00074	0.00076	0.00074
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !B1 * !C1 * X)	0.00074	0.00076	0.00074
	(A1 * A2 * !B1 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00083	0.00080	0.00079
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00089	-0.00097	-0.00096
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00074	0.00074	0.00074
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00099	-0.00099	-0.00099
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00070	0.00071	0.00071
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	0.00070	0.00071	0.00071
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00102	-0.00103	-0.00102
	(!A1 * B1 * C1 * C2 * X)	0.00083	0.00080	0.00079
	(!A1 * B1 * C1 * C2 * X)	-0.00089	-0.00097	-0.00096
	(!A1 * !B1 * C1 * !C2 * !X)	0.00070	0.00071	0.00071
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00102	-0.00103	-0.00102
	(!A1 * !B1 * !C1 * !X)	0.00070	0.00071	0.00071
	(!A1 * !B1 * !C1 * !X)	-0.00102	-0.00103	-0.00102

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	0.00082	0.00081	0.00081
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * B1 * !C1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * B1 * !C1 * X)	-0.00059	-0.00060	-0.00060
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00076	0.00077	0.00076
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00068	-0.00069	-0.00068
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00075	0.00077	0.00076
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00059	-0.00060	-0.00060
	(A1 * A2 * !B1 * !C1 * X)	0.00075	0.00077	0.00076
	(A1 * A2 * !B1 * !C1 * X)	-0.00059	-0.00060	-0.00060
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00087	0.00081	0.00080
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00085	-0.00095	-0.00094
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00075	0.00075	0.00075
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00073	0.00074	0.00073
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !B1 * !C1 * !X)	0.00073	0.00074	0.00073
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * B1 * C1 * C2 * X)	0.00087	0.00081	0.00080
	(!A1 * B1 * C1 * C2 * X)	-0.00085	-0.00095	-0.00094
	(!A1 * !B1 * C1 * !C2 * !X)	0.00075	0.00076	0.00075
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00097	-0.00098	-0.00097
	(!A1 * !B1 * !C1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !B1 * !C1 * !X)	-0.00097	-0.00098	-0.00097

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)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * B1 * C1 * C2 * X)	0.00073	0.00073	0.00073
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00073	-0.00073	-0.00073
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * B1 * !C1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * A2 * B1 * !C1 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00073	-0.00075	-0.00075
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00070	0.00071	0.00070
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00072	-0.00075	-0.00074
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00061	0.00061	0.00061
	(A1 * A2 * !B1 * !C1 * X)	-0.00072	-0.00075	-0.00074
	(A1 * A2 * !B1 * !C1 * X)	0.00061	0.00061	0.00061
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00072	-0.00074	-0.00074
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00099	0.00101	0.00099
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00066	-0.00071	-0.00071
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00105	0.00104	0.00103
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00066	-0.00071	-0.00071
	(A1 * !A2 * !B1 * !C1 * !X)	0.00105	0.00104	0.00103
	(!A1 * B1 * C1 * C2 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * B1 * C1 * C2 * X)	0.00096	0.00097	0.00096
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00066	-0.00071	-0.00071
	(!A1 * !B1 * C1 * !C2 * !X)	0.00105	0.00104	0.00103
	(!A1 * !B1 * !C1 * !X)	-0.00066	-0.00071	-0.00071
	(!A1 * !B1 * !C1 * !X)	0.00105	0.00104	0.00103

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * C1 * C2 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00073	-0.00074	-0.00075
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00067	0.00067	0.00065
	(A1 * A2 * B1 * !C1 * X)	-0.00073	-0.00074	-0.00075
	(A1 * A2 * B1 * !C1 * X)	0.00067	0.00067	0.00065
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00074	-0.00077	-0.00076
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00068	0.00069	0.00068
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00074	-0.00076	-0.00076
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00059	0.00060	0.00060
	(A1 * A2 * !B1 * !C1 * X)	-0.00074	-0.00076	-0.00076
	(A1 * A2 * !B1 * !C1 * X)	0.00059	0.00060	0.00060
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00080	-0.00080	-0.00079
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00094	0.00095	0.00094
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00073	-0.00075	-0.00075
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00098	0.00099	0.00098
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00069	-0.00073	-0.00073
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00101	0.00099	0.00098
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00069	-0.00073	-0.00073
	(A1 * !A2 * !B1 * !C1 * !X)	0.00101	0.00099	0.00098
	(!A1 * B1 * C1 * C2 * X)	-0.00080	-0.00080	-0.00079
	(!A1 * B1 * C1 * C2 * X)	0.00094	0.00095	0.00094
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00071	-0.00076	-0.00075
	(!A1 * !B1 * C1 * !C2 * !X)	0.00101	0.00099	0.00098
	(!A1 * !B1 * !C1 * !X)	-0.00071	-0.00076	-0.00075
	(!A1 * !B1 * !C1 * !X)	0.00101	0.00099	0.00098

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)	0.00095	0.00096	0.00095
	(A1 * B1 * B2 * C2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * B1 * B2 * !C2 * X)	0.00091	0.00092	0.00091
	(A1 * B1 * B2 * !C2 * X)	-0.00057	-0.00058	-0.00057
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00091	0.00091	0.00091
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * A2 * !B1 * C2 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * !B1 * C2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * A2 * !B1 * !C2 * X)	0.00090	0.00091	0.00091
	(A1 * A2 * !B1 * !C2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00032	0.00032	0.00031
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00123	-0.00124	-0.00125
	(A1 * !A2 * !B1 * !C2 * !X)	0.00032	0.00032	0.00031
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00123	-0.00124	-0.00125
	(!A1 * B1 * B2 * C2 * X)	0.00095	0.00096	0.00095
	(!A1 * B1 * B2 * C2 * X)	-0.00057	-0.00058	-0.00057
	(!A1 * B1 * B2 * !C2 * X)	0.00090	0.00091	0.00091
	(!A1 * B1 * B2 * !C2 * X)	-0.00057	-0.00057	-0.00057
	(!A1 * B1 * !B2 * !C2 * !X)	0.00032	0.00032	0.00031
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00123	-0.00124	-0.00125
	(!A1 * !B1 * !C2 * !X)	0.00032	0.00032	0.00031
	(!A1 * !B1 * !C2 * !X)	-0.00123	-0.00124	-0.00125

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00093	0.00093	0.00093
	(A1 * B1 * B2 * C2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * B1 * B2 * !C2 * X)	0.00088	0.00089	0.00088
	(A1 * B1 * B2 * !C2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00093	0.00093	0.00093
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * !B1 * C2 * X)	0.00093	0.00093	0.00093
	(A1 * A2 * !B1 * C2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * !B1 * !C2 * X)	0.00088	0.00089	0.00088
	(A1 * A2 * !B1 * !C2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00031	0.00031	0.00030
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00117	-0.00118	-0.00119
	(A1 * !A2 * !B1 * !C2 * !X)	0.00031	0.00031	0.00030
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00117	-0.00118	-0.00119
	(!A1 * B1 * B2 * C2 * X)	0.00093	0.00093	0.00093
	(!A1 * B1 * B2 * C2 * X)	-0.00054	-0.00054	-0.00054
	(!A1 * B1 * B2 * !C2 * X)	0.00088	0.00089	0.00088
	(!A1 * B1 * B2 * !C2 * X)	-0.00054	-0.00054	-0.00054
	(!A1 * B1 * !B2 * !C2 * !X)	0.00031	0.00031	0.00030
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00117	-0.00118	-0.00119
	(!A1 * !B1 * !C2 * !X)	0.00031	0.00031	0.00030
	(!A1 * !B1 * !C2 * !X)	-0.00117	-0.00118	-0.00119

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)**	-0.00082	-0.00083	-0.00093
	(A1 * B1 * B2 * C2 * X)	0.00069	0.00069	0.00060
	(A1 * B1 * B2 * !C2 * X)	-0.00088	-0.00092	-0.00091
	(A1 * B1 * B2 * !C2 * X)	0.00057	0.00058	0.00057
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00069	-0.00070	-0.00090
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00078	0.00077	0.00062
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00089	-0.00091	-0.00091
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00058	0.00057	0.00057
	(A1 * A2 * !B1 * C2 * X)	-0.00069	-0.00070	-0.00090
	(A1 * A2 * !B1 * C2 * X)	0.00078	0.00077	0.00062
	(A1 * A2 * !B1 * !C2 * X)	-0.00089	-0.00091	-0.00091
	(A1 * A2 * !B1 * !C2 * X)	0.00058	0.00057	0.00057
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00125	0.00126	0.00125
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * !B1 * !C2 * !X)	0.00125	0.00126	0.00125
	(!A1 * B1 * B2 * C2 * X)	-0.00082	-0.00083	-0.00093
	(!A1 * B1 * B2 * C2 * X)	0.00070	0.00069	0.00060
	(!A1 * B1 * B2 * !C2 * X)	-0.00089	-0.00091	-0.00091
	(!A1 * B1 * B2 * !C2 * X)	0.00058	0.00057	0.00057
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * B1 * !B2 * !C2 * !X)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !C2 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !B1 * !C2 * !X)	0.00125	0.00126	0.00125

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00083	-0.00083	-0.00091
	(A1 * B1 * B2 * C2 * X)	0.00063	0.00062	0.00056
	(A1 * B1 * B2 * !C2 * X)	-0.00087	-0.00089	-0.00088
	(A1 * B1 * B2 * !C2 * X)	0.00054	0.00054	0.00054
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00069	-0.00070	-0.00088
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00073	0.00072	0.00059
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00054	0.00054	0.00054
	(A1 * A2 * !B1 * C2 * X)	-0.00069	-0.00070	-0.00088
	(A1 * A2 * !B1 * C2 * X)	0.00073	0.00072	0.00059
	(A1 * A2 * !B1 * !C2 * X)	-0.00086	-0.00089	-0.00088
	(A1 * A2 * !B1 * !C2 * X)	0.00054	0.00054	0.00054
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00029	-0.00030	-0.00029
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00119	0.00120	0.00119
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00029	-0.00030	-0.00029
	(A1 * !A2 * !B1 * !C2 * !X)	0.00119	0.00120	0.00119
	(!A1 * B1 * B2 * C2 * X)	-0.00083	-0.00083	-0.00091
	(!A1 * B1 * B2 * C2 * X)	0.00063	0.00062	0.00056
	(!A1 * B1 * B2 * !C2 * X)	-0.00086	-0.00089	-0.00088
	(!A1 * B1 * B2 * !C2 * X)	0.00054	0.00054	0.00054
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00029	-0.00030	-0.00029
	(!A1 * B1 * !B2 * !C2 * !X)	0.00119	0.00120	0.00119
	(!A1 * !B1 * !C2 * !X)	-0.00029	-0.00030	-0.00029
	(!A1 * !B1 * !C2 * !X)	0.00119	0.00120	0.00119

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)**	0.00095	0.00096	0.00095
	(A1 * B1 * B2 * C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * B1 * B2 * !C1 * X)	0.00091	0.00092	0.00091
	(A1 * B1 * B2 * !C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00091	0.00092	0.00091
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * C1 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * !B1 * C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * !C1 * X)	0.00091	0.00092	0.00091
	(A1 * A2 * !B1 * !C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00072	0.00073	0.00072
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(A1 * !A2 * !B1 * !C1 * !X)	0.00072	0.00073	0.00072
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(!A1 * B1 * B2 * C1 * X)	0.00095	0.00096	0.00095
	(!A1 * B1 * B2 * C1 * X)	-0.00055	-0.00055	-0.00055
	(!A1 * B1 * B2 * !C1 * X)	0.00091	0.00092	0.00091
	(!A1 * B1 * B2 * !C1 * X)	-0.00055	-0.00055	-0.00055
	(!A1 * B1 * !B2 * !C1 * !X)	0.00072	0.00073	0.00072
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(!A1 * !B1 * !C1 * !X)	0.00072	0.00073	0.00072
	(!A1 * !B1 * !C1 * !X)	-0.00109	-0.00110	-0.00109

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00098	0.00099	0.00098
	(A1 * B1 * B2 * C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * B1 * B2 * !C1 * X)	0.00094	0.00095	0.00094
	(A1 * B1 * B2 * !C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00098	0.00099	0.00098
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * C1 * X)	0.00098	0.00099	0.00098
	(A1 * A2 * !B1 * C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * !C1 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * !B1 * !C1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00071	0.00071	0.00071
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00114	-0.00115	-0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	0.00071	0.00071	0.00071
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * B1 * B2 * C1 * X)	0.00098	0.00099	0.00098
	(!A1 * B1 * B2 * C1 * X)	-0.00055	-0.00055	-0.00055
	(!A1 * B1 * B2 * !C1 * X)	0.00094	0.00095	0.00094
	(!A1 * B1 * B2 * !C1 * X)	-0.00055	-0.00055	-0.00055
	(!A1 * B1 * !B2 * !C1 * !X)	0.00071	0.00071	0.00071
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00114	-0.00115	-0.00114
	(!A1 * !B1 * !C1 * !X)	0.00071	0.00071	0.00071
	(!A1 * !B1 * !C1 * !X)	-0.00114	-0.00115	-0.00114

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)**	-0.00082	-0.00083	-0.00093
	(A1 * B1 * B2 * C1 * X)	0.00067	0.00067	0.00058
	(A1 * B1 * B2 * !C1 * X)	-0.00089	-0.00092	-0.00091
	(A1 * B1 * B2 * !C1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00069	-0.00070	-0.00090
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00075	0.00075	0.00060
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00089	-0.00092	-0.00091
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * !B1 * C1 * X)	-0.00069	-0.00070	-0.00090
	(A1 * A2 * !B1 * C1 * X)	0.00075	0.00075	0.00060
	(A1 * A2 * !B1 * !C1 * X)	-0.00089	-0.00092	-0.00091
	(A1 * A2 * !B1 * !C1 * X)	0.00055	0.00055	0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00068	-0.00073	-0.00072
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00112	0.00111	0.00110
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00068	-0.00073	-0.00072
	(A1 * !A2 * !B1 * !C1 * !X)	0.00112	0.00111	0.00110
	(!A1 * B1 * B2 * C1 * X)	-0.00082	-0.00082	-0.00093
	(!A1 * B1 * B2 * C1 * X)	0.00067	0.00067	0.00058
	(!A1 * B1 * B2 * !C1 * X)	-0.00089	-0.00092	-0.00091
	(!A1 * B1 * B2 * !C1 * X)	0.00055	0.00055	0.00055
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00068	-0.00073	-0.00072
	(!A1 * B1 * !B2 * !C1 * !X)	0.00112	0.00111	0.00110
	(!A1 * !B1 * !C1 * !X)	-0.00068	-0.00073	-0.00072
	(!A1 * !B1 * !C1 * !X)	0.00112	0.00111	0.00110

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00088	-0.00089	-0.00097
	(A1 * B1 * B2 * C1 * X)	0.00064	0.00064	0.00057
	(A1 * B1 * B2 * !C1 * X)	-0.00092	-0.00095	-0.00094
	(A1 * B1 * B2 * !C1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00075	-0.00075	-0.00094
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00074	0.00074	0.00060
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00092	-0.00095	-0.00094
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * !B1 * C1 * X)	-0.00075	-0.00075	-0.00094
	(A1 * A2 * !B1 * C1 * X)	0.00074	0.00074	0.00060
	(A1 * A2 * !B1 * !C1 * X)	-0.00092	-0.00095	-0.00094
	(A1 * A2 * !B1 * !C1 * X)	0.00055	0.00055	0.00055
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00067	-0.00071	-0.00071
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00117	0.00116	0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00067	-0.00071	-0.00071
	(A1 * !A2 * !B1 * !C1 * !X)	0.00117	0.00116	0.00115
	(!A1 * B1 * B2 * C1 * X)	-0.00088	-0.00089	-0.00097
	(!A1 * B1 * B2 * C1 * X)	0.00064	0.00064	0.00057
	(!A1 * B1 * B2 * !C1 * X)	-0.00092	-0.00095	-0.00094
	(!A1 * B1 * B2 * !C1 * X)	0.00055	0.00055	0.00055
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00067	-0.00071	-0.00071
	(!A1 * B1 * !B2 * !C1 * !X)	0.00117	0.00116	0.00115
	(!A1 * !B1 * !C1 * !X)	-0.00067	-0.00071	-0.00071
	(!A1 * !B1 * !C1 * !X)	0.00117	0.00116	0.00115

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00262	0.00258	0.00272	0.00273	0.29117
sky130_fd_sc_hs__a22oi_2	0.00576	0.00499	0.00549	0.00497	0.53593
sky130_fd_sc_hs__a22oi_4	0.01002	0.00982	0.01014	0.00995	1.02083

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22oi_1	0.00000	0.01273	0.03622
sky130_fd_sc_hs__a22oi_2	0.00000	0.02545	0.07244
sky130_fd_sc_hs__a22oi_4	0.00000	0.05091	0.14489

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)	0.19774	1.40838	12.14460
	A2->Y (FR)	0.23207	1.44951	12.21470
	B1->Y (FR)	0.14650	1.31134	11.90130
	B2->Y (FR)	0.17961	1.36255	12.02440
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.20520	1.23523	11.93120
	A2->Y (FR)	0.24187	1.28944	12.13770
	B1->Y (FR)	0.14793	1.14721	11.78040
	B2->Y (FR)	0.18876	1.21047	12.01540
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.18625	1.07855	11.82000
	A2->Y (FR)	0.23092	1.13737	12.04180
	B1->Y (FR)	0.13478	1.00135	11.70830
	B2->Y (FR)	0.18015	1.06400	11.97110

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.04805	0.55587	5.07016
	A2->Y (RF)	0.05376	0.53045	4.75960
	B1->Y (RF)	0.03614	0.53530	5.08123
	B2->Y (RF)	0.04171	0.51255	4.79127
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.04988	0.50298	5.01968
	A2->Y (RF)	0.05515	0.48704	4.76399
	B1->Y (RF)	0.03572	0.47253	4.98711
	B2->Y (RF)	0.04265	0.46113	4.73096
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.04889	0.47153	5.23273
	A2->Y (RF)	0.05558	0.44095	4.72957
	B1->Y (RF)	0.03391	0.43693	5.21867
	B2->Y (RF)	0.04092	0.40953	4.69082

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00029	0.00018	0.00018
	A1	0.00415	0.00404	0.00405
	A2	0.00059	0.00051	0.00051
	A2	0.00506	0.00500	0.00500
	B1	0.00036	0.00027	0.00045
	B1	0.00355	0.00332	0.00362
	B2	0.00055	0.00048	0.00065
	B2	0.00436	0.00428	0.00444
sky130_fd_sc_hs__a22oi_2	A1	0.00111	0.00083	0.00085
	A1	0.00929	0.00902	0.00905
	A2	0.00180	0.00159	0.00160
	A2	0.01072	0.01052	0.01054
	B1	0.00087	0.00060	0.00105
	B1	0.00745	0.00709	0.00763
	B2	0.00177	0.00157	0.00200
	B2	0.00923	0.00903	0.00943
sky130_fd_sc_hs__a22oi_4	A1	0.00123	0.00070	0.00079
	A1	0.01664	0.01614	0.01624
	A2	0.00273	0.00232	0.00236
	A2	0.02042	0.02006	0.02011
	B1	0.00107	0.00056	0.00149
	B1	0.01370	0.01304	0.01409
	B2	0.00262	0.00227	0.00308
	B2	0.01750	0.01714	0.01790

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00513	0.00505	0.00505
	A1	0.00151	0.00140	0.00141
	A2	0.00576	0.00567	0.00564
	A2	0.00148	0.00138	0.00136
	B1	0.00316	0.00321	0.00330
	B1	-0.00006	-0.00010	-0.00004
	B2	0.00385	0.00384	0.00389
	B2	-0.00005	-0.00010	-0.00006
sky130_fd_sc_hs__a22oi_2	A1	0.01035	0.01007	0.01028
	A1	0.00268	0.00240	0.00247
	A2	0.01122	0.01104	0.01098
	A2	0.00272	0.00251	0.00251
	B1	0.00667	0.00659	0.00697
	B1	-0.00001	-0.00013	0.00005
	B2	0.00771	0.00765	0.00777
	B2	0.00005	-0.00009	0.00003
sky130_fd_sc_hs__a22oi_4	A1	0.01954	0.01902	0.01925
	A1	0.00513	0.00455	0.00479
	A2	0.02202	0.02158	0.02158
	A2	0.00508	0.00462	0.00466
	B1	0.01252	0.01238	0.01321
	B1	-0.00032	-0.00062	-0.00012
	B2	0.01515	0.01493	0.01547
	B2	-0.00019	-0.00049	-0.00018

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)	0.00090	0.00087	0.00087
	(A2 * B1 * B2 * !Y)	-0.00099	-0.00104	-0.00104
	(!A2 * B1 * B2 * !Y)	0.00082	0.00082	0.00082
	(!A2 * B1 * B2 * !Y)	-0.00107	-0.00108	-0.00108
	(!A2 * B1 * !B2 * Y)	0.00033	0.00033	0.00032
	(!A2 * B1 * !B2 * Y)	-0.00123	-0.00124	-0.00126
	(!A2 * !B1 * Y)	0.00033	0.00033	0.00032
	(!A2 * !B1 * Y)	-0.00123	-0.00124	-0.00126
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00202	0.00193	0.00191
	(A2 * B1 * B2 * !Y)	-0.00204	-0.00222	-0.00223
	(!A2 * B1 * B2 * !Y)	0.00179	0.00182	0.00180
	(!A2 * B1 * B2 * !Y)	-0.00230	-0.00233	-0.00231
	(!A2 * B1 * !B2 * Y)	0.00067	0.00066	0.00063
	(!A2 * B1 * !B2 * Y)	-0.00279	-0.00278	-0.00283
	(!A2 * !B1 * Y)	0.00067	0.00066	0.00063
	(!A2 * !B1 * Y)	-0.00279	-0.00278	-0.00283
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00372	0.00357	0.00354
	(A2 * B1 * B2 * !Y)	-0.00391	-0.00424	-0.00422
	(!A2 * B1 * B2 * !Y)	0.00330	0.00332	0.00332
	(!A2 * B1 * B2 * !Y)	-0.00436	-0.00438	-0.00437
	(!A2 * B1 * !B2 * Y)	0.00127	0.00127	0.00120
	(!A2 * B1 * !B2 * Y)	-0.00503	-0.00506	-0.00518
	(!A2 * !B1 * Y)	0.00127	0.00127	0.00121
	(!A2 * !B1 * Y)	-0.00503	-0.00506	-0.00518

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)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * !Y)	0.00104	0.00105	0.00104
	(!A2 * B1 * B2 * !Y)	-0.00080	-0.00082	-0.00082
	(!A2 * B1 * B2 * !Y)	0.00108	0.00108	0.00108
	(!A2 * B1 * !B2 * Y)	-0.00031	-0.00031	-0.00031
	(!A2 * B1 * !B2 * Y)	0.00125	0.00127	0.00126
	(!A2 * !B1 * Y)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * Y)	0.00125	0.00127	0.00126
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00191	-0.00191	-0.00191
	(A2 * B1 * B2 * !Y)	0.00222	0.00222	0.00223
	(!A2 * B1 * B2 * !Y)	-0.00174	-0.00182	-0.00180
	(!A2 * B1 * B2 * !Y)	0.00233	0.00233	0.00232
	(!A2 * B1 * !B2 * Y)	-0.00062	-0.00063	-0.00061
	(!A2 * B1 * !B2 * Y)	0.00283	0.00287	0.00283
	(!A2 * !B1 * Y)	-0.00062	-0.00063	-0.00061
	(!A2 * !B1 * Y)	0.00283	0.00287	0.00283
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00353	-0.00354	-0.00353
	(A2 * B1 * B2 * !Y)	0.00421	0.00424	0.00422
	(!A2 * B1 * B2 * !Y)	-0.00317	-0.00332	-0.00332
	(!A2 * B1 * B2 * !Y)	0.00440	0.00441	0.00438
	(!A2 * B1 * !B2 * Y)	-0.00117	-0.00118	-0.00116
	(!A2 * B1 * !B2 * Y)	0.00521	0.00527	0.00519
	(!A2 * !B1 * Y)	-0.00117	-0.00118	-0.00116
	(!A2 * !B1 * Y)	0.00521	0.00527	0.00519

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)	0.00096	0.00093	0.00092
	(A1 * B1 * B2 * !Y)	-0.00102	-0.00109	-0.00109
	(!A1 * B1 * B2 * !Y)	0.00087	0.00088	0.00087
	(!A1 * B1 * B2 * !Y)	-0.00112	-0.00112	-0.00112
	(!A1 * B1 * !B2 * Y)	0.00088	0.00087	0.00088
	(!A1 * B1 * !B2 * Y)	-0.00112	-0.00112	-0.00112
	(!A1 * !B1 * Y)	0.00088	0.00087	0.00088
	(!A1 * !B1 * Y)	-0.00112	-0.00112	-0.00112
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00182	0.00177	0.00175
	(A1 * B1 * B2 * !Y)	-0.00193	-0.00206	-0.00206
	(!A1 * B1 * B2 * !Y)	0.00164	0.00165	0.00164
	(!A1 * B1 * B2 * !Y)	-0.00213	-0.00213	-0.00212
	(!A1 * B1 * !B2 * Y)	0.00158	0.00159	0.00158
	(!A1 * B1 * !B2 * Y)	-0.00219	-0.00219	-0.00218
	(!A1 * !B1 * Y)	0.00158	0.00160	0.00158
	(!A1 * !B1 * Y)	-0.00219	-0.00219	-0.00218
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00374	0.00359	0.00356
	(A1 * B1 * B2 * !Y)	-0.00393	-0.00425	-0.00424
	(!A1 * B1 * B2 * !Y)	0.00333	0.00335	0.00332
	(!A1 * B1 * B2 * !Y)	-0.00439	-0.00440	-0.00438
	(!A1 * B1 * !B2 * Y)	0.00333	0.00336	0.00333
	(!A1 * B1 * !B2 * Y)	-0.00439	-0.00440	-0.00438
	(!A1 * !B1 * Y)	0.00333	0.00334	0.00333
	(!A1 * !B1 * Y)	-0.00439	-0.00439	-0.00438

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)	-0.00092	-0.00093	-0.00092
	(A1 * B1 * B2 * !Y)	0.00109	0.00109	0.00109
	(!A1 * B1 * B2 * !Y)	-0.00085	-0.00088	-0.00087
	(!A1 * B1 * B2 * !Y)	0.00112	0.00114	0.00112
	(!A1 * B1 * !B2 * Y)	-0.00084	-0.00087	-0.00088
	(!A1 * B1 * !B2 * Y)	0.00114	0.00114	0.00112
	(!A1 * !B1 * Y)	-0.00084	-0.00087	-0.00088
	(!A1 * !B1 * Y)	0.00114	0.00114	0.00112
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00174	-0.00175	-0.00175
	(A1 * B1 * B2 * !Y)	0.00205	0.00206	0.00206
	(!A1 * B1 * B2 * !Y)	-0.00160	-0.00165	-0.00164
	(!A1 * B1 * B2 * !Y)	0.00214	0.00215	0.00213
	(!A1 * B1 * !B2 * Y)	-0.00150	-0.00159	-0.00158
	(!A1 * B1 * !B2 * Y)	0.00224	0.00222	0.00219
	(!A1 * !B1 * Y)	-0.00150	-0.00159	-0.00158
	(!A1 * !B1 * Y)	0.00224	0.00222	0.00219
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00354	-0.00358	-0.00355
	(A1 * B1 * B2 * !Y)	0.00420	0.00428	0.00424
	(!A1 * B1 * B2 * !Y)	-0.00322	-0.00334	-0.00332
	(!A1 * B1 * B2 * !Y)	0.00441	0.00440	0.00440
	(!A1 * B1 * !B2 * Y)	-0.00314	-0.00335	-0.00333
	(!A1 * B1 * !B2 * Y)	0.00451	0.00445	0.00440
	(!A1 * !B1 * Y)	-0.00315	-0.00334	-0.00333
	(!A1 * !B1 * Y)	0.00451	0.00445	0.00439

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)	0.00101	0.00101	0.00101
	(A1 * A2 * B2 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !B2 * !Y)	0.00095	0.00095	0.00095
	(A1 * A2 * !B2 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * !B2 * Y)	0.00030	0.00030	0.00029
	(A1 * !A2 * !B2 * Y)	-0.00129	-0.00129	-0.00131
	(!A1 * !B2 * Y)	0.00030	0.00030	0.00029
	(!A1 * !B2 * Y)	-0.00129	-0.00129	-0.00131
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00216	0.00217	0.00216
	(A1 * A2 * B2 * !Y)	-0.00113	-0.00114	-0.00113
	(A1 * A2 * !B2 * !Y)	0.00203	0.00204	0.00203
	(A1 * A2 * !B2 * !Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A2 * !B2 * Y)	0.00071	0.00071	0.00068
	(A1 * !A2 * !B2 * Y)	-0.00256	-0.00257	-0.00262
	(!A1 * !B2 * Y)	0.00071	0.00071	0.00068
	(!A1 * !B2 * Y)	-0.00256	-0.00257	-0.00262
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00397	0.00401	0.00399
	(A1 * A2 * B2 * !Y)	-0.00227	-0.00230	-0.00228
	(A1 * A2 * !B2 * !Y)	0.00377	0.00380	0.00378
	(A1 * A2 * !B2 * !Y)	-0.00228	-0.00229	-0.00228
	(A1 * !A2 * !B2 * Y)	0.00126	0.00126	0.00119
	(A1 * !A2 * !B2 * Y)	-0.00507	-0.00509	-0.00520
	(!A1 * !B2 * Y)	0.00127	0.00126	0.00119
	(!A1 * !B2 * Y)	-0.00507	-0.00509	-0.00520

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)	-0.00086	-0.00088	-0.00099
	(A1 * A2 * B2 * !Y)	0.00070	0.00070	0.00061
	(A1 * A2 * !B2 * !Y)	-0.00093	-0.00095	-0.00095
	(A1 * A2 * !B2 * !Y)	0.00058	0.00058	0.00058
	(A1 * !A2 * !B2 * Y)	-0.00029	-0.00029	-0.00028
	(A1 * !A2 * !B2 * Y)	0.00131	0.00133	0.00131
	(!A1 * !B2 * Y)	-0.00029	-0.00029	-0.00028
	(!A1 * !B2 * Y)	0.00131	0.00133	0.00131
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00190	-0.00193	-0.00212
	(A1 * A2 * B2 * !Y)	0.00133	0.00134	0.00118
	(A1 * A2 * !B2 * !Y)	-0.00198	-0.00204	-0.00203
	(A1 * A2 * !B2 * !Y)	0.00113	0.00113	0.00113
	(A1 * !A2 * !B2 * Y)	-0.00066	-0.00067	-0.00066
	(A1 * !A2 * !B2 * Y)	0.00262	0.00266	0.00263
	(!A1 * !B2 * Y)	-0.00066	-0.00067	-0.00066
	(!A1 * !B2 * Y)	0.00262	0.00266	0.00263
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00352	-0.00356	-0.00392
	(A1 * A2 * B2 * !Y)	0.00269	0.00268	0.00238
	(A1 * A2 * !B2 * !Y)	-0.00363	-0.00380	-0.00378
	(A1 * A2 * !B2 * !Y)	0.00229	0.00229	0.00228
	(A1 * !A2 * !B2 * Y)	-0.00116	-0.00117	-0.00115
	(A1 * !A2 * !B2 * Y)	0.00522	0.00527	0.00521
	(!A1 * !B2 * Y)	-0.00116	-0.00117	-0.00115
	(!A1 * !B2 * Y)	0.00522	0.00527	0.00521

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)	0.00110	0.00111	0.00110
	(A1 * A2 * B1 * !Y)	-0.00059	-0.00059	-0.00059
	(A1 * A2 * !B1 * !Y)	0.00105	0.00106	0.00104
	(A1 * A2 * !B1 * !Y)	-0.00058	-0.00059	-0.00059
	(A1 * !A2 * !B1 * Y)	0.00088	0.00088	0.00088
	(A1 * !A2 * !B1 * Y)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * Y)	0.00088	0.00088	0.00088
	(!A1 * !B1 * Y)	-0.00116	-0.00116	-0.00116
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00190	0.00191	0.00190
	(A1 * A2 * B1 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * !B1 * !Y)	0.00179	0.00181	0.00180
	(A1 * A2 * !B1 * !Y)	-0.00114	-0.00114	-0.00113
	(A1 * !A2 * !B1 * Y)	0.00158	0.00158	0.00158
	(A1 * !A2 * !B1 * Y)	-0.00216	-0.00217	-0.00216
	(!A1 * !B1 * Y)	0.00158	0.00158	0.00158
	(!A1 * !B1 * Y)	-0.00216	-0.00217	-0.00216
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00398	0.00402	0.00399
	(A1 * A2 * B1 * !Y)	-0.00229	-0.00230	-0.00228
	(A1 * A2 * !B1 * !Y)	0.00377	0.00379	0.00376
	(A1 * A2 * !B1 * !Y)	-0.00229	-0.00228	-0.00228
	(A1 * !A2 * !B1 * Y)	0.00332	0.00333	0.00332
	(A1 * !A2 * !B1 * Y)	-0.00436	-0.00437	-0.00435
	(!A1 * !B1 * Y)	0.00332	0.00332	0.00332
	(!A1 * !B1 * Y)	-0.00436	-0.00436	-0.00435

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)	-0.00096	-0.00097	-0.00108
	(A1 * A2 * B1 * !Y)	0.00071	0.00070	0.00062
	(A1 * A2 * !B1 * !Y)	-0.00102	-0.00105	-0.00104
	(A1 * A2 * !B1 * !Y)	0.00058	0.00059	0.00059
	(A1 * !A2 * !B1 * Y)	-0.00083	-0.00088	-0.00088
	(A1 * !A2 * !B1 * Y)	0.00119	0.00118	0.00116
	(!A1 * !B1 * Y)	-0.00083	-0.00088	-0.00088
	(!A1 * !B1 * Y)	0.00119	0.00118	0.00116
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00165	-0.00167	-0.00186
	(A1 * A2 * B1 * !Y)	0.00134	0.00134	0.00119
	(A1 * A2 * !B1 * !Y)	-0.00175	-0.00181	-0.00180
	(A1 * A2 * !B1 * !Y)	0.00114	0.00114	0.00113
	(A1 * !A2 * !B1 * Y)	-0.00150	-0.00158	-0.00158
	(A1 * !A2 * !B1 * Y)	0.00221	0.00219	0.00217
	(!A1 * !B1 * Y)	-0.00150	-0.00158	-0.00158
	(!A1 * !B1 * Y)	0.00221	0.00219	0.00217
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00350	-0.00355	-0.00392
	(A1 * A2 * B1 * !Y)	0.00267	0.00268	0.00238
	(A1 * A2 * !B1 * !Y)	-0.00367	-0.00378	-0.00376
	(A1 * A2 * !B1 * !Y)	0.00229	0.00228	0.00228
	(A1 * !A2 * !B1 * Y)	-0.00315	-0.00333	-0.00332
	(A1 * !A2 * !B1 * Y)	0.00447	0.00441	0.00437
	(!A1 * !B1 * Y)	-0.00315	-0.00332	-0.00332
	(!A1 * !B1 * Y)	0.00447	0.00441	0.00437

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00257	0.00234	0.00250	0.00257	0.63823
sky130_fd_sc_hs__a22o_2	0.00268	0.00245	0.00263	0.00256	1.26589
sky130_fd_sc_hs__a22o_4	0.00453	0.00476	0.00454	0.00500	2.52725

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22o_1	0.00000	0.03864	0.09179
sky130_fd_sc_hs__a22o_2	0.00000	0.04965	0.09540
sky130_fd_sc_hs__a22o_4	0.00000	0.10082	0.19080

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)	0.13906	0.92938	7.57607
	A2->X (RR)	0.14607	0.93011	7.72660
	B1->X (RR)	0.12342	0.89063	7.49112
	B2->X (RR)	0.12921	0.89669	7.60310
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.13920	0.83372	7.79632
	A2->X (RR)	0.14671	0.82597	7.90735
	B1->X (RR)	0.12352	0.79795	7.71040
	B2->X (RR)	0.12860	0.79562	7.79808
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.13614	0.72973	7.74615
	A2->X (RR)	0.14263	0.72971	7.87667
	B1->X (RR)	0.12208	0.69447	7.62811
	B2->X (RR)	0.12838	0.69768	7.74432

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.28695	0.92183	5.28890
	A2->X (FF)	0.31532	0.96325	5.48884
	B1->X (FF)	0.25115	0.85925	4.87358
	B2->X (FF)	0.27386	0.88825	4.98313
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.36084	0.98730	5.63344
	A2->X (FF)	0.39741	1.03604	5.83599
	B1->X (FF)	0.32922	0.93126	5.26359
	B2->X (FF)	0.35253	0.95953	5.36994
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.34705	0.95188	5.75374
	A2->X (FF)	0.37194	0.98427	5.87223
	B1->X (FF)	0.30967	0.88958	5.32973
	B2->X (FF)	0.32651	0.90638	5.41017

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00665	0.00658	0.00722
	A1	0.00325	0.00318	0.00384
	A2	0.00727	0.00729	0.00759
	A2	0.00326	0.00327	0.00364
	B1	0.00512	0.00503	0.00622
	B1	0.00206	0.00199	0.00323
	B2	0.00565	0.00562	0.00635
	B2	0.00204	0.00201	0.00280
sky130_fd_sc_hs__a22o_2	A1	0.00820	0.00830	0.00895
	A1	0.00469	0.00478	0.00555
	A2	0.00882	0.00903	0.00933
	A2	0.00464	0.00486	0.00527
	B1	0.00670	0.00679	0.00784
	B1	0.00347	0.00356	0.00474
	B2	0.00727	0.00743	0.00807
	B2	0.00345	0.00362	0.00440
sky130_fd_sc_hs__a22o_4	A1	0.01608	0.01632	0.01783
	A1	0.00953	0.00979	0.01158
	A2	0.01738	0.01775	0.01855
	A2	0.00954	0.00992	0.01096
	B1	0.01271	0.01283	0.01506
	B1	0.00715	0.00761	0.00977
	B2	0.01385	0.01400	0.01534
	B2	0.00701	0.00717	0.00883

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00221	0.00207	0.00238
	A1	0.00576	0.00567	0.00590
	A2	0.00254	0.00258	0.00287
	A2	0.00664	0.00674	0.00692
	B1	0.00246	0.00250	0.00392
	B1	0.00542	0.00545	0.00685
	B2	0.00265	0.00273	0.00428
	B2	0.00615	0.00623	0.00755
sky130_fd_sc_hs__a22o_2	A1	0.00370	0.00379	0.00454
	A1	0.00745	0.00753	0.00776
	A2	0.00393	0.00422	0.00516
	A2	0.00855	0.00886	0.00907
	B1	0.00404	0.00422	0.00588
	B1	0.00719	0.00736	0.00878
	B2	0.00427	0.00459	0.00601
	B2	0.00794	0.00826	0.00958
sky130_fd_sc_hs__a22o_4	A1	0.00650	0.00686	0.00849
	A1	0.01398	0.01449	0.01504
	A2	0.00730	0.00765	0.00885
	A2	0.01535	0.01593	0.01645
	B1	0.00704	0.00735	0.01156
	B1	0.01251	0.01297	0.01582
	B2	0.00753	0.00782	0.01231
	B2	0.01419	0.01472	0.01745

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)	0.00098	0.00093	0.00093
	(A2 * B1 * B2 * X)	-0.00087	-0.00094	-0.00094
	(!A2 * B1 * B2 * X)	0.00088	0.00088	0.00088
	(!A2 * B1 * B2 * X)	-0.00096	-0.00097	-0.00096
	(!A2 * B1 * !B2 * !X)	0.00033	0.00033	0.00031
	(!A2 * B1 * !B2 * !X)	-0.00122	-0.00123	-0.00126
	(!A2 * !B1 * !X)	0.00033	0.00033	0.00031
	(!A2 * !B1 * !X)	-0.00122	-0.00123	-0.00126
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00107	0.00102	0.00102
	(A2 * B1 * B2 * X)	-0.00086	-0.00093	-0.00093
	(!A2 * B1 * B2 * X)	0.00096	0.00097	0.00097
	(!A2 * B1 * B2 * X)	-0.00095	-0.00096	-0.00095
	(!A2 * B1 * !B2 * !X)	0.00036	0.00037	0.00033
	(!A2 * B1 * !B2 * !X)	-0.00122	-0.00123	-0.00127
	(!A2 * !B1 * !X)	0.00036	0.00037	0.00033
	(!A2 * !B1 * !X)	-0.00122	-0.00123	-0.00127
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00161	0.00151	0.00149
	(A2 * B1 * B2 * X)	-0.00178	-0.00194	-0.00194
	(!A2 * B1 * B2 * X)	0.00138	0.00140	0.00139
	(!A2 * B1 * B2 * X)	-0.00200	-0.00202	-0.00201
	(!A2 * B1 * !B2 * !X)	0.00050	0.00051	0.00048
	(!A2 * B1 * !B2 * !X)	-0.00229	-0.00232	-0.00235
	(!A2 * !B1 * !X)	0.00051	0.00051	0.00048
	(!A2 * !B1 * !X)	-0.00230	-0.00232	-0.00235

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)	-0.00093	-0.00092	-0.00092
	(A2 * B1 * B2 * X)	0.00094	0.00094	0.00094
	(!A2 * B1 * B2 * X)	-0.00084	-0.00088	-0.00088
	(!A2 * B1 * B2 * X)	0.00096	0.00098	0.00097
	(!A2 * B1 * !B2 * !X)	-0.00029	-0.00030	-0.00029
	(!A2 * B1 * !B2 * !X)	0.00126	0.00128	0.00127
	(!A2 * !B1 * !X)	-0.00029	-0.00030	-0.00029
	(!A2 * !B1 * !X)	0.00126	0.00128	0.00127
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00102	-0.00102	-0.00101
	(A2 * B1 * B2 * X)	0.00094	0.00094	0.00093
	(!A2 * B1 * B2 * X)	-0.00093	-0.00097	-0.00097
	(!A2 * B1 * B2 * X)	0.00095	0.00097	0.00096
	(!A2 * B1 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * B1 * !B2 * !X)	0.00127	0.00129	0.00128
	(!A2 * !B1 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * !B1 * !X)	0.00127	0.00128	0.00128
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00149	-0.00149	-0.00148
	(A2 * B1 * B2 * X)	0.00195	0.00196	0.00194
	(!A2 * B1 * B2 * X)	-0.00134	-0.00140	-0.00139
	(!A2 * B1 * B2 * X)	0.00202	0.00202	0.00202
	(!A2 * B1 * !B2 * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * B1 * !B2 * !X)	0.00237	0.00237	0.00236
	(!A2 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * !B1 * !X)	0.00237	0.00237	0.00236

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)	0.00096	0.00092	0.00091
	(A1 * B1 * B2 * X)	-0.00086	-0.00094	-0.00094
	(!A1 * B1 * B2 * X)	0.00086	0.00087	0.00086
	(!A1 * B1 * B2 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * B1 * !B2 * !X)	0.00086	0.00087	0.00086
	(!A1 * B1 * !B2 * !X)	-0.00096	-0.00097	-0.00097
	(!A1 * !B1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !B1 * !X)	-0.00096	-0.00097	-0.00097
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00098	0.00094	0.00093
	(A1 * B1 * B2 * X)	-0.00090	-0.00097	-0.00098
	(!A1 * B1 * B2 * X)	0.00088	0.00088	0.00088
	(!A1 * B1 * B2 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * B1 * !B2 * !X)	0.00087	0.00088	0.00088
	(!A1 * B1 * !B2 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * !B1 * !X)	0.00087	0.00088	0.00088
	(!A1 * !B1 * !X)	-0.00100	-0.00100	-0.00100
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00193	0.00185	0.00183
	(A1 * B1 * B2 * X)	-0.00175	-0.00191	-0.00191
	(!A1 * B1 * B2 * X)	0.00173	0.00175	0.00173
	(!A1 * B1 * B2 * X)	-0.00196	-0.00198	-0.00196
	(!A1 * B1 * !B2 * !X)	0.00169	0.00171	0.00170
	(!A1 * B1 * !B2 * !X)	-0.00200	-0.00201	-0.00200
	(!A1 * !B1 * !X)	0.00169	0.00171	0.00170
	(!A1 * !B1 * !X)	-0.00200	-0.00201	-0.00200

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)	-0.00091	-0.00091	-0.00091
	(A1 * B1 * B2 * X)	0.00093	0.00094	0.00094
	(!A1 * B1 * B2 * X)	-0.00083	-0.00087	-0.00086
	(!A1 * B1 * B2 * X)	0.00096	0.00098	0.00097
	(!A1 * B1 * !B2 * !X)	-0.00082	-0.00086	-0.00086
	(!A1 * B1 * !B2 * !X)	0.00098	0.00098	0.00097
	(!A1 * !B1 * !X)	-0.00082	-0.00086	-0.00086
	(!A1 * !B1 * !X)	0.00098	0.00098	0.00097
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00092	-0.00093	-0.00093
	(A1 * B1 * B2 * X)	0.00097	0.00098	0.00098
	(!A1 * B1 * B2 * X)	-0.00085	-0.00088	-0.00088
	(!A1 * B1 * B2 * X)	0.00100	0.00101	0.00100
	(!A1 * B1 * !B2 * !X)	-0.00084	-0.00088	-0.00088
	(!A1 * B1 * !B2 * !X)	0.00101	0.00101	0.00100
	(!A1 * !B1 * !X)	-0.00084	-0.00088	-0.00088
	(!A1 * !B1 * !X)	0.00101	0.00101	0.00100
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00182	-0.00183	-0.00182
	(A1 * B1 * B2 * X)	0.00189	0.00191	0.00191
	(!A1 * B1 * B2 * X)	-0.00169	-0.00175	-0.00173
	(!A1 * B1 * B2 * X)	0.00196	0.00198	0.00197
	(!A1 * B1 * !B2 * !X)	-0.00161	-0.00170	-0.00170
	(!A1 * B1 * !B2 * !X)	0.00205	0.00202	0.00201
	(!A1 * !B1 * !X)	-0.00161	-0.00170	-0.00170
	(!A1 * !B1 * !X)	0.00205	0.00202	0.00201

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)	0.00088	0.00089	0.00089
	(A1 * A2 * B2 * X)	-0.00053	-0.00053	-0.00053
	(A1 * A2 * !B2 * X)	0.00084	0.00084	0.00084
	(A1 * A2 * !B2 * X)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * !B2 * !X)	0.00028	0.00028	0.00027
	(A1 * !A2 * !B2 * !X)	-0.00114	-0.00114	-0.00116
	(!A1 * !B2 * !X)	0.00029	0.00029	0.00028
	(!A1 * !B2 * !X)	-0.00113	-0.00114	-0.00116
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * B2 * X)	-0.00052	-0.00053	-0.00052
	(A1 * A2 * !B2 * X)	0.00093	0.00094	0.00093
	(A1 * A2 * !B2 * X)	-0.00052	-0.00052	-0.00052
	(A1 * !A2 * !B2 * !X)	0.00031	0.00031	0.00030
	(A1 * !A2 * !B2 * !X)	-0.00116	-0.00116	-0.00118
	(!A1 * !B2 * !X)	0.00031	0.00031	0.00030
	(!A1 * !B2 * !X)	-0.00116	-0.00115	-0.00118
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00164	0.00165	0.00164
	(A1 * A2 * B2 * X)	-0.00104	-0.00105	-0.00104
	(A1 * A2 * !B2 * X)	0.00155	0.00156	0.00155
	(A1 * A2 * !B2 * X)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * !B2 * !X)	0.00053	0.00053	0.00050
	(A1 * !A2 * !B2 * !X)	-0.00221	-0.00220	-0.00225
	(!A1 * !B2 * !X)	0.00053	0.00053	0.00050
	(!A1 * !B2 * !X)	-0.00221	-0.00220	-0.00225

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)	-0.00079	-0.00079	-0.00087
	(A1 * A2 * B2 * X)	0.00062	0.00062	0.00055
	(A1 * A2 * !B2 * X)	-0.00082	-0.00084	-0.00084
	(A1 * A2 * !B2 * X)	0.00053	0.00053	0.00053
	(A1 * !A2 * !B2 * !X)	-0.00026	-0.00027	-0.00026
	(A1 * !A2 * !B2 * !X)	0.00115	0.00116	0.00116
	(!A1 * !B2 * !X)	-0.00028	-0.00028	-0.00028
	(!A1 * !B2 * !X)	0.00115	0.00116	0.00116
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00089	-0.00089	-0.00098
	(A1 * A2 * B2 * X)	0.00062	0.00061	0.00055
	(A1 * A2 * !B2 * X)	-0.00091	-0.00094	-0.00093
	(A1 * A2 * !B2 * X)	0.00053	0.00052	0.00052
	(A1 * !A2 * !B2 * !X)	-0.00029	-0.00029	-0.00029
	(A1 * !A2 * !B2 * !X)	0.00118	0.00119	0.00119
	(!A1 * !B2 * !X)	-0.00029	-0.00030	-0.00029
	(!A1 * !B2 * !X)	0.00118	0.00119	0.00119
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00143	-0.00144	-0.00161
	(A1 * A2 * B2 * X)	0.00123	0.00122	0.00108
	(A1 * A2 * !B2 * X)	-0.00151	-0.00156	-0.00155
	(A1 * A2 * !B2 * X)	0.00105	0.00104	0.00104
	(A1 * !A2 * !B2 * !X)	-0.00049	-0.00049	-0.00049
	(A1 * !A2 * !B2 * !X)	0.00225	0.00226	0.00225
	(!A1 * !B2 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * !B2 * !X)	0.00225	0.00226	0.00225

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)	0.00093	0.00093	0.00093
	(A1 * A2 * B1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !B1 * X)	0.00088	0.00090	0.00088
	(A1 * A2 * !B1 * X)	-0.00057	-0.00058	-0.00057
	(A1 * !A2 * !B1 * !X)	0.00075	0.00076	0.00075
	(A1 * !A2 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(!A1 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !B1 * !X)	-0.00102	-0.00102	-0.00102
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00097	0.00097	0.00097
	(A1 * A2 * B1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * X)	0.00092	0.00093	0.00092
	(A1 * A2 * !B1 * X)	-0.00054	-0.00055	-0.00055
	(A1 * !A2 * !B1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !B1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !X)	-0.00097	-0.00098	-0.00097
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00179	0.00180	0.00179
	(A1 * A2 * B1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * !B1 * X)	0.00172	0.00173	0.00171
	(A1 * A2 * !B1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * !A2 * !B1 * !X)	0.00135	0.00136	0.00136
	(A1 * !A2 * !B1 * !X)	-0.00222	-0.00223	-0.00223
	(!A1 * !B1 * !X)	0.00136	0.00136	0.00136
	(!A1 * !B1 * !X)	-0.00222	-0.00223	-0.00223

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)	-0.00083	-0.00083	-0.00091
	(A1 * A2 * B1 * X)	0.00067	0.00066	0.00060
	(A1 * A2 * !B1 * X)	-0.00086	-0.00089	-0.00088
	(A1 * A2 * !B1 * X)	0.00057	0.00058	0.00057
	(A1 * !A2 * !B1 * !X)	-0.00071	-0.00076	-0.00075
	(A1 * !A2 * !B1 * !X)	0.00105	0.00104	0.00102
	(!A1 * !B1 * !X)	-0.00076	-0.00080	-0.00080
	(!A1 * !B1 * !X)	0.00105	0.00104	0.00102
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00087	-0.00087	-0.00095
	(A1 * A2 * B1 * X)	0.00064	0.00064	0.00057
	(A1 * A2 * !B1 * X)	-0.00089	-0.00093	-0.00092
	(A1 * A2 * !B1 * X)	0.00055	0.00055	0.00055
	(A1 * !A2 * !B1 * !X)	-0.00079	-0.00084	-0.00083
	(A1 * !A2 * !B1 * !X)	0.00100	0.00099	0.00098
	(!A1 * !B1 * !X)	-0.00081	-0.00086	-0.00085
	(!A1 * !B1 * !X)	0.00100	0.00099	0.00098
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00157	-0.00159	-0.00176
	(A1 * A2 * B1 * X)	0.00131	0.00132	0.00119
	(A1 * A2 * !B1 * X)	-0.00167	-0.00172	-0.00171
	(A1 * A2 * !B1 * X)	0.00114	0.00115	0.00114
	(A1 * !A2 * !B1 * !X)	-0.00129	-0.00136	-0.00136
	(A1 * !A2 * !B1 * !X)	0.00227	0.00226	0.00224
	(!A1 * !B1 * !X)	-0.00129	-0.00136	-0.00136
	(!A1 * !B1 * !X)	0.00227	0.00225	0.00224

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00221	0.00240	0.00255	0.00274	0.28154
sky130_fd_sc_hs__a2bb2oi_2	0.00243	0.00253	0.00495	0.00502	0.56571
sky130_fd_sc_hs__a2bb2oi_4	0.00380	0.00401	0.00983	0.01009	1.06979

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.02692	0.06049
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.03818	0.07689
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.07339	0.15378

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)	0.19131	1.18842	7.94568
	A2_N->Y (RR)	0.18496	1.16199	7.83827
	B1->Y (FR)	0.18595	1.41128	12.19180
	B2->Y (FR)	0.14861	1.33486	11.84440
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.17036	0.98924	7.90115
	A2_N->Y (RR)	0.16584	0.97265	7.82497
	B1->Y (FR)	0.17041	1.21015	12.16910
	B2->Y (FR)	0.12800	1.15668	12.00410
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.19588	0.93776	8.36966
	A2_N->Y (RR)	0.18372	0.90349	8.23240
	B1->Y (FR)	0.16690	1.06904	12.11250
	B2->Y (FR)	0.12342	1.01058	11.85380

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)	0.21392	0.75605	3.77463
	A2_N->Y (FF)	0.19489	0.70330	3.36012
	B1->Y (RF)	0.04406	0.51138	4.66545
	B2->Y (RF)	0.03954	0.53483	4.96211
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.27952	0.83431	4.22926
	A2_N->Y (FF)	0.26005	0.78742	3.84241
	B1->Y (RF)	0.04448	0.48111	4.91098
	B2->Y (RF)	0.03663	0.50004	5.26277
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.27455	0.80485	4.12410
	A2_N->Y (FF)	0.23934	0.73947	3.67054
	B1->Y (RF)	0.04357	0.42775	4.82216
	B2->Y (RF)	0.03682	0.45599	5.33764

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	0.00556	0.00542	0.00601
	A1_N	0.00366	0.00353	0.00411
	A2_N	0.00469	0.00446	0.00546
	A2_N	0.00319	0.00295	0.00396
	B1	0.00096	0.00089	0.00089
	B1	0.00387	0.00381	0.00383
	B2	0.00058	0.00050	0.00051
	B2	0.00305	0.00297	0.00299
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00828	0.00818	0.00896
	A1_N	0.00695	0.00685	0.00765
	A2_N	0.00726	0.00706	0.00817
	A2_N	0.00642	0.00622	0.00735
	B1	0.00216	0.00200	0.00202
	B1	0.00801	0.00783	0.00789
	B2	0.00117	0.00105	0.00109
	B2	0.00584	0.00572	0.00581
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01494	0.01472	0.01566
	A1_N	0.01339	0.01317	0.01425
	A2_N	0.01294	0.01271	0.01432
	A2_N	0.01212	0.01189	0.01349
	B1	0.00399	0.00365	0.00373
	B1	0.01578	0.01547	0.01559
	B2	0.00225	0.00199	0.00214
	B2	0.01178	0.01151	0.01170

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00290	0.00299	0.00337
	A1_N	0.00477	0.00485	0.00524
	A2_N	0.00291	0.00299	0.00434
	A2_N	0.00436	0.00444	0.00580
	B1	0.00370	0.00362	0.00366
	B1	0.00077	0.00068	0.00068
	B2	0.00320	0.00309	0.00322
	B2	0.00077	0.00066	0.00070
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00477	0.00510	0.00556
	A1_N	0.00601	0.00633	0.00679
	A2_N	0.00493	0.00520	0.00669
	A2_N	0.00565	0.00594	0.00742
	B1	0.00705	0.00684	0.00701
	B1	0.00118	0.00097	0.00098
	B2	0.00581	0.00556	0.00583
	B2	0.00120	0.00096	0.00106
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.00999	0.01061	0.01127
	A1_N	0.01138	0.01208	0.01265
	A2_N	0.00972	0.01037	0.01279
	A2_N	0.01032	0.01095	0.01339
	B1	0.01395	0.01351	0.01394
	B1	0.00211	0.00165	0.00174
	B2	0.01148	0.01096	0.01169
	B2	0.00213	0.00158	0.00186

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)	0.00081	0.00072	0.00071
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00088	-0.00098	-0.00099
	(!A2_N * B1 * B2 * !Y)	0.00361	0.00344	0.00393
	(!A2_N * B1 * B2 * !Y)	0.00094	0.00079	0.00129
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00104	0.00096	0.00094
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00084	-0.00095	-0.00096
	(!A2_N * B1 * B2 * !Y)	0.00462	0.00448	0.00507
	(!A2_N * B1 * B2 * !Y)	0.00171	0.00156	0.00217
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00118	0.00101	0.00099
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00173	-0.00195	-0.00196
	(!A2_N * B1 * B2 * !Y)	0.00799	0.00763	0.00824
	(!A2_N * B1 * B2 * !Y)	0.00325	0.00287	0.00353

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)	-0.00070	-0.00070	-0.00070
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00099	0.00100	0.00099
	(!A2_N * B1 * B2 * !Y)	0.00099	0.00090	0.00135
	(!A2_N * B1 * B2 * !Y)	0.00364	0.00355	0.00400
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00094	-0.00094	-0.00093
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00096	0.00096	0.00096
	(!A2_N * B1 * B2 * !Y)	0.00169	0.00158	0.00205
	(!A2_N * B1 * B2 * !Y)	0.00457	0.00447	0.00494
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00099	-0.00099	-0.00098
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00195	0.00195	0.00196
	(!A2_N * B1 * B2 * !Y)	0.00384	0.00366	0.00423
	(!A2_N * B1 * B2 * !Y)	0.00850	0.00834	0.00891

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)	0.00084	0.00084	0.00084
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00054	-0.00055	-0.00054
	(!A1_N * B1 * B2 * !Y)	0.00279	0.00256	0.00351
	(!A1_N * B1 * B2 * !Y)	0.00050	0.00027	0.00123
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00094	0.00095	0.00095
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00054	-0.00055	-0.00054
	(!A1_N * B1 * B2 * !Y)	0.00369	0.00346	0.00449
	(!A1_N * B1 * B2 * !Y)	0.00126	0.00102	0.00206
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00137	0.00137	0.00136
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00112	-0.00111	-0.00111
	(!A1_N * B1 * B2 * !Y)	0.00597	0.00559	0.00687
	(!A1_N * B1 * B2 * !Y)	0.00192	0.00153	0.00285

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)	-0.00080	-0.00080	-0.00083
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00058	0.00058	0.00056
	(!A1_N * B1 * B2 * !Y)	0.00099	0.00093	0.00231
	(!A1_N * B1 * B2 * !Y)	0.00325	0.00320	0.00458
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00091	-0.00091	-0.00094
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00058	0.00058	0.00055
	(!A1_N * B1 * B2 * !Y)	0.00182	0.00174	0.00320
	(!A1_N * B1 * B2 * !Y)	0.00424	0.00416	0.00562
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00123	-0.00124	-0.00135
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00123	0.00123	0.00114
	(!A1_N * B1 * B2 * !Y)	0.00356	0.00349	0.00572
	(!A1_N * B1 * B2 * !Y)	0.00754	0.00748	0.00969

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)	0.00088	0.00089	0.00088
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00108	-0.00108	-0.00108
	(!A1_N * !A2_N * B2 * !Y)	0.00098	0.00094	0.00093
	(!A1_N * !A2_N * B2 * !Y)	-0.00099	-0.00106	-0.00106
	(!A1_N * !A2_N * !B2 * !Y)	0.00087	0.00088	0.00088
	(!A1_N * !A2_N * !B2 * !Y)	-0.00107	-0.00108	-0.00108
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00167	0.00169	0.00168
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00218	-0.00220	-0.00219
	(!A1_N * !A2_N * B2 * !Y)	0.00188	0.00180	0.00179
	(!A1_N * !A2_N * B2 * !Y)	-0.00202	-0.00215	-0.00215
	(!A1_N * !A2_N * !B2 * !Y)	0.00168	0.00169	0.00168
	(!A1_N * !A2_N * !B2 * !Y)	-0.00219	-0.00220	-0.00219
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00335	0.00338	0.00334
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00440	-0.00441	-0.00439
	(!A1_N * !A2_N * B2 * !Y)	0.00379	0.00361	0.00358
	(!A1_N * !A2_N * B2 * !Y)	-0.00401	-0.00430	-0.00430
	(!A1_N * !A2_N * !B2 * !Y)	0.00335	0.00337	0.00334
	(!A1_N * !A2_N * !B2 * !Y)	-0.00440	-0.00441	-0.00439

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)	-0.00084	-0.00088	-0.00088
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00110	0.00110	0.00108
	(!A1_N * !A2_N * B2 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1_N * !A2_N * B2 * !Y)	0.00106	0.00107	0.00106
	(!A1_N * !A2_N * !B2 * !Y)	-0.00085	-0.00088	-0.00088
	(!A1_N * !A2_N * !B2 * !Y)	0.00108	0.00109	0.00108
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00160	-0.00169	-0.00168
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00224	0.00222	0.00220
	(!A1_N * !A2_N * B2 * !Y)	-0.00179	-0.00180	-0.00179
	(!A1_N * !A2_N * B2 * !Y)	0.00214	0.00216	0.00215
	(!A1_N * !A2_N * !B2 * !Y)	-0.00163	-0.00169	-0.00168
	(!A1_N * !A2_N * !B2 * !Y)	0.00220	0.00220	0.00220
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00317	-0.00337	-0.00334
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00452	0.00446	0.00440
	(!A1_N * !A2_N * B2 * !Y)	-0.00357	-0.00359	-0.00357
	(!A1_N * !A2_N * B2 * !Y)	0.00427	0.00433	0.00430
	(!A1_N * !A2_N * !B2 * !Y)	-0.00325	-0.00336	-0.00334
	(!A1_N * !A2_N * !B2 * !Y)	0.00442	0.00441	0.00440

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)	0.00041	0.00041	0.00039
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00129	-0.00128	-0.00130
	(!A1_N * !A2_N * B1 * !Y)	0.00097	0.00093	0.00092
	(!A1_N * !A2_N * B1 * !Y)	-0.00107	-0.00114	-0.00114
	(!A1_N * !A2_N * !B1 * !Y)	0.00087	0.00088	0.00087
	(!A1_N * !A2_N * !B1 * !Y)	-0.00116	-0.00116	-0.00116
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00069	0.00069	0.00065
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00250	-0.00249	-0.00256
	(!A1_N * !A2_N * B1 * !Y)	0.00186	0.00180	0.00178
	(!A1_N * !A2_N * B1 * !Y)	-0.00200	-0.00213	-0.00213
	(!A1_N * !A2_N * !B1 * !Y)	0.00167	0.00169	0.00168
	(!A1_N * !A2_N * !B1 * !Y)	-0.00216	-0.00217	-0.00217
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00129	0.00129	0.00123
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00508	-0.00510	-0.00522
	(!A1_N * !A2_N * B1 * !Y)	0.00376	0.00358	0.00355
	(!A1_N * !A2_N * B1 * !Y)	-0.00402	-0.00432	-0.00432
	(!A1_N * !A2_N * !B1 * !Y)	0.00333	0.00336	0.00334
	(!A1_N * !A2_N * !B1 * !Y)	-0.00440	-0.00442	-0.00441

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)	-0.00039	-0.00039	-0.00038
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00131	0.00133	0.00131
	(!A1_N * !A2_N * B1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A1_N * !A2_N * B1 * !Y)	0.00113	0.00114	0.00114
	(!A1_N * !A2_N * !B1 * !Y)	-0.00084	-0.00088	-0.00087
	(!A1_N * !A2_N * !B1 * !Y)	0.00116	0.00118	0.00116
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00063	-0.00064	-0.00063
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00257	0.00260	0.00257
	(!A1_N * !A2_N * B1 * !Y)	-0.00179	-0.00179	-0.00178
	(!A1_N * !A2_N * B1 * !Y)	0.00213	0.00214	0.00213
	(!A1_N * !A2_N * !B1 * !Y)	-0.00161	-0.00169	-0.00168
	(!A1_N * !A2_N * !B1 * !Y)	0.00217	0.00220	0.00218
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00120	-0.00121	-0.00118
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00525	0.00531	0.00524
	(!A1_N * !A2_N * B1 * !Y)	-0.00356	-0.00356	-0.00355
	(!A1_N * !A2_N * B1 * !Y)	0.00433	0.00434	0.00432
	(!A1_N * !A2_N * !B1 * !Y)	-0.00319	-0.00336	-0.00334
	(!A1_N * !A2_N * !B1 * !Y)	0.00442	0.00442	0.00442

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00218	0.00226	0.00239	0.00232	0.63272
sky130_fd_sc_hs__a2bb2o_2	0.00230	0.00236	0.00250	0.00270	1.16640
sky130_fd_sc_hs__a2bb2o_4	0.00250	0.00267	0.00450	0.00456	2.41863

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.04815	0.08284
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.05888	0.08754
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.09173	0.11219

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)	0.29713	1.24245	9.47515
	A2_N->X (FR)	0.27462	1.18671	9.01311
	B1->X (RR)	0.12779	0.89831	7.53510
	B2->X (RR)	0.12179	0.88474	7.35176
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.30281	1.13783	9.49691
	A2_N->X (FR)	0.28104	1.08253	9.04511
	B1->X (RR)	0.12537	0.79715	7.67084
	B2->X (RR)	0.12151	0.79660	7.54696
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.37421	1.13048	9.92277
	A2_N->X (FR)	0.35342	1.08676	9.51676
	B1->X (RR)	0.13907	0.71839	7.73399
	B2->X (RR)	0.13149	0.71232	7.56478

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)	0.28697	0.69049	2.80837
	A2_N->X (RF)	0.27877	0.66494	2.70223
	B1->X (FF)	0.28066	0.91329	5.20130
	B2->X (FF)	0.24155	0.86473	5.01133
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.35731	0.75160	2.81356
	A2_N->X (RF)	0.34908	0.72143	2.70221
	B1->X (FF)	0.35104	0.97937	5.48550
	B2->X (FF)	0.31249	0.93190	5.32170
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.33874	0.70820	2.93166
	A2_N->X (RF)	0.32915	0.68381	2.83422
	B1->X (FF)	0.34610	0.94357	5.61742
	B2->X (FF)	0.30084	0.89131	5.42018

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	0.00510	0.00512	0.00542
	A1_N	0.00678	0.00679	0.00721
	A2_N	0.00506	0.00511	0.00648
	A2_N	0.00631	0.00637	0.00785
	B1	0.00578	0.00578	0.00613
	B1	0.00286	0.00291	0.00321
	B2	0.00517	0.00512	0.00586
	B2	0.00286	0.00281	0.00358
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00667	0.00696	0.00728
	A1_N	0.00852	0.00879	0.00923
	A2_N	0.00671	0.00700	0.00838
	A2_N	0.00804	0.00834	0.00976
	B1	0.00744	0.00764	0.00801
	B1	0.00450	0.00469	0.00521
	B2	0.00693	0.00703	0.00772
	B2	0.00451	0.00461	0.00531
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01093	0.01163	0.01198
	A1_N	0.01230	0.01294	0.01515
	A2_N	0.01087	0.01148	0.01283
	A2_N	0.01179	0.01235	0.01390
	B1	0.01359	0.01399	0.01483
	B1	0.00810	0.00851	0.00961
	B2	0.01247	0.01272	0.01439
	B2	0.00812	0.00836	0.01029

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00731	0.00720	0.00774
	A1_N	0.00558	0.00548	0.00597
	A2_N	0.00637	0.00625	0.00722
	A2_N	0.00506	0.00494	0.00590
	B1	0.00281	0.00286	0.00336
	B1	0.00571	0.00580	0.00604
	B2	0.00266	0.00269	0.00323
	B2	0.00499	0.00501	0.00532
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00876	0.00892	0.00949
	A1_N	0.00688	0.00706	0.00760
	A2_N	0.00781	0.00796	0.00899
	A2_N	0.00642	0.00654	0.00756
	B1	0.00419	0.00450	0.00520
	B1	0.00712	0.00742	0.00770
	B2	0.00397	0.00420	0.00452
	B2	0.00642	0.00665	0.00695
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01473	0.01536	0.01637
	A1_N	0.01326	0.01390	0.01471
	A2_N	0.01369	0.01433	0.01576
	A2_N	0.01267	0.01332	0.01450
	B1	0.00885	0.00938	0.01084
	B1	0.01429	0.01491	0.01548
	B2	0.00816	0.00861	0.01028
	B2	0.01260	0.01316	0.01379

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)	0.00087	0.00077	0.00076
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00082	-0.00092	-0.00094
	(!A2_N * B1 * B2 * X)	0.00348	0.00332	0.00381
	(!A2_N * B1 * B2 * X)	0.00092	0.00076	0.00127
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00090	0.00080	0.00079
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00087	-0.00098	-0.00099
	(!A2_N * B1 * B2 * X)	0.00356	0.00340	0.00389
	(!A2_N * B1 * B2 * X)	0.00086	0.00069	0.00120
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00099	0.00090	0.00089
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00095	-0.00105	-0.00106
	(!A2_N * B1 * B2 * X)	0.00467	0.00449	0.00508
	(!A2_N * B1 * B2 * X)	0.00165	0.00146	0.00208

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)	-0.00075	-0.00076	-0.00075
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00093	0.00094	0.00094
	(!A2_N * B1 * B2 * X)	0.00098	0.00090	0.00135
	(!A2_N * B1 * B2 * X)	0.00352	0.00344	0.00389
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00098	0.00099	0.00099
	(!A2_N * B1 * B2 * X)	0.00092	0.00082	0.00128
	(!A2_N * B1 * B2 * X)	0.00359	0.00350	0.00396
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00105	0.00107	0.00106
	(!A2_N * B1 * B2 * X)	0.00084	0.00073	0.00115
	(!A2_N * B1 * B2 * X)	0.00383	0.00373	0.00415

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)	0.00083	0.00084	0.00084
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00052	-0.00052	-0.00052
	(!A1_N * B1 * B2 * X)	0.00260	0.00240	0.00337
	(!A1_N * B1 * B2 * X)	0.00045	0.00024	0.00123
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00084	0.00085	0.00085
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00052	-0.00052	-0.00052
	(!A1_N * B1 * B2 * X)	0.00265	0.00243	0.00340
	(!A1_N * B1 * B2 * X)	0.00044	0.00021	0.00119
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00100	0.00101	0.00100
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00057	-0.00058	-0.00058
	(!A1_N * B1 * B2 * X)	0.00374	0.00350	0.00447
	(!A1_N * B1 * B2 * X)	0.00116	0.00091	0.00190

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)	-0.00080	-0.00080	-0.00083
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00056	0.00056	0.00053
	(!A1_N * B1 * B2 * X)	0.00097	0.00094	0.00233
	(!A1_N * B1 * B2 * X)	0.00311	0.00308	0.00447
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00081	-0.00081	-0.00084
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00056	0.00055	0.00053
	(!A1_N * B1 * B2 * X)	0.00096	0.00091	0.00230
	(!A1_N * B1 * B2 * X)	0.00315	0.00312	0.00450
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00096	-0.00096	-0.00099
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00062	0.00062	0.00059
	(!A1_N * B1 * B2 * X)	0.00084	0.00075	0.00202
	(!A1_N * B1 * B2 * X)	0.00339	0.00330	0.00457

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)	0.00093	0.00093	0.00093
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00098	-0.00099	-0.00098
	(!A1_N * !A2_N * B2 * X)	0.00101	0.00097	0.00096
	(!A1_N * !A2_N * B2 * X)	-0.00091	-0.00097	-0.00097
	(!A1_N * !A2_N * !B2 * X)	0.00093	0.00093	0.00092
	(!A1_N * !A2_N * !B2 * X)	-0.00099	-0.00099	-0.00099
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00088	0.00089	0.00088
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00100	-0.00101	-0.00100
	(!A1_N * !A2_N * B2 * X)	0.00099	0.00095	0.00094
	(!A1_N * !A2_N * B2 * X)	-0.00091	-0.00098	-0.00098
	(!A1_N * !A2_N * !B2 * X)	0.00088	0.00089	0.00088
	(!A1_N * !A2_N * !B2 * X)	-0.00101	-0.00101	-0.00101
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00147	0.00149	0.00148
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00201	-0.00203	-0.00201
	(!A1_N * !A2_N * B2 * X)	0.00170	0.00160	0.00158
	(!A1_N * !A2_N * B2 * X)	-0.00182	-0.00197	-0.00198
	(!A1_N * !A2_N * !B2 * X)	0.00148	0.00149	0.00148
	(!A1_N * !A2_N * !B2 * X)	-0.00201	-0.00202	-0.00201

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)	-0.00089	-0.00093	-0.00093
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00101	0.00100	0.00099
	(!A1_N * !A2_N * B2 * X)	-0.00096	-0.00097	-0.00096
	(!A1_N * !A2_N * B2 * X)	0.00097	0.00098	0.00097
	(!A1_N * !A2_N * !B2 * X)	-0.00091	-0.00093	-0.00092
	(!A1_N * !A2_N * !B2 * X)	0.00099	0.00100	0.00099
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00084	-0.00089	-0.00088
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00103	0.00103	0.00101
	(!A1_N * !A2_N * B2 * X)	-0.00094	-0.00094	-0.00093
	(!A1_N * !A2_N * B2 * X)	0.00098	0.00099	0.00098
	(!A1_N * !A2_N * !B2 * X)	-0.00086	-0.00089	-0.00088
	(!A1_N * !A2_N * !B2 * X)	0.00101	0.00102	0.00101
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00139	-0.00149	-0.00148
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00207	0.00205	0.00202
	(!A1_N * !A2_N * B2 * X)	-0.00157	-0.00159	-0.00157
	(!A1_N * !A2_N * B2 * X)	0.00197	0.00200	0.00198
	(!A1_N * !A2_N * !B2 * X)	-0.00143	-0.00149	-0.00148
	(!A1_N * !A2_N * !B2 * X)	0.00202	0.00204	0.00202

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)	0.00038	0.00038	0.00036
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00112	-0.00113	-0.00114
	(!A1_N * !A2_N * B1 * X)	0.00080	0.00075	0.00074
	(!A1_N * !A2_N * B1 * X)	-0.00100	-0.00106	-0.00106
	(!A1_N * !A2_N * !B1 * X)	0.00070	0.00070	0.00070
	(!A1_N * !A2_N * !B1 * X)	-0.00108	-0.00108	-0.00108
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00037	0.00037	0.00036
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00123	-0.00123	-0.00125
	(!A1_N * !A2_N * B1 * X)	0.00099	0.00093	0.00092
	(!A1_N * !A2_N * B1 * X)	-0.00097	-0.00105	-0.00105
	(!A1_N * !A2_N * !B1 * X)	0.00086	0.00086	0.00086
	(!A1_N * !A2_N * !B1 * X)	-0.00107	-0.00107	-0.00107
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00064	0.00064	0.00060
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00227	-0.00228	-0.00232
	(!A1_N * !A2_N * B1 * X)	0.00169	0.00160	0.00158
	(!A1_N * !A2_N * B1 * X)	-0.00182	-0.00197	-0.00198
	(!A1_N * !A2_N * !B1 * X)	0.00148	0.00148	0.00148
	(!A1_N * !A2_N * !B1 * X)	-0.00202	-0.00201	-0.00201

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)	-0.00035	-0.00035	-0.00035
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00114	0.00115	0.00115
	(!A1_N * !A2_N * B1 * X)	-0.00074	-0.00075	-0.00074
	(!A1_N * !A2_N * B1 * X)	0.00107	0.00107	0.00106
	(!A1_N * !A2_N * !B1 * X)	-0.00068	-0.00070	-0.00070
	(!A1_N * !A2_N * !B1 * X)	0.00108	0.00109	0.00108
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00125	0.00125	0.00125
	(!A1_N * !A2_N * B1 * X)	-0.00092	-0.00092	-0.00092
	(!A1_N * !A2_N * B1 * X)	0.00105	0.00106	0.00105
	(!A1_N * !A2_N * !B1 * X)	-0.00084	-0.00086	-0.00086
	(!A1_N * !A2_N * !B1 * X)	0.00108	0.00108	0.00108
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00058	-0.00058	-0.00058
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00233	0.00234	0.00233
	(!A1_N * !A2_N * B1 * X)	-0.00157	-0.00158	-0.00157
	(!A1_N * !A2_N * B1 * X)	0.00197	0.00199	0.00198
	(!A1_N * !A2_N * !B1 * X)	-0.00143	-0.00148	-0.00148
	(!A1_N * !A2_N * !B1 * X)	0.00203	0.00201	0.00202

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00275	0.00278	0.00270	0.00287	0.00273	0.18335
sky130_fd_sc_hs__a311oi_2	0.00520	0.00496	0.00478	0.00413	0.00403	0.35645
sky130_fd_sc_hs__a311oi_4	0.01004	0.00967	0.00968	0.00774	0.00787	0.66147

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311oi_1	0.00000	0.00871	0.02171
sky130_fd_sc_hs__a311oi_2	0.00000	0.01585	0.04342
sky130_fd_sc_hs__a311oi_4	0.00000	0.03169	0.08684

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)	0.30114	1.60663	11.56540
	A2->Y (FR)	0.37014	1.70414	11.82830
	A3->Y (FR)	0.40283	1.72741	11.73840
	B1->Y (FR)	0.32584	1.65813	12.16180
	C1->Y (FR)	0.25790	1.55184	11.74670
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.25152	1.37930	11.62090
	A2->Y (FR)	0.31071	1.44498	11.72850
	A3->Y (FR)	0.36521	1.50799	11.80090
	B1->Y (FR)	0.31463	1.45584	12.17480
	C1->Y (FR)	0.23150	1.33353	11.75590
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.23357	1.19066	11.34680
	A2->Y (FR)	0.29945	1.26692	11.53720
	A3->Y (FR)	0.36202	1.34655	11.71660
	B1->Y (FR)	0.30712	1.29248	12.14080
	C1->Y (FR)	0.22693	1.17695	11.75110

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.06284	0.57866	4.64903
	A2->Y (RF)	0.07393	0.57046	4.50518
	A3->Y (RF)	0.07797	0.53285	4.07643
	B1->Y (RF)	0.03384	0.41311	3.44077
	C1->Y (RF)	0.03072	0.40105	3.43241
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.05376	0.55382	5.00574
	A2->Y (RF)	0.06477	0.52559	4.62801
	A3->Y (RF)	0.07144	0.49444	4.17971
	B1->Y (RF)	0.04123	0.49052	4.65162
	C1->Y (RF)	0.03373	0.47219	4.62133
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.05198	0.50661	5.03766
	A2->Y (RF)	0.06421	0.48289	4.63230
	A3->Y (RF)	0.07068	0.44477	4.08569
	B1->Y (RF)	0.03783	0.43713	4.51813
	C1->Y (RF)	0.03256	0.43173	4.68866

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00043	0.00029	0.00028
	A1	0.00461	0.00447	0.00446
	A2	0.00082	0.00067	0.00065
	A2	0.00557	0.00541	0.00539
	A3	0.00098	0.00087	0.00086
	A3	0.00630	0.00618	0.00616
	B1	0.00107	0.00093	0.00094
	B1	0.00570	0.00556	0.00556
	C1	0.00102	0.00091	0.00116
	C1	0.00515	0.00505	0.00528
sky130_fd_sc_hs__a311oi_2	A1	0.00013	-0.00008	-0.00009
	A1	0.00782	0.00762	0.00760
	A2	0.00091	0.00068	0.00066
	A2	0.00961	0.00940	0.00936
	A3	0.00174	0.00154	0.00152
	A3	0.01145	0.01125	0.01119
	B1	0.00233	0.00220	0.00219
	B1	0.00988	0.00975	0.00974
	C1	0.00228	0.00215	0.00245
	C1	0.00870	0.00853	0.00886

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00013	-0.00054	-0.00049
	A1	0.01486	0.01446	0.01449
	A2	0.00142	0.00093	0.00093
	A2	0.01856	0.01804	0.01806
	A3	0.00292	0.00251	0.00250
	A3	0.02222	0.02187	0.02174
	B1	0.00410	0.00385	0.00387
	B1	0.01893	0.01869	0.01868
	C1	0.00402	0.00376	0.00439
	C1	0.01674	0.01650	0.01707

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00550	0.00537	0.00543
	A1	0.00143	0.00129	0.00131
	A2	0.00610	0.00601	0.00598
	A2	0.00142	0.00129	0.00126
	A3	0.00670	0.00659	0.00654
	A3	0.00140	0.00127	0.00123
	B1	0.00527	0.00520	0.00524
	B1	0.00055	0.00044	0.00050
	C1	0.00419	0.00418	0.00425
	C1	-0.00003	-0.00010	-0.00002

sky130_fd_sc_hs__a311oi_2	**A1**	0.01015	0.00990	0.01003
	A1	0.00278	0.00247	0.00251
	A2	0.01129	0.01106	0.01106
	A2	0.00279	0.00253	0.00246
	A3	0.01240	0.01216	0.01203
	A3	0.00278	0.00253	0.00245
	B1	0.00855	0.00838	0.00847
	B1	0.00084	0.00059	0.00064
	C1	0.00593	0.00592	0.00613
	C1	-0.00072	-0.00080	-0.00068
sky130_fd_sc_hs__a311oi_4	**A1**	0.01955	0.01895	0.01898
	A1	0.00516	0.00455	0.00468
	A2	0.02187	0.02138	0.02144
	A2	0.00515	0.00461	0.00453
	A3	0.02432	0.02381	0.02361
	A3	0.00511	0.00460	0.00447
	B1	0.01654	0.01615	0.01642
	B1	0.00134	0.00083	0.00102
	C1	0.01168	0.01159	0.01221
	C1	-0.00152	-0.00173	-0.00138

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)**	0.00093	0.00093	0.00093
	(A2 * A3 * B1 * C1 * !Y)	-0.00098	-0.00104	-0.00103
	(A2 * A3 * B1 * !C1 * !Y)	0.00093	0.00093	0.00093
	(A2 * A3 * B1 * !C1 * !Y)	-0.00098	-0.00104	-0.00103
	(A2 * A3 * !B1 * C1 * !Y)	0.00093	0.00093	0.00093
	(A2 * A3 * !B1 * C1 * !Y)	-0.00094	-0.00100	-0.00099
	(A2 * !A3 * B1 * C1 * !Y)	0.00085	0.00086	0.00085
	(A2 * !A3 * B1 * C1 * !Y)	-0.00106	-0.00107	-0.00106
	(A2 * !A3 * B1 * !C1 * !Y)	0.00085	0.00085	0.00085
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00106	-0.00107	-0.00106
	(A2 * !A3 * !B1 * C1 * !Y)	0.00085	0.00085	0.00085
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00106	-0.00106	-0.00106
	(A2 * !A3 * !B1 * !C1 * Y)	0.00032	0.00032	0.00029
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00125	-0.00126	-0.00131
	(!A2 * B1 * C1 * !Y)	0.00087	0.00088	0.00088
	(!A2 * B1 * C1 * !Y)	-0.00106	-0.00107	-0.00106
	(!A2 * B1 * !C1 * !Y)	0.00087	0.00088	0.00087
	(!A2 * B1 * !C1 * !Y)	-0.00107	-0.00107	-0.00106
	(!A2 * !B1 * C1 * !Y)	0.00087	0.00088	0.00087
	(!A2 * !B1 * C1 * !Y)	-0.00107	-0.00107	-0.00106
	(!A2 * !B1 * !C1 * Y)	0.00032	0.00032	0.00030
	(!A2 * !B1 * !C1 * Y)	-0.00129	-0.00129	-0.00131

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00181	0.00181	0.00181
	(A2 * A3 * B1 * C1 * !Y)	-0.00207	-0.00216	-0.00214
	(A2 * A3 * B1 * !C1 * !Y)	0.00181	0.00181	0.00181
	(A2 * A3 * B1 * !C1 * !Y)	-0.00207	-0.00215	-0.00214
	(A2 * A3 * !B1 * C1 * !Y)	0.00182	0.00181	0.00181
	(A2 * A3 * !B1 * C1 * !Y)	-0.00198	-0.00209	-0.00207
	(A2 * !A3 * B1 * C1 * !Y)	0.00166	0.00167	0.00166
	(A2 * !A3 * B1 * C1 * !Y)	-0.00222	-0.00223	-0.00222
	(A2 * !A3 * B1 * !C1 * !Y)	0.00165	0.00166	0.00166
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00222	-0.00223	-0.00222
	(A2 * !A3 * !B1 * C1 * !Y)	0.00165	0.00166	0.00166
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00221	-0.00223	-0.00222
	(A2 * !A3 * !B1 * !C1 * Y)	0.00070	0.00070	0.00063
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00249	-0.00251	-0.00263
	(!A2 * B1 * C1 * !Y)	0.00171	0.00173	0.00171
	(!A2 * B1 * C1 * !Y)	-0.00222	-0.00224	-0.00222
	(!A2 * B1 * !C1 * !Y)	0.00171	0.00171	0.00171
	(!A2 * B1 * !C1 * !Y)	-0.00223	-0.00223	-0.00222
	(!A2 * !B1 * C1 * !Y)	0.00170	0.00172	0.00171
	(!A2 * !B1 * C1 * !Y)	-0.00221	-0.00223	-0.00222
	(!A2 * !B1 * !C1 * Y)	0.00068	0.00068	0.00064
	(!A2 * !B1 * !C1 * Y)	-0.00259	-0.00260	-0.00264

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00353	0.00355	0.00354
	(A2 * A3 * B1 * C1 * !Y)	-0.00409	-0.00427	-0.00425
	(A2 * A3 * B1 * !C1 * !Y)	0.00353	0.00355	0.00354
	(A2 * A3 * B1 * !C1 * !Y)	-0.00407	-0.00428	-0.00425
	(A2 * A3 * !B1 * C1 * !Y)	0.00356	0.00356	0.00354
	(A2 * A3 * !B1 * C1 * !Y)	-0.00390	-0.00414	-0.00409
	(A2 * !A3 * B1 * C1 * !Y)	0.00323	0.00327	0.00324
	(A2 * !A3 * B1 * C1 * !Y)	-0.00440	-0.00443	-0.00440
	(A2 * !A3 * B1 * !C1 * !Y)	0.00322	0.00323	0.00323
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00439	-0.00440	-0.00440
	(A2 * !A3 * !B1 * C1 * !Y)	0.00322	0.00321	0.00322
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00442	-0.00440	-0.00440
	(A2 * !A3 * !B1 * !C1 * Y)	0.00131	0.00131	0.00118
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00490	-0.00492	-0.00518
	(!A2 * B1 * C1 * !Y)	0.00332	0.00335	0.00334
	(!A2 * B1 * C1 * !Y)	-0.00439	-0.00442	-0.00440
	(!A2 * B1 * !C1 * !Y)	0.00332	0.00335	0.00334
	(!A2 * B1 * !C1 * !Y)	-0.00439	-0.00442	-0.00440
	(!A2 * !B1 * C1 * !Y)	0.00332	0.00333	0.00334
	(!A2 * !B1 * C1 * !Y)	-0.00438	-0.00440	-0.00440
	(!A2 * !B1 * !C1 * Y)	0.00128	0.00128	0.00122
	(!A2 * !B1 * !C1 * Y)	-0.00508	-0.00510	-0.00521

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)**	-0.00093	-0.00093	-0.00093
	(A2 * A3 * B1 * C1 * !Y)	0.00102	0.00104	0.00103
	(A2 * A3 * B1 * !C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A2 * A3 * B1 * !C1 * !Y)	0.00104	0.00104	0.00103
	(A2 * A3 * !B1 * C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A2 * A3 * !B1 * C1 * !Y)	0.00100	0.00100	0.00099
	(A2 * !A3 * B1 * C1 * !Y)	-0.00079	-0.00086	-0.00085
	(A2 * !A3 * B1 * C1 * !Y)	0.00106	0.00108	0.00107
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00079	-0.00085	-0.00085
	(A2 * !A3 * B1 * !C1 * !Y)	0.00106	0.00108	0.00107
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00078	-0.00085	-0.00085
	(A2 * !A3 * !B1 * C1 * !Y)	0.00106	0.00108	0.00107
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * !B1 * !C1 * Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * C1 * !Y)	-0.00085	-0.00088	-0.00088
	(!A2 * B1 * C1 * !Y)	0.00106	0.00107	0.00107
	(!A2 * B1 * !C1 * !Y)	-0.00085	-0.00088	-0.00087
	(!A2 * B1 * !C1 * !Y)	0.00107	0.00107	0.00107
	(!A2 * !B1 * C1 * !Y)	-0.00085	-0.00088	-0.00087
	(!A2 * !B1 * C1 * !Y)	0.00107	0.00108	0.00107
	(!A2 * !B1 * !C1 * Y)	-0.00029	-0.00030	-0.00029
	(!A2 * !B1 * !C1 * Y)	0.00131	0.00132	0.00131

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00180	-0.00181	-0.00181
	(A2 * A3 * B1 * C1 * !Y)	0.00214	0.00217	0.00214
	(A2 * A3 * B1 * !C1 * !Y)	-0.00181	-0.00181	-0.00181
	(A2 * A3 * B1 * !C1 * !Y)	0.00215	0.00215	0.00214
	(A2 * A3 * !B1 * C1 * !Y)	-0.00180	-0.00181	-0.00181
	(A2 * A3 * !B1 * C1 * !Y)	0.00206	0.00209	0.00207
	(A2 * !A3 * B1 * C1 * !Y)	-0.00154	-0.00167	-0.00166
	(A2 * !A3 * B1 * C1 * !Y)	0.00223	0.00226	0.00223
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00152	-0.00166	-0.00166
	(A2 * !A3 * B1 * !C1 * !Y)	0.00222	0.00226	0.00223
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00151	-0.00166	-0.00166
	(A2 * !A3 * !B1 * C1 * !Y)	0.00223	0.00226	0.00223
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00061	-0.00061	-0.00060
	(A2 * !A3 * !B1 * !C1 * Y)	0.00266	0.00266	0.00265
	(!A2 * B1 * C1 * !Y)	-0.00165	-0.00173	-0.00171
	(!A2 * B1 * C1 * !Y)	0.00222	0.00226	0.00223
	(!A2 * B1 * !C1 * !Y)	-0.00165	-0.00171	-0.00171
	(!A2 * B1 * !C1 * !Y)	0.00224	0.00223	0.00223
	(!A2 * !B1 * C1 * !Y)	-0.00165	-0.00172	-0.00171
	(!A2 * !B1 * C1 * !Y)	0.00224	0.00224	0.00223
	(!A2 * !B1 * !C1 * Y)	-0.00062	-0.00063	-0.00062
	(!A2 * !B1 * !C1 * Y)	0.00265	0.00267	0.00265

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00353	-0.00354	-0.00353
	(A2 * A3 * B1 * C1 * !Y)	0.00426	0.00427	0.00425
	(A2 * A3 * B1 * !C1 * !Y)	-0.00353	-0.00354	-0.00353
	(A2 * A3 * B1 * !C1 * !Y)	0.00426	0.00428	0.00425
	(A2 * A3 * !B1 * C1 * !Y)	-0.00353	-0.00356	-0.00354
	(A2 * A3 * !B1 * C1 * !Y)	0.00409	0.00414	0.00409
	(A2 * !A3 * B1 * C1 * !Y)	-0.00297	-0.00327	-0.00324
	(A2 * !A3 * B1 * C1 * !Y)	0.00443	0.00447	0.00441
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00293	-0.00323	-0.00323
	(A2 * !A3 * B1 * !C1 * !Y)	0.00443	0.00443	0.00441
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00290	-0.00321	-0.00322
	(A2 * !A3 * !B1 * C1 * !Y)	0.00443	0.00444	0.00441
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00116	-0.00116	-0.00115
	(A2 * !A3 * !B1 * !C1 * Y)	0.00524	0.00525	0.00522
	(!A2 * B1 * C1 * !Y)	-0.00322	-0.00335	-0.00334
	(!A2 * B1 * C1 * !Y)	0.00442	0.00442	0.00441
	(!A2 * B1 * !C1 * !Y)	-0.00320	-0.00335	-0.00334
	(!A2 * B1 * !C1 * !Y)	0.00439	0.00443	0.00441
	(!A2 * !B1 * C1 * !Y)	-0.00318	-0.00333	-0.00334
	(!A2 * !B1 * C1 * !Y)	0.00438	0.00445	0.00441
	(!A2 * !B1 * !C1 * Y)	-0.00120	-0.00119	-0.00118
	(!A2 * !B1 * !C1 * Y)	0.00525	0.00526	0.00522

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)**	0.00097	0.00097	0.00097
	(A1 * A3 * B1 * C1 * !Y)	-0.00099	-0.00104	-0.00103
	(A1 * A3 * B1 * !C1 * !Y)	0.00097	0.00097	0.00097
	(A1 * A3 * B1 * !C1 * !Y)	-0.00098	-0.00104	-0.00103
	(A1 * A3 * !B1 * C1 * !Y)	0.00097	0.00097	0.00097
	(A1 * A3 * !B1 * C1 * !Y)	-0.00094	-0.00100	-0.00099
	(A1 * !A3 * B1 * C1 * !Y)	0.00091	0.00091	0.00091
	(A1 * !A3 * B1 * C1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * B1 * !C1 * !Y)	0.00090	0.00091	0.00091
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * !B1 * C1 * !Y)	0.00090	0.00091	0.00091
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * !B1 * !C1 * Y)	0.00037	0.00037	0.00038
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00119	-0.00119	-0.00118
	(!A1 * A3 * B1 * !Y)	0.00092	0.00093	0.00092
	(!A1 * A3 * B1 * !Y)	-0.00107	-0.00107	-0.00106
	(!A1 * A3 * !B1 * C1 * !Y)	0.00092	0.00093	0.00092
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00107	-0.00107	-0.00106
	(!A1 * A3 * !B1 * !C1 * Y)	0.00080	0.00079	0.00080
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00119	-0.00118	-0.00118
	(!A1 * !A3 * B1 * !Y)	0.00059	0.00059	0.00058
	(!A1 * !A3 * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00059	0.00059	0.00058
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00106	-0.00107	-0.00106
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00042	0.00043	0.00043
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00118	-0.00120	-0.00119

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00179	0.00178	0.00178
	(A1 * A3 * B1 * C1 * !Y)	-0.00205	-0.00214	-0.00212
	(A1 * A3 * B1 * !C1 * !Y)	0.00177	0.00179	0.00178
	(A1 * A3 * B1 * !C1 * !Y)	-0.00203	-0.00214	-0.00212
	(A1 * A3 * !B1 * C1 * !Y)	0.00179	0.00179	0.00178
	(A1 * A3 * !B1 * C1 * !Y)	-0.00194	-0.00206	-0.00204
	(A1 * !A3 * B1 * C1 * !Y)	0.00167	0.00167	0.00167
	(A1 * !A3 * B1 * C1 * !Y)	-0.00221	-0.00221	-0.00220
	(A1 * !A3 * B1 * !C1 * !Y)	0.00166	0.00167	0.00167
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00220	-0.00221	-0.00220
	(A1 * !A3 * !B1 * C1 * !Y)	0.00166	0.00167	0.00167
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00220	-0.00221	-0.00220
	(A1 * !A3 * !B1 * !C1 * Y)	0.00083	0.00084	0.00083
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00221	-0.00222	-0.00220
	(!A1 * A3 * B1 * !Y)	0.00168	0.00170	0.00168
	(!A1 * A3 * B1 * !Y)	-0.00219	-0.00221	-0.00220
	(!A1 * A3 * !B1 * C1 * !Y)	0.00168	0.00170	0.00168
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00220	-0.00221	-0.00220
	(!A1 * A3 * !B1 * !C1 * Y)	0.00168	0.00169	0.00168
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00221	-0.00221	-0.00220
	(!A1 * !A3 * B1 * !Y)	0.00103	0.00103	0.00102
	(!A1 * !A3 * B1 * !Y)	-0.00221	-0.00222	-0.00220
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00103	0.00103	0.00102
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00221	-0.00221	-0.00220
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00096	0.00095	0.00095
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00223	-0.00223	-0.00222

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00354	0.00356	0.00355
	(A1 * A3 * B1 * C1 * !Y)	-0.00405	-0.00425	-0.00421
	(A1 * A3 * B1 * !C1 * !Y)	0.00354	0.00356	0.00355
	(A1 * A3 * B1 * !C1 * !Y)	-0.00404	-0.00423	-0.00421
	(A1 * A3 * !B1 * C1 * !Y)	0.00357	0.00357	0.00355
	(A1 * A3 * !B1 * C1 * !Y)	-0.00387	-0.00411	-0.00407
	(A1 * !A3 * B1 * C1 * !Y)	0.00329	0.00331	0.00330
	(A1 * !A3 * B1 * C1 * !Y)	-0.00437	-0.00438	-0.00437
	(A1 * !A3 * B1 * !C1 * !Y)	0.00329	0.00331	0.00329
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00437	-0.00438	-0.00437
	(A1 * !A3 * !B1 * C1 * !Y)	0.00327	0.00329	0.00328
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00436	-0.00438	-0.00437
	(A1 * !A3 * !B1 * !C1 * Y)	0.00159	0.00160	0.00160
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00436	-0.00439	-0.00435
	(!A1 * A3 * B1 * !Y)	0.00334	0.00336	0.00335
	(!A1 * A3 * B1 * !Y)	-0.00436	-0.00438	-0.00437
	(!A1 * A3 * !B1 * C1 * !Y)	0.00333	0.00337	0.00335
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00435	-0.00438	-0.00436
	(!A1 * A3 * !B1 * !C1 * Y)	0.00333	0.00337	0.00335
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00435	-0.00438	-0.00436
	(!A1 * !A3 * B1 * !Y)	0.00195	0.00197	0.00195
	(!A1 * !A3 * B1 * !Y)	-0.00436	-0.00439	-0.00437
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00195	0.00197	0.00195
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00436	-0.00439	-0.00437
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00181	0.00183	0.00181
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00439	-0.00442	-0.00440

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)**	-0.00097	-0.00097	-0.00097
	(A1 * A3 * B1 * C1 * !Y)	0.00103	0.00104	0.00103
	(A1 * A3 * B1 * !C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A1 * A3 * B1 * !C1 * !Y)	0.00102	0.00104	0.00103
	(A1 * A3 * !B1 * C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A1 * A3 * !B1 * C1 * !Y)	0.00099	0.00100	0.00099
	(A1 * !A3 * B1 * C1 * !Y)	-0.00089	-0.00091	-0.00091
	(A1 * !A3 * B1 * C1 * !Y)	0.00106	0.00107	0.00107
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00089	-0.00091	-0.00091
	(A1 * !A3 * B1 * !C1 * !Y)	0.00107	0.00107	0.00107
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00089	-0.00091	-0.00091
	(A1 * !A3 * !B1 * C1 * !Y)	0.00107	0.00107	0.00107
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00036
	(A1 * !A3 * !B1 * !C1 * Y)	0.00121	0.00122	0.00119
	(!A1 * A3 * B1 * !Y)	-0.00089	-0.00093	-0.00092
	(!A1 * A3 * B1 * !Y)	0.00107	0.00108	0.00107
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00089	-0.00093	-0.00092
	(!A1 * A3 * !B1 * C1 * !Y)	0.00107	0.00108	0.00107
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00075	-0.00079	-0.00080
	(!A1 * A3 * !B1 * !C1 * Y)	0.00122	0.00120	0.00119
	(!A1 * !A3 * B1 * !Y)	-0.00059	-0.00059	-0.00058
	(!A1 * !A3 * B1 * !Y)	0.00106	0.00107	0.00107
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00059	-0.00059	-0.00058
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00106	0.00107	0.00107
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00042	-0.00043	-0.00043
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00123	0.00124	0.00120

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00177	-0.00178	-0.00178
	(A1 * A3 * B1 * C1 * !Y)	0.00211	0.00214	0.00212
	(A1 * A3 * B1 * !C1 * !Y)	-0.00177	-0.00179	-0.00178
	(A1 * A3 * B1 * !C1 * !Y)	0.00211	0.00214	0.00212
	(A1 * A3 * !B1 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(A1 * A3 * !B1 * C1 * !Y)	0.00204	0.00206	0.00204
	(A1 * !A3 * B1 * C1 * !Y)	-0.00160	-0.00167	-0.00167
	(A1 * !A3 * B1 * C1 * !Y)	0.00222	0.00222	0.00221
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00160	-0.00167	-0.00167
	(A1 * !A3 * B1 * !C1 * !Y)	0.00222	0.00222	0.00221
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00160	-0.00167	-0.00167
	(A1 * !A3 * !B1 * C1 * !Y)	0.00222	0.00222	0.00221
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00078	-0.00078	-0.00080
	(A1 * !A3 * !B1 * !C1 * Y)	0.00227	0.00228	0.00223
	(!A1 * A3 * B1 * !Y)	-0.00162	-0.00170	-0.00168
	(!A1 * A3 * B1 * !Y)	0.00219	0.00223	0.00221
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00162	-0.00170	-0.00168
	(!A1 * A3 * !B1 * C1 * !Y)	0.00220	0.00223	0.00221
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00156	-0.00169	-0.00168
	(!A1 * A3 * !B1 * !C1 * Y)	0.00226	0.00224	0.00221
	(!A1 * !A3 * B1 * !Y)	-0.00103	-0.00103	-0.00102
	(!A1 * !A3 * B1 * !Y)	0.00222	0.00222	0.00221
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00103	-0.00103	-0.00102
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00222	0.00222	0.00221
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00096	-0.00095	-0.00095
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00231	0.00232	0.00224

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00354	-0.00355	-0.00354
	(A1 * A3 * B1 * C1 * !Y)	0.00420	0.00425	0.00421
	(A1 * A3 * B1 * !C1 * !Y)	-0.00353	-0.00355	-0.00354
	(A1 * A3 * B1 * !C1 * !Y)	0.00420	0.00423	0.00421
	(A1 * A3 * !B1 * C1 * !Y)	-0.00354	-0.00357	-0.00355
	(A1 * A3 * !B1 * C1 * !Y)	0.00405	0.00411	0.00407
	(A1 * !A3 * B1 * C1 * !Y)	-0.00316	-0.00331	-0.00330
	(A1 * !A3 * B1 * C1 * !Y)	0.00439	0.00441	0.00438
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00316	-0.00331	-0.00329
	(A1 * !A3 * B1 * !C1 * !Y)	0.00439	0.00441	0.00438
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00315	-0.00329	-0.00328
	(A1 * !A3 * !B1 * C1 * !Y)	0.00439	0.00441	0.00438
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00149	-0.00150	-0.00153
	(A1 * !A3 * !B1 * !C1 * Y)	0.00450	0.00452	0.00441
	(!A1 * A3 * B1 * !Y)	-0.00322	-0.00336	-0.00335
	(!A1 * A3 * B1 * !Y)	0.00437	0.00438	0.00438
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00322	-0.00337	-0.00335
	(!A1 * A3 * !B1 * C1 * !Y)	0.00437	0.00438	0.00438
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00310	-0.00337	-0.00335
	(!A1 * A3 * !B1 * !C1 * Y)	0.00452	0.00438	0.00438
	(!A1 * !A3 * B1 * !Y)	-0.00195	-0.00197	-0.00195
	(!A1 * !A3 * B1 * !Y)	0.00437	0.00440	0.00438
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00195	-0.00197	-0.00195
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00437	0.00440	0.00438
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00181	-0.00183	-0.00181
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00458	0.00460	0.00444

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)**	0.00104	0.00103	0.00103
	(A1 * A2 * B1 * C1 * !Y)	-0.00100	-0.00105	-0.00104
	(A1 * A2 * B1 * !C1 * !Y)	0.00104	0.00103	0.00103
	(A1 * A2 * B1 * !C1 * !Y)	-0.00100	-0.00104	-0.00104
	(A1 * A2 * !B1 * C1 * !Y)	0.00103	0.00103	0.00103
	(A1 * A2 * !B1 * C1 * !Y)	-0.00095	-0.00101	-0.00100
	(A1 * !A2 * !B1 * !C1 * Y)	0.00087	0.00088	0.00088
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00116	-0.00117	-0.00116
	(!A2 * B1 * !Y)	0.00097	0.00097	0.00097
	(!A2 * B1 * !Y)	-0.00107	-0.00107	-0.00107
	(!A2 * !B1 * C1 * !Y)	0.00097	0.00098	0.00097
	(!A2 * !B1 * C1 * !Y)	-0.00107	-0.00107	-0.00107
	(!A1 * A2 * B1 * !Y)	0.00095	0.00096	0.00096
	(!A1 * A2 * B1 * !Y)	-0.00107	-0.00107	-0.00107
	(!A1 * A2 * !B1 * C1 * !Y)	0.00096	0.00096	0.00096
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00107	-0.00107	-0.00107
	(!A1 * A2 * !B1 * !C1 * Y)	0.00086	0.00086	0.00086
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00116	-0.00116	-0.00116
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00087	0.00088	0.00087
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00116	-0.00117	-0.00116

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00174	0.00175	0.00174
	(A1 * A2 * B1 * C1 * !Y)	-0.00200	-0.00209	-0.00207
	(A1 * A2 * B1 * !C1 * !Y)	0.00174	0.00175	0.00174
	(A1 * A2 * B1 * !C1 * !Y)	-0.00199	-0.00209	-0.00207
	(A1 * A2 * !B1 * C1 * !Y)	0.00175	0.00175	0.00174
	(A1 * A2 * !B1 * C1 * !Y)	-0.00191	-0.00202	-0.00201
	(A1 * !A2 * !B1 * !C1 * Y)	0.00164	0.00165	0.00164
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00215	-0.00216	-0.00215
	(!A2 * B1 * !Y)	0.00164	0.00165	0.00164
	(!A2 * B1 * !Y)	-0.00215	-0.00215	-0.00215
	(!A2 * !B1 * C1 * !Y)	0.00164	0.00165	0.00164
	(!A2 * !B1 * C1 * !Y)	-0.00215	-0.00215	-0.00215
	(!A1 * A2 * B1 * !Y)	0.00159	0.00161	0.00159
	(!A1 * A2 * B1 * !Y)	-0.00215	-0.00216	-0.00215
	(!A1 * A2 * !B1 * C1 * !Y)	0.00159	0.00160	0.00159
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00215	-0.00215	-0.00215
	(!A1 * A2 * !B1 * !C1 * Y)	0.00159	0.00160	0.00159
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00215	-0.00215	-0.00215
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00164	0.00165	0.00163
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00215	-0.00216	-0.00215

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00353	0.00355	0.00354
	(A1 * A2 * B1 * C1 * !Y)	-0.00404	-0.00423	-0.00420
	(A1 * A2 * B1 * !C1 * !Y)	0.00354	0.00355	0.00354
	(A1 * A2 * B1 * !C1 * !Y)	-0.00403	-0.00423	-0.00420
	(A1 * A2 * !B1 * C1 * !Y)	0.00356	0.00356	0.00354
	(A1 * A2 * !B1 * C1 * !Y)	-0.00386	-0.00407	-0.00405
	(A1 * !A2 * !B1 * !C1 * Y)	0.00330	0.00332	0.00330
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00435	-0.00436	-0.00435
	(!A2 * B1 * !Y)	0.00330	0.00331	0.00329
	(!A2 * B1 * !Y)	-0.00435	-0.00436	-0.00434
	(!A2 * !B1 * C1 * !Y)	0.00330	0.00332	0.00329
	(!A2 * !B1 * C1 * !Y)	-0.00435	-0.00436	-0.00434
	(!A1 * A2 * B1 * !Y)	0.00322	0.00323	0.00321
	(!A1 * A2 * B1 * !Y)	-0.00435	-0.00435	-0.00434
	(!A1 * A2 * !B1 * C1 * !Y)	0.00322	0.00323	0.00321
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00435	-0.00435	-0.00434
	(!A1 * A2 * !B1 * !C1 * Y)	0.00321	0.00323	0.00321
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00435	-0.00436	-0.00434
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00331	0.00332	0.00330
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00435	-0.00436	-0.00435

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)**	-0.00102	-0.00103	-0.00103
	(A1 * A2 * B1 * C1 * !Y)	0.00103	0.00105	0.00104
	(A1 * A2 * B1 * !C1 * !Y)	-0.00102	-0.00103	-0.00103
	(A1 * A2 * B1 * !C1 * !Y)	0.00103	0.00105	0.00104
	(A1 * A2 * !B1 * C1 * !Y)	-0.00102	-0.00103	-0.00103
	(A1 * A2 * !B1 * C1 * !Y)	0.00099	0.00101	0.00100
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00085	-0.00088	-0.00088
	(A1 * !A2 * !B1 * !C1 * Y)	0.00116	0.00118	0.00117
	(!A2 * B1 * !Y)	-0.00095	-0.00097	-0.00097
	(!A2 * B1 * !Y)	0.00107	0.00107	0.00107
	(!A2 * !B1 * C1 * !Y)	-0.00095	-0.00098	-0.00097
	(!A2 * !B1 * C1 * !Y)	0.00107	0.00108	0.00107
	(!A1 * A2 * B1 * !Y)	-0.00091	-0.00096	-0.00096
	(!A1 * A2 * B1 * !Y)	0.00107	0.00108	0.00107
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00091	-0.00096	-0.00096
	(!A1 * A2 * !B1 * C1 * !Y)	0.00107	0.00108	0.00107
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00081	-0.00086	-0.00086
	(!A1 * A2 * !B1 * !C1 * Y)	0.00116	0.00117	0.00117
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00085	-0.00088	-0.00087
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00116	0.00119	0.00117

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00174	-0.00175	-0.00174
	(A1 * A2 * B1 * C1 * !Y)	0.00207	0.00210	0.00207
	(A1 * A2 * B1 * !C1 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * A2 * B1 * !C1 * !Y)	0.00207	0.00210	0.00207
	(A1 * A2 * !B1 * C1 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * A2 * !B1 * C1 * !Y)	0.00200	0.00202	0.00201
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00157	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !C1 * Y)	0.00215	0.00218	0.00215
	(!A2 * B1 * !Y)	-0.00159	-0.00165	-0.00164
	(!A2 * B1 * !Y)	0.00215	0.00217	0.00215
	(!A2 * !B1 * C1 * !Y)	-0.00158	-0.00165	-0.00164
	(!A2 * !B1 * C1 * !Y)	0.00215	0.00217	0.00215
	(!A1 * A2 * B1 * !Y)	-0.00150	-0.00161	-0.00159
	(!A1 * A2 * B1 * !Y)	0.00215	0.00217	0.00215
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00150	-0.00160	-0.00159
	(!A1 * A2 * !B1 * C1 * !Y)	0.00215	0.00217	0.00215
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00149	-0.00160	-0.00159
	(!A1 * A2 * !B1 * !C1 * Y)	0.00216	0.00217	0.00215
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00158	-0.00165	-0.00163
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00215	0.00218	0.00215

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00352	-0.00355	-0.00353
	(A1 * A2 * B1 * C1 * !Y)	0.00418	0.00424	0.00420
	(A1 * A2 * B1 * !C1 * !Y)	-0.00352	-0.00355	-0.00353
	(A1 * A2 * B1 * !C1 * !Y)	0.00418	0.00424	0.00420
	(A1 * A2 * !B1 * C1 * !Y)	-0.00353	-0.00355	-0.00353
	(A1 * A2 * !B1 * C1 * !Y)	0.00403	0.00407	0.00405
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00317	-0.00332	-0.00330
	(A1 * !A2 * !B1 * !C1 * Y)	0.00438	0.00441	0.00436
	(!A2 * B1 * !Y)	-0.00320	-0.00331	-0.00329
	(!A2 * B1 * !Y)	0.00437	0.00439	0.00436
	(!A2 * !B1 * C1 * !Y)	-0.00320	-0.00332	-0.00329
	(!A2 * !B1 * C1 * !Y)	0.00437	0.00439	0.00436
	(!A1 * A2 * B1 * !Y)	-0.00301	-0.00323	-0.00321
	(!A1 * A2 * B1 * !Y)	0.00435	0.00439	0.00436
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00301	-0.00323	-0.00321
	(!A1 * A2 * !B1 * C1 * !Y)	0.00435	0.00439	0.00436
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00300	-0.00323	-0.00321
	(!A1 * A2 * !B1 * !C1 * Y)	0.00436	0.00439	0.00436
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00318	-0.00332	-0.00330
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00438	0.00441	0.00436

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)**	0.00107	0.00104	0.00101
	(A1 * A2 * A3 * C1 * !Y)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * A3 * !C1 * !Y)	0.00099	0.00100	0.00099
	(A1 * A2 * A3 * !C1 * !Y)	-0.00062	-0.00063	-0.00063
	(A1 * A2 * !A3 * C1 * !Y)	0.00111	0.00100	0.00098
	(A1 * A2 * !A3 * C1 * !Y)	-0.00091	-0.00104	-0.00104
	(A1 * !A2 * C1 * !Y)	0.00111	0.00100	0.00098
	(A1 * !A2 * C1 * !Y)	-0.00091	-0.00104	-0.00104
	(!A1 * C1 * !Y)	0.00111	0.00100	0.00098
	(!A1 * C1 * !Y)	-0.00091	-0.00104	-0.00104
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00109	0.00105	0.00102
	(A1 * A2 * A3 * C1 * !Y)	-0.00158	-0.00159	-0.00159
	(A1 * A2 * A3 * !C1 * !Y)	0.00102	0.00101	0.00100
	(A1 * A2 * A3 * !C1 * !Y)	-0.00134	-0.00132	-0.00132
	(A1 * A2 * !A3 * C1 * !Y)	0.00121	0.00102	0.00100
	(A1 * A2 * !A3 * C1 * !Y)	-0.00191	-0.00215	-0.00214
	(A1 * !A2 * C1 * !Y)	0.00121	0.00102	0.00100
	(A1 * !A2 * C1 * !Y)	-0.00191	-0.00215	-0.00214
	(!A1 * C1 * !Y)	0.00121	0.00102	0.00100
	(!A1 * C1 * !Y)	-0.00191	-0.00214	-0.00214
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00212	0.00204	0.00196
	(A1 * A2 * A3 * C1 * !Y)	-0.00309	-0.00312	-0.00310
	(A1 * A2 * A3 * !C1 * !Y)	0.00196	0.00194	0.00192
	(A1 * A2 * A3 * !C1 * !Y)	-0.00260	-0.00258	-0.00258
	(A1 * A2 * !A3 * C1 * !Y)	0.00238	0.00195	0.00191
	(A1 * A2 * !A3 * C1 * !Y)	-0.00368	-0.00420	-0.00422
	(A1 * !A2 * C1 * !Y)	0.00237	0.00195	0.00191
	(A1 * !A2 * C1 * !Y)	-0.00368	-0.00419	-0.00422
	(!A1 * C1 * !Y)	0.00237	0.00195	0.00191
	(!A1 * C1 * !Y)	-0.00369	-0.00423	-0.00422

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)	-0.00100	-0.00100	-0.00100
	(A1 * A2 * A3 * C1 * !Y)	0.00076	0.00077	0.00076
	(A1 * A2 * A3 * !C1 * !Y)	-0.00094	-0.00095	-0.00097
	(A1 * A2 * A3 * !C1 * !Y)	0.00068	0.00068	0.00066
	(A1 * A2 * !A3 * C1 * !Y)	-0.00098	-0.00098	-0.00098
	(A1 * A2 * !A3 * C1 * !Y)	0.00104	0.00104	0.00104
	(A1 * !A2 * C1 * !Y)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * C1 * !Y)	0.00104	0.00104	0.00104
	(!A1 * C1 * !Y)	-0.00098	-0.00098	-0.00098
	(!A1 * C1 * !Y)	0.00104	0.00104	0.00104
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00100	-0.00101	-0.00101
	(A1 * A2 * A3 * C1 * !Y)	0.00158	0.00159	0.00159
	(A1 * A2 * A3 * !C1 * !Y)	-0.00090	-0.00091	-0.00094
	(A1 * A2 * A3 * !C1 * !Y)	0.00141	0.00141	0.00139
	(A1 * A2 * !A3 * C1 * !Y)	-0.00100	-0.00100	-0.00099
	(A1 * A2 * !A3 * C1 * !Y)	0.00215	0.00215	0.00214
	(A1 * !A2 * C1 * !Y)	-0.00100	-0.00100	-0.00099
	(A1 * !A2 * C1 * !Y)	0.00215	0.00215	0.00214
	(!A1 * C1 * !Y)	-0.00100	-0.00100	-0.00099
	(!A1 * C1 * !Y)	0.00215	0.00214	0.00214

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00193	-0.00194	-0.00193
	(A1 * A2 * A3 * C1 * !Y)	0.00309	0.00312	0.00310
	(A1 * A2 * A3 * !C1 * !Y)	-0.00171	-0.00172	-0.00180
	(A1 * A2 * A3 * !C1 * !Y)	0.00278	0.00277	0.00271
	(A1 * A2 * !A3 * C1 * !Y)	-0.00191	-0.00190	-0.00190
	(A1 * A2 * !A3 * C1 * !Y)	0.00422	0.00420	0.00422
	(A1 * !A2 * C1 * !Y)	-0.00191	-0.00190	-0.00190
	(A1 * !A2 * C1 * !Y)	0.00422	0.00419	0.00422
	(!A1 * C1 * !Y)	-0.00191	-0.00191	-0.00190
	(!A1 * C1 * !Y)	0.00422	0.00423	0.00422

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)	0.00105	0.00105	0.00105
	(A1 * A2 * B1 * !Y)	-0.00059	-0.00059	-0.00059
	(A1 * A2 * A3 * !B1 * !Y)	0.00104	0.00105	0.00105
	(A1 * A2 * A3 * !B1 * !Y)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * B1 * !Y)	0.00104	0.00105	0.00105
	(A1 * !A2 * B1 * !Y)	-0.00059	-0.00059	-0.00059
	(!A1 * B1 * !Y)	0.00105	0.00105	0.00105
	(!A1 * B1 * !Y)	-0.00059	-0.00059	-0.00059
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00118	0.00119	0.00118
	(A1 * A2 * B1 * !Y)	-0.00115	-0.00115	-0.00115
	(A1 * A2 * A3 * !B1 * !Y)	0.00117	0.00119	0.00118
	(A1 * A2 * A3 * !B1 * !Y)	-0.00114	-0.00115	-0.00115
	(A1 * !A2 * B1 * !Y)	0.00118	0.00119	0.00118
	(A1 * !A2 * B1 * !Y)	-0.00115	-0.00116	-0.00115
	(!A1 * B1 * !Y)	0.00118	0.00119	0.00118
	(!A1 * B1 * !Y)	-0.00116	-0.00116	-0.00115
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00235	0.00236	0.00235
	(A1 * A2 * B1 * !Y)	-0.00229	-0.00229	-0.00228
	(A1 * A2 * A3 * !B1 * !Y)	0.00235	0.00236	0.00235
	(A1 * A2 * A3 * !B1 * !Y)	-0.00228	-0.00229	-0.00228
	(A1 * !A2 * B1 * !Y)	0.00235	0.00236	0.00235
	(A1 * !A2 * B1 * !Y)	-0.00228	-0.00229	-0.00228
	(!A1 * B1 * !Y)	0.00237	0.00236	0.00235
	(!A1 * B1 * !Y)	-0.00231	-0.00229	-0.00228

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)	-0.00100	-0.00100	-0.00104
	(A1 * A2 * B1 * !Y)	0.00064	0.00063	0.00060
	(A1 * A2 * A3 * !B1 * !Y)	-0.00088	-0.00088	-0.00101
	(A1 * A2 * A3 * !B1 * !Y)	0.00072	0.00072	0.00062
	(A1 * !A2 * B1 * !Y)	-0.00100	-0.00100	-0.00104
	(A1 * !A2 * B1 * !Y)	0.00064	0.00064	0.00060
	(!A1 * B1 * !Y)	-0.00100	-0.00100	-0.00104
	(!A1 * B1 * !Y)	0.00064	0.00064	0.00060
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00104	-0.00105	-0.00116
	(A1 * A2 * B1 * !Y)	0.00129	0.00128	0.00119
	(A1 * A2 * A3 * !B1 * !Y)	-0.00076	-0.00077	-0.00110
	(A1 * A2 * A3 * !B1 * !Y)	0.00147	0.00146	0.00122
	(A1 * !A2 * B1 * !Y)	-0.00104	-0.00105	-0.00116
	(A1 * !A2 * B1 * !Y)	0.00129	0.00128	0.00119
	(!A1 * B1 * !Y)	-0.00104	-0.00105	-0.00116
	(!A1 * B1 * !Y)	0.00129	0.00128	0.00119
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00210	-0.00211	-0.00232
	(A1 * A2 * B1 * !Y)	0.00253	0.00251	0.00235
	(A1 * A2 * A3 * !B1 * !Y)	-0.00155	-0.00157	-0.00219
	(A1 * A2 * A3 * !B1 * !Y)	0.00287	0.00285	0.00242
	(A1 * !A2 * B1 * !Y)	-0.00210	-0.00211	-0.00232
	(A1 * !A2 * B1 * !Y)	0.00253	0.00252	0.00235
	(!A1 * B1 * !Y)	-0.00210	-0.00211	-0.00232
	(!A1 * B1 * !Y)	0.00253	0.00252	0.00235

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00250	0.00235	0.00237	0.00246	0.00255	0.65430
sky130_fd_sc_hs__a311o_2	0.00258	0.00257	0.00272	0.00278	0.00263	1.16538
sky130_fd_sc_hs__a311o_4	0.00472	0.00436	0.00462	0.00453	0.00453	2.12205

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311o_1	0.00000	0.02486	0.04882
sky130_fd_sc_hs__a311o_2	0.00000	0.03104	0.05243
sky130_fd_sc_hs__a311o_4	0.00000	0.06328	0.10486

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)	0.15735	0.95414	7.66175
	A2->X (RR)	0.16723	0.97060	7.85665
	A3->X (RR)	0.17301	0.95425	7.86307
	B1->X (RR)	0.10306	0.87383	7.58630
	C1->X (RR)	0.09904	0.85670	7.52995
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.17056	0.88821	7.79947
	A2->X (RR)	0.18073	0.89451	7.94876
	A3->X (RR)	0.18721	0.87592	7.92370
	B1->X (RR)	0.10584	0.79237	7.67685
	C1->X (RR)	0.10185	0.77929	7.62202
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.20063	0.84448	7.76172
	A2->X (RR)	0.21620	0.86171	7.96476
	A3->X (RR)	0.22225	0.81775	7.86768
	B1->X (RR)	0.10505	0.69641	7.53814
	C1->X (RR)	0.09976	0.67888	7.47249

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.39410	1.04540	5.48338
	A2->X (FF)	0.45292	1.11261	5.68721
	A3->X (FF)	0.49733	1.16199	5.81982
	B1->X (FF)	0.45400	1.11332	5.78735
	C1->X (FF)	0.39876	1.02395	5.30774
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.53901	1.18558	5.76898
	A2->X (FF)	0.61508	1.27068	5.94266
	A3->X (FF)	0.67195	1.33175	6.07025
	B1->X (FF)	0.63082	1.28760	6.14070
	C1->X (FF)	0.56578	1.18381	5.68920
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.54277	1.13956	5.57355
	A2->X (FF)	0.61802	1.22095	5.77161
	A3->X (FF)	0.67874	1.29085	5.91443
	B1->X (FF)	0.63465	1.24334	5.99000
	C1->X (FF)	0.54523	1.11577	5.50212

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.00683	0.00669	0.00721
	A1	0.00324	0.00311	0.00370
	A2	0.00722	0.00709	0.00728
	A2	0.00324	0.00311	0.00335
	A3	0.00774	0.00759	0.00767
	A3	0.00323	0.00307	0.00322
	B1	0.00643	0.00638	0.00707
	B1	0.00244	0.00240	0.00316
	C1	0.00563	0.00553	0.00655
	C1	0.00195	0.00186	0.00312
sky130_fd_sc_hs__a311o_2	A1	0.00877	0.00880	0.00929
	A1	0.00491	0.00494	0.00556
	A2	0.00934	0.00939	0.00957
	A2	0.00491	0.00496	0.00522
	A3	0.01003	0.01005	0.01011
	A3	0.00491	0.00508	0.00510
	B1	0.00873	0.00884	0.00944
	B1	0.00417	0.00428	0.00505
	C1	0.00777	0.00786	0.00866
	C1	0.00364	0.00371	0.00476

sky130_fd_sc_hs__a311o_4	**A1**	0.01710	0.01727	0.01855
	A1	0.01034	0.01052	0.01207
	A2	0.01802	0.01833	0.01889
	A2	0.01028	0.01060	0.01132
	A3	0.01925	0.01958	0.01995
	A3	0.01035	0.01068	0.01130
	B1	0.01638	0.01645	0.01779
	B1	0.00863	0.00871	0.01025
	C1	0.01391	0.01406	0.01602
	C1	0.00701	0.00720	0.00957

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00202	0.00205	0.00243
	A1	0.00569	0.00571	0.00582
	A2	0.00242	0.00244	0.00280
	A2	0.00644	0.00650	0.00658
	A3	0.00264	0.00263	0.00282
	A3	0.00714	0.00714	0.00720
	B1	0.00258	0.00257	0.00323
	B1	0.00647	0.00650	0.00681
	C1	0.00246	0.00247	0.00379
	C1	0.00604	0.00609	0.00731

sky130_fd_sc_hs__a311o_2	**A1**	0.00371	0.00391	0.00456
	A1	0.00765	0.00787	0.00804
	A2	0.00409	0.00429	0.00502
	A2	0.00855	0.00874	0.00891
	A3	0.00426	0.00430	0.00497
	A3	0.00932	0.00936	0.00944
	B1	0.00400	0.00411	0.00507
	B1	0.00874	0.00882	0.00911
	C1	0.00425	0.00433	0.00581
	C1	0.00826	0.00840	0.00957
sky130_fd_sc_hs__a311o_4	**A1**	0.00750	0.00792	0.00841
	A1	0.01443	0.01490	0.01526
	A2	0.00865	0.00909	0.01015
	A2	0.01645	0.01691	0.01728
	A3	0.00887	0.00924	0.01075
	A3	0.01771	0.01809	0.01837
	B1	0.00851	0.00896	0.01057
	B1	0.01656	0.01691	0.01743
	C1	0.00845	0.00869	0.01243
	C1	0.01558	0.01597	0.01833

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)**	0.00088	0.00088	0.00087
	(A2 * A3 * B1 * C1 * X)	-0.00090	-0.00095	-0.00094
	(A2 * A3 * B1 * !C1 * X)	0.00087	0.00088	0.00087
	(A2 * A3 * B1 * !C1 * X)	-0.00090	-0.00095	-0.00094
	(A2 * A3 * !B1 * C1 * X)	0.00088	0.00088	0.00087
	(A2 * A3 * !B1 * C1 * X)	-0.00086	-0.00092	-0.00091
	(A2 * !A3 * B1 * C1 * X)	0.00081	0.00081	0.00081
	(A2 * !A3 * B1 * C1 * X)	-0.00097	-0.00098	-0.00097
	(A2 * !A3 * B1 * !C1 * X)	0.00081	0.00081	0.00081
	(A2 * !A3 * B1 * !C1 * X)	-0.00097	-0.00098	-0.00097
	(A2 * !A3 * !B1 * C1 * X)	0.00081	0.00081	0.00081
	(A2 * !A3 * !B1 * C1 * X)	-0.00097	-0.00098	-0.00097
	(A2 * !A3 * !B1 * !C1 * !X)	0.00038	0.00038	0.00035
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00110	-0.00110	-0.00115
	(!A2 * B1 * C1 * X)	0.00083	0.00084	0.00083
	(!A2 * B1 * C1 * X)	-0.00097	-0.00098	-0.00097
	(!A2 * B1 * !C1 * X)	0.00083	0.00083	0.00083
	(!A2 * B1 * !C1 * X)	-0.00097	-0.00098	-0.00097
	(!A2 * !B1 * C1 * X)	0.00083	0.00082	0.00083
	(!A2 * !B1 * C1 * X)	-0.00097	-0.00097	-0.00097
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00038	0.00036
	(!A2 * !B1 * !C1 * !X)	-0.00113	-0.00114	-0.00116

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00093	0.00092	0.00092
	(A2 * A3 * B1 * C1 * X)	-0.00090	-0.00094	-0.00093
	(A2 * A3 * B1 * !C1 * X)	0.00093	0.00092	0.00092
	(A2 * A3 * B1 * !C1 * X)	-0.00090	-0.00094	-0.00093
	(A2 * A3 * !B1 * C1 * X)	0.00092	0.00092	0.00092
	(A2 * A3 * !B1 * C1 * X)	-0.00085	-0.00091	-0.00091
	(A2 * !A3 * B1 * C1 * X)	0.00084	0.00085	0.00084
	(A2 * !A3 * B1 * C1 * X)	-0.00096	-0.00097	-0.00097
	(A2 * !A3 * B1 * !C1 * X)	0.00084	0.00085	0.00084
	(A2 * !A3 * B1 * !C1 * X)	-0.00096	-0.00097	-0.00096
	(A2 * !A3 * !B1 * C1 * X)	0.00084	0.00085	0.00084
	(A2 * !A3 * !B1 * C1 * X)	-0.00096	-0.00097	-0.00096
	(A2 * !A3 * !B1 * !C1 * !X)	0.00032	0.00032	0.00029
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00114	-0.00114	-0.00119
	(!A2 * B1 * C1 * X)	0.00087	0.00087	0.00087
	(!A2 * B1 * C1 * X)	-0.00097	-0.00097	-0.00097
	(!A2 * B1 * !C1 * X)	0.00087	0.00087	0.00087
	(!A2 * B1 * !C1 * X)	-0.00096	-0.00097	-0.00097
	(!A2 * !B1 * C1 * X)	0.00087	0.00087	0.00087
	(!A2 * !B1 * C1 * X)	-0.00097	-0.00097	-0.00096
	(!A2 * !B1 * !C1 * !X)	0.00033	0.00033	0.00031
	(!A2 * !B1 * !C1 * !X)	-0.00118	-0.00118	-0.00120

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00159	0.00159	0.00158
	(A2 * A3 * B1 * C1 * X)	-0.00188	-0.00197	-0.00195
	(A2 * A3 * B1 * !C1 * X)	0.00160	0.00159	0.00158
	(A2 * A3 * B1 * !C1 * X)	-0.00189	-0.00197	-0.00195
	(A2 * A3 * !B1 * C1 * X)	0.00159	0.00159	0.00158
	(A2 * A3 * !B1 * C1 * X)	-0.00180	-0.00191	-0.00189
	(A2 * !A3 * B1 * C1 * X)	0.00144	0.00145	0.00144
	(A2 * !A3 * B1 * C1 * X)	-0.00202	-0.00203	-0.00202
	(A2 * !A3 * B1 * !C1 * X)	0.00144	0.00144	0.00144
	(A2 * !A3 * B1 * !C1 * X)	-0.00202	-0.00203	-0.00202
	(A2 * !A3 * !B1 * C1 * X)	0.00144	0.00146	0.00145
	(A2 * !A3 * !B1 * C1 * X)	-0.00202	-0.00204	-0.00202
	(A2 * !A3 * !B1 * !C1 * !X)	0.00061	0.00062	0.00055
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00223	-0.00225	-0.00237
	(!A2 * B1 * C1 * X)	0.00150	0.00151	0.00150
	(!A2 * B1 * C1 * X)	-0.00201	-0.00204	-0.00202
	(!A2 * B1 * !C1 * X)	0.00149	0.00151	0.00150
	(!A2 * B1 * !C1 * X)	-0.00202	-0.00204	-0.00202
	(!A2 * !B1 * C1 * X)	0.00149	0.00151	0.00150
	(!A2 * !B1 * C1 * X)	-0.00202	-0.00203	-0.00202
	(!A2 * !B1 * !C1 * !X)	0.00065	0.00065	0.00060
	(!A2 * !B1 * !C1 * !X)	-0.00229	-0.00231	-0.00238

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)**	-0.00087	-0.00088	-0.00087
	(A2 * A3 * B1 * C1 * X)	0.00094	0.00095	0.00094
	(A2 * A3 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00087
	(A2 * A3 * B1 * !C1 * X)	0.00094	0.00095	0.00094
	(A2 * A3 * !B1 * C1 * X)	-0.00087	-0.00088	-0.00087
	(A2 * A3 * !B1 * C1 * X)	0.00091	0.00092	0.00091
	(A2 * !A3 * B1 * C1 * X)	-0.00077	-0.00081	-0.00081
	(A2 * !A3 * B1 * C1 * X)	0.00098	0.00099	0.00098
	(A2 * !A3 * B1 * !C1 * X)	-0.00076	-0.00081	-0.00081
	(A2 * !A3 * B1 * !C1 * X)	0.00097	0.00099	0.00098
	(A2 * !A3 * !B1 * C1 * X)	-0.00075	-0.00081	-0.00081
	(A2 * !A3 * !B1 * C1 * X)	0.00097	0.00099	0.00098
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00035	-0.00035	-0.00035
	(A2 * !A3 * !B1 * !C1 * !X)	0.00117	0.00117	0.00116
	(!A2 * B1 * C1 * X)	-0.00081	-0.00083	-0.00083
	(!A2 * B1 * C1 * X)	0.00098	0.00098	0.00098
	(!A2 * B1 * !C1 * X)	-0.00081	-0.00083	-0.00083
	(!A2 * B1 * !C1 * X)	0.00098	0.00099	0.00098
	(!A2 * !B1 * C1 * X)	-0.00080	-0.00082	-0.00083
	(!A2 * !B1 * C1 * X)	0.00097	0.00099	0.00098
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00035
	(!A2 * !B1 * !C1 * !X)	0.00117	0.00117	0.00116

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00092	-0.00092	-0.00092
	(A2 * A3 * B1 * C1 * X)	0.00094	0.00094	0.00093
	(A2 * A3 * B1 * !C1 * X)	-0.00092	-0.00092	-0.00092
	(A2 * A3 * B1 * !C1 * X)	0.00094	0.00095	0.00093
	(A2 * A3 * !B1 * C1 * X)	-0.00092	-0.00092	-0.00092
	(A2 * A3 * !B1 * C1 * X)	0.00091	0.00091	0.00091
	(A2 * !A3 * B1 * C1 * X)	-0.00079	-0.00085	-0.00084
	(A2 * !A3 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(A2 * !A3 * B1 * !C1 * X)	-0.00079	-0.00085	-0.00084
	(A2 * !A3 * B1 * !C1 * X)	0.00098	0.00098	0.00097
	(A2 * !A3 * !B1 * C1 * X)	-0.00079	-0.00085	-0.00084
	(A2 * !A3 * !B1 * C1 * X)	0.00098	0.00098	0.00097
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * !B1 * !C1 * !X)	0.00120	0.00121	0.00120
	(!A2 * B1 * C1 * X)	-0.00084	-0.00087	-0.00087
	(!A2 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A2 * B1 * !C1 * X)	-0.00084	-0.00087	-0.00087
	(!A2 * B1 * !C1 * X)	0.00096	0.00098	0.00097
	(!A2 * !B1 * C1 * X)	-0.00084	-0.00087	-0.00087
	(!A2 * !B1 * C1 * X)	0.00097	0.00097	0.00097
	(!A2 * !B1 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !C1 * !X)	0.00120	0.00121	0.00120

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00158	-0.00159	-0.00158
	(A2 * A3 * B1 * C1 * X)	0.00195	0.00197	0.00195
	(A2 * A3 * B1 * !C1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * A3 * B1 * !C1 * X)	0.00194	0.00198	0.00195
	(A2 * A3 * !B1 * C1 * X)	-0.00157	-0.00158	-0.00158
	(A2 * A3 * !B1 * C1 * X)	0.00188	0.00191	0.00189
	(A2 * !A3 * B1 * C1 * X)	-0.00133	-0.00145	-0.00144
	(A2 * !A3 * B1 * C1 * X)	0.00203	0.00205	0.00203
	(A2 * !A3 * B1 * !C1 * X)	-0.00132	-0.00144	-0.00144
	(A2 * !A3 * B1 * !C1 * X)	0.00202	0.00205	0.00203
	(A2 * !A3 * !B1 * C1 * X)	-0.00132	-0.00146	-0.00145
	(A2 * !A3 * !B1 * C1 * X)	0.00202	0.00205	0.00203
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00054	-0.00054	-0.00054
	(A2 * !A3 * !B1 * !C1 * !X)	0.00240	0.00240	0.00239
	(!A2 * B1 * C1 * X)	-0.00143	-0.00151	-0.00150
	(!A2 * B1 * C1 * X)	0.00201	0.00205	0.00203
	(!A2 * B1 * !C1 * X)	-0.00144	-0.00151	-0.00150
	(!A2 * B1 * !C1 * X)	0.00204	0.00206	0.00203
	(!A2 * !B1 * C1 * X)	-0.00144	-0.00151	-0.00150
	(!A2 * !B1 * C1 * X)	0.00204	0.00206	0.00203
	(!A2 * !B1 * !C1 * !X)	-0.00058	-0.00058	-0.00058
	(!A2 * !B1 * !C1 * !X)	0.00240	0.00240	0.00239

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)**	0.00076	0.00076	0.00075
	(A1 * A3 * B1 * C1 * X)	-0.00093	-0.00097	-0.00097
	(A1 * A3 * B1 * !C1 * X)	0.00076	0.00076	0.00075
	(A1 * A3 * B1 * !C1 * X)	-0.00093	-0.00097	-0.00097
	(A1 * A3 * !B1 * C1 * X)	0.00076	0.00075	0.00075
	(A1 * A3 * !B1 * C1 * X)	-0.00088	-0.00094	-0.00093
	(A1 * !A3 * B1 * C1 * X)	0.00071	0.00071	0.00071
	(A1 * !A3 * B1 * C1 * X)	-0.00100	-0.00101	-0.00100
	(A1 * !A3 * B1 * !C1 * X)	0.00071	0.00071	0.00071
	(A1 * !A3 * B1 * !C1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * !B1 * C1 * X)	0.00071	0.00071	0.00071
	(A1 * !A3 * !B1 * C1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * !B1 * !C1 * !X)	0.00031	0.00031	0.00031
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00105	-0.00105	-0.00104
	(!A1 * A3 * B1 * X)	0.00071	0.00072	0.00071
	(!A1 * A3 * B1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * A3 * !B1 * C1 * X)	0.00071	0.00071	0.00071
	(!A1 * A3 * !B1 * C1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * !B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00105	-0.00105	-0.00105
	(!A1 * !A3 * B1 * X)	0.00044	0.00044	0.00043
	(!A1 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * !A3 * !B1 * C1 * X)	0.00043	0.00044	0.00043
	(!A1 * !A3 * !B1 * C1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00036	0.00036	0.00036
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00105	-0.00105	-0.00105

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00093	0.00092	0.00091
	(A1 * A3 * B1 * C1 * X)	-0.00090	-0.00094	-0.00093
	(A1 * A3 * B1 * !C1 * X)	0.00092	0.00092	0.00091
	(A1 * A3 * B1 * !C1 * X)	-0.00090	-0.00094	-0.00093
	(A1 * A3 * !B1 * C1 * X)	0.00092	0.00091	0.00091
	(A1 * A3 * !B1 * C1 * X)	-0.00085	-0.00091	-0.00091
	(A1 * !A3 * B1 * C1 * X)	0.00085	0.00085	0.00085
	(A1 * !A3 * B1 * C1 * X)	-0.00097	-0.00097	-0.00097
	(A1 * !A3 * B1 * !C1 * X)	0.00085	0.00086	0.00085
	(A1 * !A3 * B1 * !C1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * !A3 * !B1 * C1 * X)	0.00085	0.00086	0.00085
	(A1 * !A3 * !B1 * C1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * !A3 * !B1 * !C1 * !X)	0.00038	0.00038	0.00038
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00103	-0.00103	-0.00102
	(!A1 * A3 * B1 * X)	0.00086	0.00087	0.00086
	(!A1 * A3 * B1 * X)	-0.00097	-0.00097	-0.00097
	(!A1 * A3 * !B1 * C1 * X)	0.00086	0.00087	0.00086
	(!A1 * A3 * !B1 * C1 * X)	-0.00097	-0.00097	-0.00096
	(!A1 * A3 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00103	-0.00103	-0.00103
	(!A1 * !A3 * B1 * X)	0.00053	0.00053	0.00053
	(!A1 * !A3 * B1 * X)	-0.00097	-0.00097	-0.00097
	(!A1 * !A3 * !B1 * C1 * X)	0.00053	0.00053	0.00053
	(!A1 * !A3 * !B1 * C1 * X)	-0.00097	-0.00097	-0.00096
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00043	0.00043	0.00043
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00104	-0.00104	-0.00103

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00152	0.00152	0.00151
	(A1 * A3 * B1 * C1 * X)	-0.00187	-0.00194	-0.00193
	(A1 * A3 * B1 * !C1 * X)	0.00152	0.00152	0.00151
	(A1 * A3 * B1 * !C1 * X)	-0.00186	-0.00194	-0.00193
	(A1 * A3 * !B1 * C1 * X)	0.00152	0.00152	0.00151
	(A1 * A3 * !B1 * C1 * X)	-0.00180	-0.00190	-0.00188
	(A1 * !A3 * B1 * C1 * X)	0.00143	0.00143	0.00143
	(A1 * !A3 * B1 * C1 * X)	-0.00200	-0.00200	-0.00199
	(A1 * !A3 * B1 * !C1 * X)	0.00143	0.00143	0.00143
	(A1 * !A3 * B1 * !C1 * X)	-0.00200	-0.00199	-0.00199
	(A1 * !A3 * !B1 * C1 * X)	0.00143	0.00143	0.00143
	(A1 * !A3 * !B1 * C1 * X)	-0.00200	-0.00200	-0.00199
	(A1 * !A3 * !B1 * !C1 * !X)	0.00071	0.00072	0.00073
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00199	-0.00200	-0.00198
	(!A1 * A3 * B1 * X)	0.00143	0.00144	0.00143
	(!A1 * A3 * B1 * X)	-0.00198	-0.00200	-0.00199
	(!A1 * A3 * !B1 * C1 * X)	0.00143	0.00145	0.00143
	(!A1 * A3 * !B1 * C1 * X)	-0.00198	-0.00200	-0.00199
	(!A1 * A3 * !B1 * !C1 * !X)	0.00143	0.00144	0.00143
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00198	-0.00199	-0.00199
	(!A1 * !A3 * B1 * X)	0.00091	0.00092	0.00091
	(!A1 * !A3 * B1 * X)	-0.00199	-0.00200	-0.00199
	(!A1 * !A3 * !B1 * C1 * X)	0.00091	0.00092	0.00091
	(!A1 * !A3 * !B1 * C1 * X)	-0.00199	-0.00200	-0.00199
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00083	0.00084	0.00084
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00200	-0.00201	-0.00200

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)**	-0.00076	-0.00076	-0.00075
	(A1 * A3 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(A1 * A3 * B1 * !C1 * X)	-0.00076	-0.00076	-0.00075
	(A1 * A3 * B1 * !C1 * X)	0.00097	0.00097	0.00097
	(A1 * A3 * !B1 * C1 * X)	-0.00076	-0.00075	-0.00075
	(A1 * A3 * !B1 * C1 * X)	0.00094	0.00094	0.00093
	(A1 * !A3 * B1 * C1 * X)	-0.00069	-0.00071	-0.00071
	(A1 * !A3 * B1 * C1 * X)	0.00100	0.00101	0.00100
	(A1 * !A3 * B1 * !C1 * X)	-0.00069	-0.00071	-0.00071
	(A1 * !A3 * B1 * !C1 * X)	0.00101	0.00100	0.00100
	(A1 * !A3 * !B1 * C1 * X)	-0.00069	-0.00071	-0.00071
	(A1 * !A3 * !B1 * C1 * X)	0.00101	0.00101	0.00101
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00030
	(A1 * !A3 * !B1 * !C1 * !X)	0.00107	0.00108	0.00106
	(!A1 * A3 * B1 * X)	-0.00069	-0.00072	-0.00071
	(!A1 * A3 * B1 * X)	0.00101	0.00102	0.00100
	(!A1 * A3 * !B1 * C1 * X)	-0.00069	-0.00071	-0.00071
	(!A1 * A3 * !B1 * C1 * X)	0.00101	0.00102	0.00101
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00062	-0.00067	-0.00067
	(!A1 * A3 * !B1 * !C1 * !X)	0.00108	0.00106	0.00105
	(!A1 * !A3 * B1 * X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A3 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * !A3 * !B1 * C1 * X)	-0.00043	-0.00044	-0.00043
	(!A1 * !A3 * !B1 * C1 * X)	0.00100	0.00101	0.00101
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00110	0.00110	0.00106

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00091	-0.00092	-0.00091
	(A1 * A3 * B1 * C1 * X)	0.00093	0.00095	0.00093
	(A1 * A3 * B1 * !C1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * A3 * B1 * !C1 * X)	0.00093	0.00095	0.00093
	(A1 * A3 * !B1 * C1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * A3 * !B1 * C1 * X)	0.00090	0.00091	0.00091
	(A1 * !A3 * B1 * C1 * X)	-0.00083	-0.00085	-0.00085
	(A1 * !A3 * B1 * C1 * X)	0.00097	0.00097	0.00097
	(A1 * !A3 * B1 * !C1 * X)	-0.00083	-0.00086	-0.00085
	(A1 * !A3 * B1 * !C1 * X)	0.00097	0.00097	0.00097
	(A1 * !A3 * !B1 * C1 * X)	-0.00083	-0.00086	-0.00085
	(A1 * !A3 * !B1 * C1 * X)	0.00097	0.00097	0.00097
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00035	-0.00035	-0.00036
	(A1 * !A3 * !B1 * !C1 * !X)	0.00106	0.00106	0.00104
	(!A1 * A3 * B1 * X)	-0.00084	-0.00087	-0.00086
	(!A1 * A3 * B1 * X)	0.00097	0.00098	0.00097
	(!A1 * A3 * !B1 * C1 * X)	-0.00084	-0.00087	-0.00086
	(!A1 * A3 * !B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00075	-0.00081	-0.00080
	(!A1 * A3 * !B1 * !C1 * !X)	0.00106	0.00104	0.00103
	(!A1 * !A3 * B1 * X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A3 * B1 * X)	0.00097	0.00097	0.00097
	(!A1 * !A3 * !B1 * C1 * X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A3 * !B1 * C1 * X)	0.00097	0.00097	0.00097
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00108	0.00109	0.00105

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00151	-0.00152	-0.00151
	(A1 * A3 * B1 * C1 * X)	0.00193	0.00194	0.00193
	(A1 * A3 * B1 * !C1 * X)	-0.00151	-0.00151	-0.00151
	(A1 * A3 * B1 * !C1 * X)	0.00193	0.00194	0.00193
	(A1 * A3 * !B1 * C1 * X)	-0.00151	-0.00151	-0.00151
	(A1 * A3 * !B1 * C1 * X)	0.00188	0.00190	0.00188
	(A1 * !A3 * B1 * C1 * X)	-0.00137	-0.00143	-0.00143
	(A1 * !A3 * B1 * C1 * X)	0.00201	0.00200	0.00200
	(A1 * !A3 * B1 * !C1 * X)	-0.00137	-0.00143	-0.00143
	(A1 * !A3 * B1 * !C1 * X)	0.00201	0.00201	0.00200
	(A1 * !A3 * !B1 * C1 * X)	-0.00137	-0.00143	-0.00143
	(A1 * !A3 * !B1 * C1 * X)	0.00201	0.00201	0.00200
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00067	-0.00067	-0.00069
	(A1 * !A3 * !B1 * !C1 * !X)	0.00206	0.00206	0.00201
	(!A1 * A3 * B1 * X)	-0.00137	-0.00144	-0.00143
	(!A1 * A3 * B1 * X)	0.00199	0.00202	0.00200
	(!A1 * A3 * !B1 * C1 * X)	-0.00136	-0.00145	-0.00143
	(!A1 * A3 * !B1 * C1 * X)	0.00199	0.00202	0.00200
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00133	-0.00144	-0.00143
	(!A1 * A3 * !B1 * !C1 * !X)	0.00204	0.00202	0.00199
	(!A1 * !A3 * B1 * X)	-0.00091	-0.00092	-0.00091
	(!A1 * !A3 * B1 * X)	0.00201	0.00201	0.00200
	(!A1 * !A3 * !B1 * C1 * X)	-0.00091	-0.00092	-0.00091
	(!A1 * !A3 * !B1 * C1 * X)	0.00201	0.00201	0.00200
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00207	0.00207	0.00201

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)**	0.00084	0.00083	0.00083
	(A1 * A2 * B1 * C1 * X)	-0.00092	-0.00096	-0.00095
	(A1 * A2 * B1 * !C1 * X)	0.00084	0.00083	0.00083
	(A1 * A2 * B1 * !C1 * X)	-0.00092	-0.00096	-0.00095
	(A1 * A2 * !B1 * C1 * X)	0.00084	0.00084	0.00083
	(A1 * A2 * !B1 * C1 * X)	-0.00087	-0.00092	-0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	0.00068	0.00068	0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00109	-0.00109	-0.00109
	(!A2 * B1 * X)	0.00078	0.00079	0.00079
	(!A2 * B1 * X)	-0.00098	-0.00098	-0.00098
	(!A2 * !B1 * C1 * X)	0.00079	0.00079	0.00079
	(!A2 * !B1 * C1 * X)	-0.00098	-0.00098	-0.00098
	(!A1 * A2 * B1 * X)	0.00077	0.00078	0.00077
	(!A1 * A2 * B1 * X)	-0.00098	-0.00098	-0.00098
	(!A1 * A2 * !B1 * C1 * X)	0.00077	0.00078	0.00077
	(!A1 * A2 * !B1 * C1 * X)	-0.00098	-0.00098	-0.00098
	(!A1 * A2 * !B1 * !C1 * !X)	0.00067	0.00067	0.00066
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00109	-0.00109	-0.00109
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00068	0.00068	0.00068
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00109	-0.00109	-0.00109

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00105	0.00105	0.00104
	(A1 * A2 * B1 * C1 * X)	-0.00089	-0.00094	-0.00093
	(A1 * A2 * B1 * !C1 * X)	0.00105	0.00105	0.00104
	(A1 * A2 * B1 * !C1 * X)	-0.00089	-0.00094	-0.00093
	(A1 * A2 * !B1 * C1 * X)	0.00105	0.00104	0.00104
	(A1 * A2 * !B1 * C1 * X)	-0.00085	-0.00090	-0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00081	0.00081
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00114	-0.00114	-0.00114
	(!A2 * B1 * X)	0.00098	0.00100	0.00099
	(!A2 * B1 * X)	-0.00096	-0.00096	-0.00096
	(!A2 * !B1 * C1 * X)	0.00099	0.00100	0.00099
	(!A2 * !B1 * C1 * X)	-0.00096	-0.00096	-0.00096
	(!A1 * A2 * B1 * X)	0.00097	0.00098	0.00097
	(!A1 * A2 * B1 * X)	-0.00096	-0.00096	-0.00096
	(!A1 * A2 * !B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A1 * A2 * !B1 * C1 * X)	-0.00096	-0.00096	-0.00096
	(!A1 * A2 * !B1 * !C1 * !X)	0.00079	0.00079	0.00079
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00114	-0.00115	-0.00114
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00114	-0.00115	-0.00114

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00174	0.00174	0.00174
	(A1 * A2 * B1 * C1 * X)	-0.00180	-0.00188	-0.00187
	(A1 * A2 * B1 * !C1 * X)	0.00174	0.00174	0.00174
	(A1 * A2 * B1 * !C1 * X)	-0.00180	-0.00188	-0.00187
	(A1 * A2 * !B1 * C1 * X)	0.00175	0.00174	0.00174
	(A1 * A2 * !B1 * C1 * X)	-0.00174	-0.00183	-0.00182
	(A1 * !A2 * !B1 * !C1 * !X)	0.00145	0.00146	0.00145
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00212	-0.00213	-0.00212
	(!A2 * B1 * X)	0.00164	0.00166	0.00165
	(!A2 * B1 * X)	-0.00192	-0.00194	-0.00193
	(!A2 * !B1 * C1 * X)	0.00165	0.00166	0.00165
	(!A2 * !B1 * C1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * A2 * B1 * X)	0.00161	0.00162	0.00162
	(!A1 * A2 * B1 * X)	-0.00193	-0.00193	-0.00193
	(!A1 * A2 * !B1 * C1 * X)	0.00162	0.00163	0.00162
	(!A1 * A2 * !B1 * C1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * A2 * !B1 * !C1 * !X)	0.00143	0.00144	0.00143
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00212	-0.00212	-0.00212
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00145	0.00145	0.00145
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00212	-0.00212	-0.00212

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)**	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * C1 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * B1 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * !C1 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * !B1 * C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * X)	0.00092	0.00092	0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00065	-0.00068	-0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(!A2 * B1 * X)	-0.00077	-0.00079	-0.00079
	(!A2 * B1 * X)	0.00098	0.00099	0.00098
	(!A2 * !B1 * C1 * X)	-0.00077	-0.00079	-0.00079
	(!A2 * !B1 * C1 * X)	0.00098	0.00099	0.00098
	(!A1 * A2 * B1 * X)	-0.00073	-0.00078	-0.00077
	(!A1 * A2 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * A2 * !B1 * C1 * X)	-0.00073	-0.00078	-0.00077
	(!A1 * A2 * !B1 * C1 * X)	0.00098	0.00099	0.00098
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00062	-0.00067	-0.00066
	(!A1 * A2 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00065	-0.00068	-0.00068
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00105	-0.00105	-0.00104
	(A1 * A2 * B1 * C1 * X)	0.00093	0.00094	0.00093
	(A1 * A2 * B1 * !C1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * A2 * B1 * !C1 * X)	0.00092	0.00094	0.00093
	(A1 * A2 * !B1 * C1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * A2 * !B1 * C1 * X)	0.00089	0.00090	0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00077	-0.00081	-0.00081
	(A1 * !A2 * !B1 * !C1 * !X)	0.00114	0.00116	0.00115
	(!A2 * B1 * X)	-0.00096	-0.00100	-0.00099
	(!A2 * B1 * X)	0.00096	0.00097	0.00096
	(!A2 * !B1 * C1 * X)	-0.00096	-0.00100	-0.00099
	(!A2 * !B1 * C1 * X)	0.00096	0.00097	0.00096
	(!A1 * A2 * B1 * X)	-0.00093	-0.00098	-0.00097
	(!A1 * A2 * B1 * X)	0.00096	0.00097	0.00096
	(!A1 * A2 * !B1 * C1 * X)	-0.00093	-0.00098	-0.00097
	(!A1 * A2 * !B1 * C1 * X)	0.00096	0.00097	0.00096
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00074	-0.00079	-0.00079
	(!A1 * A2 * !B1 * !C1 * !X)	0.00114	0.00115	0.00115
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00078	-0.00081	-0.00080
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00114	0.00116	0.00115

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00174	-0.00174	-0.00174
	(A1 * A2 * B1 * C1 * X)	0.00186	0.00189	0.00187
	(A1 * A2 * B1 * !C1 * X)	-0.00173	-0.00174	-0.00174
	(A1 * A2 * B1 * !C1 * X)	0.00186	0.00189	0.00187
	(A1 * A2 * !B1 * C1 * X)	-0.00173	-0.00174	-0.00173
	(A1 * A2 * !B1 * C1 * X)	0.00181	0.00183	0.00182
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00140	-0.00146	-0.00145
	(A1 * !A2 * !B1 * !C1 * !X)	0.00212	0.00215	0.00213
	(!A2 * B1 * X)	-0.00160	-0.00166	-0.00165
	(!A2 * B1 * X)	0.00193	0.00195	0.00193
	(!A2 * !B1 * C1 * X)	-0.00160	-0.00166	-0.00165
	(!A2 * !B1 * C1 * X)	0.00193	0.00195	0.00194
	(!A1 * A2 * B1 * X)	-0.00155	-0.00162	-0.00162
	(!A1 * A2 * B1 * X)	0.00193	0.00195	0.00193
	(!A1 * A2 * !B1 * C1 * X)	-0.00155	-0.00163	-0.00162
	(!A1 * A2 * !B1 * C1 * X)	0.00193	0.00195	0.00194
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00135	-0.00144	-0.00143
	(!A1 * A2 * !B1 * !C1 * !X)	0.00212	0.00214	0.00213
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00140	-0.00145	-0.00145
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00212	0.00215	0.00213

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)**	0.00094	0.00091	0.00087
	(A1 * A2 * A3 * C1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * A3 * !C1 * X)	0.00086	0.00087	0.00085
	(A1 * A2 * A3 * !C1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !A3 * C1 * X)	0.00098	0.00086	0.00085
	(A1 * A2 * !A3 * C1 * X)	-0.00081	-0.00094	-0.00095
	(A1 * !A2 * C1 * X)	0.00098	0.00086	0.00085
	(A1 * !A2 * C1 * X)	-0.00081	-0.00094	-0.00095
	(!A1 * C1 * X)	0.00098	0.00086	0.00085
	(!A1 * C1 * X)	-0.00081	-0.00094	-0.00095
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00109	0.00105	0.00102
	(A1 * A2 * A3 * C1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * A3 * !C1 * X)	0.00101	0.00101	0.00100
	(A1 * A2 * A3 * !C1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !A3 * C1 * X)	0.00113	0.00101	0.00099
	(A1 * A2 * !A3 * C1 * X)	-0.00081	-0.00094	-0.00094
	(A1 * !A2 * C1 * X)	0.00113	0.00101	0.00099
	(A1 * !A2 * C1 * X)	-0.00081	-0.00094	-0.00094
	(!A1 * C1 * X)	0.00112	0.00101	0.00099
	(!A1 * C1 * X)	-0.00081	-0.00094	-0.00094
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00167	0.00164	0.00160
	(A1 * A2 * A3 * C1 * X)	-0.00152	-0.00153	-0.00152
	(A1 * A2 * A3 * !C1 * X)	0.00158	0.00159	0.00158
	(A1 * A2 * A3 * !C1 * X)	-0.00124	-0.00125	-0.00125
	(A1 * A2 * !A3 * C1 * X)	0.00180	0.00160	0.00157
	(A1 * A2 * !A3 * C1 * X)	-0.00171	-0.00197	-0.00197
	(A1 * !A2 * C1 * X)	0.00180	0.00160	0.00157
	(A1 * !A2 * C1 * X)	-0.00171	-0.00197	-0.00197
	(!A1 * C1 * X)	0.00180	0.00160	0.00157
	(!A1 * C1 * X)	-0.00171	-0.00197	-0.00197

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)	-0.00086	-0.00086	-0.00085
	(A1 * A2 * A3 * C1 * X)	0.00070	0.00071	0.00070
	(A1 * A2 * A3 * !C1 * X)	-0.00081	-0.00081	-0.00084
	(A1 * A2 * A3 * !C1 * X)	0.00063	0.00063	0.00060
	(A1 * A2 * !A3 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * !A3 * C1 * X)	0.00094	0.00095	0.00095
	(A1 * !A2 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * C1 * X)	0.00094	0.00095	0.00095
	(!A1 * C1 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * C1 * X)	0.00094	0.00095	0.00095
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00100	-0.00101	-0.00100
	(A1 * A2 * A3 * C1 * X)	0.00070	0.00071	0.00070
	(A1 * A2 * A3 * !C1 * X)	-0.00095	-0.00096	-0.00098
	(A1 * A2 * A3 * !C1 * X)	0.00063	0.00062	0.00060
	(A1 * A2 * !A3 * C1 * X)	-0.00099	-0.00099	-0.00098
	(A1 * A2 * !A3 * C1 * X)	0.00094	0.00095	0.00094
	(A1 * !A2 * C1 * X)	-0.00099	-0.00099	-0.00098
	(A1 * !A2 * C1 * X)	0.00094	0.00095	0.00094
	(!A1 * C1 * X)	-0.00099	-0.00099	-0.00098
	(!A1 * C1 * X)	0.00094	0.00095	0.00094

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00158	-0.00159	-0.00158
	(A1 * A2 * A3 * C1 * X)	0.00152	0.00153	0.00152
	(A1 * A2 * A3 * !C1 * X)	-0.00148	-0.00150	-0.00152
	(A1 * A2 * A3 * !C1 * X)	0.00135	0.00134	0.00132
	(A1 * A2 * !A3 * C1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * A2 * !A3 * C1 * X)	0.00195	0.00199	0.00197
	(A1 * !A2 * C1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * !A2 * C1 * X)	0.00195	0.00199	0.00197
	(!A1 * C1 * X)	-0.00156	-0.00157	-0.00156
	(!A1 * C1 * X)	0.00195	0.00199	0.00197

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)	0.00104	0.00105	0.00104
	(A1 * A2 * B1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * A2 * A3 * !B1 * X)	0.00104	0.00105	0.00104
	(A1 * A2 * A3 * !B1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * B1 * X)	0.00104	0.00105	0.00104
	(A1 * !A2 * B1 * X)	-0.00053	-0.00053	-0.00053
	(!A1 * B1 * X)	0.00105	0.00105	0.00104
	(!A1 * B1 * X)	-0.00053	-0.00053	-0.00053
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * B1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * A3 * !B1 * X)	0.00102	0.00103	0.00103
	(A1 * A2 * A3 * !B1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * !A2 * B1 * X)	0.00102	0.00103	0.00102
	(A1 * !A2 * B1 * X)	-0.00056	-0.00056	-0.00056
	(!A1 * B1 * X)	0.00102	0.00103	0.00102
	(!A1 * B1 * X)	-0.00056	-0.00056	-0.00056
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00168	0.00169	0.00168
	(A1 * A2 * B1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * A2 * A3 * !B1 * X)	0.00168	0.00169	0.00168
	(A1 * A2 * A3 * !B1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * !A2 * B1 * X)	0.00168	0.00169	0.00168
	(A1 * !A2 * B1 * X)	-0.00119	-0.00120	-0.00119
	(!A1 * B1 * X)	0.00168	0.00169	0.00168
	(!A1 * B1 * X)	-0.00119	-0.00120	-0.00119

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)	-0.00100	-0.00101	-0.00104
	(A1 * A2 * B1 * X)	0.00057	0.00057	0.00054
	(A1 * A2 * A3 * !B1 * X)	-0.00088	-0.00089	-0.00101
	(A1 * A2 * A3 * !B1 * X)	0.00064	0.00065	0.00056
	(A1 * !A2 * B1 * X)	-0.00100	-0.00101	-0.00104
	(A1 * !A2 * B1 * X)	0.00056	0.00057	0.00054
	(!A1 * B1 * X)	-0.00100	-0.00101	-0.00104
	(!A1 * B1 * X)	0.00056	0.00057	0.00054
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00098	-0.00099	-0.00102
	(A1 * A2 * B1 * X)	0.00060	0.00060	0.00057
	(A1 * A2 * A3 * !B1 * X)	-0.00087	-0.00088	-0.00099
	(A1 * A2 * A3 * !B1 * X)	0.00068	0.00068	0.00059
	(A1 * !A2 * B1 * X)	-0.00098	-0.00099	-0.00102
	(A1 * !A2 * B1 * X)	0.00060	0.00060	0.00057
	(!A1 * B1 * X)	-0.00098	-0.00099	-0.00102
	(!A1 * B1 * X)	0.00060	0.00060	0.00057
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00155	-0.00157	-0.00166
	(A1 * A2 * B1 * X)	0.00132	0.00131	0.00122
	(A1 * A2 * A3 * !B1 * X)	-0.00131	-0.00132	-0.00161
	(A1 * A2 * A3 * !B1 * X)	0.00149	0.00148	0.00126
	(A1 * !A2 * B1 * X)	-0.00155	-0.00156	-0.00166
	(A1 * !A2 * B1 * X)	0.00132	0.00132	0.00123
	(!A1 * B1 * X)	-0.00155	-0.00156	-0.00166
	(!A1 * B1 * X)	0.00132	0.00132	0.00123

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00270	0.00277	0.00266	0.00274	0.29696
sky130_fd_sc_hs__a31oi_2	0.00514	0.00497	0.00531	0.00407	0.57228
sky130_fd_sc_hs__a31oi_4	0.01041	0.00978	0.00976	0.00823	1.00869

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31oi_1	0.00000	0.01183	0.02381
sky130_fd_sc_hs__a31oi_2	0.00000	0.02207	0.04762
sky130_fd_sc_hs__a31oi_4	0.00000	0.04414	0.09524

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)	0.15967	1.35146	12.03010
	A2->Y (FR)	0.20161	1.41394	12.24770
	A3->Y (FR)	0.22223	1.43271	12.20330
	B1->Y (FR)	0.15215	1.33466	12.05220
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.14231	1.17632	12.10090
	A2->Y (FR)	0.17292	1.20658	12.10010
	A3->Y (FR)	0.19952	1.22359	11.95920
	B1->Y (FR)	0.11586	1.12199	11.92300
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.13976	1.03587	11.80720
	A2->Y (FR)	0.17599	1.06689	11.73810
	A3->Y (FR)	0.21307	1.11882	11.90910
	B1->Y (FR)	0.15561	1.04059	11.82580

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.05585	0.63526	5.88224
	A2->Y (RF)	0.06718	0.62386	5.63929
	A3->Y (RF)	0.07078	0.58537	5.13983
	B1->Y (RF)	0.02765	0.44169	4.24307
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.05185	0.59776	6.24025
	A2->Y (RF)	0.06055	0.55739	5.65779
	A3->Y (RF)	0.06668	0.52940	5.21651
	B1->Y (RF)	0.03296	0.54045	5.87494
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.05356	0.55158	6.32250
	A2->Y (RF)	0.06576	0.52134	5.75095
	A3->Y (RF)	0.07185	0.48145	5.14103
	B1->Y (RF)	0.03049	0.45826	5.47097

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	-0.00002	-0.00002
	A1	0.00343	0.00334	0.00335
	A2	0.00049	0.00036	0.00036
	A2	0.00443	0.00431	0.00431
	A3	0.00066	0.00057	0.00057
	A3	0.00518	0.00509	0.00509
	B1	0.00064	0.00056	0.00074
	B1	0.00448	0.00440	0.00460
sky130_fd_sc_hs__a31oi_2	A1	0.00015	-0.00000	0.00002
	A1	0.00644	0.00627	0.00635
	A2	0.00088	0.00071	0.00072
	A2	0.00821	0.00802	0.00807
	A3	0.00150	0.00132	0.00133
	A3	0.01002	0.00983	0.00980
	B1	0.00215	0.00205	0.00225
	B1	0.00833	0.00823	0.00841
sky130_fd_sc_hs__a31oi_4	A1	-0.00066	-0.00098	-0.00083
	A1	0.01225	0.01194	0.01213
	A2	0.00130	0.00083	0.00090
	A2	0.01631	0.01585	0.01593
	A3	0.00278	0.00239	0.00241
	A3	0.01995	0.01961	0.01962
	B1	0.00384	0.00363	0.00409
	B1	0.01670	0.01646	0.01694

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00431	0.00420	0.00428
	A1	0.00103	0.00092	0.00095
	A2	0.00495	0.00486	0.00499
	A2	0.00103	0.00092	0.00091
	A3	0.00553	0.00543	0.00554
	A3	0.00098	0.00087	0.00086
	B1	0.00396	0.00394	0.00403
	B1	0.00001	-0.00005	0.00002
sky130_fd_sc_hs__a31oi_2	A1	0.00782	0.00759	0.00765
	A1	0.00169	0.00142	0.00150
	A2	0.00894	0.00878	0.00909
	A2	0.00167	0.00145	0.00145
	A3	0.01027	0.01011	0.01002
	A3	0.00170	0.00146	0.00145
	B1	0.00565	0.00565	0.00579
	B1	-0.00080	-0.00087	-0.00076
sky130_fd_sc_hs__a31oi_4	A1	0.01582	0.01528	0.01580
	A1	0.00322	0.00259	0.00281
	A2	0.01806	0.01754	0.01792
	A2	0.00316	0.00267	0.00269
	A3	0.02051	0.02002	0.02042
	A3	0.00313	0.00264	0.00265
	B1	0.01177	0.01168	0.01282
	B1	-0.00165	-0.00190	-0.00154

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)**	0.00095	0.00092	0.00091
	(A2 * A3 * B1 * !Y)	-0.00098	-0.00104	-0.00103
	(A2 * !A3 * B1 * !Y)	0.00084	0.00085	0.00084
	(A2 * !A3 * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(A2 * !A3 * !B1 * Y)	0.00033	0.00033	0.00030
	(A2 * !A3 * !B1 * Y)	-0.00122	-0.00123	-0.00128
	(!A2 * B1 * !Y)	0.00086	0.00086	0.00086
	(!A2 * B1 * !Y)	-0.00106	-0.00106	-0.00106
	(!A2 * !B1 * Y)	0.00033	0.00033	0.00031
	(!A2 * !B1 * Y)	-0.00126	-0.00127	-0.00129
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00187	0.00185	0.00184
	(A2 * A3 * B1 * !Y)	-0.00199	-0.00212	-0.00211
	(A2 * !A3 * B1 * !Y)	0.00169	0.00169	0.00168
	(A2 * !A3 * B1 * !Y)	-0.00218	-0.00218	-0.00217
	(A2 * !A3 * !B1 * Y)	0.00064	0.00064	0.00058
	(A2 * !A3 * !B1 * Y)	-0.00251	-0.00251	-0.00264
	(!A2 * B1 * !Y)	0.00172	0.00174	0.00173
	(!A2 * B1 * !Y)	-0.00216	-0.00218	-0.00217
	(!A2 * !B1 * Y)	0.00062	0.00061	0.00058
	(!A2 * !B1 * Y)	-0.00261	-0.00261	-0.00266
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00389	0.00384	0.00380
	(A2 * A3 * B1 * !Y)	-0.00391	-0.00415	-0.00415
	(A2 * !A3 * B1 * !Y)	0.00350	0.00351	0.00350
	(A2 * !A3 * B1 * !Y)	-0.00430	-0.00430	-0.00428
	(A2 * !A3 * !B1 * Y)	0.00137	0.00136	0.00122
	(A2 * !A3 * !B1 * Y)	-0.00501	-0.00502	-0.00529
	(!A2 * B1 * !Y)	0.00360	0.00364	0.00361
	(!A2 * B1 * !Y)	-0.00427	-0.00431	-0.00428
	(!A2 * !B1 * Y)	0.00137	0.00136	0.00128
	(!A2 * !B1 * Y)	-0.00520	-0.00520	-0.00532

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)	-0.00091	-0.00092	-0.00091
	(A2 * A3 * B1 * !Y)	0.00103	0.00104	0.00103
	(A2 * !A3 * B1 * !Y)	-0.00077	-0.00085	-0.00084
	(A2 * !A3 * B1 * !Y)	0.00106	0.00108	0.00107
	(A2 * !A3 * !B1 * Y)	-0.00029	-0.00030	-0.00029
	(A2 * !A3 * !B1 * Y)	0.00128	0.00130	0.00129
	(!A2 * B1 * !Y)	-0.00083	-0.00086	-0.00086
	(!A2 * B1 * !Y)	0.00106	0.00107	0.00107
	(!A2 * !B1 * Y)	-0.00030	-0.00031	-0.00030
	(!A2 * !B1 * Y)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00184	-0.00184	-0.00183
	(A2 * A3 * B1 * !Y)	0.00211	0.00212	0.00211
	(A2 * !A3 * B1 * !Y)	-0.00153	-0.00169	-0.00168
	(A2 * !A3 * B1 * !Y)	0.00219	0.00218	0.00218
	(A2 * !A3 * !B1 * Y)	-0.00056	-0.00056	-0.00055
	(A2 * !A3 * !B1 * Y)	0.00267	0.00270	0.00267
	(!A2 * B1 * !Y)	-0.00166	-0.00174	-0.00173
	(!A2 * B1 * !Y)	0.00219	0.00219	0.00218
	(!A2 * !B1 * Y)	-0.00057	-0.00057	-0.00056
	(!A2 * !B1 * Y)	0.00267	0.00271	0.00267

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00381	-0.00380	-0.00380
	(A2 * A3 * B1 * !Y)	0.00417	0.00415	0.00415
	(A2 * !A3 * B1 * !Y)	-0.00319	-0.00351	-0.00350
	(A2 * !A3 * B1 * !Y)	0.00431	0.00432	0.00429
	(A2 * !A3 * !B1 * Y)	-0.00119	-0.00121	-0.00120
	(A2 * !A3 * !B1 * Y)	0.00531	0.00541	0.00533
	(!A2 * B1 * !Y)	-0.00345	-0.00364	-0.00361
	(!A2 * B1 * !Y)	0.00427	0.00432	0.00429
	(!A2 * !B1 * Y)	-0.00125	-0.00126	-0.00124
	(!A2 * !B1 * Y)	0.00536	0.00541	0.00534

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)**	0.00101	0.00098	0.00097
	(A1 * A3 * B1 * !Y)	-0.00098	-0.00104	-0.00103
	(A1 * !A3 * B1 * !Y)	0.00092	0.00092	0.00092
	(A1 * !A3 * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * !B1 * Y)	0.00038	0.00038	0.00038
	(A1 * !A3 * !B1 * Y)	-0.00119	-0.00119	-0.00118
	(!A1 * A3 * B1 * !Y)	0.00092	0.00092	0.00092
	(!A1 * A3 * B1 * !Y)	-0.00106	-0.00106	-0.00106
	(!A1 * A3 * !B1 * Y)	0.00080	0.00081	0.00080
	(!A1 * A3 * !B1 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * !A3 * B1 * !Y)	0.00060	0.00059	0.00059
	(!A1 * !A3 * B1 * !Y)	-0.00106	-0.00106	-0.00106
	(!A1 * !A3 * !B1 * Y)	0.00044	0.00044	0.00044
	(!A1 * !A3 * !B1 * Y)	-0.00120	-0.00120	-0.00119

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00173	0.00170	0.00170
	(A1 * A3 * B1 * !Y)	-0.00200	-0.00213	-0.00212
	(A1 * !A3 * B1 * !Y)	0.00159	0.00159	0.00159
	(A1 * !A3 * B1 * !Y)	-0.00219	-0.00219	-0.00219
	(A1 * !A3 * !B1 * Y)	0.00076	0.00076	0.00075
	(A1 * !A3 * !B1 * Y)	-0.00221	-0.00221	-0.00218
	(!A1 * A3 * B1 * !Y)	0.00159	0.00160	0.00159
	(!A1 * A3 * B1 * !Y)	-0.00219	-0.00220	-0.00219
	(!A1 * A3 * !B1 * Y)	0.00158	0.00159	0.00158
	(!A1 * A3 * !B1 * Y)	-0.00220	-0.00220	-0.00219
	(!A1 * !A3 * B1 * !Y)	0.00095	0.00095	0.00094
	(!A1 * !A3 * B1 * !Y)	-0.00220	-0.00220	-0.00219
	(!A1 * !A3 * !B1 * Y)	0.00086	0.00086	0.00085
	(!A1 * !A3 * !B1 * Y)	-0.00222	-0.00223	-0.00221
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00371	0.00362	0.00361
	(A1 * A3 * B1 * !Y)	-0.00400	-0.00427	-0.00425
	(A1 * !A3 * B1 * !Y)	0.00333	0.00335	0.00334
	(A1 * !A3 * B1 * !Y)	-0.00439	-0.00441	-0.00439
	(A1 * !A3 * !B1 * Y)	0.00162	0.00164	0.00165
	(A1 * !A3 * !B1 * Y)	-0.00442	-0.00445	-0.00440
	(!A1 * A3 * B1 * !Y)	0.00340	0.00343	0.00341
	(!A1 * A3 * B1 * !Y)	-0.00438	-0.00440	-0.00439
	(!A1 * A3 * !B1 * Y)	0.00337	0.00338	0.00338
	(!A1 * A3 * !B1 * Y)	-0.00441	-0.00442	-0.00442
	(!A1 * !A3 * B1 * !Y)	0.00208	0.00208	0.00206
	(!A1 * !A3 * B1 * !Y)	-0.00442	-0.00442	-0.00439
	(!A1 * !A3 * !B1 * Y)	0.00187	0.00189	0.00187
	(!A1 * !A3 * !B1 * Y)	-0.00445	-0.00448	-0.00446

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)	-0.00097	-0.00098	-0.00097
	(A1 * A3 * B1 * !Y)	0.00103	0.00104	0.00103
	(A1 * !A3 * B1 * !Y)	-0.00090	-0.00092	-0.00092
	(A1 * !A3 * B1 * !Y)	0.00107	0.00107	0.00107
	(A1 * !A3 * !B1 * Y)	-0.00036	-0.00036	-0.00037
	(A1 * !A3 * !B1 * Y)	0.00121	0.00122	0.00119
	(!A1 * A3 * B1 * !Y)	-0.00090	-0.00092	-0.00092
	(!A1 * A3 * B1 * !Y)	0.00106	0.00108	0.00107
	(!A1 * A3 * !B1 * Y)	-0.00075	-0.00081	-0.00080
	(!A1 * A3 * !B1 * Y)	0.00121	0.00120	0.00119
	(!A1 * !A3 * B1 * !Y)	-0.00060	-0.00059	-0.00059
	(!A1 * !A3 * B1 * !Y)	0.00106	0.00107	0.00107
	(!A1 * !A3 * !B1 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A3 * !B1 * Y)	0.00123	0.00124	0.00120
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * A3 * B1 * !Y)	0.00211	0.00214	0.00212
	(A1 * !A3 * B1 * !Y)	-0.00152	-0.00159	-0.00159
	(A1 * !A3 * B1 * !Y)	0.00220	0.00221	0.00219
	(A1 * !A3 * !B1 * Y)	-0.00070	-0.00070	-0.00072
	(A1 * !A3 * !B1 * Y)	0.00225	0.00227	0.00222
	(!A1 * A3 * B1 * !Y)	-0.00152	-0.00160	-0.00159
	(!A1 * A3 * B1 * !Y)	0.00219	0.00222	0.00219
	(!A1 * A3 * !B1 * Y)	-0.00148	-0.00159	-0.00158
	(!A1 * A3 * !B1 * Y)	0.00225	0.00223	0.00220
	(!A1 * !A3 * B1 * !Y)	-0.00095	-0.00095	-0.00094
	(!A1 * !A3 * B1 * !Y)	0.00221	0.00220	0.00219
	(!A1 * !A3 * !B1 * Y)	-0.00086	-0.00086	-0.00085
	(!A1 * !A3 * !B1 * Y)	0.00229	0.00230	0.00223

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00360	-0.00361	-0.00360
	(A1 * A3 * B1 * !Y)	0.00423	0.00427	0.00425
	(A1 * !A3 * B1 * !Y)	-0.00320	-0.00335	-0.00334
	(A1 * !A3 * B1 * !Y)	0.00442	0.00444	0.00440
	(A1 * !A3 * !B1 * Y)	-0.00153	-0.00154	-0.00157
	(A1 * !A3 * !B1 * Y)	0.00455	0.00457	0.00447
	(!A1 * A3 * B1 * !Y)	-0.00328	-0.00343	-0.00341
	(!A1 * A3 * B1 * !Y)	0.00440	0.00446	0.00440
	(!A1 * A3 * !B1 * Y)	-0.00315	-0.00338	-0.00338
	(!A1 * A3 * !B1 * Y)	0.00455	0.00449	0.00443
	(!A1 * !A3 * B1 * !Y)	-0.00208	-0.00208	-0.00206
	(!A1 * !A3 * B1 * !Y)	0.00444	0.00442	0.00441
	(!A1 * !A3 * !B1 * Y)	-0.00187	-0.00189	-0.00187
	(!A1 * !A3 * !B1 * Y)	0.00460	0.00463	0.00449

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)**	0.00104	0.00102	0.00101
	(A1 * A2 * B1 * !Y)	-0.00101	-0.00107	-0.00107
	(A1 * !A2 * !B1 * Y)	0.00088	0.00089	0.00088
	(A1 * !A2 * !B1 * Y)	-0.00117	-0.00118	-0.00117
	(!A2 * B1 * !Y)	0.00096	0.00095	0.00095
	(!A2 * B1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * A2 * B1 * !Y)	0.00094	0.00095	0.00094
	(!A1 * A2 * B1 * !Y)	-0.00109	-0.00110	-0.00110
	(!A1 * A2 * !B1 * Y)	0.00087	0.00088	0.00087
	(!A1 * A2 * !B1 * Y)	-0.00117	-0.00117	-0.00117
	(!A1 * !A2 * !B1 * Y)	0.00088	0.00089	0.00088
	(!A1 * !A2 * !B1 * Y)	-0.00117	-0.00117	-0.00117

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00192	0.00189	0.00188
	(A1 * A2 * B1 * !Y)	-0.00199	-0.00211	-0.00210
	(A1 * !A2 * !B1 * Y)	0.00174	0.00175	0.00173
	(A1 * !A2 * !B1 * Y)	-0.00217	-0.00218	-0.00217
	(!A2 * B1 * !Y)	0.00178	0.00178	0.00177
	(!A2 * B1 * !Y)	-0.00216	-0.00217	-0.00216
	(!A1 * A2 * B1 * !Y)	0.00171	0.00172	0.00171
	(!A1 * A2 * B1 * !Y)	-0.00216	-0.00217	-0.00216
	(!A1 * A2 * !B1 * Y)	0.00171	0.00171	0.00170
	(!A1 * A2 * !B1 * Y)	-0.00217	-0.00217	-0.00217
	(!A1 * !A2 * !B1 * Y)	0.00174	0.00174	0.00174
	(!A1 * !A2 * !B1 * Y)	-0.00217	-0.00217	-0.00217
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00369	0.00360	0.00358
	(A1 * A2 * B1 * !Y)	-0.00401	-0.00425	-0.00423
	(A1 * !A2 * !B1 * Y)	0.00333	0.00334	0.00333
	(A1 * !A2 * !B1 * Y)	-0.00438	-0.00439	-0.00437
	(!A2 * B1 * !Y)	0.00333	0.00335	0.00332
	(!A2 * B1 * !Y)	-0.00438	-0.00439	-0.00437
	(!A1 * A2 * B1 * !Y)	0.00325	0.00326	0.00325
	(!A1 * A2 * B1 * !Y)	-0.00437	-0.00438	-0.00437
	(!A1 * A2 * !B1 * Y)	0.00326	0.00327	0.00325
	(!A1 * A2 * !B1 * Y)	-0.00438	-0.00439	-0.00437
	(!A1 * !A2 * !B1 * Y)	0.00332	0.00335	0.00332
	(!A1 * !A2 * !B1 * Y)	-0.00438	-0.00440	-0.00437

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)**	-0.00100	-0.00102	-0.00101
	(A1 * A2 * B1 * !Y)	0.00106	0.00108	0.00107
	(A1 * !A2 * !B1 * Y)	-0.00085	-0.00089	-0.00088
	(A1 * !A2 * !B1 * Y)	0.00117	0.00119	0.00117
	(!A2 * B1 * !Y)	-0.00093	-0.00095	-0.00095
	(!A2 * B1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * A2 * B1 * !Y)	-0.00089	-0.00095	-0.00094
	(!A1 * A2 * B1 * !Y)	0.00109	0.00111	0.00110
	(!A1 * A2 * !B1 * Y)	-0.00082	-0.00088	-0.00087
	(!A1 * A2 * !B1 * Y)	0.00117	0.00118	0.00117
	(!A1 * !A2 * !B1 * Y)	-0.00085	-0.00089	-0.00088
	(!A1 * !A2 * !B1 * Y)	0.00117	0.00119	0.00117
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00187	-0.00189	-0.00187
	(A1 * A2 * B1 * !Y)	0.00209	0.00212	0.00210
	(A1 * !A2 * !B1 * Y)	-0.00167	-0.00175	-0.00173
	(A1 * !A2 * !B1 * Y)	0.00217	0.00219	0.00217
	(!A2 * B1 * !Y)	-0.00172	-0.00178	-0.00177
	(!A2 * B1 * !Y)	0.00216	0.00219	0.00217
	(!A1 * A2 * B1 * !Y)	-0.00161	-0.00172	-0.00171
	(!A1 * A2 * B1 * !Y)	0.00217	0.00219	0.00217
	(!A1 * A2 * !B1 * Y)	-0.00160	-0.00171	-0.00170
	(!A1 * A2 * !B1 * Y)	0.00218	0.00219	0.00217
	(!A1 * !A2 * !B1 * Y)	-0.00168	-0.00174	-0.00174
	(!A1 * !A2 * !B1 * Y)	0.00217	0.00220	0.00217

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00357	-0.00360	-0.00357
	(A1 * A2 * B1 * !Y)	0.00422	0.00428	0.00423
	(A1 * !A2 * !B1 * Y)	-0.00320	-0.00334	-0.00333
	(A1 * !A2 * !B1 * Y)	0.00440	0.00443	0.00438
	(!A2 * B1 * !Y)	-0.00322	-0.00335	-0.00332
	(!A2 * B1 * !Y)	0.00440	0.00442	0.00438
	(!A1 * A2 * B1 * !Y)	-0.00306	-0.00326	-0.00325
	(!A1 * A2 * B1 * !Y)	0.00438	0.00442	0.00438
	(!A1 * A2 * !B1 * Y)	-0.00304	-0.00327	-0.00325
	(!A1 * A2 * !B1 * Y)	0.00438	0.00442	0.00439
	(!A1 * !A2 * !B1 * Y)	-0.00321	-0.00335	-0.00332
	(!A1 * !A2 * !B1 * Y)	0.00440	0.00443	0.00439

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)**	0.00111	0.00112	0.00111
	(A1 * A2 * A3 * !Y)	-0.00056	-0.00057	-0.00057
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00120	0.00119	0.00119
	(A1 * A2 * A3 * !Y)	-0.00114	-0.00113	-0.00112
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00247	0.00249	0.00247
	(A1 * A2 * A3 * !Y)	-0.00230	-0.00231	-0.00230

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)	-0.00100	-0.00101	-0.00110
	(A1 * A2 * A3 * !Y)	0.00066	0.00066	0.00059
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00093	-0.00095	-0.00115
	(A1 * A2 * A3 * !Y)	0.00134	0.00133	0.00117
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00199	-0.00202	-0.00241
	(A1 * A2 * A3 * !Y)	0.00272	0.00270	0.00240

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00240	0.00237	0.00238	0.00260	0.64651
sky130_fd_sc_hs__a31o_2	0.00268	0.00258	0.00259	0.00252	1.28099
sky130_fd_sc_hs__a31o_4	0.00473	0.00456	0.00454	0.00472	2.53957

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31o_1	0.00000	0.03557	0.05429
sky130_fd_sc_hs__a31o_2	0.00000	0.04484	0.05791
sky130_fd_sc_hs__a31o_4	0.00000	0.09106	0.11582

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)	0.14415	0.91533	7.43886
	A2->X (RR)	0.15385	0.93522	7.63662
	A3->X (RR)	0.15890	0.92160	7.65497
	B1->X (RR)	0.09548	0.84464	7.41534
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.14995	0.83166	7.66897
	A2->X (RR)	0.15948	0.84118	7.82884
	A3->X (RR)	0.16452	0.82251	7.82218
	B1->X (RR)	0.09021	0.74205	7.59180
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.16809	0.77624	7.82691
	A2->X (RR)	0.17869	0.78021	7.98424
	A3->X (RR)	0.18511	0.76178	7.98069
	B1->X (RR)	0.09013	0.65605	7.69009

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.23958	0.86412	5.04346
	A2->X (FF)	0.27796	0.91124	5.24508
	A3->X (FF)	0.30249	0.94179	5.37536
	B1->X (FF)	0.26039	0.86934	4.88934
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.32236	0.94550	5.48760
	A2->X (FF)	0.37183	1.00367	5.67691
	A3->X (FF)	0.39167	1.02713	5.78413
	B1->X (FF)	0.34712	0.95725	5.35649
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.31350	0.90909	5.54084
	A2->X (FF)	0.35262	0.95487	5.71236
	A3->X (FF)	0.38936	0.99788	5.85164
	B1->X (FF)	0.33542	0.91200	5.37466

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00568	0.00558	0.00626
	A1	0.00275	0.00264	0.00335
	A2	0.00616	0.00609	0.00640
	A2	0.00275	0.00268	0.00306
	A3	0.00669	0.00660	0.00679
	A3	0.00274	0.00265	0.00291
	B1	0.00549	0.00537	0.00649
	B1	0.00191	0.00180	0.00314
sky130_fd_sc_hs__a31o_2	A1	0.00750	0.00753	0.00818
	A1	0.00430	0.00433	0.00512
	A2	0.00804	0.00813	0.00842
	A2	0.00430	0.00439	0.00481
	A3	0.00864	0.00873	0.00892
	A3	0.00428	0.00438	0.00470
	B1	0.00729	0.00733	0.00829
	B1	0.00348	0.00351	0.00467
sky130_fd_sc_hs__a31o_4	A1	0.01439	0.01455	0.01611
	A1	0.00852	0.00869	0.01049
	A2	0.01543	0.01573	0.01652
	A2	0.00852	0.00884	0.00978
	A3	0.01651	0.01690	0.01747
	A3	0.00850	0.00888	0.00962
	B1	0.01307	0.01320	0.01551
	B1	0.00623	0.00637	0.00910

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00203	0.00200	0.00239
	A1	0.00500	0.00500	0.00527
	A2	0.00234	0.00236	0.00260
	A2	0.00575	0.00578	0.00600
	A3	0.00249	0.00250	0.00274
	A3	0.00639	0.00639	0.00658
	B1	0.00227	0.00229	0.00390
	B1	0.00574	0.00577	0.00712
sky130_fd_sc_hs__a31o_2	A1	0.00340	0.00329	0.00425
	A1	0.00666	0.00681	0.00711
	A2	0.00377	0.00398	0.00501
	A2	0.00750	0.00771	0.00798
	A3	0.00397	0.00406	0.00502
	A3	0.00824	0.00844	0.00866
	B1	0.00394	0.00417	0.00593
	B1	0.00762	0.00786	0.00917
sky130_fd_sc_hs__a31o_4	A1	0.00693	0.00739	0.00795
	A1	0.01293	0.01338	0.01389
	A2	0.00749	0.00803	0.00931
	A2	0.01442	0.01499	0.01546
	A3	0.00817	0.00880	0.00941
	A3	0.01607	0.01669	0.01712
	B1	0.00821	0.00870	0.01173
	B1	0.01476	0.01526	0.01800

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)**	0.00081	0.00077	0.00076
	(A2 * A3 * B1 * X)	-0.00090	-0.00097	-0.00097
	(A2 * !A3 * B1 * X)	0.00069	0.00070	0.00070
	(A2 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00100
	(A2 * !A3 * !B1 * !X)	0.00026	0.00026	0.00024
	(A2 * !A3 * !B1 * !X)	-0.00114	-0.00115	-0.00119
	(!A2 * B1 * X)	0.00072	0.00072	0.00072
	(!A2 * B1 * X)	-0.00100	-0.00100	-0.00100
	(!A2 * !B1 * !X)	0.00027	0.00027	0.00025
	(!A2 * !B1 * !X)	-0.00117	-0.00118	-0.00119
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00101	0.00097	0.00096
	(A2 * A3 * B1 * X)	-0.00087	-0.00094	-0.00093
	(A2 * !A3 * B1 * X)	0.00089	0.00089	0.00089
	(A2 * !A3 * B1 * X)	-0.00096	-0.00096	-0.00096
	(A2 * !A3 * !B1 * !X)	0.00033	0.00033	0.00030
	(A2 * !A3 * !B1 * !X)	-0.00117	-0.00118	-0.00123
	(!A2 * B1 * X)	0.00091	0.00092	0.00091
	(!A2 * B1 * X)	-0.00096	-0.00097	-0.00096
	(!A2 * !B1 * !X)	0.00034	0.00034	0.00032
	(!A2 * !B1 * !X)	-0.00121	-0.00121	-0.00123
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00170	0.00164	0.00163
	(A2 * A3 * B1 * X)	-0.00183	-0.00195	-0.00194
	(A2 * !A3 * B1 * X)	0.00149	0.00150	0.00150
	(A2 * !A3 * B1 * X)	-0.00201	-0.00202	-0.00201
	(A2 * !A3 * !B1 * !X)	0.00062	0.00062	0.00056
	(A2 * !A3 * !B1 * !X)	-0.00229	-0.00230	-0.00242
	(!A2 * B1 * X)	0.00154	0.00156	0.00154
	(!A2 * B1 * X)	-0.00200	-0.00202	-0.00201
	(!A2 * !B1 * !X)	0.00061	0.00061	0.00057
	(!A2 * !B1 * !X)	-0.00238	-0.00239	-0.00243

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)	-0.00076	-0.00076	-0.00076
	(A2 * A3 * B1 * X)	0.00097	0.00097	0.00097
	(A2 * !A3 * B1 * X)	-0.00065	-0.00070	-0.00070
	(A2 * !A3 * B1 * X)	0.00101	0.00102	0.00101
	(A2 * !A3 * !B1 * !X)	-0.00023	-0.00024	-0.00024
	(A2 * !A3 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A2 * B1 * X)	-0.00069	-0.00072	-0.00072
	(!A2 * B1 * X)	0.00100	0.00100	0.00101
	(!A2 * !B1 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * !X)	0.00119	0.00120	0.00119
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00097	-0.00097	-0.00096
	(A2 * A3 * B1 * X)	0.00094	0.00094	0.00093
	(A2 * !A3 * B1 * X)	-0.00083	-0.00089	-0.00089
	(A2 * !A3 * B1 * X)	0.00097	0.00098	0.00097
	(A2 * !A3 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(A2 * !A3 * !B1 * !X)	0.00123	0.00124	0.00124
	(!A2 * B1 * X)	-0.00088	-0.00092	-0.00091
	(!A2 * B1 * X)	0.00096	0.00097	0.00097
	(!A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !X)	0.00123	0.00124	0.00124

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00163	-0.00163	-0.00162
	(A2 * A3 * B1 * X)	0.00196	0.00195	0.00194
	(A2 * !A3 * B1 * X)	-0.00141	-0.00150	-0.00150
	(A2 * !A3 * B1 * X)	0.00204	0.00204	0.00202
	(A2 * !A3 * !B1 * !X)	-0.00054	-0.00054	-0.00054
	(A2 * !A3 * !B1 * !X)	0.00243	0.00245	0.00244
	(!A2 * B1 * X)	-0.00148	-0.00155	-0.00154
	(!A2 * B1 * X)	0.00200	0.00202	0.00202
	(!A2 * !B1 * !X)	-0.00055	-0.00056	-0.00055
	(!A2 * !B1 * !X)	0.00243	0.00245	0.00244

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)**	0.00080	0.00075	0.00075
	(A1 * A3 * B1 * X)	-0.00090	-0.00097	-0.00096
	(A1 * !A3 * B1 * X)	0.00070	0.00070	0.00070
	(A1 * !A3 * B1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * !B1 * !X)	0.00031	0.00031	0.00031
	(A1 * !A3 * !B1 * !X)	-0.00104	-0.00104	-0.00103
	(!A1 * A3 * B1 * X)	0.00071	0.00071	0.00071
	(!A1 * A3 * B1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * !B1 * !X)	0.00067	0.00068	0.00067
	(!A1 * A3 * !B1 * !X)	-0.00104	-0.00104	-0.00103
	(!A1 * !A3 * B1 * X)	0.00042	0.00042	0.00042
	(!A1 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * !A3 * !B1 * !X)	0.00036	0.00036	0.00035
	(!A1 * !A3 * !B1 * !X)	-0.00104	-0.00104	-0.00104

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00097	0.00093	0.00093
	(A1 * A3 * B1 * X)	-0.00087	-0.00094	-0.00093
	(A1 * !A3 * B1 * X)	0.00087	0.00088	0.00087
	(A1 * !A3 * B1 * X)	-0.00096	-0.00096	-0.00096
	(A1 * !A3 * !B1 * !X)	0.00039	0.00038	0.00039
	(A1 * !A3 * !B1 * !X)	-0.00104	-0.00104	-0.00103
	(!A1 * A3 * B1 * X)	0.00088	0.00088	0.00088
	(!A1 * A3 * B1 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * A3 * !B1 * !X)	0.00080	0.00081	0.00080
	(!A1 * A3 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(!A1 * !A3 * B1 * X)	0.00055	0.00055	0.00055
	(!A1 * !A3 * B1 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * !A3 * !B1 * !X)	0.00044	0.00044	0.00044
	(!A1 * !A3 * !B1 * !X)	-0.00105	-0.00105	-0.00104
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00168	0.00162	0.00161
	(A1 * A3 * B1 * X)	-0.00184	-0.00197	-0.00196
	(A1 * !A3 * B1 * X)	0.00150	0.00151	0.00150
	(A1 * !A3 * B1 * X)	-0.00203	-0.00204	-0.00203
	(A1 * !A3 * !B1 * !X)	0.00077	0.00077	0.00077
	(A1 * !A3 * !B1 * !X)	-0.00205	-0.00205	-0.00203
	(!A1 * A3 * B1 * X)	0.00151	0.00153	0.00152
	(!A1 * A3 * B1 * X)	-0.00202	-0.00204	-0.00203
	(!A1 * A3 * !B1 * !X)	0.00151	0.00152	0.00152
	(!A1 * A3 * !B1 * !X)	-0.00203	-0.00204	-0.00203
	(!A1 * !A3 * B1 * X)	0.00095	0.00096	0.00095
	(!A1 * !A3 * B1 * X)	-0.00204	-0.00205	-0.00203
	(!A1 * !A3 * !B1 * !X)	0.00088	0.00088	0.00087
	(!A1 * !A3 * !B1 * !X)	-0.00207	-0.00207	-0.00206

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)	-0.00075	-0.00075	-0.00075
	(A1 * A3 * B1 * X)	0.00097	0.00097	0.00096
	(A1 * !A3 * B1 * X)	-0.00068	-0.00070	-0.00070
	(A1 * !A3 * B1 * X)	0.00101	0.00101	0.00100
	(A1 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00030
	(A1 * !A3 * !B1 * !X)	0.00106	0.00107	0.00104
	(!A1 * A3 * B1 * X)	-0.00068	-0.00071	-0.00071
	(!A1 * A3 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * A3 * !B1 * !X)	-0.00062	-0.00068	-0.00067
	(!A1 * A3 * !B1 * !X)	0.00107	0.00105	0.00104
	(!A1 * !A3 * B1 * X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A3 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00035
	(!A1 * !A3 * !B1 * !X)	0.00108	0.00109	0.00105
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * A3 * B1 * X)	0.00093	0.00094	0.00093
	(A1 * !A3 * B1 * X)	-0.00085	-0.00088	-0.00087
	(A1 * !A3 * B1 * X)	0.00097	0.00096	0.00097
	(A1 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00037
	(A1 * !A3 * !B1 * !X)	0.00106	0.00107	0.00105
	(!A1 * A3 * B1 * X)	-0.00085	-0.00088	-0.00088
	(!A1 * A3 * B1 * X)	0.00096	0.00097	0.00097
	(!A1 * A3 * !B1 * !X)	-0.00075	-0.00081	-0.00080
	(!A1 * A3 * !B1 * !X)	0.00106	0.00105	0.00104
	(!A1 * !A3 * B1 * X)	-0.00055	-0.00055	-0.00055
	(!A1 * !A3 * B1 * X)	0.00096	0.00097	0.00097
	(!A1 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A3 * !B1 * !X)	0.00108	0.00109	0.00105

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00160	-0.00162	-0.00160
	(A1 * A3 * B1 * X)	0.00195	0.00198	0.00196
	(A1 * !A3 * B1 * X)	-0.00144	-0.00151	-0.00150
	(A1 * !A3 * B1 * X)	0.00205	0.00204	0.00204
	(A1 * !A3 * !B1 * !X)	-0.00072	-0.00072	-0.00074
	(A1 * !A3 * !B1 * !X)	0.00210	0.00211	0.00207
	(!A1 * A3 * B1 * X)	-0.00147	-0.00153	-0.00152
	(!A1 * A3 * B1 * X)	0.00203	0.00206	0.00204
	(!A1 * A3 * !B1 * !X)	-0.00142	-0.00152	-0.00152
	(!A1 * A3 * !B1 * !X)	0.00210	0.00207	0.00204
	(!A1 * !A3 * B1 * X)	-0.00095	-0.00096	-0.00095
	(!A1 * !A3 * B1 * X)	0.00205	0.00205	0.00204
	(!A1 * !A3 * !B1 * !X)	-0.00088	-0.00088	-0.00087
	(!A1 * !A3 * !B1 * !X)	0.00214	0.00214	0.00208

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)**	0.00087	0.00083	0.00083
	(A1 * A2 * B1 * X)	-0.00089	-0.00095	-0.00095
	(A1 * !A2 * !B1 * !X)	0.00068	0.00069	0.00068
	(A1 * !A2 * !B1 * !X)	-0.00108	-0.00108	-0.00108
	(!A2 * B1 * X)	0.00078	0.00078	0.00078
	(!A2 * B1 * X)	-0.00098	-0.00098	-0.00098
	(!A1 * A2 * B1 * X)	0.00077	0.00078	0.00077
	(!A1 * A2 * B1 * X)	-0.00098	-0.00099	-0.00098
	(!A1 * A2 * !B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * A2 * !B1 * !X)	-0.00108	-0.00108	-0.00108
	(!A1 * !A2 * !B1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A2 * !B1 * !X)	-0.00108	-0.00109	-0.00108

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00104	0.00100	0.00100
	(A1 * A2 * B1 * X)	-0.00086	-0.00092	-0.00092
	(A1 * !A2 * !B1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * !X)	-0.00108	-0.00109	-0.00109
	(!A2 * B1 * X)	0.00093	0.00094	0.00094
	(!A2 * B1 * X)	-0.00094	-0.00095	-0.00095
	(!A1 * A2 * B1 * X)	0.00093	0.00093	0.00093
	(!A1 * A2 * B1 * X)	-0.00095	-0.00095	-0.00095
	(!A1 * A2 * !B1 * !X)	0.00079	0.00080	0.00079
	(!A1 * A2 * !B1 * !X)	-0.00109	-0.00109	-0.00108
	(!A1 * !A2 * !B1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !A2 * !B1 * !X)	-0.00108	-0.00109	-0.00109
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00165	0.00160	0.00159
	(A1 * A2 * B1 * X)	-0.00183	-0.00197	-0.00197
	(A1 * !A2 * !B1 * !X)	0.00149	0.00148	0.00148
	(A1 * !A2 * !B1 * !X)	-0.00205	-0.00204	-0.00204
	(!A2 * B1 * X)	0.00149	0.00150	0.00149
	(!A2 * B1 * X)	-0.00204	-0.00205	-0.00204
	(!A1 * A2 * B1 * X)	0.00146	0.00146	0.00146
	(!A1 * A2 * B1 * X)	-0.00204	-0.00205	-0.00204
	(!A1 * A2 * !B1 * !X)	0.00145	0.00146	0.00145
	(!A1 * A2 * !B1 * !X)	-0.00204	-0.00205	-0.00204
	(!A1 * !A2 * !B1 * !X)	0.00149	0.00150	0.00148
	(!A1 * !A2 * !B1 * !X)	-0.00205	-0.00205	-0.00204

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)**	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !X)	-0.00066	-0.00069	-0.00068
	(A1 * !A2 * !B1 * !X)	0.00108	0.00110	0.00108
	(!A2 * B1 * X)	-0.00076	-0.00078	-0.00078
	(!A2 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * A2 * B1 * X)	-0.00073	-0.00078	-0.00077
	(!A1 * A2 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * A2 * !B1 * !X)	-0.00063	-0.00067	-0.00067
	(!A1 * A2 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !A2 * !B1 * !X)	-0.00066	-0.00069	-0.00068
	(!A1 * !A2 * !B1 * !X)	0.00108	0.00110	0.00108
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00100	-0.00100	-0.00099
	(A1 * A2 * B1 * X)	0.00092	0.00093	0.00092
	(A1 * !A2 * !B1 * !X)	-0.00077	-0.00081	-0.00080
	(A1 * !A2 * !B1 * !X)	0.00109	0.00110	0.00109
	(!A2 * B1 * X)	-0.00092	-0.00094	-0.00094
	(!A2 * B1 * X)	0.00095	0.00096	0.00095
	(!A1 * A2 * B1 * X)	-0.00088	-0.00093	-0.00093
	(!A1 * A2 * B1 * X)	0.00095	0.00096	0.00095
	(!A1 * A2 * !B1 * !X)	-0.00075	-0.00080	-0.00079
	(!A1 * A2 * !B1 * !X)	0.00110	0.00109	0.00109
	(!A1 * !A2 * !B1 * !X)	-0.00078	-0.00081	-0.00080
	(!A1 * !A2 * !B1 * !X)	0.00109	0.00110	0.00109

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00159	-0.00159	-0.00159
	(A1 * A2 * B1 * X)	0.00196	0.00198	0.00197
	(A1 * !A2 * !B1 * !X)	-0.00142	-0.00148	-0.00148
	(A1 * !A2 * !B1 * !X)	0.00205	0.00207	0.00205
	(!A2 * B1 * X)	-0.00143	-0.00150	-0.00149
	(!A2 * B1 * X)	0.00204	0.00206	0.00205
	(!A1 * A2 * B1 * X)	-0.00137	-0.00146	-0.00146
	(!A1 * A2 * B1 * X)	0.00204	0.00206	0.00205
	(!A1 * A2 * !B1 * !X)	-0.00136	-0.00146	-0.00145
	(!A1 * A2 * !B1 * !X)	0.00205	0.00206	0.00205
	(!A1 * !A2 * !B1 * !X)	-0.00142	-0.00150	-0.00148
	(!A1 * !A2 * !B1 * !X)	0.00205	0.00207	0.00205

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)**	0.00111	0.00112	0.00111
	(A1 * A2 * A3 * X)	-0.00053	-0.00053	-0.00053
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00106	0.00105	0.00105
	(A1 * A2 * A3 * X)	-0.00053	-0.00052	-0.00052
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00183	0.00183	0.00182
	(A1 * A2 * A3 * X)	-0.00114	-0.00113	-0.00112

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)**	-0.00101	-0.00102	-0.00110
	(A1 * A2 * A3 * X)	0.00061	0.00061	0.00055
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	-0.00095	-0.00096	-0.00103
	(A1 * A2 * A3 * X)	0.00060	0.00060	0.00054
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	-0.00157	-0.00158	-0.00178
	(A1 * A2 * A3 * X)	0.00133	0.00132	0.00117

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00275	0.00274	0.00247	0.00282	0.00259	0.29528
sky130_fd_sc_hs__a32oi_2	0.00517	0.00499	0.00490	0.00522	0.00507	0.55456
sky130_fd_sc_hs__a32oi_4	0.01022	0.00985	0.00979	0.01043	0.01004	0.96231

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32oi_1	0.00000	0.01295	0.03622
sky130_fd_sc_hs__a32oi_2	0.00000	0.02591	0.07244
sky130_fd_sc_hs__a32oi_4	0.00000	0.05181	0.14489

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)	0.22373	1.44003	12.25720
	A2->Y (FR)	0.25484	1.47176	12.28130
	A3->Y (FR)	0.27826	1.49630	12.26160
	B1->Y (FR)	0.16081	1.34204	12.05300
	B2->Y (FR)	0.18779	1.37101	12.07180
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.19984	1.22127	11.86750
	A2->Y (FR)	0.25144	1.29782	12.20930
	A3->Y (FR)	0.27530	1.32189	12.15100
	B1->Y (FR)	0.13818	1.14541	11.89080
	B2->Y (FR)	0.18122	1.19552	12.01000
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.21708	1.12062	11.84830
	A2->Y (FR)	0.25570	1.15677	11.83940
	A3->Y (FR)	0.28732	1.19698	11.86910
	B1->Y (FR)	0.17765	1.04703	11.56920
	B2->Y (FR)	0.22704	1.11154	11.82860

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.07082	0.65272	5.87384
	A2->Y (RF)	0.07985	0.63959	5.64116
	A3->Y (RF)	0.08392	0.59955	5.12871
	B1->Y (RF)	0.03905	0.53625	5.06731
	B2->Y (RF)	0.04323	0.51086	4.76437
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.06928	0.61694	6.17829
	A2->Y (RF)	0.08407	0.60837	5.91353
	A3->Y (RF)	0.08848	0.54934	5.16713
	B1->Y (RF)	0.03411	0.48570	5.19967
	B2->Y (RF)	0.04234	0.46705	4.84035
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.07160	0.56002	6.05250
	A2->Y (RF)	0.08477	0.54667	5.70581
	A3->Y (RF)	0.08950	0.48822	4.93358
	B1->Y (RF)	0.03492	0.43250	5.07874
	B2->Y (RF)	0.04203	0.40519	4.55894

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00067	0.00052	0.00051
	A1	0.00474	0.00460	0.00460
	A2	0.00093	0.00080	0.00079
	A2	0.00557	0.00544	0.00544
	A3	0.00127	0.00120	0.00119
	A3	0.00636	0.00629	0.00628
	B1	0.00103	0.00090	0.00107
	B1	0.00488	0.00476	0.00494
	B2	0.00126	0.00119	0.00136
	B2	0.00564	0.00557	0.00575
sky130_fd_sc_hs__a32oi_2	A1	0.00080	0.00055	0.00055
	A1	0.00883	0.00857	0.00858
	A2	0.00189	0.00161	0.00159
	A2	0.01102	0.01075	0.01074
	A3	0.00236	0.00221	0.00218
	A3	0.01257	0.01242	0.01240
	B1	0.00153	0.00128	0.00166
	B1	0.00899	0.00876	0.00911
	B2	0.00245	0.00227	0.00261
	B2	0.01107	0.01090	0.01119

sky130_fd_sc_hs__a32oi_4	**A1**	0.00151	0.00090	0.00097
	A1	0.01757	0.01699	0.01708
	A2	0.00309	0.00252	0.00253
	A2	0.02141	0.02069	0.02083
	A3	0.00417	0.00386	0.00383
	A3	0.02470	0.02434	0.02431
	B1	0.00259	0.00199	0.00287
	B1	0.01777	0.01714	0.01799
	B2	0.00421	0.00381	0.00461
	B2	0.02157	0.02120	0.02192

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00562	0.00552	0.00569
	A1	0.00179	0.00168	0.00168
	A2	0.00623	0.00613	0.00609
	A2	0.00179	0.00169	0.00166
	A3	0.00672	0.00665	0.00668
	A3	0.00176	0.00167	0.00163
	B1	0.00402	0.00403	0.00416
	B1	0.00005	-0.00000	0.00006
	B2	0.00457	0.00455	0.00459
	B2	0.00004	-0.00002	0.00002

sky130_fd_sc_hs__a32oi_2	**A1**	0.01092	0.01068	0.01077
	A1	0.00345	0.00320	0.00324
	A2	0.01215	0.01195	0.01246
	A2	0.00344	0.00321	0.00317
	A3	0.01335	0.01316	0.01306
	A3	0.00343	0.00321	0.00317
	B1	0.00766	0.00763	0.00800
	B1	-0.00009	-0.00019	-0.00002
	B2	0.00897	0.00894	0.00916
	B2	-0.00006	-0.00019	-0.00008
sky130_fd_sc_hs__a32oi_4	**A1**	0.02122	0.02068	0.02115
	A1	0.00634	0.00574	0.00590
	A2	0.02371	0.02327	0.02338
	A2	0.00628	0.00579	0.00578
	A3	0.02612	0.02566	0.02580
	A3	0.00621	0.00574	0.00570
	B1	0.01543	0.01526	0.01573
	B1	-0.00021	-0.00059	-0.00008
	B2	0.01801	0.01782	0.01832
	B2	-0.00011	-0.00045	-0.00015

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)**	0.00097	0.00096	0.00095
	(A2 * A3 * B1 * B2 * !Y)	-0.00099	-0.00103	-0.00103
	(A2 * !A3 * B1 * B2 * !Y)	0.00087	0.00088	0.00087
	(A2 * !A3 * B1 * B2 * !Y)	-0.00107	-0.00107	-0.00106
	(A2 * !A3 * B1 * !B2 * Y)	0.00034	0.00034	0.00031
	(A2 * !A3 * B1 * !B2 * Y)	-0.00124	-0.00125	-0.00130
	(A2 * !A3 * !B1 * Y)	0.00034	0.00034	0.00031
	(A2 * !A3 * !B1 * Y)	-0.00124	-0.00125	-0.00130
	(!A2 * B1 * B2 * !Y)	0.00089	0.00090	0.00089
	(!A2 * B1 * B2 * !Y)	-0.00106	-0.00107	-0.00106
	(!A2 * B1 * !B2 * Y)	0.00033	0.00033	0.00032
	(!A2 * B1 * !B2 * Y)	-0.00128	-0.00129	-0.00131
	(!A2 * !B1 * Y)	0.00033	0.00033	0.00032
	(!A2 * !B1 * Y)	-0.00128	-0.00129	-0.00131
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00191	0.00189	0.00188
	(A2 * A3 * B1 * B2 * !Y)	-0.00195	-0.00207	-0.00206
	(A2 * !A3 * B1 * B2 * !Y)	0.00172	0.00173	0.00172
	(A2 * !A3 * B1 * B2 * !Y)	-0.00211	-0.00213	-0.00212
	(A2 * !A3 * B1 * !B2 * Y)	0.00072	0.00072	0.00064
	(A2 * !A3 * B1 * !B2 * Y)	-0.00243	-0.00243	-0.00257
	(A2 * !A3 * !B1 * Y)	0.00072	0.00072	0.00064
	(A2 * !A3 * !B1 * Y)	-0.00243	-0.00243	-0.00257
	(!A2 * B1 * B2 * !Y)	0.00178	0.00180	0.00178
	(!A2 * B1 * B2 * !Y)	-0.00212	-0.00213	-0.00212
	(!A2 * B1 * !B2 * Y)	0.00072	0.00072	0.00068
	(!A2 * B1 * !B2 * Y)	-0.00252	-0.00252	-0.00259
	(!A2 * !B1 * Y)	0.00073	0.00072	0.00068
	(!A2 * !B1 * Y)	-0.00252	-0.00252	-0.00259

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00380	0.00373	0.00371
	(A2 * A3 * B1 * B2 * !Y)	-0.00388	-0.00414	-0.00411
	(A2 * !A3 * B1 * B2 * !Y)	0.00337	0.00340	0.00338
	(A2 * !A3 * B1 * B2 * !Y)	-0.00425	-0.00427	-0.00425
	(A2 * !A3 * B1 * !B2 * Y)	0.00128	0.00129	0.00116
	(A2 * !A3 * B1 * !B2 * Y)	-0.00493	-0.00496	-0.00522
	(A2 * !A3 * !B1 * Y)	0.00129	0.00129	0.00116
	(A2 * !A3 * !B1 * Y)	-0.00493	-0.00495	-0.00522
	(!A2 * B1 * B2 * !Y)	0.00350	0.00350	0.00351
	(!A2 * B1 * B2 * !Y)	-0.00426	-0.00425	-0.00425
	(!A2 * B1 * !B2 * Y)	0.00129	0.00129	0.00122
	(!A2 * B1 * !B2 * Y)	-0.00511	-0.00513	-0.00525
	(!A2 * !B1 * Y)	0.00129	0.00130	0.00123
	(!A2 * !B1 * Y)	-0.00511	-0.00513	-0.00525

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)**	-0.00095	-0.00095	-0.00095
	(A2 * A3 * B1 * B2 * !Y)	0.00104	0.00103	0.00103
	(A2 * !A3 * B1 * B2 * !Y)	-0.00081	-0.00088	-0.00087
	(A2 * !A3 * B1 * B2 * !Y)	0.00107	0.00108	0.00107
	(A2 * !A3 * B1 * !B2 * Y)	-0.00030	-0.00031	-0.00030
	(A2 * !A3 * B1 * !B2 * Y)	0.00130	0.00132	0.00131
	(A2 * !A3 * !B1 * Y)	-0.00030	-0.00031	-0.00030
	(A2 * !A3 * !B1 * Y)	0.00130	0.00132	0.00131
	(!A2 * B1 * B2 * !Y)	-0.00087	-0.00090	-0.00089
	(!A2 * B1 * B2 * !Y)	0.00107	0.00107	0.00107
	(!A2 * B1 * !B2 * Y)	-0.00031	-0.00031	-0.00031
	(!A2 * B1 * !B2 * Y)	0.00130	0.00132	0.00131
	(!A2 * !B1 * Y)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * Y)	0.00130	0.00132	0.00131
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00187	-0.00188	-0.00187
	(A2 * A3 * B1 * B2 * !Y)	0.00205	0.00207	0.00206
	(A2 * !A3 * B1 * B2 * !Y)	-0.00155	-0.00173	-0.00172
	(A2 * !A3 * B1 * B2 * !Y)	0.00211	0.00214	0.00213
	(A2 * !A3 * B1 * !B2 * Y)	-0.00064	-0.00064	-0.00063
	(A2 * !A3 * B1 * !B2 * Y)	0.00261	0.00263	0.00260
	(A2 * !A3 * !B1 * Y)	-0.00064	-0.00064	-0.00063
	(A2 * !A3 * !B1 * Y)	0.00261	0.00263	0.00260
	(!A2 * B1 * B2 * !Y)	-0.00171	-0.00180	-0.00178
	(!A2 * B1 * B2 * !Y)	0.00214	0.00214	0.00213
	(!A2 * B1 * !B2 * Y)	-0.00065	-0.00066	-0.00065
	(!A2 * B1 * !B2 * Y)	0.00259	0.00262	0.00260
	(!A2 * !B1 * Y)	-0.00066	-0.00066	-0.00065
	(!A2 * !B1 * Y)	0.00259	0.00262	0.00260

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00372	-0.00373	-0.00370
	(A2 * A3 * B1 * B2 * !Y)	0.00414	0.00417	0.00411
	(A2 * !A3 * B1 * B2 * !Y)	-0.00306	-0.00340	-0.00338
	(A2 * !A3 * B1 * B2 * !Y)	0.00430	0.00428	0.00427
	(A2 * !A3 * B1 * !B2 * Y)	-0.00115	-0.00116	-0.00114
	(A2 * !A3 * B1 * !B2 * Y)	0.00528	0.00533	0.00526
	(A2 * !A3 * !B1 * Y)	-0.00116	-0.00116	-0.00115
	(A2 * !A3 * !B1 * Y)	0.00528	0.00533	0.00526
	(!A2 * B1 * B2 * !Y)	-0.00337	-0.00350	-0.00351
	(!A2 * B1 * B2 * !Y)	0.00428	0.00429	0.00427
	(!A2 * B1 * !B2 * Y)	-0.00119	-0.00120	-0.00118
	(!A2 * B1 * !B2 * Y)	0.00527	0.00533	0.00526
	(!A2 * !B1 * Y)	-0.00119	-0.00120	-0.00118
	(!A2 * !B1 * Y)	0.00525	0.00533	0.00526

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)**	0.00100	0.00099	0.00098
	(A1 * A3 * B1 * B2 * !Y)	-0.00099	-0.00104	-0.00103
	(A1 * !A3 * B1 * B2 * !Y)	0.00092	0.00092	0.00093
	(A1 * !A3 * B1 * B2 * !Y)	-0.00106	-0.00106	-0.00106
	(A1 * !A3 * B1 * !B2 * Y)	0.00045	0.00045	0.00045
	(A1 * !A3 * B1 * !B2 * Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A3 * !B1 * Y)	0.00045	0.00045	0.00045
	(A1 * !A3 * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * A3 * B1 * B2 * !Y)	0.00092	0.00093	0.00092
	(!A1 * A3 * B1 * B2 * !Y)	-0.00106	-0.00107	-0.00106
	(!A1 * A3 * B1 * !B2 * Y)	0.00086	0.00087	0.00086
	(!A1 * A3 * B1 * !B2 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * A3 * !B1 * Y)	0.00086	0.00086	0.00086
	(!A1 * A3 * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * B1 * B2 * !Y)	0.00059	0.00059	0.00059
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00106	-0.00107	-0.00106
	(!A1 * !A3 * B1 * !B2 * Y)	0.00050	0.00050	0.00050
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00113	-0.00113	-0.00113
	(!A1 * !A3 * !B1 * Y)	0.00050	0.00050	0.00050
	(!A1 * !A3 * !B1 * Y)	-0.00113	-0.00113	-0.00113

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00185	0.00181	0.00180
	(A1 * A3 * B1 * B2 * !Y)	-0.00201	-0.00214	-0.00213
	(A1 * !A3 * B1 * B2 * !Y)	0.00168	0.00169	0.00168
	(A1 * !A3 * B1 * B2 * !Y)	-0.00221	-0.00222	-0.00221
	(A1 * !A3 * B1 * !B2 * Y)	0.00083	0.00083	0.00084
	(A1 * !A3 * B1 * !B2 * Y)	-0.00225	-0.00225	-0.00222
	(A1 * !A3 * !B1 * Y)	0.00083	0.00083	0.00084
	(A1 * !A3 * !B1 * Y)	-0.00225	-0.00225	-0.00222
	(!A1 * A3 * B1 * B2 * !Y)	0.00171	0.00171	0.00170
	(!A1 * A3 * B1 * B2 * !Y)	-0.00221	-0.00221	-0.00221
	(!A1 * A3 * B1 * !B2 * Y)	0.00167	0.00169	0.00168
	(!A1 * A3 * B1 * !B2 * Y)	-0.00223	-0.00224	-0.00223
	(!A1 * A3 * !B1 * Y)	0.00168	0.00169	0.00168
	(!A1 * A3 * !B1 * Y)	-0.00224	-0.00224	-0.00223
	(!A1 * !A3 * B1 * B2 * !Y)	0.00107	0.00107	0.00106
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00222	-0.00223	-0.00222
	(!A1 * !A3 * B1 * !B2 * Y)	0.00095	0.00096	0.00095
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00224	-0.00227	-0.00225
	(!A1 * !A3 * !B1 * Y)	0.00095	0.00097	0.00096
	(!A1 * !A3 * !B1 * Y)	-0.00224	-0.00227	-0.00225

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00372	0.00363	0.00361
	(A1 * A3 * B1 * B2 * !Y)	-0.00397	-0.00425	-0.00423
	(A1 * !A3 * B1 * B2 * !Y)	0.00331	0.00333	0.00332
	(A1 * !A3 * B1 * B2 * !Y)	-0.00437	-0.00439	-0.00438
	(A1 * !A3 * B1 * !B2 * Y)	0.00157	0.00159	0.00160
	(A1 * !A3 * B1 * !B2 * Y)	-0.00442	-0.00445	-0.00440
	(A1 * !A3 * !B1 * Y)	0.00157	0.00160	0.00160
	(A1 * !A3 * !B1 * Y)	-0.00442	-0.00445	-0.00440
	(!A1 * A3 * B1 * B2 * !Y)	0.00340	0.00342	0.00341
	(!A1 * A3 * B1 * B2 * !Y)	-0.00437	-0.00438	-0.00438
	(!A1 * A3 * B1 * !B2 * Y)	0.00336	0.00338	0.00337
	(!A1 * A3 * B1 * !B2 * Y)	-0.00441	-0.00443	-0.00442
	(!A1 * A3 * !B1 * Y)	0.00336	0.00338	0.00337
	(!A1 * A3 * !B1 * Y)	-0.00441	-0.00442	-0.00442
	(!A1 * !A3 * B1 * B2 * !Y)	0.00200	0.00203	0.00201
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00437	-0.00441	-0.00438
	(!A1 * !A3 * B1 * !B2 * Y)	0.00180	0.00182	0.00181
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00445	-0.00449	-0.00446
	(!A1 * !A3 * !B1 * Y)	0.00181	0.00183	0.00181
	(!A1 * !A3 * !B1 * Y)	-0.00445	-0.00449	-0.00446

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)**	-0.00098	-0.00098	-0.00098
	(A1 * A3 * B1 * B2 * !Y)	0.00103	0.00104	0.00103
	(A1 * !A3 * B1 * B2 * !Y)	-0.00090	-0.00092	-0.00093
	(A1 * !A3 * B1 * B2 * !Y)	0.00107	0.00107	0.00107
	(A1 * !A3 * B1 * !B2 * Y)	-0.00042	-0.00042	-0.00043
	(A1 * !A3 * B1 * !B2 * Y)	0.00115	0.00116	0.00113
	(A1 * !A3 * !B1 * Y)	-0.00042	-0.00042	-0.00043
	(A1 * !A3 * !B1 * Y)	0.00115	0.00116	0.00113
	(!A1 * A3 * B1 * B2 * !Y)	-0.00089	-0.00093	-0.00092
	(!A1 * A3 * B1 * B2 * !Y)	0.00106	0.00108	0.00107
	(!A1 * A3 * B1 * !B2 * Y)	-0.00081	-0.00087	-0.00086
	(!A1 * A3 * B1 * !B2 * Y)	0.00117	0.00114	0.00113
	(!A1 * A3 * !B1 * Y)	-0.00081	-0.00086	-0.00086
	(!A1 * A3 * !B1 * Y)	0.00117	0.00114	0.00113
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00059	-0.00059	-0.00059
	(!A1 * !A3 * B1 * B2 * !Y)	0.00106	0.00107	0.00107
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * B1 * !B2 * Y)	0.00118	0.00118	0.00114
	(!A1 * !A3 * !B1 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * !B1 * Y)	0.00118	0.00118	0.00114

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00179	-0.00180	-0.00180
	(A1 * A3 * B1 * B2 * !Y)	0.00212	0.00214	0.00213
	(A1 * !A3 * B1 * B2 * !Y)	-0.00161	-0.00169	-0.00168
	(A1 * !A3 * B1 * B2 * !Y)	0.00223	0.00223	0.00222
	(A1 * !A3 * B1 * !B2 * Y)	-0.00077	-0.00078	-0.00080
	(A1 * !A3 * B1 * !B2 * Y)	0.00230	0.00231	0.00226
	(A1 * !A3 * !B1 * Y)	-0.00077	-0.00078	-0.00080
	(A1 * !A3 * !B1 * Y)	0.00230	0.00231	0.00226
	(!A1 * A3 * B1 * B2 * !Y)	-0.00163	-0.00171	-0.00170
	(!A1 * A3 * B1 * B2 * !Y)	0.00221	0.00224	0.00221
	(!A1 * A3 * B1 * !B2 * Y)	-0.00156	-0.00169	-0.00168
	(!A1 * A3 * B1 * !B2 * Y)	0.00229	0.00227	0.00224
	(!A1 * A3 * !B1 * Y)	-0.00156	-0.00169	-0.00168
	(!A1 * A3 * !B1 * Y)	0.00229	0.00227	0.00224
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00107	-0.00107	-0.00106
	(!A1 * !A3 * B1 * B2 * !Y)	0.00222	0.00223	0.00222
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00095	-0.00096	-0.00095
	(!A1 * !A3 * B1 * !B2 * Y)	0.00231	0.00233	0.00226
	(!A1 * !A3 * !B1 * Y)	-0.00095	-0.00097	-0.00096
	(!A1 * !A3 * !B1 * Y)	0.00231	0.00233	0.00226

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00360	-0.00362	-0.00360
	(A1 * A3 * B1 * B2 * !Y)	0.00421	0.00425	0.00423
	(A1 * !A3 * B1 * B2 * !Y)	-0.00322	-0.00333	-0.00332
	(A1 * !A3 * B1 * B2 * !Y)	0.00441	0.00443	0.00440
	(A1 * !A3 * B1 * !B2 * Y)	-0.00149	-0.00150	-0.00153
	(A1 * !A3 * B1 * !B2 * Y)	0.00455	0.00457	0.00447
	(A1 * !A3 * !B1 * Y)	-0.00149	-0.00150	-0.00153
	(A1 * !A3 * !B1 * Y)	0.00455	0.00457	0.00447
	(!A1 * A3 * B1 * B2 * !Y)	-0.00327	-0.00342	-0.00341
	(!A1 * A3 * B1 * B2 * !Y)	0.00439	0.00439	0.00439
	(!A1 * A3 * B1 * !B2 * Y)	-0.00312	-0.00338	-0.00337
	(!A1 * A3 * B1 * !B2 * Y)	0.00457	0.00443	0.00443
	(!A1 * A3 * !B1 * Y)	-0.00312	-0.00338	-0.00337
	(!A1 * A3 * !B1 * Y)	0.00457	0.00443	0.00443
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00200	-0.00203	-0.00201
	(!A1 * !A3 * B1 * B2 * !Y)	0.00439	0.00441	0.00440
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00180	-0.00182	-0.00181
	(!A1 * !A3 * B1 * !B2 * Y)	0.00463	0.00466	0.00450
	(!A1 * !A3 * !B1 * Y)	-0.00181	-0.00183	-0.00181
	(!A1 * !A3 * !B1 * Y)	0.00463	0.00466	0.00450

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)**	0.00094	0.00093	0.00092
	(A1 * A2 * B1 * B2 * !Y)	-0.00100	-0.00105	-0.00104
	(A1 * !A2 * B1 * !B2 * Y)	0.00087	0.00087	0.00087
	(A1 * !A2 * B1 * !B2 * Y)	-0.00108	-0.00108	-0.00107
	(A1 * !A2 * !B1 * Y)	0.00087	0.00087	0.00087
	(A1 * !A2 * !B1 * Y)	-0.00108	-0.00108	-0.00107
	(!A2 * B1 * B2 * !Y)	0.00087	0.00087	0.00087
	(!A2 * B1 * B2 * !Y)	-0.00108	-0.00108	-0.00107
	(!A1 * A2 * B1 * B2 * !Y)	0.00085	0.00085	0.00085
	(!A1 * A2 * B1 * B2 * !Y)	-0.00107	-0.00108	-0.00107
	(!A1 * A2 * B1 * !B2 * Y)	0.00085	0.00085	0.00085
	(!A1 * A2 * B1 * !B2 * Y)	-0.00107	-0.00108	-0.00107
	(!A1 * A2 * !B1 * Y)	0.00085	0.00085	0.00085
	(!A1 * A2 * !B1 * Y)	-0.00107	-0.00108	-0.00107
	(!A1 * !A2 * B1 * !B2 * Y)	0.00086	0.00088	0.00087
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00107	-0.00108	-0.00107
	(!A1 * !A2 * !B1 * Y)	0.00087	0.00088	0.00087
	(!A1 * !A2 * !B1 * Y)	-0.00108	-0.00108	-0.00107

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00189	0.00185	0.00184
	(A1 * A2 * B1 * B2 * !Y)	-0.00200	-0.00211	-0.00211
	(A1 * !A2 * B1 * !B2 * Y)	0.00173	0.00174	0.00173
	(A1 * !A2 * B1 * !B2 * Y)	-0.00218	-0.00219	-0.00218
	(A1 * !A2 * !B1 * Y)	0.00173	0.00173	0.00173
	(A1 * !A2 * !B1 * Y)	-0.00218	-0.00219	-0.00218
	(!A2 * B1 * B2 * !Y)	0.00173	0.00174	0.00173
	(!A2 * B1 * B2 * !Y)	-0.00218	-0.00218	-0.00218
	(!A1 * A2 * B1 * B2 * !Y)	0.00170	0.00171	0.00170
	(!A1 * A2 * B1 * B2 * !Y)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * B1 * !B2 * Y)	0.00171	0.00171	0.00170
	(!A1 * A2 * B1 * !B2 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * !B1 * Y)	0.00171	0.00171	0.00170
	(!A1 * A2 * !B1 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * B1 * !B2 * Y)	0.00173	0.00173	0.00173
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * !B1 * Y)	0.00173	0.00173	0.00173
	(!A1 * !A2 * !B1 * Y)	-0.00218	-0.00218	-0.00218

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00369	0.00360	0.00357
	(A1 * A2 * B1 * B2 * !Y)	-0.00401	-0.00428	-0.00425
	(A1 * !A2 * B1 * !B2 * Y)	0.00331	0.00335	0.00332
	(A1 * !A2 * B1 * !B2 * Y)	-0.00440	-0.00443	-0.00441
	(A1 * !A2 * !B1 * Y)	0.00331	0.00335	0.00332
	(A1 * !A2 * !B1 * Y)	-0.00440	-0.00443	-0.00441
	(!A2 * B1 * B2 * !Y)	0.00332	0.00334	0.00331
	(!A2 * B1 * B2 * !Y)	-0.00441	-0.00443	-0.00440
	(!A1 * A2 * B1 * B2 * !Y)	0.00326	0.00326	0.00325
	(!A1 * A2 * B1 * B2 * !Y)	-0.00441	-0.00441	-0.00440
	(!A1 * A2 * B1 * !B2 * Y)	0.00326	0.00326	0.00324
	(!A1 * A2 * B1 * !B2 * Y)	-0.00442	-0.00442	-0.00441
	(!A1 * A2 * !B1 * Y)	0.00326	0.00326	0.00324
	(!A1 * A2 * !B1 * Y)	-0.00442	-0.00442	-0.00441
	(!A1 * !A2 * B1 * !B2 * Y)	0.00330	0.00334	0.00331
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00440	-0.00443	-0.00441
	(!A1 * !A2 * !B1 * Y)	0.00330	0.00335	0.00331
	(!A1 * !A2 * !B1 * Y)	-0.00440	-0.00444	-0.00441

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)**	-0.00092	-0.00092	-0.00091
	(A1 * A2 * B1 * B2 * !Y)	0.00105	0.00105	0.00104
	(A1 * !A2 * B1 * !B2 * Y)	-0.00084	-0.00087	-0.00087
	(A1 * !A2 * B1 * !B2 * Y)	0.00108	0.00109	0.00108
	(A1 * !A2 * !B1 * Y)	-0.00084	-0.00087	-0.00087
	(A1 * !A2 * !B1 * Y)	0.00108	0.00109	0.00108
	(!A2 * B1 * B2 * !Y)	-0.00084	-0.00087	-0.00087
	(!A2 * B1 * B2 * !Y)	0.00108	0.00109	0.00108
	(!A1 * A2 * B1 * B2 * !Y)	-0.00080	-0.00085	-0.00085
	(!A1 * A2 * B1 * B2 * !Y)	0.00107	0.00109	0.00108
	(!A1 * A2 * B1 * !B2 * Y)	-0.00080	-0.00085	-0.00085
	(!A1 * A2 * B1 * !B2 * Y)	0.00108	0.00108	0.00108
	(!A1 * A2 * !B1 * Y)	-0.00080	-0.00085	-0.00085
	(!A1 * A2 * !B1 * Y)	0.00108	0.00108	0.00108
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00084	-0.00087	-0.00087
	(!A1 * !A2 * B1 * !B2 * Y)	0.00108	0.00109	0.00108
	(!A1 * !A2 * !B1 * Y)	-0.00084	-0.00087	-0.00087
	(!A1 * !A2 * !B1 * Y)	0.00108	0.00109	0.00108

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00184	-0.00184	-0.00184
	(A1 * A2 * B1 * B2 * !Y)	0.00210	0.00211	0.00211
	(A1 * !A2 * B1 * !B2 * Y)	-0.00167	-0.00174	-0.00173
	(A1 * !A2 * B1 * !B2 * Y)	0.00218	0.00221	0.00219
	(A1 * !A2 * !B1 * Y)	-0.00167	-0.00173	-0.00173
	(A1 * !A2 * !B1 * Y)	0.00218	0.00221	0.00219
	(!A2 * B1 * B2 * !Y)	-0.00168	-0.00174	-0.00173
	(!A2 * B1 * B2 * !Y)	0.00218	0.00221	0.00219
	(!A1 * A2 * B1 * B2 * !Y)	-0.00161	-0.00171	-0.00170
	(!A1 * A2 * B1 * B2 * !Y)	0.00218	0.00220	0.00218
	(!A1 * A2 * B1 * !B2 * Y)	-0.00161	-0.00171	-0.00170
	(!A1 * A2 * B1 * !B2 * Y)	0.00218	0.00220	0.00218
	(!A1 * A2 * !B1 * Y)	-0.00161	-0.00171	-0.00170
	(!A1 * A2 * !B1 * Y)	0.00218	0.00220	0.00218
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00167	-0.00173	-0.00173
	(!A1 * !A2 * B1 * !B2 * Y)	0.00218	0.00221	0.00219
	(!A1 * !A2 * !B1 * Y)	-0.00167	-0.00173	-0.00173
	(!A1 * !A2 * !B1 * Y)	0.00218	0.00221	0.00219

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00356	-0.00358	-0.00356
	(A1 * A2 * B1 * B2 * !Y)	0.00424	0.00428	0.00425
	(A1 * !A2 * B1 * !B2 * Y)	-0.00320	-0.00335	-0.00332
	(A1 * !A2 * B1 * !B2 * Y)	0.00444	0.00446	0.00442
	(A1 * !A2 * !B1 * Y)	-0.00320	-0.00335	-0.00332
	(A1 * !A2 * !B1 * Y)	0.00444	0.00446	0.00442
	(!A2 * B1 * B2 * !Y)	-0.00322	-0.00334	-0.00331
	(!A2 * B1 * B2 * !Y)	0.00443	0.00446	0.00442
	(!A1 * A2 * B1 * B2 * !Y)	-0.00307	-0.00326	-0.00325
	(!A1 * A2 * B1 * B2 * !Y)	0.00441	0.00445	0.00442
	(!A1 * A2 * B1 * !B2 * Y)	-0.00306	-0.00326	-0.00324
	(!A1 * A2 * B1 * !B2 * Y)	0.00442	0.00445	0.00442
	(!A1 * A2 * !B1 * Y)	-0.00306	-0.00326	-0.00324
	(!A1 * A2 * !B1 * Y)	0.00442	0.00445	0.00442
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00320	-0.00334	-0.00331
	(!A1 * !A2 * B1 * !B2 * Y)	0.00444	0.00446	0.00442
	(!A1 * !A2 * !B1 * Y)	-0.00321	-0.00335	-0.00331
	(!A1 * !A2 * !B1 * Y)	0.00444	0.00446	0.00442

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)**	0.00107	0.00108	0.00107
	(A1 * A2 * A3 * B2 * !Y)	-0.00056	-0.00057	-0.00056
	(A1 * A2 * A3 * !B2 * !Y)	0.00102	0.00102	0.00102
	(A1 * A2 * A3 * !B2 * !Y)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * !A3 * !B2 * Y)	0.00033	0.00033	0.00031
	(A1 * A2 * !A3 * !B2 * Y)	-0.00131	-0.00132	-0.00134
	(A1 * !A2 * !B2 * Y)	0.00033	0.00033	0.00031
	(A1 * !A2 * !B2 * Y)	-0.00131	-0.00132	-0.00134
	(!A1 * !B2 * Y)	0.00033	0.00032	0.00031
	(!A1 * !B2 * Y)	-0.00131	-0.00132	-0.00134
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00204	0.00205	0.00204
	(A1 * A2 * A3 * B2 * !Y)	-0.00114	-0.00114	-0.00113
	(A1 * A2 * A3 * !B2 * !Y)	0.00193	0.00195	0.00194
	(A1 * A2 * A3 * !B2 * !Y)	-0.00113	-0.00113	-0.00113
	(A1 * A2 * !A3 * !B2 * Y)	0.00069	0.00068	0.00064
	(A1 * A2 * !A3 * !B2 * Y)	-0.00252	-0.00253	-0.00260
	(A1 * !A2 * !B2 * Y)	0.00069	0.00068	0.00064
	(A1 * !A2 * !B2 * Y)	-0.00252	-0.00253	-0.00260
	(!A1 * !B2 * Y)	0.00069	0.00069	0.00064
	(!A1 * !B2 * Y)	-0.00252	-0.00253	-0.00260
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00409	0.00417	0.00411
	(A1 * A2 * A3 * B2 * !Y)	-0.00228	-0.00233	-0.00229
	(A1 * A2 * A3 * !B2 * !Y)	0.00388	0.00391	0.00389
	(A1 * A2 * A3 * !B2 * !Y)	-0.00229	-0.00230	-0.00229
	(A1 * A2 * !A3 * !B2 * Y)	0.00131	0.00130	0.00123
	(A1 * A2 * !A3 * !B2 * Y)	-0.00516	-0.00516	-0.00528
	(A1 * !A2 * !B2 * Y)	0.00131	0.00130	0.00123
	(A1 * !A2 * !B2 * Y)	-0.00516	-0.00516	-0.00528
	(!A1 * !B2 * Y)	0.00132	0.00131	0.00123
	(!A1 * !B2 * Y)	-0.00516	-0.00516	-0.00528

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)	-0.00091	-0.00092	-0.00105
	(A1 * A2 * A3 * B2 * !Y)	0.00070	0.00070	0.00060
	(A1 * A2 * A3 * !B2 * !Y)	-0.00100	-0.00102	-0.00102
	(A1 * A2 * A3 * !B2 * !Y)	0.00057	0.00057	0.00056
	(A1 * A2 * !A3 * !B2 * Y)	-0.00031	-0.00031	-0.00030
	(A1 * A2 * !A3 * !B2 * Y)	0.00134	0.00136	0.00134
	(A1 * !A2 * !B2 * Y)	-0.00031	-0.00031	-0.00030
	(A1 * !A2 * !B2 * Y)	0.00134	0.00136	0.00134
	(!A1 * !B2 * Y)	-0.00031	-0.00031	-0.00030
	(!A1 * !B2 * Y)	0.00134	0.00136	0.00134
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00171	-0.00174	-0.00199
	(A1 * A2 * A3 * B2 * !Y)	0.00140	0.00140	0.00119
	(A1 * A2 * A3 * !B2 * !Y)	-0.00186	-0.00195	-0.00194
	(A1 * A2 * A3 * !B2 * !Y)	0.00113	0.00113	0.00113
	(A1 * A2 * !A3 * !B2 * Y)	-0.00063	-0.00063	-0.00062
	(A1 * A2 * !A3 * !B2 * Y)	0.00261	0.00263	0.00260
	(A1 * !A2 * !B2 * Y)	-0.00063	-0.00063	-0.00062
	(A1 * !A2 * !B2 * Y)	0.00261	0.00263	0.00260
	(!A1 * !B2 * Y)	-0.00063	-0.00063	-0.00062
	(!A1 * !B2 * Y)	0.00261	0.00263	0.00260

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00353	-0.00357	-0.00403
	(A1 * A2 * A3 * B2 * !Y)	0.00280	0.00278	0.00241
	(A1 * A2 * A3 * !B2 * !Y)	-0.00374	-0.00391	-0.00389
	(A1 * A2 * A3 * !B2 * !Y)	0.00230	0.00230	0.00229
	(A1 * A2 * !A3 * !B2 * Y)	-0.00120	-0.00120	-0.00118
	(A1 * A2 * !A3 * !B2 * Y)	0.00530	0.00535	0.00529
	(A1 * !A2 * !B2 * Y)	-0.00120	-0.00121	-0.00118
	(A1 * !A2 * !B2 * Y)	0.00530	0.00535	0.00529
	(!A1 * !B2 * Y)	-0.00121	-0.00121	-0.00119
	(!A1 * !B2 * Y)	0.00530	0.00535	0.00529

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)**	0.00103	0.00103	0.00103
	(A1 * A2 * A3 * B1 * !Y)	-0.00059	-0.00060	-0.00059
	(A1 * A2 * A3 * !B1 * !Y)	0.00098	0.00099	0.00098
	(A1 * A2 * A3 * !B1 * !Y)	-0.00059	-0.00060	-0.00059
	(A1 * A2 * !A3 * !B1 * Y)	0.00086	0.00087	0.00086
	(A1 * A2 * !A3 * !B1 * Y)	-0.00111	-0.00112	-0.00111
	(A1 * !A2 * !B1 * Y)	0.00086	0.00087	0.00086
	(A1 * !A2 * !B1 * Y)	-0.00111	-0.00112	-0.00111
	(!A1 * !B1 * Y)	0.00086	0.00087	0.00086
	(!A1 * !B1 * Y)	-0.00111	-0.00112	-0.00111

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00202	0.00204	0.00203
	(A1 * A2 * A3 * B1 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * A2 * A3 * !B1 * !Y)	0.00193	0.00194	0.00193
	(A1 * A2 * A3 * !B1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * A2 * !A3 * !B1 * Y)	0.00171	0.00173	0.00171
	(A1 * A2 * !A3 * !B1 * Y)	-0.00218	-0.00219	-0.00218
	(A1 * !A2 * !B1 * Y)	0.00171	0.00173	0.00171
	(A1 * !A2 * !B1 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * !B1 * Y)	0.00171	0.00173	0.00171
	(!A1 * !B1 * Y)	-0.00218	-0.00219	-0.00218
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00401	0.00405	0.00402
	(A1 * A2 * A3 * B1 * !Y)	-0.00230	-0.00232	-0.00230
	(A1 * A2 * A3 * !B1 * !Y)	0.00381	0.00383	0.00380
	(A1 * A2 * A3 * !B1 * !Y)	-0.00231	-0.00230	-0.00230
	(A1 * A2 * !A3 * !B1 * Y)	0.00336	0.00337	0.00336
	(A1 * A2 * !A3 * !B1 * Y)	-0.00437	-0.00438	-0.00436
	(A1 * !A2 * !B1 * Y)	0.00336	0.00337	0.00336
	(A1 * !A2 * !B1 * Y)	-0.00437	-0.00437	-0.00436
	(!A1 * !B1 * Y)	0.00336	0.00337	0.00336
	(!A1 * !B1 * Y)	-0.00437	-0.00437	-0.00436

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)**	-0.00087	-0.00088	-0.00101
	(A1 * A2 * A3 * B1 * !Y)	0.00074	0.00073	0.00063
	(A1 * A2 * A3 * !B1 * !Y)	-0.00095	-0.00099	-0.00098
	(A1 * A2 * A3 * !B1 * !Y)	0.00059	0.00060	0.00059
	(A1 * A2 * !A3 * !B1 * Y)	-0.00082	-0.00087	-0.00086
	(A1 * A2 * !A3 * !B1 * Y)	0.00114	0.00114	0.00112
	(A1 * !A2 * !B1 * Y)	-0.00082	-0.00087	-0.00086
	(A1 * !A2 * !B1 * Y)	0.00114	0.00114	0.00112
	(!A1 * !B1 * Y)	-0.00082	-0.00087	-0.00086
	(!A1 * !B1 * Y)	0.00114	0.00114	0.00112
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00170	-0.00173	-0.00198
	(A1 * A2 * A3 * B1 * !Y)	0.00143	0.00142	0.00122
	(A1 * A2 * A3 * !B1 * !Y)	-0.00187	-0.00194	-0.00193
	(A1 * A2 * A3 * !B1 * !Y)	0.00116	0.00116	0.00116
	(A1 * A2 * !A3 * !B1 * Y)	-0.00163	-0.00173	-0.00171
	(A1 * A2 * !A3 * !B1 * Y)	0.00222	0.00221	0.00219
	(A1 * !A2 * !B1 * Y)	-0.00163	-0.00173	-0.00171
	(A1 * !A2 * !B1 * Y)	0.00222	0.00221	0.00219
	(!A1 * !B1 * Y)	-0.00163	-0.00173	-0.00171
	(!A1 * !B1 * Y)	0.00222	0.00221	0.00219
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00342	-0.00347	-0.00394
	(A1 * A2 * A3 * B1 * !Y)	0.00279	0.00279	0.00242
	(A1 * A2 * A3 * !B1 * !Y)	-0.00370	-0.00381	-0.00380
	(A1 * A2 * A3 * !B1 * !Y)	0.00231	0.00230	0.00230
	(A1 * A2 * !A3 * !B1 * Y)	-0.00318	-0.00337	-0.00336
	(A1 * A2 * !A3 * !B1 * Y)	0.00447	0.00442	0.00437
	(A1 * !A2 * !B1 * Y)	-0.00318	-0.00337	-0.00336
	(A1 * !A2 * !B1 * Y)	0.00447	0.00442	0.00437
	(!A1 * !B1 * Y)	-0.00319	-0.00337	-0.00336
	(!A1 * !B1 * Y)	0.00447	0.00442	0.00437

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00245	0.00242	0.00250	0.00245	0.00226	0.64342
sky130_fd_sc_hs__a32o_2	0.00263	0.00258	0.00265	0.00258	0.00244	1.17761
sky130_fd_sc_hs__a32o_4	0.00448	0.00504	0.00449	0.00468	0.00536	2.46874

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32o_1	0.00000	0.04078	0.09179
sky130_fd_sc_hs__a32o_2	0.00000	0.05319	0.09540
sky130_fd_sc_hs__a32o_4	0.00000	0.10780	0.19080

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)	0.17292	0.98494	7.78146
	A2->X (RR)	0.18291	0.99544	7.94039
	A3->X (RR)	0.18886	0.97725	7.93385
	B1->X (RR)	0.12958	0.91220	7.64364
	B2->X (RR)	0.13371	0.91260	7.73419
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.17499	0.89883	7.91003
	A2->X (RR)	0.18534	0.90312	8.03811
	A3->X (RR)	0.19147	0.88209	8.01346
	B1->X (RR)	0.12950	0.82559	7.76233
	B2->X (RR)	0.13472	0.82020	7.83962
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.18634	0.81532	7.96801
	A2->X (RR)	0.19978	0.82854	8.13357
	A3->X (RR)	0.20624	0.80728	8.11342
	B1->X (RR)	0.12902	0.72699	7.81501
	B2->X (RR)	0.13483	0.72603	7.90140

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.32392	0.97477	5.47746
	A2->X (FF)	0.35961	1.01720	5.62927
	A3->X (FF)	0.37855	1.03880	5.73150
	B1->X (FF)	0.28598	0.90910	5.07384
	B2->X (FF)	0.31295	0.94490	5.20187
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.39985	1.03331	5.65647
	A2->X (FF)	0.44181	1.08236	5.80492
	A3->X (FF)	0.47516	1.11940	5.92134
	B1->X (FF)	0.36784	0.97562	5.30516
	B2->X (FF)	0.40792	1.02120	5.45424
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.37160	0.97628	5.73530
	A2->X (FF)	0.39892	1.00922	5.86024
	A3->X (FF)	0.44415	1.06072	6.01400
	B1->X (FF)	0.35358	0.93212	5.40820
	B2->X (FF)	0.37974	0.96147	5.51385

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.00713	0.00698	0.00754
	A1	0.00360	0.00345	0.00407
	A2	0.00760	0.00746	0.00767
	A2	0.00360	0.00345	0.00372
	A3	0.00816	0.00798	0.00807
	A3	0.00359	0.00341	0.00356
	B1	0.00566	0.00557	0.00659
	B1	0.00214	0.00205	0.00328
	B2	0.00614	0.00611	0.00670
	B2	0.00212	0.00209	0.00287
sky130_fd_sc_hs__a32o_2	A1	0.00879	0.00881	0.00937
	A1	0.00516	0.00518	0.00582
	A2	0.00935	0.00941	0.00963
	A2	0.00517	0.00521	0.00548
	A3	0.01002	0.01004	0.01013
	A3	0.00516	0.00518	0.00534
	B1	0.00754	0.00765	0.00851
	B1	0.00373	0.00384	0.00500
	B2	0.00813	0.00832	0.00878
	B2	0.00372	0.00390	0.00467

sky130_fd_sc_hs__a32o_4	**A1**	0.01676	0.01699	0.01845
	A1	0.01006	0.01029	0.01196
	A2	0.01802	0.01831	0.01903
	A2	0.01002	0.01032	0.01114
	A3	0.01902	0.01939	0.01995
	A3	0.01005	0.01041	0.01108
	B1	0.01382	0.01396	0.01613
	B1	0.00693	0.00704	0.00971
	B2	0.01540	0.01568	0.01695
	B2	0.00688	0.00712	0.00882

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00252	0.00248	0.00304
	A1	0.00622	0.00621	0.00638
	A2	0.00282	0.00286	0.00333
	A2	0.00695	0.00698	0.00713
	A3	0.00299	0.00283	0.00359
	A3	0.00762	0.00757	0.00767
	B1	0.00278	0.00276	0.00422
	B1	0.00619	0.00617	0.00744
	B2	0.00294	0.00302	0.00438
	B2	0.00681	0.00691	0.00808

sky130_fd_sc_hs__a32o_2	**A1**	0.00381	0.00389	0.00460
	A1	0.00770	0.00791	0.00812
	A2	0.00417	0.00440	0.00525
	A2	0.00857	0.00882	0.00901
	A3	0.00395	0.00403	0.00487
	A3	0.00937	0.00942	0.00952
	B1	0.00375	0.00397	0.00578
	B1	0.00772	0.00782	0.00907
	B2	0.00403	0.00423	0.00590
	B2	0.00857	0.00877	0.00993
sky130_fd_sc_hs__a32o_4	**A1**	0.00663	0.00710	0.00861
	A1	0.01432	0.01479	0.01525
	A2	0.00773	0.00813	0.00869
	A2	0.01605	0.01659	0.01696
	A3	0.00850	0.00911	0.00954
	A3	0.01767	0.01828	0.01863
	B1	0.00803	0.00836	0.01226
	B1	0.01469	0.01510	0.01779
	B2	0.00807	0.00837	0.01186
	B2	0.01623	0.01669	0.01930

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)**	0.00086	0.00082	0.00082
	(A2 * A3 * B1 * B2 * X)	-0.00088	-0.00093	-0.00094
	(A2 * !A3 * B1 * B2 * X)	0.00075	0.00076	0.00076
	(A2 * !A3 * B1 * B2 * X)	-0.00096	-0.00097	-0.00096
	(A2 * !A3 * B1 * !B2 * !X)	0.00030	0.00030	0.00027
	(A2 * !A3 * B1 * !B2 * !X)	-0.00113	-0.00114	-0.00118
	(A2 * !A3 * !B1 * !X)	0.00030	0.00030	0.00027
	(A2 * !A3 * !B1 * !X)	-0.00113	-0.00114	-0.00118
	(!A2 * B1 * B2 * X)	0.00078	0.00078	0.00078
	(!A2 * B1 * B2 * X)	-0.00097	-0.00097	-0.00096
	(!A2 * B1 * !B2 * !X)	0.00030	0.00030	0.00028
	(!A2 * B1 * !B2 * !X)	-0.00116	-0.00117	-0.00118
	(!A2 * !B1 * !X)	0.00030	0.00030	0.00028
	(!A2 * !B1 * !X)	-0.00116	-0.00117	-0.00118
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00097	0.00093	0.00093
	(A2 * A3 * B1 * B2 * X)	-0.00088	-0.00093	-0.00093
	(A2 * !A3 * B1 * B2 * X)	0.00086	0.00086	0.00086
	(A2 * !A3 * B1 * B2 * X)	-0.00097	-0.00097	-0.00096
	(A2 * !A3 * B1 * !B2 * !X)	0.00033	0.00033	0.00030
	(A2 * !A3 * B1 * !B2 * !X)	-0.00115	-0.00115	-0.00121
	(A2 * !A3 * !B1 * !X)	0.00033	0.00033	0.00030
	(A2 * !A3 * !B1 * !X)	-0.00115	-0.00115	-0.00121
	(!A2 * B1 * B2 * X)	0.00088	0.00089	0.00088
	(!A2 * B1 * B2 * X)	-0.00097	-0.00097	-0.00096
	(!A2 * B1 * !B2 * !X)	0.00033	0.00033	0.00031
	(!A2 * B1 * !B2 * !X)	-0.00118	-0.00119	-0.00121
	(!A2 * !B1 * !X)	0.00033	0.00033	0.00031
	(!A2 * !B1 * !X)	-0.00118	-0.00119	-0.00121

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00154	0.00149	0.00148
	(A2 * A3 * B1 * B2 * X)	-0.00177	-0.00187	-0.00187
	(A2 * !A3 * B1 * B2 * X)	0.00136	0.00135	0.00135
	(A2 * !A3 * B1 * B2 * X)	-0.00194	-0.00193	-0.00193
	(A2 * !A3 * B1 * !B2 * !X)	0.00057	0.00057	0.00050
	(A2 * !A3 * B1 * !B2 * !X)	-0.00212	-0.00213	-0.00225
	(A2 * !A3 * !B1 * !X)	0.00057	0.00057	0.00050
	(A2 * !A3 * !B1 * !X)	-0.00212	-0.00213	-0.00225
	(!A2 * B1 * B2 * X)	0.00139	0.00140	0.00139
	(!A2 * B1 * B2 * X)	-0.00192	-0.00193	-0.00193
	(!A2 * B1 * !B2 * !X)	0.00053	0.00053	0.00050
	(!A2 * B1 * !B2 * !X)	-0.00222	-0.00223	-0.00227
	(!A2 * !B1 * !X)	0.00053	0.00053	0.00050
	(!A2 * !B1 * !X)	-0.00222	-0.00223	-0.00227

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)**	-0.00082	-0.00082	-0.00082
	(A2 * A3 * B1 * B2 * X)	0.00094	0.00094	0.00094
	(A2 * !A3 * B1 * B2 * X)	-0.00070	-0.00076	-0.00076
	(A2 * !A3 * B1 * B2 * X)	0.00098	0.00099	0.00097
	(A2 * !A3 * B1 * !B2 * !X)	-0.00027	-0.00027	-0.00027
	(A2 * !A3 * B1 * !B2 * !X)	0.00118	0.00119	0.00119
	(A2 * !A3 * !B1 * !X)	-0.00027	-0.00027	-0.00027
	(A2 * !A3 * !B1 * !X)	0.00118	0.00119	0.00119
	(!A2 * B1 * B2 * X)	-0.00076	-0.00078	-0.00078
	(!A2 * B1 * B2 * X)	0.00097	0.00098	0.00097
	(!A2 * B1 * !B2 * !X)	-0.00027	-0.00028	-0.00027
	(!A2 * B1 * !B2 * !X)	0.00118	0.00119	0.00119
	(!A2 * !B1 * !X)	-0.00027	-0.00028	-0.00027
	(!A2 * !B1 * !X)	0.00118	0.00119	0.00119
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00094	-0.00093	-0.00093
	(A2 * A3 * B1 * B2 * X)	0.00094	0.00094	0.00093
	(A2 * !A3 * B1 * B2 * X)	-0.00080	-0.00086	-0.00086
	(A2 * !A3 * B1 * B2 * X)	0.00098	0.00098	0.00097
	(A2 * !A3 * B1 * !B2 * !X)	-0.00029	-0.00030	-0.00030
	(A2 * !A3 * B1 * !B2 * !X)	0.00121	0.00122	0.00121
	(A2 * !A3 * !B1 * !X)	-0.00029	-0.00030	-0.00030
	(A2 * !A3 * !B1 * !X)	0.00121	0.00122	0.00121
	(!A2 * B1 * B2 * X)	-0.00086	-0.00089	-0.00088
	(!A2 * B1 * B2 * X)	0.00097	0.00098	0.00097
	(!A2 * B1 * !B2 * !X)	-0.00030	-0.00031	-0.00030
	(!A2 * B1 * !B2 * !X)	0.00121	0.00122	0.00121
	(!A2 * !B1 * !X)	-0.00030	-0.00031	-0.00030
	(!A2 * !B1 * !X)	0.00121	0.00122	0.00121

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00147	-0.00148	-0.00147
	(A2 * A3 * B1 * B2 * X)	0.00185	0.00188	0.00187
	(A2 * !A3 * B1 * B2 * X)	-0.00125	-0.00135	-0.00135
	(A2 * !A3 * B1 * B2 * X)	0.00195	0.00196	0.00194
	(A2 * !A3 * B1 * !B2 * !X)	-0.00047	-0.00047	-0.00046
	(A2 * !A3 * B1 * !B2 * !X)	0.00227	0.00228	0.00227
	(A2 * !A3 * !B1 * !X)	-0.00047	-0.00047	-0.00046
	(A2 * !A3 * !B1 * !X)	0.00227	0.00228	0.00227
	(!A2 * B1 * B2 * X)	-0.00135	-0.00140	-0.00139
	(!A2 * B1 * B2 * X)	0.00194	0.00193	0.00194
	(!A2 * B1 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * B1 * !B2 * !X)	0.00227	0.00228	0.00227
	(!A2 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * !X)	0.00227	0.00228	0.00227

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)**	0.00084	0.00081	0.00080
	(A1 * A3 * B1 * B2 * X)	-0.00088	-0.00094	-0.00094
	(A1 * !A3 * B1 * B2 * X)	0.00075	0.00076	0.00075
	(A1 * !A3 * B1 * B2 * X)	-0.00097	-0.00097	-0.00097
	(A1 * !A3 * B1 * !B2 * !X)	0.00034	0.00034	0.00034
	(A1 * !A3 * B1 * !B2 * !X)	-0.00104	-0.00104	-0.00103
	(A1 * !A3 * !B1 * !X)	0.00034	0.00034	0.00034
	(A1 * !A3 * !B1 * !X)	-0.00104	-0.00104	-0.00103
	(!A1 * A3 * B1 * B2 * X)	0.00076	0.00077	0.00076
	(!A1 * A3 * B1 * B2 * X)	-0.00097	-0.00097	-0.00097
	(!A1 * A3 * B1 * !B2 * !X)	0.00069	0.00070	0.00069
	(!A1 * A3 * B1 * !B2 * !X)	-0.00103	-0.00104	-0.00103
	(!A1 * A3 * !B1 * !X)	0.00069	0.00070	0.00069
	(!A1 * A3 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * B1 * B2 * X)	0.00048	0.00049	0.00048
	(!A1 * !A3 * B1 * B2 * X)	-0.00097	-0.00097	-0.00097
	(!A1 * !A3 * B1 * !B2 * !X)	0.00039	0.00038	0.00038
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00105	-0.00105	-0.00104
	(!A1 * !A3 * !B1 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A3 * !B1 * !X)	-0.00105	-0.00105	-0.00104

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00095	0.00092	0.00092
	(A1 * A3 * B1 * B2 * X)	-0.00088	-0.00093	-0.00093
	(A1 * !A3 * B1 * B2 * X)	0.00086	0.00086	0.00086
	(A1 * !A3 * B1 * B2 * X)	-0.00096	-0.00097	-0.00096
	(A1 * !A3 * B1 * !B2 * !X)	0.00038	0.00038	0.00038
	(A1 * !A3 * B1 * !B2 * !X)	-0.00104	-0.00104	-0.00103
	(A1 * !A3 * !B1 * !X)	0.00038	0.00038	0.00038
	(A1 * !A3 * !B1 * !X)	-0.00104	-0.00104	-0.00103
	(!A1 * A3 * B1 * B2 * X)	0.00087	0.00088	0.00087
	(!A1 * A3 * B1 * B2 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * A3 * B1 * !B2 * !X)	0.00080	0.00080	0.00080
	(!A1 * A3 * B1 * !B2 * !X)	-0.00103	-0.00103	-0.00103
	(!A1 * A3 * !B1 * !X)	0.00080	0.00081	0.00080
	(!A1 * A3 * !B1 * !X)	-0.00103	-0.00103	-0.00103
	(!A1 * !A3 * B1 * B2 * X)	0.00054	0.00055	0.00054
	(!A1 * !A3 * B1 * B2 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * !A3 * B1 * !B2 * !X)	0.00044	0.00044	0.00043
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00104	-0.00104	-0.00104
	(!A1 * !A3 * !B1 * !X)	0.00044	0.00044	0.00043
	(!A1 * !A3 * !B1 * !X)	-0.00104	-0.00104	-0.00104

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00167	0.00159	0.00158
	(A1 * A3 * B1 * B2 * X)	-0.00189	-0.00204	-0.00204
	(A1 * !A3 * B1 * B2 * X)	0.00149	0.00150	0.00149
	(A1 * !A3 * B1 * B2 * X)	-0.00211	-0.00213	-0.00212
	(A1 * !A3 * B1 * !B2 * !X)	0.00071	0.00071	0.00070
	(A1 * !A3 * B1 * !B2 * !X)	-0.00223	-0.00223	-0.00221
	(A1 * !A3 * !B1 * !X)	0.00071	0.00071	0.00070
	(A1 * !A3 * !B1 * !X)	-0.00223	-0.00223	-0.00221
	(!A1 * A3 * B1 * B2 * X)	0.00148	0.00150	0.00149
	(!A1 * A3 * B1 * B2 * X)	-0.00211	-0.00212	-0.00212
	(!A1 * A3 * B1 * !B2 * !X)	0.00138	0.00139	0.00139
	(!A1 * A3 * B1 * !B2 * !X)	-0.00221	-0.00221	-0.00221
	(!A1 * A3 * !B1 * !X)	0.00138	0.00138	0.00139
	(!A1 * A3 * !B1 * !X)	-0.00221	-0.00221	-0.00221
	(!A1 * !A3 * B1 * B2 * X)	0.00098	0.00098	0.00098
	(!A1 * !A3 * B1 * B2 * X)	-0.00213	-0.00212	-0.00212
	(!A1 * !A3 * B1 * !B2 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00223	-0.00225	-0.00223
	(!A1 * !A3 * !B1 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A3 * !B1 * !X)	-0.00223	-0.00225	-0.00223

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)**	-0.00080	-0.00080	-0.00080
	(A1 * A3 * B1 * B2 * X)	0.00093	0.00094	0.00094
	(A1 * !A3 * B1 * B2 * X)	-0.00074	-0.00076	-0.00075
	(A1 * !A3 * B1 * B2 * X)	0.00098	0.00098	0.00097
	(A1 * !A3 * B1 * !B2 * !X)	-0.00031	-0.00032	-0.00032
	(A1 * !A3 * B1 * !B2 * !X)	0.00106	0.00107	0.00104
	(A1 * !A3 * !B1 * !X)	-0.00031	-0.00032	-0.00032
	(A1 * !A3 * !B1 * !X)	0.00106	0.00107	0.00104
	(!A1 * A3 * B1 * B2 * X)	-0.00074	-0.00077	-0.00076
	(!A1 * A3 * B1 * B2 * X)	0.00097	0.00098	0.00097
	(!A1 * A3 * B1 * !B2 * !X)	-0.00065	-0.00070	-0.00069
	(!A1 * A3 * B1 * !B2 * !X)	0.00106	0.00105	0.00104
	(!A1 * A3 * !B1 * !X)	-0.00065	-0.00070	-0.00069
	(!A1 * A3 * !B1 * !X)	0.00106	0.00105	0.00104
	(!A1 * !A3 * B1 * B2 * X)	-0.00048	-0.00049	-0.00048
	(!A1 * !A3 * B1 * B2 * X)	0.00097	0.00097	0.00097
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00039	-0.00038	-0.00038
	(!A1 * !A3 * B1 * !B2 * !X)	0.00108	0.00109	0.00105
	(!A1 * !A3 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A3 * !B1 * !X)	0.00108	0.00109	0.00105

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00091	-0.00092	-0.00091
	(A1 * A3 * B1 * B2 * X)	0.00093	0.00094	0.00093
	(A1 * !A3 * B1 * B2 * X)	-0.00084	-0.00086	-0.00086
	(A1 * !A3 * B1 * B2 * X)	0.00097	0.00097	0.00097
	(A1 * !A3 * B1 * !B2 * !X)	-0.00036	-0.00036	-0.00037
	(A1 * !A3 * B1 * !B2 * !X)	0.00106	0.00107	0.00104
	(A1 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00037
	(A1 * !A3 * !B1 * !X)	0.00106	0.00107	0.00104
	(!A1 * A3 * B1 * B2 * X)	-0.00084	-0.00088	-0.00087
	(!A1 * A3 * B1 * B2 * X)	0.00097	0.00098	0.00097
	(!A1 * A3 * B1 * !B2 * !X)	-0.00075	-0.00080	-0.00080
	(!A1 * A3 * B1 * !B2 * !X)	0.00106	0.00105	0.00104
	(!A1 * A3 * !B1 * !X)	-0.00075	-0.00081	-0.00080
	(!A1 * A3 * !B1 * !X)	0.00106	0.00105	0.00104
	(!A1 * !A3 * B1 * B2 * X)	-0.00054	-0.00055	-0.00054
	(!A1 * !A3 * B1 * B2 * X)	0.00096	0.00097	0.00097
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A3 * B1 * !B2 * !X)	0.00108	0.00109	0.00105
	(!A1 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A3 * !B1 * !X)	0.00108	0.00109	0.00105

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00157	-0.00157	-0.00156
	(A1 * A3 * B1 * B2 * X)	0.00203	0.00205	0.00204
	(A1 * !A3 * B1 * B2 * X)	-0.00143	-0.00150	-0.00149
	(A1 * !A3 * B1 * B2 * X)	0.00214	0.00215	0.00213
	(A1 * !A3 * B1 * !B2 * !X)	-0.00064	-0.00065	-0.00066
	(A1 * !A3 * B1 * !B2 * !X)	0.00228	0.00229	0.00224
	(A1 * !A3 * !B1 * !X)	-0.00064	-0.00065	-0.00066
	(A1 * !A3 * !B1 * !X)	0.00228	0.00229	0.00224
	(!A1 * A3 * B1 * B2 * X)	-0.00144	-0.00150	-0.00149
	(!A1 * A3 * B1 * B2 * X)	0.00212	0.00215	0.00212
	(!A1 * A3 * B1 * !B2 * !X)	-0.00128	-0.00139	-0.00139
	(!A1 * A3 * B1 * !B2 * !X)	0.00229	0.00225	0.00222
	(!A1 * A3 * !B1 * !X)	-0.00128	-0.00138	-0.00139
	(!A1 * A3 * !B1 * !X)	0.00229	0.00225	0.00222
	(!A1 * !A3 * B1 * B2 * X)	-0.00098	-0.00098	-0.00098
	(!A1 * !A3 * B1 * B2 * X)	0.00214	0.00214	0.00213
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A3 * B1 * !B2 * !X)	0.00231	0.00230	0.00225
	(!A1 * !A3 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A3 * !B1 * !X)	0.00231	0.00230	0.00225

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)**	0.00093	0.00092	0.00091
	(A1 * A2 * B1 * B2 * X)	-0.00087	-0.00093	-0.00092
	(A1 * !A2 * B1 * !B2 * !X)	0.00070	0.00070	0.00070
	(A1 * !A2 * B1 * !B2 * !X)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00070	0.00070	0.00070
	(A1 * !A2 * !B1 * !X)	-0.00111	-0.00111	-0.00111
	(!A2 * B1 * B2 * X)	0.00086	0.00086	0.00086
	(!A2 * B1 * B2 * X)	-0.00095	-0.00095	-0.00095
	(!A1 * A2 * B1 * B2 * X)	0.00085	0.00085	0.00085
	(!A1 * A2 * B1 * B2 * X)	-0.00095	-0.00095	-0.00095
	(!A1 * A2 * B1 * !B2 * !X)	0.00069	0.00069	0.00069
	(!A1 * A2 * B1 * !B2 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * A2 * !B1 * !X)	0.00069	0.00069	0.00069
	(!A1 * A2 * !B1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * B1 * !B2 * !X)	0.00070	0.00070	0.00070
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * !X)	0.00070	0.00070	0.00070
	(!A1 * !A2 * !B1 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00105	0.00104	0.00102
	(A1 * A2 * B1 * B2 * X)	-0.00086	-0.00093	-0.00093
	(A1 * !A2 * B1 * !B2 * !X)	0.00081	0.00081	0.00081
	(A1 * !A2 * B1 * !B2 * !X)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00081	0.00081	0.00081
	(A1 * !A2 * !B1 * !X)	-0.00111	-0.00111	-0.00111
	(!A2 * B1 * B2 * X)	0.00096	0.00097	0.00096
	(!A2 * B1 * B2 * X)	-0.00095	-0.00096	-0.00095
	(!A1 * A2 * B1 * B2 * X)	0.00095	0.00096	0.00095
	(!A1 * A2 * B1 * B2 * X)	-0.00095	-0.00096	-0.00095
	(!A1 * A2 * B1 * !B2 * !X)	0.00080	0.00080	0.00080
	(!A1 * A2 * B1 * !B2 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * A2 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * A2 * !B1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * B1 * !B2 * !X)	0.00081	0.00081	0.00081
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A2 * !B1 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00164	0.00157	0.00156
	(A1 * A2 * B1 * B2 * X)	-0.00183	-0.00197	-0.00197
	(A1 * !A2 * B1 * !B2 * !X)	0.00147	0.00148	0.00147
	(A1 * !A2 * B1 * !B2 * !X)	-0.00204	-0.00205	-0.00204
	(A1 * !A2 * !B1 * !X)	0.00147	0.00148	0.00147
	(A1 * !A2 * !B1 * !X)	-0.00204	-0.00205	-0.00204
	(!A2 * B1 * B2 * X)	0.00147	0.00148	0.00147
	(!A2 * B1 * B2 * X)	-0.00204	-0.00204	-0.00204
	(!A1 * A2 * B1 * B2 * X)	0.00143	0.00144	0.00143
	(!A1 * A2 * B1 * B2 * X)	-0.00204	-0.00205	-0.00204
	(!A1 * A2 * B1 * !B2 * !X)	0.00142	0.00143	0.00142
	(!A1 * A2 * B1 * !B2 * !X)	-0.00204	-0.00205	-0.00204
	(!A1 * A2 * !B1 * !X)	0.00142	0.00143	0.00142
	(!A1 * A2 * !B1 * !X)	-0.00204	-0.00205	-0.00204
	(!A1 * !A2 * B1 * !B2 * !X)	0.00147	0.00146	0.00146
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00204	-0.00203	-0.00204
	(!A1 * !A2 * !B1 * !X)	0.00147	0.00148	0.00146
	(!A1 * !A2 * !B1 * !X)	-0.00204	-0.00205	-0.00204

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)**	-0.00090	-0.00091	-0.00090
	(A1 * A2 * B1 * B2 * X)	0.00092	0.00093	0.00092
	(A1 * !A2 * B1 * !B2 * !X)	-0.00067	-0.00070	-0.00070
	(A1 * !A2 * B1 * !B2 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B1 * !X)	-0.00067	-0.00070	-0.00070
	(A1 * !A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(!A2 * B1 * B2 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * B1 * B2 * X)	0.00095	0.00096	0.00095
	(!A1 * A2 * B1 * B2 * X)	-0.00080	-0.00085	-0.00085
	(!A1 * A2 * B1 * B2 * X)	0.00095	0.00096	0.00095
	(!A1 * A2 * B1 * !B2 * !X)	-0.00065	-0.00069	-0.00069
	(!A1 * A2 * B1 * !B2 * !X)	0.00112	0.00112	0.00111
	(!A1 * A2 * !B1 * !X)	-0.00065	-0.00069	-0.00069
	(!A1 * A2 * !B1 * !X)	0.00112	0.00112	0.00111
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00068	-0.00070	-0.00070
	(!A1 * !A2 * B1 * !B2 * !X)	0.00111	0.00112	0.00111
	(!A1 * !A2 * !B1 * !X)	-0.00068	-0.00070	-0.00070
	(!A1 * !A2 * !B1 * !X)	0.00111	0.00112	0.00111

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00102	-0.00102	-0.00102
	(A1 * A2 * B1 * B2 * X)	0.00092	0.00093	0.00093
	(A1 * !A2 * B1 * !B2 * !X)	-0.00078	-0.00081	-0.00081
	(A1 * !A2 * B1 * !B2 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B1 * !X)	-0.00078	-0.00081	-0.00081
	(A1 * !A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(!A2 * B1 * B2 * X)	-0.00094	-0.00097	-0.00096
	(!A2 * B1 * B2 * X)	0.00095	0.00097	0.00096
	(!A1 * A2 * B1 * B2 * X)	-0.00090	-0.00096	-0.00095
	(!A1 * A2 * B1 * B2 * X)	0.00096	0.00096	0.00096
	(!A1 * A2 * B1 * !B2 * !X)	-0.00075	-0.00080	-0.00080
	(!A1 * A2 * B1 * !B2 * !X)	0.00111	0.00112	0.00111
	(!A1 * A2 * !B1 * !X)	-0.00075	-0.00080	-0.00080
	(!A1 * A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00078	-0.00081	-0.00081
	(!A1 * !A2 * B1 * !B2 * !X)	0.00111	0.00112	0.00111
	(!A1 * !A2 * !B1 * !X)	-0.00078	-0.00082	-0.00081
	(!A1 * !A2 * !B1 * !X)	0.00111	0.00112	0.00111

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00155	-0.00156	-0.00155
	(A1 * A2 * B1 * B2 * X)	0.00195	0.00197	0.00197
	(A1 * !A2 * B1 * !B2 * !X)	-0.00140	-0.00148	-0.00147
	(A1 * !A2 * B1 * !B2 * !X)	0.00204	0.00207	0.00205
	(A1 * !A2 * !B1 * !X)	-0.00140	-0.00148	-0.00147
	(A1 * !A2 * !B1 * !X)	0.00204	0.00207	0.00205
	(!A2 * B1 * B2 * X)	-0.00142	-0.00148	-0.00147
	(!A2 * B1 * B2 * X)	0.00204	0.00206	0.00205
	(!A1 * A2 * B1 * B2 * X)	-0.00133	-0.00144	-0.00143
	(!A1 * A2 * B1 * B2 * X)	0.00204	0.00206	0.00205
	(!A1 * A2 * B1 * !B2 * !X)	-0.00133	-0.00143	-0.00142
	(!A1 * A2 * B1 * !B2 * !X)	0.00204	0.00206	0.00205
	(!A1 * A2 * !B1 * !X)	-0.00133	-0.00143	-0.00142
	(!A1 * A2 * !B1 * !X)	0.00204	0.00206	0.00205
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00146	-0.00146
	(!A1 * !A2 * B1 * !B2 * !X)	0.00204	0.00207	0.00205
	(!A1 * !A2 * !B1 * !X)	-0.00141	-0.00148	-0.00146
	(!A1 * !A2 * !B1 * !X)	0.00204	0.00207	0.00205

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)**	0.00089	0.00089	0.00089
	(A1 * A2 * A3 * B2 * X)	-0.00052	-0.00052	-0.00052
	(A1 * A2 * A3 * !B2 * X)	0.00084	0.00085	0.00084
	(A1 * A2 * A3 * !B2 * X)	-0.00052	-0.00052	-0.00052
	(A1 * A2 * !A3 * !B2 * !X)	0.00028	0.00028	0.00027
	(A1 * A2 * !A3 * !B2 * !X)	-0.00114	-0.00115	-0.00117
	(A1 * !A2 * !B2 * !X)	0.00028	0.00028	0.00027
	(A1 * !A2 * !B2 * !X)	-0.00114	-0.00115	-0.00117
	(!A1 * !B2 * !X)	0.00028	0.00028	0.00027
	(!A1 * !B2 * !X)	-0.00114	-0.00115	-0.00117
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00099	0.00099	0.00099
	(A1 * A2 * A3 * B2 * X)	-0.00053	-0.00053	-0.00053
	(A1 * A2 * A3 * !B2 * X)	0.00093	0.00094	0.00094
	(A1 * A2 * A3 * !B2 * X)	-0.00052	-0.00052	-0.00052
	(A1 * A2 * !A3 * !B2 * !X)	0.00035	0.00035	0.00033
	(A1 * A2 * !A3 * !B2 * !X)	-0.00114	-0.00115	-0.00117
	(A1 * !A2 * !B2 * !X)	0.00035	0.00035	0.00033
	(A1 * !A2 * !B2 * !X)	-0.00114	-0.00115	-0.00117
	(!A1 * !B2 * !X)	0.00035	0.00035	0.00033
	(!A1 * !B2 * !X)	-0.00114	-0.00115	-0.00117
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00178	0.00179	0.00178
	(A1 * A2 * A3 * B2 * X)	-0.00105	-0.00106	-0.00105
	(A1 * A2 * A3 * !B2 * X)	0.00166	0.00167	0.00167
	(A1 * A2 * A3 * !B2 * X)	-0.00105	-0.00105	-0.00105
	(A1 * A2 * !A3 * !B2 * !X)	0.00052	0.00052	0.00050
	(A1 * A2 * !A3 * !B2 * !X)	-0.00232	-0.00231	-0.00236
	(A1 * !A2 * !B2 * !X)	0.00052	0.00052	0.00050
	(A1 * !A2 * !B2 * !X)	-0.00232	-0.00231	-0.00236
	(!A1 * !B2 * !X)	0.00052	0.00052	0.00050
	(!A1 * !B2 * !X)	-0.00232	-0.00231	-0.00236

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)	-0.00075	-0.00076	-0.00087
	(A1 * A2 * A3 * B2 * X)	0.00064	0.00063	0.00055
	(A1 * A2 * A3 * !B2 * X)	-0.00083	-0.00085	-0.00084
	(A1 * A2 * A3 * !B2 * X)	0.00052	0.00052	0.00052
	(A1 * A2 * !A3 * !B2 * !X)	-0.00026	-0.00027	-0.00026
	(A1 * A2 * !A3 * !B2 * !X)	0.00117	0.00117	0.00117
	(A1 * !A2 * !B2 * !X)	-0.00026	-0.00027	-0.00026
	(A1 * !A2 * !B2 * !X)	0.00117	0.00117	0.00117
	(!A1 * !B2 * !X)	-0.00026	-0.00027	-0.00026
	(!A1 * !B2 * !X)	0.00117	0.00117	0.00117
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00085	-0.00086	-0.00097
	(A1 * A2 * A3 * B2 * X)	0.00064	0.00064	0.00055
	(A1 * A2 * A3 * !B2 * X)	-0.00091	-0.00094	-0.00094
	(A1 * A2 * A3 * !B2 * X)	0.00053	0.00053	0.00052
	(A1 * A2 * !A3 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * A2 * !A3 * !B2 * !X)	0.00117	0.00117	0.00117
	(A1 * !A2 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * !X)	0.00117	0.00117	0.00117
	(!A1 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !B2 * !X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00149	-0.00151	-0.00174
	(A1 * A2 * A3 * B2 * X)	0.00130	0.00129	0.00110
	(A1 * A2 * A3 * !B2 * X)	-0.00162	-0.00167	-0.00167
	(A1 * A2 * A3 * !B2 * X)	0.00106	0.00105	0.00105
	(A1 * A2 * !A3 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(A1 * A2 * !A3 * !B2 * !X)	0.00236	0.00237	0.00237
	(A1 * !A2 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(A1 * !A2 * !B2 * !X)	0.00236	0.00237	0.00237
	(!A1 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A1 * !B2 * !X)	0.00236	0.00237	0.00237

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)**	0.00087	0.00087	0.00087
	(A1 * A2 * A3 * B1 * X)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * A3 * !B1 * X)	0.00083	0.00084	0.00082
	(A1 * A2 * A3 * !B1 * X)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * !A3 * !B1 * !X)	0.00076	0.00076	0.00075
	(A1 * A2 * !A3 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !B1 * !X)	0.00076	0.00076	0.00075
	(A1 * !A2 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !B1 * !X)	0.00076	0.00076	0.00075
	(!A1 * !B1 * !X)	-0.00098	-0.00098	-0.00098

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00100	0.00100	0.00100
	(A1 * A2 * A3 * B1 * X)	-0.00055	-0.00056	-0.00055
	(A1 * A2 * A3 * !B1 * X)	0.00096	0.00096	0.00095
	(A1 * A2 * A3 * !B1 * X)	-0.00055	-0.00056	-0.00055
	(A1 * A2 * !A3 * !B1 * !X)	0.00088	0.00089	0.00089
	(A1 * A2 * !A3 * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !X)	0.00088	0.00089	0.00089
	(A1 * !A2 * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * !B1 * !X)	0.00088	0.00089	0.00089
	(!A1 * !B1 * !X)	-0.00098	-0.00099	-0.00098
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00227	0.00230	0.00227
	(A1 * A2 * A3 * B1 * X)	-0.00109	-0.00111	-0.00109
	(A1 * A2 * A3 * !B1 * X)	0.00216	0.00217	0.00216
	(A1 * A2 * A3 * !B1 * X)	-0.00109	-0.00109	-0.00109
	(A1 * A2 * !A3 * !B1 * !X)	0.00189	0.00190	0.00188
	(A1 * A2 * !A3 * !B1 * !X)	-0.00209	-0.00209	-0.00209
	(A1 * !A2 * !B1 * !X)	0.00189	0.00190	0.00189
	(A1 * !A2 * !B1 * !X)	-0.00209	-0.00209	-0.00209
	(!A1 * !B1 * !X)	0.00189	0.00190	0.00189
	(!A1 * !B1 * !X)	-0.00209	-0.00209	-0.00209

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)**	-0.00073	-0.00074	-0.00085
	(A1 * A2 * A3 * B1 * X)	0.00066	0.00066	0.00057
	(A1 * A2 * A3 * !B1 * X)	-0.00080	-0.00083	-0.00082
	(A1 * A2 * A3 * !B1 * X)	0.00054	0.00055	0.00054
	(A1 * A2 * !A3 * !B1 * !X)	-0.00071	-0.00076	-0.00075
	(A1 * A2 * !A3 * !B1 * !X)	0.00101	0.00099	0.00098
	(A1 * !A2 * !B1 * !X)	-0.00071	-0.00076	-0.00075
	(A1 * !A2 * !B1 * !X)	0.00101	0.00099	0.00098
	(!A1 * !B1 * !X)	-0.00071	-0.00076	-0.00075
	(!A1 * !B1 * !X)	0.00101	0.00099	0.00098
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00086	-0.00087	-0.00098
	(A1 * A2 * A3 * B1 * X)	0.00067	0.00067	0.00058
	(A1 * A2 * A3 * !B1 * X)	-0.00093	-0.00096	-0.00095
	(A1 * A2 * A3 * !B1 * X)	0.00055	0.00056	0.00055
	(A1 * A2 * !A3 * !B1 * !X)	-0.00085	-0.00089	-0.00089
	(A1 * A2 * !A3 * !B1 * !X)	0.00100	0.00099	0.00099
	(A1 * !A2 * !B1 * !X)	-0.00085	-0.00089	-0.00089
	(A1 * !A2 * !B1 * !X)	0.00100	0.00099	0.00099
	(!A1 * !B1 * !X)	-0.00085	-0.00089	-0.00089
	(!A1 * !B1 * !X)	0.00100	0.00099	0.00099
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00198	-0.00201	-0.00223
	(A1 * A2 * A3 * B1 * X)	0.00134	0.00134	0.00115
	(A1 * A2 * A3 * !B1 * X)	-0.00211	-0.00217	-0.00216
	(A1 * A2 * A3 * !B1 * X)	0.00109	0.00109	0.00109
	(A1 * A2 * !A3 * !B1 * !X)	-0.00179	-0.00189	-0.00188
	(A1 * A2 * !A3 * !B1 * !X)	0.00216	0.00210	0.00209
	(A1 * !A2 * !B1 * !X)	-0.00179	-0.00189	-0.00189
	(A1 * !A2 * !B1 * !X)	0.00216	0.00210	0.00209
	(!A1 * !B1 * !X)	-0.00179	-0.00189	-0.00189
	(!A1 * !B1 * !X)	0.00216	0.00210	0.00209

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00270	0.00273	0.00268	0.00271	0.00276	0.27869
sky130_fd_sc_hs__a41oi_2	0.00522	0.00506	0.00496	0.00495	0.00400	0.53872
sky130_fd_sc_hs__a41oi_4	0.01019	0.00979	0.00990	0.00979	0.00791	0.99020

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41oi_1	0.00000	0.01178	0.03100
sky130_fd_sc_hs__a41oi_2	0.00000	0.02186	0.06201
sky130_fd_sc_hs__a41oi_4	0.00000	0.04372	0.12401

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)	0.18831	1.39921	12.02070
	A2->Y (FR)	0.22973	1.45602	12.18910
	A3->Y (FR)	0.25312	1.46484	12.04040
	A4->Y (FR)	0.26505	1.44309	11.73210
	B1->Y (FR)	0.16287	1.35777	12.00170
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.15471	1.20341	12.07670
	A2->Y (FR)	0.19092	1.22075	11.88740
	A3->Y (FR)	0.22054	1.26067	11.97210
	A4->Y (FR)	0.25185	1.30234	12.04140
	B1->Y (FR)	0.17889	1.19759	11.84370
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.14220	1.04003	11.71900
	A2->Y (FR)	0.18410	1.07020	11.58920
	A3->Y (FR)	0.22059	1.12221	11.78060
	A4->Y (FR)	0.25540	1.17629	11.99110
	B1->Y (FR)	0.18529	1.08331	11.92050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.07223	0.70685	6.36466
	A2->Y (RF)	0.08746	0.70617	6.18835
	A3->Y (RF)	0.09644	0.67927	5.75720
	A4->Y (RF)	0.10179	0.65370	5.35609
	B1->Y (RF)	0.02804	0.43489	4.09975
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.06279	0.66942	6.88206
	A2->Y (RF)	0.08337	0.67560	6.69543
	A3->Y (RF)	0.09344	0.63371	6.07257
	A4->Y (RF)	0.10053	0.61510	5.68064
	B1->Y (RF)	0.03100	0.52237	5.62605
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.06000	0.60415	6.90593
	A2->Y (RF)	0.08340	0.61039	6.67105
	A3->Y (RF)	0.09512	0.57362	6.06289
	A4->Y (RF)	0.10069	0.54495	5.56535
	B1->Y (RF)	0.02921	0.45733	5.47008

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00026	0.00016	0.00015
	A1	0.00386	0.00378	0.00378
	A2	0.00071	0.00059	0.00058
	A2	0.00482	0.00471	0.00469
	A3	0.00108	0.00096	0.00095
	A3	0.00567	0.00556	0.00554
	A4	0.00130	0.00121	0.00119
	A4	0.00643	0.00634	0.00631
	B1	0.00126	0.00117	0.00135
	B1	0.00561	0.00552	0.00569
sky130_fd_sc_hs__a41oi_2	A1	-0.00037	-0.00046	-0.00044
	A1	0.00620	0.00609	0.00616
	A2	0.00073	0.00048	0.00048
	A2	0.00841	0.00816	0.00818
	A3	0.00140	0.00118	0.00116
	A3	0.01006	0.00984	0.00983
	A4	0.00222	0.00203	0.00200
	A4	0.01198	0.01179	0.01176
	B1	0.00274	0.00264	0.00284
	B1	0.01004	0.00997	0.01012

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00112	-0.00133	-0.00118
	A1	0.01194	0.01173	0.01191
	A2	0.00135	0.00080	0.00087
	A2	0.01661	0.01605	0.01611
	A3	0.00270	0.00217	0.00218
	A3	0.02017	0.01962	0.01964
	A4	0.00403	0.00367	0.00362
	A4	0.02357	0.02316	0.02310
	B1	0.00511	0.00493	0.00541
	B1	0.01973	0.01956	0.01995

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00478	0.00466	0.00477
	A1	0.00127	0.00115	0.00116
	A2	0.00532	0.00521	0.00517
	A2	0.00127	0.00116	0.00114
	A3	0.00584	0.00574	0.00598
	A3	0.00126	0.00115	0.00112
	A4	0.00646	0.00635	0.00641
	A4	0.00126	0.00115	0.00111
	B1	0.00440	0.00439	0.00446
	B1	-0.00014	-0.00020	-0.00013

sky130_fd_sc_hs__a41oi_2	**A1**	0.00860	0.00833	0.00833
	A1	0.00225	0.00195	0.00201
	A2	0.00982	0.00959	0.00966
	A2	0.00223	0.00198	0.00195
	A3	0.01090	0.01066	0.01092
	A3	0.00222	0.00198	0.00193
	A4	0.01215	0.01193	0.01184
	A4	0.00220	0.00195	0.00191
	B1	0.00693	0.00694	0.00737
	B1	-0.00082	-0.00090	-0.00078
sky130_fd_sc_hs__a41oi_4	**A1**	0.01669	0.01611	0.01620
	A1	0.00406	0.00342	0.00364
	A2	0.01908	0.01861	0.01879
	A2	0.00401	0.00349	0.00349
	A3	0.02152	0.02099	0.02113
	A3	0.00397	0.00345	0.00342
	A4	0.02386	0.02336	0.02361
	A4	0.00395	0.00344	0.00340
	B1	0.01380	0.01375	0.01476
	B1	-0.00168	-0.00190	-0.00152

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)**	0.00096	0.00094	0.00094
	(A2 * A3 * A4 * B1 * !Y)	-0.00102	-0.00107	-0.00107
	(A2 * A3 * !A4 * B1 * !Y)	0.00086	0.00087	0.00086
	(A2 * A3 * !A4 * B1 * !Y)	-0.00111	-0.00111	-0.00111
	(A2 * A3 * !A4 * !B1 * Y)	0.00039	0.00038	0.00034
	(A2 * A3 * !A4 * !B1 * Y)	-0.00121	-0.00121	-0.00131
	(A2 * !A3 * B1 * !Y)	0.00087	0.00088	0.00087
	(A2 * !A3 * B1 * !Y)	-0.00110	-0.00111	-0.00111
	(A2 * !A3 * !B1 * Y)	0.00038	0.00038	0.00034
	(A2 * !A3 * !B1 * Y)	-0.00125	-0.00126	-0.00132
	(!A2 * B1 * !Y)	0.00089	0.00089	0.00089
	(!A2 * B1 * !Y)	-0.00110	-0.00111	-0.00111
	(!A2 * !B1 * Y)	0.00037	0.00036	0.00035
	(!A2 * !B1 * Y)	-0.00130	-0.00129	-0.00132
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00189	0.00188	0.00187
	(A2 * A3 * A4 * B1 * !Y)	-0.00197	-0.00208	-0.00208
	(A2 * A3 * !A4 * B1 * !Y)	0.00168	0.00170	0.00169
	(A2 * A3 * !A4 * B1 * !Y)	-0.00215	-0.00216	-0.00215
	(A2 * A3 * !A4 * !B1 * Y)	0.00072	0.00072	0.00061
	(A2 * A3 * !A4 * !B1 * Y)	-0.00238	-0.00239	-0.00262
	(A2 * !A3 * B1 * !Y)	0.00172	0.00172	0.00172
	(A2 * !A3 * B1 * !Y)	-0.00215	-0.00215	-0.00215
	(A2 * !A3 * !B1 * Y)	0.00068	0.00068	0.00061
	(A2 * !A3 * !B1 * Y)	-0.00249	-0.00250	-0.00264
	(!A2 * B1 * !Y)	0.00177	0.00178	0.00178
	(!A2 * B1 * !Y)	-0.00216	-0.00216	-0.00215
	(!A2 * !B1 * Y)	0.00067	0.00067	0.00063
	(!A2 * !B1 * Y)	-0.00258	-0.00260	-0.00266

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00380	0.00376	0.00374
	(A2 * A3 * A4 * B1 * !Y)	-0.00391	-0.00411	-0.00411
	(A2 * A3 * !A4 * B1 * !Y)	0.00335	0.00334	0.00334
	(A2 * A3 * !A4 * B1 * !Y)	-0.00427	-0.00426	-0.00426
	(A2 * A3 * !A4 * !B1 * Y)	0.00145	0.00145	0.00124
	(A2 * A3 * !A4 * !B1 * Y)	-0.00467	-0.00469	-0.00513
	(A2 * !A3 * B1 * !Y)	0.00343	0.00344	0.00342
	(A2 * !A3 * B1 * !Y)	-0.00426	-0.00428	-0.00426
	(A2 * !A3 * !B1 * Y)	0.00138	0.00137	0.00123
	(A2 * !A3 * !B1 * Y)	-0.00487	-0.00489	-0.00517
	(!A2 * B1 * !Y)	0.00355	0.00356	0.00355
	(!A2 * B1 * !Y)	-0.00427	-0.00428	-0.00426
	(!A2 * !B1 * Y)	0.00140	0.00140	0.00132
	(!A2 * !B1 * Y)	-0.00505	-0.00507	-0.00521

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)**	-0.00094	-0.00094	-0.00094
	(A2 * A3 * A4 * B1 * !Y)	0.00107	0.00108	0.00107
	(A2 * A3 * !A4 * B1 * !Y)	-0.00079	-0.00087	-0.00086
	(A2 * A3 * !A4 * B1 * !Y)	0.00112	0.00112	0.00111
	(A2 * A3 * !A4 * !B1 * Y)	-0.00033	-0.00034	-0.00033
	(A2 * A3 * !A4 * !B1 * Y)	0.00132	0.00134	0.00133
	(A2 * !A3 * B1 * !Y)	-0.00081	-0.00088	-0.00087
	(A2 * !A3 * B1 * !Y)	0.00110	0.00112	0.00111
	(A2 * !A3 * !B1 * Y)	-0.00033	-0.00034	-0.00033
	(A2 * !A3 * !B1 * Y)	0.00132	0.00134	0.00133
	(!A2 * B1 * !Y)	-0.00087	-0.00089	-0.00089
	(!A2 * B1 * !Y)	0.00111	0.00112	0.00111
	(!A2 * !B1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * Y)	0.00132	0.00134	0.00133
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00186	-0.00187	-0.00187
	(A2 * A3 * A4 * B1 * !Y)	0.00207	0.00208	0.00208
	(A2 * A3 * !A4 * B1 * !Y)	-0.00151	-0.00170	-0.00169
	(A2 * A3 * !A4 * B1 * !Y)	0.00217	0.00216	0.00216
	(A2 * A3 * !A4 * !B1 * Y)	-0.00059	-0.00060	-0.00059
	(A2 * A3 * !A4 * !B1 * Y)	0.00267	0.00270	0.00266
	(A2 * !A3 * B1 * !Y)	-0.00156	-0.00172	-0.00172
	(A2 * !A3 * B1 * !Y)	0.00216	0.00217	0.00216
	(A2 * !A3 * !B1 * Y)	-0.00060	-0.00060	-0.00059
	(A2 * !A3 * !B1 * Y)	0.00267	0.00270	0.00266
	(!A2 * B1 * !Y)	-0.00170	-0.00178	-0.00178
	(!A2 * B1 * !Y)	0.00217	0.00217	0.00216
	(!A2 * !B1 * Y)	-0.00061	-0.00061	-0.00061
	(!A2 * !B1 * Y)	0.00267	0.00270	0.00267

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00373	-0.00374	-0.00374
	(A2 * A3 * A4 * B1 * !Y)	0.00409	0.00411	0.00411
	(A2 * A3 * !A4 * B1 * !Y)	-0.00297	-0.00334	-0.00334
	(A2 * A3 * !A4 * B1 * !Y)	0.00427	0.00427	0.00427
	(A2 * A3 * !A4 * !B1 * Y)	-0.00122	-0.00123	-0.00122
	(A2 * A3 * !A4 * !B1 * Y)	0.00523	0.00529	0.00522
	(A2 * !A3 * B1 * !Y)	-0.00305	-0.00344	-0.00342
	(A2 * !A3 * B1 * !Y)	0.00426	0.00429	0.00427
	(A2 * !A3 * !B1 * Y)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * !B1 * Y)	0.00523	0.00529	0.00522
	(!A2 * B1 * !Y)	-0.00339	-0.00356	-0.00355
	(!A2 * B1 * !Y)	0.00428	0.00430	0.00427
	(!A2 * !B1 * Y)	-0.00127	-0.00129	-0.00127
	(!A2 * !B1 * Y)	0.00521	0.00530	0.00522

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)**	0.00092	0.00090	0.00090
	(A1 * A3 * A4 * B1 * !Y)	-0.00102	-0.00107	-0.00106
	(A1 * A3 * !A4 * B1 * !Y)	0.00083	0.00083	0.00083
	(A1 * A3 * !A4 * B1 * !Y)	-0.00111	-0.00111	-0.00110
	(A1 * A3 * !A4 * !B1 * Y)	0.00038	0.00038	0.00038
	(A1 * A3 * !A4 * !B1 * Y)	-0.00116	-0.00116	-0.00115
	(A1 * !A3 * B1 * !Y)	0.00085	0.00086	0.00085
	(A1 * !A3 * B1 * !Y)	-0.00110	-0.00111	-0.00110
	(A1 * !A3 * !B1 * Y)	0.00040	0.00040	0.00040
	(A1 * !A3 * !B1 * Y)	-0.00116	-0.00116	-0.00115
	(!A1 * A3 * A4 * B1 * !Y)	0.00085	0.00086	0.00086
	(!A1 * A3 * A4 * B1 * !Y)	-0.00110	-0.00111	-0.00110
	(!A1 * A3 * A4 * !B1 * Y)	0.00080	0.00081	0.00080
	(!A1 * A3 * A4 * !B1 * Y)	-0.00115	-0.00116	-0.00116
	(!A1 * A3 * !A4 * B1 * !Y)	0.00053	0.00054	0.00053
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00110	-0.00111	-0.00110
	(!A1 * A3 * !A4 * !B1 * Y)	0.00046	0.00046	0.00046
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00117	-0.00116	-0.00116
	(!A1 * !A3 * B1 * !Y)	0.00056	0.00056	0.00055
	(!A1 * !A3 * B1 * !Y)	-0.00111	-0.00111	-0.00110
	(!A1 * !A3 * !B1 * Y)	0.00047	0.00047	0.00046
	(!A1 * !A3 * !B1 * Y)	-0.00117	-0.00117	-0.00116

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00186	0.00183	0.00182
	(A1 * A3 * A4 * B1 * !Y)	-0.00203	-0.00213	-0.00212
	(A1 * A3 * !A4 * B1 * !Y)	0.00167	0.00167	0.00166
	(A1 * A3 * !A4 * B1 * !Y)	-0.00221	-0.00221	-0.00220
	(A1 * A3 * !A4 * !B1 * Y)	0.00082	0.00083	0.00084
	(A1 * A3 * !A4 * !B1 * Y)	-0.00221	-0.00223	-0.00221
	(A1 * !A3 * B1 * !Y)	0.00172	0.00173	0.00172
	(A1 * !A3 * B1 * !Y)	-0.00220	-0.00221	-0.00220
	(A1 * !A3 * !B1 * Y)	0.00087	0.00087	0.00087
	(A1 * !A3 * !B1 * Y)	-0.00223	-0.00224	-0.00221
	(!A1 * A3 * A4 * B1 * !Y)	0.00172	0.00173	0.00172
	(!A1 * A3 * A4 * B1 * !Y)	-0.00220	-0.00220	-0.00220
	(!A1 * A3 * A4 * !B1 * Y)	0.00169	0.00169	0.00169
	(!A1 * A3 * A4 * !B1 * Y)	-0.00223	-0.00222	-0.00222
	(!A1 * A3 * !A4 * B1 * !Y)	0.00107	0.00108	0.00107
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00220	-0.00221	-0.00220
	(!A1 * A3 * !A4 * !B1 * Y)	0.00100	0.00100	0.00099
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00224	-0.00224	-0.00224
	(!A1 * !A3 * B1 * !Y)	0.00111	0.00111	0.00110
	(!A1 * !A3 * B1 * !Y)	-0.00220	-0.00221	-0.00220
	(!A1 * !A3 * !B1 * Y)	0.00098	0.00100	0.00099
	(!A1 * !A3 * !B1 * Y)	-0.00223	-0.00226	-0.00224

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00367	0.00361	0.00360
	(A1 * A3 * A4 * B1 * !Y)	-0.00400	-0.00423	-0.00420
	(A1 * A3 * !A4 * B1 * !Y)	0.00324	0.00325	0.00323
	(A1 * A3 * !A4 * B1 * !Y)	-0.00439	-0.00438	-0.00436
	(A1 * A3 * !A4 * !B1 * Y)	0.00156	0.00158	0.00162
	(A1 * A3 * !A4 * !B1 * Y)	-0.00436	-0.00440	-0.00435
	(A1 * !A3 * B1 * !Y)	0.00333	0.00336	0.00334
	(A1 * !A3 * B1 * !Y)	-0.00436	-0.00438	-0.00436
	(A1 * !A3 * !B1 * Y)	0.00162	0.00164	0.00165
	(A1 * !A3 * !B1 * Y)	-0.00436	-0.00441	-0.00436
	(!A1 * A3 * A4 * B1 * !Y)	0.00340	0.00344	0.00341
	(!A1 * A3 * A4 * B1 * !Y)	-0.00436	-0.00439	-0.00436
	(!A1 * A3 * A4 * !B1 * Y)	0.00337	0.00340	0.00338
	(!A1 * A3 * A4 * !B1 * Y)	-0.00438	-0.00440	-0.00438
	(!A1 * A3 * !A4 * B1 * !Y)	0.00204	0.00206	0.00204
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00436	-0.00439	-0.00436
	(!A1 * A3 * !A4 * !B1 * Y)	0.00192	0.00193	0.00192
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00440	-0.00442	-0.00440
	(!A1 * !A3 * B1 * !Y)	0.00208	0.00208	0.00206
	(!A1 * !A3 * B1 * !Y)	-0.00439	-0.00439	-0.00436
	(!A1 * !A3 * !B1 * Y)	0.00188	0.00190	0.00188
	(!A1 * !A3 * !B1 * Y)	-0.00440	-0.00443	-0.00441

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)**	-0.00090	-0.00090	-0.00090
	(A1 * A3 * A4 * B1 * !Y)	0.00107	0.00107	0.00106
	(A1 * A3 * !A4 * B1 * !Y)	-0.00076	-0.00083	-0.00083
	(A1 * A3 * !A4 * B1 * !Y)	0.00111	0.00112	0.00111
	(A1 * A3 * !A4 * !B1 * Y)	-0.00036	-0.00037	-0.00038
	(A1 * A3 * !A4 * !B1 * Y)	0.00119	0.00119	0.00117
	(A1 * !A3 * B1 * !Y)	-0.00083	-0.00086	-0.00085
	(A1 * !A3 * B1 * !Y)	0.00111	0.00111	0.00111
	(A1 * !A3 * !B1 * Y)	-0.00037	-0.00038	-0.00038
	(A1 * !A3 * !B1 * Y)	0.00119	0.00119	0.00117
	(!A1 * A3 * A4 * B1 * !Y)	-0.00083	-0.00086	-0.00086
	(!A1 * A3 * A4 * B1 * !Y)	0.00111	0.00112	0.00111
	(!A1 * A3 * A4 * !B1 * Y)	-0.00075	-0.00081	-0.00080
	(!A1 * A3 * A4 * !B1 * Y)	0.00120	0.00118	0.00116
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00053	-0.00054	-0.00053
	(!A1 * A3 * !A4 * B1 * !Y)	0.00111	0.00111	0.00111
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * A3 * !A4 * !B1 * Y)	0.00117	0.00117	0.00116
	(!A1 * !A3 * B1 * !Y)	-0.00056	-0.00056	-0.00055
	(!A1 * !A3 * B1 * !Y)	0.00111	0.00111	0.00111
	(!A1 * !A3 * !B1 * Y)	-0.00047	-0.00047	-0.00046
	(!A1 * !A3 * !B1 * Y)	0.00120	0.00121	0.00117

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00183	-0.00183	-0.00182
	(A1 * A3 * A4 * B1 * !Y)	0.00213	0.00213	0.00212
	(A1 * A3 * !A4 * B1 * !Y)	-0.00151	-0.00167	-0.00166
	(A1 * A3 * !A4 * B1 * !Y)	0.00222	0.00221	0.00221
	(A1 * A3 * !A4 * !B1 * Y)	-0.00078	-0.00079	-0.00081
	(A1 * A3 * !A4 * !B1 * Y)	0.00229	0.00231	0.00225
	(A1 * !A3 * B1 * !Y)	-0.00166	-0.00173	-0.00172
	(A1 * !A3 * B1 * !Y)	0.00221	0.00222	0.00221
	(A1 * !A3 * !B1 * Y)	-0.00081	-0.00082	-0.00084
	(A1 * !A3 * !B1 * Y)	0.00229	0.00231	0.00225
	(!A1 * A3 * A4 * B1 * !Y)	-0.00165	-0.00173	-0.00172
	(!A1 * A3 * A4 * B1 * !Y)	0.00221	0.00222	0.00221
	(!A1 * A3 * A4 * !B1 * Y)	-0.00155	-0.00169	-0.00169
	(!A1 * A3 * A4 * !B1 * Y)	0.00232	0.00224	0.00223
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00107	-0.00108	-0.00107
	(!A1 * A3 * !A4 * B1 * !Y)	0.00220	0.00222	0.00221
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00100	-0.00100	-0.00099
	(!A1 * A3 * !A4 * !B1 * Y)	0.00226	0.00226	0.00224
	(!A1 * !A3 * B1 * !Y)	-0.00111	-0.00111	-0.00110
	(!A1 * !A3 * B1 * !Y)	0.00220	0.00222	0.00221
	(!A1 * !A3 * !B1 * Y)	-0.00098	-0.00100	-0.00099
	(!A1 * !A3 * !B1 * Y)	0.00231	0.00233	0.00226

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00359	-0.00361	-0.00359
	(A1 * A3 * A4 * B1 * !Y)	0.00419	0.00423	0.00420
	(A1 * A3 * !A4 * B1 * !Y)	-0.00291	-0.00325	-0.00323
	(A1 * A3 * !A4 * B1 * !Y)	0.00440	0.00439	0.00438
	(A1 * A3 * !A4 * !B1 * Y)	-0.00151	-0.00152	-0.00154
	(A1 * A3 * !A4 * !B1 * Y)	0.00450	0.00453	0.00443
	(A1 * !A3 * B1 * !Y)	-0.00321	-0.00336	-0.00334
	(A1 * !A3 * B1 * !Y)	0.00439	0.00443	0.00438
	(A1 * !A3 * !B1 * Y)	-0.00154	-0.00155	-0.00158
	(A1 * !A3 * !B1 * Y)	0.00450	0.00453	0.00442
	(!A1 * A3 * A4 * B1 * !Y)	-0.00325	-0.00344	-0.00341
	(!A1 * A3 * A4 * B1 * !Y)	0.00439	0.00440	0.00438
	(!A1 * A3 * A4 * !B1 * Y)	-0.00309	-0.00340	-0.00338
	(!A1 * A3 * A4 * !B1 * Y)	0.00457	0.00443	0.00440
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00204	-0.00206	-0.00204
	(!A1 * A3 * !A4 * B1 * !Y)	0.00437	0.00440	0.00438
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00192	-0.00193	-0.00192
	(!A1 * A3 * !A4 * !B1 * Y)	0.00444	0.00444	0.00440
	(!A1 * !A3 * B1 * !Y)	-0.00208	-0.00208	-0.00206
	(!A1 * !A3 * B1 * !Y)	0.00440	0.00440	0.00438
	(!A1 * !A3 * !B1 * Y)	-0.00188	-0.00190	-0.00188
	(!A1 * !A3 * !B1 * Y)	0.00453	0.00457	0.00443

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)**	0.00090	0.00088	0.00089
	(A1 * A2 * A4 * B1 * !Y)	-0.00102	-0.00107	-0.00106
	(A1 * A2 * !A4 * B1 * !Y)	0.00083	0.00083	0.00083
	(A1 * A2 * !A4 * B1 * !Y)	-0.00110	-0.00111	-0.00110
	(A1 * A2 * !A4 * !B1 * Y)	0.00038	0.00038	0.00038
	(A1 * A2 * !A4 * !B1 * Y)	-0.00115	-0.00115	-0.00114
	(A1 * !A2 * A4 * !B1 * Y)	0.00080	0.00081	0.00080
	(A1 * !A2 * A4 * !B1 * Y)	-0.00114	-0.00115	-0.00114
	(A1 * !A2 * !A4 * !B1 * Y)	0.00045	0.00045	0.00044
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00114	-0.00115	-0.00114
	(!A2 * A4 * B1 * !Y)	0.00084	0.00085	0.00084
	(!A2 * A4 * B1 * !Y)	-0.00110	-0.00111	-0.00110
	(!A2 * !A4 * B1 * !Y)	0.00051	0.00052	0.00051
	(!A2 * !A4 * B1 * !Y)	-0.00110	-0.00111	-0.00110
	(!A1 * A2 * A4 * B1 * !Y)	0.00082	0.00082	0.00082
	(!A1 * A2 * A4 * B1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * A2 * A4 * !B1 * Y)	0.00077	0.00078	0.00078
	(!A1 * A2 * A4 * !B1 * Y)	-0.00114	-0.00114	-0.00114
	(!A1 * A2 * !A4 * B1 * !Y)	0.00051	0.00051	0.00051
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00110	-0.00111	-0.00110
	(!A1 * A2 * !A4 * !B1 * Y)	0.00045	0.00044	0.00044
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00114	-0.00115	-0.00114
	(!A1 * !A2 * A4 * !B1 * Y)	0.00080	0.00080	0.00080
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00114	-0.00114	-0.00114
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00046	0.00046	0.00046
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00114	-0.00115	-0.00115

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00181	0.00180	0.00179
	(A1 * A2 * A4 * B1 * !Y)	-0.00201	-0.00211	-0.00211
	(A1 * A2 * !A4 * B1 * !Y)	0.00166	0.00167	0.00166
	(A1 * A2 * !A4 * B1 * !Y)	-0.00218	-0.00220	-0.00219
	(A1 * A2 * !A4 * !B1 * Y)	0.00085	0.00085	0.00086
	(A1 * A2 * !A4 * !B1 * Y)	-0.00215	-0.00216	-0.00215
	(A1 * !A2 * A4 * !B1 * Y)	0.00168	0.00170	0.00169
	(A1 * !A2 * A4 * !B1 * Y)	-0.00218	-0.00220	-0.00219
	(A1 * !A2 * !A4 * !B1 * Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00218	-0.00220	-0.00219
	(!A2 * A4 * B1 * !Y)	0.00168	0.00169	0.00169
	(!A2 * A4 * B1 * !Y)	-0.00218	-0.00219	-0.00218
	(!A2 * !A4 * B1 * !Y)	0.00103	0.00103	0.00102
	(!A2 * !A4 * B1 * !Y)	-0.00218	-0.00220	-0.00218
	(!A1 * A2 * A4 * B1 * !Y)	0.00165	0.00165	0.00165
	(!A1 * A2 * A4 * B1 * !Y)	-0.00219	-0.00219	-0.00219
	(!A1 * A2 * A4 * !B1 * Y)	0.00164	0.00165	0.00164
	(!A1 * A2 * A4 * !B1 * Y)	-0.00218	-0.00219	-0.00219
	(!A1 * A2 * !A4 * B1 * !Y)	0.00103	0.00103	0.00103
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00219	-0.00219	-0.00218
	(!A1 * A2 * !A4 * !B1 * Y)	0.00096	0.00097	0.00096
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00219	-0.00220	-0.00220
	(!A1 * !A2 * A4 * !B1 * Y)	0.00168	0.00170	0.00168
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00218	-0.00219	-0.00219
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00100	0.00101	0.00100
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00218	-0.00220	-0.00219

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00362	0.00357	0.00356
	(A1 * A2 * A4 * B1 * !Y)	-0.00403	-0.00427	-0.00424
	(A1 * A2 * !A4 * B1 * !Y)	0.00331	0.00333	0.00333
	(A1 * A2 * !A4 * B1 * !Y)	-0.00439	-0.00442	-0.00441
	(A1 * A2 * !A4 * !B1 * Y)	0.00161	0.00161	0.00160
	(A1 * A2 * !A4 * !B1 * Y)	-0.00439	-0.00440	-0.00437
	(A1 * !A2 * A4 * !B1 * Y)	0.00328	0.00332	0.00330
	(A1 * !A2 * A4 * !B1 * Y)	-0.00441	-0.00444	-0.00441
	(A1 * !A2 * !A4 * !B1 * Y)	0.00181	0.00183	0.00182
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00441	-0.00444	-0.00442
	(!A2 * A4 * B1 * !Y)	0.00329	0.00333	0.00330
	(!A2 * A4 * B1 * !Y)	-0.00441	-0.00444	-0.00441
	(!A2 * !A4 * B1 * !Y)	0.00194	0.00195	0.00193
	(!A2 * !A4 * B1 * !Y)	-0.00443	-0.00445	-0.00441
	(!A1 * A2 * A4 * B1 * !Y)	0.00321	0.00324	0.00322
	(!A1 * A2 * A4 * B1 * !Y)	-0.00440	-0.00443	-0.00441
	(!A1 * A2 * A4 * !B1 * Y)	0.00321	0.00321	0.00322
	(!A1 * A2 * A4 * !B1 * Y)	-0.00441	-0.00440	-0.00441
	(!A1 * A2 * !A4 * B1 * !Y)	0.00198	0.00200	0.00198
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00441	-0.00444	-0.00441
	(!A1 * A2 * !A4 * !B1 * Y)	0.00186	0.00187	0.00187
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00442	-0.00443	-0.00443
	(!A1 * !A2 * A4 * !B1 * Y)	0.00328	0.00330	0.00329
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00441	-0.00442	-0.00441
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00189	0.00189	0.00188
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00442	-0.00444	-0.00442

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)**	-0.00088	-0.00088	-0.00088
	(A1 * A2 * A4 * B1 * !Y)	0.00106	0.00107	0.00106
	(A1 * A2 * !A4 * B1 * !Y)	-0.00081	-0.00083	-0.00083
	(A1 * A2 * !A4 * B1 * !Y)	0.00111	0.00111	0.00111
	(A1 * A2 * !A4 * !B1 * Y)	-0.00037	-0.00037	-0.00037
	(A1 * A2 * !A4 * !B1 * Y)	0.00115	0.00115	0.00115
	(A1 * !A2 * A4 * !B1 * Y)	-0.00077	-0.00081	-0.00080
	(A1 * !A2 * A4 * !B1 * Y)	0.00114	0.00116	0.00114
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00045	-0.00045	-0.00044
	(A1 * !A2 * !A4 * !B1 * Y)	0.00114	0.00115	0.00115
	(!A2 * A4 * B1 * !Y)	-0.00081	-0.00085	-0.00084
	(!A2 * A4 * B1 * !Y)	0.00110	0.00112	0.00111
	(!A2 * !A4 * B1 * !Y)	-0.00051	-0.00052	-0.00051
	(!A2 * !A4 * B1 * !Y)	0.00110	0.00111	0.00111
	(!A1 * A2 * A4 * B1 * !Y)	-0.00076	-0.00082	-0.00082
	(!A1 * A2 * A4 * B1 * !Y)	0.00110	0.00112	0.00111
	(!A1 * A2 * A4 * !B1 * Y)	-0.00072	-0.00078	-0.00078
	(!A1 * A2 * A4 * !B1 * Y)	0.00114	0.00116	0.00114
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00051	-0.00051	-0.00051
	(!A1 * A2 * !A4 * B1 * !Y)	0.00110	0.00111	0.00111
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00045	-0.00044	-0.00044
	(!A1 * A2 * !A4 * !B1 * Y)	0.00114	0.00115	0.00115
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00077	-0.00080	-0.00080
	(!A1 * !A2 * A4 * !B1 * Y)	0.00114	0.00116	0.00114
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00114	0.00115	0.00115

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00178	-0.00179	-0.00178
	(A1 * A2 * A4 * B1 * !Y)	0.00210	0.00211	0.00211
	(A1 * A2 * !A4 * B1 * !Y)	-0.00159	-0.00167	-0.00166
	(A1 * A2 * !A4 * B1 * !Y)	0.00220	0.00221	0.00219
	(A1 * A2 * !A4 * !B1 * Y)	-0.00082	-0.00082	-0.00081
	(A1 * A2 * !A4 * !B1 * Y)	0.00221	0.00221	0.00219
	(A1 * !A2 * A4 * !B1 * Y)	-0.00161	-0.00170	-0.00169
	(A1 * !A2 * A4 * !B1 * Y)	0.00219	0.00222	0.00219
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * !A4 * !B1 * Y)	0.00221	0.00221	0.00219
	(!A2 * A4 * B1 * !Y)	-0.00162	-0.00169	-0.00169
	(!A2 * A4 * B1 * !Y)	0.00219	0.00222	0.00219
	(!A2 * !A4 * B1 * !Y)	-0.00103	-0.00103	-0.00102
	(!A2 * !A4 * B1 * !Y)	0.00218	0.00221	0.00219
	(!A1 * A2 * A4 * B1 * !Y)	-0.00152	-0.00165	-0.00165
	(!A1 * A2 * A4 * B1 * !Y)	0.00220	0.00222	0.00219
	(!A1 * A2 * A4 * !B1 * Y)	-0.00152	-0.00165	-0.00164
	(!A1 * A2 * A4 * !B1 * Y)	0.00221	0.00222	0.00219
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00103	-0.00103	-0.00103
	(!A1 * A2 * !A4 * B1 * !Y)	0.00219	0.00220	0.00219
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00096	-0.00097	-0.00096
	(!A1 * A2 * !A4 * !B1 * Y)	0.00221	0.00221	0.00220
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00161	-0.00170	-0.00168
	(!A1 * !A2 * A4 * !B1 * Y)	0.00219	0.00222	0.00219
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00221	0.00221	0.00219

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00355	-0.00356	-0.00355
	(A1 * A2 * A4 * B1 * !Y)	0.00423	0.00427	0.00424
	(A1 * A2 * !A4 * B1 * !Y)	-0.00319	-0.00333	-0.00333
	(A1 * A2 * !A4 * B1 * !Y)	0.00444	0.00446	0.00443
	(A1 * A2 * !A4 * !B1 * Y)	-0.00154	-0.00154	-0.00153
	(A1 * A2 * !A4 * !B1 * Y)	0.00443	0.00446	0.00443
	(A1 * !A2 * A4 * !B1 * Y)	-0.00313	-0.00332	-0.00330
	(A1 * !A2 * A4 * !B1 * Y)	0.00442	0.00444	0.00443
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00181	-0.00183	-0.00182
	(A1 * !A2 * !A4 * !B1 * Y)	0.00442	0.00445	0.00443
	(!A2 * A4 * B1 * !Y)	-0.00317	-0.00333	-0.00330
	(!A2 * A4 * B1 * !Y)	0.00442	0.00445	0.00443
	(!A2 * !A4 * B1 * !Y)	-0.00194	-0.00195	-0.00193
	(!A2 * !A4 * B1 * !Y)	0.00443	0.00445	0.00443
	(!A1 * A2 * A4 * B1 * !Y)	-0.00295	-0.00324	-0.00322
	(!A1 * A2 * A4 * B1 * !Y)	0.00444	0.00448	0.00443
	(!A1 * A2 * A4 * !B1 * Y)	-0.00294	-0.00321	-0.00322
	(!A1 * A2 * A4 * !B1 * Y)	0.00445	0.00448	0.00443
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00198	-0.00200	-0.00198
	(!A1 * A2 * !A4 * B1 * !Y)	0.00442	0.00445	0.00443
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00186	-0.00187	-0.00187
	(!A1 * A2 * !A4 * !B1 * Y)	0.00443	0.00446	0.00443
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00314	-0.00330	-0.00329
	(!A1 * !A2 * A4 * !B1 * Y)	0.00442	0.00445	0.00443
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00189	-0.00189	-0.00188
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00442	0.00445	0.00443

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)**	0.00096	0.00094	0.00095
	(A1 * A2 * A3 * B1 * !Y)	-0.00101	-0.00106	-0.00106
	(A1 * A2 * !A3 * !B1 * Y)	0.00081	0.00082	0.00081
	(A1 * A2 * !A3 * !B1 * Y)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * A3 * !B1 * Y)	0.00080	0.00080	0.00080
	(A1 * !A2 * A3 * !B1 * Y)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * !A3 * !B1 * Y)	0.00081	0.00082	0.00081
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00118	-0.00118	-0.00118
	(!A3 * B1 * !Y)	0.00089	0.00090	0.00089
	(!A3 * B1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A2 * A3 * B1 * !Y)	0.00088	0.00088	0.00088
	(!A2 * A3 * B1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * A2 * A3 * B1 * !Y)	0.00087	0.00088	0.00087
	(!A1 * A2 * A3 * B1 * !Y)	-0.00109	-0.00110	-0.00110
	(!A1 * A2 * A3 * !B1 * Y)	0.00079	0.00080	0.00079
	(!A1 * A2 * A3 * !B1 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * !A3 * !B1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !A3 * !B1 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * !A2 * A3 * !B1 * Y)	0.00080	0.00080	0.00080
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00118	-0.00118	-0.00118

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00182	0.00181	0.00180
	(A1 * A2 * A3 * B1 * !Y)	-0.00202	-0.00211	-0.00211
	(A1 * A2 * !A3 * !B1 * Y)	0.00168	0.00169	0.00168
	(A1 * A2 * !A3 * !B1 * Y)	-0.00219	-0.00220	-0.00219
	(A1 * !A2 * A3 * !B1 * Y)	0.00163	0.00165	0.00164
	(A1 * !A2 * A3 * !B1 * Y)	-0.00219	-0.00220	-0.00219
	(A1 * !A2 * !A3 * !B1 * Y)	0.00168	0.00170	0.00168
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00219	-0.00221	-0.00219
	(!A3 * B1 * !Y)	0.00169	0.00169	0.00168
	(!A3 * B1 * !Y)	-0.00219	-0.00219	-0.00219
	(!A2 * A3 * B1 * !Y)	0.00163	0.00165	0.00164
	(!A2 * A3 * B1 * !Y)	-0.00219	-0.00220	-0.00219
	(!A1 * A2 * A3 * B1 * !Y)	0.00162	0.00164	0.00162
	(!A1 * A2 * A3 * B1 * !Y)	-0.00219	-0.00220	-0.00219
	(!A1 * A2 * A3 * !B1 * Y)	0.00161	0.00163	0.00162
	(!A1 * A2 * A3 * !B1 * Y)	-0.00219	-0.00220	-0.00219
	(!A1 * !A3 * !B1 * Y)	0.00168	0.00168	0.00168
	(!A1 * !A3 * !B1 * Y)	-0.00219	-0.00219	-0.00219
	(!A1 * !A2 * A3 * !B1 * Y)	0.00163	0.00164	0.00164
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00219	-0.00220	-0.00219

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00364	0.00359	0.00357
	(A1 * A2 * A3 * B1 * !Y)	-0.00402	-0.00425	-0.00422
	(A1 * A2 * !A3 * !B1 * Y)	0.00334	0.00336	0.00334
	(A1 * A2 * !A3 * !B1 * Y)	-0.00439	-0.00440	-0.00438
	(A1 * !A2 * A3 * !B1 * Y)	0.00324	0.00325	0.00323
	(A1 * !A2 * A3 * !B1 * Y)	-0.00439	-0.00441	-0.00438
	(A1 * !A2 * !A3 * !B1 * Y)	0.00334	0.00337	0.00333
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00439	-0.00441	-0.00438
	(!A3 * B1 * !Y)	0.00334	0.00336	0.00333
	(!A3 * B1 * !Y)	-0.00439	-0.00440	-0.00438
	(!A2 * A3 * B1 * !Y)	0.00322	0.00324	0.00323
	(!A2 * A3 * B1 * !Y)	-0.00438	-0.00439	-0.00438
	(!A1 * A2 * A3 * B1 * !Y)	0.00321	0.00325	0.00322
	(!A1 * A2 * A3 * B1 * !Y)	-0.00438	-0.00442	-0.00438
	(!A1 * A2 * A3 * !B1 * Y)	0.00323	0.00321	0.00322
	(!A1 * A2 * A3 * !B1 * Y)	-0.00439	-0.00438	-0.00438
	(!A1 * !A3 * !B1 * Y)	0.00334	0.00336	0.00333
	(!A1 * !A3 * !B1 * Y)	-0.00439	-0.00441	-0.00438
	(!A1 * !A2 * A3 * !B1 * Y)	0.00324	0.00325	0.00322
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00439	-0.00440	-0.00438

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)**	-0.00095	-0.00094	-0.00094
	(A1 * A2 * A3 * B1 * !Y)	0.00107	0.00107	0.00106
	(A1 * A2 * !A3 * !B1 * Y)	-0.00078	-0.00082	-0.00081
	(A1 * A2 * !A3 * !B1 * Y)	0.00118	0.00120	0.00118
	(A1 * !A2 * A3 * !B1 * Y)	-0.00075	-0.00080	-0.00080
	(A1 * !A2 * A3 * !B1 * Y)	0.00118	0.00119	0.00118
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00078	-0.00082	-0.00081
	(A1 * !A2 * !A3 * !B1 * Y)	0.00118	0.00120	0.00118
	(!A3 * B1 * !Y)	-0.00087	-0.00090	-0.00089
	(!A3 * B1 * !Y)	0.00110	0.00112	0.00110
	(!A2 * A3 * B1 * !Y)	-0.00083	-0.00088	-0.00088
	(!A2 * A3 * B1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * A2 * A3 * B1 * !Y)	-0.00082	-0.00088	-0.00087
	(!A1 * A2 * A3 * B1 * !Y)	0.00109	0.00111	0.00110
	(!A1 * A2 * A3 * !B1 * Y)	-0.00074	-0.00080	-0.00079
	(!A1 * A2 * A3 * !B1 * Y)	0.00118	0.00119	0.00118
	(!A1 * !A3 * !B1 * Y)	-0.00078	-0.00082	-0.00081
	(!A1 * !A3 * !B1 * Y)	0.00118	0.00120	0.00118
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00075	-0.00080	-0.00080
	(!A1 * !A2 * A3 * !B1 * Y)	0.00118	0.00119	0.00118

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00179	-0.00179	-0.00180
	(A1 * A2 * A3 * B1 * !Y)	0.00211	0.00211	0.00211
	(A1 * A2 * !A3 * !B1 * Y)	-0.00162	-0.00169	-0.00168
	(A1 * A2 * !A3 * !B1 * Y)	0.00220	0.00222	0.00220
	(A1 * !A2 * A3 * !B1 * Y)	-0.00154	-0.00165	-0.00164
	(A1 * !A2 * A3 * !B1 * Y)	0.00221	0.00222	0.00220
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00162	-0.00170	-0.00168
	(A1 * !A2 * !A3 * !B1 * Y)	0.00220	0.00222	0.00220
	(!A3 * B1 * !Y)	-0.00163	-0.00169	-0.00168
	(!A3 * B1 * !Y)	0.00220	0.00219	0.00220
	(!A2 * A3 * B1 * !Y)	-0.00154	-0.00165	-0.00164
	(!A2 * A3 * B1 * !Y)	0.00221	0.00222	0.00220
	(!A1 * A2 * A3 * B1 * !Y)	-0.00151	-0.00164	-0.00162
	(!A1 * A2 * A3 * B1 * !Y)	0.00219	0.00222	0.00220
	(!A1 * A2 * A3 * !B1 * Y)	-0.00150	-0.00163	-0.00162
	(!A1 * A2 * A3 * !B1 * Y)	0.00220	0.00222	0.00220
	(!A1 * !A3 * !B1 * Y)	-0.00162	-0.00168	-0.00168
	(!A1 * !A3 * !B1 * Y)	0.00220	0.00222	0.00220
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00154	-0.00164	-0.00164
	(!A1 * !A2 * A3 * !B1 * Y)	0.00221	0.00222	0.00220

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00356	-0.00358	-0.00356
	(A1 * A2 * A3 * B1 * !Y)	0.00420	0.00426	0.00422
	(A1 * A2 * !A3 * !B1 * Y)	-0.00321	-0.00336	-0.00334
	(A1 * A2 * !A3 * !B1 * Y)	0.00441	0.00444	0.00440
	(A1 * !A2 * A3 * !B1 * Y)	-0.00302	-0.00325	-0.00323
	(A1 * !A2 * A3 * !B1 * Y)	0.00439	0.00443	0.00440
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00322	-0.00337	-0.00333
	(A1 * !A2 * !A3 * !B1 * Y)	0.00441	0.00445	0.00440
	(!A3 * B1 * !Y)	-0.00324	-0.00335	-0.00333
	(!A3 * B1 * !Y)	0.00441	0.00440	0.00440
	(!A2 * A3 * B1 * !Y)	-0.00303	-0.00324	-0.00323
	(!A2 * A3 * B1 * !Y)	0.00439	0.00443	0.00440
	(!A1 * A2 * A3 * B1 * !Y)	-0.00299	-0.00325	-0.00322
	(!A1 * A2 * A3 * B1 * !Y)	0.00439	0.00443	0.00440
	(!A1 * A2 * A3 * !B1 * Y)	-0.00299	-0.00321	-0.00322
	(!A1 * A2 * A3 * !B1 * Y)	0.00439	0.00443	0.00440
	(!A1 * !A3 * !B1 * Y)	-0.00322	-0.00336	-0.00333
	(!A1 * !A3 * !B1 * Y)	0.00441	0.00445	0.00440
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00302	-0.00325	-0.00322
	(!A1 * !A2 * A3 * !B1 * Y)	0.00439	0.00443	0.00440

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)	0.00111	0.00112	0.00111
	(A1 * A2 * A3 * A4 * !Y)	-0.00057	-0.00058	-0.00057
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00118	0.00120	0.00119
	(A1 * A2 * A3 * A4 * !Y)	-0.00116	-0.00118	-0.00117
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00236	0.00236	0.00235
	(A1 * A2 * A3 * A4 * !Y)	-0.00233	-0.00232	-0.00231

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)	-0.00095	-0.00097	-0.00109
	(A1 * A2 * A3 * A4 * !Y)	0.00069	0.00069	0.00060
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00088	-0.00089	-0.00115
	(A1 * A2 * A3 * A4 * !Y)	0.00144	0.00143	0.00123
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00174	-0.00178	-0.00226
	(A1 * A2 * A3 * A4 * !Y)	0.00278	0.00278	0.00243

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00254	0.00250	0.00252	0.00246	0.00262	0.65832
sky130_fd_sc_hs__a41o_2	0.00250	0.00256	0.00262	0.00246	0.00265	1.28110
sky130_fd_sc_hs__a41o_4	0.00493	0.00474	0.00489	0.00471	0.00487	2.23996

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41o_1	0.00000	0.03549	0.06928
sky130_fd_sc_hs__a41o_2	0.00000	0.04589	0.07289
sky130_fd_sc_hs__a41o_4	0.00000	0.09178	0.14578

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)	0.17517	0.96024	7.61571
	A2->X (RR)	0.18909	0.98555	7.81469
	A3->X (RR)	0.19923	0.98276	7.85985
	A4->X (RR)	0.20413	0.97023	7.86790
	B1->X (RR)	0.10300	0.86072	7.60129
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.18402	0.88827	7.83753
	A2->X (RR)	0.19998	0.90765	8.02059
	A3->X (RR)	0.20976	0.89794	8.03115
	A4->X (RR)	0.21397	0.87996	8.00446
	B1->X (RR)	0.09209	0.75738	7.72029
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.19919	0.83894	7.89666
	A2->X (RR)	0.21875	0.86408	8.09551
	A3->X (RR)	0.22868	0.83595	8.04927
	A4->X (RR)	0.23422	0.82337	8.03425
	B1->X (RR)	0.08637	0.67216	7.72224

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.26382	0.89323	5.17163
	A2->X (FF)	0.30884	0.94591	5.37856
	A3->X (FF)	0.34135	0.98631	5.53616
	A4->X (FF)	0.37306	1.02405	5.68684
	B1->X (FF)	0.31715	0.93346	5.13752
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.32046	0.94542	5.49019
	A2->X (FF)	0.37069	1.00253	5.68449
	A3->X (FF)	0.40229	1.03952	5.81604
	A4->X (FF)	0.43046	1.07410	5.93176
	B1->X (FF)	0.37670	0.98264	5.43421
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.32494	0.91692	5.39710
	A2->X (FF)	0.37166	0.96879	5.57585
	A3->X (FF)	0.40903	1.01271	5.72084
	A4->X (FF)	0.44567	1.05506	5.85828
	B1->X (FF)	0.38474	0.96250	5.38721

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.00699	0.00694	0.00759
	A1	0.00390	0.00384	0.00456
	A2	0.00758	0.00758	0.00787
	A2	0.00391	0.00390	0.00426
	A3	0.00815	0.00816	0.00835
	A3	0.00391	0.00391	0.00416
	A4	0.00875	0.00878	0.00891
	A4	0.00390	0.00392	0.00412
	B1	0.00678	0.00660	0.00771
	B1	0.00259	0.00241	0.00374
sky130_fd_sc_hs__a41o_2	A1	0.00796	0.00807	0.00876
	A1	0.00487	0.00498	0.00579
	A2	0.00858	0.00875	0.00908
	A2	0.00488	0.00505	0.00546
	A3	0.00917	0.00937	0.00962
	A3	0.00488	0.00508	0.00540
	A4	0.00973	0.00995	0.01015
	A4	0.00487	0.00509	0.00538
	B1	0.00782	0.00780	0.00881
	B1	0.00360	0.00358	0.00477

sky130_fd_sc_hs__a41o_4	**A1**	0.01520	0.01538	0.01675
	A1	0.00902	0.00919	0.01075
	A2	0.01634	0.01669	0.01741
	A2	0.00902	0.00936	0.01019
	A3	0.01764	0.01803	0.01860
	A3	0.00901	0.00940	0.01009
	A4	0.01876	0.01923	0.01969
	A4	0.00898	0.00945	0.01004
	B1	0.01478	0.01486	0.01697
	B1	0.00630	0.00636	0.00883

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00210	0.00206	0.00249
	A1	0.00526	0.00522	0.00543
	A2	0.00240	0.00240	0.00257
	A2	0.00610	0.00609	0.00625
	A3	0.00277	0.00280	0.00320
	A3	0.00697	0.00699	0.00713
	A4	0.00301	0.00299	0.00352
	A4	0.00773	0.00784	0.00793
	B1	0.00308	0.00311	0.00476
	B1	0.00705	0.00711	0.00841

sky130_fd_sc_hs__a41o_2	**A1**	0.00343	0.00354	0.00418
	A1	0.00660	0.00682	0.00704
	A2	0.00383	0.00389	0.00480
	A2	0.00755	0.00778	0.00797
	A3	0.00413	0.00436	0.00535
	A3	0.00838	0.00866	0.00882
	A4	0.00433	0.00464	0.00564
	A4	0.00906	0.00941	0.00956
	B1	0.00377	0.00405	0.00607
	B1	0.00841	0.00866	0.00998
sky130_fd_sc_hs__a41o_4	**A1**	0.00657	0.00679	0.00821
	A1	0.01292	0.01326	0.01371
	A2	0.00753	0.00778	0.00957
	A2	0.01491	0.01537	0.01582
	A3	0.00803	0.00851	0.00989
	A3	0.01653	0.01712	0.01752
	A4	0.00888	0.00942	0.01021
	A4	0.01833	0.01892	0.01928
	B1	0.00888	0.00938	0.01304
	B1	0.01687	0.01734	0.02004

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)**	0.00089	0.00088	0.00087
	(A2 * A3 * A4 * B1 * X)	-0.00092	-0.00098	-0.00097
	(A2 * A3 * !A4 * B1 * X)	0.00079	0.00080	0.00079
	(A2 * A3 * !A4 * B1 * X)	-0.00101	-0.00101	-0.00101
	(A2 * A3 * !A4 * !B1 * !X)	0.00035	0.00035	0.00030
	(A2 * A3 * !A4 * !B1 * !X)	-0.00108	-0.00109	-0.00118
	(A2 * !A3 * B1 * X)	0.00079	0.00080	0.00080
	(A2 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00101
	(A2 * !A3 * !B1 * !X)	0.00033	0.00033	0.00030
	(A2 * !A3 * !B1 * !X)	-0.00112	-0.00113	-0.00119
	(!A2 * B1 * X)	0.00082	0.00082	0.00082
	(!A2 * B1 * X)	-0.00101	-0.00101	-0.00101
	(!A2 * !B1 * !X)	0.00032	0.00032	0.00030
	(!A2 * !B1 * !X)	-0.00116	-0.00117	-0.00119
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00088	0.00087	0.00086
	(A2 * A3 * A4 * B1 * X)	-0.00092	-0.00098	-0.00097
	(A2 * A3 * !A4 * B1 * X)	0.00078	0.00079	0.00078
	(A2 * A3 * !A4 * B1 * X)	-0.00102	-0.00102	-0.00101
	(A2 * A3 * !A4 * !B1 * !X)	0.00035	0.00035	0.00031
	(A2 * A3 * !A4 * !B1 * !X)	-0.00107	-0.00108	-0.00117
	(A2 * !A3 * B1 * X)	0.00079	0.00080	0.00079
	(A2 * !A3 * B1 * X)	-0.00101	-0.00102	-0.00101
	(A2 * !A3 * !B1 * !X)	0.00034	0.00034	0.00031
	(A2 * !A3 * !B1 * !X)	-0.00111	-0.00112	-0.00118
	(!A2 * B1 * X)	0.00081	0.00082	0.00081
	(!A2 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A2 * !B1 * !X)	0.00034	0.00034	0.00032
	(!A2 * !B1 * !X)	-0.00115	-0.00116	-0.00118

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00187	0.00183	0.00182
	(A2 * A3 * A4 * B1 * X)	-0.00189	-0.00199	-0.00198
	(A2 * A3 * !A4 * B1 * X)	0.00163	0.00164	0.00164
	(A2 * A3 * !A4 * B1 * X)	-0.00205	-0.00206	-0.00206
	(A2 * A3 * !A4 * !B1 * !X)	0.00077	0.00077	0.00066
	(A2 * A3 * !A4 * !B1 * !X)	-0.00217	-0.00219	-0.00240
	(A2 * !A3 * B1 * X)	0.00167	0.00167	0.00166
	(A2 * !A3 * B1 * X)	-0.00206	-0.00207	-0.00206
	(A2 * !A3 * !B1 * !X)	0.00072	0.00072	0.00065
	(A2 * !A3 * !B1 * !X)	-0.00228	-0.00230	-0.00242
	(!A2 * B1 * X)	0.00172	0.00173	0.00172
	(!A2 * B1 * X)	-0.00205	-0.00206	-0.00206
	(!A2 * !B1 * !X)	0.00073	0.00073	0.00069
	(!A2 * !B1 * !X)	-0.00237	-0.00238	-0.00244

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)**	-0.00087	-0.00087	-0.00087
	(A2 * A3 * A4 * B1 * X)	0.00098	0.00098	0.00097
	(A2 * A3 * !A4 * B1 * X)	-0.00073	-0.00080	-0.00079
	(A2 * A3 * !A4 * B1 * X)	0.00102	0.00103	0.00101
	(A2 * A3 * !A4 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * A3 * !A4 * !B1 * !X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * X)	-0.00074	-0.00080	-0.00080
	(A2 * !A3 * B1 * X)	0.00102	0.00103	0.00101
	(A2 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A2 * B1 * X)	-0.00079	-0.00082	-0.00082
	(!A2 * B1 * X)	0.00101	0.00101	0.00101
	(!A2 * !B1 * !X)	-0.00029	-0.00030	-0.00029
	(!A2 * !B1 * !X)	0.00119	0.00120	0.00119
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00086	-0.00086	-0.00086
	(A2 * A3 * A4 * B1 * X)	0.00098	0.00098	0.00097
	(A2 * A3 * !A4 * B1 * X)	-0.00072	-0.00079	-0.00078
	(A2 * A3 * !A4 * B1 * X)	0.00102	0.00102	0.00101
	(A2 * A3 * !A4 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(A2 * A3 * !A4 * !B1 * !X)	0.00119	0.00119	0.00119
	(A2 * !A3 * B1 * X)	-0.00074	-0.00080	-0.00079
	(A2 * !A3 * B1 * X)	0.00102	0.00102	0.00101
	(A2 * !A3 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(A2 * !A3 * !B1 * !X)	0.00119	0.00119	0.00119
	(!A2 * B1 * X)	-0.00078	-0.00082	-0.00081
	(!A2 * B1 * X)	0.00101	0.00102	0.00101
	(!A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !X)	0.00118	0.00119	0.00119

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00182	-0.00183	-0.00182
	(A2 * A3 * A4 * B1 * X)	0.00197	0.00199	0.00198
	(A2 * A3 * !A4 * B1 * X)	-0.00148	-0.00164	-0.00164
	(A2 * A3 * !A4 * B1 * X)	0.00206	0.00209	0.00206
	(A2 * A3 * !A4 * !B1 * !X)	-0.00064	-0.00064	-0.00064
	(A2 * A3 * !A4 * !B1 * !X)	0.00245	0.00245	0.00244
	(A2 * !A3 * B1 * X)	-0.00151	-0.00167	-0.00166
	(A2 * !A3 * B1 * X)	0.00206	0.00209	0.00206
	(A2 * !A3 * !B1 * !X)	-0.00065	-0.00065	-0.00064
	(A2 * !A3 * !B1 * !X)	0.00245	0.00245	0.00244
	(!A2 * B1 * X)	-0.00165	-0.00173	-0.00172
	(!A2 * B1 * X)	0.00205	0.00209	0.00206
	(!A2 * !B1 * !X)	-0.00067	-0.00067	-0.00066
	(!A2 * !B1 * !X)	0.00245	0.00246	0.00245

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)**	0.00091	0.00088	0.00088
	(A1 * A3 * A4 * B1 * X)	-0.00092	-0.00097	-0.00096
	(A1 * A3 * !A4 * B1 * X)	0.00081	0.00081	0.00081
	(A1 * A3 * !A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * A3 * !A4 * !B1 * !X)	0.00041	0.00041	0.00041
	(A1 * A3 * !A4 * !B1 * !X)	-0.00101	-0.00101	-0.00100
	(A1 * !A3 * B1 * X)	0.00083	0.00084	0.00083
	(A1 * !A3 * B1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * !B1 * !X)	0.00042	0.00042	0.00042
	(A1 * !A3 * !B1 * !X)	-0.00100	-0.00101	-0.00100
	(!A1 * A3 * A4 * B1 * X)	0.00083	0.00083	0.00083
	(!A1 * A3 * A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * A4 * !B1 * !X)	0.00083	0.00083	0.00083
	(!A1 * A3 * A4 * !B1 * !X)	-0.00101	-0.00101	-0.00100
	(!A1 * A3 * !A4 * B1 * X)	0.00051	0.00051	0.00051
	(!A1 * A3 * !A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * !A4 * !B1 * !X)	0.00049	0.00049	0.00049
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(!A1 * !A3 * B1 * X)	0.00052	0.00052	0.00051
	(!A1 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * !A3 * !B1 * !X)	0.00048	0.00048	0.00048
	(!A1 * !A3 * !B1 * !X)	-0.00101	-0.00101	-0.00101

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00092	0.00089	0.00089
	(A1 * A3 * A4 * B1 * X)	-0.00092	-0.00097	-0.00097
	(A1 * A3 * !A4 * B1 * X)	0.00082	0.00082	0.00082
	(A1 * A3 * !A4 * B1 * X)	-0.00101	-0.00101	-0.00100
	(A1 * A3 * !A4 * !B1 * !X)	0.00041	0.00041	0.00042
	(A1 * A3 * !A4 * !B1 * !X)	-0.00101	-0.00101	-0.00100
	(A1 * !A3 * B1 * X)	0.00084	0.00085	0.00085
	(A1 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00100
	(A1 * !A3 * !B1 * !X)	0.00044	0.00044	0.00044
	(A1 * !A3 * !B1 * !X)	-0.00101	-0.00101	-0.00100
	(!A1 * A3 * A4 * B1 * X)	0.00084	0.00085	0.00085
	(!A1 * A3 * A4 * B1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * A3 * A4 * !B1 * !X)	0.00084	0.00085	0.00084
	(!A1 * A3 * A4 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(!A1 * A3 * !A4 * B1 * X)	0.00052	0.00053	0.00052
	(!A1 * A3 * !A4 * B1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * A3 * !A4 * !B1 * !X)	0.00050	0.00050	0.00050
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * !A3 * B1 * X)	0.00054	0.00054	0.00054
	(!A1 * !A3 * B1 * X)	-0.00101	-0.00101	-0.00100
	(!A1 * !A3 * !B1 * !X)	0.00051	0.00050	0.00050
	(!A1 * !A3 * !B1 * !X)	-0.00102	-0.00102	-0.00101

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00181	0.00179	0.00178
	(A1 * A3 * A4 * B1 * X)	-0.00184	-0.00196	-0.00194
	(A1 * A3 * !A4 * B1 * X)	0.00160	0.00161	0.00160
	(A1 * A3 * !A4 * B1 * X)	-0.00202	-0.00203	-0.00202
	(A1 * A3 * !A4 * !B1 * !X)	0.00078	0.00079	0.00080
	(A1 * A3 * !A4 * !B1 * !X)	-0.00202	-0.00203	-0.00201
	(A1 * !A3 * B1 * X)	0.00164	0.00166	0.00165
	(A1 * !A3 * B1 * X)	-0.00201	-0.00203	-0.00202
	(A1 * !A3 * !B1 * !X)	0.00080	0.00080	0.00081
	(A1 * !A3 * !B1 * !X)	-0.00203	-0.00203	-0.00201
	(!A1 * A3 * A4 * B1 * X)	0.00167	0.00168	0.00168
	(!A1 * A3 * A4 * B1 * X)	-0.00202	-0.00203	-0.00202
	(!A1 * A3 * A4 * !B1 * !X)	0.00167	0.00169	0.00168
	(!A1 * A3 * A4 * !B1 * !X)	-0.00202	-0.00203	-0.00202
	(!A1 * A3 * !A4 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * A3 * !A4 * B1 * X)	-0.00202	-0.00204	-0.00202
	(!A1 * A3 * !A4 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00203	-0.00205	-0.00203
	(!A1 * !A3 * B1 * X)	0.00100	0.00100	0.00099
	(!A1 * !A3 * B1 * X)	-0.00204	-0.00204	-0.00202
	(!A1 * !A3 * !B1 * !X)	0.00091	0.00092	0.00092
	(!A1 * !A3 * !B1 * !X)	-0.00203	-0.00205	-0.00204

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)**	-0.00089	-0.00088	-0.00088
	(A1 * A3 * A4 * B1 * X)	0.00097	0.00097	0.00096
	(A1 * A3 * !A4 * B1 * X)	-0.00075	-0.00081	-0.00081
	(A1 * A3 * !A4 * B1 * X)	0.00101	0.00101	0.00100
	(A1 * A3 * !A4 * !B1 * !X)	-0.00039	-0.00039	-0.00039
	(A1 * A3 * !A4 * !B1 * !X)	0.00103	0.00104	0.00101
	(A1 * !A3 * B1 * X)	-0.00081	-0.00084	-0.00083
	(A1 * !A3 * B1 * X)	0.00101	0.00102	0.00100
	(A1 * !A3 * !B1 * !X)	-0.00039	-0.00039	-0.00040
	(A1 * !A3 * !B1 * !X)	0.00103	0.00104	0.00101
	(!A1 * A3 * A4 * B1 * X)	-0.00081	-0.00083	-0.00083
	(!A1 * A3 * A4 * B1 * X)	0.00101	0.00100	0.00100
	(!A1 * A3 * A4 * !B1 * !X)	-0.00077	-0.00083	-0.00083
	(!A1 * A3 * A4 * !B1 * !X)	0.00105	0.00101	0.00101
	(!A1 * A3 * !A4 * B1 * X)	-0.00051	-0.00051	-0.00051
	(!A1 * A3 * !A4 * B1 * X)	0.00101	0.00101	0.00100
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * A3 * !A4 * !B1 * !X)	0.00103	0.00102	0.00101
	(!A1 * !A3 * B1 * X)	-0.00052	-0.00052	-0.00051
	(!A1 * !A3 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * !A3 * !B1 * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * !A3 * !B1 * !X)	0.00105	0.00106	0.00102

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00090	-0.00089	-0.00089
	(A1 * A3 * A4 * B1 * X)	0.00097	0.00097	0.00097
	(A1 * A3 * !A4 * B1 * X)	-0.00075	-0.00082	-0.00082
	(A1 * A3 * !A4 * B1 * X)	0.00102	0.00102	0.00101
	(A1 * A3 * !A4 * !B1 * !X)	-0.00040	-0.00040	-0.00041
	(A1 * A3 * !A4 * !B1 * !X)	0.00104	0.00104	0.00102
	(A1 * !A3 * B1 * X)	-0.00082	-0.00085	-0.00085
	(A1 * !A3 * B1 * X)	0.00101	0.00102	0.00101
	(A1 * !A3 * !B1 * !X)	-0.00041	-0.00041	-0.00042
	(A1 * !A3 * !B1 * !X)	0.00104	0.00104	0.00102
	(!A1 * A3 * A4 * B1 * X)	-0.00082	-0.00085	-0.00085
	(!A1 * A3 * A4 * B1 * X)	0.00101	0.00102	0.00101
	(!A1 * A3 * A4 * !B1 * !X)	-0.00078	-0.00085	-0.00084
	(!A1 * A3 * A4 * !B1 * !X)	0.00105	0.00103	0.00101
	(!A1 * A3 * !A4 * B1 * X)	-0.00052	-0.00053	-0.00052
	(!A1 * A3 * !A4 * B1 * X)	0.00101	0.00101	0.00101
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * A3 * !A4 * !B1 * !X)	0.00104	0.00102	0.00101
	(!A1 * !A3 * B1 * X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A3 * B1 * X)	0.00101	0.00101	0.00101
	(!A1 * !A3 * !B1 * !X)	-0.00051	-0.00050	-0.00050
	(!A1 * !A3 * !B1 * !X)	0.00105	0.00105	0.00102

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00177	-0.00178	-0.00177
	(A1 * A3 * A4 * B1 * X)	0.00194	0.00196	0.00194
	(A1 * A3 * !A4 * B1 * X)	-0.00145	-0.00161	-0.00160
	(A1 * A3 * !A4 * B1 * X)	0.00203	0.00203	0.00203
	(A1 * A3 * !A4 * !B1 * !X)	-0.00073	-0.00074	-0.00075
	(A1 * A3 * !A4 * !B1 * !X)	0.00209	0.00210	0.00205
	(A1 * !A3 * B1 * X)	-0.00158	-0.00166	-0.00165
	(A1 * !A3 * B1 * X)	0.00202	0.00204	0.00203
	(A1 * !A3 * !B1 * !X)	-0.00075	-0.00075	-0.00077
	(A1 * !A3 * !B1 * !X)	0.00210	0.00209	0.00204
	(!A1 * A3 * A4 * B1 * X)	-0.00160	-0.00168	-0.00168
	(!A1 * A3 * A4 * B1 * X)	0.00204	0.00204	0.00203
	(!A1 * A3 * A4 * !B1 * !X)	-0.00154	-0.00169	-0.00168
	(!A1 * A3 * A4 * !B1 * !X)	0.00212	0.00204	0.00203
	(!A1 * A3 * !A4 * B1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * A3 * !A4 * B1 * X)	0.00203	0.00204	0.00203
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00095	-0.00096	-0.00095
	(!A1 * A3 * !A4 * !B1 * !X)	0.00207	0.00206	0.00203
	(!A1 * !A3 * B1 * X)	-0.00100	-0.00100	-0.00099
	(!A1 * !A3 * B1 * X)	0.00205	0.00204	0.00203
	(!A1 * !A3 * !B1 * !X)	-0.00091	-0.00092	-0.00092
	(!A1 * !A3 * !B1 * !X)	0.00213	0.00213	0.00205

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)**	0.00089	0.00087	0.00087
	(A1 * A2 * A4 * B1 * X)	-0.00093	-0.00099	-0.00098
	(A1 * A2 * !A4 * B1 * X)	0.00082	0.00082	0.00082
	(A1 * A2 * !A4 * B1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * A2 * !A4 * !B1 * !X)	0.00042	0.00043	0.00043
	(A1 * A2 * !A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * A4 * !B1 * !X)	0.00082	0.00082	0.00082
	(A1 * !A2 * A4 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !A2 * !A4 * !B1 * !X)	0.00049	0.00049	0.00049
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(!A2 * A4 * B1 * X)	0.00082	0.00083	0.00082
	(!A2 * A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(!A2 * !A4 * B1 * X)	0.00051	0.00052	0.00051
	(!A2 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(!A1 * A2 * A4 * B1 * X)	0.00079	0.00080	0.00080
	(!A1 * A2 * A4 * B1 * X)	-0.00102	-0.00102	-0.00102
	(!A1 * A2 * A4 * !B1 * !X)	0.00079	0.00080	0.00080
	(!A1 * A2 * A4 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(!A1 * A2 * !A4 * B1 * X)	0.00050	0.00051	0.00050
	(!A1 * A2 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(!A1 * A2 * !A4 * !B1 * !X)	0.00048	0.00048	0.00048
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(!A1 * !A2 * A4 * !B1 * !X)	0.00082	0.00083	0.00082
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00051	0.00051	0.00050
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00093	0.00091	0.00091
	(A1 * A2 * A4 * B1 * X)	-0.00092	-0.00097	-0.00097
	(A1 * A2 * !A4 * B1 * X)	0.00085	0.00085	0.00085
	(A1 * A2 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * !A4 * !B1 * !X)	0.00044	0.00044	0.00044
	(A1 * A2 * !A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * !A4 * !B1 * !X)	0.00050	0.00050	0.00050
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(!A2 * A4 * B1 * X)	0.00086	0.00086	0.00086
	(!A2 * A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A2 * !A4 * B1 * X)	0.00052	0.00053	0.00052
	(!A2 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A1 * A2 * A4 * B1 * X)	0.00083	0.00084	0.00084
	(!A1 * A2 * A4 * B1 * X)	-0.00101	-0.00101	-0.00101
	(!A1 * A2 * A4 * !B1 * !X)	0.00083	0.00084	0.00084
	(!A1 * A2 * A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * A2 * !A4 * B1 * X)	0.00053	0.00053	0.00053
	(!A1 * A2 * !A4 * B1 * X)	-0.00101	-0.00101	-0.00101
	(!A1 * A2 * !A4 * !B1 * !X)	0.00050	0.00050	0.00050
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * A4 * !B1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00052	0.00052	0.00051
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00186	0.00184	0.00181
	(A1 * A2 * A4 * B1 * X)	-0.00187	-0.00198	-0.00197
	(A1 * A2 * !A4 * B1 * X)	0.00170	0.00170	0.00170
	(A1 * A2 * !A4 * B1 * X)	-0.00205	-0.00205	-0.00205
	(A1 * A2 * !A4 * !B1 * !X)	0.00085	0.00086	0.00085
	(A1 * A2 * !A4 * !B1 * !X)	-0.00201	-0.00203	-0.00201
	(A1 * !A2 * A4 * !B1 * !X)	0.00168	0.00170	0.00168
	(A1 * !A2 * A4 * !B1 * !X)	-0.00205	-0.00206	-0.00205
	(A1 * !A2 * !A4 * !B1 * !X)	0.00096	0.00096	0.00095
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00206	-0.00206	-0.00205
	(!A2 * A4 * B1 * X)	0.00168	0.00168	0.00168
	(!A2 * A4 * B1 * X)	-0.00205	-0.00205	-0.00205
	(!A2 * !A4 * B1 * X)	0.00101	0.00102	0.00101
	(!A2 * !A4 * B1 * X)	-0.00206	-0.00206	-0.00205
	(!A1 * A2 * A4 * B1 * X)	0.00164	0.00165	0.00164
	(!A1 * A2 * A4 * B1 * X)	-0.00205	-0.00206	-0.00205
	(!A1 * A2 * A4 * !B1 * !X)	0.00164	0.00165	0.00164
	(!A1 * A2 * A4 * !B1 * !X)	-0.00205	-0.00206	-0.00205
	(!A1 * A2 * !A4 * B1 * X)	0.00101	0.00102	0.00101
	(!A1 * A2 * !A4 * B1 * X)	-0.00205	-0.00207	-0.00205
	(!A1 * A2 * !A4 * !B1 * !X)	0.00097	0.00097	0.00096
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00206	-0.00208	-0.00206
	(!A1 * !A2 * A4 * !B1 * !X)	0.00168	0.00169	0.00168
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00205	-0.00206	-0.00205
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00099	0.00099	0.00098
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00206	-0.00206	-0.00205

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)**	-0.00086	-0.00087	-0.00086
	(A1 * A2 * A4 * B1 * X)	0.00098	0.00099	0.00098
	(A1 * A2 * !A4 * B1 * X)	-0.00079	-0.00082	-0.00082
	(A1 * A2 * !A4 * B1 * X)	0.00103	0.00103	0.00102
	(A1 * A2 * !A4 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(A1 * A2 * !A4 * !B1 * !X)	0.00102	0.00103	0.00103
	(A1 * !A2 * A4 * !B1 * !X)	-0.00078	-0.00082	-0.00082
	(A1 * !A2 * A4 * !B1 * !X)	0.00102	0.00104	0.00102
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00049	-0.00049	-0.00049
	(A1 * !A2 * !A4 * !B1 * !X)	0.00102	0.00103	0.00103
	(!A2 * A4 * B1 * X)	-0.00079	-0.00083	-0.00082
	(!A2 * A4 * B1 * X)	0.00102	0.00103	0.00102
	(!A2 * !A4 * B1 * X)	-0.00051	-0.00052	-0.00051
	(!A2 * !A4 * B1 * X)	0.00102	0.00103	0.00103
	(!A1 * A2 * A4 * B1 * X)	-0.00073	-0.00080	-0.00080
	(!A1 * A2 * A4 * B1 * X)	0.00102	0.00104	0.00102
	(!A1 * A2 * A4 * !B1 * !X)	-0.00073	-0.00080	-0.00080
	(!A1 * A2 * A4 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A1 * A2 * !A4 * B1 * X)	-0.00050	-0.00051	-0.00050
	(!A1 * A2 * !A4 * B1 * X)	0.00103	0.00103	0.00103
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * A2 * !A4 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00079	-0.00083	-0.00082
	(!A1 * !A2 * A4 * !B1 * !X)	0.00102	0.00104	0.00102
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00051	-0.00051	-0.00050
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00102	0.00103	0.00102

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00090	-0.00091	-0.00090
	(A1 * A2 * A4 * B1 * X)	0.00097	0.00098	0.00097
	(A1 * A2 * !A4 * B1 * X)	-0.00083	-0.00085	-0.00085
	(A1 * A2 * !A4 * B1 * X)	0.00102	0.00102	0.00102
	(A1 * A2 * !A4 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(A1 * A2 * !A4 * !B1 * !X)	0.00101	0.00102	0.00102
	(A1 * !A2 * A4 * !B1 * !X)	-0.00082	-0.00087	-0.00086
	(A1 * !A2 * A4 * !B1 * !X)	0.00101	0.00103	0.00102
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(A1 * !A2 * !A4 * !B1 * !X)	0.00101	0.00102	0.00102
	(!A2 * A4 * B1 * X)	-0.00083	-0.00086	-0.00086
	(!A2 * A4 * B1 * X)	0.00102	0.00103	0.00102
	(!A2 * !A4 * B1 * X)	-0.00052	-0.00053	-0.00052
	(!A2 * !A4 * B1 * X)	0.00101	0.00102	0.00102
	(!A1 * A2 * A4 * B1 * X)	-0.00078	-0.00084	-0.00084
	(!A1 * A2 * A4 * B1 * X)	0.00101	0.00103	0.00102
	(!A1 * A2 * A4 * !B1 * !X)	-0.00078	-0.00084	-0.00084
	(!A1 * A2 * A4 * !B1 * !X)	0.00101	0.00103	0.00102
	(!A1 * A2 * !A4 * B1 * X)	-0.00053	-0.00053	-0.00053
	(!A1 * A2 * !A4 * B1 * X)	0.00101	0.00102	0.00102
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * A2 * !A4 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00083	-0.00086	-0.00086
	(!A1 * !A2 * A4 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00052	-0.00052	-0.00051
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00101	0.00102	0.00102

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00181	-0.00182	-0.00181
	(A1 * A2 * A4 * B1 * X)	0.00196	0.00198	0.00197
	(A1 * A2 * !A4 * B1 * X)	-0.00162	-0.00170	-0.00170
	(A1 * A2 * !A4 * B1 * X)	0.00207	0.00207	0.00206
	(A1 * A2 * !A4 * !B1 * !X)	-0.00080	-0.00080	-0.00079
	(A1 * A2 * !A4 * !B1 * !X)	0.00206	0.00208	0.00206
	(A1 * !A2 * A4 * !B1 * !X)	-0.00160	-0.00169	-0.00168
	(A1 * !A2 * A4 * !B1 * !X)	0.00206	0.00206	0.00206
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00096	-0.00096	-0.00095
	(A1 * !A2 * !A4 * !B1 * !X)	0.00206	0.00207	0.00206
	(!A2 * A4 * B1 * X)	-0.00162	-0.00168	-0.00168
	(!A2 * A4 * B1 * X)	0.00206	0.00206	0.00206
	(!A2 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A2 * !A4 * B1 * X)	0.00208	0.00207	0.00206
	(!A1 * A2 * A4 * B1 * X)	-0.00152	-0.00165	-0.00164
	(!A1 * A2 * A4 * B1 * X)	0.00207	0.00208	0.00206
	(!A1 * A2 * A4 * !B1 * !X)	-0.00151	-0.00165	-0.00164
	(!A1 * A2 * A4 * !B1 * !X)	0.00207	0.00208	0.00206
	(!A1 * A2 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A1 * A2 * !A4 * B1 * X)	0.00205	0.00207	0.00206
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00097	-0.00097	-0.00096
	(!A1 * A2 * !A4 * !B1 * !X)	0.00206	0.00208	0.00206
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00161	-0.00169	-0.00168
	(!A1 * !A2 * A4 * !B1 * !X)	0.00206	0.00206	0.00206
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00099	-0.00099	-0.00098
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00206	0.00207	0.00206

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)**	0.00094	0.00093	0.00093
	(A1 * A2 * A3 * B1 * X)	-0.00092	-0.00098	-0.00098
	(A1 * A2 * !A3 * !B1 * !X)	0.00088	0.00088	0.00088
	(A1 * A2 * !A3 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !A2 * A3 * !B1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * A3 * !B1 * !X)	-0.00101	-0.00102	-0.00102
	(A1 * !A2 * !A3 * !B1 * !X)	0.00088	0.00089	0.00088
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(!A3 * B1 * X)	0.00088	0.00089	0.00088
	(!A3 * B1 * X)	-0.00102	-0.00102	-0.00102
	(!A2 * A3 * B1 * X)	0.00086	0.00087	0.00086
	(!A2 * A3 * B1 * X)	-0.00102	-0.00102	-0.00102
	(!A1 * A2 * A3 * B1 * X)	0.00085	0.00086	0.00085
	(!A1 * A2 * A3 * B1 * X)	-0.00101	-0.00102	-0.00102
	(!A1 * A2 * A3 * !B1 * !X)	0.00085	0.00086	0.00085
	(!A1 * A2 * A3 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(!A1 * !A3 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(!A1 * !A2 * A3 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00101	-0.00102	-0.00102

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00094	0.00092	0.00092
	(A1 * A2 * A3 * B1 * X)	-0.00092	-0.00098	-0.00098
	(A1 * A2 * !A3 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * A2 * !A3 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !A2 * A3 * !B1 * !X)	0.00085	0.00086	0.00085
	(A1 * !A2 * A3 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !A2 * !A3 * !B1 * !X)	0.00086	0.00086	0.00087
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00101	-0.00101	-0.00102
	(!A3 * B1 * X)	0.00086	0.00088	0.00086
	(!A3 * B1 * X)	-0.00102	-0.00102	-0.00102
	(!A2 * A3 * B1 * X)	0.00086	0.00086	0.00085
	(!A2 * A3 * B1 * X)	-0.00102	-0.00102	-0.00102
	(!A1 * A2 * A3 * B1 * X)	0.00084	0.00085	0.00084
	(!A1 * A2 * A3 * B1 * X)	-0.00101	-0.00102	-0.00102
	(!A1 * A2 * A3 * !B1 * !X)	0.00084	0.00085	0.00084
	(!A1 * A2 * A3 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(!A1 * !A3 * !B1 * !X)	0.00086	0.00087	0.00087
	(!A1 * !A3 * !B1 * !X)	-0.00101	-0.00102	-0.00102
	(!A1 * !A2 * A3 * !B1 * !X)	0.00086	0.00086	0.00085
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00102	-0.00102	-0.00102

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00182	0.00180	0.00179
	(A1 * A2 * A3 * B1 * X)	-0.00183	-0.00194	-0.00193
	(A1 * A2 * !A3 * !B1 * !X)	0.00168	0.00170	0.00168
	(A1 * A2 * !A3 * !B1 * !X)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * A3 * !B1 * !X)	0.00162	0.00164	0.00163
	(A1 * !A2 * A3 * !B1 * !X)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * !A3 * !B1 * !X)	0.00168	0.00169	0.00168
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00200	-0.00201	-0.00200
	(!A3 * B1 * X)	0.00168	0.00169	0.00168
	(!A3 * B1 * X)	-0.00200	-0.00201	-0.00200
	(!A2 * A3 * B1 * X)	0.00163	0.00164	0.00163
	(!A2 * A3 * B1 * X)	-0.00200	-0.00200	-0.00200
	(!A1 * A2 * A3 * B1 * X)	0.00161	0.00163	0.00161
	(!A1 * A2 * A3 * B1 * X)	-0.00199	-0.00201	-0.00200
	(!A1 * A2 * A3 * !B1 * !X)	0.00161	0.00163	0.00161
	(!A1 * A2 * A3 * !B1 * !X)	-0.00199	-0.00201	-0.00200
	(!A1 * !A3 * !B1 * !X)	0.00168	0.00169	0.00168
	(!A1 * !A3 * !B1 * !X)	-0.00200	-0.00201	-0.00200
	(!A1 * !A2 * A3 * !B1 * !X)	0.00162	0.00164	0.00163
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00199	-0.00200	-0.00200

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)**	-0.00093	-0.00093	-0.00092
	(A1 * A2 * A3 * B1 * X)	0.00098	0.00098	0.00098
	(A1 * A2 * !A3 * !B1 * !X)	-0.00085	-0.00088	-0.00088
	(A1 * A2 * !A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * !A2 * A3 * !B1 * !X)	-0.00081	-0.00087	-0.00086
	(A1 * !A2 * A3 * !B1 * !X)	0.00101	0.00103	0.00102
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00085	-0.00089	-0.00088
	(A1 * !A2 * !A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A3 * B1 * X)	-0.00085	-0.00089	-0.00088
	(!A3 * B1 * X)	0.00102	0.00103	0.00102
	(!A2 * A3 * B1 * X)	-0.00082	-0.00087	-0.00086
	(!A2 * A3 * B1 * X)	0.00102	0.00103	0.00102
	(!A1 * A2 * A3 * B1 * X)	-0.00080	-0.00086	-0.00085
	(!A1 * A2 * A3 * B1 * X)	0.00102	0.00103	0.00102
	(!A1 * A2 * A3 * !B1 * !X)	-0.00080	-0.00086	-0.00085
	(!A1 * A2 * A3 * !B1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A3 * !B1 * !X)	-0.00085	-0.00089	-0.00088
	(!A1 * !A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00081	-0.00087	-0.00086
	(!A1 * !A2 * A3 * !B1 * !X)	0.00101	0.00103	0.00102

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00092	-0.00092	-0.00092
	(A1 * A2 * A3 * B1 * X)	0.00098	0.00098	0.00098
	(A1 * A2 * !A3 * !B1 * !X)	-0.00084	-0.00088	-0.00087
	(A1 * A2 * !A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * !A2 * A3 * !B1 * !X)	-0.00080	-0.00086	-0.00085
	(A1 * !A2 * A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00084	-0.00086	-0.00087
	(A1 * !A2 * !A3 * !B1 * !X)	0.00102	0.00104	0.00102
	(!A3 * B1 * X)	-0.00084	-0.00087	-0.00086
	(!A3 * B1 * X)	0.00102	0.00103	0.00102
	(!A2 * A3 * B1 * X)	-0.00081	-0.00086	-0.00085
	(!A2 * A3 * B1 * X)	0.00102	0.00103	0.00102
	(!A1 * A2 * A3 * B1 * X)	-0.00080	-0.00085	-0.00084
	(!A1 * A2 * A3 * B1 * X)	0.00102	0.00103	0.00102
	(!A1 * A2 * A3 * !B1 * !X)	-0.00080	-0.00085	-0.00084
	(!A1 * A2 * A3 * !B1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A3 * !B1 * !X)	-0.00084	-0.00087	-0.00087
	(!A1 * !A3 * !B1 * !X)	0.00102	0.00104	0.00102
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00080	-0.00086	-0.00085
	(!A1 * !A2 * A3 * !B1 * !X)	0.00102	0.00103	0.00102

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00179	-0.00180	-0.00179
	(A1 * A2 * A3 * B1 * X)	0.00192	0.00194	0.00193
	(A1 * A2 * !A3 * !B1 * !X)	-0.00161	-0.00169	-0.00168
	(A1 * A2 * !A3 * !B1 * !X)	0.00200	0.00202	0.00200
	(A1 * !A2 * A3 * !B1 * !X)	-0.00153	-0.00164	-0.00163
	(A1 * !A2 * A3 * !B1 * !X)	0.00201	0.00202	0.00200
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00162	-0.00169	-0.00168
	(A1 * !A2 * !A3 * !B1 * !X)	0.00200	0.00203	0.00200
	(!A3 * B1 * X)	-0.00163	-0.00169	-0.00168
	(!A3 * B1 * X)	0.00200	0.00202	0.00201
	(!A2 * A3 * B1 * X)	-0.00153	-0.00164	-0.00163
	(!A2 * A3 * B1 * X)	0.00201	0.00202	0.00201
	(!A1 * A2 * A3 * B1 * X)	-0.00150	-0.00163	-0.00161
	(!A1 * A2 * A3 * B1 * X)	0.00200	0.00202	0.00201
	(!A1 * A2 * A3 * !B1 * !X)	-0.00150	-0.00163	-0.00161
	(!A1 * A2 * A3 * !B1 * !X)	0.00200	0.00202	0.00201
	(!A1 * !A3 * !B1 * !X)	-0.00162	-0.00169	-0.00168
	(!A1 * !A3 * !B1 * !X)	0.00200	0.00202	0.00200
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00153	-0.00164	-0.00163
	(!A1 * !A2 * A3 * !B1 * !X)	0.00201	0.00202	0.00200

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)**	0.00105	0.00106	0.00105
	(A1 * A2 * A3 * A4 * X)	-0.00054	-0.00054	-0.00054
sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * A4 * X)**	0.00107	0.00107	0.00106
	(A1 * A2 * A3 * A4 * X)	-0.00056	-0.00055	-0.00055
sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * A4 * X)**	0.00199	0.00200	0.00199
	(A1 * A2 * A3 * A4 * X)	-0.00112	-0.00113	-0.00112

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)	-0.00090	-0.00091	-0.00103
	(A1 * A2 * A3 * A4 * X)	0.00066	0.00065	0.00057
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00091	-0.00092	-0.00104
	(A1 * A2 * A3 * A4 * X)	0.00067	0.00066	0.00058
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00168	-0.00170	-0.00194
	(A1 * A2 * A3 * A4 * X)	0.00138	0.00138	0.00118

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00246	0.00231	0.65886
sky130_fd_sc_hs__and2b_2	0.00220	0.00267	1.16499
sky130_fd_sc_hs__and2b_4	0.00246	0.00486	2.43578

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.10166	0.17331
sky130_fd_sc_hs__and2b_2	0.00000	0.09578	0.12362
sky130_fd_sc_hs__and2b_4	0.00000	0.17081	0.35438

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)	0.20453	1.10766	8.81843
	B->X (RR)	0.11218	0.84919	7.47249
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.21781	1.02036	8.80813
	B->X (RR)	0.11717	0.76285	7.51921
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.22253	0.95197	9.13166
	B->X (RR)	0.11949	0.66645	7.55825

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)	0.15980	0.53650	2.73693
	B->X (FF)	0.13346	0.71269	4.47668
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.18734	0.53407	2.57418
	B->X (FF)	0.16048	0.74476	4.69203
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.18292	0.51253	2.71782
	B->X (FF)	0.16155	0.71315	4.74165

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	0.00382	0.00379	0.00572
	A_N	0.00591	0.00589	0.00787
	B	0.00466	0.00456	0.00548
	B	0.00256	0.00245	0.00339
sky130_fd_sc_hs__and2b_2	A_N	0.00573	0.00589	0.00771
	A_N	0.00763	0.00779	0.00967
	B	0.00645	0.00652	0.00702
	B	0.00398	0.00405	0.00456
sky130_fd_sc_hs__and2b_4	A_N	0.01066	0.01119	0.01309
	A_N	0.01265	0.01321	0.01515
	B	0.01221	0.01246	0.01420
	B	0.00787	0.00812	0.00986

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00649	0.00629	0.00765
	A_N	0.00438	0.00416	0.00549
	B	0.00217	0.00225	0.00419
	B	0.00426	0.00432	0.00618
sky130_fd_sc_hs__and2b_2	A_N	0.00781	0.00783	0.00898
	A_N	0.00593	0.00589	0.00704
	B	0.00342	0.00359	0.00529
	B	0.00587	0.00604	0.00746
sky130_fd_sc_hs__and2b_4	A_N	0.01208	0.01260	0.01428
	A_N	0.01010	0.01057	0.01201
	B	0.00669	0.00718	0.01109
	B	0.01101	0.01148	0.01531

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00364	0.00343	0.00477
	(!B * !X)	0.00129	0.00108	0.00243
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00347	0.00329	0.00464
	(!B * !X)	0.00129	0.00110	0.00246
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00431	0.00411	0.00540
	(!B * !X)	0.00182	0.00162	0.00291

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00007	0.00002	0.00188
	(!B * !X)	0.00242	0.00238	0.00424
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00022	0.00021	0.00204
	(!B * !X)	0.00241	0.00241	0.00423
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00041	0.00036	0.00190
	(!B * !X)	0.00292	0.00287	0.00440

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00079	0.00080	0.00080
	(A_N * !X)	-0.00096	-0.00097	-0.00096
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00097	0.00098	0.00097
	(A_N * !X)	-0.00109	-0.00109	-0.00109
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00171	0.00172	0.00171
	(A_N * !X)	-0.00195	-0.00196	-0.00195

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00076	-0.00080	-0.00080
	(A_N * !X)	0.00100	0.00099	0.00097
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00094	-0.00098	-0.00097
	(A_N * !X)	0.00112	0.00111	0.00110
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00165	-0.00172	-0.00171
	(A_N * !X)	0.00198	0.00198	0.00196

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00237	0.00231	0.63850
sky130_fd_sc_hs__and2_2	0.00257	0.00284	1.24779
sky130_fd_sc_hs__and2_4	0.00418	0.00465	2.45582

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.05870	0.17119
sky130_fd_sc_hs__and2_2	0.00000	0.05283	0.09540
sky130_fd_sc_hs__and2_4	0.00000	0.14638	0.34960

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)	0.10368	0.83399	7.26016
	B->X (RR)	0.11065	0.85314	7.40930
sky130_fd_sc_hs__and2_2	A->X (RR)	0.10684	0.74809	7.41724
	B->X (RR)	0.11387	0.75620	7.54011
sky130_fd_sc_hs__and2_4	A->X (RR)	0.10521	0.65226	7.46193
	B->X (RR)	0.11416	0.66675	7.60522

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.11912	0.67835	4.31611
	B->X (FF)	0.13620	0.71549	4.45198
sky130_fd_sc_hs__and2_2	A->X (FF)	0.13654	0.71228	4.73703
	B->X (FF)	0.15654	0.74585	4.86891
sky130_fd_sc_hs__and2_4	A->X (FF)	0.14627	0.68231	4.59277
	B->X (FF)	0.16116	0.70891	4.70509

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00436	0.00426	0.00592
	A	0.00205	0.00196	0.00365
	B	0.00475	0.00462	0.00546
	B	0.00207	0.00194	0.00279
sky130_fd_sc_hs__and2_2	A	0.00593	0.00595	0.00705
	A	0.00344	0.00346	0.00459
	B	0.00665	0.00666	0.00718
	B	0.00348	0.00349	0.00402
sky130_fd_sc_hs__and2_4	A	0.01090	0.01108	0.01418
	A	0.00697	0.00716	0.01029
	B	0.01229	0.01257	0.01437
	B	0.00694	0.00722	0.00928

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00168	0.00176	0.00376
	A	0.00398	0.00402	0.00603
	B	0.00214	0.00217	0.00415
	B	0.00477	0.00480	0.00664
sky130_fd_sc_hs__and2_2	A	0.00328	0.00349	0.00509
	A	0.00577	0.00595	0.00754
	B	0.00350	0.00364	0.00532
	B	0.00663	0.00675	0.00821
sky130_fd_sc_hs__and2_4	A	0.00619	0.00671	0.01141
	A	0.01013	0.01063	0.01473
	B	0.00652	0.00720	0.01174
	B	0.01177	0.01237	0.01614

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00048	0.00048	0.00046
	(!B * !X)	-0.00101	-0.00101	-0.00104
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00035	0.00035	0.00034
	(!B * !X)	-0.00119	-0.00120	-0.00122
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00053	0.00053	0.00050
	(!B * !X)	-0.00196	-0.00197	-0.00202

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00046	-0.00046	-0.00045
	(!B * !X)	0.00104	0.00105	0.00104
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00033	-0.00033	-0.00033
	(!B * !X)	0.00121	0.00123	0.00122
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00048	-0.00048	-0.00048
	(!B * !X)	0.00202	0.00203	0.00202

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00070	0.00070	0.00070
	(!A * !X)	-0.00097	-0.00098	-0.00097
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00080	0.00081	0.00081
	(!A * !X)	-0.00117	-0.00118	-0.00118
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00164	0.00165	0.00164
	(!A * !X)	-0.00180	-0.00181	-0.00180

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00066	-0.00070	-0.00070
	(!A * !X)	0.00099	0.00099	0.00098
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00076	-0.00081	-0.00081
	(!A * !X)	0.00120	0.00120	0.00118
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00156	-0.00165	-0.00164
	(!A * !X)	0.00185	0.00182	0.00181

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00215	0.00227	0.00226	0.63238
sky130_fd_sc_hs__and3b_2	0.00223	0.00272	0.00260	1.16979
sky130_fd_sc_hs__and3b_4	0.00249	0.00463	0.00476	2.43020

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	0.09252	0.25709
sky130_fd_sc_hs__and3b_2	0.00000	0.09357	0.14161
sky130_fd_sc_hs__and3b_4	0.00000	0.12638	0.28376

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)	0.22633	1.12533	8.73271
	B->X (RR)	0.14838	0.91255	7.53638
	C->X (RR)	0.15464	0.90486	7.55933
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.24773	1.05234	8.85061
	B->X (RR)	0.15765	0.83646	7.72609
	C->X (RR)	0.16419	0.82241	7.73041
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.27533	1.02229	9.25826
	B->X (RR)	0.17971	0.77136	7.78597
	C->X (RR)	0.18562	0.74134	7.75407

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)	0.17279	0.53353	2.55824
	B->X (FF)	0.15245	0.73840	4.46631
	C->X (FF)	0.16149	0.75855	4.55654
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.19023	0.53228	2.52424
	B->X (FF)	0.16708	0.75727	4.75254
	C->X (FF)	0.18777	0.78829	4.87643
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.18108	0.51151	2.71155
	B->X (FF)	0.15724	0.71942	4.87292
	C->X (FF)	0.16870	0.73942	4.96988

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	0.00462	0.00467	0.00656
	A_N	0.00634	0.00638	0.00831
	B	0.00522	0.00516	0.00613
	B	0.00307	0.00301	0.00398
	C	0.00573	0.00566	0.00630
	C	0.00315	0.00308	0.00375
sky130_fd_sc_hs__and3b_2	A_N	0.00649	0.00668	0.00857
	A_N	0.00831	0.00849	0.01048
	B	0.00726	0.00734	0.00796
	B	0.00474	0.00482	0.00557
	C	0.00785	0.00792	0.00825
	C	0.00485	0.00492	0.00539
sky130_fd_sc_hs__and3b_4	A_N	0.01171	0.01223	0.01405
	A_N	0.01347	0.01398	0.01609
	B	0.01326	0.01352	0.01481
	B	0.00882	0.00920	0.01061
	C	0.01442	0.01467	0.01570
	C	0.00887	0.00913	0.01041

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00602	0.00584	0.00722
	A_N	0.00430	0.00410	0.00549
	B	0.00220	0.00224	0.00420
	B	0.00434	0.00437	0.00626
	C	0.00242	0.00247	0.00423
	C	0.00494	0.00498	0.00672
sky130_fd_sc_hs__and3b_2	A_N	0.00762	0.00765	0.00898
	A_N	0.00581	0.00584	0.00713
	B	0.00341	0.00361	0.00510
	B	0.00591	0.00609	0.00757
	C	0.00372	0.00384	0.00516
	C	0.00664	0.00675	0.00804
sky130_fd_sc_hs__and3b_4	A_N	0.01264	0.01308	0.01447
	A_N	0.01087	0.01130	0.01256
	B	0.00723	0.00761	0.01056
	B	0.01164	0.01200	0.01493
	C	0.00761	0.00807	0.01089
	C	0.01298	0.01343	0.01622

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)	0.00310	0.00294	0.00439
	(B * !C * !X)	0.00100	0.00083	0.00229
	(!B * !X)	0.00309	0.00293	0.00438
	(!B * !X)	0.00100	0.00083	0.00229
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00337	0.00319	0.00457
	(B * !C * !X)	0.00118	0.00099	0.00238
	(!B * !X)	0.00336	0.00318	0.00456
	(!B * !X)	0.00118	0.00099	0.00238
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00460	0.00439	0.00566
	(B * !C * !X)	0.00218	0.00197	0.00324
	(!B * !X)	0.00457	0.00436	0.00563
	(!B * !X)	0.00219	0.00197	0.00324

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)	0.00009	0.00012	0.00198
	(B * !C * !X)	0.00223	0.00226	0.00411
	(!B * !X)	0.00008	0.00011	0.00198
	(!B * !X)	0.00218	0.00221	0.00408
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00017	0.00017	0.00200
	(B * !C * !X)	0.00241	0.00241	0.00422
	(!B * !X)	0.00016	0.00015	0.00199
	(!B * !X)	0.00234	0.00234	0.00418
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00036	0.00028	0.00178
	(B * !C * !X)	0.00287	0.00280	0.00428
	(!B * !X)	0.00036	0.00029	0.00181
	(!B * !X)	0.00276	0.00270	0.00421

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)	0.00080	0.00080	0.00080
	(A_N * C * !X)	-0.00089	-0.00089	-0.00089
	(A_N * !C * !X)	0.00052	0.00052	0.00052
	(A_N * !C * !X)	-0.00090	-0.00090	-0.00089
	(!A_N * !C * !X)	0.00033	0.00033	0.00033
	(!A_N * !C * !X)	-0.00102	-0.00103	-0.00103
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00098	0.00099	0.00099
	(A_N * C * !X)	-0.00105	-0.00106	-0.00105
	(A_N * !C * !X)	0.00066	0.00066	0.00065
	(A_N * !C * !X)	-0.00106	-0.00106	-0.00106
	(!A_N * !C * !X)	0.00044	0.00045	0.00044
	(!A_N * !C * !X)	-0.00120	-0.00121	-0.00121
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00156	0.00157	0.00156
	(A_N * C * !X)	-0.00202	-0.00202	-0.00201
	(A_N * !C * !X)	0.00097	0.00098	0.00097
	(A_N * !C * !X)	-0.00204	-0.00204	-0.00203
	(!A_N * !C * !X)	0.00072	0.00072	0.00072
	(!A_N * !C * !X)	-0.00216	-0.00217	-0.00216

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)	-0.00075	-0.00080	-0.00080
	(A_N * C * !X)	0.00092	0.00091	0.00089
	(A_N * !C * !X)	-0.00052	-0.00052	-0.00052
	(A_N * !C * !X)	0.00094	0.00094	0.00091
	(!A_N * !C * !X)	-0.00031	-0.00031	-0.00032
	(!A_N * !C * !X)	0.00104	0.00105	0.00104
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00093	-0.00099	-0.00099
	(A_N * C * !X)	0.00109	0.00108	0.00106
	(A_N * !C * !X)	-0.00066	-0.00066	-0.00065
	(A_N * !C * !X)	0.00111	0.00112	0.00107
	(!A_N * !C * !X)	-0.00041	-0.00042	-0.00042
	(!A_N * !C * !X)	0.00123	0.00124	0.00122
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00147	-0.00157	-0.00156
	(A_N * C * !X)	0.00207	0.00205	0.00202
	(A_N * !C * !X)	-0.00097	-0.00098	-0.00097
	(A_N * !C * !X)	0.00211	0.00211	0.00205
	(!A_N * !C * !X)	-0.00067	-0.00067	-0.00069
	(!A_N * !C * !X)	0.00221	0.00223	0.00219

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)	0.00069	0.00070	0.00069
	(A_N * B * !X)	-0.00093	-0.00093	-0.00093
	(A_N * !B * !X)	0.00070	0.00071	0.00070
	(A_N * !B * !X)	-0.00093	-0.00094	-0.00093
	(!A_N * !B * !X)	0.00070	0.00071	0.00070
	(!A_N * !B * !X)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00087	0.00087	0.00087
	(A_N * B * !X)	-0.00106	-0.00106	-0.00105
	(A_N * !B * !X)	0.00088	0.00088	0.00088
	(A_N * !B * !X)	-0.00106	-0.00106	-0.00106
	(!A_N * !B * !X)	0.00087	0.00088	0.00088
	(!A_N * !B * !X)	-0.00105	-0.00106	-0.00105
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00146	0.00147	0.00146
	(A_N * B * !X)	-0.00209	-0.00209	-0.00209
	(A_N * !B * !X)	0.00147	0.00147	0.00146
	(A_N * !B * !X)	-0.00209	-0.00210	-0.00209
	(!A_N * !B * !X)	0.00147	0.00148	0.00146
	(!A_N * !B * !X)	-0.00209	-0.00210	-0.00209

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)	-0.00066	-0.00070	-0.00069
	(A_N * B * !X)	0.00094	0.00094	0.00093
	(A_N * !B * !X)	-0.00068	-0.00071	-0.00070
	(A_N * !B * !X)	0.00093	0.00094	0.00093
	(!A_N * !B * !X)	-0.00068	-0.00071	-0.00070
	(!A_N * !B * !X)	0.00094	0.00094	0.00093
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00082	-0.00087	-0.00087
	(A_N * B * !X)	0.00106	0.00107	0.00106
	(A_N * !B * !X)	-0.00085	-0.00088	-0.00088
	(A_N * !B * !X)	0.00106	0.00107	0.00106
	(!A_N * !B * !X)	-0.00085	-0.00088	-0.00088
	(!A_N * !B * !X)	0.00106	0.00107	0.00106
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00139	-0.00147	-0.00146
	(A_N * B * !X)	0.00209	0.00211	0.00210
	(A_N * !B * !X)	-0.00142	-0.00147	-0.00146
	(A_N * !B * !X)	0.00209	0.00212	0.00210
	(!A_N * !B * !X)	-0.00141	-0.00148	-0.00146
	(!A_N * !B * !X)	0.00211	0.00212	0.00210

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00245	0.00224	0.00221	0.65659
sky130_fd_sc_hs__and3_2	0.00242	0.00221	0.00224	1.27172
sky130_fd_sc_hs__and3_4	0.00439	0.00426	0.00440	2.44124

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.04956	0.25497
sky130_fd_sc_hs__and3_2	0.00000	0.06586	0.25859
sky130_fd_sc_hs__and3_4	0.00000	0.13172	0.51717

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)	0.13065	0.87669	7.35634
	B->X (RR)	0.14062	0.90229	7.52046
	C->X (RR)	0.14593	0.89135	7.55180
sky130_fd_sc_hs__and3_2	A->X (RR)	0.14726	0.81799	7.58797
	B->X (RR)	0.15715	0.83239	7.76210
	C->X (RR)	0.16235	0.81661	7.75642
sky130_fd_sc_hs__and3_4	A->X (RR)	0.15628	0.74679	7.63342
	B->X (RR)	0.17037	0.76836	7.81837
	C->X (RR)	0.17662	0.73883	7.78315

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.13231	0.70344	4.40243
	B->X (FF)	0.14983	0.73757	4.52940
	C->X (FF)	0.15417	0.75331	4.61588
sky130_fd_sc_hs__and3_2	A->X (FF)	0.16443	0.74252	4.67535
	B->X (FF)	0.18164	0.76986	4.78973
	C->X (FF)	0.19008	0.78651	4.86752
sky130_fd_sc_hs__and3_4	A->X (FF)	0.15355	0.69942	4.65768
	B->X (FF)	0.17131	0.72882	4.78221
	C->X (FF)	0.18520	0.75260	4.88046

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00487	0.00479	0.00631
	A	0.00245	0.00237	0.00391
	B	0.00512	0.00505	0.00602
	B	0.00246	0.00250	0.00336
	C	0.00564	0.00555	0.00626
	C	0.00244	0.00236	0.00307
sky130_fd_sc_hs__and3_2	A	0.00639	0.00647	0.00779
	A	0.00398	0.00406	0.00551
	B	0.00662	0.00675	0.00756
	B	0.00398	0.00411	0.00506
	C	0.00716	0.00728	0.00784
	C	0.00398	0.00409	0.00479
sky130_fd_sc_hs__and3_4	A	0.01190	0.01210	0.01487
	A	0.00746	0.00767	0.01069
	B	0.01291	0.01324	0.01497
	B	0.00747	0.00781	0.00979
	C	0.01409	0.01444	0.01579
	C	0.00749	0.00786	0.00945

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00158	0.00165	0.00362
	A	0.00401	0.00404	0.00601
	B	0.00216	0.00219	0.00417
	B	0.00478	0.00480	0.00669
	C	0.00237	0.00245	0.00433
	C	0.00547	0.00553	0.00731
sky130_fd_sc_hs__and3_2	A	0.00296	0.00318	0.00528
	A	0.00538	0.00559	0.00753
	B	0.00354	0.00378	0.00599
	B	0.00614	0.00638	0.00824
	C	0.00370	0.00393	0.00567
	C	0.00678	0.00702	0.00874
sky130_fd_sc_hs__and3_4	A	0.00635	0.00682	0.01122
	A	0.01079	0.01121	0.01517
	B	0.00723	0.00769	0.01233
	B	0.01256	0.01301	0.01677
	C	0.00766	0.00816	0.01224
	C	0.01401	0.01450	0.01808

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00052	0.00052	0.00049
	(B * !C * !X)	-0.00098	-0.00098	-0.00103
	(!B * !X)	0.00052	0.00051	0.00050
	(!B * !X)	-0.00101	-0.00101	-0.00103
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00053	0.00052	0.00050
	(B * !C * !X)	-0.00096	-0.00096	-0.00101
	(!B * !X)	0.00053	0.00052	0.00051
	(!B * !X)	-0.00099	-0.00099	-0.00102
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00062	0.00062	0.00055
	(B * !C * !X)	-0.00198	-0.00200	-0.00211
	(!B * !X)	0.00063	0.00063	0.00058
	(!B * !X)	-0.00206	-0.00207	-0.00212

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00049	-0.00049	-0.00048
	(B * !C * !X)	0.00103	0.00104	0.00103
	(!B * !X)	-0.00050	-0.00050	-0.00049
	(!B * !X)	0.00104	0.00104	0.00104
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00050	-0.00050	-0.00050
	(B * !C * !X)	0.00102	0.00103	0.00102
	(!B * !X)	-0.00051	-0.00051	-0.00050
	(!B * !X)	0.00102	0.00103	0.00102
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00055	-0.00055	-0.00054
	(B * !C * !X)	0.00214	0.00214	0.00213
	(!B * !X)	-0.00056	-0.00057	-0.00056
	(!B * !X)	0.00213	0.00215	0.00213

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00032	0.00032	0.00032
	(A * !C * !X)	-0.00088	-0.00089	-0.00088
	(!A * C * !X)	0.00067	0.00068	0.00067
	(!A * C * !X)	-0.00089	-0.00089	-0.00089
	(!A * !C * !X)	0.00038	0.00038	0.00037
	(!A * !C * !X)	-0.00089	-0.00089	-0.00089
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00031	0.00031	0.00031
	(A * !C * !X)	-0.00087	-0.00087	-0.00086
	(!A * C * !X)	0.00067	0.00068	0.00067
	(!A * C * !X)	-0.00087	-0.00087	-0.00087
	(!A * !C * !X)	0.00036	0.00036	0.00036
	(!A * !C * !X)	-0.00087	-0.00088	-0.00087
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00074	0.00075	0.00075
	(A * !C * !X)	-0.00172	-0.00173	-0.00171
	(!A * C * !X)	0.00148	0.00149	0.00148
	(!A * C * !X)	-0.00172	-0.00173	-0.00172
	(!A * !C * !X)	0.00086	0.00086	0.00086
	(!A * !C * !X)	-0.00174	-0.00174	-0.00174

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00031	-0.00030	-0.00031
	(A * !C * !X)	0.00092	0.00092	0.00089
	(!A * C * !X)	-0.00063	-0.00068	-0.00067
	(!A * C * !X)	0.00092	0.00090	0.00089
	(!A * !C * !X)	-0.00038	-0.00038	-0.00037
	(!A * !C * !X)	0.00094	0.00093	0.00090
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00030	-0.00029	-0.00030
	(A * !C * !X)	0.00091	0.00090	0.00088
	(!A * C * !X)	-0.00063	-0.00068	-0.00067
	(!A * C * !X)	0.00090	0.00088	0.00087
	(!A * !C * !X)	-0.00036	-0.00036	-0.00036
	(!A * !C * !X)	0.00092	0.00092	0.00088
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00070	-0.00071	-0.00072
	(A * !C * !X)	0.00178	0.00179	0.00174
	(!A * C * !X)	-0.00138	-0.00149	-0.00148
	(!A * C * !X)	0.00177	0.00175	0.00173
	(!A * !C * !X)	-0.00086	-0.00086	-0.00086
	(!A * !C * !X)	0.00179	0.00181	0.00175

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00070	0.00070	0.00070
	(A * !B * !X)	-0.00091	-0.00092	-0.00091
	(!A * B * !X)	0.00068	0.00069	0.00068
	(!A * B * !X)	-0.00091	-0.00092	-0.00091
	(!A * !B * !X)	0.00070	0.00070	0.00070
	(!A * !B * !X)	-0.00091	-0.00092	-0.00091
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00069	0.00069	0.00069
	(A * !B * !X)	-0.00092	-0.00092	-0.00092
	(!A * B * !X)	0.00067	0.00068	0.00067
	(!A * B * !X)	-0.00092	-0.00092	-0.00092
	(!A * !B * !X)	0.00069	0.00069	0.00068
	(!A * !B * !X)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00146	0.00146	0.00145
	(A * !B * !X)	-0.00182	-0.00183	-0.00182
	(!A * B * !X)	0.00143	0.00144	0.00143
	(!A * B * !X)	-0.00182	-0.00183	-0.00182
	(!A * !B * !X)	0.00145	0.00147	0.00145
	(!A * !B * !X)	-0.00182	-0.00183	-0.00182

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00067	-0.00070	-0.00070
	(A * !B * !X)	0.00091	0.00093	0.00092
	(!A * B * !X)	-0.00065	-0.00069	-0.00068
	(!A * B * !X)	0.00092	0.00092	0.00092
	(!A * !B * !X)	-0.00067	-0.00070	-0.00070
	(!A * !B * !X)	0.00091	0.00093	0.00092
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00066	-0.00069	-0.00069
	(A * !B * !X)	0.00092	0.00094	0.00092
	(!A * B * !X)	-0.00063	-0.00068	-0.00067
	(!A * B * !X)	0.00092	0.00093	0.00092
	(!A * !B * !X)	-0.00066	-0.00069	-0.00068
	(!A * !B * !X)	0.00092	0.00094	0.00092
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00140	-0.00146	-0.00145
	(A * !B * !X)	0.00182	0.00185	0.00183
	(!A * B * !X)	-0.00135	-0.00144	-0.00143
	(!A * B * !X)	0.00183	0.00184	0.00183
	(!A * !B * !X)	-0.00140	-0.00147	-0.00145
	(!A * !B * !X)	0.00182	0.00184	0.00183

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00220	0.00224	0.00235	0.00229	0.59333
sky130_fd_sc_hs__and4bb_2	0.00223	0.00212	0.00257	0.00262	1.25845
sky130_fd_sc_hs__and4bb_4	0.00240	0.00256	0.00475	0.00459	2.40386

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	0.12543	0.34300
sky130_fd_sc_hs__and4bb_2	0.00000	0.13247	0.20443
sky130_fd_sc_hs__and4bb_4	0.00000	0.14247	0.37671

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)	0.27249	1.19614	8.83258
	B_N->X (FR)	0.28468	1.20920	8.84299
	C->X (RR)	0.20246	0.98830	7.70159
	D->X (RR)	0.20718	0.97825	7.71288
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.26922	1.07155	8.92020
	B_N->X (FR)	0.29557	1.10547	9.01937
	C->X (RR)	0.20774	0.88363	7.94848
	D->X (RR)	0.21477	0.87087	7.93949
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.32885	1.09828	9.37427
	B_N->X (FR)	0.36522	1.14242	9.47750
	C->X (RR)	0.25068	0.83972	7.94085
	D->X (RR)	0.25649	0.82227	7.90580

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)	0.18364	0.55185	2.56977
	B_N->X (RF)	0.19303	0.56430	2.57968
	C->X (FF)	0.17068	0.77178	4.56295
	D->X (FF)	0.18249	0.79322	4.65261
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.19349	0.54787	2.78404
	B_N->X (RF)	0.21419	0.58057	2.86721
	C->X (FF)	0.18697	0.80278	5.16917
	D->X (FF)	0.20074	0.82287	5.25830
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.20233	0.54125	2.76440
	B_N->X (RF)	0.21169	0.55810	2.81894
	C->X (FF)	0.17308	0.74983	5.01414
	D->X (FF)	0.18584	0.77074	5.10491

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	0.00494	0.00499	0.00683
	A_N	0.00672	0.00676	0.00863
	B_N	0.00534	0.00547	0.00736
	B_N	0.00735	0.00749	0.00941
	C	0.00592	0.00597	0.00672
	C	0.00380	0.00384	0.00466
	D	0.00637	0.00645	0.00713
	D	0.00386	0.00393	0.00467
sky130_fd_sc_hs__and4bb_2	A_N	0.00662	0.00680	0.00867
	A_N	0.00831	0.00848	0.01047
	B_N	0.00748	0.00760	0.00932
	B_N	0.00923	0.00935	0.01117
	C	0.00799	0.00803	0.00845
	C	0.00553	0.00557	0.00606
	D	0.00862	0.00863	0.00891
	D	0.00562	0.00562	0.00598
sky130_fd_sc_hs__and4bb_4	A_N	0.01321	0.01374	0.01557
	A_N	0.01470	0.01520	0.01731
	B_N	0.01446	0.01497	0.01663
	B_N	0.01623	0.01674	0.01858
	C	0.01558	0.01584	0.01689
	C	0.01099	0.01125	0.01245
	D	0.01655	0.01685	0.01769
	D	0.01104	0.01134	0.01238

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00648	0.00622	0.00739
	A_N	0.00471	0.00441	0.00561
	B_N	0.00665	0.00654	0.00790
	B_N	0.00464	0.00451	0.00586
	C	0.00279	0.00286	0.00469
	C	0.00490	0.00496	0.00679
	D	0.00303	0.00319	0.00494
	D	0.00546	0.00562	0.00734
sky130_fd_sc_hs__and4bb_2	A_N	0.00757	0.00762	0.00894
	A_N	0.00589	0.00593	0.00720
	B_N	0.00793	0.00798	0.00910
	B_N	0.00618	0.00622	0.00736
	C	0.00391	0.00412	0.00584
	C	0.00635	0.00655	0.00798
	D	0.00415	0.00430	0.00570
	D	0.00708	0.00723	0.00852
sky130_fd_sc_hs__and4bb_4	A_N	0.01263	0.01315	0.01432
	A_N	0.01115	0.01166	0.01284
	B_N	0.01359	0.01412	0.01545
	B_N	0.01180	0.01231	0.01343
	C	0.00745	0.00787	0.01102
	C	0.01200	0.01241	0.01518
	D	0.00814	0.00857	0.01127
	D	0.01346	0.01389	0.01648

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)	0.00310	0.00293	0.00433
	(B_N * !X)	0.00110	0.00091	0.00232
	(!B_N * C * !D * !X)	0.00324	0.00307	0.00447
	(!B_N * C * !D * !X)	0.00123	0.00105	0.00246
	(!B_N * !C * !X)	0.00324	0.00307	0.00447
	(!B_N * !C * !X)	0.00123	0.00105	0.00246
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00315	0.00298	0.00438
	(B_N * !X)	0.00112	0.00094	0.00235
	(!B_N * C * !D * !X)	0.00329	0.00311	0.00451
	(!B_N * C * !D * !X)	0.00125	0.00106	0.00248
	(!B_N * !C * !X)	0.00329	0.00311	0.00451
	(!B_N * !C * !X)	0.00125	0.00107	0.00248
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00435	0.00418	0.00541
	(B_N * !X)	0.00225	0.00207	0.00331
	(!B_N * C * !D * !X)	0.00462	0.00445	0.00568
	(!B_N * C * !D * !X)	0.00251	0.00233	0.00357
	(!B_N * !C * !X)	0.00462	0.00445	0.00567
	(!B_N * !C * !X)	0.00251	0.00233	0.00357

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)	0.00031	0.00031	0.00217
	(B_N * !X)	0.00232	0.00232	0.00418
	(!B_N * C * !D * !X)	0.00019	0.00019	0.00204
	(!B_N * C * !D * !X)	0.00227	0.00227	0.00410
	(!B_N * !C * !X)	0.00018	0.00018	0.00203
	(!B_N * !C * !X)	0.00221	0.00220	0.00406
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00024	0.00023	0.00210
	(B_N * !X)	0.00228	0.00227	0.00414
	(!B_N * C * !D * !X)	0.00014	0.00013	0.00198
	(!B_N * C * !D * !X)	0.00225	0.00224	0.00407
	(!B_N * !C * !X)	0.00012	0.00011	0.00197
	(!B_N * !C * !X)	0.00218	0.00217	0.00403
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00085	0.00082	0.00230
	(B_N * !X)	0.00294	0.00292	0.00440
	(!B_N * C * !D * !X)	0.00063	0.00061	0.00206
	(!B_N * C * !D * !X)	0.00286	0.00284	0.00426
	(!B_N * !C * !X)	0.00059	0.00057	0.00204
	(!B_N * !C * !X)	0.00272	0.00270	0.00416

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)	0.00312	0.00291	0.00423
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00088	0.00065	0.00198
	(!C * !X)	0.00317	0.00299	0.00435
	(!C * !X)	0.00088	0.00069	0.00205
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00314	0.00293	0.00420
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00104	0.00082	0.00210
	(!C * !X)	0.00320	0.00303	0.00434
	(!C * !X)	0.00105	0.00086	0.00218
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00432	0.00402	0.00512
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00193	0.00162	0.00273
	(!C * !X)	0.00442	0.00421	0.00535
	(!C * !X)	0.00193	0.00172	0.00285

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)	0.00065	0.00064	0.00251
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00290	0.00288	0.00476
	(!C * !X)	0.00037	0.00036	0.00223
	(!C * !X)	0.00266	0.00265	0.00452
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00093	0.00092	0.00276
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00302	0.00302	0.00486
	(!C * !X)	0.00059	0.00059	0.00243
	(!C * !X)	0.00274	0.00273	0.00458
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00186	0.00180	0.00329
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00425	0.00418	0.00568
	(!C * !X)	0.00126	0.00120	0.00268
	(!C * !X)	0.00374	0.00367	0.00516

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)**	0.00090	0.00091	0.00090
	(A_N * B_N * D * !X)	-0.00086	-0.00087	-0.00086
	(A_N * B_N * !D * !X)	0.00065	0.00065	0.00065
	(A_N * B_N * !D * !X)	-0.00087	-0.00087	-0.00086
	(A_N * !B_N * D * !X)	0.00069	0.00069	0.00069
	(A_N * !B_N * D * !X)	-0.00109	-0.00109	-0.00108
	(A_N * !B_N * !D * !X)	0.00042	0.00042	0.00041
	(A_N * !B_N * !D * !X)	-0.00115	-0.00115	-0.00115
	(!A_N * B_N * D * !X)	0.00090	0.00091	0.00090
	(!A_N * B_N * D * !X)	-0.00086	-0.00087	-0.00086
	(!A_N * B_N * !D * !X)	0.00063	0.00064	0.00063
	(!A_N * B_N * !D * !X)	-0.00087	-0.00087	-0.00086
	(!A_N * !B_N * !D * !X)	0.00035	0.00036	0.00035
	(!A_N * !B_N * !D * !X)	-0.00108	-0.00109	-0.00108
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00095	0.00096	0.00095
	(A_N * B_N * D * !X)	-0.00102	-0.00102	-0.00102
	(A_N * B_N * !D * !X)	0.00066	0.00066	0.00066
	(A_N * B_N * !D * !X)	-0.00102	-0.00102	-0.00102
	(A_N * !B_N * D * !X)	0.00078	0.00079	0.00078
	(A_N * !B_N * D * !X)	-0.00120	-0.00121	-0.00119
	(A_N * !B_N * !D * !X)	0.00046	0.00047	0.00046
	(A_N * !B_N * !D * !X)	-0.00128	-0.00129	-0.00128
	(!A_N * B_N * D * !X)	0.00095	0.00096	0.00095
	(!A_N * B_N * D * !X)	-0.00102	-0.00102	-0.00102
	(!A_N * B_N * !D * !X)	0.00064	0.00064	0.00064
	(!A_N * B_N * !D * !X)	-0.00102	-0.00102	-0.00102
	(!A_N * !B_N * !D * !X)	0.00039	0.00039	0.00039
	(!A_N * !B_N * !D * !X)	-0.00119	-0.00120	-0.00120

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00159	0.00161	0.00160
	(A_N * B_N * D * !X)	-0.00210	-0.00212	-0.00211
	(A_N * B_N * !D * !X)	0.00105	0.00106	0.00105
	(A_N * B_N * !D * !X)	-0.00212	-0.00213	-0.00212
	(A_N * !B_N * D * !X)	0.00149	0.00150	0.00150
	(A_N * !B_N * D * !X)	-0.00224	-0.00224	-0.00221
	(A_N * !B_N * !D * !X)	0.00092	0.00092	0.00091
	(A_N * !B_N * !D * !X)	-0.00239	-0.00239	-0.00238
	(!A_N * B_N * D * !X)	0.00159	0.00160	0.00160
	(!A_N * B_N * D * !X)	-0.00210	-0.00211	-0.00211
	(!A_N * B_N * !D * !X)	0.00103	0.00102	0.00101
	(!A_N * B_N * !D * !X)	-0.00214	-0.00213	-0.00212
	(!A_N * !B_N * !D * !X)	0.00079	0.00079	0.00079
	(!A_N * !B_N * !D * !X)	-0.00222	-0.00224	-0.00223

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)**	-0.00088	-0.00090	-0.00090
	(A_N * B_N * D * !X)	0.00087	0.00088	0.00087
	(A_N * B_N * !D * !X)	-0.00065	-0.00065	-0.00065
	(A_N * B_N * !D * !X)	0.00087	0.00087	0.00087
	(A_N * !B_N * D * !X)	-0.00064	-0.00069	-0.00069
	(A_N * !B_N * D * !X)	0.00112	0.00110	0.00108
	(A_N * !B_N * !D * !X)	-0.00042	-0.00042	-0.00041
	(A_N * !B_N * !D * !X)	0.00118	0.00120	0.00119
	(!A_N * B_N * D * !X)	-0.00088	-0.00091	-0.00090
	(!A_N * B_N * D * !X)	0.00087	0.00088	0.00087
	(!A_N * B_N * !D * !X)	-0.00063	-0.00064	-0.00063
	(!A_N * B_N * !D * !X)	0.00088	0.00089	0.00087
	(!A_N * !B_N * !D * !X)	-0.00035	-0.00034	-0.00034
	(!A_N * !B_N * !D * !X)	0.00111	0.00110	0.00109
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00094	-0.00096	-0.00095
	(A_N * B_N * D * !X)	0.00103	0.00103	0.00102
	(A_N * B_N * !D * !X)	-0.00066	-0.00066	-0.00066
	(A_N * B_N * !D * !X)	0.00102	0.00103	0.00102
	(A_N * !B_N * D * !X)	-0.00073	-0.00079	-0.00078
	(A_N * !B_N * D * !X)	0.00124	0.00121	0.00119
	(A_N * !B_N * !D * !X)	-0.00046	-0.00047	-0.00046
	(A_N * !B_N * !D * !X)	0.00130	0.00133	0.00132
	(!A_N * B_N * D * !X)	-0.00094	-0.00096	-0.00095
	(!A_N * B_N * D * !X)	0.00103	0.00103	0.00102
	(!A_N * B_N * !D * !X)	-0.00064	-0.00064	-0.00064
	(!A_N * B_N * !D * !X)	0.00103	0.00104	0.00102
	(!A_N * !B_N * !D * !X)	-0.00037	-0.00037	-0.00037
	(!A_N * !B_N * !D * !X)	0.00121	0.00122	0.00121

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	-0.00157	-0.00161	-0.00160
	(A_N * B_N * D * !X)	0.00212	0.00214	0.00212
	(A_N * B_N * !D * !X)	-0.00105	-0.00106	-0.00105
	(A_N * B_N * !D * !X)	0.00212	0.00214	0.00213
	(A_N * !B_N * D * !X)	-0.00141	-0.00150	-0.00150
	(A_N * !B_N * D * !X)	0.00233	0.00225	0.00221
	(A_N * !B_N * !D * !X)	-0.00092	-0.00092	-0.00091
	(A_N * !B_N * !D * !X)	0.00241	0.00248	0.00245
	(!A_N * B_N * D * !X)	-0.00156	-0.00160	-0.00160
	(!A_N * B_N * D * !X)	0.00213	0.00214	0.00212
	(!A_N * B_N * !D * !X)	-0.00103	-0.00102	-0.00101
	(!A_N * B_N * !D * !X)	0.00215	0.00217	0.00214
	(!A_N * !B_N * !D * !X)	-0.00075	-0.00075	-0.00075
	(!A_N * !B_N * !D * !X)	0.00226	0.00228	0.00226

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)**	0.00080	0.00081	0.00081
	(A_N * B_N * C * !X)	-0.00084	-0.00085	-0.00084
	(A_N * !C * !X)	0.00081	0.00082	0.00081
	(A_N * !C * !X)	-0.00084	-0.00085	-0.00084
	(A_N * !B_N * C * !X)	0.00070	0.00070	0.00069
	(A_N * !B_N * C * !X)	-0.00097	-0.00097	-0.00097
	(!A_N * B_N * C * !X)	0.00080	0.00081	0.00081
	(!A_N * B_N * C * !X)	-0.00084	-0.00085	-0.00084
	(!A_N * B_N * !C * !X)	0.00081	0.00082	0.00081
	(!A_N * B_N * !C * !X)	-0.00084	-0.00085	-0.00084
	(!A_N * !B_N * !C * !X)	0.00071	0.00072	0.00071
	(!A_N * !B_N * !C * !X)	-0.00095	-0.00095	-0.00094

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00084	0.00085	0.00084
	(A_N * B_N * C * !X)	-0.00108	-0.00108	-0.00108
	(A_N * !C * !X)	0.00084	0.00086	0.00085
	(A_N * !C * !X)	-0.00108	-0.00109	-0.00108
	(A_N * !B_N * C * !X)	0.00079	0.00080	0.00079
	(A_N * !B_N * C * !X)	-0.00115	-0.00115	-0.00115
	(!A_N * B_N * C * !X)	0.00084	0.00085	0.00084
	(!A_N * B_N * C * !X)	-0.00108	-0.00109	-0.00108
	(!A_N * B_N * !C * !X)	0.00084	0.00085	0.00085
	(!A_N * B_N * !C * !X)	-0.00108	-0.00109	-0.00108
	(!A_N * !B_N * !C * !X)	0.00081	0.00082	0.00081
	(!A_N * !B_N * !C * !X)	-0.00112	-0.00113	-0.00112
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00141	0.00142	0.00141
	(A_N * B_N * C * !X)	-0.00209	-0.00210	-0.00209
	(A_N * !C * !X)	0.00143	0.00143	0.00143
	(A_N * !C * !X)	-0.00209	-0.00209	-0.00209
	(A_N * !B_N * C * !X)	0.00138	0.00140	0.00139
	(A_N * !B_N * C * !X)	-0.00215	-0.00216	-0.00214
	(!A_N * B_N * C * !X)	0.00141	0.00142	0.00141
	(!A_N * B_N * C * !X)	-0.00209	-0.00209	-0.00209
	(!A_N * B_N * !C * !X)	0.00143	0.00144	0.00143
	(!A_N * B_N * !C * !X)	-0.00209	-0.00210	-0.00209
	(!A_N * !B_N * !C * !X)	0.00143	0.00144	0.00143
	(!A_N * !B_N * !C * !X)	-0.00209	-0.00210	-0.00209

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)**	-0.00077	-0.00081	-0.00081
	(A_N * B_N * C * !X)	0.00085	0.00085	0.00085
	(A_N * !C * !X)	-0.00079	-0.00082	-0.00081
	(A_N * !C * !X)	0.00084	0.00086	0.00085
	(A_N * !B_N * C * !X)	-0.00065	-0.00070	-0.00069
	(A_N * !B_N * C * !X)	0.00099	0.00097	0.00097
	(!A_N * B_N * C * !X)	-0.00078	-0.00081	-0.00081
	(!A_N * B_N * C * !X)	0.00085	0.00085	0.00085
	(!A_N * B_N * !C * !X)	-0.00079	-0.00082	-0.00081
	(!A_N * B_N * !C * !X)	0.00084	0.00085	0.00085
	(!A_N * !B_N * !C * !X)	-0.00068	-0.00071	-0.00071
	(!A_N * !B_N * !C * !X)	0.00095	0.00096	0.00095
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00080	-0.00085	-0.00084
	(A_N * B_N * C * !X)	0.00108	0.00109	0.00109
	(A_N * !C * !X)	-0.00082	-0.00085	-0.00085
	(A_N * !C * !X)	0.00108	0.00110	0.00109
	(A_N * !B_N * C * !X)	-0.00075	-0.00080	-0.00079
	(A_N * !B_N * C * !X)	0.00118	0.00115	0.00115
	(!A_N * B_N * C * !X)	-0.00080	-0.00085	-0.00084
	(!A_N * B_N * C * !X)	0.00108	0.00109	0.00109
	(!A_N * B_N * !C * !X)	-0.00082	-0.00085	-0.00085
	(!A_N * B_N * !C * !X)	0.00108	0.00110	0.00109
	(!A_N * !B_N * !C * !X)	-0.00078	-0.00082	-0.00081
	(!A_N * !B_N * !C * !X)	0.00113	0.00114	0.00112

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00134	-0.00142	-0.00141
	(A_N * B_N * C * !X)	0.00209	0.00211	0.00210
	(A_N * !C * !X)	-0.00138	-0.00143	-0.00143
	(A_N * !C * !X)	0.00209	0.00211	0.00210
	(A_N * !B_N * C * !X)	-0.00131	-0.00140	-0.00139
	(A_N * !B_N * C * !X)	0.00218	0.00216	0.00214
	(!A_N * B_N * C * !X)	-0.00134	-0.00142	-0.00141
	(!A_N * B_N * C * !X)	0.00209	0.00211	0.00210
	(!A_N * B_N * !C * !X)	-0.00138	-0.00144	-0.00143
	(!A_N * B_N * !C * !X)	0.00209	0.00211	0.00210
	(!A_N * !B_N * !C * !X)	-0.00137	-0.00144	-0.00143
	(!A_N * !B_N * !C * !X)	0.00210	0.00212	0.00210

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00234	0.00246	0.00236	0.00228	0.62869
sky130_fd_sc_hs__and4b_2	0.00217	0.00261	0.00261	0.00268	1.16528
sky130_fd_sc_hs__and4b_4	0.00236	0.00482	0.00520	0.00480	2.24121

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	0.08247	0.34088
sky130_fd_sc_hs__and4b_2	0.00000	0.08952	0.18569
sky130_fd_sc_hs__and4b_4	0.00000	0.11803	0.37193

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)	0.25446	1.15858	8.74952
	B->X (RR)	0.18463	0.97105	7.66349
	C->X (RR)	0.19250	0.96680	7.69459
	D->X (RR)	0.19976	0.95800	7.70703
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.28196	1.09759	8.91901
	B->X (RR)	0.19149	0.88909	7.81163
	C->X (RR)	0.20156	0.88201	7.82852
	D->X (RR)	0.20757	0.86845	7.81555
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.34330	1.12852	9.60597
	B->X (RR)	0.21757	0.84321	8.00922
	C->X (RR)	0.23749	0.84249	8.03689
	D->X (RR)	0.23997	0.82734	8.02512

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)	0.17229	0.54336	2.63946
	B->X (FF)	0.15517	0.75195	4.57526
	C->X (FF)	0.16769	0.77418	4.66892
	D->X (FF)	0.18211	0.79879	4.77085
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.20372	0.55745	2.60791
	B->X (FF)	0.17888	0.77508	4.82300
	C->X (FF)	0.19470	0.79802	4.92622
	D->X (FF)	0.20624	0.81606	5.00832
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.22189	0.57060	2.70591
	B->X (FF)	0.17216	0.73606	4.77406
	C->X (FF)	0.18985	0.76174	4.88811
	D->X (FF)	0.21700	0.79618	5.00488

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	0.00475	0.00474	0.00664
	A_N	0.00642	0.00642	0.00831
	B	0.00553	0.00543	0.00628
	B	0.00304	0.00293	0.00384
	C	0.00606	0.00597	0.00669
	C	0.00315	0.00305	0.00384
	D	0.00646	0.00631	0.00679
	D	0.00314	0.00299	0.00352
sky130_fd_sc_hs__and4b_2	A_N	0.00659	0.00674	0.00855
	A_N	0.00817	0.00832	0.01020
	B	0.00721	0.00730	0.00788
	B	0.00456	0.00465	0.00535
	C	0.00776	0.00785	0.00832
	C	0.00467	0.00476	0.00535
	D	0.00840	0.00848	0.00876
	D	0.00466	0.00474	0.00514
sky130_fd_sc_hs__and4b_4	A_N	0.01322	0.01373	0.01555
	A_N	0.01500	0.01550	0.01745
	B	0.01435	0.01465	0.01600
	B	0.00949	0.00979	0.01126
	C	0.01582	0.01613	0.01711
	C	0.00976	0.01006	0.01116
	D	0.01648	0.01683	0.01779
	D	0.00975	0.01011	0.01120

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00598	0.00580	0.00716
	A_N	0.00431	0.00410	0.00545
	B	0.00221	0.00221	0.00411
	B	0.00470	0.00469	0.00652
	C	0.00233	0.00237	0.00428
	C	0.00517	0.00521	0.00698
	D	0.00275	0.00274	0.00446
	D	0.00593	0.00592	0.00756
sky130_fd_sc_hs__and4b_2	A_N	0.00791	0.00791	0.00906
	A_N	0.00633	0.00633	0.00742
	B	0.00362	0.00380	0.00549
	B	0.00627	0.00643	0.00790
	C	0.00396	0.00414	0.00559
	C	0.00697	0.00716	0.00857
	D	0.00413	0.00423	0.00597
	D	0.00771	0.00782	0.00906
sky130_fd_sc_hs__and4b_4	A_N	0.01356	0.01400	0.01503
	A_N	0.01178	0.01220	0.01317
	B	0.00677	0.00729	0.01091
	B	0.01161	0.01203	0.01495
	C	0.00735	0.00769	0.01083
	C	0.01323	0.01356	0.01621
	D	0.00821	0.00870	0.01218
	D	0.01460	0.01508	0.01773

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)	0.00319	0.00300	0.00442
	(B * C * !D * !X)	0.00091	0.00072	0.00214
	(B * !C * !X)	0.00319	0.00300	0.00442
	(B * !C * !X)	0.00091	0.00072	0.00214
	(!B * !X)	0.00318	0.00299	0.00441
	(!B * !X)	0.00091	0.00072	0.00214
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00353	0.00335	0.00470
	(B * C * !D * !X)	0.00136	0.00118	0.00253
	(B * !C * !X)	0.00353	0.00335	0.00470
	(B * !C * !X)	0.00136	0.00118	0.00253
	(!B * !X)	0.00351	0.00333	0.00469
	(!B * !X)	0.00136	0.00118	0.00253
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00543	0.00525	0.00641
	(B * C * !D * !X)	0.00282	0.00262	0.00379
	(B * !C * !X)	0.00543	0.00524	0.00641
	(B * !C * !X)	0.00282	0.00262	0.00379
	(!B * !X)	0.00539	0.00520	0.00636
	(!B * !X)	0.00282	0.00262	0.00379

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	0.00014	0.00200
	(B * C * !D * !X)	0.00251	0.00249	0.00434
	(B * !C * !X)	0.00013	0.00012	0.00199
	(B * !C * !X)	0.00246	0.00245	0.00431
	(!B * !X)	0.00013	0.00012	0.00200
	(!B * !X)	0.00241	0.00240	0.00427
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00022	0.00020	0.00202
	(B * C * !D * !X)	0.00247	0.00246	0.00425
	(B * !C * !X)	0.00021	0.00019	0.00202
	(B * !C * !X)	0.00242	0.00242	0.00422
	(!B * !X)	0.00020	0.00019	0.00202
	(!B * !X)	0.00236	0.00235	0.00418
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00047	0.00043	0.00183
	(B * C * !D * !X)	0.00325	0.00320	0.00456
	(B * !C * !X)	0.00045	0.00041	0.00183
	(B * !C * !X)	0.00316	0.00312	0.00451
	(!B * !X)	0.00044	0.00040	0.00184
	(!B * !X)	0.00302	0.00298	0.00442

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)**	0.00083	0.00083	0.00083
	(A_N * C * D * !X)	-0.00098	-0.00098	-0.00098
	(A_N * C * !D * !X)	0.00056	0.00056	0.00056
	(A_N * C * !D * !X)	-0.00099	-0.00099	-0.00099
	(A_N * !C * !X)	0.00054	0.00054	0.00054
	(A_N * !C * !X)	-0.00099	-0.00099	-0.00099
	(!A_N * C * !D * !X)	0.00035	0.00035	0.00035
	(!A_N * C * !D * !X)	-0.00110	-0.00111	-0.00112
	(!A_N * !C * !X)	0.00035	0.00035	0.00035
	(!A_N * !C * !X)	-0.00112	-0.00113	-0.00112
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00095	0.00096	0.00095
	(A_N * C * D * !X)	-0.00102	-0.00103	-0.00102
	(A_N * C * !D * !X)	0.00062	0.00061	0.00062
	(A_N * C * !D * !X)	-0.00103	-0.00103	-0.00103
	(A_N * !C * !X)	0.00063	0.00063	0.00062
	(A_N * !C * !X)	-0.00104	-0.00103	-0.00103
	(!A_N * C * !D * !X)	0.00037	0.00037	0.00038
	(!A_N * C * !D * !X)	-0.00117	-0.00117	-0.00118
	(!A_N * !C * !X)	0.00040	0.00040	0.00040
	(!A_N * !C * !X)	-0.00119	-0.00119	-0.00119
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00194	0.00196	0.00195
	(A_N * C * D * !X)	-0.00193	-0.00194	-0.00194
	(A_N * C * !D * !X)	0.00138	0.00139	0.00138
	(A_N * C * !D * !X)	-0.00195	-0.00195	-0.00195
	(A_N * !C * !X)	0.00141	0.00141	0.00141
	(A_N * !C * !X)	-0.00195	-0.00195	-0.00195
	(!A_N * C * !D * !X)	0.00085	0.00086	0.00086
	(!A_N * C * !D * !X)	-0.00227	-0.00229	-0.00232
	(!A_N * !C * !X)	0.00089	0.00089	0.00089
	(!A_N * !C * !X)	-0.00231	-0.00233	-0.00233

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)	-0.00078	-0.00083	-0.00083
	(A_N * C * D * !X)	0.00104	0.00099	0.00099
	(A_N * C * !D * !X)	-0.00056	-0.00056	-0.00056
	(A_N * C * !D * !X)	0.00101	0.00100	0.00099
	(A_N * !C * !X)	-0.00054	-0.00054	-0.00054
	(A_N * !C * !X)	0.00103	0.00104	0.00100
	(!A_N * C * !D * !X)	-0.00033	-0.00033	-0.00033
	(!A_N * C * !D * !X)	0.00116	0.00115	0.00113
	(!A_N * !C * !X)	-0.00034	-0.00033	-0.00034
	(!A_N * !C * !X)	0.00116	0.00115	0.00113
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00090	-0.00094	-0.00095
	(A_N * C * D * !X)	0.00107	0.00103	0.00103
	(A_N * C * !D * !X)	-0.00062	-0.00061	-0.00062
	(A_N * C * !D * !X)	0.00104	0.00104	0.00103
	(A_N * !C * !X)	-0.00063	-0.00063	-0.00062
	(A_N * !C * !X)	0.00107	0.00108	0.00104
	(!A_N * C * !D * !X)	-0.00036	-0.00036	-0.00037
	(!A_N * C * !D * !X)	0.00121	0.00122	0.00120
	(!A_N * !C * !X)	-0.00037	-0.00037	-0.00038
	(!A_N * !C * !X)	0.00121	0.00122	0.00120

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00187	-0.00196	-0.00195
	(A_N * C * D * !X)	0.00201	0.00196	0.00195
	(A_N * C * !D * !X)	-0.00138	-0.00139	-0.00138
	(A_N * C * !D * !X)	0.00199	0.00197	0.00195
	(A_N * !C * !X)	-0.00141	-0.00141	-0.00141
	(A_N * !C * !X)	0.00202	0.00201	0.00196
	(!A_N * C * !D * !X)	-0.00082	-0.00082	-0.00083
	(!A_N * C * !D * !X)	0.00239	0.00239	0.00236
	(!A_N * !C * !X)	-0.00084	-0.00084	-0.00085
	(!A_N * !C * !X)	0.00239	0.00239	0.00236

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)**	0.00084	0.00084	0.00083
	(A_N * B * D * !X)	-0.00089	-0.00089	-0.00088
	(A_N * B * !D * !X)	0.00057	0.00057	0.00057
	(A_N * B * !D * !X)	-0.00089	-0.00089	-0.00089
	(A_N * !B * D * !X)	0.00084	0.00084	0.00084
	(A_N * !B * D * !X)	-0.00088	-0.00088	-0.00088
	(A_N * !B * !D * !X)	0.00057	0.00057	0.00057
	(A_N * !B * !D * !X)	-0.00088	-0.00089	-0.00089
	(!A_N * B * !D * !X)	0.00050	0.00051	0.00050
	(!A_N * B * !D * !X)	-0.00088	-0.00089	-0.00088
	(!A_N * !B * D * !X)	0.00083	0.00084	0.00083
	(!A_N * !B * D * !X)	-0.00089	-0.00089	-0.00089
	(!A_N * !B * !D * !X)	0.00055	0.00055	0.00055
	(!A_N * !B * !D * !X)	-0.00089	-0.00090	-0.00089

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00080	0.00080	0.00080
	(A_N * B * D * !X)	-0.00102	-0.00101	-0.00101
	(A_N * B * !D * !X)	0.00048	0.00048	0.00047
	(A_N * B * !D * !X)	-0.00102	-0.00102	-0.00102
	(A_N * !B * D * !X)	0.00081	0.00082	0.00081
	(A_N * !B * D * !X)	-0.00101	-0.00102	-0.00101
	(A_N * !B * !D * !X)	0.00047	0.00047	0.00047
	(A_N * !B * !D * !X)	-0.00102	-0.00102	-0.00102
	(!A_N * B * !D * !X)	0.00038	0.00038	0.00038
	(!A_N * B * !D * !X)	-0.00103	-0.00103	-0.00102
	(!A_N * !B * D * !X)	0.00080	0.00080	0.00080
	(!A_N * !B * D * !X)	-0.00103	-0.00103	-0.00102
	(!A_N * !B * !D * !X)	0.00044	0.00044	0.00044
	(!A_N * !B * !D * !X)	-0.00103	-0.00103	-0.00103
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00180	0.00181	0.00180
	(A_N * B * D * !X)	-0.00207	-0.00207	-0.00207
	(A_N * B * !D * !X)	0.00125	0.00127	0.00125
	(A_N * B * !D * !X)	-0.00207	-0.00208	-0.00207
	(A_N * !B * D * !X)	0.00182	0.00183	0.00182
	(A_N * !B * D * !X)	-0.00207	-0.00208	-0.00207
	(A_N * !B * !D * !X)	0.00127	0.00127	0.00127
	(A_N * !B * !D * !X)	-0.00208	-0.00208	-0.00207
	(!A_N * B * !D * !X)	0.00108	0.00108	0.00108
	(!A_N * B * !D * !X)	-0.00210	-0.00211	-0.00210
	(!A_N * !B * D * !X)	0.00179	0.00180	0.00179
	(!A_N * !B * D * !X)	-0.00210	-0.00210	-0.00210
	(!A_N * !B * !D * !X)	0.00120	0.00120	0.00120
	(!A_N * !B * !D * !X)	-0.00211	-0.00212	-0.00211

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)	-0.00079	-0.00084	-0.00083
	(A_N * B * D * !X)	0.00089	0.00090	0.00089
	(A_N * B * !D * !X)	-0.00057	-0.00057	-0.00057
	(A_N * B * !D * !X)	0.00089	0.00090	0.00089
	(A_N * !B * D * !X)	-0.00082	-0.00084	-0.00084
	(A_N * !B * D * !X)	0.00089	0.00088	0.00089
	(A_N * !B * !D * !X)	-0.00057	-0.00057	-0.00057
	(A_N * !B * !D * !X)	0.00089	0.00090	0.00089
	(!A_N * B * !D * !X)	-0.00048	-0.00048	-0.00048
	(!A_N * B * !D * !X)	0.00091	0.00091	0.00090
	(!A_N * !B * D * !X)	-0.00080	-0.00083	-0.00083
	(!A_N * !B * D * !X)	0.00090	0.00089	0.00089
	(!A_N * !B * !D * !X)	-0.00055	-0.00055	-0.00055
	(!A_N * !B * !D * !X)	0.00092	0.00092	0.00090
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00075	-0.00080	-0.00080
	(A_N * B * D * !X)	0.00102	0.00103	0.00102
	(A_N * B * !D * !X)	-0.00048	-0.00048	-0.00047
	(A_N * B * !D * !X)	0.00102	0.00102	0.00102
	(A_N * !B * D * !X)	-0.00078	-0.00082	-0.00081
	(A_N * !B * D * !X)	0.00102	0.00103	0.00102
	(A_N * !B * !D * !X)	-0.00047	-0.00047	-0.00047
	(A_N * !B * !D * !X)	0.00102	0.00102	0.00102
	(!A_N * B * !D * !X)	-0.00037	-0.00037	-0.00037
	(!A_N * B * !D * !X)	0.00104	0.00104	0.00103
	(!A_N * !B * D * !X)	-0.00077	-0.00080	-0.00080
	(!A_N * !B * D * !X)	0.00104	0.00104	0.00103
	(!A_N * !B * !D * !X)	-0.00044	-0.00044	-0.00044
	(!A_N * !B * !D * !X)	0.00104	0.00105	0.00103

sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	-0.00171	-0.00181	-0.00180
	(A_N * B * D * !X)	0.00208	0.00208	0.00208
	(A_N * B * !D * !X)	-0.00125	-0.00127	-0.00125
	(A_N * B * !D * !X)	0.00208	0.00208	0.00208
	(A_N * !B * D * !X)	-0.00176	-0.00183	-0.00182
	(A_N * !B * D * !X)	0.00208	0.00209	0.00208
	(A_N * !B * !D * !X)	-0.00127	-0.00127	-0.00127
	(A_N * !B * !D * !X)	0.00208	0.00209	0.00208
	(!A_N * B * !D * !X)	-0.00106	-0.00107	-0.00106
	(!A_N * B * !D * !X)	0.00213	0.00214	0.00211
	(!A_N * !B * D * !X)	-0.00172	-0.00180	-0.00179
	(!A_N * !B * D * !X)	0.00212	0.00211	0.00210
	(!A_N * !B * !D * !X)	-0.00120	-0.00120	-0.00120
	(!A_N * !B * !D * !X)	0.00214	0.00214	0.00212

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)**	0.00068	0.00069	0.00068
	(A_N * B * C * !X)	-0.00096	-0.00097	-0.00096
	(A_N * !C * !X)	0.00070	0.00071	0.00070
	(A_N * !C * !X)	-0.00097	-0.00097	-0.00096
	(A_N * !B * C * !X)	0.00068	0.00069	0.00068
	(A_N * !B * C * !X)	-0.00096	-0.00097	-0.00096
	(!A_N * B * !C * !X)	0.00070	0.00071	0.00070
	(!A_N * B * !C * !X)	-0.00096	-0.00097	-0.00096
	(!A_N * !B * C * !X)	0.00068	0.00069	0.00068
	(!A_N * !B * C * !X)	-0.00096	-0.00097	-0.00096
	(!A_N * !B * !C * !X)	0.00070	0.00071	0.00070
	(!A_N * !B * !C * !X)	-0.00096	-0.00097	-0.00097

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00080	0.00081	0.00080
	(A_N * B * C * !X)	-0.00110	-0.00111	-0.00110
	(A_N * !C * !X)	0.00081	0.00082	0.00082
	(A_N * !C * !X)	-0.00110	-0.00111	-0.00110
	(A_N * !B * C * !X)	0.00080	0.00081	0.00080
	(A_N * !B * C * !X)	-0.00110	-0.00110	-0.00110
	(!A_N * B * !C * !X)	0.00080	0.00081	0.00080
	(!A_N * B * !C * !X)	-0.00111	-0.00112	-0.00111
	(!A_N * !B * C * !X)	0.00079	0.00079	0.00079
	(!A_N * !B * C * !X)	-0.00111	-0.00111	-0.00111
	(!A_N * !B * !C * !X)	0.00080	0.00081	0.00080
	(!A_N * !B * !C * !X)	-0.00111	-0.00112	-0.00111
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00145	0.00147	0.00145
	(A_N * B * C * !X)	-0.00206	-0.00207	-0.00206
	(A_N * !C * !X)	0.00147	0.00147	0.00147
	(A_N * !C * !X)	-0.00206	-0.00206	-0.00206
	(A_N * !B * C * !X)	0.00146	0.00147	0.00146
	(A_N * !B * C * !X)	-0.00206	-0.00207	-0.00206
	(!A_N * B * !C * !X)	0.00144	0.00146	0.00144
	(!A_N * B * !C * !X)	-0.00209	-0.00210	-0.00208
	(!A_N * !B * C * !X)	0.00143	0.00144	0.00143
	(!A_N * !B * C * !X)	-0.00208	-0.00209	-0.00208
	(!A_N * !B * !C * !X)	0.00145	0.00145	0.00144
	(!A_N * !B * !C * !X)	-0.00209	-0.00209	-0.00208

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)**	-0.00064	-0.00069	-0.00068
	(A_N * B * C * !X)	0.00097	0.00097	0.00097
	(A_N * !C * !X)	-0.00068	-0.00071	-0.00070
	(A_N * !C * !X)	0.00097	0.00098	0.00097
	(A_N * !B * C * !X)	-0.00064	-0.00069	-0.00068
	(A_N * !B * C * !X)	0.00097	0.00097	0.00097
	(!A_N * B * !C * !X)	-0.00068	-0.00071	-0.00070
	(!A_N * B * !C * !X)	0.00096	0.00098	0.00097
	(!A_N * !B * C * !X)	-0.00064	-0.00069	-0.00068
	(!A_N * !B * C * !X)	0.00097	0.00097	0.00097
	(!A_N * !B * !C * !X)	-0.00068	-0.00071	-0.00070
	(!A_N * !B * !C * !X)	0.00096	0.00098	0.00097
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00075	-0.00081	-0.00080
	(A_N * B * C * !X)	0.00110	0.00111	0.00110
	(A_N * !C * !X)	-0.00079	-0.00082	-0.00082
	(A_N * !C * !X)	0.00110	0.00112	0.00110
	(A_N * !B * C * !X)	-0.00075	-0.00081	-0.00080
	(A_N * !B * C * !X)	0.00110	0.00111	0.00110
	(!A_N * B * !C * !X)	-0.00077	-0.00081	-0.00080
	(!A_N * B * !C * !X)	0.00111	0.00113	0.00111
	(!A_N * !B * C * !X)	-0.00074	-0.00079	-0.00079
	(!A_N * !B * C * !X)	0.00111	0.00112	0.00112
	(!A_N * !B * !C * !X)	-0.00078	-0.00081	-0.00080
	(!A_N * !B * !C * !X)	0.00111	0.00113	0.00111

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00135	-0.00147	-0.00145
	(A_N * B * C * !X)	0.00206	0.00207	0.00206
	(A_N * !C * !X)	-0.00143	-0.00147	-0.00147
	(A_N * !C * !X)	0.00207	0.00209	0.00206
	(A_N * !B * C * !X)	-0.00137	-0.00147	-0.00146
	(A_N * !B * C * !X)	0.00207	0.00208	0.00206
	(!A_N * B * !C * !X)	-0.00139	-0.00145	-0.00144
	(!A_N * B * !C * !X)	0.00210	0.00211	0.00209
	(!A_N * !B * C * !X)	-0.00134	-0.00144	-0.00143
	(!A_N * !B * C * !X)	0.00209	0.00210	0.00209
	(!A_N * !B * !C * !X)	-0.00141	-0.00145	-0.00144
	(!A_N * !B * !C * !X)	0.00210	0.00211	0.00209

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00248	0.00245	0.00235	0.00237	0.63632
sky130_fd_sc_hs__and4_2	0.00266	0.00273	0.00259	0.00254	1.16612
sky130_fd_sc_hs__and4_4	0.00459	0.00474	0.00521	0.00462	2.43567

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.03952	0.33876
sky130_fd_sc_hs__and4_2	0.00000	0.04657	0.18357
sky130_fd_sc_hs__and4_4	0.00000	0.09360	0.36715

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)	0.16764	0.94430	7.53011
	B->X (RR)	0.17986	0.96912	7.69124
	C->X (RR)	0.18728	0.96423	7.72211
	D->X (RR)	0.19517	0.95550	7.73167
sky130_fd_sc_hs__and4_2	A->X (RR)	0.17777	0.88098	7.70262
	B->X (RR)	0.19148	0.89865	7.86562
	C->X (RR)	0.20021	0.88995	7.88074
	D->X (RR)	0.20638	0.87583	7.86892
sky130_fd_sc_hs__and4_4	A->X (RR)	0.18758	0.79447	7.73225
	B->X (RR)	0.20448	0.82001	7.91776
	C->X (RR)	0.22107	0.81770	7.94124
	D->X (RR)	0.22294	0.80062	7.93171

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.13974	0.71927	4.41442
	B->X (FF)	0.15483	0.74762	4.52554
	C->X (FF)	0.16711	0.77014	4.61672
	D->X (FF)	0.18120	0.79465	4.71781
sky130_fd_sc_hs__and4_2	A->X (FF)	0.15473	0.74106	4.69202
	B->X (FF)	0.17459	0.77064	4.81346
	C->X (FF)	0.18791	0.79193	4.91429
	D->X (FF)	0.20807	0.82040	5.02345
sky130_fd_sc_hs__and4_4	A->X (FF)	0.15266	0.71204	4.84577
	B->X (FF)	0.15998	0.72644	4.92605
	C->X (FF)	0.17589	0.75066	5.03729
	D->X (FF)	0.18409	0.76654	5.11116

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00520	0.00512	0.00650
	A	0.00267	0.00259	0.00398
	B	0.00561	0.00559	0.00646
	B	0.00268	0.00265	0.00359
	C	0.00609	0.00605	0.00680
	C	0.00269	0.00265	0.00346
	D	0.00665	0.00657	0.00706
	D	0.00269	0.00261	0.00316
sky130_fd_sc_hs__and4_2	A	0.00698	0.00701	0.00800
	A	0.00419	0.00423	0.00534
	B	0.00755	0.00763	0.00820
	B	0.00424	0.00433	0.00501
	C	0.00806	0.00815	0.00861
	C	0.00426	0.00436	0.00492
	D	0.00869	0.00876	0.00903
	D	0.00428	0.00435	0.00473
sky130_fd_sc_hs__and4_4	A	0.01290	0.01306	0.01533
	A	0.00811	0.00829	0.01080
	B	0.01408	0.01442	0.01577
	B	0.00810	0.00844	0.00998
	C	0.01548	0.01583	0.01683
	C	0.00811	0.00846	0.00961
	D	0.01603	0.01640	0.01738
	D	0.00812	0.00849	0.00966

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00194	0.00194	0.00387
	A	0.00447	0.00446	0.00638
	B	0.00222	0.00224	0.00420
	B	0.00511	0.00512	0.00697
	C	0.00242	0.00250	0.00429
	C	0.00573	0.00577	0.00756
	D	0.00268	0.00268	0.00444
	D	0.00647	0.00647	0.00812
sky130_fd_sc_hs__and4_2	A	0.00321	0.00335	0.00509
	A	0.00599	0.00613	0.00765
	B	0.00352	0.00367	0.00531
	B	0.00677	0.00692	0.00836
	C	0.00388	0.00406	0.00551
	C	0.00755	0.00774	0.00914
	D	0.00414	0.00424	0.00551
	D	0.00834	0.00847	0.00966
sky130_fd_sc_hs__and4_4	A	0.00639	0.00678	0.01041
	A	0.01116	0.01153	0.01457
	B	0.00673	0.00711	0.01036
	B	0.01263	0.01299	0.01591
	C	0.00725	0.00757	0.01034
	C	0.01437	0.01468	0.01739
	D	0.00809	0.00858	0.01185
	D	0.01564	0.01610	0.01879

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)	0.00032	0.00032	0.00029
	(B * C * !D * !X)	-0.00103	-0.00105	-0.00112
	(B * !C * !X)	0.00030	0.00030	0.00028
	(B * !C * !X)	-0.00107	-0.00109	-0.00113
	(!B * !X)	0.00030	0.00030	0.00029
	(!B * !X)	-0.00111	-0.00112	-0.00113
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00039	0.00039	0.00035
	(B * C * !D * !X)	-0.00117	-0.00118	-0.00127
	(B * !C * !X)	0.00037	0.00037	0.00034
	(B * !C * !X)	-0.00122	-0.00122	-0.00127
	(!B * !X)	0.00036	0.00036	0.00034
	(!B * !X)	-0.00126	-0.00126	-0.00128
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00056	0.00057	0.00048
	(B * C * !D * !X)	-0.00213	-0.00216	-0.00232
	(B * !C * !X)	0.00054	0.00054	0.00048
	(B * !C * !X)	-0.00221	-0.00223	-0.00234
	(!B * !X)	0.00051	0.00051	0.00049
	(!B * !X)	-0.00231	-0.00232	-0.00235

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)	-0.00027	-0.00028	-0.00027
	(B * C * !D * !X)	0.00112	0.00114	0.00113
	(B * !C * !X)	-0.00027	-0.00028	-0.00027
	(B * !C * !X)	0.00112	0.00114	0.00113
	(!B * !X)	-0.00028	-0.00028	-0.00028
	(!B * !X)	0.00112	0.00114	0.00113
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00033	-0.00033	-0.00033
	(B * C * !D * !X)	0.00128	0.00129	0.00128
	(B * !C * !X)	-0.00033	-0.00033	-0.00033
	(B * !C * !X)	0.00128	0.00129	0.00128
	(!B * !X)	-0.00034	-0.00034	-0.00033
	(!B * !X)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00046	-0.00045	-0.00045
	(B * C * !D * !X)	0.00237	0.00237	0.00236
	(B * !C * !X)	-0.00046	-0.00046	-0.00045
	(B * !C * !X)	0.00237	0.00237	0.00236
	(!B * !X)	-0.00047	-0.00047	-0.00047
	(!B * !X)	0.00235	0.00237	0.00236

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)**	0.00034	0.00034	0.00034
	(A * C * !D * !X)	-0.00090	-0.00091	-0.00090
	(A * !C * !X)	0.00034	0.00034	0.00034
	(A * !C * !X)	-0.00090	-0.00090	-0.00090
	(!A * C * D * !X)	0.00071	0.00071	0.00071
	(!A * C * D * !X)	-0.00090	-0.00091	-0.00090
	(!A * C * !D * !X)	0.00040	0.00040	0.00040
	(!A * C * !D * !X)	-0.00091	-0.00091	-0.00090
	(!A * !C * !X)	0.00038	0.00038	0.00038
	(!A * !C * !X)	-0.00091	-0.00091	-0.00090
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00040	0.00040	0.00040
	(A * C * !D * !X)	-0.00108	-0.00108	-0.00107
	(A * !C * !X)	0.00041	0.00041	0.00041
	(A * !C * !X)	-0.00108	-0.00108	-0.00107
	(!A * C * D * !X)	0.00082	0.00082	0.00082
	(!A * C * D * !X)	-0.00108	-0.00108	-0.00107
	(!A * C * !D * !X)	0.00048	0.00048	0.00047
	(!A * C * !D * !X)	-0.00108	-0.00108	-0.00108
	(!A * !C * !X)	0.00047	0.00047	0.00046
	(!A * !C * !X)	-0.00108	-0.00108	-0.00108
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00084	0.00084	0.00084
	(A * C * !D * !X)	-0.00201	-0.00202	-0.00201
	(A * !C * !X)	0.00087	0.00088	0.00087
	(A * !C * !X)	-0.00202	-0.00203	-0.00202
	(!A * C * D * !X)	0.00159	0.00161	0.00160
	(!A * C * D * !X)	-0.00201	-0.00202	-0.00201
	(!A * C * !D * !X)	0.00097	0.00097	0.00096
	(!A * C * !D * !X)	-0.00203	-0.00204	-0.00203
	(!A * !C * !X)	0.00098	0.00098	0.00098
	(!A * !C * !X)	-0.00204	-0.00204	-0.00204

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)	-0.00032	-0.00032	-0.00032
	(A * C * !D * !X)	0.00092	0.00093	0.00091
	(A * !C * !X)	-0.00032	-0.00032	-0.00033
	(A * !C * !X)	0.00092	0.00093	0.00091
	(!A * C * D * !X)	-0.00065	-0.00071	-0.00071
	(!A * C * D * !X)	0.00096	0.00091	0.00091
	(!A * C * !D * !X)	-0.00040	-0.00040	-0.00040
	(!A * C * !D * !X)	0.00094	0.00092	0.00091
	(!A * !C * !X)	-0.00038	-0.00038	-0.00038
	(!A * !C * !X)	0.00095	0.00096	0.00092
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00038	-0.00038	-0.00038
	(A * C * !D * !X)	0.00110	0.00111	0.00108
	(A * !C * !X)	-0.00038	-0.00039	-0.00039
	(A * !C * !X)	0.00110	0.00111	0.00108
	(!A * C * D * !X)	-0.00076	-0.00082	-0.00082
	(!A * C * D * !X)	0.00113	0.00108	0.00108
	(!A * C * !D * !X)	-0.00048	-0.00048	-0.00047
	(!A * C * !D * !X)	0.00111	0.00109	0.00108
	(!A * !C * !X)	-0.00047	-0.00047	-0.00046
	(!A * !C * !X)	0.00113	0.00113	0.00109

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00081	-0.00080	-0.00082
	(A * C * !D * !X)	0.00208	0.00207	0.00204
	(A * !C * !X)	-0.00083	-0.00082	-0.00084
	(A * !C * !X)	0.00209	0.00207	0.00204
	(!A * C * D * !X)	-0.00148	-0.00161	-0.00160
	(!A * C * D * !X)	0.00209	0.00205	0.00202
	(!A * C * !D * !X)	-0.00097	-0.00097	-0.00096
	(!A * C * !D * !X)	0.00209	0.00206	0.00203
	(!A * !C * !X)	-0.00098	-0.00098	-0.00098
	(!A * !C * !X)	0.00213	0.00212	0.00206

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)**	0.00039	0.00039	0.00039
	(A * B * !D * !X)	-0.00085	-0.00085	-0.00085
	(A * !B * D * !X)	0.00074	0.00074	0.00074
	(A * !B * D * !X)	-0.00087	-0.00087	-0.00087
	(A * !B * !D * !X)	0.00044	0.00044	0.00044
	(A * !B * !D * !X)	-0.00087	-0.00087	-0.00087
	(!A * B * D * !X)	0.00072	0.00072	0.00072
	(!A * B * D * !X)	-0.00087	-0.00087	-0.00087
	(!A * B * !D * !X)	0.00043	0.00044	0.00043
	(!A * B * !D * !X)	-0.00087	-0.00088	-0.00087
	(!A * !B * D * !X)	0.00073	0.00074	0.00074
	(!A * !B * D * !X)	-0.00087	-0.00087	-0.00087
	(!A * !B * !D * !X)	0.00045	0.00045	0.00045
	(!A * !B * !D * !X)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00042	0.00043	0.00043
	(A * B * !D * !X)	-0.00100	-0.00100	-0.00099
	(A * !B * D * !X)	0.00083	0.00083	0.00083
	(A * !B * D * !X)	-0.00101	-0.00101	-0.00101
	(A * !B * !D * !X)	0.00049	0.00049	0.00049
	(A * !B * !D * !X)	-0.00101	-0.00101	-0.00101
	(!A * B * D * !X)	0.00080	0.00080	0.00080
	(!A * B * D * !X)	-0.00100	-0.00101	-0.00101
	(!A * B * !D * !X)	0.00048	0.00047	0.00047
	(!A * B * !D * !X)	-0.00101	-0.00101	-0.00101
	(!A * !B * D * !X)	0.00083	0.00083	0.00083
	(!A * !B * D * !X)	-0.00101	-0.00101	-0.00101
	(!A * !B * !D * !X)	0.00051	0.00051	0.00050
	(!A * !B * !D * !X)	-0.00101	-0.00101	-0.00101
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00107	0.00108	0.00108
	(A * B * !D * !X)	-0.00210	-0.00210	-0.00210
	(A * !B * D * !X)	0.00180	0.00180	0.00180
	(A * !B * D * !X)	-0.00209	-0.00210	-0.00210
	(A * !B * !D * !X)	0.00119	0.00119	0.00119
	(A * !B * !D * !X)	-0.00211	-0.00211	-0.00211
	(!A * B * D * !X)	0.00175	0.00176	0.00176
	(!A * B * D * !X)	-0.00210	-0.00210	-0.00209
	(!A * B * !D * !X)	0.00117	0.00117	0.00116
	(!A * B * !D * !X)	-0.00211	-0.00211	-0.00210
	(!A * !B * D * !X)	0.00180	0.00180	0.00180
	(!A * !B * D * !X)	-0.00209	-0.00210	-0.00210
	(!A * !B * !D * !X)	0.00122	0.00123	0.00122
	(!A * !B * !D * !X)	-0.00211	-0.00211	-0.00211

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)	-0.00038	-0.00038	-0.00037
	(A * B * !D * !X)	0.00089	0.00088	0.00087
	(A * !B * D * !X)	-0.00071	-0.00074	-0.00074
	(A * !B * D * !X)	0.00088	0.00088	0.00087
	(A * !B * !D * !X)	-0.00044	-0.00044	-0.00044
	(A * !B * !D * !X)	0.00089	0.00088	0.00087
	(!A * B * D * !X)	-0.00066	-0.00072	-0.00072
	(!A * B * D * !X)	0.00087	0.00088	0.00087
	(!A * B * !D * !X)	-0.00043	-0.00044	-0.00043
	(!A * B * !D * !X)	0.00088	0.00088	0.00087
	(!A * !B * D * !X)	-0.00072	-0.00074	-0.00074
	(!A * !B * D * !X)	0.00088	0.00088	0.00087
	(!A * !B * !D * !X)	-0.00045	-0.00045	-0.00045
	(!A * !B * !D * !X)	0.00088	0.00088	0.00087
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00040	-0.00041	-0.00041
	(A * B * !D * !X)	0.00101	0.00102	0.00101
	(A * !B * D * !X)	-0.00079	-0.00083	-0.00083
	(A * !B * D * !X)	0.00101	0.00102	0.00101
	(A * !B * !D * !X)	-0.00049	-0.00049	-0.00049
	(A * !B * !D * !X)	0.00101	0.00102	0.00101
	(!A * B * D * !X)	-0.00074	-0.00080	-0.00080
	(!A * B * D * !X)	0.00101	0.00102	0.00101
	(!A * B * !D * !X)	-0.00048	-0.00047	-0.00047
	(!A * B * !D * !X)	0.00101	0.00101	0.00101
	(!A * !B * D * !X)	-0.00079	-0.00083	-0.00083
	(!A * !B * D * !X)	0.00101	0.00102	0.00101
	(!A * !B * !D * !X)	-0.00051	-0.00051	-0.00050
	(!A * !B * !D * !X)	0.00101	0.00101	0.00101

sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	-0.00106	-0.00106	-0.00106
	(A * B * !D * !X)	0.00211	0.00212	0.00211
	(A * !B * D * !X)	-0.00172	-0.00180	-0.00180
	(A * !B * D * !X)	0.00209	0.00211	0.00210
	(A * !B * !D * !X)	-0.00119	-0.00119	-0.00119
	(A * !B * !D * !X)	0.00211	0.00212	0.00211
	(!A * B * D * !X)	-0.00165	-0.00176	-0.00176
	(!A * B * D * !X)	0.00211	0.00211	0.00210
	(!A * B * !D * !X)	-0.00117	-0.00117	-0.00116
	(!A * B * !D * !X)	0.00211	0.00212	0.00211
	(!A * !B * D * !X)	-0.00172	-0.00180	-0.00180
	(!A * !B * D * !X)	0.00209	0.00211	0.00210
	(!A * !B * !D * !X)	-0.00122	-0.00123	-0.00122
	(!A * !B * !D * !X)	0.00212	0.00212	0.00212

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)**	0.00072	0.00073	0.00072
	(A * B * !C * !X)	-0.00096	-0.00097	-0.00097
	(A * !B * C * !X)	0.00070	0.00070	0.00070
	(A * !B * C * !X)	-0.00097	-0.00097	-0.00097
	(A * !B * !C * !X)	0.00072	0.00073	0.00072
	(A * !B * !C * !X)	-0.00096	-0.00097	-0.00097
	(!A * B * C * !X)	0.00069	0.00070	0.00070
	(!A * B * C * !X)	-0.00096	-0.00097	-0.00097
	(!A * !C * !X)	0.00072	0.00073	0.00072
	(!A * !C * !X)	-0.00096	-0.00097	-0.00097
	(!A * !B * C * !X)	0.00071	0.00071	0.00071
	(!A * !B * C * !X)	-0.00097	-0.00097	-0.00097

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00085	0.00085	0.00084
	(A * B * !C * !X)	-0.00104	-0.00105	-0.00104
	(A * !B * C * !X)	0.00083	0.00084	0.00083
	(A * !B * C * !X)	-0.00105	-0.00105	-0.00104
	(A * !B * !C * !X)	0.00085	0.00085	0.00084
	(A * !B * !C * !X)	-0.00104	-0.00105	-0.00104
	(!A * B * C * !X)	0.00082	0.00083	0.00082
	(!A * B * C * !X)	-0.00104	-0.00105	-0.00104
	(!A * !C * !X)	0.00085	0.00085	0.00084
	(!A * !C * !X)	-0.00104	-0.00105	-0.00104
	(!A * !B * C * !X)	0.00083	0.00083	0.00083
	(!A * !B * C * !X)	-0.00105	-0.00105	-0.00104
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00139	0.00141	0.00139
	(A * B * !C * !X)	-0.00204	-0.00205	-0.00204
	(A * !B * C * !X)	0.00137	0.00138	0.00137
	(A * !B * C * !X)	-0.00204	-0.00205	-0.00204
	(A * !B * !C * !X)	0.00140	0.00140	0.00140
	(A * !B * !C * !X)	-0.00204	-0.00205	-0.00204
	(!A * B * C * !X)	0.00135	0.00135	0.00135
	(!A * B * C * !X)	-0.00204	-0.00204	-0.00204
	(!A * !C * !X)	0.00139	0.00140	0.00139
	(!A * !C * !X)	-0.00204	-0.00205	-0.00204
	(!A * !B * C * !X)	0.00137	0.00138	0.00137
	(!A * !B * C * !X)	-0.00204	-0.00205	-0.00204

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)**	-0.00069	-0.00073	-0.00072
	(A * B * !C * !X)	0.00097	0.00099	0.00097
	(A * !B * C * !X)	-0.00066	-0.00070	-0.00070
	(A * !B * C * !X)	0.00097	0.00098	0.00097
	(A * !B * !C * !X)	-0.00070	-0.00073	-0.00072
	(A * !B * !C * !X)	0.00097	0.00098	0.00097
	(!A * B * C * !X)	-0.00065	-0.00070	-0.00070
	(!A * B * C * !X)	0.00096	0.00098	0.00097
	(!A * !C * !X)	-0.00070	-0.00073	-0.00072
	(!A * !C * !X)	0.00097	0.00098	0.00097
	(!A * !B * C * !X)	-0.00066	-0.00071	-0.00071
	(!A * !B * C * !X)	0.00097	0.00098	0.00097
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00082	-0.00085	-0.00084
	(A * B * !C * !X)	0.00104	0.00106	0.00105
	(A * !B * C * !X)	-0.00079	-0.00084	-0.00083
	(A * !B * C * !X)	0.00105	0.00105	0.00105
	(A * !B * !C * !X)	-0.00082	-0.00085	-0.00084
	(A * !B * !C * !X)	0.00104	0.00106	0.00105
	(!A * B * C * !X)	-0.00077	-0.00083	-0.00082
	(!A * B * C * !X)	0.00105	0.00105	0.00105
	(!A * !C * !X)	-0.00082	-0.00085	-0.00084
	(!A * !C * !X)	0.00104	0.00106	0.00105
	(!A * !B * C * !X)	-0.00079	-0.00083	-0.00083
	(!A * !B * C * !X)	0.00105	0.00105	0.00105

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00135	-0.00141	-0.00139
	(A * B * !C * !X)	0.00206	0.00207	0.00205
	(A * !B * C * !X)	-0.00129	-0.00138	-0.00137
	(A * !B * C * !X)	0.00205	0.00206	0.00205
	(A * !B * !C * !X)	-0.00136	-0.00140	-0.00140
	(A * !B * !C * !X)	0.00206	0.00207	0.00205
	(!A * B * C * !X)	-0.00125	-0.00135	-0.00135
	(!A * B * C * !X)	0.00204	0.00206	0.00205
	(!A * !C * !X)	-0.00135	-0.00140	-0.00139
	(!A * !C * !X)	0.00205	0.00207	0.00205
	(!A * !B * C * !X)	-0.00129	-0.00138	-0.00137
	(!A * !B * C * !X)	0.00205	0.00206	0.00205

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00239	0.63545
sky130_fd_sc_hs__buf_16	0.01535	9.84066
sky130_fd_sc_hs__buf_2	0.00255	1.22103
sky130_fd_sc_hs__buf_4	0.00348	2.48667
sky130_fd_sc_hs__buf_8	0.00787	4.80115
sky130_fd_sc_hs__bufbuf_16	0.00283	9.82773
sky130_fd_sc_hs__bufbuf_8	0.00223	4.82727

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.05382	0.08740
sky130_fd_sc_hs__buf_16	0.00000	0.23897	0.31146
sky130_fd_sc_hs__buf_2	0.00000	0.04616	0.05131
sky130_fd_sc_hs__buf_4	0.00000	0.12904	0.18203
sky130_fd_sc_hs__buf_8	0.00000	0.11948	0.15573
sky130_fd_sc_hs__bufbuf_16	0.00000	0.28242	0.36940
sky130_fd_sc_hs__bufbuf_8	0.00000	0.17330	0.17596

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)**	0.08715	0.81833	7.34237
sky130_fd_sc_hs__buf_16	**A->X (RR)**	0.08647	0.49500	7.45509
sky130_fd_sc_hs__buf_2	**A->X (RR)**	0.08762	0.72297	7.37574
sky130_fd_sc_hs__buf_4	**A->X (RR)**	0.10349	0.68463	7.82507
sky130_fd_sc_hs__buf_8	**A->X (RR)**	0.08629	0.55938	7.51520
sky130_fd_sc_hs__bufbuf_16	**A->X (RR)**	0.27038	0.69761	7.77749
sky130_fd_sc_hs__bufbuf_8	**A->X (RR)**	0.29994	0.74294	7.57868

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	**A->X (FF)**	0.11517	0.66515	4.14893
sky130_fd_sc_hs__buf_16	**A->X (FF)**	0.14564	0.66649	4.92378
sky130_fd_sc_hs__buf_2	**A->X (FF)**	0.14276	0.71849	4.64925
sky130_fd_sc_hs__buf_4	**A->X (FF)**	0.13558	0.66642	4.51259
sky130_fd_sc_hs__buf_8	**A->X (FF)**	0.14805	0.69492	5.05098
sky130_fd_sc_hs__bufbuf_16	**A->X (FF)**	0.35680	0.88800	5.04955
sky130_fd_sc_hs__bufbuf_8	**A->X (FF)**	0.30615	0.78142	4.25565

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00404	0.00388	0.00501
	A	0.00187	0.00171	0.00286
sky130_fd_sc_hs__buf_16	A	0.03984	0.04022	0.04742
	A	0.02589	0.02629	0.03366
sky130_fd_sc_hs__buf_2	A	0.00590	0.00586	0.00682
	A	0.00358	0.00356	0.00456
sky130_fd_sc_hs__buf_4	A	0.00944	0.00959	0.01154
	A	0.00627	0.00643	0.00864
sky130_fd_sc_hs__buf_8	A	0.02030	0.02050	0.02367
	A	0.01313	0.01337	0.01655
sky130_fd_sc_hs__bufbuf_16	A	0.04750	0.05043	0.05176
	A	0.04492	0.04797	0.05058
sky130_fd_sc_hs__bufbuf_8	A	0.02374	0.02511	0.02655
	A	0.02172	0.02313	0.02509

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	**A**	0.00191	0.00198	0.00383
	A	0.00408	0.00412	0.00589
sky130_fd_sc_hs__buf_16	**A**	0.02567	0.02757	0.03870
	A	0.03963	0.04132	0.05028
sky130_fd_sc_hs__buf_2	**A**	0.00327	0.00349	0.00521
	A	0.00559	0.00575	0.00717
sky130_fd_sc_hs__buf_4	**A**	0.00666	0.00741	0.01108
	A	0.00981	0.01038	0.01347
sky130_fd_sc_hs__buf_8	**A**	0.01282	0.01364	0.01921
	A	0.01998	0.02078	0.02503
sky130_fd_sc_hs__bufbuf_16	**A**	0.04501	0.04776	0.05199
	A	0.04758	0.05081	0.05227
sky130_fd_sc_hs__bufbuf_8	**A**	0.02123	0.02291	0.02610
	A	0.02326	0.02491	0.02676

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00252	0.63866
sky130_fd_sc_hs__clkbuf_16	0.00843	9.94372
sky130_fd_sc_hs__clkbuf_2	0.00253	1.16078
sky130_fd_sc_hs__clkbuf_4	0.00231	2.47055
sky130_fd_sc_hs__clkbuf_8	0.00433	4.83704

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkbuf_1	0.00000	0.01910	0.01910
sky130_fd_sc_hs__clkbuf_16	0.00000	0.19096	0.29372
sky130_fd_sc_hs__clkbuf_2	0.00000	0.02865	0.03721
sky130_fd_sc_hs__clkbuf_4	0.00000	0.04774	0.07343
sky130_fd_sc_hs__clkbuf_8	0.00000	0.09548	0.14686

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)**	0.09158	0.84030	7.45228
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.11858	0.60609	8.02810
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.09854	0.77027	7.60528
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.12526	0.74888	8.07919
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.11823	0.66103	7.95772

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.10664	0.78178	5.84236
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.16888	0.75522	6.76518
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.12922	0.77821	5.93239
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.17117	0.83232	6.73421
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.16386	0.77997	6.67831

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00389	0.00371	0.00437
	A	0.00162	0.00142	0.00209
sky130_fd_sc_hs__clkbuf_16	A	0.02998	0.03077	0.03390
	A	0.02232	0.02311	0.02686
sky130_fd_sc_hs__clkbuf_2	A	0.00523	0.00509	0.00563
	A	0.00300	0.00292	0.00354
sky130_fd_sc_hs__clkbuf_4	A	0.00804	0.00819	0.00880
	A	0.00593	0.00610	0.00682
sky130_fd_sc_hs__clkbuf_8	A	0.01531	0.01571	0.01708
	A	0.01137	0.01178	0.01347

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00157	0.00152	0.00253
	A	0.00387	0.00380	0.00481
sky130_fd_sc_hs__clkbuf_16	A	0.01964	0.02149	0.02623
	A	0.02733	0.02914	0.03388
sky130_fd_sc_hs__clkbuf_2	A	0.00245	0.00249	0.00340
	A	0.00468	0.00471	0.00562
sky130_fd_sc_hs__clkbuf_4	A	0.00507	0.00554	0.00659
	A	0.00716	0.00765	0.00864
sky130_fd_sc_hs__clkbuf_8	A	0.00984	0.01085	0.01334
	A	0.01378	0.01478	0.01690

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00239	0.64729
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00242	0.64690
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00244	0.65429
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00237	0.65085
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00241	0.64365
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00244	0.64167

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.04163	0.04606
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.01936	0.03672
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.01937	0.03672
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.08671	0.09113
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.01989	0.03725
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.01992	0.03726

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)**	0.16148	1.06207	8.78196
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.17566	1.08582	8.85347
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.19688	1.13135	9.10147
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.28793	1.18961	8.95443
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.42635	1.33562	9.09845
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.80389	1.73544	9.63145

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.14690	0.65148	4.36263
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.23950	0.77258	4.62059
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.45957	1.05378	5.08485
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.27689	0.78375	4.51346
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.50757	1.04231	4.87689
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	1.10595	1.70407	5.66662

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00320	0.00310	0.00422
	A	0.00537	0.00527	0.00647
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00337	0.00323	0.00420
	A	0.00557	0.00544	0.00646
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00365	0.00346	0.00425
	A	0.00587	0.00569	0.00649
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.00704	0.00683	0.00784
	A	0.00920	0.00900	0.01007
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.00755	0.00733	0.00819
	A	0.00975	0.00951	0.01040
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.00859	0.00836	0.00905
	A	0.01081	0.01060	0.01130

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00532	0.00512	0.00605
	A	0.00314	0.00295	0.00374
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00555	0.00547	0.00636
	A	0.00334	0.00321	0.00390
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00634	0.00620	0.00738
	A	0.00411	0.00400	0.00466
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.00905	0.00881	0.01010
	A	0.00688	0.00665	0.00730
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.00962	0.00942	0.01034
	A	0.00742	0.00724	0.00784
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.01140	0.01125	0.01246
	A	0.00917	0.00903	0.00963

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00304	0.94882
sky130_fd_sc_hs__clkinv_16	0.04482	14.61460
sky130_fd_sc_hs__clkinv_2	0.00578	1.78256
sky130_fd_sc_hs__clkinv_4	0.01144	3.53939
sky130_fd_sc_hs__clkinv_8	0.02291	6.88049

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkinv_1	0.00000	0.08428	0.16757
sky130_fd_sc_hs__clkinv_16	0.00000	0.22521	0.43466
sky130_fd_sc_hs__clkinv_2	0.00000	0.02815	0.05433
sky130_fd_sc_hs__clkinv_4	0.00000	0.05630	0.10867
sky130_fd_sc_hs__clkinv_8	0.00000	0.11261	0.21733

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)**	0.03835	0.92007	11.44980
sky130_fd_sc_hs__clkinv_16	**A->Y (FR)**	0.02903	0.63934	11.97830
sky130_fd_sc_hs__clkinv_2	**A->Y (FR)**	0.03684	0.86163	11.96600
sky130_fd_sc_hs__clkinv_4	**A->Y (FR)**	0.03267	0.77428	11.94910
sky130_fd_sc_hs__clkinv_8	**A->Y (FR)**	0.03274	0.70593	11.90200

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	**A->Y (RF)**	0.03561	0.80091	9.95289
sky130_fd_sc_hs__clkinv_16	**A->Y (RF)**	0.02668	0.49087	10.00530
sky130_fd_sc_hs__clkinv_2	**A->Y (RF)**	0.03197	0.69614	9.61357
sky130_fd_sc_hs__clkinv_4	**A->Y (RF)**	0.02888	0.61903	9.69479
sky130_fd_sc_hs__clkinv_8	**A->Y (RF)**	0.02914	0.54862	9.68277

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00013	-0.00008	0.00012
	A	0.00262	0.00270	0.00292
sky130_fd_sc_hs__clkinv_16	A	-0.00663	-0.00576	-0.00355
	A	0.03400	0.03520	0.03875
sky130_fd_sc_hs__clkinv_2	A	-0.00049	-0.00040	-0.00021
	A	0.00476	0.00484	0.00523
sky130_fd_sc_hs__clkinv_4	A	-0.00116	-0.00091	-0.00046
	A	0.00920	0.00947	0.01031
sky130_fd_sc_hs__clkinv_8	A	-0.00224	-0.00189	-0.00061
	A	0.01857	0.01876	0.02094

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00210	0.00210	0.00222
	A	-0.00066	-0.00067	-0.00060
sky130_fd_sc_hs__clkinv_16	A	0.02918	0.02870	0.03197
	A	-0.01147	-0.01197	-0.00891
sky130_fd_sc_hs__clkinv_2	A	0.00418	0.00410	0.00437
	A	-0.00106	-0.00106	-0.00087
sky130_fd_sc_hs__clkinv_4	A	0.00756	0.00770	0.00810
	A	-0.00281	-0.00280	-0.00228
sky130_fd_sc_hs__clkinv_8	A	0.01496	0.01511	0.01636
	A	-0.00579	-0.00603	-0.00468

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00153	0.64304
sky130_fd_sc_hs__dlymetal6s4s_1	0.00153	0.64124
sky130_fd_sc_hs__dlymetal6s6s_1	0.00153	0.63821

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.03966	0.05729
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.03966	0.05729
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.03966	0.05729

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)**	0.10651	0.84760	7.39242
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.21610	0.95756	7.44537
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.31296	1.05149	7.50546

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.17614	0.82302	5.16980
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.35496	0.99256	5.16764
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.52515	1.16610	5.33039

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01033	0.00999	0.01067
	A	0.00894	0.00860	0.00929
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01033	0.00997	0.01077
	A	0.00894	0.00858	0.00939
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01036	0.01019	0.01049
	A	0.00897	0.00880	0.00910

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.00871	0.00855	0.00887
	A	0.01011	0.00994	0.01022
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.00873	0.00849	0.00899
	A	0.01013	0.00987	0.01031
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.00876	0.00864	0.00899
	A	0.01016	0.01002	0.01036

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00167	0.00164	0.00516	0.00283	0.63906	0.60434
sky130_fd_sc_hs__dfbbn_2	0.00168	0.00166	0.00509	0.00283	1.25187	1.21974

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	0.24958	0.47761
sky130_fd_sc_hs__dfbbn_2	0.00000	0.24900	0.45964

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)	0.70925	1.66601	9.93568
	SET_B->Q (FR)	0.32993	1.30739	9.78484
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.80835	1.63004	10.03190
	SET_B->Q (FR)	0.38291	1.23788	9.98041

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)	0.69188	1.30348	5.23203
	RESET_B->Q (FF)	0.41003	1.03030	4.96552
	SET_B->Q (RF)	0.22606	0.65102	3.17027
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.75562	1.32982	5.24039
	RESET_B->Q (FF)	0.47305	1.05785	5.01717
	SET_B->Q (RF)	0.28716	0.69241	3.37059

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)	0.63633	1.63260	9.91532
	RESET_B->Q_N (FR)	0.35632	1.36695	9.68065
	SET_B->Q_N (RR)	0.17187	0.99041	7.97739
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.64415	1.51731	9.86103
	RESET_B->Q_N (FR)	0.36371	1.24786	9.65698
	SET_B->Q_N (RR)	0.17834	0.88691	8.07331

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)	0.58526	1.28643	5.23865
	SET_B->Q_N (FF)	0.22396	0.90470	5.39253
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.64813	1.34293	5.30503
	SET_B->Q_N (FF)	0.24946	0.91205	5.58106

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)	0.04289	0.12780	1.62293
	setup	CLK_N (F)	0.18197	0.06231	-1.56328
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.04229	0.12936	1.62937
	setup	CLK_N (F)	0.16953	0.04814	-1.57611

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)	-0.27631	-0.36452	-1.71613
	setup	CLK_N (F)	0.32479	0.40581	1.80974
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.27623	-0.36565	-1.71706
	setup	CLK_N (F)	0.32478	0.40356	1.81033

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)	0.04289	0.12780	1.62293
	setup	CLK_N (F)	0.18197	0.06231	-1.56328
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.04229	0.12936	1.62937
	setup	CLK_N (F)	0.16953	0.04814	-1.57611

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)	-0.27631	-0.36452	-1.71613
	setup	CLK_N (F)	0.32479	0.40581	1.80974
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.27623	-0.36565	-1.71706
	setup	CLK_N (F)	0.32478	0.40356	1.81033

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)	0.17595	0.06365	-1.65984
	removal	CLK_N (F)	0.06809	0.15515	1.75614
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.16454	0.05125	-1.66546
	removal	CLK_N (F)	0.06784	0.15500	1.75793

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)	0.17595	0.06365	-1.65984
	removal	CLK_N (F)	0.06809	0.15515	1.75614
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.16454	0.05125	-1.66546
	removal	CLK_N (F)	0.06784	0.15500	1.75793

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 ()	0.37488	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.32210	0.83740	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.38729	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.33142	0.83740	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)	-0.06352	-0.18646	-1.51658
	removal	CLK_N (F)	0.08692	0.21282	1.97929
	hold	RESET_B (R)	-0.08629	-0.16685	-0.77306
	setup	RESET_B (R)	0.19779	0.24450	1.09042
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.06691	-0.18846	-1.24414
	removal	CLK_N (F)	0.08692	0.21282	1.98227
	hold	RESET_B (R)	-0.11715	-0.19963	-0.93245
	setup	RESET_B (R)	0.21068	0.27600	1.29470

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)	-0.06352	-0.18646	-1.51658
	removal	CLK_N (F)	0.08692	0.21282	1.97929
	hold	RESET_B (R)	-0.08729	-0.16685	-0.77306
	hold	RESET_B (R)	-0.08629	-0.16692	-0.77377
	setup	RESET_B (R)	0.19779	0.24450	1.09042
	setup	RESET_B (R)	0.14409	0.21194	1.08478
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.06691	-0.18846	-1.24414
	removal	CLK_N (F)	0.08692	0.21282	1.98227
	hold	RESET_B (R)	-0.12562	-0.21741	-1.02260
	hold	RESET_B (R)	-0.11715	-0.19963	-0.93245
	setup	RESET_B (R)	0.21068	0.27600	1.29470
	setup	RESET_B (R)	0.15174	0.26047	1.26210

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 ()	0.25071	0.83740	16.50020
	min_pulse_width	SET_B ()	0.22898	0.83740	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.30037	0.83740	16.50020
	min_pulse_width	SET_B ()	0.26933	0.83740	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 ()	0.30969	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.26623	0.83740	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.30037	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.26623	0.83740	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 ()	0.32521	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.38729	0.83740	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.38419	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.40281	0.83740	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	0.00792	0.00795	0.00857
	CLK_N	0.00919	0.00922	0.00977
	SET_B	0.00819	0.00808	0.00956
	SET_B	0.01055	0.01044	0.01186
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00951	0.00975	0.01084
	CLK_N	0.01080	0.01104	0.01170
	SET_B	0.00975	0.00982	0.01163
	SET_B	0.01211	0.01218	0.01368

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00874	0.00879	0.00939
	CLK_N	0.00990	0.00995	0.01043
	RESET_B	0.01034	0.01040	0.01064
	RESET_B	0.01102	0.01107	0.01124
	SET_B	0.01078	0.01064	0.01092
	SET_B	0.00840	0.00827	0.00851
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01036	0.01063	0.01114
	CLK_N	0.01151	0.01177	0.01225
	RESET_B	0.01198	0.01229	0.01258
	RESET_B	0.01266	0.01296	0.01311
	SET_B	0.01242	0.01251	0.01277
	SET_B	0.01005	0.01012	0.01033

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00875	0.00880	0.00940
	CLK_N	0.00991	0.00996	0.01054
	RESET_B	0.01035	0.01041	0.01079
	RESET_B	0.01103	0.01108	0.01137
	SET_B	0.01079	0.01069	0.01105
	SET_B	0.00842	0.00827	0.00865
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01037	0.01064	0.01130
	CLK_N	0.01152	0.01179	0.01243
	RESET_B	0.01199	0.01229	0.01286
	RESET_B	0.01267	0.01297	0.01331
	SET_B	0.01243	0.01254	0.01293
	SET_B	0.01006	0.01013	0.01052

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00790	0.00793	0.00851
	CLK_N	0.00918	0.00920	0.00967
	SET_B	0.00815	0.00804	0.00933
	SET_B	0.01051	0.01040	0.01168
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00949	0.00973	0.01044
	CLK_N	0.01078	0.01102	0.01150
	SET_B	0.00971	0.00981	0.01118
	SET_B	0.01207	0.01216	0.01343

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)	0.00618	0.00599	0.00627
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00495	0.00476	0.00504
	(CLK_N * !SET_B * Q * !Q_N)	0.00400	0.00391	0.00420
	(CLK_N * !SET_B * Q * !Q_N)	0.00245	0.00236	0.00265
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00346	0.00336	0.00365
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00193	0.00184	0.00212
	!CLK_N	0.00216	0.00204	0.00243
	!CLK_N	0.00063	0.00051	0.00090
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00620	0.00601	0.00629
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00497	0.00477	0.00506
	(CLK_N * !SET_B * Q * !Q_N)	0.00401	0.00392	0.00421
	(CLK_N * !SET_B * Q * !Q_N)	0.00246	0.00236	0.00266
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00344	0.00335	0.00363
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00191	0.00182	0.00210
	!CLK_N	0.00215	0.00204	0.00242
	!CLK_N	0.00063	0.00051	0.00089

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)	0.00591	0.00574	0.00602
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00713	0.00696	0.00724
	(CLK_N * !SET_B * Q * !Q_N)	0.00169	0.00159	0.00188
	(CLK_N * !SET_B * Q * !Q_N)	0.00324	0.00314	0.00343
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00217	0.00207	0.00239
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00370	0.00359	0.00392
	!CLK_N	0.00092	0.00082	0.00120
	!CLK_N	0.00244	0.00235	0.00273
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00589	0.00573	0.00600
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00712	0.00696	0.00723
	(CLK_N * !SET_B * Q * !Q_N)	0.00165	0.00155	0.00184
	(CLK_N * !SET_B * Q * !Q_N)	0.00320	0.00310	0.00339
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00216	0.00205	0.00238
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00368	0.00358	0.00391
	!CLK_N	0.00090	0.00080	0.00119
	!CLK_N	0.00242	0.00233	0.00272

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)	0.00674	0.00653	0.00712
	(CLK_N * D * SET_B * !Q * Q_N)	0.00528	0.00506	0.00565
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00399	0.00387	0.00453
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00222	0.00210	0.00276
	(!SET_B * Q * !Q_N)	0.00400	0.00387	0.00456
	(!SET_B * Q * !Q_N)	0.00219	0.00206	0.00275
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00677	0.00656	0.00714
	(CLK_N * D * SET_B * !Q * Q_N)	0.00528	0.00506	0.00564
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00398	0.00386	0.00452
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00219	0.00207	0.00273
	(!SET_B * Q * !Q_N)	0.00401	0.00388	0.00457
	(!SET_B * Q * !Q_N)	0.00218	0.00204	0.00274

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)	0.00597	0.00587	0.00677
	(CLK_N * D * SET_B * !Q * Q_N)	0.00744	0.00733	0.00824
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00197	0.00191	0.00288
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00375	0.00369	0.00465
	(!SET_B * Q * !Q_N)	0.00142	0.00137	0.00236
	(!SET_B * Q * !Q_N)	0.00325	0.00320	0.00417
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00599	0.00589	0.00679
	(CLK_N * D * SET_B * !Q * Q_N)	0.00749	0.00738	0.00829
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00199	0.00193	0.00289
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00378	0.00373	0.00468
	(!SET_B * Q * !Q_N)	0.00142	0.00138	0.00236
	(!SET_B * Q * !Q_N)	0.00327	0.00322	0.00420

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)	0.00194	0.00195	0.00194
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00215	-0.00215	-0.00215
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00625	0.00607	0.00674
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00178	0.00160	0.00226
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00191	0.00193	0.00192
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00213	-0.00214	-0.00213
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00624	0.00608	0.00675
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00183	0.00163	0.00230

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)	-0.00190	-0.00195	-0.00194
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00215	0.00218	0.00216
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00068	0.00055	0.00212
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00515	0.00504	0.00661
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00188	-0.00193	-0.00192
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00215	0.00216	0.00214
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00066	0.00052	0.00210
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00508	0.00498	0.00654

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)**	0.01166	0.01136	0.01238
	(D * RESET_B * SET_B * !Q * Q_N)	0.00954	0.00923	0.01025
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00750	0.00718	0.00803
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00508	0.00475	0.00560
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00892	0.00862	0.00961
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00650	0.00618	0.00718
	(!D * SET_B * !Q * Q_N)	0.00706	0.00671	0.00760
	(!D * SET_B * !Q * Q_N)	0.00463	0.00428	0.00518
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01230	0.01191	0.01261
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00958	0.00918	0.00987
	(!D * !SET_B * Q * !Q_N)	0.00794	0.00753	0.00835
	(!D * !SET_B * Q * !Q_N)	0.00553	0.00512	0.00594

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01170	0.01139	0.01240
	(D * RESET_B * SET_B * !Q * Q_N)	0.00957	0.00926	0.01028
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00749	0.00717	0.00802
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00507	0.00474	0.00559
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00893	0.00862	0.00962
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00651	0.00618	0.00719
	(!D * SET_B * !Q * Q_N)	0.00707	0.00671	0.00761
	(!D * SET_B * !Q * Q_N)	0.00464	0.00428	0.00518
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01231	0.01192	0.01261
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00959	0.00919	0.00988
	(!D * !SET_B * Q * !Q_N)	0.00790	0.00752	0.00831
	(!D * !SET_B * Q * !Q_N)	0.00550	0.00510	0.00590

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)	0.00574	0.00550	0.00669
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00817	0.00792	0.00912
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00801	0.00772	0.00881
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01044	0.01015	0.01124
	(!D * SET_B * !Q * Q_N)	0.00617	0.00593	0.00712
	(!D * SET_B * !Q * Q_N)	0.00859	0.00836	0.00954
	(!D * !SET_B * Q * !Q_N)	0.00786	0.00757	0.00874
	(!D * !SET_B * Q * !Q_N)	0.01027	0.00999	0.01116
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00575	0.00551	0.00669
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00817	0.00793	0.00912
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00799	0.00769	0.00879
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01041	0.01013	0.01122
	(!D * SET_B * !Q * Q_N)	0.00616	0.00592	0.00710
	(!D * SET_B * !Q * Q_N)	0.00858	0.00835	0.00953
	(!D * !SET_B * Q * !Q_N)	0.00789	0.00760	0.00876
	(!D * !SET_B * Q * !Q_N)	0.01029	0.01002	0.01118

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00146	0.00180	0.00602	0.00280	0.64420	0.59453

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfbbp_1	0.00000	0.24958	0.47761

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)	0.66963	1.42285	8.01513
	SET_B->Q (FR)	0.30412	1.28538	9.75131

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.49052	0.88730	3.20659
	RESET_B->Q (FF)	0.39488	1.01274	4.93279
	SET_B->Q (RF)	0.23000	0.64297	3.15921

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)	0.43774	1.21075	7.77981
	RESET_B->Q_N (FR)	0.34254	1.34595	9.53745
	SET_B->Q_N (RR)	0.17755	0.97897	7.85472

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)	0.54946	1.03417	3.21063
	SET_B->Q_N (FF)	0.20552	0.87394	5.25172

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)	-0.05492	-0.10930	-0.61152
	setup	CLK (R)	0.14715	0.16085	0.71297

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)	-0.19633	-0.32444	-2.87467
	setup	CLK (R)	0.31880	0.42255	3.06388

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)	-0.05492	-0.10930	-0.61152
	setup	CLK (R)	0.14715	0.16085	0.71297

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)	-0.19633	-0.32444	-2.87467
	setup	CLK (R)	0.31880	0.42255	3.06388

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)	0.15725	0.17223	0.41410
	removal	CLK (R)	-0.06199	-0.08528	-0.28625

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)	0.15725	0.17223	0.41410
	removal	CLK (R)	-0.06199	-0.08528	-0.28625

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 ()	0.32521	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.33452	0.83740	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)	0.02521	0.00400	1.41820
	removal	CLK (R)	0.11073	0.14108	0.34099
	hold	RESET_B (R)	-0.09255	-0.18293	-0.83183
	setup	RESET_B (R)	0.17592	0.24462	1.17964

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)	0.02521	0.00400	1.41820
	removal	CLK (R)	0.11073	0.14108	0.34099
	hold	RESET_B (R)	-0.09464	-0.18308	-0.83193
	hold	RESET_B (R)	-0.09255	-0.18293	-0.83183
	setup	RESET_B (R)	0.16542	0.23817	1.16524
	setup	RESET_B (R)	0.17592	0.24462	1.17964

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 ()	0.20725	0.83740	16.50020
	min_pulse_width	SET_B ()	0.21966	0.83740	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 ()	0.16379	0.83740	16.50020
	min_pulse_width	CLK ()	0.22587	0.83740	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 ()	0.30348	0.83740	16.50020
	min_pulse_width	CLK ()	0.44627	0.83740	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	0.00930	0.00934	0.00986
	CLK	0.00807	0.00813	0.00861
	SET_B	0.00813	0.00803	0.00962
	SET_B	0.01072	0.01061	0.01204

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00937	0.00933	0.00966
	CLK	0.00802	0.00799	0.00830
	RESET_B	0.00948	0.00952	0.00978
	RESET_B	0.01017	0.01022	0.01039
	SET_B	0.01025	0.01005	0.01031
	SET_B	0.00764	0.00745	0.00768

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00938	0.00933	0.00975
	CLK	0.00803	0.00798	0.00840
	RESET_B	0.00949	0.00953	0.00995
	RESET_B	0.01018	0.01023	0.01052
	SET_B	0.01026	0.01013	0.01045
	SET_B	0.00766	0.00746	0.00783

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00928	0.00933	0.00972
	CLK	0.00805	0.00811	0.00849
	SET_B	0.00809	0.00797	0.00936
	SET_B	0.01068	0.01058	0.01185

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00142	0.00135	0.00184
	CLK	0.00010	0.00001	0.00050
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00584	0.00567	0.00599
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00466	0.00448	0.00480
	(!CLK * !SET_B * Q * !Q_N)	0.00338	0.00331	0.00365
	(!CLK * !SET_B * Q * !Q_N)	0.00189	0.00181	0.00216
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00277	0.00270	0.00302
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00128	0.00121	0.00154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00005	-0.00008	0.00039
	CLK	0.00129	0.00125	0.00172
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00441	0.00426	0.00457
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00559	0.00544	0.00575
	(!CLK * !SET_B * Q * !Q_N)	0.00112	0.00105	0.00137
	(!CLK * !SET_B * Q * !Q_N)	0.00261	0.00255	0.00287
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00164	0.00158	0.00193
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00312	0.00305	0.00341

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)	0.00363	0.00350	0.00418
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00196	0.00182	0.00251
	(!SET_B * Q * !Q_N)	0.00392	0.00378	0.00450
	(!SET_B * Q * !Q_N)	0.00222	0.00207	0.00280
	(!CLK * D * SET_B * !Q * Q_N)	0.00679	0.00654	0.00714
	(!CLK * D * SET_B * !Q * Q_N)	0.00543	0.00516	0.00577

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)	0.00190	0.00182	0.00280
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00357	0.00349	0.00447
	(!SET_B * Q * !Q_N)	0.00106	0.00100	0.00200
	(!SET_B * Q * !Q_N)	0.00278	0.00272	0.00371
	(!CLK * D * SET_B * !Q * Q_N)	0.00505	0.00491	0.00584
	(!CLK * D * SET_B * !Q * Q_N)	0.00642	0.00627	0.00720

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)	0.00195	0.00195	0.00195
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00274	-0.00274	-0.00274
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00519	0.00500	0.00570
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00012	-0.00010	0.00062

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)	-0.00192	-0.00195	-0.00195
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00275	0.00278	0.00275
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00123	0.00106	0.00265
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00628	0.00614	0.00773

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)	0.00860	0.00829	0.00909
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00604	0.00570	0.00651
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01033	0.00993	0.01074
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00792	0.00750	0.00832
	(!D * SET_B * !Q * Q_N)	0.00867	0.00835	0.00918
	(!D * SET_B * !Q * Q_N)	0.00611	0.00577	0.00661
	(!D * !SET_B * Q * !Q_N)	0.01082	0.01055	0.01139
	(!D * !SET_B * Q * !Q_N)	0.00810	0.00781	0.00866

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)	0.00904	0.00871	0.00977
	(D * RESET_B * SET_B * !Q * Q_N)	0.01176	0.01143	0.01249
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00459	0.00435	0.00556
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00716	0.00693	0.00813
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00577	0.00549	0.00664
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00819	0.00791	0.00907
	(!D * SET_B * !Q * Q_N)	0.00450	0.00427	0.00545
	(!D * SET_B * !Q * Q_N)	0.00707	0.00684	0.00802
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00946	0.00924	0.01073
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01190	0.01168	0.01315
	(!D * !SET_B * Q * !Q_N)	0.00613	0.00593	0.00737
	(!D * !SET_B * Q * !Q_N)	0.00886	0.00866	0.01010

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00174	0.00544	0.00286	0.65817	0.64211
sky130_fd_sc_hs__dfrbp_2	0.00159	0.00522	0.00286	1.29832	1.27265

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.12216	0.22974
sky130_fd_sc_hs__dfrbp_2	0.00000	0.13184	0.21060

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)	0.42600	1.17702	7.88200
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.53085	1.16058	8.36805

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.35898	0.75902	3.00019
	RESET_B->Q (FF)	0.51229	1.16762	5.86034
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.40953	0.78039	3.06638
	RESET_B->Q (FF)	0.60052	1.23207	6.10069

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)	0.30551	1.08536	7.72441
	RESET_B->Q_N (FR)	0.45822	1.48721	10.57600
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.29505	0.95513	7.61263
	RESET_B->Q_N (FR)	0.48662	1.40494	10.64360

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)	0.32487	0.81579	3.07622
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.36353	0.85383	3.18521

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)	-0.08359	-0.18002	-1.01939
	setup	CLK (R)	0.20869	0.26328	1.15528
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08379	-0.18599	-1.08846
	setup	CLK (R)	0.22460	0.27606	1.23762

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)	-0.08289	-0.25112	-2.96094
	setup	CLK (R)	0.36043	0.46546	3.41590
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.12020	-0.30096	-3.30341
	setup	CLK (R)	0.39590	0.49816	3.55497

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)	-0.08359	-0.18002	-1.01939
	setup	CLK (R)	0.20869	0.26328	1.15528
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08379	-0.18599	-1.08846
	setup	CLK (R)	0.22460	0.27606	1.23762

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)	-0.08289	-0.25112	-2.96094
	setup	CLK (R)	0.36043	0.46546	3.41590
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.12020	-0.30096	-3.30341
	setup	CLK (R)	0.39590	0.49816	3.55497

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)	0.22127	0.26288	1.29972
	removal	CLK (R)	-0.14998	-0.22588	-1.24365
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.23583	0.27553	1.36473
	removal	CLK (R)	-0.16501	-0.23786	-1.31315

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)	0.22127	0.26288	1.29972
	removal	CLK (R)	-0.14998	-0.22588	-1.24365
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.23583	0.27553	1.36473
	removal	CLK (R)	-0.16501	-0.23786	-1.31315

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 ()	0.27554	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.21346	0.83740	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.29727	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.22277	0.83740	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 ()	0.25692	0.83740	16.50020
	min_pulse_width	CLK ()	0.13275	0.83740	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.36246	0.83740	16.50020
	min_pulse_width	CLK ()	0.15758	0.83740	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 ()	0.31589	0.83740	16.50020
	min_pulse_width	CLK ()	0.43075	0.83740	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.33142	0.83740	16.50020
	min_pulse_width	CLK ()	0.43385	0.83740	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	0.00866	0.00862	0.00903
	CLK	0.00736	0.00733	0.00773
sky130_fd_sc_hs__dfrbp_2	CLK	0.00945	0.00968	0.01153
	CLK	0.00817	0.00842	0.00934

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00884	0.00886	0.00938
	CLK	0.00752	0.00753	0.00805
	RESET_B	0.00676	0.00665	0.00720
	RESET_B	0.00935	0.00923	0.00952
sky130_fd_sc_hs__dfrbp_2	CLK	0.00978	0.01007	0.01059
	CLK	0.00851	0.00879	0.00931
	RESET_B	0.00849	0.00869	0.00895
	RESET_B	0.01090	0.01109	0.01132

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00885	0.00888	0.00953
	CLK	0.00753	0.00754	0.00821
	RESET_B	0.00676	0.00666	0.00721
	RESET_B	0.00936	0.00924	0.00963
sky130_fd_sc_hs__dfrbp_2	CLK	0.00979	0.01009	0.01088
	CLK	0.00852	0.00881	0.00958
	RESET_B	0.00805	0.00829	0.00994
	RESET_B	0.01091	0.01110	0.01152

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00865	0.00862	0.00893
	CLK	0.00735	0.00733	0.00763
sky130_fd_sc_hs__dfrbp_2	CLK	0.00944	0.00967	0.01007
	CLK	0.00817	0.00841	0.00877

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00229	0.00217	0.00257
	(CLK * RESET_B)	0.00055	0.00042	0.00082
	(CLK * !RESET_B)	0.00026	0.00026	0.00025
	(CLK * !RESET_B)	-0.00074	-0.00075	-0.00076
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00649	0.00637	0.00666
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00466	0.00454	0.00482
	(!CLK * !RESET_B)	0.00026	0.00026	0.00025
	(!CLK * !RESET_B)	-0.00074	-0.00075	-0.00076
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00264	0.00253	0.00290
	(CLK * RESET_B)	0.00112	0.00100	0.00138
	(CLK * !RESET_B)	0.00029	0.00029	0.00029
	(CLK * !RESET_B)	-0.00063	-0.00064	-0.00064
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00800	0.00790	0.00819
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00658	0.00648	0.00677
	(!CLK * !RESET_B)	0.00029	0.00029	0.00029
	(!CLK * !RESET_B)	-0.00063	-0.00064	-0.00064

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00036	0.00023	0.00063
	(CLK * RESET_B)	0.00211	0.00198	0.00238
	(CLK * !RESET_B)	-0.00025	-0.00025	-0.00024
	(CLK * !RESET_B)	0.00076	0.00077	0.00076
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00389	0.00373	0.00415
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00573	0.00556	0.00598
	(!CLK * !RESET_B)	-0.00025	-0.00025	-0.00024
	(!CLK * !RESET_B)	0.00076	0.00076	0.00076
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00057	0.00044	0.00082
	(CLK * RESET_B)	0.00210	0.00197	0.00234
	(CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B)	0.00065	0.00066	0.00065
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00481	0.00463	0.00497
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00624	0.00606	0.00640
	(!CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B)	0.00065	0.00065	0.00065

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)	0.00425	0.00413	0.00436
	(CLK * D * !Q * Q_N)	-0.00080	-0.00094	-0.00069
	(CLK * !D * !Q * Q_N)	0.00199	0.00200	0.00200
	(CLK * !D * !Q * Q_N)	-0.00221	-0.00222	-0.00222
	(!CLK * D * !Q * Q_N)	0.00863	0.00828	0.00854
	(!CLK * D * !Q * Q_N)	0.00352	0.00317	0.00343
	(!CLK * !D * !Q * Q_N)	0.00194	0.00196	0.00195
	(!CLK * !D * !Q * Q_N)	-0.00226	-0.00227	-0.00227
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00474	0.00466	0.00487
	(CLK * D * !Q * Q_N)	-0.00007	-0.00017	0.00005
	(CLK * !D * !Q * Q_N)	0.00218	0.00220	0.00218
	(CLK * !D * !Q * Q_N)	-0.00194	-0.00195	-0.00194
	(!CLK * D * !Q * Q_N)	0.01027	0.00993	0.01021
	(!CLK * D * !Q * Q_N)	0.00558	0.00524	0.00550
	(!CLK * !D * !Q * Q_N)	0.00216	0.00216	0.00215
	(!CLK * !D * !Q * Q_N)	-0.00198	-0.00198	-0.00197

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)	-0.00109	-0.00123	-0.00089
	(CLK * D * !Q * Q_N)	0.00395	0.00383	0.00416
	(CLK * !D * !Q * Q_N)	-0.00195	-0.00200	-0.00200
	(CLK * !D * !Q * Q_N)	0.00224	0.00223	0.00223
	(!CLK * D * !Q * Q_N)	0.00307	0.00268	0.00298
	(!CLK * D * !Q * Q_N)	0.00819	0.00780	0.00812
	(!CLK * !D * !Q * Q_N)	-0.00190	-0.00196	-0.00195
	(!CLK * !D * !Q * Q_N)	0.00229	0.00228	0.00227
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00110	-0.00122	-0.00088
	(CLK * D * !Q * Q_N)	0.00370	0.00361	0.00393
	(CLK * !D * !Q * Q_N)	-0.00213	-0.00219	-0.00218
	(CLK * !D * !Q * Q_N)	0.00197	0.00196	0.00195
	(!CLK * D * !Q * Q_N)	0.00382	0.00343	0.00373
	(!CLK * D * !Q * Q_N)	0.00851	0.00813	0.00843
	(!CLK * !D * !Q * Q_N)	-0.00210	-0.00216	-0.00215
	(!CLK * !D * !Q * Q_N)	0.00200	0.00199	0.00198

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)	0.00826	0.00794	0.00878
	(D * RESET_B * Q * !Q_N)	0.00565	0.00532	0.00616
	(D * !RESET_B * !Q * Q_N)	0.00851	0.00818	0.00904
	(D * !RESET_B * !Q * Q_N)	0.00590	0.00555	0.00642
	(!D * !Q * Q_N)	0.00851	0.00818	0.00904
	(!D * !Q * Q_N)	0.00590	0.00555	0.00642
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00750	0.00718	0.00808
	(D * RESET_B * Q * !Q_N)	0.00495	0.00462	0.00552
	(D * !RESET_B * !Q * Q_N)	0.00753	0.00721	0.00810
	(D * !RESET_B * !Q * Q_N)	0.00498	0.00465	0.00555
	(!D * !Q * Q_N)	0.00753	0.00721	0.00810
	(!D * !Q * Q_N)	0.00498	0.00465	0.00555

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)	0.00468	0.00445	0.00566
	(D * RESET_B * Q * !Q_N)	0.00729	0.00707	0.00828
	(D * RESET_B * !Q * Q_N)	0.00849	0.00819	0.00934
	(D * RESET_B * !Q * Q_N)	0.01102	0.01071	0.01188
	(D * !RESET_B * !Q * Q_N)	0.00437	0.00413	0.00534
	(D * !RESET_B * !Q * Q_N)	0.00698	0.00675	0.00797
	(!D * RESET_B * Q * !Q_N)	0.00877	0.00860	0.01006
	(!D * RESET_B * Q * !Q_N)	0.01147	0.01130	0.01277
	(!D * !Q * Q_N)	0.00436	0.00413	0.00535
	(!D * !Q * Q_N)	0.00698	0.00675	0.00796
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00471	0.00448	0.00570
	(D * RESET_B * Q * !Q_N)	0.00726	0.00703	0.00826
	(D * RESET_B * !Q * Q_N)	0.01036	0.01002	0.01111
	(D * RESET_B * !Q * Q_N)	0.01299	0.01265	0.01375
	(D * !RESET_B * !Q * Q_N)	0.00467	0.00443	0.00567
	(D * !RESET_B * !Q * Q_N)	0.00722	0.00699	0.00822
	(!D * RESET_B * Q * !Q_N)	0.00963	0.00942	0.01096
	(!D * RESET_B * Q * !Q_N)	0.01208	0.01187	0.01342
	(!D * !Q * Q_N)	0.00467	0.00445	0.00567
	(!D * !Q * Q_N)	0.00722	0.00701	0.00822

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00171	0.00515	0.00273	0.63458

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.11313	0.21046

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)	0.46229	1.44435	9.77740

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)	0.34220	0.95353	4.92217
	RESET_B->Q (FF)	0.47440	1.12603	5.73616

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)	0.06136	0.13993	1.54226
	setup	CLK_N (F)	0.09936	0.00818	-1.35305

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)	-0.08041	-0.14514	-1.39759
	setup	CLK_N (F)	0.43111	0.48679	1.85099

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)	0.06136	0.13993	1.54226
	setup	CLK_N (F)	0.09936	0.00818	-1.35305

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)	-0.08041	-0.14514	-1.39759
	setup	CLK_N (F)	0.43111	0.48679	1.85099

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)	0.11310	0.00289	-1.28022
	removal	CLK_N (F)	-0.02726	0.05824	1.32843

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)	0.11310	0.00289	-1.28022
	removal	CLK_N (F)	-0.02726	0.05824	1.32843

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 ()	0.20414	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.26933	0.83740	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 ()	0.21656	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.40902	0.83740	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 ()	0.27864	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.22277	0.83740	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	0.01350	0.01347	0.01525
	CLK_N	0.01594	0.01591	0.01772

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01260	0.01234	0.01364
	CLK_N	0.01498	0.01472	0.01584
	RESET_B	0.01213	0.01172	0.01268
	RESET_B	0.01691	0.01650	0.01718

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)	0.00642	0.00629	0.00659
	(CLK_N * RESET_B)	0.00481	0.00470	0.00498
	(CLK_N * !RESET_B)	0.00026	0.00026	0.00025
	(CLK_N * !RESET_B)	-0.00073	-0.00074	-0.00075
	(!CLK_N * RESET_B)	0.00223	0.00211	0.00251
	(!CLK_N * RESET_B)	0.00058	0.00045	0.00085
	(!CLK_N * !RESET_B)	0.00026	0.00026	0.00025
	(!CLK_N * !RESET_B)	-0.00074	-0.00074	-0.00075

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)	0.00449	0.00432	0.00471
	(CLK_N * RESET_B)	0.00609	0.00592	0.00631
	(CLK_N * !RESET_B)	-0.00025	-0.00025	-0.00025
	(CLK_N * !RESET_B)	0.00075	0.00076	0.00075
	(!CLK_N * RESET_B)	0.00041	0.00029	0.00069
	(!CLK_N * RESET_B)	0.00207	0.00194	0.00234
	(!CLK_N * !RESET_B)	-0.00025	-0.00025	-0.00025
	(!CLK_N * !RESET_B)	0.00076	0.00076	0.00075

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)	0.00853	0.00824	0.00848
	(CLK_N * D * !Q)	0.00379	0.00348	0.00374
	(CLK_N * !D * !Q)	0.00210	0.00211	0.00210
	(CLK_N * !D * !Q)	-0.00196	-0.00197	-0.00196
	(!CLK_N * D * !Q)	0.00405	0.00395	0.00419
	(!CLK_N * D * !Q)	-0.00075	-0.00086	-0.00062
	(!CLK_N * !D * !Q)	0.00206	0.00207	0.00205
	(!CLK_N * !D * !Q)	-0.00202	-0.00202	-0.00201

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)	0.00360	0.00325	0.00355
	(CLK_N * D * !Q)	0.00833	0.00799	0.00831
	(CLK_N * !D * !Q)	-0.00206	-0.00210	-0.00210
	(CLK_N * !D * !Q)	0.00198	0.00197	0.00197
	(!CLK_N * D * !Q)	-0.00097	-0.00108	-0.00073
	(!CLK_N * D * !Q)	0.00383	0.00374	0.00408
	(!CLK_N * !D * !Q)	-0.00201	-0.00206	-0.00205
	(!CLK_N * !D * !Q)	0.00203	0.00202	0.00202

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)	0.00788	0.00748	0.00834
	(D * RESET_B * Q)	0.00547	0.00507	0.00593
	(D * RESET_B * !Q)	0.01218	0.01182	0.01277
	(D * RESET_B * !Q)	0.00983	0.00946	0.01041
	(D * !RESET_B * !Q)	0.00776	0.00737	0.00821
	(D * !RESET_B * !Q)	0.00535	0.00496	0.00580
	(!D * RESET_B * Q)	0.01186	0.01137	0.01211
	(!D * RESET_B * Q)	0.00940	0.00890	0.00964
	(!D * !Q)	0.00776	0.00737	0.00820
	(!D * !Q)	0.00535	0.00496	0.00579

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)	0.00564	0.00537	0.00656
	(D * RESET_B * Q)	0.00806	0.00779	0.00898
	(D * !RESET_B * !Q)	0.00573	0.00546	0.00665
	(D * !RESET_B * !Q)	0.00815	0.00788	0.00907
	(!D * !Q)	0.00573	0.00545	0.00665
	(!D * !Q)	0.00814	0.00787	0.00907

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00172	0.00542	0.00287	0.65902
sky130_fd_sc_hs__dfrtp_2	0.00171	0.00531	0.00286	1.28889
sky130_fd_sc_hs__dfrtp_4	0.00173	0.00553	0.00286	2.53677

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtp_1	0.00000	0.11313	0.21046
sky130_fd_sc_hs__dfrtp_2	0.00000	0.12740	0.21407
sky130_fd_sc_hs__dfrtp_4	0.00000	0.18189	0.30509

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)**	0.34350	1.10411	7.78278
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RR)**	0.34087	0.97709	7.74804
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RR)**	0.44496	0.99491	7.90051

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	**CLK->Q (RF)**	0.34516	0.74384	2.99093
	RESET_B->Q (FF)	0.48664	1.14195	5.84423
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RF)**	0.38504	0.76571	3.01305
	RESET_B->Q (FF)	0.52463	1.16034	5.86904
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RF)**	0.38698	0.74596	3.15818
	RESET_B->Q (FF)	0.54022	1.14856	6.02645

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)	-0.08892	-0.18895	-1.04559
	setup	CLK (R)	0.23480	0.28365	1.25867
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.08987	-0.18691	-1.03427
	setup	CLK (R)	0.23446	0.28171	1.24859
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.09216	-0.18690	-1.01515
	setup	CLK (R)	0.24718	0.28964	1.19968

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)	-0.06666	-0.23625	-2.80119
	setup	CLK (R)	0.35858	0.46103	3.41480
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.06320	-0.23261	-2.79360
	setup	CLK (R)	0.35474	0.45951	3.41726
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.08579	-0.24760	-2.91712
	setup	CLK (R)	0.38418	0.48283	3.45024

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)	-0.08892	-0.18895	-1.04559
	setup	CLK (R)	0.23480	0.28365	1.25867
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.08987	-0.18691	-1.03427
	setup	CLK (R)	0.23446	0.28171	1.24859
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.09216	-0.18690	-1.01515
	setup	CLK (R)	0.24718	0.28964	1.19968

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)	-0.06666	-0.23625	-2.80119
	setup	CLK (R)	0.35858	0.46103	3.41480
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.06320	-0.23261	-2.79360
	setup	CLK (R)	0.35474	0.45951	3.41726
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.08579	-0.24760	-2.91712
	setup	CLK (R)	0.38418	0.48283	3.45024

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)	0.25033	0.28253	1.36612
	removal	CLK (R)	-0.15233	-0.22632	-1.24694
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.24758	0.28001	1.35990
	removal	CLK (R)	-0.15082	-0.22358	-1.24078
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.26391	0.28820	1.32846
	removal	CLK (R)	-0.16118	-0.23233	-1.23470

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)	0.25033	0.28253	1.36612
	removal	CLK (R)	-0.15233	-0.22632	-1.24694
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.24758	0.28001	1.35990
	removal	CLK (R)	-0.15082	-0.22358	-1.24078
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.26391	0.28820	1.32846
	removal	CLK (R)	-0.16118	-0.23233	-1.23470

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 ()	0.27244	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.20414	0.83740	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.27554	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.21035	0.83740	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.28796	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.21035	0.83740	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 ()	0.17621	0.83740	16.50020
	min_pulse_width	CLK ()	0.12654	0.83740	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.18552	0.83740	16.50020
	min_pulse_width	CLK ()	0.13275	0.83740	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.25692	0.83740	16.50020
	min_pulse_width	CLK ()	0.13895	0.83740	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 ()	0.34694	0.83740	16.50020
	min_pulse_width	CLK ()	0.42765	0.83740	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.34383	0.83740	16.50020
	min_pulse_width	CLK ()	0.42765	0.83740	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.37177	0.83740	16.50020
	min_pulse_width	CLK ()	0.46179	0.83740	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	0.01558	0.01543	0.01619
	CLK	0.01301	0.01285	0.01368
sky130_fd_sc_hs__dfrtp_2	CLK	0.01710	0.01708	0.01790
	CLK	0.01453	0.01452	0.01549
sky130_fd_sc_hs__dfrtp_4	CLK	0.02141	0.02180	0.02280
	CLK	0.01874	0.01913	0.02037

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.01664	0.01655	0.01778
	CLK	0.01392	0.01383	0.01498
	RESET_B	0.01222	0.01186	0.01277
	RESET_B	0.01738	0.01698	0.01766
sky130_fd_sc_hs__dfrtp_2	CLK	0.01778	0.01794	0.01913
	CLK	0.01508	0.01524	0.01641
	RESET_B	0.01346	0.01336	0.01488
	RESET_B	0.01853	0.01839	0.01910
sky130_fd_sc_hs__dfrtp_4	CLK	0.02287	0.02347	0.02511
	CLK	0.02006	0.02066	0.02187
	RESET_B	0.01821	0.01854	0.02025
	RESET_B	0.02344	0.02373	0.02445

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00227	0.00215	0.00255
	(CLK * RESET_B)	0.00053	0.00041	0.00081
	(CLK * !RESET_B)	0.00026	0.00025	0.00025
	(CLK * !RESET_B)	-0.00073	-0.00073	-0.00074
	(!CLK * RESET_B)	0.00666	0.00654	0.00683
	(!CLK * RESET_B)	0.00482	0.00470	0.00499
	(!CLK * !RESET_B)	0.00026	0.00025	0.00025
	(!CLK * !RESET_B)	-0.00073	-0.00073	-0.00074
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00221	0.00209	0.00249
	(CLK * RESET_B)	0.00050	0.00038	0.00078
	(CLK * !RESET_B)	0.00026	0.00025	0.00025
	(CLK * !RESET_B)	-0.00073	-0.00074	-0.00074
	(!CLK * RESET_B)	0.00639	0.00627	0.00657
	(!CLK * RESET_B)	0.00460	0.00447	0.00477
	(!CLK * !RESET_B)	0.00026	0.00025	0.00025
	(!CLK * !RESET_B)	-0.00073	-0.00073	-0.00074
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00228	0.00217	0.00256
	(CLK * RESET_B)	0.00055	0.00043	0.00083
	(CLK * !RESET_B)	0.00026	0.00026	0.00025
	(CLK * !RESET_B)	-0.00074	-0.00074	-0.00075
	(!CLK * RESET_B)	0.00730	0.00717	0.00744
	(!CLK * RESET_B)	0.00546	0.00533	0.00561
	(!CLK * !RESET_B)	0.00026	0.00026	0.00025
	(!CLK * !RESET_B)	-0.00073	-0.00074	-0.00075

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00035	0.00023	0.00063
	(CLK * RESET_B)	0.00208	0.00196	0.00236
	(CLK * !RESET_B)	-0.00024	-0.00024	-0.00024
	(CLK * !RESET_B)	0.00075	0.00076	0.00074
	(!CLK * RESET_B)	0.00408	0.00391	0.00432
	(!CLK * RESET_B)	0.00593	0.00575	0.00616
	(!CLK * !RESET_B)	-0.00024	-0.00024	-0.00024
	(!CLK * !RESET_B)	0.00075	0.00075	0.00074
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00035	0.00023	0.00063
	(CLK * RESET_B)	0.00206	0.00194	0.00235
	(CLK * !RESET_B)	-0.00024	-0.00024	-0.00024
	(CLK * !RESET_B)	0.00075	0.00076	0.00075
	(!CLK * RESET_B)	0.00408	0.00391	0.00433
	(!CLK * RESET_B)	0.00588	0.00571	0.00613
	(!CLK * !RESET_B)	-0.00024	-0.00024	-0.00024
	(!CLK * !RESET_B)	0.00075	0.00075	0.00075
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00036	0.00023	0.00063
	(CLK * RESET_B)	0.00209	0.00196	0.00236
	(CLK * !RESET_B)	-0.00024	-0.00025	-0.00024
	(CLK * !RESET_B)	0.00075	0.00076	0.00075
	(!CLK * RESET_B)	0.00417	0.00400	0.00438
	(!CLK * RESET_B)	0.00601	0.00583	0.00622
	(!CLK * !RESET_B)	-0.00025	-0.00025	-0.00024
	(!CLK * !RESET_B)	0.00075	0.00075	0.00075

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)	0.00423	0.00411	0.00434
	(CLK * D * !Q)	-0.00080	-0.00094	-0.00070
	(CLK * !D * !Q)	0.00199	0.00200	0.00199
	(CLK * !D * !Q)	-0.00220	-0.00221	-0.00220
	(!CLK * D * !Q)	0.00883	0.00850	0.00876
	(!CLK * D * !Q)	0.00371	0.00337	0.00363
	(!CLK * !D * !Q)	0.00192	0.00193	0.00192
	(!CLK * !D * !Q)	-0.00227	-0.00228	-0.00227
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00414	0.00403	0.00426
	(CLK * D * !Q)	-0.00081	-0.00096	-0.00070
	(CLK * !D * !Q)	0.00197	0.00200	0.00198
	(CLK * !D * !Q)	-0.00217	-0.00218	-0.00217
	(!CLK * D * !Q)	0.00852	0.00820	0.00847
	(!CLK * D * !Q)	0.00348	0.00316	0.00342
	(!CLK * !D * !Q)	0.00191	0.00192	0.00191
	(!CLK * !D * !Q)	-0.00223	-0.00224	-0.00224
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00435	0.00423	0.00446
	(CLK * D * !Q)	-0.00075	-0.00089	-0.00065
	(CLK * !D * !Q)	0.00211	0.00212	0.00211
	(CLK * !D * !Q)	-0.00217	-0.00217	-0.00217
	(!CLK * D * !Q)	0.00941	0.00907	0.00930
	(!CLK * D * !Q)	0.00422	0.00387	0.00412
	(!CLK * !D * !Q)	0.00193	0.00194	0.00193
	(!CLK * !D * !Q)	-0.00234	-0.00235	-0.00234

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)	-0.00110	-0.00123	-0.00090
	(CLK * D * !Q)	0.00394	0.00380	0.00414
	(CLK * !D * !Q)	-0.00194	-0.00200	-0.00199
	(CLK * !D * !Q)	0.00223	0.00223	0.00221
	(!CLK * D * !Q)	0.00320	0.00281	0.00310
	(!CLK * D * !Q)	0.00833	0.00795	0.00825
	(!CLK * !D * !Q)	-0.00188	-0.00193	-0.00192
	(!CLK * !D * !Q)	0.00230	0.00230	0.00228
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00108	-0.00121	-0.00087
	(CLK * D * !Q)	0.00388	0.00377	0.00410
	(CLK * !D * !Q)	-0.00193	-0.00199	-0.00198
	(CLK * !D * !Q)	0.00220	0.00219	0.00218
	(!CLK * D * !Q)	0.00321	0.00284	0.00314
	(!CLK * D * !Q)	0.00825	0.00787	0.00820
	(!CLK * !D * !Q)	-0.00187	-0.00192	-0.00191
	(!CLK * !D * !Q)	0.00226	0.00225	0.00224
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00120	-0.00134	-0.00100
	(CLK * D * !Q)	0.00390	0.00378	0.00411
	(CLK * !D * !Q)	-0.00206	-0.00212	-0.00211
	(CLK * !D * !Q)	0.00219	0.00219	0.00218
	(!CLK * D * !Q)	0.00338	0.00298	0.00325
	(!CLK * D * !Q)	0.00858	0.00818	0.00846
	(!CLK * !D * !Q)	-0.00189	-0.00194	-0.00193
	(!CLK * !D * !Q)	0.00237	0.00236	0.00235

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)	0.00854	0.00819	0.00905
	(D * RESET_B * Q)	0.00590	0.00554	0.00639
	(D * !RESET_B * !Q)	0.00889	0.00853	0.00941
	(D * !RESET_B * !Q)	0.00625	0.00587	0.00675
	(!D * !Q)	0.00889	0.00853	0.00940
	(!D * !Q)	0.00625	0.00587	0.00674
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.00849	0.00815	0.00900
	(D * RESET_B * Q)	0.00586	0.00552	0.00635
	(D * !RESET_B * !Q)	0.00884	0.00849	0.00935
	(D * !RESET_B * !Q)	0.00621	0.00585	0.00671
	(!D * !Q)	0.00884	0.00849	0.00934
	(!D * !Q)	0.00621	0.00585	0.00670
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.00896	0.00864	0.00944
	(D * RESET_B * Q)	0.00623	0.00588	0.00669
	(D * !RESET_B * !Q)	0.00924	0.00892	0.00972
	(D * !RESET_B * !Q)	0.00651	0.00617	0.00697
	(!D * !Q)	0.00924	0.00892	0.00971
	(!D * !Q)	0.00651	0.00616	0.00697

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)**	0.00471	0.00447	0.00568
	(D * RESET_B * Q)	0.00736	0.00713	0.00833
	(D * RESET_B * !Q)	0.00873	0.00842	0.00956
	(D * RESET_B * !Q)	0.01128	0.01096	0.01211
	(D * !RESET_B * !Q)	0.00435	0.00411	0.00531
	(D * !RESET_B * !Q)	0.00700	0.00677	0.00797
	(!D * RESET_B * Q)	0.00901	0.00882	0.01029
	(!D * RESET_B * Q)	0.01177	0.01158	0.01305
	(!D * !Q)	0.00435	0.00413	0.00531
	(!D * !Q)	0.00700	0.00679	0.00797
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00472	0.00449	0.00569
	(D * RESET_B * Q)	0.00736	0.00713	0.00833
	(D * RESET_B * !Q)	0.00852	0.00821	0.00936
	(D * RESET_B * !Q)	0.01107	0.01076	0.01192
	(D * !RESET_B * !Q)	0.00436	0.00412	0.00533
	(D * !RESET_B * !Q)	0.00700	0.00677	0.00798
	(!D * RESET_B * Q)	0.00902	0.00883	0.01029
	(!D * RESET_B * Q)	0.01175	0.01156	0.01302
	(!D * !Q)	0.00436	0.00412	0.00533
	(!D * !Q)	0.00700	0.00676	0.00797
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00490	0.00467	0.00585
	(D * RESET_B * Q)	0.00764	0.00742	0.00860
	(D * RESET_B * !Q)	0.00961	0.00930	0.01038
	(D * RESET_B * !Q)	0.01225	0.01194	0.01302
	(D * !RESET_B * !Q)	0.00460	0.00437	0.00556
	(D * !RESET_B * !Q)	0.00734	0.00712	0.00830
	(!D * RESET_B * Q)	0.00922	0.00903	0.01050
	(!D * RESET_B * Q)	0.01207	0.01189	0.01336
	(!D * !Q)	0.00460	0.00437	0.00556
	(!D * !Q)	0.00734	0.00712	0.00830

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00170	0.00325	0.00283	0.63141	0.60521
sky130_fd_sc_hs__dfsbp_2	0.00170	0.00320	0.00283	1.29913	1.25382

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.12191	0.14529
sky130_fd_sc_hs__dfsbp_2	0.00000	0.11806	0.12732

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)	0.48773	1.23641	7.83870
	SET_B->Q (FR)	0.49391	1.51016	10.95970
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.58761	1.19470	7.98148
	SET_B->Q (FR)	0.60270	1.47726	11.32150

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.40300	0.79740	2.98050
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.45864	0.82346	3.10082

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)	0.34727	1.14198	7.77894
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.34735	1.01437	7.78961

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)	0.37446	0.87719	3.08934
	SET_B->Q_N (FF)	0.37392	1.14588	6.30982
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.41928	0.91440	3.21825
	SET_B->Q_N (FF)	0.42458	1.19118	6.64351

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)	-0.07769	-0.17405	-1.10851
	setup	CLK (R)	0.15054	0.22652	1.16629
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07435	-0.17025	-1.09619
	setup	CLK (R)	0.13819	0.21674	1.13896

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)	-0.07442	-0.24004	-2.83182
	setup	CLK (R)	0.39833	0.49512	3.54395
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.08446	-0.25170	-2.89185
	setup	CLK (R)	0.38549	0.48674	3.52672

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)	-0.07769	-0.17405	-1.10851
	setup	CLK (R)	0.15054	0.22652	1.16629
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07435	-0.17025	-1.09619
	setup	CLK (R)	0.13819	0.21674	1.13896

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)	-0.07442	-0.24004	-2.83182
	setup	CLK (R)	0.39833	0.49512	3.54395
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.08446	-0.25170	-2.89185
	setup	CLK (R)	0.38549	0.48674	3.52672

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)	-0.16187	-0.22155	-0.68560
	removal	CLK (R)	0.19453	0.24756	0.72828
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.16372	-0.22095	-0.68215
	removal	CLK (R)	0.19608	0.24756	0.71344

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)	-0.16187	-0.22155	-0.68560
	removal	CLK (R)	0.19453	0.24756	0.72828
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.16372	-0.22095	-0.68215
	removal	CLK (R)	0.19608	0.24756	0.71344

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 ()	0.38284	0.89634	16.50020
	min_pulse_width	SET_B ()	0.39284	0.93903	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.41742	0.93090	16.50020
	min_pulse_width	SET_B ()	0.48736	1.03252	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 ()	0.31279	0.83740	16.50020
	min_pulse_width	CLK ()	0.16379	0.83740	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.40281	0.83740	16.50020
	min_pulse_width	CLK ()	0.18862	0.83740	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 ()	0.28485	0.83740	16.50020
	min_pulse_width	CLK ()	0.50525	0.83740	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.27554	0.83740	16.50020
	min_pulse_width	CLK ()	0.48973	0.83740	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	0.00890	0.00887	0.00932
	CLK	0.00761	0.00759	0.00801
	SET_B	0.00839	0.00840	0.00865
	SET_B	0.00967	0.00967	0.00973
sky130_fd_sc_hs__dfsbp_2	CLK	0.01031	0.01050	0.01106
	CLK	0.00901	0.00920	0.00971
	SET_B	0.00970	0.00997	0.01074
	SET_B	0.01094	0.01121	0.01138

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00937	0.00936	0.00972
	CLK	0.00815	0.00814	0.00850
sky130_fd_sc_hs__dfsbp_2	CLK	0.01085	0.01107	0.01149
	CLK	0.00961	0.00983	0.01022

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00939	0.00937	0.00987
	CLK	0.00817	0.00816	0.00865
sky130_fd_sc_hs__dfsbp_2	CLK	0.01087	0.01109	0.01166
	CLK	0.00963	0.00985	0.01040

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00888	0.00886	0.00916
	CLK	0.00760	0.00758	0.00787
	SET_B	0.00837	0.00838	0.00837
	SET_B	0.00965	0.00965	0.00960
sky130_fd_sc_hs__dfsbp_2	CLK	0.01030	0.01048	0.01086
	CLK	0.00900	0.00918	0.00954
	SET_B	0.00968	0.00995	0.01013
	SET_B	0.01092	0.01119	0.01120

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00204	0.00193	0.00235
	CLK	0.00049	0.00037	0.00080
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00597	0.00584	0.00606
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00427	0.00414	0.00435
	(!CLK * !SET_B * Q * !Q_N)	0.00465	0.00457	0.00483
	(!CLK * !SET_B * Q * !Q_N)	0.00288	0.00278	0.00305
sky130_fd_sc_hs__dfsbp_2	CLK	0.00204	0.00192	0.00234
	CLK	0.00048	0.00036	0.00079
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00591	0.00578	0.00600
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00414	0.00401	0.00423
	(!CLK * !SET_B * Q * !Q_N)	0.00465	0.00456	0.00482
	(!CLK * !SET_B * Q * !Q_N)	0.00282	0.00273	0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00022	0.00014	0.00055
	CLK	0.00176	0.00168	0.00210
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00429	0.00418	0.00450
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00600	0.00589	0.00621
	(!CLK * !SET_B * Q * !Q_N)	0.00251	0.00241	0.00269
	(!CLK * !SET_B * Q * !Q_N)	0.00429	0.00419	0.00448
sky130_fd_sc_hs__dfsbp_2	CLK	0.00021	0.00013	0.00055
	CLK	0.00177	0.00169	0.00211
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00411	0.00400	0.00432
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00588	0.00577	0.00609
	(!CLK * !SET_B * Q * !Q_N)	0.00241	0.00232	0.00261
	(!CLK * !SET_B * Q * !Q_N)	0.00424	0.00414	0.00444

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)	0.00150	0.00150	0.00150
	(CLK * Q * !Q_N)	-0.00125	-0.00125	-0.00125
	(!CLK * D * Q * !Q_N)	0.00165	0.00166	0.00165
	(!CLK * D * Q * !Q_N)	-0.00110	-0.00111	-0.00110
	(!CLK * !D * Q * !Q_N)	0.00311	0.00305	0.00328
	(!CLK * !D * Q * !Q_N)	0.00025	0.00016	0.00042
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00152	0.00154	0.00152
	(CLK * Q * !Q_N)	-0.00121	-0.00122	-0.00121
	(!CLK * D * Q * !Q_N)	0.00163	0.00164	0.00164
	(!CLK * D * Q * !Q_N)	-0.00110	-0.00110	-0.00110
	(!CLK * !D * Q * !Q_N)	0.00298	0.00292	0.00317
	(!CLK * !D * Q * !Q_N)	0.00015	0.00007	0.00033

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)	-0.00148	-0.00150	-0.00150
	(CLK * Q * !Q_N)	0.00126	0.00127	0.00125
	(!CLK * D * Q * !Q_N)	-0.00162	-0.00166	-0.00165
	(!CLK * D * Q * !Q_N)	0.00112	0.00112	0.00111
	(!CLK * !D * Q * !Q_N)	-0.00013	-0.00020	0.00018
	(!CLK * !D * Q * !Q_N)	0.00273	0.00267	0.00304
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00150	-0.00154	-0.00152
	(CLK * Q * !Q_N)	0.00122	0.00124	0.00122
	(!CLK * D * Q * !Q_N)	-0.00161	-0.00164	-0.00164
	(!CLK * D * Q * !Q_N)	0.00111	0.00113	0.00111
	(!CLK * !D * Q * !Q_N)	-0.00011	-0.00017	0.00021
	(!CLK * !D * Q * !Q_N)	0.00272	0.00267	0.00305

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)	0.00882	0.00847	0.00931
	(D * Q * !Q_N)	0.00632	0.00596	0.00681
	(!D * SET_B * !Q * Q_N)	0.00869	0.00832	0.00917
	(!D * SET_B * !Q * Q_N)	0.00619	0.00581	0.00667
	(!D * !SET_B * Q * !Q_N)	0.01520	0.01499	0.01609
	(!D * !SET_B * Q * !Q_N)	0.01248	0.01226	0.01336
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.00872	0.00836	0.00920
	(D * Q * !Q_N)	0.00618	0.00581	0.00666
	(!D * SET_B * !Q * Q_N)	0.00865	0.00827	0.00913
	(!D * SET_B * !Q * Q_N)	0.00610	0.00572	0.00658
	(!D * !SET_B * Q * !Q_N)	0.01498	0.01476	0.01588
	(!D * !SET_B * Q * !Q_N)	0.01217	0.01195	0.01306

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)	0.00889	0.00861	0.00973
	(D * SET_B * !Q * Q_N)	0.01124	0.01095	0.01208
	(D * Q * !Q_N)	0.00517	0.00497	0.00616
	(D * Q * !Q_N)	0.00768	0.00747	0.00867
	(!D * SET_B * Q * !Q_N)	0.01016	0.01000	0.01144
	(!D * SET_B * Q * !Q_N)	0.01282	0.01266	0.01410
	(!D * SET_B * !Q * Q_N)	0.00528	0.00507	0.00628
	(!D * SET_B * !Q * Q_N)	0.00778	0.00757	0.00877
	(!D * !SET_B * Q * !Q_N)	0.00835	0.00820	0.00963
	(!D * !SET_B * Q * !Q_N)	0.01109	0.01093	0.01236
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.00873	0.00845	0.00959
	(D * SET_B * !Q * Q_N)	0.01107	0.01078	0.01191
	(D * Q * !Q_N)	0.00509	0.00489	0.00608
	(D * Q * !Q_N)	0.00765	0.00744	0.00863
	(!D * SET_B * Q * !Q_N)	0.00988	0.00971	0.01115
	(!D * SET_B * Q * !Q_N)	0.01264	0.01247	0.01391
	(!D * SET_B * !Q * Q_N)	0.00515	0.00494	0.00615
	(!D * SET_B * !Q * Q_N)	0.00770	0.00749	0.00869
	(!D * !SET_B * Q * !Q_N)	0.00816	0.00799	0.00943
	(!D * !SET_B * Q * !Q_N)	0.01099	0.01081	0.01225

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00169	0.00336	0.00281	0.65379
sky130_fd_sc_hs__dfstp_2	0.00170	0.00315	0.00283	1.29612
sky130_fd_sc_hs__dfstp_4	0.00169	0.00321	0.00284	2.45986

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	0.10864	0.12718
sky130_fd_sc_hs__dfstp_2	0.00000	0.09150	0.11995
sky130_fd_sc_hs__dfstp_4	0.00000	0.19033	0.22181

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)	0.38715	1.14181	7.78702
	SET_B->Q (FR)	0.39926	1.42126	10.65750
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.40190	1.03628	7.83751
	SET_B->Q (FR)	0.41635	1.31916	10.77110
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.47373	1.01886	7.86961
	SET_B->Q (FR)	0.48436	1.29704	10.90770

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.37559	0.77057	3.02316
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.40434	0.77531	3.06322
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.41286	0.75844	3.04077

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)	-0.07631	-0.17267	-1.09506
	setup	CLK (R)	0.15014	0.22615	1.17141
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.07777	-0.17412	-1.10739
	setup	CLK (R)	0.15180	0.22833	1.18029
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07507	-0.17087	-1.08861
	setup	CLK (R)	0.13954	0.21674	1.13667

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)	-0.06177	-0.23304	-2.73792
	setup	CLK (R)	0.38348	0.48606	3.51907
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.06457	-0.23593	-2.78009
	setup	CLK (R)	0.38693	0.48901	3.53893
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07413	-0.24209	-2.84644
	setup	CLK (R)	0.37888	0.48187	3.50206

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)	-0.07631	-0.17267	-1.09506
	setup	CLK (R)	0.15014	0.22615	1.17141
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.07777	-0.17412	-1.10739
	setup	CLK (R)	0.15180	0.22833	1.18029
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07507	-0.17087	-1.08861
	setup	CLK (R)	0.13954	0.21674	1.13667

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)	-0.06177	-0.23304	-2.73792
	setup	CLK (R)	0.38348	0.48606	3.51907
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.06457	-0.23593	-2.78009
	setup	CLK (R)	0.38693	0.48901	3.53893
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07413	-0.24209	-2.84644
	setup	CLK (R)	0.37888	0.48187	3.50206

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)	-0.16083	-0.22396	-0.68550
	removal	CLK (R)	0.19221	0.24224	0.77219
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.16530	-0.22379	-0.68284
	removal	CLK (R)	0.19238	0.24490	0.75172
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.16052	-0.21895	-0.67056
	removal	CLK (R)	0.18934	0.23957	0.71252

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)	-0.16083	-0.22396	-0.68550
	removal	CLK (R)	0.19221	0.24224	0.77219
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.16530	-0.22379	-0.68284
	removal	CLK (R)	0.19238	0.24490	0.75172
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.16052	-0.21895	-0.67056
	removal	CLK (R)	0.18934	0.23957	0.71252

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 ()	0.33659	0.85163	16.50020
	min_pulse_width	SET_B ()	0.29931	0.85366	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.35064	0.86382	16.50020
	min_pulse_width	SET_B ()	0.31805	0.87196	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.36576	0.87805	16.50020
	min_pulse_width	SET_B ()	0.36402	0.90854	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 ()	0.21966	0.83740	16.50020
	min_pulse_width	CLK ()	0.14827	0.83740	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.23519	0.83740	16.50020
	min_pulse_width	CLK ()	0.15448	0.83740	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.29106	0.83740	16.50020
	min_pulse_width	CLK ()	0.15758	0.83740	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 ()	0.28485	0.83740	16.50020
	min_pulse_width	CLK ()	0.48663	0.83740	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.28485	0.83740	16.50020
	min_pulse_width	CLK ()	0.48973	0.83740	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.27554	0.83740	16.50020
	min_pulse_width	CLK ()	0.48042	0.83740	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	0.01540	0.01508	0.01583
	CLK	0.01294	0.01263	0.01344
	SET_B	0.01423	0.01399	0.01401
	SET_B	0.01697	0.01672	0.01677
sky130_fd_sc_hs__dfstp_2	CLK	0.01733	0.01722	0.01802
	CLK	0.01475	0.01465	0.01558
	SET_B	0.01623	0.01622	0.01628
	SET_B	0.01873	0.01871	0.01883
sky130_fd_sc_hs__dfstp_4	CLK	0.02127	0.02154	0.02247
	CLK	0.01867	0.01894	0.02012
	SET_B	0.02002	0.02046	0.02066
	SET_B	0.02253	0.02297	0.02331

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.01684	0.01661	0.01749
	CLK	0.01426	0.01403	0.01487
sky130_fd_sc_hs__dfstp_2	CLK	0.01848	0.01850	0.01951
	CLK	0.01598	0.01601	0.01684
sky130_fd_sc_hs__dfstp_4	CLK	0.02269	0.02324	0.02447
	CLK	0.02018	0.02074	0.02165

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00204	0.00193	0.00235
	CLK	0.00050	0.00038	0.00081
	(!CLK * SET_B)	0.00590	0.00578	0.00599
	(!CLK * SET_B)	0.00420	0.00407	0.00429
	(!CLK * !SET_B * Q)	0.00462	0.00454	0.00480
	(!CLK * !SET_B * Q)	0.00284	0.00275	0.00301
sky130_fd_sc_hs__dfstp_2	CLK	0.00206	0.00195	0.00236
	CLK	0.00051	0.00039	0.00081
	(!CLK * SET_B)	0.00590	0.00577	0.00598
	(!CLK * SET_B)	0.00419	0.00406	0.00428
	(!CLK * !SET_B * Q)	0.00462	0.00453	0.00479
	(!CLK * !SET_B * Q)	0.00283	0.00273	0.00299
sky130_fd_sc_hs__dfstp_4	CLK	0.00206	0.00194	0.00236
	CLK	0.00051	0.00039	0.00082
	(!CLK * SET_B)	0.00587	0.00575	0.00597
	(!CLK * SET_B)	0.00416	0.00403	0.00425
	(!CLK * !SET_B * Q)	0.00457	0.00448	0.00475
	(!CLK * !SET_B * Q)	0.00278	0.00269	0.00296

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00027	0.00019	0.00060
	CLK	0.00181	0.00173	0.00215
	(!CLK * SET_B)	0.00412	0.00400	0.00433
	(!CLK * SET_B)	0.00582	0.00571	0.00603
	(!CLK * !SET_B * Q)	0.00242	0.00232	0.00261
	(!CLK * !SET_B * Q)	0.00421	0.00411	0.00440
sky130_fd_sc_hs__dfstp_2	CLK	0.00026	0.00018	0.00059
	CLK	0.00181	0.00173	0.00214
	(!CLK * SET_B)	0.00425	0.00413	0.00446
	(!CLK * SET_B)	0.00595	0.00584	0.00616
	(!CLK * !SET_B * Q)	0.00255	0.00246	0.00274
	(!CLK * !SET_B * Q)	0.00435	0.00425	0.00454
sky130_fd_sc_hs__dfstp_4	CLK	0.00028	0.00019	0.00061
	CLK	0.00182	0.00174	0.00215
	(!CLK * SET_B)	0.00406	0.00395	0.00427
	(!CLK * SET_B)	0.00578	0.00567	0.00599
	(!CLK * !SET_B * Q)	0.00241	0.00231	0.00260
	(!CLK * !SET_B * Q)	0.00420	0.00410	0.00439

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00144	0.00144	0.00144
	(CLK * Q)	-0.00137	-0.00137	-0.00136
	(!CLK * D * Q)	0.00156	0.00157	0.00156
	(!CLK * D * Q)	-0.00124	-0.00125	-0.00124
	(!CLK * !D * Q)	0.00296	0.00289	0.00313
	(!CLK * !D * Q)	0.00003	-0.00006	0.00021
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00140	0.00142	0.00141
	(CLK * Q)	-0.00125	-0.00126	-0.00125
	(!CLK * D * Q)	0.00152	0.00154	0.00153
	(!CLK * D * Q)	-0.00113	-0.00114	-0.00113
	(!CLK * !D * Q)	0.00293	0.00286	0.00311
	(!CLK * !D * Q)	0.00015	0.00005	0.00031
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00149	0.00150	0.00149
	(CLK * Q)	-0.00122	-0.00122	-0.00122
	(!CLK * D * Q)	0.00160	0.00160	0.00160
	(!CLK * D * Q)	-0.00111	-0.00111	-0.00111
	(!CLK * !D * Q)	0.00295	0.00288	0.00313
	(!CLK * !D * Q)	0.00013	0.00005	0.00031

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00141	-0.00144	-0.00144
	(CLK * Q)	0.00138	0.00140	0.00137
	(!CLK * D * Q)	-0.00153	-0.00157	-0.00156
	(!CLK * D * Q)	0.00126	0.00127	0.00125
	(!CLK * !D * Q)	-0.00006	-0.00013	0.00025
	(!CLK * !D * Q)	0.00287	0.00281	0.00319
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00138	-0.00142	-0.00141
	(CLK * Q)	0.00126	0.00127	0.00126
	(!CLK * D * Q)	-0.00150	-0.00154	-0.00153
	(!CLK * D * Q)	0.00115	0.00115	0.00114
	(!CLK * !D * Q)	-0.00001	-0.00008	0.00029
	(!CLK * !D * Q)	0.00278	0.00272	0.00309
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00146	-0.00150	-0.00149
	(CLK * Q)	0.00123	0.00124	0.00123
	(!CLK * D * Q)	-0.00157	-0.00160	-0.00160
	(!CLK * D * Q)	0.00113	0.00113	0.00112
	(!CLK * !D * Q)	-0.00004	-0.00010	0.00027
	(!CLK * !D * Q)	0.00278	0.00272	0.00310

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.00872	0.00838	0.00920
	(D * Q)	0.00621	0.00585	0.00669
	(!D * SET_B * !Q)	0.00868	0.00831	0.00916
	(!D * SET_B * !Q)	0.00617	0.00579	0.00664
	(!D * !SET_B * Q)	0.01482	0.01460	0.01572
	(!D * !SET_B * Q)	0.01207	0.01184	0.01296
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.00885	0.00850	0.00932
	(D * Q)	0.00631	0.00595	0.00678
	(!D * SET_B * !Q)	0.00872	0.00833	0.00918
	(!D * SET_B * !Q)	0.00618	0.00578	0.00664
	(!D * !SET_B * Q)	0.01502	0.01479	0.01586
	(!D * !SET_B * Q)	0.01224	0.01200	0.01307
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.00874	0.00840	0.00922
	(D * Q)	0.00619	0.00583	0.00667
	(!D * SET_B * !Q)	0.00872	0.00834	0.00919
	(!D * SET_B * !Q)	0.00616	0.00577	0.00663
	(!D * !SET_B * Q)	0.01474	0.01452	0.01562
	(!D * !SET_B * Q)	0.01194	0.01171	0.01281

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)**	0.00885	0.00857	0.00968
	(D * SET_B * !Q)	0.01123	0.01094	0.01206
	(D * Q)	0.00520	0.00499	0.00617
	(D * Q)	0.00772	0.00750	0.00870
	(!D * SET_B * Q)	0.00989	0.00970	0.01116
	(!D * SET_B * Q)	0.01257	0.01237	0.01384
	(!D * SET_B * !Q)	0.00522	0.00500	0.00621
	(!D * SET_B * !Q)	0.00774	0.00752	0.00872
	(!D * !SET_B * Q)	0.00817	0.00799	0.00944
	(!D * !SET_B * Q)	0.01094	0.01075	0.01220
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.00879	0.00851	0.00963
	(D * SET_B * !Q)	0.01118	0.01090	0.01202
	(D * Q)	0.00511	0.00490	0.00609
	(D * Q)	0.00765	0.00744	0.00863
	(!D * SET_B * Q)	0.00996	0.00978	0.01124
	(!D * SET_B * Q)	0.01267	0.01248	0.01394
	(!D * SET_B * !Q)	0.00522	0.00500	0.00621
	(!D * SET_B * !Q)	0.00776	0.00754	0.00875
	(!D * !SET_B * Q)	0.00826	0.00809	0.00953
	(!D * !SET_B * Q)	0.01105	0.01088	0.01232
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.00876	0.00847	0.00960
	(D * SET_B * !Q)	0.01115	0.01085	0.01198
	(D * Q)	0.00514	0.00493	0.00612
	(D * Q)	0.00770	0.00749	0.00869
	(!D * SET_B * Q)	0.00975	0.00957	0.01103
	(!D * SET_B * Q)	0.01249	0.01230	0.01377
	(!D * SET_B * !Q)	0.00515	0.00493	0.00614
	(!D * SET_B * !Q)	0.00771	0.00749	0.00870
	(!D * !SET_B * Q)	0.00809	0.00793	0.00936
	(!D * !SET_B * Q)	0.01090	0.01074	0.01217

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00173	0.00283	0.63850	0.62934
sky130_fd_sc_hs__dfxbp_2	0.00168	0.00284	1.16324	1.27185

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.18257	0.26410
sky130_fd_sc_hs__dfxbp_2	0.00000	0.24560	0.40931

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)	0.33856	1.10236	7.76724
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.40739	1.06267	7.77438

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.38493	0.81211	3.09343
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.36925	0.75059	2.86000

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)	0.45500	1.21633	7.79533
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.46317	1.09589	7.79560

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)	0.39533	0.78851	2.97465
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.50767	0.87326	3.16669

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)	-0.03266	-0.08724	-0.59503
	setup	CLK (R)	0.13818	0.16836	0.83713
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.03091	-0.07943	-0.53185
	setup	CLK (R)	0.12125	0.15395	0.75626

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)	-0.05622	-0.19950	-2.45500
	setup	CLK (R)	0.27791	0.38600	3.05814
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.05645	-0.19330	-2.47095
	setup	CLK (R)	0.27088	0.37900	3.00339

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 ()	0.16379	0.83740	16.50020
	min_pulse_width	CLK ()	0.13275	0.83740	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.22277	0.83740	16.50020
	min_pulse_width	CLK ()	0.13275	0.83740	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** ()	0.28175	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.39040	0.83740	16.50020
sky130_fd_sc_hs__dfxbp_2	**min_pulse_width**	**CLK** ()	0.27244	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.39350	0.83740	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	0.00864	0.00850	0.00890
	CLK	0.00745	0.00730	0.00770
sky130_fd_sc_hs__dfxbp_2	CLK	0.01050	0.01058	0.01108
	CLK	0.00930	0.00942	0.00987

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00889	0.00889	0.00945
	CLK	0.00770	0.00770	0.00824
sky130_fd_sc_hs__dfxbp_2	CLK	0.01097	0.01120	0.01173
	CLK	0.00976	0.01000	0.01053

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00890	0.00891	0.00954
	CLK	0.00771	0.00772	0.00835
sky130_fd_sc_hs__dfxbp_2	CLK	0.01098	0.01121	0.01198
	CLK	0.00977	0.01000	0.01073

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00863	0.00846	0.00874
	CLK	0.00744	0.00728	0.00755
sky130_fd_sc_hs__dfxbp_2	CLK	0.01049	0.01059	0.01082
	CLK	0.00929	0.00941	0.00960

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00149	0.00140	0.00187
	CLK	-0.00009	-0.00018	0.00030
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00536	0.00523	0.00560
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00379	0.00365	0.00402
sky130_fd_sc_hs__dfxbp_2	CLK	0.00140	0.00131	0.00179
	CLK	-0.00014	-0.00023	0.00026
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00526	0.00513	0.00551
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00373	0.00360	0.00398

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00005	-0.00010	0.00037
	CLK	0.00153	0.00148	0.00195
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00306	0.00293	0.00333
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00463	0.00450	0.00490
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00005	-0.00010	0.00038
	CLK	0.00147	0.00143	0.00191
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00282	0.00270	0.00311
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00435	0.00423	0.00464

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)	0.00785	0.00753	0.00835
	(D * Q * !Q_N)	0.00548	0.00515	0.00598
	(!D * !Q * Q_N)	0.00801	0.00768	0.00851
	(!D * !Q * Q_N)	0.00564	0.00531	0.00614
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00790	0.00757	0.00839
	(D * Q * !Q_N)	0.00549	0.00516	0.00598
	(!D * !Q * Q_N)	0.00797	0.00764	0.00847
	(!D * !Q * Q_N)	0.00556	0.00522	0.00605

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)	0.00599	0.00571	0.00690
	(D * Q * !Q_N)	0.00836	0.00809	0.00927
	(D * !Q * Q_N)	0.00956	0.00918	0.01029
	(D * !Q * Q_N)	0.01193	0.01155	0.01267
	(!D * Q * !Q_N)	0.00989	0.00965	0.01113
	(!D * Q * !Q_N)	0.01227	0.01202	0.01351
	(!D * !Q * Q_N)	0.00577	0.00549	0.00668
	(!D * !Q * Q_N)	0.00814	0.00787	0.00905
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00598	0.00570	0.00688
	(D * Q * !Q_N)	0.00838	0.00811	0.00929
	(D * !Q * Q_N)	0.00962	0.00924	0.01033
	(D * !Q * Q_N)	0.01203	0.01164	0.01275
	(!D * Q * !Q_N)	0.00959	0.00934	0.01080
	(!D * Q * !Q_N)	0.01200	0.01175	0.01321
	(!D * !Q * Q_N)	0.00584	0.00556	0.00674
	(!D * !Q * Q_N)	0.00825	0.00797	0.00915

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00169	0.00283	0.63632
sky130_fd_sc_hs__dfxtp_2	0.00173	0.00283	1.28617
sky130_fd_sc_hs__dfxtp_4	0.00172	0.00284	2.43563

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.14727	0.28090
sky130_fd_sc_hs__dfxtp_2	0.00000	0.13828	0.24482
sky130_fd_sc_hs__dfxtp_4	0.00000	0.22116	0.37553

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)**	0.30840	1.07348	7.71651
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.32672	0.96695	7.75084
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.39206	0.94515	7.81192

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.36185	0.77937	3.06777
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.37907	0.77085	3.10598
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.38556	0.74963	3.12046

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)	-0.03313	-0.08699	-0.58412
	setup	CLK (R)	0.14152	0.17036	0.83021
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03194	-0.08483	-0.56146
	setup	CLK (R)	0.13896	0.16636	0.80636
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03174	-0.08249	-0.54181
	setup	CLK (R)	0.13218	0.16104	0.77570

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)	-0.05689	-0.20386	-2.47946
	setup	CLK (R)	0.28867	0.39500	3.08182
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.04942	-0.19314	-2.42012
	setup	CLK (R)	0.27000	0.37500	3.01451
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.05412	-0.19055	-2.42661
	setup	CLK (R)	0.27250	0.37600	3.00041

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 ()	0.14827	0.83740	16.50020
	min_pulse_width	CLK ()	0.12964	0.83740	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.16379	0.83740	16.50020
	min_pulse_width	CLK ()	0.13275	0.83740	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.21035	0.83740	16.50020
	min_pulse_width	CLK ()	0.13895	0.83740	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** ()	0.29417	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.40281	0.83740	16.50020
sky130_fd_sc_hs__dfxtp_2	**min_pulse_width**	**CLK** ()	0.28796	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.39040	0.83740	16.50020
sky130_fd_sc_hs__dfxtp_4	**min_pulse_width**	**CLK** ()	0.28175	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.39660	0.83740	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	0.01340	0.01304	0.01379
	CLK	0.01099	0.01063	0.01145
sky130_fd_sc_hs__dfxtp_2	CLK	0.01507	0.01487	0.01567
	CLK	0.01264	0.01246	0.01339
sky130_fd_sc_hs__dfxtp_4	CLK	0.01878	0.01894	0.01983
	CLK	0.01639	0.01656	0.01771

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01402	0.01388	0.01514
	CLK	0.01161	0.01148	0.01270
sky130_fd_sc_hs__dfxtp_2	CLK	0.01555	0.01566	0.01698
	CLK	0.01312	0.01324	0.01449
sky130_fd_sc_hs__dfxtp_4	CLK	0.01974	0.02037	0.02210
	CLK	0.01734	0.01798	0.01934

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00138	0.00128	0.00175
	CLK	-0.00016	-0.00026	0.00021
	!CLK	0.00527	0.00514	0.00551
	!CLK	0.00374	0.00360	0.00397
sky130_fd_sc_hs__dfxtp_2	CLK	0.00147	0.00138	0.00185
	CLK	-0.00011	-0.00021	0.00027
	!CLK	0.00522	0.00509	0.00546
	!CLK	0.00365	0.00351	0.00388
sky130_fd_sc_hs__dfxtp_4	CLK	0.00139	0.00130	0.00177
	CLK	-0.00018	-0.00028	0.00021
	!CLK	0.00522	0.00509	0.00546
	!CLK	0.00365	0.00351	0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00017	0.00011	0.00057
	CLK	0.00171	0.00165	0.00211
	!CLK	0.00328	0.00315	0.00356
	!CLK	0.00481	0.00469	0.00510
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00009	-0.00013	0.00034
	CLK	0.00150	0.00145	0.00192
	!CLK	0.00311	0.00298	0.00338
	!CLK	0.00468	0.00456	0.00496
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00005	-0.00009	0.00038
	CLK	0.00152	0.00148	0.00195
	!CLK	0.00306	0.00294	0.00333
	!CLK	0.00463	0.00450	0.00490

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00789	0.00755	0.00837
	(D * Q)	0.00549	0.00515	0.00596
	(!D * !Q)	0.00817	0.00784	0.00865
	(!D * !Q)	0.00577	0.00543	0.00624
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00792	0.00759	0.00840
	(D * Q)	0.00550	0.00516	0.00597
	(!D * !Q)	0.00814	0.00780	0.00862
	(!D * !Q)	0.00571	0.00537	0.00620
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00786	0.00753	0.00836
	(D * Q)	0.00547	0.00514	0.00596
	(!D * !Q)	0.00808	0.00775	0.00857
	(!D * !Q)	0.00569	0.00536	0.00618

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00623	0.00596	0.00713
	(D * Q)	0.00863	0.00837	0.00954
	(D * !Q)	0.00975	0.00936	0.01048
	(D * !Q)	0.01215	0.01176	0.01289
	(!D * Q)	0.01010	0.00986	0.01133
	(!D * Q)	0.01251	0.01226	0.01374
	(!D * !Q)	0.00589	0.00561	0.00678
	(!D * !Q)	0.00829	0.00802	0.00920
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00610	0.00584	0.00700
	(D * Q)	0.00852	0.00826	0.00943
	(D * !Q)	0.00953	0.00916	0.01025
	(D * !Q)	0.01195	0.01158	0.01268
	(!D * Q)	0.01003	0.00979	0.01124
	(!D * Q)	0.01244	0.01221	0.01366
	(!D * !Q)	0.00583	0.00555	0.00673
	(!D * !Q)	0.00825	0.00798	0.00915
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00634	0.00607	0.00724
	(D * Q)	0.00873	0.00847	0.00963
	(D * !Q)	0.00980	0.00941	0.01050
	(D * !Q)	0.01218	0.01179	0.01290
	(!D * Q)	0.01027	0.01002	0.01150
	(!D * Q)	0.01266	0.01241	0.01389
	(!D * !Q)	0.00605	0.00578	0.00694
	(!D * !Q)	0.00844	0.00818	0.00934

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00247	0.00424	0.65771
sky130_fd_sc_hs__dlclkp_2	0.00246	0.00456	1.30224
sky130_fd_sc_hs__dlclkp_4	0.00245	0.00476	2.52597

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.18334	0.30921
sky130_fd_sc_hs__dlclkp_2	0.00000	0.16962	0.23343
sky130_fd_sc_hs__dlclkp_4	0.00000	0.17886	0.18870

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)**	0.11258	0.84779	7.45177
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.11503	0.74665	7.56534
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.15692	0.74465	7.93318

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.13564	0.70683	4.39252
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.15619	0.74371	4.87533
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.21250	0.82382	5.47070

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)	-0.04819	-0.12245	-0.73382
	setup	CLK (R)	0.20770	0.23825	1.80808
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.05101	-0.11979	-0.72461
	setup	CLK (R)	0.21577	0.23315	1.62590
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.04963	-0.11713	-0.71642
	setup	CLK (R)	0.21205	0.21338	1.28811

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)	-0.12527	-0.23436	-2.42910
	setup	CLK (R)	0.21229	0.33211	2.70019
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.11861	-0.23065	-2.40981
	setup	CLK (R)	0.20629	0.31421	2.54776
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.12183	-0.22988	-2.41650
	setup	CLK (R)	0.17852	0.26880	2.52227

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 ()	0.08308	0.83740	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.09239	0.83740	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.12964	0.83740	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** ()	0.31589	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.30658	0.83740	16.50020
sky130_fd_sc_hs__dlclkp_2	**min_pulse_width**	**CLK** ()	0.33763	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.31279	0.83740	16.50020
sky130_fd_sc_hs__dlclkp_4	**min_pulse_width**	**CLK** ()	0.32831	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.30348	0.83740	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	0.00983	0.00955	0.01227
	CLK	0.00597	0.00567	0.00841
sky130_fd_sc_hs__dlclkp_2	CLK	0.01173	0.01160	0.01386
	CLK	0.00759	0.00745	0.00985
sky130_fd_sc_hs__dlclkp_4	CLK	0.01516	0.01532	0.01751
	CLK	0.01090	0.01107	0.01345

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01090	0.01085	0.01493
	CLK	0.01485	0.01477	0.01872
sky130_fd_sc_hs__dlclkp_2	CLK	0.01272	0.01280	0.01655
	CLK	0.01692	0.01698	0.02052
sky130_fd_sc_hs__dlclkp_4	CLK	0.01645	0.01694	0.02123
	CLK	0.02067	0.02114	0.02442

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00104	0.00094	0.00093
	CLK	-0.00093	-0.00103	-0.00104
	(!CLK * !GCLK)	0.00701	0.00682	0.00715
	(!CLK * !GCLK)	0.00490	0.00469	0.00503
sky130_fd_sc_hs__dlclkp_2	CLK	0.00082	0.00082	0.00081
	CLK	-0.00115	-0.00116	-0.00116
	(!CLK * !GCLK)	0.00709	0.00690	0.00723
	(!CLK * !GCLK)	0.00500	0.00478	0.00512
sky130_fd_sc_hs__dlclkp_4	CLK	0.00079	0.00079	0.00079
	CLK	-0.00114	-0.00116	-0.00116
	(!CLK * !GCLK)	0.00694	0.00674	0.00707
	(!CLK * !GCLK)	0.00495	0.00474	0.00508

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00091	-0.00093	-0.00093
	CLK	0.00104	0.00105	0.00105
	(!CLK * !GCLK)	0.00463	0.00446	0.00480
	(!CLK * !GCLK)	0.00675	0.00658	0.00692
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00077	-0.00081	-0.00081
	CLK	0.00118	0.00117	0.00116
	(!CLK * !GCLK)	0.00483	0.00466	0.00500
	(!CLK * !GCLK)	0.00694	0.00677	0.00711
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00075	-0.00079	-0.00079
	CLK	0.00118	0.00117	0.00116
	(!CLK * !GCLK)	0.00518	0.00501	0.00534
	(!CLK * !GCLK)	0.00718	0.00701	0.00734

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00614	0.00585	0.00738
	(!GATE * !GCLK)	0.00247	0.00214	0.00371
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00648	0.00618	0.00767
	(!GATE * !GCLK)	0.00253	0.00222	0.00372
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00642	0.00613	0.00762
	(!GATE * !GCLK)	0.00236	0.00204	0.00355

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.00848	0.00822	0.01041
	(GATE * !GCLK)	0.01215	0.01190	0.01409
	(!GATE * !GCLK)	0.00286	0.00269	0.00487
	(!GATE * !GCLK)	0.00655	0.00639	0.00857
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.00873	0.00845	0.01063
	(GATE * !GCLK)	0.01269	0.01241	0.01460
	(!GATE * !GCLK)	0.00301	0.00283	0.00499
	(!GATE * !GCLK)	0.00696	0.00677	0.00894
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.00847	0.00821	0.01036
	(GATE * !GCLK)	0.01265	0.01239	0.01453
	(!GATE * !GCLK)	0.00282	0.00263	0.00480
	(!GATE * !GCLK)	0.00691	0.00672	0.00887

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00223	0.00246	0.00270	0.63510	0.64294
sky130_fd_sc_hs__dlrbn_2	0.00224	0.00245	0.00280	1.15775	1.27438

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrbn_1	0.00000	0.23948	0.32733
sky130_fd_sc_hs__dlrbn_2	0.00000	0.23421	0.30935

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)	0.45155	1.18951	7.68217
	GATE_N->Q (-R)	0.54424	1.48250	9.36267
	RESET_B->Q (RR)	0.14280	0.91359	7.68558
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.45910	1.09635	7.63557
	GATE_N->Q (-R)	0.55596	1.39519	9.33019
	RESET_B->Q (RR)	0.15260	0.84257	7.80854

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.33826	0.89946	4.17149
	GATE_N->Q (-F)	0.37794	0.98074	4.62572
	RESET_B->Q (FF)	0.16793	0.81236	5.07353
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.37505	0.91570	4.07181
	GATE_N->Q (-F)	0.41526	0.99764	4.52318
	RESET_B->Q (FF)	0.19942	0.83486	5.20540

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)	0.41510	1.31381	8.94059
	GATE_N->Q_N (-R)	0.45499	1.39490	9.39305
	RESET_B->Q_N (FR)	0.24680	1.21800	9.53270
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.48184	1.26528	9.26039
	GATE_N->Q_N (-R)	0.52246	1.34687	9.71172
	RESET_B->Q_N (FR)	0.30886	1.18238	10.09270

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)	0.50780	0.87572	2.98429
	GATE_N->Q_N (-F)	0.60049	1.16962	4.66577
	RESET_B->Q_N (RF)	0.19916	0.59669	2.89334
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.57385	0.92929	3.21388
	GATE_N->Q_N (-F)	0.67086	1.22770	4.90682
	RESET_B->Q_N (RF)	0.26663	0.67281	3.33190

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 ()**	0.19793	0.83740	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.25071	0.83740	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	0.00719	0.00718	0.00784
	D	0.00613	0.00613	0.00678
	GATE_N	0.00746	0.00750	0.00866
	GATE_N	0.00846	0.00850	0.00949
	RESET_B	0.00476	0.00473	0.00500
	RESET_B	0.00354	0.00350	0.00376
sky130_fd_sc_hs__dlrbn_2	D	0.00861	0.00879	0.00953
	D	0.00757	0.00781	0.00847
	GATE_N	0.00889	0.00917	0.01041
	GATE_N	0.00988	0.01016	0.01121
	RESET_B	0.00632	0.00660	0.00683
	RESET_B	0.00506	0.00527	0.00551

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00565	0.00578	0.00658
	D	0.00671	0.00684	0.00758
	GATE_N	0.00690	0.00695	0.00786
	GATE_N	0.00803	0.00808	0.00899
	RESET_B	0.00499	0.00492	0.00549
	RESET_B	0.00613	0.00606	0.00643
sky130_fd_sc_hs__dlrbn_2	D	0.00722	0.00759	0.00845
	D	0.00826	0.00867	0.00942
	GATE_N	0.00846	0.00879	0.00967
	GATE_N	0.00957	0.00990	0.01077
	RESET_B	0.00650	0.00662	0.00715
	RESET_B	0.00768	0.00780	0.00812

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00567	0.00580	0.00672
	D	0.00672	0.00685	0.00771
	GATE_N	0.00692	0.00697	0.00819
	GATE_N	0.00805	0.00809	0.00914
	RESET_B	0.00500	0.00493	0.00559
	RESET_B	0.00614	0.00607	0.00654
sky130_fd_sc_hs__dlrbn_2	D	0.00723	0.00764	0.00888
	D	0.00827	0.00868	0.00964
	GATE_N	0.00847	0.00880	0.01001
	GATE_N	0.00959	0.00992	0.01097
	RESET_B	0.00651	0.00664	0.00727
	RESET_B	0.00768	0.00781	0.00826

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00718	0.00717	0.00768
	D	0.00613	0.00612	0.00663
	GATE_N	0.00745	0.00749	0.00842
	GATE_N	0.00845	0.00849	0.00935
	RESET_B	0.00476	0.00474	0.00486
	RESET_B	0.00353	0.00350	0.00363
sky130_fd_sc_hs__dlrbn_2	D	0.00860	0.00878	0.00938
	D	0.00756	0.00780	0.00828
	GATE_N	0.00888	0.00916	0.01017
	GATE_N	0.00987	0.01016	0.01099
	RESET_B	0.00631	0.00655	0.00659
	RESET_B	0.00506	0.00526	0.00529

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)	0.00313	0.00294	0.00421
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00115	0.00095	0.00224
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00583	0.00558	0.00684
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00398	0.00373	0.00498
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)	0.00311	0.00291	0.00420
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00115	0.00095	0.00223
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00550	0.00525	0.00651
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00367	0.00342	0.00467

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)	0.00093	0.00095	0.00276
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00290	0.00293	0.00474
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00425	0.00420	0.00594
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00611	0.00605	0.00780
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)	0.00088	0.00090	0.00271
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00284	0.00287	0.00467
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00437	0.00432	0.00606
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00621	0.00615	0.00790

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)	0.00566	0.00534	0.00681
	(D * RESET_B * Q * !Q_N)	0.00354	0.00321	0.00468
	(D * !RESET_B * !Q * Q_N)	0.00874	0.00842	0.00978
	(D * !RESET_B * !Q * Q_N)	0.00650	0.00617	0.00754
	(!D * !Q * Q_N)	0.00601	0.00570	0.00714
	(!D * !Q * Q_N)	0.00389	0.00357	0.00502
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00568	0.00536	0.00682
	(D * RESET_B * Q * !Q_N)	0.00356	0.00324	0.00471
	(D * !RESET_B * !Q * Q_N)	0.00886	0.00853	0.00989
	(D * !RESET_B * !Q * Q_N)	0.00663	0.00630	0.00767
	(!D * !Q * Q_N)	0.00595	0.00564	0.00708
	(!D * !Q * Q_N)	0.00384	0.00353	0.00497

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)	0.00439	0.00426	0.00635
	(D * RESET_B * Q * !Q_N)	0.00651	0.00639	0.00847
	(D * !RESET_B * !Q * Q_N)	0.00634	0.00618	0.00814
	(D * !RESET_B * !Q * Q_N)	0.00859	0.00844	0.01039
	(!D * !Q * Q_N)	0.00403	0.00391	0.00600
	(!D * !Q * Q_N)	0.00616	0.00604	0.00813
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00432	0.00420	0.00628
	(D * RESET_B * Q * !Q_N)	0.00643	0.00631	0.00838
	(D * !RESET_B * !Q * Q_N)	0.00603	0.00588	0.00783
	(D * !RESET_B * !Q * Q_N)	0.00827	0.00812	0.01006
	(!D * !Q * Q_N)	0.00403	0.00391	0.00599
	(!D * !Q * Q_N)	0.00614	0.00602	0.00811

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)	0.00092	0.00093	0.00092
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00117	-0.00118	-0.00117
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00098	0.00099	0.00098
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00118	-0.00119	-0.00118

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)	-0.00088	-0.00092	-0.00092
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00120	0.00120	0.00118
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00094	-0.00098	-0.00098
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00122	0.00121	0.00120

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00206	0.00235	0.00279	0.63357	0.63158
sky130_fd_sc_hs__dlrbp_2	0.00207	0.00234	0.00279	1.28650	1.28611

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrbp_1	0.00000	0.23948	0.32733
sky130_fd_sc_hs__dlrbp_2	0.00000	0.23421	0.30935

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)	0.43636	1.16787	7.63247
	GATE->Q (-R)	0.38402	1.11719	7.61353
	RESET_B->Q (RR)	0.14530	0.91901	7.71361
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.44827	1.06463	7.72202
	GATE->Q (-R)	0.39248	1.00886	7.68536
	RESET_B->Q (RR)	0.15209	0.82815	7.95168

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.33574	0.88999	4.12285
	GATE->Q (-F)	0.35865	0.74494	2.77225
	RESET_B->Q (FF)	0.17107	0.81822	5.09951
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.37260	0.91786	4.28559
	GATE->Q (-F)	0.39447	0.76942	2.91976
	RESET_B->Q (FF)	0.19230	0.83576	5.44263

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)	0.41572	1.31179	8.91739
	GATE->Q_N (-R)	0.43883	1.16673	7.56290
	RESET_B->Q_N (FR)	0.25324	1.23143	9.58268
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.47809	1.23694	8.97120
	GATE->Q_N (-R)	0.50033	1.08935	7.60246
	RESET_B->Q_N (FR)	0.29718	1.15489	9.82378

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)	0.49441	0.85310	2.88587
	GATE->Q_N (-F)	0.44214	0.80339	2.86751
	RESET_B->Q_N (RF)	0.20353	0.60067	2.87223
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.55235	0.88412	3.02560
	GATE->Q_N (-F)	0.49676	0.82812	2.98925
	RESET_B->Q_N (RF)	0.25550	0.64504	3.18702

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** ()	0.19793	0.83740	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B** ()	0.23829	0.83740	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	0.00680	0.00679	0.00746
	D	0.00581	0.00580	0.00648
	GATE	0.00785	0.00776	0.00847
	GATE	0.00675	0.00665	0.00736
	RESET_B	0.00479	0.00478	0.00500
	RESET_B	0.00353	0.00349	0.00374
sky130_fd_sc_hs__dlrbp_2	D	0.00846	0.00866	0.00947
	D	0.00747	0.00771	0.00845
	GATE	0.00948	0.00962	0.01047
	GATE	0.00837	0.00851	0.00933
	RESET_B	0.00639	0.00666	0.00690
	RESET_B	0.00512	0.00531	0.00557

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00587	0.00602	0.00677
	D	0.00686	0.00701	0.00773
	GATE	0.00807	0.00812	0.00877
	GATE	0.00712	0.00716	0.00782
	RESET_B	0.00506	0.00499	0.00546
	RESET_B	0.00624	0.00617	0.00652
sky130_fd_sc_hs__dlrbp_2	D	0.00745	0.00783	0.00867
	D	0.00844	0.00883	0.00957
	GATE	0.00964	0.00993	0.01066
	GATE	0.00868	0.00897	0.00967
	RESET_B	0.00661	0.00676	0.00708
	RESET_B	0.00779	0.00793	0.00824

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00588	0.00603	0.00695
	D	0.00687	0.00702	0.00788
	GATE	0.00808	0.00814	0.00888
	GATE	0.00714	0.00717	0.00793
	RESET_B	0.00507	0.00499	0.00562
	RESET_B	0.00625	0.00617	0.00664
sky130_fd_sc_hs__dlrbp_2	D	0.00746	0.00779	0.00887
	D	0.00845	0.00880	0.00974
	GATE	0.00965	0.00995	0.01087
	GATE	0.00869	0.00898	0.00987
	RESET_B	0.00662	0.00676	0.00725
	RESET_B	0.00779	0.00793	0.00840

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00679	0.00678	0.00731
	D	0.00580	0.00579	0.00632
	GATE	0.00784	0.00774	0.00832
	GATE	0.00674	0.00663	0.00721
	RESET_B	0.00479	0.00478	0.00489
	RESET_B	0.00353	0.00349	0.00362
sky130_fd_sc_hs__dlrbp_2	D	0.00845	0.00867	0.00922
	D	0.00746	0.00770	0.00821
	GATE	0.00947	0.00962	0.01026
	GATE	0.00837	0.00851	0.00913
	RESET_B	0.00638	0.00662	0.00666
	RESET_B	0.00512	0.00530	0.00538

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)	0.00500	0.00477	0.00606
	(GATE * !RESET_B * !Q * Q_N)	0.00332	0.00308	0.00438
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00302	0.00283	0.00416
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00121	0.00101	0.00235
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00505	0.00481	0.00610
	(GATE * !RESET_B * !Q * Q_N)	0.00336	0.00313	0.00441
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00302	0.00283	0.00415
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00120	0.00100	0.00232

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)	0.00445	0.00441	0.00618
	(GATE * !RESET_B * !Q * Q_N)	0.00614	0.00611	0.00787
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00072	0.00075	0.00258
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00253	0.00257	0.00440
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00451	0.00446	0.00622
	(GATE * !RESET_B * !Q * Q_N)	0.00620	0.00616	0.00791
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00077	0.00081	0.00263
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00260	0.00264	0.00447

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)	0.00583	0.00554	0.00701
	(D * RESET_B * Q * !Q_N)	0.00377	0.00347	0.00495
	(D * !RESET_B * !Q * Q_N)	0.00689	0.00649	0.00795
	(D * !RESET_B * !Q * Q_N)	0.00496	0.00455	0.00601
	(!D * !Q * Q_N)	0.00586	0.00558	0.00705
	(!D * !Q * Q_N)	0.00380	0.00352	0.00499
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00583	0.00555	0.00703
	(D * RESET_B * Q * !Q_N)	0.00377	0.00347	0.00495
	(D * !RESET_B * !Q * Q_N)	0.00687	0.00647	0.00794
	(D * !RESET_B * !Q * Q_N)	0.00495	0.00454	0.00601
	(!D * !Q * Q_N)	0.00584	0.00556	0.00703
	(!D * !Q * Q_N)	0.00377	0.00348	0.00496

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)	0.00363	0.00353	0.00561
	(D * RESET_B * Q * !Q_N)	0.00569	0.00559	0.00768
	(D * !RESET_B * !Q * Q_N)	0.00610	0.00588	0.00800
	(D * !RESET_B * !Q * Q_N)	0.00804	0.00781	0.00993
	(!D * !Q * Q_N)	0.00362	0.00350	0.00562
	(!D * !Q * Q_N)	0.00568	0.00556	0.00768
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00361	0.00350	0.00559
	(D * RESET_B * Q * !Q_N)	0.00568	0.00557	0.00766
	(D * !RESET_B * !Q * Q_N)	0.00605	0.00583	0.00796
	(D * !RESET_B * !Q * Q_N)	0.00799	0.00777	0.00988
	(!D * !Q * Q_N)	0.00362	0.00350	0.00562
	(!D * !Q * Q_N)	0.00569	0.00556	0.00769

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)	0.00093	0.00094	0.00094
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00120	-0.00121	-0.00120
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00094	0.00096	0.00095
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00120	-0.00120	-0.00120

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)	-0.00089	-0.00094	-0.00093
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00123	0.00123	0.00121
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00091	-0.00095	-0.00095
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00123	0.00123	0.00121

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00205	0.00238	0.00266	0.64319
sky130_fd_sc_hs__dlrtn_2	0.00207	0.00236	0.00274	1.27838
sky130_fd_sc_hs__dlrtn_4	0.00207	0.00237	0.00447	2.43025

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtn_1	0.00000	0.18782	0.26703
sky130_fd_sc_hs__dlrtn_2	0.00000	0.18599	0.25804
sky130_fd_sc_hs__dlrtn_4	0.00000	0.30565	0.52484

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)	0.42012	1.14742	7.57772
	GATE_N->Q (-R)	0.49600	1.41784	9.18270
	RESET_B->Q (RR)	0.12619	0.87139	7.46729
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.43295	1.04830	7.69800
	GATE_N->Q (-R)	0.50916	1.31859	9.30422
	RESET_B->Q (RR)	0.13297	0.78538	7.74584
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.48404	1.01154	7.72203
	GATE_N->Q (-R)	0.56140	1.28532	9.33950
	RESET_B->Q (RR)	0.14249	0.70327	7.70772

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.31328	0.86201	4.13933
	GATE_N->Q (-F)	0.34188	0.92936	4.52653
	RESET_B->Q (FF)	0.15050	0.76287	4.75882
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.33213	0.85544	4.14732
	GATE_N->Q (-F)	0.36007	0.92239	4.53714
	RESET_B->Q (FF)	0.16770	0.78054	5.09362
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.34621	0.84815	4.23503
	GATE_N->Q (-F)	0.37956	0.92374	4.66085
	RESET_B->Q (FF)	0.17556	0.73906	4.82926

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** ()	0.17310	0.83740	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B** ()	0.21035	0.83740	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B** ()	0.23519	0.83740	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	0.01001	0.00989	0.01116
	D	0.00807	0.00795	0.00929
	GATE_N	0.01045	0.01040	0.01241
	GATE_N	0.01239	0.01234	0.01434
	RESET_B	0.00602	0.00589	0.00646
	RESET_B	0.00361	0.00347	0.00405
sky130_fd_sc_hs__dlrtn_2	D	0.01144	0.01158	0.01294
	D	0.00951	0.00966	0.01116
	GATE_N	0.01192	0.01213	0.01420
	GATE_N	0.01387	0.01407	0.01629
	RESET_B	0.00741	0.00748	0.00793
	RESET_B	0.00493	0.00500	0.00557
sky130_fd_sc_hs__dlrtn_4	D	0.01630	0.01691	0.01852
	D	0.01424	0.01485	0.01674
	GATE_N	0.01682	0.01749	0.01985
	GATE_N	0.01863	0.01930	0.02193
	RESET_B	0.01299	0.01336	0.01502
	RESET_B	0.00893	0.00930	0.01121

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.00824	0.00836	0.01009
	D	0.01019	0.01031	0.01194
	GATE_N	0.00997	0.00986	0.01201
	GATE_N	0.01220	0.01213	0.01420
	RESET_B	0.00653	0.00633	0.00766
	RESET_B	0.00878	0.00856	0.00972
sky130_fd_sc_hs__dlrtn_2	D	0.00985	0.01023	0.01212
	D	0.01179	0.01219	0.01384
	GATE_N	0.01165	0.01186	0.01438
	GATE_N	0.01382	0.01404	0.01612
	RESET_B	0.00811	0.00811	0.00923
	RESET_B	0.01042	0.01044	0.01128
sky130_fd_sc_hs__dlrtn_4	D	0.01397	0.01489	0.01663
	D	0.01604	0.01694	0.01862
	GATE_N	0.01580	0.01649	0.01913
	GATE_N	0.01812	0.01882	0.02093
	RESET_B	0.01256	0.01279	0.01647
	RESET_B	0.01640	0.01661	0.01977

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)	0.00292	0.00274	0.00404
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00112	0.00093	0.00224
	(!GATE_N * !RESET_B * !Q)	0.00491	0.00468	0.00595
	(!GATE_N * !RESET_B * !Q)	0.00324	0.00301	0.00428
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00295	0.00276	0.00406
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00113	0.00094	0.00224
	(!GATE_N * !RESET_B * !Q)	0.00493	0.00470	0.00597
	(!GATE_N * !RESET_B * !Q)	0.00325	0.00301	0.00429
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00294	0.00275	0.00406
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00113	0.00093	0.00225
	(!GATE_N * !RESET_B * !Q)	0.00521	0.00498	0.00625
	(!GATE_N * !RESET_B * !Q)	0.00356	0.00332	0.00458

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)	0.00096	0.00099	0.00282
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00276	0.00278	0.00462
	(!GATE_N * !RESET_B * !Q)	0.00473	0.00467	0.00644
	(!GATE_N * !RESET_B * !Q)	0.00640	0.00635	0.00811
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00095	0.00097	0.00280
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00277	0.00279	0.00462
	(!GATE_N * !RESET_B * !Q)	0.00476	0.00470	0.00647
	(!GATE_N * !RESET_B * !Q)	0.00645	0.00639	0.00815
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00093	0.00095	0.00278
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00273	0.00275	0.00459
	(!GATE_N * !RESET_B * !Q)	0.00545	0.00540	0.00717
	(!GATE_N * !RESET_B * !Q)	0.00713	0.00708	0.00885

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)	0.00555	0.00525	0.00678
	(D * RESET_B * Q)	0.00348	0.00317	0.00469
	(D * !RESET_B * !Q)	0.00865	0.00836	0.00978
	(D * !RESET_B * !Q)	0.00645	0.00614	0.00757
	(!D * !Q)	0.00553	0.00526	0.00674
	(!D * !Q)	0.00346	0.00317	0.00466
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00553	0.00524	0.00676
	(D * RESET_B * Q)	0.00348	0.00317	0.00470
	(D * !RESET_B * !Q)	0.00867	0.00837	0.00979
	(D * !RESET_B * !Q)	0.00649	0.00618	0.00760
	(!D * !Q)	0.00550	0.00522	0.00671
	(!D * !Q)	0.00345	0.00316	0.00465
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00558	0.00528	0.00679
	(D * RESET_B * Q)	0.00352	0.00321	0.00473
	(D * !RESET_B * !Q)	0.00939	0.00910	0.01054
	(D * !RESET_B * !Q)	0.00720	0.00690	0.00834
	(!D * !Q)	0.00551	0.00523	0.00672
	(!D * !Q)	0.00346	0.00316	0.00465

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)	0.00369	0.00358	0.00569
	(D * RESET_B * Q)	0.00577	0.00565	0.00778
	(D * !RESET_B * !Q)	0.00531	0.00515	0.00718
	(D * !RESET_B * !Q)	0.00752	0.00736	0.00939
	(!D * !Q)	0.00369	0.00358	0.00570
	(!D * !Q)	0.00577	0.00567	0.00779
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00373	0.00364	0.00574
	(D * RESET_B * Q)	0.00579	0.00570	0.00780
	(D * !RESET_B * !Q)	0.00537	0.00522	0.00724
	(D * !RESET_B * !Q)	0.00756	0.00741	0.00943
	(!D * !Q)	0.00376	0.00363	0.00577
	(!D * !Q)	0.00581	0.00569	0.00783
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00376	0.00364	0.00575
	(D * RESET_B * Q)	0.00582	0.00571	0.00782
	(D * !RESET_B * !Q)	0.00568	0.00553	0.00755
	(D * !RESET_B * !Q)	0.00789	0.00775	0.00976
	(!D * !Q)	0.00380	0.00367	0.00581
	(!D * !Q)	0.00587	0.00574	0.00788

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)	0.00093	0.00094	0.00093
	(D * GATE_N * !Q) + (!D * !Q)	-0.00110	-0.00111	-0.00111
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00095	0.00096	0.00095
	(D * GATE_N * !Q) + (!D * !Q)	-0.00118	-0.00119	-0.00118
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00161	0.00162	0.00160
	(D * GATE_N * !Q) + (!D * !Q)	-0.00182	-0.00183	-0.00182

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)	-0.00089	-0.00094	-0.00093
	(D * GATE_N * !Q) + (!D * !Q)	0.00114	0.00114	0.00111
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00091	-0.00096	-0.00095
	(D * GATE_N * !Q) + (!D * !Q)	0.00121	0.00121	0.00119
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00154	-0.00161	-0.00160
	(D * GATE_N * !Q) + (!D * !Q)	0.00186	0.00185	0.00183

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00221	0.00240	0.00271	0.65545
sky130_fd_sc_hs__dlrtp_2	0.00218	0.00235	0.00280	1.27897
sky130_fd_sc_hs__dlrtp_4	0.00217	0.00233	0.00426	2.46973

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	0.18782	0.26703
sky130_fd_sc_hs__dlrtp_2	0.00000	0.18599	0.25804
sky130_fd_sc_hs__dlrtp_4	0.00000	0.30565	0.52484

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)	0.41582	1.14600	7.69115
	GATE->Q (-R)	0.36349	1.09414	7.67101
	RESET_B->Q (RR)	0.12674	0.87757	7.58869
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.43244	1.04335	7.66671
	GATE->Q (-R)	0.37890	0.98875	7.63109
	RESET_B->Q (RR)	0.13274	0.78366	7.71625
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.48060	1.00898	7.79745
	GATE->Q (-R)	0.43191	0.95982	7.78774
	RESET_B->Q (RR)	0.14207	0.70480	7.79016

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.32356	0.88093	4.27435
	GATE->Q (-F)	0.34553	0.73551	2.92456
	RESET_B->Q (FF)	0.15089	0.76954	4.86561
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.34592	0.87516	4.23382
	GATE->Q (-F)	0.36450	0.72205	2.85663
	RESET_B->Q (FF)	0.16358	0.77705	5.13100
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.35676	0.86104	4.28465
	GATE->Q (-F)	0.37363	0.70938	2.89975
	RESET_B->Q (FF)	0.17442	0.73865	4.86261

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** ()	0.17000	0.83740	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B** ()	0.20414	0.83740	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B** ()	0.23208	0.83740	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	0.01007	0.00987	0.01106
	D	0.00792	0.00772	0.00898
	GATE	0.01229	0.01192	0.01328
	GATE	0.01001	0.00965	0.01108
	RESET_B	0.00580	0.00563	0.00619
	RESET_B	0.00334	0.00316	0.00379
sky130_fd_sc_hs__dlrtp_2	D	0.01179	0.01187	0.01321
	D	0.00964	0.00972	0.01120
	GATE	0.01381	0.01376	0.01517
	GATE	0.01157	0.01151	0.01307
	RESET_B	0.00745	0.00748	0.00794
	RESET_B	0.00491	0.00494	0.00553
sky130_fd_sc_hs__dlrtp_4	D	0.01651	0.01709	0.01864
	D	0.01431	0.01490	0.01673
	GATE	0.01850	0.01897	0.02061
	GATE	0.01621	0.01669	0.01860
	RESET_B	0.01283	0.01323	0.01494
	RESET_B	0.00895	0.00937	0.01132

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.00801	0.00811	0.00977
	D	0.01018	0.01026	0.01192
	GATE	0.01263	0.01256	0.01413
	GATE	0.01066	0.01058	0.01207
	RESET_B	0.00652	0.00632	0.00765
	RESET_B	0.00880	0.00859	0.00974
sky130_fd_sc_hs__dlrtp_2	D	0.00949	0.00988	0.01158
	D	0.01165	0.01203	0.01370
	GATE	0.01390	0.01416	0.01574
	GATE	0.01198	0.01218	0.01375
	RESET_B	0.00793	0.00794	0.00919
	RESET_B	0.01030	0.01030	0.01119
sky130_fd_sc_hs__dlrtp_4	D	0.01380	0.01469	0.01673
	D	0.01601	0.01688	0.01861
	GATE	0.01808	0.01898	0.02074
	GATE	0.01622	0.01696	0.01857
	RESET_B	0.01255	0.01281	0.01606
	RESET_B	0.01622	0.01646	0.01965

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)	0.00522	0.00498	0.00624
	(GATE * !RESET_B * !Q)	0.00336	0.00311	0.00438
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00318	0.00298	0.00428
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00117	0.00096	0.00227
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00530	0.00505	0.00630
	(GATE * !RESET_B * !Q)	0.00343	0.00318	0.00444
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00320	0.00300	0.00429
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00120	0.00100	0.00229
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00548	0.00523	0.00648
	(GATE * !RESET_B * !Q)	0.00363	0.00337	0.00462
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00319	0.00299	0.00428
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00120	0.00099	0.00229

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)	0.00439	0.00431	0.00608
	(GATE * !RESET_B * !Q)	0.00626	0.00618	0.00795
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00070	0.00070	0.00254
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00272	0.00272	0.00456
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00450	0.00442	0.00619
	(GATE * !RESET_B * !Q)	0.00637	0.00630	0.00806
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00074	0.00075	0.00257
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00274	0.00275	0.00457
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00516	0.00508	0.00685
	(GATE * !RESET_B * !Q)	0.00703	0.00695	0.00872
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00071	0.00071	0.00254
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00271	0.00271	0.00454

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)	0.00610	0.00580	0.00727
	(D * RESET_B * Q)	0.00398	0.00367	0.00515
	(D * !RESET_B * !Q)	0.00720	0.00680	0.00823
	(D * !RESET_B * !Q)	0.00523	0.00481	0.00625
	(!D * !Q)	0.00605	0.00576	0.00722
	(!D * !Q)	0.00393	0.00363	0.00509
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00595	0.00566	0.00714
	(D * RESET_B * Q)	0.00387	0.00356	0.00504
	(D * !RESET_B * !Q)	0.00709	0.00669	0.00812
	(D * !RESET_B * !Q)	0.00515	0.00472	0.00617
	(!D * !Q)	0.00589	0.00559	0.00707
	(!D * !Q)	0.00380	0.00350	0.00498
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00587	0.00557	0.00705
	(D * RESET_B * Q)	0.00378	0.00348	0.00496
	(D * !RESET_B * !Q)	0.00728	0.00687	0.00828
	(D * !RESET_B * !Q)	0.00532	0.00491	0.00632
	(!D * !Q)	0.00583	0.00555	0.00702
	(!D * !Q)	0.00375	0.00346	0.00493

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)	0.00361	0.00351	0.00557
	(D * RESET_B * Q)	0.00573	0.00563	0.00770
	(D * !RESET_B * !Q)	0.00610	0.00588	0.00798
	(D * !RESET_B * !Q)	0.00809	0.00787	0.00997
	(!D * !Q)	0.00368	0.00357	0.00566
	(!D * !Q)	0.00581	0.00569	0.00779
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00364	0.00353	0.00561
	(D * RESET_B * Q)	0.00573	0.00563	0.00770
	(D * !RESET_B * !Q)	0.00623	0.00600	0.00810
	(D * !RESET_B * !Q)	0.00818	0.00796	0.01006
	(!D * !Q)	0.00372	0.00360	0.00571
	(!D * !Q)	0.00581	0.00569	0.00780
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00359	0.00348	0.00557
	(D * RESET_B * Q)	0.00568	0.00557	0.00765
	(D * !RESET_B * !Q)	0.00689	0.00666	0.00874
	(D * !RESET_B * !Q)	0.00886	0.00863	0.01071
	(!D * !Q)	0.00363	0.00351	0.00562
	(!D * !Q)	0.00572	0.00560	0.00771

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)	0.00092	0.00094	0.00093
	(D * !GATE * !Q) + (!D * !Q)	-0.00113	-0.00114	-0.00114
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00094	0.00095	0.00094
	(D * !GATE * !Q) + (!D * !Q)	-0.00121	-0.00121	-0.00121
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00156	0.00157	0.00156
	(D * !GATE * !Q) + (!D * !Q)	-0.00174	-0.00174	-0.00173

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)	-0.00089	-0.00093	-0.00093
	(D * !GATE * !Q) + (!D * !Q)	0.00117	0.00117	0.00115
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00090	-0.00094	-0.00094
	(D * !GATE * !Q) + (!D * !Q)	0.00124	0.00124	0.00122
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00149	-0.00156	-0.00156
	(D * !GATE * !Q) + (!D * !Q)	0.00177	0.00176	0.00174

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00220	0.00240	0.62918	0.64387
sky130_fd_sc_hs__dlxbn_2	0.00208	0.00238	1.16382	1.26938

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlxbn_1	0.00000	0.21949	0.32733
sky130_fd_sc_hs__dlxbn_2	0.00000	0.22269	0.30935

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)	0.41749	1.15742	7.59794
	GATE_N->Q (-R)	0.49547	1.42970	9.21048
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.42553	1.05821	7.61565
	GATE_N->Q (-R)	0.50280	1.33021	9.22381

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.33264	0.89402	4.21550
	GATE_N->Q (-F)	0.36235	0.96263	4.60942
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.35346	0.88647	4.06237
	GATE_N->Q (-F)	0.38401	0.95625	4.45652

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)	0.41192	1.34858	9.45209
	GATE_N->Q_N (-R)	0.44181	1.41687	9.84311
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.45740	1.23679	9.21762
	GATE_N->Q_N (-R)	0.48833	1.30680	9.61157

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)	0.47526	0.84656	3.01738
	GATE_N->Q_N (-F)	0.55314	1.11967	4.63163
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.53336	0.88895	3.14816
	GATE_N->Q_N (-F)	0.61076	1.16041	4.75768

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00679	0.00689	0.00758
	D	0.00583	0.00593	0.00661
	GATE_N	0.00699	0.00712	0.00826
	GATE_N	0.00804	0.00818	0.00923
sky130_fd_sc_hs__dlxbn_2	D	0.00836	0.00870	0.00950
	D	0.00745	0.00780	0.00857
	GATE_N	0.00857	0.00894	0.01006
	GATE_N	0.00962	0.00999	0.01109

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00595	0.00613	0.00694
	D	0.00691	0.00709	0.00786
	GATE_N	0.00693	0.00703	0.00806
	GATE_N	0.00799	0.00808	0.00903
sky130_fd_sc_hs__dlxbn_2	D	0.00746	0.00790	0.00877
	D	0.00838	0.00880	0.00960
	GATE_N	0.00843	0.00877	0.00975
	GATE_N	0.00947	0.00981	0.01074

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00596	0.00614	0.00719
	D	0.00693	0.00710	0.00800
	GATE_N	0.00694	0.00702	0.00809
	GATE_N	0.00800	0.00810	0.00914
sky130_fd_sc_hs__dlxbn_2	D	0.00747	0.00791	0.00918
	D	0.00840	0.00882	0.00982
	GATE_N	0.00844	0.00878	0.01012
	GATE_N	0.00949	0.00983	0.01094

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00678	0.00688	0.00742
	D	0.00582	0.00592	0.00645
	GATE_N	0.00698	0.00711	0.00802
	GATE_N	0.00803	0.00817	0.00907
sky130_fd_sc_hs__dlxbn_2	D	0.00835	0.00867	0.00926
	D	0.00744	0.00779	0.00830
	GATE_N	0.00856	0.00894	0.00999
	GATE_N	0.00962	0.00999	0.01088

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)	0.00310	0.00290	0.00419
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00117	0.00096	0.00227
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00303	0.00284	0.00414
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00119	0.00100	0.00230

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)	0.00083	0.00085	0.00267
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00275	0.00277	0.00460
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00086	0.00087	0.00271
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00270	0.00272	0.00455

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)	0.00575	0.00545	0.00695
	(D * Q * !Q_N)	0.00365	0.00333	0.00484
	(!D * !Q * Q_N)	0.00568	0.00538	0.00687
	(!D * !Q * Q_N)	0.00357	0.00327	0.00477
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00573	0.00543	0.00693
	(D * Q * !Q_N)	0.00364	0.00332	0.00483
	(!D * !Q * Q_N)	0.00565	0.00537	0.00685
	(!D * !Q * Q_N)	0.00357	0.00326	0.00475

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)	0.00376	0.00365	0.00575
	(D * Q * !Q_N)	0.00586	0.00576	0.00786
	(!D * !Q * Q_N)	0.00382	0.00371	0.00582
	(!D * !Q * Q_N)	0.00592	0.00582	0.00792
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00374	0.00363	0.00573
	(D * Q * !Q_N)	0.00583	0.00573	0.00783
	(!D * !Q * Q_N)	0.00379	0.00369	0.00579
	(!D * !Q * Q_N)	0.00588	0.00579	0.00789

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00218	0.00241	0.63193	0.64270

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.21949	0.32733

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)	0.40802	1.14637	7.60991
	GATE->Q (-R)	0.35467	1.09218	7.57027

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.34290	0.90747	4.23613
	GATE->Q (-F)	0.35626	0.74953	2.84939

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)	0.42305	1.35893	9.44803
	GATE->Q_N (-R)	0.43656	1.20078	8.05783

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)	0.46584	0.83573	2.99815
	GATE->Q_N (-F)	0.41258	0.78067	2.95842

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00679	0.00689	0.00756
	D	0.00584	0.00594	0.00660
	GATE	0.00776	0.00779	0.00854
	GATE	0.00671	0.00673	0.00748

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00585	0.00604	0.00686
	D	0.00680	0.00700	0.00775
	GATE	0.00799	0.00808	0.00881
	GATE	0.00694	0.00703	0.00775

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00586	0.00606	0.00708
	D	0.00682	0.00701	0.00790
	GATE	0.00801	0.00811	0.00891
	GATE	0.00696	0.00705	0.00785

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00678	0.00688	0.00742
	D	0.00583	0.00593	0.00646
	GATE	0.00775	0.00777	0.00840
	GATE	0.00670	0.00672	0.00734

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)	0.00316	0.00297	0.00427
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00126	0.00106	0.00236

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)	0.00075	0.00078	0.00259
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00266	0.00268	0.00450

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)	0.00577	0.00548	0.00696
	(D * Q * !Q_N)	0.00366	0.00337	0.00485
	(!D * !Q * Q_N)	0.00583	0.00556	0.00702
	(!D * !Q * Q_N)	0.00371	0.00345	0.00491

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)	0.00355	0.00344	0.00553
	(D * Q * !Q_N)	0.00565	0.00555	0.00764
	(!D * !Q * Q_N)	0.00350	0.00339	0.00549
	(!D * !Q * Q_N)	0.00561	0.00551	0.00761

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00218	0.00243	0.64925
sky130_fd_sc_hs__dlxtn_2	0.00223	0.00243	1.24839
sky130_fd_sc_hs__dlxtn_4	0.00222	0.00242	2.43197

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.17924	0.24109
sky130_fd_sc_hs__dlxtn_2	0.00000	0.17653	0.25804
sky130_fd_sc_hs__dlxtn_4	0.00000	0.27596	0.35726

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)	0.39238	1.12640	7.64904
	GATE_N->Q (-R)	0.47267	1.40332	9.27919
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.39526	1.00437	7.52995
	GATE_N->Q (-R)	0.47230	1.27473	9.13789
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.45112	0.97248	7.68673
	GATE_N->Q (-R)	0.52687	1.24390	9.29510

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.30672	0.85655	4.16084
	GATE_N->Q (-F)	0.34063	0.93050	4.57339
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.32561	0.84862	4.13456
	GATE_N->Q (-F)	0.35695	0.91886	4.53514
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.34467	0.84995	4.30485
	GATE_N->Q (-F)	0.37981	0.92612	4.73401

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.00960	0.00956	0.01080
	D	0.00761	0.00757	0.00888
	GATE_N	0.00993	0.00996	0.01199
	GATE_N	0.01208	0.01212	0.01423
sky130_fd_sc_hs__dlxtn_2	D	0.01119	0.01136	0.01266
	D	0.00917	0.00934	0.01064
	GATE_N	0.01150	0.01173	0.01382
	GATE_N	0.01364	0.01388	0.01601
sky130_fd_sc_hs__dlxtn_4	D	0.01585	0.01635	0.01774
	D	0.01383	0.01433	0.01600
	GATE_N	0.01617	0.01673	0.01892
	GATE_N	0.01831	0.01887	0.02134

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.00814	0.00821	0.01000
	D	0.01013	0.01020	0.01188
	GATE_N	0.01003	0.00991	0.01212
	GATE_N	0.01218	0.01210	0.01418
sky130_fd_sc_hs__dlxtn_2	D	0.00956	0.00984	0.01171
	D	0.01159	0.01190	0.01359
	GATE_N	0.01144	0.01159	0.01414
	GATE_N	0.01358	0.01373	0.01588
sky130_fd_sc_hs__dlxtn_4	D	0.01394	0.01472	0.01696
	D	0.01597	0.01675	0.01849
	GATE_N	0.01582	0.01643	0.01911
	GATE_N	0.01797	0.01859	0.02070

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00310	0.00290	0.00417
	GATE_N	0.00111	0.00090	0.00217
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00311	0.00291	0.00418
	GATE_N	0.00108	0.00087	0.00214
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00312	0.00291	0.00418
	GATE_N	0.00109	0.00088	0.00215

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00102	0.00100	0.00283
	GATE_N	0.00301	0.00300	0.00483
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00101	0.00099	0.00282
	GATE_N	0.00304	0.00302	0.00486
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00102	0.00101	0.00284
	GATE_N	0.00305	0.00303	0.00487

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00599	0.00569	0.00716
	(D * Q)	0.00383	0.00353	0.00500
	(!D * !Q)	0.00590	0.00561	0.00706
	(!D * !Q)	0.00374	0.00345	0.00490
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00585	0.00556	0.00705
	(D * Q)	0.00371	0.00340	0.00490
	(!D * !Q)	0.00574	0.00546	0.00692
	(!D * !Q)	0.00359	0.00330	0.00477
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00590	0.00560	0.00708
	(D * Q)	0.00376	0.00345	0.00493
	(!D * !Q)	0.00578	0.00550	0.00695
	(!D * !Q)	0.00363	0.00335	0.00481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00377	0.00364	0.00573
	(D * Q)	0.00593	0.00580	0.00789
	(!D * !Q)	0.00385	0.00371	0.00581
	(!D * !Q)	0.00600	0.00586	0.00797
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00372	0.00362	0.00570
	(D * Q)	0.00587	0.00576	0.00785
	(!D * !Q)	0.00382	0.00369	0.00581
	(!D * !Q)	0.00597	0.00583	0.00796
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00376	0.00363	0.00573
	(D * Q)	0.00590	0.00577	0.00787
	(!D * !Q)	0.00386	0.00374	0.00583
	(!D * !Q)	0.00600	0.00588	0.00798

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00214	0.00248	0.63948

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.16533	0.23993

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)	0.46198	1.19420	7.73879
	GATE->Q (-R)	0.37077	1.10703	7.69863

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.32668	0.87982	4.24861
	GATE->Q (-F)	0.34430	0.73138	2.87017

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01042	0.01035	0.01157
	D	0.00836	0.00829	0.00960
	GATE	0.01266	0.01245	0.01337
	GATE	0.01041	0.01019	0.01119

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.00916	0.00927	0.01097
	D	0.01121	0.01132	0.01301
	GATE	0.01349	0.01341	0.01492
	GATE	0.01146	0.01138	0.01282

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00292	0.00274	0.00410
	!GATE	0.00096	0.00079	0.00215

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00078	0.00076	0.00257
	!GATE	0.00273	0.00270	0.00453

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00629	0.00601	0.00748
	(D * Q)	0.00415	0.00385	0.00533
	(!D * !Q)	0.00611	0.00583	0.00728
	(!D * !Q)	0.00397	0.00368	0.00513

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00312	0.00300	0.00512
	(D * Q)	0.00526	0.00515	0.00726
	(!D * !Q)	0.00340	0.00330	0.00539
	(!D * !Q)	0.00554	0.00545	0.00754

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00174	0.63967
sky130_fd_sc_hs__dlygate4sd2_1	0.00176	0.64182
sky130_fd_sc_hs__dlygate4sd3_1	0.00178	0.64223

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.01480	0.02068
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.01375	0.01963
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.01377	0.01964

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)**	0.26124	1.00016	7.50489
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.35415	1.10158	7.69364
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.71896	1.49058	8.22667

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.34891	0.98372	5.19668
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.44316	1.09937	5.37840
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.73864	1.45675	5.95759

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00746	0.00727	0.00752
	A	0.00588	0.00569	0.00595
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00769	0.00751	0.00776
	A	0.00610	0.00592	0.00621
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00849	0.00838	0.00859
	A	0.00687	0.00676	0.00698

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00565	0.00542	0.00585
	A	0.00724	0.00711	0.00739
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00591	0.00580	0.00599
	A	0.00751	0.00740	0.00758
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00698	0.00690	0.00698
	A	0.00859	0.00850	0.00852

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00223	0.00414	0.30313
sky130_fd_sc_hs__ebufn_2	0.00242	0.00537	0.53311
sky130_fd_sc_hs__ebufn_4	0.00265	0.00819	1.06161
sky130_fd_sc_hs__ebufn_8	0.00510	0.01359	1.93928

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	0.10353	0.16819
sky130_fd_sc_hs__ebufn_2	0.00000	0.06345	0.08941
sky130_fd_sc_hs__ebufn_4	0.00000	0.04019	0.07967
sky130_fd_sc_hs__ebufn_8	0.00000	0.06710	0.15573

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)	0.13482	1.06954	7.64120
	TE_B->Z (RR)	0.03638	0.37070	4.01341
	TE_B->Z (FR)	0.11118	1.29890	12.04060
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.11828	0.93776	7.72661
	TE_B->Z (RR)	0.03839	0.37148	4.01419
	TE_B->Z (FR)	0.10582	1.14791	12.01100
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.12518	0.84406	8.02703
	TE_B->Z (RR)	0.04750	0.37348	4.01614
	TE_B->Z (FR)	0.09768	0.99234	11.97290
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.13159	0.74998	8.03814
	TE_B->Z (RR)	0.07386	0.37850	4.02040
	TE_B->Z (FR)	0.10586	0.89296	11.89940

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.13067	0.68370	3.75079
	TE_B->Z (RF)	0.03608	0.37069	4.01343
	TE_B->Z (FF)	0.10679	0.62309	3.51178
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.15406	0.72860	4.20443
	TE_B->Z (RF)	0.03820	0.37147	4.01420
	TE_B->Z (FF)	0.11750	0.64050	3.82531
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.20908	0.81615	4.92100
	TE_B->Z (RF)	0.04685	0.37345	4.01619
	TE_B->Z (FF)	0.14480	0.69799	4.36358
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.20063	0.78622	5.00660
	TE_B->Z (RF)	0.07268	0.37834	4.02050
	TE_B->Z (FF)	0.21011	0.79094	5.01555

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00420	0.00410	0.00546
	A	0.00212	0.00202	0.00341
	TE_B	0.00186	0.00186	0.00389
	TE_B	0.00556	0.00557	0.00763
sky130_fd_sc_hs__ebufn_2	A	0.00597	0.00604	0.00727
	A	0.00375	0.00382	0.00509
	TE_B	0.00356	0.00351	0.00528
	TE_B	0.00835	0.00832	0.01012
sky130_fd_sc_hs__ebufn_4	A	0.00948	0.00985	0.01091
	A	0.00703	0.00741	0.00850
	TE_B	0.00712	0.00700	0.00838
	TE_B	0.01450	0.01436	0.01583
sky130_fd_sc_hs__ebufn_8	A	0.01830	0.01911	0.02149
	A	0.01358	0.01438	0.01682
	TE_B	0.01456	0.01435	0.01560
	TE_B	0.02684	0.02663	0.02799

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00203	0.00217	0.00401
	A	0.00411	0.00424	0.00608
	TE_B	0.00218	0.00222	0.00419
	TE_B	0.00581	0.00586	0.00782
sky130_fd_sc_hs__ebufn_2	A	0.00354	0.00388	0.00548
	A	0.00575	0.00608	0.00764
	TE_B	0.00421	0.00423	0.00595
	TE_B	0.00882	0.00881	0.01051
sky130_fd_sc_hs__ebufn_4	A	0.00658	0.00732	0.00873
	A	0.00902	0.00976	0.01116
	TE_B	0.00829	0.00831	0.00960
	TE_B	0.01537	0.01530	0.01661
sky130_fd_sc_hs__ebufn_8	A	0.01294	0.01429	0.01759
	A	0.01767	0.01905	0.02211
	TE_B	0.01681	0.01659	0.01786
	TE_B	0.02850	0.02830	0.02951

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00276	0.00260	0.00403
	(TE_B * Z)	0.00067	0.00050	0.00193
	(TE_B * !Z)	0.00273	0.00257	0.00397
	(TE_B * !Z)	0.00064	0.00047	0.00187
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00381	0.00362	0.00488
	(TE_B * Z)	0.00152	0.00132	0.00259
	(TE_B * !Z)	0.00368	0.00348	0.00468
	(TE_B * !Z)	0.00141	0.00119	0.00240
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00563	0.00541	0.00626
	(TE_B * Z)	0.00311	0.00288	0.00374
	(TE_B * !Z)	0.00541	0.00519	0.00596
	(TE_B * !Z)	0.00290	0.00267	0.00344
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01044	0.01004	0.01181
	(TE_B * Z)	0.00555	0.00513	0.00691
	(TE_B * !Z)	0.01000	0.00959	0.01121
	(TE_B * !Z)	0.00511	0.00469	0.00632

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00042	0.00046	0.00233
	(TE_B * Z)	0.00255	0.00258	0.00445
	(TE_B * !Z)	0.00046	0.00050	0.00239
	(TE_B * !Z)	0.00255	0.00259	0.00449
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00088	0.00083	0.00236
	(TE_B * Z)	0.00320	0.00317	0.00470
	(TE_B * !Z)	0.00100	0.00097	0.00256
	(TE_B * !Z)	0.00328	0.00325	0.00484
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00163	0.00153	0.00267
	(TE_B * Z)	0.00423	0.00415	0.00529
	(TE_B * !Z)	0.00187	0.00178	0.00300
	(TE_B * !Z)	0.00436	0.00428	0.00550
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00278	0.00261	0.00498
	(TE_B * Z)	0.00785	0.00769	0.01009
	(TE_B * !Z)	0.00327	0.00312	0.00565
	(TE_B * !Z)	0.00813	0.00799	0.01049

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00232	0.00207	0.00350
	(A * Z)	-0.00131	-0.00160	-0.00015
	(!A * !Z)	0.00237	0.00209	0.00354
	(!A * !Z)	-0.00126	-0.00157	-0.00011
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00256	0.00217	0.00345
	(A * Z)	-0.00205	-0.00247	-0.00119
	(!A * !Z)	0.00266	0.00224	0.00353
	(!A * !Z)	-0.00194	-0.00240	-0.00110
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00321	0.00260	0.00338
	(A * Z)	-0.00384	-0.00451	-0.00372
	(!A * !Z)	0.00329	0.00268	0.00347
	(!A * !Z)	-0.00373	-0.00442	-0.00361
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00444	0.00353	0.00393
	(A * Z)	-0.00726	-0.00824	-0.00782
	(!A * !Z)	0.00444	0.00357	0.00406
	(!A * !Z)	-0.00721	-0.00815	-0.00767

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00055	0.00056	0.00254
	(A * Z)	0.00420	0.00422	0.00620
	(!A * !Z)	0.00054	0.00055	0.00253
	(!A * !Z)	0.00419	0.00421	0.00617
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00130	0.00126	0.00299
	(A * Z)	0.00594	0.00589	0.00762
	(!A * !Z)	0.00127	0.00123	0.00295
	(!A * !Z)	0.00589	0.00585	0.00757
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00272	0.00266	0.00396
	(A * Z)	0.00979	0.00974	0.01106
	(!A * !Z)	0.00272	0.00264	0.00395
	(!A * !Z)	0.00976	0.00972	0.01102
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00559	0.00539	0.00660
	(A * Z)	0.01728	0.01715	0.01837
	(!A * !Z)	0.00574	0.00555	0.00676
	(!A * !Z)	0.01740	0.01728	0.01847

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00178	0.00348	0.00279	0.65430	0.64974

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.17173	0.27441

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)	0.31632	1.08561	7.74952

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.33218	0.81356	3.15947

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)	0.47766	1.21428	7.82596

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)	0.43518	0.85297	3.09456

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)	-0.14385	-0.25460	-1.35746
	setup	CLK (R)	0.19435	0.29261	1.40094

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)	-0.70508	-0.81229	-4.18042
	setup	CLK (R)	0.91105	0.98553	4.39087

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)	-0.14385	-0.25460	-1.35746
	setup	CLK (R)	0.19435	0.29261	1.40094

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)	-0.70508	-0.81229	-4.18042
	setup	CLK (R)	0.91105	0.98553	4.39087

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)	-0.00354	0.00925	0.04122
	setup	CLK (R)	0.96349	0.95188	1.44070

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)	-0.25463	-0.42278	-2.34266
	setup	CLK (R)	0.77599	0.87565	4.12676

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)	-0.00354	0.00925	0.04122
	hold	CLK (R)	-0.30331	-0.37161	-0.61788
	setup	CLK (R)	0.19340	0.27213	1.44070
	setup	CLK (R)	0.96349	0.95188	1.05745

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)	-0.72264	-0.84894	-4.09245
	hold	CLK (R)	-0.25463	-0.42278	-2.34266
	setup	CLK (R)	0.77599	0.87565	4.12676
	setup	CLK (R)	0.28292	0.44068	2.36696

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 ()	0.13895	0.83740	16.50020
	min_pulse_width	CLK ()	0.26312	0.83740	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 ()	0.27244	0.83740	16.50020
	min_pulse_width	CLK ()	0.59527	0.83740	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	0.00946	0.00942	0.00990
	CLK	0.00826	0.00822	0.00870

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00919	0.00909	0.00939
	CLK	0.00790	0.00780	0.00808

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00920	0.00910	0.00955
	CLK	0.00791	0.00782	0.00822

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00944	0.00940	0.00979
	CLK	0.00824	0.00821	0.00858

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00359	0.00347	0.00377
	(CLK * DE)	0.00188	0.00176	0.00206
	(CLK * !DE)	0.00069	0.00070	0.00069
	(CLK * !DE)	-0.00041	-0.00041	-0.00041
	(!CLK * DE * Q * !Q_N)	0.00802	0.00791	0.00812
	(!CLK * DE * Q * !Q_N)	0.00632	0.00620	0.00641
	(!CLK * DE * !Q * Q_N)	0.00766	0.00755	0.00775
	(!CLK * DE * !Q * Q_N)	0.00594	0.00583	0.00603
	(!CLK * !DE)	0.00069	0.00070	0.00069
	(!CLK * !DE)	-0.00041	-0.00041	-0.00041

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00132	0.00116	0.00151
	(CLK * DE)	0.00305	0.00289	0.00323
	(CLK * !DE)	-0.00023	-0.00023	-0.00023
	(CLK * !DE)	0.00086	0.00086	0.00086
	(!CLK * DE * Q * !Q_N)	0.00562	0.00545	0.00585
	(!CLK * DE * Q * !Q_N)	0.00733	0.00715	0.00756
	(!CLK * DE * !Q * Q_N)	0.00592	0.00574	0.00618
	(!CLK * DE * !Q * Q_N)	0.00764	0.00747	0.00790
	(!CLK * !DE)	-0.00023	-0.00023	-0.00023
	(!CLK * !DE)	0.00086	0.00086	0.00085

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00565	0.00540	0.00644
	CLK	0.00182	0.00154	0.00260
	(!CLK * D * Q * !Q_N)	0.00312	0.00292	0.00379
	(!CLK * D * Q * !Q_N)	-0.00002	-0.00024	0.00064
	(!CLK * D * !Q * Q_N)	0.01005	0.00979	0.01080
	(!CLK * D * !Q * Q_N)	0.00622	0.00595	0.00696
	(!CLK * !D * Q * !Q_N)	0.00946	0.00925	0.01005
	(!CLK * !D * Q * !Q_N)	0.00694	0.00671	0.00754
	(!CLK * !D * !Q * Q_N)	0.00312	0.00293	0.00380
	(!CLK * !D * !Q * Q_N)	0.00001	-0.00020	0.00068

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00340	0.00327	0.00438
	CLK	0.00591	0.00580	0.00692
	(!CLK * D * Q * !Q_N)	-0.00003	-0.00011	0.00107
	(!CLK * D * Q * !Q_N)	0.00311	0.00303	0.00422
	(!CLK * D * !Q * Q_N)	0.00644	0.00629	0.00767
	(!CLK * D * !Q * Q_N)	0.01029	0.01014	0.01151
	(!CLK * !D * Q * !Q_N)	0.00783	0.00772	0.00879
	(!CLK * !D * Q * !Q_N)	0.01034	0.01025	0.01133
	(!CLK * !D * !Q * Q_N)	-0.00005	-0.00015	0.00104
	(!CLK * !D * !Q * Q_N)	0.00306	0.00297	0.00415

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)	0.00900	0.00864	0.00948
	(D * Q * !Q_N)	0.00651	0.00614	0.00698
	(D * !DE * !Q * Q_N)	0.00871	0.00831	0.00918
	(D * !DE * !Q * Q_N)	0.00622	0.00581	0.00669
	(!D * !Q * Q_N)	0.00871	0.00831	0.00918
	(!D * !Q * Q_N)	0.00622	0.00581	0.00668
	(!D * !DE * Q * !Q_N)	0.00900	0.00864	0.00948
	(!D * !DE * Q * !Q_N)	0.00651	0.00614	0.00698

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)	0.00464	0.00441	0.00558
	(D * Q * !Q_N)	0.00714	0.00691	0.00808
	(D * DE * !Q * Q_N)	0.00924	0.00892	0.00996
	(D * DE * !Q * Q_N)	0.01173	0.01141	0.01246
	(D * !DE * !Q * Q_N)	0.00485	0.00463	0.00578
	(D * !DE * !Q * Q_N)	0.00735	0.00713	0.00828
	(!D * DE * Q * !Q_N)	0.01003	0.00983	0.01131
	(!D * DE * Q * !Q_N)	0.01252	0.01232	0.01381
	(!D * !Q * Q_N)	0.00485	0.00463	0.00578
	(!D * !Q * Q_N)	0.00735	0.00713	0.00828
	(!D * !DE * Q * !Q_N)	0.00464	0.00441	0.00558
	(!D * !DE * Q * !Q_N)	0.00714	0.00691	0.00808

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00181	0.00334	0.00273	0.65130

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.18075	0.31434

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)	0.29975	1.06304	7.67806

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.30142	0.75830	3.01282

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)	-0.13955	-0.25503	-1.36559
	setup	CLK (R)	0.18977	0.28861	1.40917

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)	-0.69718	-0.80292	-4.17096
	setup	CLK (R)	0.90505	0.98131	4.43465

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)	-0.00605	0.00644	0.02605
	setup	CLK (R)	0.95246	0.94152	1.45264

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)	-0.25389	-0.42222	-2.35869
	setup	CLK (R)	0.76820	0.86733	4.11861

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)	-0.00605	0.00644	0.02605
	hold	CLK (R)	-0.29769	-0.35563	-0.60764
	setup	CLK (R)	0.18791	0.27021	1.45264
	setup	CLK (R)	0.95246	0.94152	1.14395

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)	-0.71920	-0.83522	-4.08832
	hold	CLK (R)	-0.25389	-0.42222	-2.35869
	setup	CLK (R)	0.76820	0.86733	4.11861
	setup	CLK (R)	0.27884	0.44021	2.38346

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 ()	0.12964	0.83740	16.50020
	min_pulse_width	CLK ()	0.23519	0.83740	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 ()	0.26623	0.83740	16.50020
	min_pulse_width	CLK ()	0.60459	0.83740	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	0.01591	0.01576	0.01672
	CLK	0.01355	0.01340	0.01444

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01527	0.01502	0.01585
	CLK	0.01275	0.01249	0.01327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00347	0.00335	0.00365
	(CLK * DE)	0.00175	0.00162	0.00193
	(CLK * !DE)	0.00070	0.00070	0.00070
	(CLK * !DE)	-0.00042	-0.00042	-0.00042
	(!CLK * DE * Q)	0.00788	0.00776	0.00799
	(!CLK * DE * Q)	0.00616	0.00604	0.00627
	(!CLK * DE * !Q)	0.00751	0.00741	0.00761
	(!CLK * DE * !Q)	0.00578	0.00567	0.00588
	(!CLK * !DE)	0.00070	0.00070	0.00070
	(!CLK * !DE)	-0.00042	-0.00042	-0.00042

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00127	0.00111	0.00145
	(CLK * DE)	0.00301	0.00285	0.00319
	(CLK * !DE)	-0.00022	-0.00022	-0.00022
	(CLK * !DE)	0.00088	0.00088	0.00088
	(!CLK * DE * Q)	0.00533	0.00515	0.00556
	(!CLK * DE * Q)	0.00706	0.00688	0.00728
	(!CLK * DE * !Q)	0.00566	0.00548	0.00593
	(!CLK * DE * !Q)	0.00740	0.00722	0.00767
	(!CLK * !DE)	-0.00022	-0.00023	-0.00022
	(!CLK * !DE)	0.00088	0.00089	0.00088

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00546	0.00522	0.00627
	CLK	0.00175	0.00148	0.00256
	(!CLK * D * Q)	0.00302	0.00283	0.00371
	(!CLK * D * Q)	0.00001	-0.00021	0.00068
	(!CLK * D * !Q)	0.00981	0.00956	0.01058
	(!CLK * D * !Q)	0.00610	0.00583	0.00686
	(!CLK * !D * Q)	0.00907	0.00886	0.00969
	(!CLK * !D * Q)	0.00668	0.00645	0.00729
	(!CLK * !D * !Q)	0.00303	0.00284	0.00374
	(!CLK * !D * !Q)	0.00005	-0.00015	0.00074

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00330	0.00317	0.00429
	CLK	0.00568	0.00558	0.00670
	(!CLK * D * Q)	-0.00000	-0.00009	0.00110
	(!CLK * D * Q)	0.00301	0.00293	0.00412
	(!CLK * D * !Q)	0.00619	0.00604	0.00744
	(!CLK * D * !Q)	0.00992	0.00978	0.01116
	(!CLK * !D * Q)	0.00770	0.00759	0.00867
	(!CLK * !D * Q)	0.01008	0.00999	0.01109
	(!CLK * !D * !Q)	-0.00004	-0.00014	0.00106
	(!CLK * !D * !Q)	0.00295	0.00286	0.00406

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00863	0.00829	0.00914
	(D * Q)	0.00619	0.00583	0.00669
	(D * !DE * !Q)	0.00861	0.00820	0.00913
	(D * !DE * !Q)	0.00617	0.00576	0.00668
	(!D * !Q)	0.00861	0.00821	0.00913
	(!D * !Q)	0.00617	0.00576	0.00668
	(!D * !DE * Q)	0.00863	0.00829	0.00914
	(!D * !DE * Q)	0.00619	0.00583	0.00669

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00465	0.00440	0.00561
	(D * Q)	0.00709	0.00685	0.00806
	(D * DE * !Q)	0.00892	0.00861	0.00972
	(D * DE * !Q)	0.01136	0.01105	0.01216
	(D * !DE * !Q)	0.00457	0.00434	0.00552
	(D * !DE * !Q)	0.00701	0.00679	0.00796
	(!D * DE * Q)	0.00976	0.00958	0.01107
	(!D * DE * Q)	0.01220	0.01203	0.01352
	(!D * !Q)	0.00457	0.00434	0.00552
	(!D * !Q)	0.00701	0.00679	0.00797
	(!D * !DE * Q)	0.00464	0.00440	0.00560
	(!D * !DE * Q)	0.00709	0.00685	0.00806

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00270	0.00302	0.30561
sky130_fd_sc_hs__einvn_2	0.00505	0.00455	0.56802
sky130_fd_sc_hs__einvn_4	0.01008	0.00814	1.10267
sky130_fd_sc_hs__einvn_8	0.02018	0.01353	2.04520

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvn_1	0.00000	0.06277	0.08826
sky130_fd_sc_hs__einvn_2	0.00000	0.06678	0.08888
sky130_fd_sc_hs__einvn_4	0.00000	0.02933	0.07606
sky130_fd_sc_hs__einvn_8	0.00000	0.04538	0.14850

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)	0.09743	1.25681	11.90330
	TE_B->Z (RR)	0.03804	0.37035	4.01306
	TE_B->Z (FR)	0.10966	1.30268	12.10040
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.06605	1.06901	11.80850
	TE_B->Z (RR)	0.04794	0.37206	4.01478
	TE_B->Z (FR)	0.09455	1.12346	12.01350
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.06080	0.93179	11.80290
	TE_B->Z (RR)	0.04832	0.37349	4.01619
	TE_B->Z (FR)	0.08853	0.97670	11.92150
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.06183	0.83330	11.78770
	TE_B->Z (RR)	0.07254	0.38072	4.02243
	TE_B->Z (FR)	0.09807	0.87717	11.81190

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.03195	0.52949	5.14048
	TE_B->Z (RF)	0.03743	0.37035	4.01308
	TE_B->Z (FF)	0.10845	0.64189	3.57835
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.02655	0.47457	5.22729
	TE_B->Z (RF)	0.04699	0.37208	4.01481
	TE_B->Z (FF)	0.12809	0.67070	3.92905
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.02573	0.42292	5.27889
	TE_B->Z (RF)	0.04755	0.37351	4.01625
	TE_B->Z (FF)	0.13248	0.67322	4.34757
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.02786	0.39864	5.52946
	TE_B->Z (RF)	0.07127	0.38054	4.02257
	TE_B->Z (FF)	0.18822	0.75667	4.97661

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00024	-0.00027	-0.00008
	A	0.00213	0.00204	0.00229
	TE_B	0.00131	0.00129	0.00258
	TE_B	0.00480	0.00478	0.00609
sky130_fd_sc_hs__einvn_2	A	-0.00110	-0.00109	-0.00064
	A	0.00348	0.00350	0.00395
	TE_B	0.00197	0.00191	0.00318
	TE_B	0.00761	0.00757	0.00889
sky130_fd_sc_hs__einvn_4	A	-0.00218	-0.00212	-0.00116
	A	0.00698	0.00703	0.00801
	TE_B	0.00404	0.00392	0.00535
	TE_B	0.01449	0.01436	0.01588
sky130_fd_sc_hs__einvn_8	A	-0.00413	-0.00401	-0.00195
	A	0.01422	0.01412	0.01642
	TE_B	0.00836	0.00817	0.00948
	TE_B	0.02682	0.02663	0.02806

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00223	0.00221	0.00242
	A	-0.00014	-0.00017	-0.00010
	TE_B	0.00243	0.00243	0.00366
	TE_B	0.00431	0.00430	0.00553
sky130_fd_sc_hs__einvn_2	A	0.00364	0.00368	0.00388
	A	-0.00093	-0.00091	-0.00071
	TE_B	0.00406	0.00410	0.00528
	TE_B	0.00658	0.00656	0.00775
sky130_fd_sc_hs__einvn_4	A	0.00735	0.00737	0.00819
	A	-0.00179	-0.00178	-0.00126
	TE_B	0.00838	0.00829	0.00974
	TE_B	0.01241	0.01232	0.01367
sky130_fd_sc_hs__einvn_8	A	0.01462	0.01451	0.01579
	A	-0.00368	-0.00386	-0.00254
	TE_B	0.01685	0.01680	0.01791
	TE_B	0.02234	0.02218	0.02337

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00052	0.00052	0.00051
	(TE_B * Z)	-0.00082	-0.00082	-0.00082
	(TE_B * !Z)	0.00055	0.00056	0.00056
	(TE_B * !Z)	-0.00075	-0.00076	-0.00076
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00100	0.00099	0.00095
	(TE_B * Z)	-0.00158	-0.00158	-0.00158
	(TE_B * !Z)	0.00111	0.00111	0.00111
	(TE_B * !Z)	-0.00139	-0.00139	-0.00138
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00181	0.00182	0.00174
	(TE_B * Z)	-0.00314	-0.00317	-0.00315
	(TE_B * !Z)	0.00202	0.00203	0.00202
	(TE_B * !Z)	-0.00282	-0.00283	-0.00281
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00350	0.00349	0.00335
	(TE_B * Z)	-0.00621	-0.00626	-0.00622
	(TE_B * !Z)	0.00397	0.00397	0.00395
	(TE_B * !Z)	-0.00562	-0.00561	-0.00558

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00050	-0.00050	-0.00049
	(TE_B * Z)	0.00082	0.00082	0.00082
	(TE_B * !Z)	-0.00055	-0.00056	-0.00056
	(TE_B * !Z)	0.00078	0.00079	0.00077
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00093	-0.00093	-0.00093
	(TE_B * Z)	0.00158	0.00158	0.00158
	(TE_B * !Z)	-0.00111	-0.00111	-0.00111
	(TE_B * !Z)	0.00146	0.00146	0.00138
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00169	-0.00171	-0.00170
	(TE_B * Z)	0.00314	0.00317	0.00315
	(TE_B * !Z)	-0.00202	-0.00203	-0.00202
	(TE_B * !Z)	0.00295	0.00294	0.00282
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00329	-0.00332	-0.00329
	(TE_B * Z)	0.00621	0.00626	0.00622
	(TE_B * !Z)	-0.00397	-0.00397	-0.00395
	(TE_B * !Z)	0.00578	0.00582	0.00558

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00168	0.00148	0.00240
	(A * !Z)	-0.00099	-0.00122	-0.00029
	(!A * Z)	0.00161	0.00143	0.00236
	(!A * Z)	-0.00098	-0.00122	-0.00028
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00202	0.00173	0.00251
	(A * !Z)	-0.00210	-0.00242	-0.00159
	(!A * Z)	0.00184	0.00162	0.00244
	(!A * Z)	-0.00204	-0.00239	-0.00159
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00335	0.00282	0.00360
	(A * !Z)	-0.00387	-0.00453	-0.00366
	(!A * Z)	0.00298	0.00261	0.00344
	(!A * Z)	-0.00379	-0.00446	-0.00363
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00415	0.00341	0.00385
	(A * !Z)	-0.00768	-0.00867	-0.00813
	(!A * Z)	0.00344	0.00301	0.00354
	(!A * Z)	-0.00754	-0.00848	-0.00804

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00081	0.00081	0.00205
	(A * !Z)	0.00350	0.00350	0.00475
	(!A * Z)	0.00083	0.00082	0.00207
	(!A * Z)	0.00345	0.00345	0.00470
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00132	0.00127	0.00247
	(A * !Z)	0.00546	0.00541	0.00663
	(!A * Z)	0.00142	0.00138	0.00259
	(!A * Z)	0.00538	0.00535	0.00656
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00264	0.00257	0.00387
	(A * !Z)	0.00997	0.00994	0.01123
	(!A * Z)	0.00285	0.00278	0.00410
	(!A * Z)	0.00980	0.00977	0.01107
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00564	0.00545	0.00667
	(A * !Z)	0.01763	0.01752	0.01874
	(!A * Z)	0.00590	0.00571	0.00697
	(!A * Z)	0.01717	0.01706	0.01825

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00272	0.00271	0.27597
sky130_fd_sc_hs__einvp_2	0.00498	0.00420	0.57440
sky130_fd_sc_hs__einvp_4	0.01008	0.00757	1.10512
sky130_fd_sc_hs__einvp_8	0.02019	0.01192	2.05510

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvp_1	0.00000	0.01034	0.04782
sky130_fd_sc_hs__einvp_2	0.00000	0.03789	0.12386
sky130_fd_sc_hs__einvp_4	0.00000	0.02450	0.09056
sky130_fd_sc_hs__einvp_8	0.00000	0.04054	0.16300

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)	0.10388	1.26459	11.63310
	TE->Z (FR)	0.14495	0.59489	4.01302
	TE->Z (RR)	0.14191	1.09437	7.49906
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.06460	1.05923	11.75860
	TE->Z (FR)	0.12875	0.53503	4.01408
	TE->Z (RR)	0.13599	0.92680	7.74789
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.06065	0.93104	11.79490
	TE->Z (FR)	0.14730	0.58495	4.01585
	TE->Z (RR)	0.13155	0.79619	7.74115
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.06182	0.83803	11.90080
	TE->Z (FR)	0.24074	0.71079	4.02201
	TE->Z (RR)	0.16175	0.78086	8.20833

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.03247	0.51458	4.88616
	TE->Z (FF)	0.14760	0.59646	4.01298
	TE->Z (RF)	0.03368	0.48924	4.59590
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.02604	0.46537	5.13527
	TE->Z (FF)	0.13008	0.53910	4.01395
	TE->Z (RF)	0.03119	0.44449	4.77424
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.02606	0.42560	5.31455
	TE->Z (FF)	0.14960	0.58803	4.01566
	TE->Z (RF)	0.03255	0.39636	4.74553
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.02811	0.40297	5.65852
	TE->Z (FF)	0.24350	0.71574	4.02145
	TE->Z (RF)	0.03855	0.35956	4.72004

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00036	-0.00038	-0.00012
	A	0.00208	0.00201	0.00233
	TE	0.00405	0.00393	0.00436
	TE	0.00255	0.00243	0.00287
sky130_fd_sc_hs__einvp_2	A	-0.00108	-0.00108	-0.00062
	A	0.00343	0.00344	0.00391
	TE	0.00629	0.00614	0.00705
	TE	0.00427	0.00412	0.00504
sky130_fd_sc_hs__einvp_4	A	-0.00208	-0.00202	-0.00106
	A	0.00707	0.00715	0.00810
	TE	0.01194	0.01169	0.01269
	TE	0.00874	0.00847	0.00952
sky130_fd_sc_hs__einvp_8	A	-0.00410	-0.00400	-0.00199
	A	0.01420	0.01414	0.01640
	TE	0.02089	0.02064	0.02142
	TE	0.01741	0.01714	0.01793

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00231	0.00229	0.00236
	A	-0.00012	-0.00015	-0.00008
	TE	0.00515	0.00503	0.00552
	TE	0.00189	0.00176	0.00218
sky130_fd_sc_hs__einvp_2	A	0.00367	0.00370	0.00408
	A	-0.00084	-0.00082	-0.00062
	TE	0.00817	0.00803	0.00927
	TE	0.00289	0.00273	0.00362
sky130_fd_sc_hs__einvp_4	A	0.00723	0.00725	0.00827
	A	-0.00189	-0.00189	-0.00138
	TE	0.01566	0.01541	0.01660
	TE	0.00575	0.00549	0.00645
sky130_fd_sc_hs__einvp_8	A	0.01453	0.01442	0.01654
	A	-0.00377	-0.00393	-0.00265
	TE	0.02831	0.02808	0.02941
	TE	0.01131	0.01103	0.01179

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00044	0.00044	0.00044
	(!TE * Z)	-0.00083	-0.00083	-0.00083
	(!TE * !Z)	0.00049	0.00049	0.00049
	(!TE * !Z)	-0.00078	-0.00077	-0.00077
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00083	0.00083	0.00080
	(!TE * Z)	-0.00165	-0.00167	-0.00166
	(!TE * !Z)	0.00094	0.00094	0.00093
	(!TE * !Z)	-0.00146	-0.00146	-0.00145
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00159	0.00159	0.00152
	(!TE * Z)	-0.00329	-0.00330	-0.00329
	(!TE * !Z)	0.00183	0.00182	0.00181
	(!TE * !Z)	-0.00292	-0.00292	-0.00290
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00310	0.00309	0.00298
	(!TE * Z)	-0.00635	-0.00642	-0.00636
	(!TE * !Z)	0.00357	0.00356	0.00355
	(!TE * !Z)	-0.00566	-0.00564	-0.00561

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00043	-0.00044	-0.00043
	(!TE * Z)	0.00083	0.00083	0.00083
	(!TE * !Z)	-0.00049	-0.00049	-0.00049
	(!TE * !Z)	0.00080	0.00080	0.00078
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00079	-0.00079	-0.00079
	(!TE * Z)	0.00165	0.00167	0.00166
	(!TE * !Z)	-0.00094	-0.00094	-0.00093
	(!TE * !Z)	0.00156	0.00155	0.00147
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00152	-0.00152	-0.00151
	(!TE * Z)	0.00329	0.00330	0.00329
	(!TE * !Z)	-0.00183	-0.00182	-0.00181
	(!TE * !Z)	0.00308	0.00307	0.00292
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00298	-0.00301	-0.00298
	(!TE * Z)	0.00635	0.00642	0.00636
	(!TE * !Z)	-0.00357	-0.00356	-0.00355
	(!TE * !Z)	0.00590	0.00591	0.00563

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00355	0.00345	0.00387
	(A * !Z)	0.00131	0.00119	0.00162
	(!A * Z)	0.00354	0.00344	0.00384
	(!A * Z)	0.00123	0.00111	0.00152
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00543	0.00529	0.00617
	(A * !Z)	0.00197	0.00183	0.00272
	(!A * Z)	0.00547	0.00534	0.00620
	(!A * Z)	0.00185	0.00170	0.00256
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01024	0.01004	0.01097
	(A * !Z)	0.00411	0.00387	0.00483
	(!A * Z)	0.01031	0.01010	0.01099
	(!A * Z)	0.00383	0.00357	0.00449
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.01755	0.01737	0.01813
	(A * !Z)	0.00822	0.00795	0.00875
	(!A * Z)	0.01774	0.01751	0.01822
	(!A * Z)	0.00770	0.00744	0.00816

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00067	-0.00085	-0.00049
	(A * !Z)	0.00154	0.00141	0.00177
	(!A * Z)	-0.00071	-0.00085	-0.00048
	(!A * Z)	0.00159	0.00145	0.00181
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00173	-0.00195	-0.00085
	(A * !Z)	0.00166	0.00150	0.00259
	(!A * Z)	-0.00185	-0.00200	-0.00089
	(!A * Z)	0.00176	0.00160	0.00266
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00312	-0.00354	-0.00247
	(A * !Z)	0.00287	0.00260	0.00368
	(!A * Z)	-0.00333	-0.00363	-0.00251
	(!A * Z)	0.00309	0.00281	0.00384
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00586	-0.00653	-0.00567
	(A * !Z)	0.00325	0.00287	0.00373
	(!A * Z)	-0.00622	-0.00673	-0.00580
	(!A * Z)	0.00365	0.00324	0.00402

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00277	0.00692	0.00485	0.29660	0.65019

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fahcin_1	0.00000	0.45134	0.50592

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)	0.28004	1.22381	6.29571
	B->COUT (RR)	0.26922	1.09235	5.79631
	CIN->COUT (FR)	0.14148	1.10067	9.93924

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.43527	1.14512	5.54902
	B->COUT (FF)	0.35115	1.00459	4.93168
	CIN->COUT (RF)	0.06226	0.56110	4.97316

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)	-	0.52558	1.53890	10.77850
	B->SUM (-R)	-	0.47628	1.42697	9.96739
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.15132	0.95709	7.96715
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.25170	1.19767	9.35987

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)	-	0.53148	1.21648	5.68111
	B->SUM (-F)	-	0.44234	1.09158	5.15401
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.28274	0.99265	5.68654
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.26209	0.67738	2.85451

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.00946	0.00942	0.00972
	A	0.00829	0.00824	0.00855
	B	0.00997	0.01013	0.01202
	B	0.00701	0.00714	0.00907
	CIN	0.00393	0.00389	0.00469
	CIN	0.00613	0.00609	0.00690

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.00815	0.00810	0.00870
	A	0.00932	0.00929	0.00987
	B	0.00713	0.00725	0.00993
	B	0.01015	0.01026	0.01291
	CIN	0.00651	0.00640	0.00703
	CIN	0.00430	0.00418	0.00478

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01819	0.01810	0.01920
	A	-	0.01584	0.01575	0.01686
	B	-	0.01827	0.01920	0.02396
	B	-	0.01236	0.01328	0.01809
	CIN	(A * B) + (!A * !B)	0.00598	0.00573	0.00897
	CIN	(A * B) + (!A * !B)	0.01040	0.01016	0.01348
	CIN	(A * !B) + (!A * B)	0.00651	0.00643	0.00707
	CIN	(A * !B) + (!A * B)	0.00431	0.00421	0.00480

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01507	0.01500	0.01700
	A	-	0.01742	0.01735	0.01901
	B	-	0.01251	0.01329	0.02189
	B	-	0.01842	0.01920	0.02756
	CIN	(A * B) + (!A * !B)	0.01136	0.01096	0.01363
	CIN	(A * B) + (!A * !B)	0.00695	0.00653	0.00922
	CIN	(A * !B) + (!A * B)	0.00393	0.00390	0.00430
	CIN	(A * !B) + (!A * B)	0.00613	0.00611	0.00641

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00275	0.00876	0.00488	0.29265	0.62668

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	0.45134	0.52041

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)	0.39765	1.42188	8.13194
	B->COUT_N (FR)	0.29309	1.24965	9.90522
	CI->COUT_N (FR)	0.13575	1.08722	9.78282

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)	0.34132	0.81522	3.00105
	B->COUT_N (RF)	0.23907	0.69413	5.07217
	CI->COUT_N (RF)	0.05964	0.54715	4.94064

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)	-	0.46392	1.48316	10.35010
	B->SUM (-R)	-	0.38016	1.33224	9.44790
	CI->SUM (RR)	(A * B) + (!A * !B)	0.14392	0.93636	7.72533
	CI->SUM (FR)	(A * !B) + (!A * B)	0.24649	1.19788	9.28724

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)	-	0.49492	1.17409	5.47202
	B->SUM (-F)	-	0.38115	1.00067	4.76165
	CI->SUM (FF)	(A * B) + (!A * !B)	0.27302	0.95883	5.52927
	CI->SUM (RF)	(A * !B) + (!A * B)	0.27862	0.68596	2.79953

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	0.00742	0.00735	0.00800
	A	0.00863	0.00855	0.00927
	B	0.00552	0.00573	0.00939
	B	0.00938	0.00959	0.01325
	CI	0.00392	0.00378	0.00461
	CI	0.00614	0.00600	0.00688

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.00870	0.00843	0.00868
	A	0.00748	0.00721	0.00746
	B	0.00928	0.00928	0.01188
	B	0.00541	0.00542	0.00796
	CI	0.00655	0.00641	0.00703
	CI	0.00434	0.00414	0.00481

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01586	0.01581	0.01694
	A	-	0.01342	0.01338	0.01453
	B	-	0.01809	0.02174	0.02902
	B	-	0.01038	0.01403	0.02127
	CI	(A * B) + (!A * !B)	0.01123	0.01088	0.01331
	CI	(A * B) + (!A * !B)	0.00678	0.00643	0.00892
	CI	(A * !B) + (!A * B)	0.00392	0.00377	0.00454
	CI	(A * !B) + (!A * B)	0.00614	0.00599	0.00684

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01430	0.01430	0.01647
	A	-	0.01671	0.01671	0.01841
	B	-	0.01146	0.01508	0.02442
	B	-	0.01922	0.02280	0.03214
	CI	(A * B) + (!A * !B)	0.00679	0.00674	0.00998
	CI	(A * B) + (!A * !B)	0.01122	0.01117	0.01419
	CI	(A * !B) + (!A * B)	0.00655	0.00637	0.00700
	CI	(A * !B) + (!A * B)	0.00434	0.00416	0.00479

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00461	0.00697	0.00243	0.58563	0.63300
sky130_fd_sc_hs__fah_2	0.00465	0.00797	0.00258	1.16947	1.24382
sky130_fd_sc_hs__fah_4	0.00457	0.00719	0.00246	2.21364	2.42192

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	0.45134	0.53491
sky130_fd_sc_hs__fah_2	0.00000	0.47307	0.55663
sky130_fd_sc_hs__fah_4	0.00000	0.51651	0.60008

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)	0.47087	1.26586	7.94818
	B->COUT (RR)	0.39195	1.25053	8.22167
	CI->COUT (RR)	0.19895	1.08946	8.43999
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.49169	1.13117	7.62215
	B->COUT (RR)	0.37660	1.08491	8.17605
	CI->COUT (RR)	0.18478	0.90943	8.08930
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.47485	1.04561	8.02749
	B->COUT (RR)	0.39860	1.03249	8.49458
	CI->COUT (RR)	0.22846	0.90013	8.78733

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.45704	1.06083	4.51263
	B->COUT (FF)	0.44774	1.10292	8.38131
	CI->COUT (FF)	0.37681	1.07549	5.87015
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.51355	1.11961	4.60504
	B->COUT (FF)	0.49775	1.13857	6.07359
	CI->COUT (FF)	0.37362	1.06465	5.75704
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.61626	1.23939	4.76514
	B->COUT (FF)	0.56027	1.20815	8.63907
	CI->COUT (FF)	0.45073	1.15662	6.32314

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)	-	0.48732	1.51812	10.53340
	B->SUM (-R)	-	0.43521	1.39569	11.49740
	CI->SUM (RR)	(A * B) + (!A * !B)	0.19666	1.02188	8.06905
	CI->SUM (FR)	(A * !B) + (!A * B)	0.40309	1.44983	10.49150
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.49132	1.36533	10.10150
	B->SUM (-R)	-	0.46784	1.30309	9.70463
	CI->SUM (RR)	(A * B) + (!A * !B)	0.18393	0.90084	8.09564
	CI->SUM (FR)	(A * !B) + (!A * B)	0.39715	1.28027	10.04280
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.51087	1.30835	10.37780
	B->SUM (-R)	-	0.46902	1.23397	11.50750
	CI->SUM (RR)	(A * B) + (!A * !B)	0.24236	0.89382	8.30268
	CI->SUM (FR)	(A * !B) + (!A * B)	0.49577	1.32974	10.75820

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)	-	0.46912	1.08949	4.65734
	B->SUM (-F)	-	0.47792	1.14783	8.12195
	CI->SUM (FF)	(A * B) + (!A * !B)	0.35372	1.06617	5.79484
	CI->SUM (RF)	(A * !B) + (!A * B)	0.40380	0.94339	3.70939
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.53186	1.13778	4.72318
	B->SUM (-F)	-	0.51741	1.15859	8.34686
	CI->SUM (FF)	(A * B) + (!A * !B)	0.37711	1.06105	5.81978
	CI->SUM (RF)	(A * !B) + (!A * B)	0.37743	0.87276	3.55527
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.61793	1.25603	4.89792
	B->SUM (-F)	-	0.59057	1.26083	8.23851
	CI->SUM (FF)	(A * B) + (!A * !B)	0.45008	1.15554	6.30037
	CI->SUM (RF)	(A * !B) + (!A * B)	0.55757	1.12630	4.26003

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01196	0.01179	0.01344
	A	0.00993	0.00977	0.01140
	B	0.01073	0.01088	0.01286
	B	0.00785	0.00800	0.00996
	CI	0.00748	0.00748	0.00788
	CI	0.00650	0.00653	0.00690
sky130_fd_sc_hs__fah_2	A	0.01336	0.01341	0.01491
	A	0.01121	0.01131	0.01275
	B	0.01200	0.01244	0.01459
	B	0.00858	0.00904	0.01116
	CI	0.00779	0.00799	0.00848
	CI	0.00663	0.00684	0.00730
sky130_fd_sc_hs__fah_4	A	0.01546	0.01574	0.01777
	A	0.01344	0.01380	0.01567
	B	0.01453	0.01533	0.01988
	B	0.01146	0.01229	0.01542
	CI	0.01179	0.01230	0.01315
	CI	0.01078	0.01130	0.01190

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.00995	0.00988	0.01184
	A	0.01189	0.01185	0.01377
	B	0.00797	0.00832	0.07291
	B	0.01087	0.01119	0.07579
	CI	0.00627	0.00636	0.00691
	CI	0.00725	0.00733	0.00782
sky130_fd_sc_hs__fah_2	A	0.01117	0.01135	0.01255
	A	0.01332	0.01351	0.01469
	B	0.00838	0.00888	0.01182
	B	0.01179	0.01229	0.01496
	CI	0.00667	0.00697	0.00774
	CI	0.00783	0.00814	0.00873
sky130_fd_sc_hs__fah_4	A	0.01328	0.01375	0.01561
	A	0.01526	0.01574	0.01742
	B	0.01167	0.01247	0.07686
	B	0.01473	0.01553	0.07991
	CI	0.01026	0.01089	0.01238
	CI	0.01127	0.01190	0.01254

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02091	0.02035	0.02249
	A	-	0.01675	0.01619	0.01838
	B	-	0.00798	0.00832	0.07307
	B	-	0.01087	0.01120	0.07595
	CI	(A * B) + (!A * !B)	0.01028	0.00994	0.01071
	CI	(A * B) + (!A * !B)	0.00807	0.00773	0.00853
	CI	(A * !B) + (!A * B)	0.00628	0.00638	0.00734
	CI	(A * !B) + (!A * B)	0.00725	0.00735	0.00795
sky130_fd_sc_hs__fah_2	A	-	0.02217	0.02173	0.02394
	A	-	0.01786	0.01742	0.01975
	B	-	0.01992	0.02186	0.02814
	B	-	0.01305	0.01501	0.02137
	CI	(A * B) + (!A * !B)	0.01049	0.01061	0.01156
	CI	(A * B) + (!A * !B)	0.00814	0.00827	0.00923
	CI	(A * !B) + (!A * B)	0.00667	0.00698	0.00801
	CI	(A * !B) + (!A * B)	0.00784	0.00815	0.00888
sky130_fd_sc_hs__fah_4	A	-	0.02333	0.02338	0.02614
	A	-	0.01917	0.01919	0.02220
	B	-	0.01167	0.01248	0.07676
	B	-	0.01473	0.01554	0.07971
	CI	(A * B) + (!A * !B)	0.01480	0.01498	0.01578
	CI	(A * B) + (!A * !B)	0.01256	0.01276	0.01355
	CI	(A * !B) + (!A * B)	0.01027	0.01092	0.01291
	CI	(A * !B) + (!A * B)	0.01128	0.01194	0.01276

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.01562	0.01548	0.01859
	A	-	0.01995	0.01988	0.02286
	B	-	0.01349	0.01502	0.13943
	B	-	0.01973	0.02125	0.14542
	CI	(A * B) + (!A * !B)	0.00743	0.00733	0.00876
	CI	(A * B) + (!A * !B)	0.00965	0.00954	0.01089
	CI	(A * !B) + (!A * B)	0.00747	0.00747	0.00776
	CI	(A * !B) + (!A * B)	0.00650	0.00652	0.00673
sky130_fd_sc_hs__fah_2	A	-	0.01737	0.01749	0.02058
	A	-	0.02168	0.02182	0.02469
	B	-	0.01340	0.01513	0.15208
	B	-	0.02024	0.02197	0.15855
	CI	(A * B) + (!A * !B)	0.00830	0.00852	0.01061
	CI	(A * B) + (!A * !B)	0.01064	0.01090	0.01235
	CI	(A * !B) + (!A * B)	0.00779	0.00792	0.00837
	CI	(A * !B) + (!A * B)	0.00662	0.00684	0.00715
sky130_fd_sc_hs__fah_4	A	-	0.01875	0.01931	0.02302
	A	-	0.02300	0.02356	0.02661
	B	-	0.01789	0.02139	0.14401
	B	-	0.02429	0.02780	0.14985
	CI	(A * B) + (!A * !B)	0.01164	0.01212	0.01589
	CI	(A * B) + (!A * !B)	0.01387	0.01435	0.01582
	CI	(A * !B) + (!A * B)	0.01179	0.01230	0.01278
	CI	(A * !B) + (!A * B)	0.01077	0.01131	0.01152

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00970	0.00955	0.00693	0.64734	0.64704
sky130_fd_sc_hs__fa_2	0.01030	0.00987	0.00740	1.16800	1.22835
sky130_fd_sc_hs__fa_4	0.01028	0.01012	0.00726	2.45045	2.43792

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.08659	0.11843
sky130_fd_sc_hs__fa_2	0.00000	0.10647	0.13819
sky130_fd_sc_hs__fa_4	0.00000	0.14992	0.18164

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)	0.16355	0.96801	7.86219
	B->COUT (RR)	0.16786	0.96253	7.80312
	CIN->COUT (RR)	0.15672	0.96290	7.72624
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.16881	0.87289	7.97739
	B->COUT (RR)	0.15841	0.86060	7.92335
	CIN->COUT (RR)	0.15801	0.88082	7.87731
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.21722	0.85037	8.29621
	B->COUT (RR)	0.19569	0.83232	8.23596
	CIN->COUT (RR)	0.19756	0.86261	8.23130

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.39886	1.07800	5.87927
	B->COUT (FF)	0.35129	1.04531	5.70697
	CIN->COUT (FF)	0.31074	0.99286	5.45167
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.47523	1.14871	6.09232
	B->COUT (FF)	0.41602	1.10206	5.94891
	CIN->COUT (FF)	0.42925	1.07326	5.69725
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.63717	1.32891	6.74576
	B->COUT (FF)	0.58285	1.27675	6.65993
	CIN->COUT (FF)	0.58248	1.23496	6.41378

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.54992	1.49815	10.34360
	B->SUM (-R)	0.51751	1.46697	10.10890
	CIN->SUM (-R)	0.47135	1.39124	9.66561
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.69705	1.52339	10.74520
	B->SUM (-R)	0.63760	1.46564	10.52840
	CIN->SUM (-R)	0.65190	1.44041	10.19170
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.99249	1.70525	11.28260
	B->SUM (-R)	0.93115	1.64278	11.14580
	CIN->SUM (-R)	0.93575	1.60751	10.82160

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.47639	1.11999	5.69645
	B->SUM (-F)	0.45798	1.11100	5.71678
	CIN->SUM (-F)	0.27324	0.92583	5.24674
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.60537	1.25229	6.02458
	B->SUM (-F)	0.60383	1.25679	6.12937
	CIN->SUM (-F)	0.55054	1.14877	5.67456
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.81586	1.47574	6.68096
	B->SUM (-F)	0.76338	1.44080	6.81340
	CIN->SUM (-F)	0.73262	1.34922	6.41022

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00692	0.00688	0.00711
	A	0.00260	0.00254	0.00270
	B	0.00666	0.00658	0.00694
	B	0.00254	0.00247	0.00277
	CIN	0.00600	0.00590	0.00636
	CIN	0.00318	0.00308	0.00357
sky130_fd_sc_hs__fa_2	A	0.00877	0.00878	0.00894
	A	0.00404	0.00406	0.00420
	B	0.00846	0.00841	0.00882
	B	0.00410	0.00409	0.00440
	CIN	0.00775	0.00767	0.00816
	CIN	0.00474	0.00467	0.00511
sky130_fd_sc_hs__fa_4	A	0.01209	0.01256	0.01291
	A	0.00714	0.00761	0.00789
	B	0.01209	0.01244	0.01298
	B	0.00794	0.00830	0.00869
	CIN	0.01112	0.01146	0.01206
	CIN	0.00823	0.00862	0.00912

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00264	0.00267	0.00292
	A	0.00693	0.00702	0.00704
	B	0.00311	0.00306	0.00388
	B	0.00721	0.00718	0.00776
	CIN	0.00351	0.00351	0.00405
	CIN	0.00620	0.00620	0.00674
sky130_fd_sc_hs__fa_2	A	0.00410	0.00418	0.00444
	A	0.00880	0.00892	0.00886
	B	0.00458	0.00460	0.00535
	B	0.00892	0.00897	0.00952
	CIN	0.00500	0.00502	0.00579
	CIN	0.00804	0.00808	0.00862
sky130_fd_sc_hs__fa_4	A	0.00768	0.00810	0.00870
	A	0.01268	0.01314	0.01314
	B	0.00808	0.00836	0.00966
	B	0.01221	0.01250	0.01306
	CIN	0.00866	0.00894	0.01041
	CIN	0.01153	0.01182	0.01235

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00990	0.00989	0.01009
	A	0.00695	0.00703	0.00716
	B	0.00868	0.00852	0.00882
	B	0.00724	0.00720	0.00787
	CIN	0.00769	0.00733	0.00793
	CIN	0.00622	0.00621	0.00689
sky130_fd_sc_hs__fa_2	A	0.01178	0.01202	0.01229
	A	0.00877	0.00890	0.00906
	B	0.01073	0.01085	0.01123
	B	0.00894	0.00900	0.00975
	CIN	0.00980	0.00968	0.01031
	CIN	0.00805	0.00810	0.00879
sky130_fd_sc_hs__fa_4	A	0.01508	0.01558	0.01601
	A	0.01271	0.01316	0.01341
	B	0.01432	0.01459	0.01493
	B	0.01224	0.01253	0.01337
	CIN	0.01295	0.01304	0.01360
	CIN	0.01155	0.01184	0.01271

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00688	0.00685	0.00693
	A	0.00953	0.00953	0.00973
	B	0.00662	0.00655	0.00679
	B	0.00988	0.00996	0.01026
	CIN	0.00599	0.00588	0.00620
	CIN	0.00793	0.00776	0.00898
sky130_fd_sc_hs__fa_2	A	0.00873	0.00874	0.00881
	A	0.01130	0.01165	0.01184
	B	0.00842	0.00840	0.00864
	B	0.01129	0.01159	0.01192
	CIN	0.00781	0.00772	0.00796
	CIN	0.00976	0.00980	0.01110
sky130_fd_sc_hs__fa_4	A	0.01204	0.01250	0.01292
	A	0.01565	0.01629	0.01666
	B	0.01205	0.01240	0.01263
	B	0.01438	0.01472	0.01521
	CIN	0.01110	0.01144	0.01181
	CIN	0.01299	0.01303	0.01441

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00463	0.00440	0.63155	0.59741
sky130_fd_sc_hs__ha_2	0.00466	0.00485	1.16262	1.20415
sky130_fd_sc_hs__ha_4	0.00887	0.00810	2.23814	2.44421

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ha_1	0.00000	0.13022	0.19408
sky130_fd_sc_hs__ha_2	0.00000	0.11467	0.13524
sky130_fd_sc_hs__ha_4	0.00000	0.31114	0.43161

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)	0.13143	0.90702	7.64259
	B->COUT (RR)	0.12635	0.90205	7.54172
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.13955	0.82989	7.80111
	B->COUT (RR)	0.13545	0.83455	7.71520
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.15780	0.75342	7.90649
	B->COUT (RR)	0.14096	0.74591	7.79358

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.17306	0.79494	4.75482
	B->COUT (FF)	0.15529	0.76559	4.65696
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.20570	0.83289	5.12059
	B->COUT (FF)	0.19148	0.81078	5.03089
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.22226	0.79922	4.93412
	B->COUT (FF)	0.19353	0.76267	4.82032

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	0.13156	0.91096	7.55462
	A->SUM (FR)	B	0.27648	1.23882	9.21977
	B->SUM (RR)	!A	0.11643	0.88218	7.43780
	B->SUM (FR)	A	0.27195	1.22259	9.11154
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.14021	0.80658	7.69444
	A->SUM (FR)	B	0.35821	1.21390	9.72122
	B->SUM (RR)	!A	0.12893	0.78673	7.61229
	B->SUM (FR)	A	0.35110	1.20008	9.61405
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.15345	0.74101	7.92206
	A->SUM (FR)	B	0.38062	1.12286	9.65988
	B->SUM (RR)	!A	0.13735	0.71210	7.80854
	B->SUM (FR)	A	0.36212	1.10065	9.53159

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	0.26034	0.88212	5.08865
	A->SUM (RF)	B	0.20288	0.60001	2.77315
	B->SUM (FF)	!A	0.23413	0.82666	4.64581
	B->SUM (RF)	A	0.19789	0.59274	2.63129
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.35687	0.99001	5.64481
	A->SUM (RF)	B	0.25832	0.65634	3.12943
	B->SUM (FF)	!A	0.33179	0.93806	5.24018
	B->SUM (RF)	A	0.25448	0.65975	3.03290
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.35528	0.95547	5.71581
	A->SUM (RF)	B	0.29270	0.66786	3.26413
	B->SUM (FF)	!A	0.32099	0.89413	5.29385
	B->SUM (RF)	A	0.27567	0.65897	3.13304

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00485	0.00484	0.00524
	A	0.00245	0.00241	0.00283
	B	0.00458	0.00451	0.00525
	B	0.00263	0.00256	0.00330
sky130_fd_sc_hs__ha_2	A	0.00657	0.00681	0.00714
	A	0.00416	0.00431	0.00466
	B	0.00643	0.00659	0.00715
	B	0.00428	0.00436	0.00498
sky130_fd_sc_hs__ha_4	A	0.01223	0.01291	0.01387
	A	0.00782	0.00836	0.00931
	B	0.01150	0.01205	0.01361
	B	0.00806	0.00848	0.01003

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00251	0.00260	0.00347
	A	0.00491	0.00500	0.00582
	B	0.00297	0.00294	0.00383
	B	0.00488	0.00486	0.00569
sky130_fd_sc_hs__ha_2	A	0.00455	0.00472	0.00532
	A	0.00695	0.00710	0.00770
	B	0.00478	0.00481	0.00544
	B	0.00689	0.00692	0.00745
sky130_fd_sc_hs__ha_4	A	0.00817	0.00864	0.01074
	A	0.01256	0.01303	0.01474
	B	0.00899	0.00938	0.01102
	B	0.01236	0.01272	0.01438

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	0.00252	0.00260	0.00365
	A	B	0.00492	0.00500	0.00597
	A	!B	0.00697	0.00699	0.00732
	A	!B	0.00242	0.00244	0.00278
	B	A	0.00298	0.00296	0.00394
	B	A	0.00489	0.00487	0.00583
	B	!A	0.00531	0.00527	0.00598
	B	!A	0.00173	0.00168	0.00240
sky130_fd_sc_hs__ha_2	A	B	0.00456	0.00472	0.00565
	A	B	0.00696	0.00712	0.00789
	A	!B	0.00887	0.00907	0.00940
	A	!B	0.00437	0.00457	0.00503
	B	A	0.00479	0.00482	0.00571
	B	A	0.00690	0.00693	0.00764
	B	!A	0.00753	0.00770	0.00827
	B	!A	0.00362	0.00378	0.00448
sky130_fd_sc_hs__ha_4	A	B	0.00819	0.00868	0.01124
	A	B	0.01259	0.01306	0.01510
	A	!B	0.01781	0.01820	0.01893
	A	!B	0.00845	0.00884	0.00974
	B	A	0.00903	0.00943	0.01222
	B	A	0.01239	0.01277	0.01486
	B	!A	0.01430	0.01460	0.01590
	B	!A	0.00705	0.00736	0.00887

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	0.00485	0.00485	0.00515
	A	B	0.00245	0.00240	0.00274
	A	!B	0.00141	0.00146	0.00188
	A	!B	0.00584	0.00591	0.00624
	B	A	0.00458	0.00452	0.00512
	B	A	0.00263	0.00255	0.00318
	B	!A	0.00207	0.00218	0.00359
	B	!A	0.00567	0.00578	0.00718
sky130_fd_sc_hs__ha_2	A	B	0.00657	0.00678	0.00691
	A	B	0.00416	0.00431	0.00446
	A	!B	0.00300	0.00323	0.00362
	A	!B	0.00736	0.00760	0.00798
	B	A	0.00643	0.00651	0.00689
	B	A	0.00428	0.00436	0.00472
	B	!A	0.00335	0.00364	0.00549
	B	!A	0.00733	0.00759	0.00903
sky130_fd_sc_hs__ha_4	A	B	0.01223	0.01284	0.01344
	A	B	0.00783	0.00837	0.00889
	A	!B	0.00588	0.00635	0.00706
	A	!B	0.01499	0.01559	0.01623
	B	A	0.01150	0.01200	0.01312
	B	A	0.00805	0.00848	0.00962
	B	!A	0.00728	0.00765	0.01153
	B	!A	0.01469	0.01524	0.01808

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00786	9.95018
sky130_fd_sc_hs__bufinv_8	0.00272	4.29664
sky130_fd_sc_hs__inv_1	0.00274	0.63647
sky130_fd_sc_hs__inv_16	0.04144	9.76219
sky130_fd_sc_hs__inv_2	0.00502	1.25873
sky130_fd_sc_hs__inv_4	0.01013	2.39687
sky130_fd_sc_hs__inv_8	0.02004	4.77290

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.27156	0.36579
sky130_fd_sc_hs__bufinv_8	0.00000	0.13035	0.17384
sky130_fd_sc_hs__inv_1	0.00000	0.01086	0.01811
sky130_fd_sc_hs__inv_16	0.00000	0.17380	0.28978
sky130_fd_sc_hs__inv_2	0.00000	0.02172	0.03622
sky130_fd_sc_hs__inv_4	0.00000	0.04345	0.07244
sky130_fd_sc_hs__inv_8	0.00000	0.08690	0.14489

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)**	0.21348	0.82242	9.42050
sky130_fd_sc_hs__bufinv_8	**A->Y (FR)**	0.28003	0.99324	9.80972
sky130_fd_sc_hs__inv_1	**A->Y (FR)**	0.05096	1.04950	11.96700
sky130_fd_sc_hs__inv_16	**A->Y (FR)**	0.03470	0.68132	11.96320
sky130_fd_sc_hs__inv_2	**A->Y (FR)**	0.03918	0.91647	11.94190
sky130_fd_sc_hs__inv_4	**A->Y (FR)**	0.03696	0.82302	11.93560
sky130_fd_sc_hs__inv_8	**A->Y (FR)**	0.03573	0.74824	11.95420

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	**A->Y (RF)**	0.18954	0.47693	2.72861
sky130_fd_sc_hs__bufinv_8	**A->Y (RF)**	0.22227	0.56955	2.87756
sky130_fd_sc_hs__inv_1	**A->Y (RF)**	0.02428	0.53146	6.05769
sky130_fd_sc_hs__inv_16	**A->Y (RF)**	0.01942	0.32491	6.06969
sky130_fd_sc_hs__inv_2	**A->Y (RF)**	0.02075	0.46737	6.02693
sky130_fd_sc_hs__inv_4	**A->Y (RF)**	0.02003	0.41949	6.07767
sky130_fd_sc_hs__inv_8	**A->Y (RF)**	0.01986	0.36927	6.09315

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.03821	0.04023	0.04540
	A	0.04534	0.04737	0.05347
sky130_fd_sc_hs__bufinv_8	A	0.01998	0.02095	0.02248
	A	0.02242	0.02339	0.02494
sky130_fd_sc_hs__inv_1	A	-0.00043	-0.00041	-0.00029
	A	0.00207	0.00209	0.00228
sky130_fd_sc_hs__inv_16	A	-0.00923	-0.00836	-0.00549
	A	0.02846	0.02943	0.03324
sky130_fd_sc_hs__inv_2	A	-0.00109	-0.00102	-0.00071
	A	0.00347	0.00356	0.00399
sky130_fd_sc_hs__inv_4	A	-0.00216	-0.00188	-0.00133
	A	0.00706	0.00735	0.00814
sky130_fd_sc_hs__inv_8	A	-0.00429	-0.00389	-0.00240
	A	0.01390	0.01439	0.01596

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	**A**	0.04591	0.04825	0.05280
	A	0.03877	0.04107	0.04477
sky130_fd_sc_hs__bufinv_8	**A**	0.02214	0.02317	0.02425
	A	0.01969	0.02066	0.02151
sky130_fd_sc_hs__inv_1	**A**	0.00225	0.00227	0.00264
	A	-0.00023	-0.00025	-0.00018
sky130_fd_sc_hs__inv_16	**A**	0.02938	0.02924	0.04125
	A	-0.00818	-0.00846	-0.00588
sky130_fd_sc_hs__inv_2	**A**	0.00362	0.00364	0.00445
	A	-0.00094	-0.00091	-0.00074
sky130_fd_sc_hs__inv_4	**A**	0.00731	0.00737	0.00900
	A	-0.00188	-0.00187	-0.00141
sky130_fd_sc_hs__inv_8	**A**	0.01427	0.01431	0.02076
	A	-0.00391	-0.00396	-0.00284

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00507	0.00475	0.00496	0.64989
sky130_fd_sc_hs__maj3_2	0.00539	0.00513	0.00527	1.28296
sky130_fd_sc_hs__maj3_4	0.00987	0.00930	0.00972	2.47876

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__maj3_1	0.00000	0.03884	0.09271
sky130_fd_sc_hs__maj3_2	0.00000	0.04893	0.09632
sky130_fd_sc_hs__maj3_4	0.00000	0.09941	0.19264

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)	0.14976	0.94097	7.79326
	B->X (RR)	0.14596	0.93187	7.61664
	C->X (RR)	0.14748	0.92752	7.71205
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.15630	0.83612	7.87145
	B->X (RR)	0.14522	0.83294	7.73664
	C->X (RR)	0.14725	0.82248	7.80694
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.15351	0.75122	7.97819
	B->X (RR)	0.14157	0.74264	7.81569
	C->X (RR)	0.14813	0.74138	7.91681

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.33821	0.99738	5.65359
	B->X (FF)	0.26998	0.93311	5.21318
	C->X (FF)	0.28239	0.97373	5.53867
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.42834	1.07530	5.93480
	B->X (FF)	0.34310	0.98312	5.48824
	C->X (FF)	0.35147	1.02269	5.80125
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.38960	1.00186	5.90029
	B->X (FF)	0.30246	0.90648	5.43745
	C->X (FF)	0.32003	0.95505	5.77408

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00918	0.00906	0.00933
	A	0.00270	0.00256	0.00289
	B	0.00768	0.00721	0.00805
	B	0.00259	0.00212	0.00300
	C	0.00876	0.00847	0.00903
	C	0.00310	0.00280	0.00342
sky130_fd_sc_hs__maj3_2	A	0.01094	0.01099	0.01127
	A	0.00399	0.00404	0.00443
	B	0.00970	0.00949	0.01023
	B	0.00418	0.00398	0.00483
	C	0.01078	0.01067	0.01118
	C	0.00472	0.00463	0.00525
sky130_fd_sc_hs__maj3_4	A	0.02026	0.02034	0.02096
	A	0.00799	0.00804	0.00880
	B	0.01746	0.01719	0.01902
	B	0.00767	0.00741	0.00943
	C	0.01983	0.01959	0.02075
	C	0.00893	0.00868	0.01002

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00161	0.00161	0.00216
	A	0.00804	0.00804	0.00835
	B	0.00226	0.00197	0.00327
	B	0.00731	0.00707	0.00835
	C	0.00246	0.00224	0.00360
	C	0.00811	0.00790	0.00917
sky130_fd_sc_hs__maj3_2	A	0.00349	0.00359	0.00491
	A	0.01042	0.01062	0.01095
	B	0.00373	0.00352	0.00554
	B	0.00925	0.00911	0.01045
	C	0.00398	0.00373	0.00571
	C	0.01014	0.01010	0.01141
sky130_fd_sc_hs__maj3_4	A	0.00650	0.00664	0.00781
	A	0.01869	0.01913	0.01978
	B	0.00693	0.00685	0.01042
	B	0.01663	0.01659	0.01940
	C	0.00751	0.00695	0.01111
	C	0.01844	0.01848	0.02112

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00227	0.00209	0.00206
	(B * C * X)	-0.00165	-0.00187	-0.00188
	(!B * !C * !X)	0.00183	0.00183	0.00183
	(!B * !C * !X)	-0.00204	-0.00205	-0.00204
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00217	0.00201	0.00198
	(B * C * X)	-0.00197	-0.00218	-0.00218
	(!B * !C * !X)	0.00165	0.00167	0.00166
	(!B * !C * !X)	-0.00241	-0.00242	-0.00241
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00403	0.00371	0.00366
	(B * C * X)	-0.00338	-0.00380	-0.00381
	(!B * !C * !X)	0.00319	0.00323	0.00320
	(!B * !C * !X)	-0.00416	-0.00419	-0.00416

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00205	-0.00206	-0.00204
	(B * C * X)	0.00187	0.00188	0.00188
	(!B * !C * !X)	-0.00174	-0.00183	-0.00183
	(!B * !C * !X)	0.00210	0.00206	0.00205
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00196	-0.00197	-0.00196
	(B * C * X)	0.00216	0.00219	0.00218
	(!B * !C * !X)	-0.00157	-0.00167	-0.00166
	(!B * !C * !X)	0.00246	0.00246	0.00242
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00363	-0.00365	-0.00363
	(B * C * X)	0.00378	0.00383	0.00381
	(!B * !C * !X)	-0.00305	-0.00322	-0.00320
	(!B * !C * !X)	0.00423	0.00421	0.00418

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00171	0.00172	0.00171
	(A * C * X)	-0.00107	-0.00107	-0.00106
	(!A * !C * !X)	0.00048	0.00049	0.00047
	(!A * !C * !X)	-0.00230	-0.00232	-0.00235
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00200	0.00202	0.00201
	(A * C * X)	-0.00102	-0.00102	-0.00101
	(!A * !C * !X)	0.00060	0.00059	0.00057
	(!A * !C * !X)	-0.00236	-0.00236	-0.00240
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00335	0.00338	0.00336
	(A * C * X)	-0.00212	-0.00214	-0.00212
	(!A * !C * !X)	0.00112	0.00113	0.00106
	(!A * !C * !X)	-0.00445	-0.00449	-0.00458

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00162	-0.00163	-0.00169
	(A * C * X)	0.00113	0.00114	0.00108
	(!A * !C * !X)	-0.00046	-0.00046	-0.00045
	(!A * !C * !X)	0.00236	0.00238	0.00235
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00191	-0.00193	-0.00199
	(A * C * X)	0.00109	0.00110	0.00104
	(!A * !C * !X)	-0.00055	-0.00055	-0.00055
	(!A * !C * !X)	0.00240	0.00241	0.00240
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00315	-0.00318	-0.00333
	(A * C * X)	0.00230	0.00231	0.00217
	(!A * !C * !X)	-0.00101	-0.00103	-0.00102
	(!A * !C * !X)	0.00457	0.00462	0.00459

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00187	0.00178	0.00176
	(A * B * X)	-0.00137	-0.00148	-0.00148
	(!A * !B * !X)	0.00094	0.00094	0.00093
	(!A * !B * !X)	-0.00229	-0.00229	-0.00231
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00213	0.00204	0.00203
	(A * B * X)	-0.00135	-0.00145	-0.00146
	(!A * !B * !X)	0.00115	0.00115	0.00113
	(!A * !B * !X)	-0.00226	-0.00227	-0.00228
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00369	0.00355	0.00350
	(A * B * X)	-0.00273	-0.00295	-0.00295
	(!A * !B * !X)	0.00211	0.00212	0.00209
	(!A * !B * !X)	-0.00433	-0.00434	-0.00438

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00172	-0.00172	-0.00175
	(A * B * X)	0.00152	0.00152	0.00149
	(!A * !B * !X)	-0.00088	-0.00093	-0.00093
	(!A * !B * !X)	0.00234	0.00234	0.00232
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00198	-0.00199	-0.00201
	(A * B * X)	0.00150	0.00150	0.00147
	(!A * !B * !X)	-0.00108	-0.00113	-0.00113
	(!A * !B * !X)	0.00230	0.00231	0.00229
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00339	-0.00341	-0.00348
	(A * B * X)	0.00300	0.00303	0.00296
	(!A * !B * !X)	-0.00201	-0.00209	-0.00209
	(!A * !B * !X)	0.00442	0.00444	0.00439

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00273	0.00258	0.00478	0.28846
sky130_fd_sc_hs__mux2i_2	0.00511	0.00541	0.00775	0.50822
sky130_fd_sc_hs__mux2i_4	0.01010	0.01008	0.01345	0.93996

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.05704	0.11056
sky130_fd_sc_hs__mux2i_2	0.00000	0.05260	0.09764
sky130_fd_sc_hs__mux2i_4	0.00000	0.14193	0.27467

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)	-	0.16884	1.34118	11.90770
	A1->Y (FR)	-	0.15160	1.32394	11.89820
	S->Y (RR)	(A0 * !A1)	0.22450	1.18390	7.77357
	S->Y (FR)	(!A0 * A1)	0.19118	1.39453	12.06940
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.18155	1.20070	11.89330
	A1->Y (FR)	-	0.16896	1.16161	11.56320
	S->Y (RR)	(A0 * !A1)	0.23778	1.03472	7.47636
	S->Y (FR)	(!A0 * A1)	0.20110	1.24056	11.93420
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.16440	1.04274	11.72390
	A1->Y (FR)	-	0.16346	1.05801	11.97080
	S->Y (RR)	(A0 * !A1)	0.25923	1.00879	8.34396
	S->Y (FR)	(!A0 * A1)	0.18712	1.08132	11.70730

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)	-	0.04262	0.54930	5.08242
	A1->Y (RF)	-	0.04444	0.56928	5.27407
	S->Y (FF)	(A0 * !A1)	0.14601	0.69048	3.67441
	S->Y (RF)	(!A0 * A1)	0.05175	0.53199	4.82762
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.05156	0.53755	5.39261
	A1->Y (RF)	-	0.04988	0.52548	5.29050
	S->Y (FF)	(A0 * !A1)	0.18145	0.75102	4.28857
	S->Y (RF)	(!A0 * A1)	0.05499	0.47205	4.62670
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.04720	0.47603	5.31651
	A1->Y (RF)	-	0.05260	0.50655	5.64763
	S->Y (FF)	(A0 * !A1)	0.18203	0.70395	4.03100
	S->Y (RF)	(!A0 * A1)	0.05735	0.42743	4.60109

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	-	0.00079	0.00067	0.00085
	A0	-	0.00406	0.00395	0.00412
	A1	-	0.00056	0.00047	0.00064
	A1	-	0.00358	0.00348	0.00367
	S	(A0 * !A1)	0.00569	0.00547	0.00681
	S	(A0 * !A1)	0.00297	0.00271	0.00406
	S	(!A0 * A1)	0.00125	0.00114	0.00307
	S	(!A0 * A1)	0.00718	0.00709	0.00904
sky130_fd_sc_hs__mux2i_2	A0	-	0.00168	0.00137	0.00177
	A0	-	0.00804	0.00773	0.00812
	A1	-	0.00153	0.00122	0.00163
	A1	-	0.00788	0.00756	0.00797
	S	(A0 * !A1)	0.00964	0.00934	0.01040
	S	(A0 * !A1)	0.00617	0.00589	0.00693
	S	(!A0 * A1)	0.00298	0.00267	0.00424
	S	(!A0 * A1)	0.01309	0.01276	0.01437
sky130_fd_sc_hs__mux2i_4	A0	-	0.00198	0.00135	0.00226
	A0	-	0.01460	0.01397	0.01489
	A1	-	0.00202	0.00137	0.00229
	A1	-	0.01406	0.01340	0.01430
	S	(A0 * !A1)	0.01643	0.01603	0.01789
	S	(A0 * !A1)	0.01116	0.01070	0.01268
	S	(!A0 * A1)	0.00477	0.00432	0.00746
	S	(!A0 * A1)	0.02304	0.02261	0.02575

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00409	0.00406	0.00406
	A0	-	0.00094	0.00089	0.00091
	A1	-	0.00397	0.00395	0.00395
	A1	-	0.00088	0.00083	0.00086
	S	(A0 * !A1)	0.00341	0.00333	0.00514
	S	(A0 * !A1)	0.00615	0.00606	0.00788
	S	(!A0 * A1)	0.00770	0.00743	0.00881
	S	(!A0 * A1)	0.00173	0.00143	0.00279
sky130_fd_sc_hs__mux2i_2	A0	-	0.00843	0.00834	0.00872
	A0	-	0.00239	0.00223	0.00234
	A1	-	0.00818	0.00804	0.00833
	A1	-	0.00178	0.00162	0.00174
	S	(A0 * !A1)	0.00744	0.00721	0.00856
	S	(A0 * !A1)	0.01075	0.01057	0.01196
	S	(!A0 * A1)	0.01375	0.01332	0.01469
	S	(!A0 * A1)	0.00354	0.00311	0.00429
sky130_fd_sc_hs__mux2i_4	A0	-	0.01561	0.01529	0.01602
	A0	-	0.00354	0.00317	0.00349
	A1	-	0.01553	0.01525	0.01632
	A1	-	0.00329	0.00294	0.00327
	S	(A0 * !A1)	0.01401	0.01369	0.01658
	S	(A0 * !A1)	0.01906	0.01878	0.02171
	S	(!A0 * A1)	0.02535	0.02453	0.02645
	S	(!A0 * A1)	0.00691	0.00611	0.00808

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00109	0.00109	0.00109
	(A1 * S * !Y)	-0.00061	-0.00061	-0.00061
	(!A1 * S * Y)	0.00051	0.00050	0.00047
	(!A1 * S * Y)	-0.00123	-0.00128	-0.00128
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00198	0.00199	0.00198
	(A1 * S * !Y)	-0.00114	-0.00114	-0.00113
	(!A1 * S * Y)	0.00076	0.00076	0.00071
	(!A1 * S * Y)	-0.00242	-0.00249	-0.00253
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00385	0.00390	0.00386
	(A1 * S * !Y)	-0.00231	-0.00235	-0.00231
	(!A1 * S * Y)	0.00146	0.00145	0.00136
	(!A1 * S * Y)	-0.00489	-0.00502	-0.00508

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00100	-0.00102	-0.00109
	(A1 * S * !Y)	0.00069	0.00069	0.00063
	(!A1 * S * Y)	-0.00047	-0.00047	-0.00047
	(!A1 * S * Y)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00182	-0.00189	-0.00198
	(A1 * S * !Y)	0.00123	0.00123	0.00116
	(!A1 * S * Y)	-0.00068	-0.00069	-0.00068
	(!A1 * S * Y)	0.00252	0.00253	0.00253
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00356	-0.00366	-0.00386
	(A1 * S * !Y)	0.00255	0.00254	0.00238
	(!A1 * S * Y)	-0.00132	-0.00132	-0.00131
	(!A1 * S * Y)	0.00510	0.00510	0.00508

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00098	0.00098	0.00098
	(A0 * !S * !Y)	-0.00062	-0.00062	-0.00062
	(!A0 * !S * Y)	0.00041	0.00041	0.00038
	(!A0 * !S * Y)	-0.00123	-0.00126	-0.00129
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00204	0.00205	0.00204
	(A0 * !S * !Y)	-0.00126	-0.00126	-0.00125
	(!A0 * !S * Y)	0.00082	0.00082	0.00077
	(!A0 * !S * Y)	-0.00252	-0.00255	-0.00261
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00377	0.00379	0.00378
	(A0 * !S * !Y)	-0.00234	-0.00234	-0.00233
	(!A0 * !S * Y)	0.00130	0.00131	0.00122
	(!A0 * !S * Y)	-0.00493	-0.00502	-0.00514

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00084	-0.00091	-0.00098
	(A0 * !S * !Y)	0.00072	0.00071	0.00064
	(!A0 * !S * Y)	-0.00037	-0.00037	-0.00036
	(!A0 * !S * Y)	0.00129	0.00129	0.00129
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00182	-0.00193	-0.00204
	(A0 * !S * !Y)	0.00139	0.00139	0.00129
	(!A0 * !S * Y)	-0.00074	-0.00075	-0.00075
	(!A0 * !S * Y)	0.00260	0.00261	0.00261
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00335	-0.00358	-0.00378
	(A0 * !S * !Y)	0.00258	0.00258	0.00240
	(!A0 * !S * Y)	-0.00118	-0.00117	-0.00117
	(!A0 * !S * Y)	0.00512	0.00513	0.00514

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00418	0.00400	0.00529
	(A0 * A1 * !Y)	-0.00003	-0.00027	0.00104
	(!A0 * !A1 * Y)	0.00425	0.00403	0.00531
	(!A0 * !A1 * Y)	-0.00002	-0.00025	0.00105
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00650	0.00612	0.00720
	(A0 * A1 * !Y)	-0.00005	-0.00051	0.00059
	(!A0 * !A1 * Y)	0.00635	0.00609	0.00715
	(!A0 * !A1 * Y)	-0.00024	-0.00050	0.00061
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01136	0.01073	0.01251
	(A0 * A1 * !Y)	0.00003	-0.00073	0.00106
	(!A0 * !A1 * Y)	0.01112	0.01073	0.01241
	(!A0 * !A1 * Y)	-0.00019	-0.00065	0.00113

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00021	-0.00028	0.00158
	(A0 * A1 * !Y)	0.00403	0.00396	0.00583
	(!A0 * !A1 * Y)	-0.00027	-0.00035	0.00155
	(!A0 * !A1 * Y)	0.00399	0.00392	0.00581
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00029	-0.00045	0.00102
	(A0 * A1 * !Y)	0.00629	0.00610	0.00760
	(!A0 * !A1 * Y)	-0.00028	-0.00052	0.00098
	(!A0 * !A1 * Y)	0.00623	0.00607	0.00758
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00016	-0.00035	0.00253
	(A0 * A1 * !Y)	0.01128	0.01106	0.01390
	(!A0 * !A1 * Y)	-0.00024	-0.00057	0.00243
	(!A0 * !A1 * Y)	0.01103	0.01078	0.01380

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00264	0.00310	0.00440	0.64778
sky130_fd_sc_hs__mux2_2	0.00244	0.00277	0.00522	1.16545
sky130_fd_sc_hs__mux2_4	0.00467	0.00470	0.00788	2.21296

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2_1	0.00000	0.08349	0.15022
sky130_fd_sc_hs__mux2_2	0.00000	0.09435	0.15383
sky130_fd_sc_hs__mux2_4	0.00000	0.12883	0.18418

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)	-	0.12018	0.87890	7.43879
	A1->X (RR)	-	0.12179	0.88387	7.47508
	S->X (RR)	(!A0 * A1)	0.12165	0.88057	7.52371
	S->X (FR)	(A0 * !A1)	0.23992	1.14799	8.86492
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.13713	0.82915	7.64326
	A1->X (RR)	-	0.13553	0.82684	7.67293
	S->X (RR)	(!A0 * A1)	0.13666	0.81630	7.72342
	S->X (FR)	(A0 * !A1)	0.25208	1.05603	8.83434
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.17726	0.80475	7.81390
	A1->X (RR)	-	0.17583	0.80241	7.81244
	S->X (RR)	(!A0 * A1)	0.18347	0.77794	7.85792
	S->X (FR)	(A0 * !A1)	0.32554	1.09968	9.43646

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)	-	0.23981	0.88598	5.09224
	A1->X (FF)	-	0.23720	0.88789	5.12126
	S->X (FF)	(!A0 * A1)	0.30696	0.95332	5.46060
	S->X (RF)	(A0 * !A1)	0.34715	0.76294	3.01791
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.30614	0.93627	5.24504
	A1->X (FF)	-	0.31208	0.94823	5.30102
	S->X (FF)	(!A0 * A1)	0.38066	1.01099	5.57496
	S->X (RF)	(A0 * !A1)	0.43324	0.82970	2.85195
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.34277	0.94200	5.24992
	A1->X (FF)	-	0.34440	0.94610	5.27788
	S->X (FF)	(!A0 * A1)	0.40653	1.00365	5.52914
	S->X (RF)	(A0 * !A1)	0.45016	0.84310	2.88069

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	-	0.00595	0.00577	0.00671
	A0	-	0.00285	0.00267	0.00363
	A1	-	0.00619	0.00607	0.00694
	A1	-	0.00281	0.00270	0.00359
	S	(A0 * !A1)	0.00559	0.00542	0.00716
	S	(A0 * !A1)	0.00770	0.00756	0.00939
	S	(!A0 * A1)	0.00969	0.00949	0.01112
	S	(!A0 * A1)	0.00401	0.00382	0.00547
sky130_fd_sc_hs__mux2_2	A0	-	0.00765	0.00778	0.00867
	A0	-	0.00460	0.00473	0.00574
	A1	-	0.00799	0.00808	0.00894
	A1	-	0.00480	0.00489	0.00587
	S	(A0 * !A1)	0.00709	0.00742	0.00923
	S	(A0 * !A1)	0.00970	0.01006	0.01196
	S	(!A0 * A1)	0.01166	0.01152	0.01292
	S	(!A0 * A1)	0.00550	0.00537	0.00688
sky130_fd_sc_hs__mux2_4	A0	-	0.01431	0.01448	0.01621
	A0	-	0.00877	0.00894	0.01090
	A1	-	0.01446	0.01458	0.01636
	A1	-	0.00883	0.00895	0.01096
	S	(A0 * !A1)	0.01322	0.01379	0.01540
	S	(A0 * !A1)	0.01702	0.01757	0.01945
	S	(!A0 * A1)	0.02047	0.02027	0.02187
	S	(!A0 * A1)	0.01066	0.01047	0.01226

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00256	0.00253	0.00398
	A0	-	0.00579	0.00580	0.00720
	A1	-	0.00297	0.00290	0.00441
	A1	-	0.00634	0.00627	0.00764
	S	(A0 * !A1)	0.00835	0.00814	0.00939
	S	(A0 * !A1)	0.00615	0.00594	0.00710
	S	(!A0 * A1)	0.00317	0.00323	0.00556
	S	(!A0 * A1)	0.00879	0.00884	0.01103
sky130_fd_sc_hs__mux2_2	A0	-	0.00377	0.00392	0.00589
	A0	-	0.00697	0.00718	0.00860
	A1	-	0.00431	0.00448	0.00588
	A1	-	0.00750	0.00766	0.00904
	S	(A0 * !A1)	0.00949	0.00957	0.01084
	S	(A0 * !A1)	0.00680	0.00690	0.00805
	S	(!A0 * A1)	0.00425	0.00422	0.00651
	S	(!A0 * A1)	0.01038	0.01051	0.01251
sky130_fd_sc_hs__mux2_4	A0	-	0.00891	0.00858	0.01249
	A0	-	0.01465	0.01484	0.01741
	A1	-	0.00911	0.00896	0.01307
	A1	-	0.01458	0.01489	0.01760
	S	(A0 * !A1)	0.01725	0.01776	0.01909
	S	(A0 * !A1)	0.01336	0.01386	0.01502
	S	(!A0 * A1)	0.00986	0.00980	0.01257
	S	(!A0 * A1)	0.01958	0.01958	0.02153

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00103	0.00103	0.00103
	(A1 * S * X)	-0.00052	-0.00051	-0.00051
	(!A1 * S * !X)	0.00043	0.00043	0.00039
	(!A1 * S * !X)	-0.00112	-0.00115	-0.00117
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00097	0.00097	0.00097
	(A1 * S * X)	-0.00055	-0.00055	-0.00055
	(!A1 * S * !X)	0.00048	0.00047	0.00044
	(!A1 * S * !X)	-0.00105	-0.00108	-0.00112
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00175	0.00176	0.00175
	(A1 * S * X)	-0.00108	-0.00109	-0.00108
	(!A1 * S * !X)	0.00073	0.00071	0.00067
	(!A1 * S * !X)	-0.00222	-0.00227	-0.00230

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00094	-0.00097	-0.00102
	(A1 * S * X)	0.00057	0.00058	0.00053
	(!A1 * S * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * S * !X)	0.00117	0.00118	0.00117
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00086	-0.00090	-0.00097
	(A1 * S * X)	0.00063	0.00064	0.00057
	(!A1 * S * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * S * !X)	0.00111	0.00112	0.00112
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00161	-0.00165	-0.00175
	(A1 * S * X)	0.00120	0.00119	0.00112
	(!A1 * S * !X)	-0.00065	-0.00066	-0.00065
	(!A1 * S * !X)	0.00231	0.00231	0.00230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00112	0.00113	0.00113
	(A0 * !S * X)	-0.00061	-0.00062	-0.00061
	(!A0 * !S * !X)	0.00038	0.00037	0.00036
	(!A0 * !S * !X)	-0.00136	-0.00137	-0.00138
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00104	0.00104	0.00104
	(A0 * !S * X)	-0.00053	-0.00053	-0.00053
	(!A0 * !S * !X)	0.00034	0.00034	0.00032
	(!A0 * !S * !X)	-0.00122	-0.00124	-0.00125
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00174	0.00174	0.00173
	(A0 * !S * X)	-0.00110	-0.00110	-0.00109
	(!A0 * !S * !X)	0.00059	0.00059	0.00055
	(!A0 * !S * !X)	-0.00233	-0.00235	-0.00240

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00106	-0.00109	-0.00113
	(A0 * !S * X)	0.00067	0.00066	0.00063
	(!A0 * !S * !X)	-0.00035	-0.00035	-0.00035
	(!A0 * !S * !X)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00095	-0.00098	-0.00104
	(A0 * !S * X)	0.00061	0.00060	0.00055
	(!A0 * !S * !X)	-0.00032	-0.00032	-0.00032
	(!A0 * !S * !X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00157	-0.00166	-0.00173
	(A0 * !S * X)	0.00121	0.00119	0.00112
	(!A0 * !S * !X)	-0.00053	-0.00054	-0.00053
	(!A0 * !S * !X)	0.00240	0.00241	0.00240

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00421	0.00401	0.00525
	(A0 * A1 * X)	0.00039	0.00014	0.00140
	(!A0 * !A1 * !X)	0.00430	0.00412	0.00536
	(!A0 * !A1 * !X)	0.00048	0.00030	0.00155
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00428	0.00402	0.00535
	(A0 * A1 * X)	-0.00003	-0.00033	0.00099
	(!A0 * !A1 * !X)	0.00410	0.00390	0.00516
	(!A0 * !A1 * !X)	-0.00022	-0.00043	0.00087
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00669	0.00633	0.00742
	(A0 * A1 * X)	0.00006	-0.00035	0.00076
	(!A0 * !A1 * !X)	0.00673	0.00642	0.00747
	(!A0 * !A1 * !X)	0.00009	-0.00025	0.00084

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	-0.00001	0.00179
	(A0 * A1 * X)	0.00386	0.00384	0.00562
	(!A0 * !A1 * !X)	-0.00014	-0.00020	0.00162
	(!A0 * !A1 * !X)	0.00367	0.00361	0.00545
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00036	-0.00043	0.00141
	(A0 * A1 * X)	0.00398	0.00390	0.00575
	(!A0 * !A1 * !X)	-0.00022	-0.00032	0.00154
	(!A0 * !A1 * !X)	0.00410	0.00401	0.00587
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00018	-0.00043	0.00103
	(A0 * A1 * X)	0.00645	0.00622	0.00766
	(!A0 * !A1 * !X)	-0.00035	-0.00060	0.00091
	(!A0 * !A1 * !X)	0.00627	0.00606	0.00757

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00228	0.00239	0.00238	0.00264	0.00810	0.00516	0.62839
sky130_fd_sc_hs__mux4_2	0.00259	0.00244	0.00255	0.00249	0.00919	0.00534	1.27234
sky130_fd_sc_hs__mux4_4	0.00453	0.00435	0.00453	0.00454	0.01276	0.00796	2.45594

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.13205	0.22664
sky130_fd_sc_hs__mux4_2	0.00000	0.14089	0.24158
sky130_fd_sc_hs__mux4_4	0.00000	0.20980	0.34937

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)	0.21306	1.02096	7.99345
	A1->X (RR)	0.21388	1.02343	7.99860
	A2->X (RR)	0.21549	1.03036	8.04619
	A3->X (RR)	0.21033	1.02395	8.02999
	S0->X (-R)	0.35638	1.33247	9.55515
	S1->X (-R)	0.21175	1.13190	8.87681
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.22927	0.92532	8.14489
	A1->X (RR)	0.21847	0.91973	8.13915
	A2->X (RR)	0.21158	0.90581	8.09382
	A3->X (RR)	0.20088	0.89741	8.07992
	S0->X (-R)	0.33671	1.19402	9.54552
	S1->X (-R)	0.22447	1.03610	8.95207
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.25862	0.86575	8.27338
	A1->X (RR)	0.26050	0.87014	8.27853
	A2->X (RR)	0.26235	0.87287	8.27950
	A3->X (RR)	0.24868	0.86544	8.27651
	S0->X (-R)	0.45372	1.26745	10.23350
	S1->X (-R)	0.26771	1.05267	9.54424

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.49312	1.18358	5.95229
	A1->X (FF)	0.51380	1.20381	5.99730
	A2->X (FF)	0.54072	1.23610	6.08294
	A3->X (FF)	0.54143	1.23379	6.07647
	S0->X (-F)	0.49829	1.16129	5.68103
	S1->X (-F)	0.23836	0.86755	4.74115
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.63543	1.34152	6.50465
	A1->X (FF)	0.63054	1.33768	6.48622
	A2->X (FF)	0.61568	1.31673	6.42184
	A3->X (FF)	0.60107	1.30262	6.38854
	S0->X (-F)	0.59559	1.26580	6.15281
	S1->X (-F)	0.32521	0.97135	5.35608
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.60734	1.27346	6.41553
	A1->X (FF)	0.60018	1.26709	6.40964
	A2->X (FF)	0.64757	1.31402	6.45513
	A3->X (FF)	0.62644	1.29330	6.44312
	S0->X (-F)	0.59752	1.24312	6.19574
	S1->X (-F)	0.34933	0.97468	5.49132

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.00949	0.00953	0.00983
	A0	0.00589	0.00593	0.00626
	A1	0.00870	0.00873	0.00900
	A1	0.00508	0.00510	0.00541
	A2	0.00862	0.00866	0.00896
	A2	0.00506	0.00511	0.00544
	A3	0.00807	0.00809	0.00838
	A3	0.00430	0.00432	0.00464
	S0	0.01559	0.01510	0.01850
	S0	0.01614	0.01602	0.01909
	S1	0.00734	0.00703	0.00954
	S1	0.00730	0.00788	0.01116
sky130_fd_sc_hs__mux4_2	A0	0.01155	0.01177	0.01205
	A0	0.00752	0.00773	0.00806
	A1	0.01080	0.01103	0.01133
	A1	0.00674	0.00696	0.00732
	A2	0.01015	0.01037	0.01068
	A2	0.00629	0.00651	0.00687
	A3	0.00962	0.00985	0.01017
	A3	0.00577	0.00600	0.00638
	S0	0.01837	0.01797	0.02127
	S0	0.01722	0.01734	0.02052
	S1	0.00886	0.00875	0.01109
	S1	0.00902	0.00979	0.01314

sky130_fd_sc_hs__mux4_4	**A0**	0.02115	0.02161	0.02235
	A0	0.01411	0.01457	0.01535
	A1	0.01954	0.01999	0.02073
	A1	0.01255	0.01300	0.01376
	A2	0.01953	0.01999	0.02075
	A2	0.01253	0.01299	0.01378
	A3	0.01857	0.01901	0.01974
	A3	0.01139	0.01184	0.01260
	S0	0.03073	0.03034	0.03562
	S0	0.02846	0.02879	0.03308
	S1	0.01564	0.01556	0.01858
	S1	0.01603	0.01749	0.02294

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00312	0.00324	0.00356
	A0	0.00672	0.00685	0.00710
	A1	0.00398	0.00408	0.00485
	A1	0.00758	0.00769	0.00797
	A2	0.00462	0.00473	0.00516
	A2	0.00818	0.00830	0.00857
	A3	0.00520	0.00526	0.00574
	A3	0.00894	0.00902	0.00929
	S0	0.01460	0.01414	0.01646
	S0	0.01630	0.01608	0.01871
	S1	0.00727	0.00766	0.01047
	S1	0.00647	0.00644	0.00955

sky130_fd_sc_hs__mux4_2	**A0**	0.00568	0.00591	0.00752
	A0	0.00972	0.00995	0.01030
	A1	0.00642	0.00668	0.00833
	A1	0.01045	0.01071	0.01100
	A2	0.00622	0.00644	0.00772
	A2	0.01008	0.01032	0.01067
	A3	0.00671	0.00696	0.00815
	A3	0.01051	0.01079	0.01109
	S0	0.01701	0.01658	0.01893
	S0	0.01635	0.01633	0.02078
	S1	0.00924	0.00972	0.01240
	S1	0.00866	0.00877	0.01185
sky130_fd_sc_hs__mux4_4	**A0**	0.01022	0.01073	0.01323
	A0	0.01725	0.01779	0.01854
	A1	0.01203	0.01256	0.01542
	A1	0.01899	0.01954	0.02025
	A2	0.01182	0.01227	0.01465
	A2	0.01882	0.01930	0.02009
	A3	0.01317	0.01364	0.01605
	A3	0.02024	0.02075	0.02146
	S0	0.02853	0.02806	0.03135
	S0	0.02647	0.02661	0.03362
	S1	0.01644	0.01768	0.02277
	S1	0.01486	0.01512	0.01912

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)**	0.00499	0.00485	0.00520
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00211	0.00196	0.00232
	(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)	0.00090	0.00084	0.00083
	(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)	-0.00087	-0.00095	-0.00096
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00559	0.00545	0.00574
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00228	0.00213	0.00244
	(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)	0.00102	0.00093	0.00091
	(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)	-0.00083	-0.00093	-0.00094
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00933	0.00907	0.00975
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00371	0.00342	0.00414
	(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)	0.00175	0.00158	0.00154
	(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)	-0.00177	-0.00199	-0.00200

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)	0.00090	0.00080	0.00119
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00378	0.00369	0.00406
	(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)	-0.00082	-0.00083	-0.00083
	(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)	0.00096	0.00097	0.00096
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00139	0.00125	0.00164
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00470	0.00457	0.00494
	(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)	-0.00089	-0.00091	-0.00091
	(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)	0.00094	0.00095	0.00095

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00201	0.00180	0.00258
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00764	0.00745	0.00820
	(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)	-0.00151	-0.00154	-0.00154
	(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)	0.00200	0.00200	0.00200

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)**	0.00421	0.00407	0.00442
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00134	0.00118	0.00154
	(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)	0.00085	0.00076	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)	-0.00096	-0.00107	-0.00107

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00483	0.00471	0.00501
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00153	0.00139	0.00170
	(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)	0.00086	0.00081	0.00080
	(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)	-0.00095	-0.00102	-0.00102
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00775	0.00749	0.00817
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00222	0.00193	0.00265
	(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)	0.00168	0.00151	0.00148
	(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)	-0.00174	-0.00195	-0.00196

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)**	0.00174	0.00163	0.00201
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00464	0.00452	0.00489
	(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	-0.00075	-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)	0.00107	0.00108	0.00108
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00210	0.00199	0.00236
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00542	0.00531	0.00565
	(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)	-0.00077	-0.00080	-0.00080
	(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)	0.00102	0.00103	0.00103
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00374	0.00356	0.00429
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00928	0.00911	0.00980
	(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	-0.00149	-0.00148
	(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)	0.00194	0.00196	0.00196

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)	0.00098	0.00088	0.00088
	(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)	-0.00082	-0.00092	-0.00093
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00515	0.00502	0.00535
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00224	0.00210	0.00246
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)	0.00112	0.00102	0.00100
	(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)	-0.00082	-0.00093	-0.00094
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00528	0.00514	0.00544
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00212	0.00197	0.00229

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)**	0.00183	0.00165	0.00162
	(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)	-0.00166	-0.00187	-0.00189
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00949	0.00922	0.00992
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00375	0.00345	0.00419

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)**	-0.00086	-0.00087	-0.00088
	(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)	0.00093	0.00093	0.00093
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00142	0.00132	0.00170
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00433	0.00423	0.00461

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)**	-0.00098	-0.00100	-0.00100
	(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)	0.00093	0.00094	0.00094
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00146	0.00132	0.00171
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00462	0.00448	0.00487
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)**	-0.00159	-0.00162	-0.00162
	(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)	0.00188	0.00189	0.00189
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00193	0.00171	0.00250
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00766	0.00747	0.00823

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)**	0.00461	0.00445	0.00478
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00151	0.00134	0.00168
	(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)	0.00108	0.00099	0.00097
	(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)	-0.00093	-0.00103	-0.00104
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00474	0.00462	0.00493
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00163	0.00148	0.00181
	(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)	0.00093	0.00087	0.00086
	(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)	-0.00091	-0.00099	-0.00099
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00849	0.00820	0.00888
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00267	0.00235	0.00305
	(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)	0.00173	0.00159	0.00156
	(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)	-0.00170	-0.00189	-0.00190

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)	0.00197	0.00183	0.00222
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00508	0.00493	0.00531
	(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)	-0.00095	-0.00097	-0.00097
	(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)	0.00104	0.00104	0.00104
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00193	0.00181	0.00219
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00505	0.00494	0.00530
	(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)	-0.00083	-0.00086	-0.00086
	(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)	0.00099	0.00100	0.00100

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00325	0.00302	0.00377
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00909	0.00887	0.00956
	(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)	-0.00150	-0.00157	-0.00156
	(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)	0.00189	0.00191	0.00190

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)**	0.00577	0.00553	0.00658
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00060	-0.00088	0.00019
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00860	0.00825	0.00924
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00314	0.00278	0.00375
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00829	0.00788	0.01015
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00096	0.00052	0.00280
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00594	0.00569	0.00677
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00047	-0.00075	0.00033
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00808	0.00790	0.00886
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00258	0.00238	0.00333
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00791	0.00772	0.00872
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00236	0.00216	0.00312
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00803	0.00760	0.00997
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00070	0.00024	0.00263
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00852	0.00810	0.01050
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00117	0.00069	0.00311
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00839	0.00803	0.00903
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00286	0.00247	0.00345
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00879	0.00836	0.01064
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00138	0.00093	0.00323

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00642	0.00619	0.00726
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00015	-0.00013	0.00097
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00915	0.00862	0.00958
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00394	0.00339	0.00434
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00894	0.00849	0.01077
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00163	0.00112	0.00341
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00632	0.00608	0.00717
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00004	-0.00020	0.00089
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00949	0.00886	0.00976
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00449	0.00385	0.00473
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00913	0.00849	0.00943
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00416	0.00350	0.00442
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00901	0.00850	0.01081
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00146	0.00092	0.00324
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00912	0.00860	0.01096
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00162	0.00106	0.00342
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00861	0.00805	0.00908
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00344	0.00288	0.00386
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00952	0.00903	0.01137
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00222	0.00169	0.00403

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00906	0.00885	0.00954
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00000	-0.00025	0.00048
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01392	0.01309	0.01354
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00673	0.00587	0.00629
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01353	0.01288	0.01607
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00258	0.00193	0.00512
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00901	0.00878	0.00953
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00004	-0.00028	0.00044
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01410	0.01361	0.01410
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00658	0.00609	0.00652
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01350	0.01301	0.01354
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00599	0.00549	0.00593
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01300	0.01244	0.01569
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00228	0.00162	0.00496
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01347	0.01286	0.01622
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00275	0.00211	0.00546
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01365	0.01279	0.01329
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00638	0.00549	0.00592
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01440	0.01375	0.01698
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00337	0.00267	0.00591

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)**	0.00048	0.00030	0.00176
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00685	0.00669	0.00816
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00414	0.00399	0.00538
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00959	0.00946	0.01088
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00174	0.00147	0.00448
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00905	0.00881	0.01184
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00032	0.00013	0.00159
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00673	0.00654	0.00803
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00391	0.00379	0.00522
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00941	0.00931	0.01077
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00408	0.00396	0.00539
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00964	0.00954	0.01099
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00121	0.00094	0.00403
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00853	0.00828	0.01136
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00071	0.00041	0.00352
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00807	0.00780	0.01089
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00437	0.00422	0.00560
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00991	0.00976	0.01118
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00123	0.00094	0.00398
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00864	0.00838	0.01142

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00054	-0.00061	0.00084
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00572	0.00566	0.00713
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00315	0.00302	0.00443
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00835	0.00823	0.00967
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00083	0.00057	0.00366
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00815	0.00790	0.01101
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00044	-0.00059	0.00091
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00581	0.00568	0.00718
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00355	0.00343	0.00481
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00853	0.00844	0.00983
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00390	0.00377	0.00512
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00887	0.00878	0.01014
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00048	0.00019	0.00329
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00802	0.00773	0.01085
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00034	0.00002	0.00313
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00787	0.00757	0.01066
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00367	0.00353	0.00493
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00885	0.00875	0.01014
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00023	-0.00004	0.00304
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00755	0.00727	0.01038

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00072	-0.00078	0.00024
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00827	0.00822	0.00932
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00626	0.00611	0.00687
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01344	0.01329	0.01412
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00106	0.00083	0.00484
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01195	0.01174	0.01578
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00067	-0.00075	0.00030
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00837	0.00834	0.00941
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00562	0.00561	0.00644
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01311	0.01312	0.01403
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00625	0.00624	0.00703
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01380	0.01381	0.01466
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00089	0.00076	0.00487
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01159	0.01148	0.01562
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00041	0.00027	0.00440
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01115	0.01104	0.01517
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00661	0.00642	0.00715
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01391	0.01374	0.01453
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00017	-0.00022	0.00397
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01124	0.01084	0.01503

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)	0.00380	0.00364	0.00504
	(A1 * A3 * S0 * X)	-0.00019	-0.00038	0.00104
	(A0 * A2 * !S0 * X)	0.00380	0.00364	0.00504
	(A0 * A2 * !S0 * X)	-0.00019	-0.00038	0.00104
	(!A1 * !A3 * S0 * !X)	0.00391	0.00372	0.00518
	(!A1 * !A3 * S0 * !X)	-0.00015	-0.00035	0.00111
	(!A0 * !A2 * !S0 * !X)	0.00391	0.00372	0.00518
	(!A0 * !A2 * !S0 * !X)	-0.00015	-0.00035	0.00110
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00401	0.00384	0.00523
	(A1 * A3 * S0 * X)	-0.00015	-0.00033	0.00106
	(A0 * A2 * !S0 * X)	0.00401	0.00384	0.00523
	(A0 * A2 * !S0 * X)	-0.00015	-0.00033	0.00106
	(!A1 * !A3 * S0 * !X)	0.00398	0.00380	0.00524
	(!A1 * !A3 * S0 * !X)	-0.00021	-0.00039	0.00105
	(!A0 * !A2 * !S0 * !X)	0.00398	0.00380	0.00524
	(!A0 * !A2 * !S0 * !X)	-0.00021	-0.00039	0.00104
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00581	0.00557	0.00652
	(A1 * A3 * S0 * X)	-0.00009	-0.00038	0.00062
	(A0 * A2 * !S0 * X)	0.00581	0.00557	0.00652
	(A0 * A2 * !S0 * X)	-0.00009	-0.00038	0.00062
	(!A1 * !A3 * S0 * !X)	0.00575	0.00551	0.00652
	(!A1 * !A3 * S0 * !X)	-0.00031	-0.00058	0.00044
	(!A0 * !A2 * !S0 * !X)	0.00575	0.00551	0.00651
	(!A0 * !A2 * !S0 * !X)	-0.00031	-0.00058	0.00045

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)	-0.00045	-0.00049	0.00126
	(A1 * A3 * S0 * X)	0.00352	0.00351	0.00526
	(A0 * A2 * !S0 * X)	-0.00045	-0.00049	0.00126
	(A0 * A2 * !S0 * X)	0.00352	0.00351	0.00526
	(!A1 * !A3 * S0 * !X)	-0.00050	-0.00049	0.00117
	(!A1 * !A3 * S0 * !X)	0.00357	0.00359	0.00525
	(!A0 * !A2 * !S0 * !X)	-0.00050	-0.00048	0.00117
	(!A0 * !A2 * !S0 * !X)	0.00357	0.00359	0.00525
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00050	-0.00053	0.00121
	(A1 * A3 * S0 * X)	0.00365	0.00364	0.00538
	(A0 * A2 * !S0 * X)	-0.00050	-0.00053	0.00121
	(A0 * A2 * !S0 * X)	0.00365	0.00364	0.00538
	(!A1 * !A3 * S0 * !X)	-0.00044	-0.00043	0.00121
	(!A1 * !A3 * S0 * !X)	0.00374	0.00377	0.00541
	(!A0 * !A2 * !S0 * !X)	-0.00044	-0.00043	0.00121
	(!A0 * !A2 * !S0 * !X)	0.00374	0.00377	0.00541
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00074	-0.00081	0.00051
	(A1 * A3 * S0 * X)	0.00517	0.00511	0.00644
	(A0 * A2 * !S0 * X)	-0.00074	-0.00081	0.00051
	(A0 * A2 * !S0 * X)	0.00517	0.00511	0.00644
	(!A1 * !A3 * S0 * !X)	-0.00052	-0.00069	0.00065
	(!A1 * !A3 * S0 * !X)	0.00554	0.00540	0.00674
	(!A0 * !A2 * !S0 * !X)	-0.00052	-0.00069	0.00065
	(!A0 * !A2 * !S0 * !X)	0.00554	0.00540	0.00674

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00224	0.00266	0.60333
sky130_fd_sc_hs__nand2b_2	0.00251	0.00503	1.17966
sky130_fd_sc_hs__nand2b_4	0.00369	0.00775	1.32206

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.05382	0.08740
sky130_fd_sc_hs__nand2b_2	0.00000	0.04618	0.07722
sky130_fd_sc_hs__nand2b_4	0.00000	0.11096	0.18203

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)	0.09786	0.84450	7.40535
	B->Y (FR)	0.06928	1.06324	11.77010
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.09213	0.72441	7.26564
	B->Y (FR)	0.06454	0.95865	12.08580
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.11332	0.75748	7.59362
	B->Y (FR)	0.08779	0.96677	12.17730

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)	0.12978	0.76591	5.25222
	B->Y (RF)	0.04065	0.61652	6.77900
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.14678	0.79000	5.93060
	B->Y (RF)	0.04149	0.55539	6.93299
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.11498	0.62335	4.12517
	B->Y (RF)	0.03727	0.42115	5.22661

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	0.00439	0.00429	0.00565
	A_N	0.00231	0.00221	0.00359
	B	0.00018	0.00016	0.00028
	B	0.00251	0.00249	0.00267
sky130_fd_sc_hs__nand2b_2	A_N	0.00575	0.00581	0.00692
	A_N	0.00361	0.00368	0.00486
	B	0.00014	0.00005	0.00032
	B	0.00466	0.00458	0.00490
sky130_fd_sc_hs__nand2b_4	A_N	0.00770	0.00786	0.01014
	A_N	0.00463	0.00479	0.00720
	B	0.00003	-0.00014	0.00023
	B	0.00697	0.00656	0.00731

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00229	0.00239	0.00441
	A_N	0.00437	0.00447	0.00631
	B	0.00302	0.00300	0.00314
	B	0.00068	0.00065	0.00069
sky130_fd_sc_hs__nand2b_2	A_N	0.00394	0.00408	0.00591
	A_N	0.00608	0.00621	0.00772
	B	0.00584	0.00587	0.00589
	B	0.00127	0.00121	0.00132
sky130_fd_sc_hs__nand2b_4	A_N	0.00687	0.00714	0.01035
	A_N	0.00993	0.01013	0.01332
	B	0.01020	0.01013	0.01081
	B	0.00315	0.00307	0.00322

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00348	0.00331	0.00469
	(!B * Y)	0.00128	0.00109	0.00248
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00483	0.00462	0.00584
	(!B * Y)	0.00239	0.00217	0.00339
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00596	0.00564	0.00798
	(!B * Y)	0.00239	0.00206	0.00441

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00010	0.00012	0.00194
	(!B * Y)	0.00231	0.00233	0.00416
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00054	0.00046	0.00194
	(!B * Y)	0.00300	0.00293	0.00439
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00095	0.00094	0.00406
	(!B * Y)	0.00456	0.00456	0.00766

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00104	0.00105	0.00104
	(A_N * Y)	-0.00105	-0.00106	-0.00105
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00178	0.00180	0.00178
	(A_N * Y)	-0.00219	-0.00220	-0.00219
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00360	0.00363	0.00359
	(A_N * Y)	-0.00231	-0.00231	-0.00230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00101	-0.00105	-0.00104
	(A_N * Y)	0.00108	0.00108	0.00106
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00172	-0.00180	-0.00178
	(A_N * Y)	0.00222	0.00222	0.00219
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00344	-0.00360	-0.00359
	(A_N * Y)	0.00240	0.00235	0.00231

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00267	0.00258	0.64498
sky130_fd_sc_hs__nand2_2	0.00511	0.00505	1.24477
sky130_fd_sc_hs__nand2_4	0.00783	0.00756	1.24988
sky130_fd_sc_hs__nand2_8	0.01496	0.01493	2.41117

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2_1	0.00000	0.01087	0.03622
sky130_fd_sc_hs__nand2_2	0.00000	0.02174	0.07244
sky130_fd_sc_hs__nand2_4	0.00000	0.02537	0.07245
sky130_fd_sc_hs__nand2_8	0.00000	0.05074	0.14489

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)	0.05395	1.05615	12.05220
	B->Y (FR)	0.06628	1.06937	12.06560
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.04658	0.92564	11.96990
	B->Y (FR)	0.06300	0.93619	11.93730
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.06634	0.93900	11.98980
	B->Y (FR)	0.09884	0.97374	11.97380
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.05244	0.83218	11.86750
	B->Y (FR)	0.08275	0.85106	11.59420

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.03255	0.65186	7.44481
	B->Y (RF)	0.03727	0.62555	7.02400
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.03099	0.60419	7.78234
	B->Y (RF)	0.03910	0.57425	7.30368
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.02866	0.45419	5.76407
	B->Y (RF)	0.03566	0.42271	5.17189
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.02577	0.41682	6.04354
	B->Y (RF)	0.03284	0.36915	5.14526

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00028	-0.00028	-0.00017
	A	0.00218	0.00218	0.00237
	B	0.00001	-0.00001	0.00010
	B	0.00301	0.00299	0.00315
sky130_fd_sc_hs__nand2_2	A	-0.00086	-0.00084	-0.00054
	A	0.00391	0.00394	0.00437
	B	0.00021	0.00009	0.00035
	B	0.00612	0.00572	0.00640
sky130_fd_sc_hs__nand2_4	A	-0.00168	-0.00184	-0.00128
	A	0.00562	0.00518	0.00614
	B	0.00029	0.00004	0.00044
	B	0.00982	0.00953	0.01006
sky130_fd_sc_hs__nand2_8	A	-0.00380	-0.00384	-0.00253
	A	0.01035	0.01005	0.01188
	B	-0.00013	-0.00059	0.00031
	B	0.01868	0.01816	0.01933

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00237	0.00235	0.00244
	A	-0.00010	-0.00012	-0.00006
	B	0.00295	0.00294	0.00307
	B	-0.00007	-0.00010	-0.00006
sky130_fd_sc_hs__nand2_2	A	0.00466	0.00468	0.00482
	A	-0.00011	-0.00014	0.00001
	B	0.00597	0.00591	0.00604
	B	-0.00004	-0.00011	-0.00000
sky130_fd_sc_hs__nand2_4	A	0.00864	0.00854	0.00933
	A	0.00138	0.00123	0.00148
	B	0.01117	0.01105	0.01167
	B	0.00145	0.00134	0.00148
sky130_fd_sc_hs__nand2_8	A	0.01373	0.01361	0.01481
	A	-0.00036	-0.00049	0.00009
	B	0.01908	0.01889	0.01988
	B	-0.00012	-0.00032	0.00004

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00035	0.00035	0.00034
	(!B * Y)	-0.00130	-0.00131	-0.00132
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00066	0.00066	0.00062
	(!B * Y)	-0.00251	-0.00251	-0.00259
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00130	0.00129	0.00122
	(!B * Y)	-0.00304	-0.00304	-0.00318
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00256	0.00254	0.00241
	(!B * Y)	-0.00584	-0.00585	-0.00611

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00033	-0.00033	-0.00033
	(!B * Y)	0.00133	0.00134	0.00132
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00060	-0.00061	-0.00060
	(!B * Y)	0.00260	0.00263	0.00259
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00117	-0.00119	-0.00117
	(!B * Y)	0.00318	0.00323	0.00318
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00232	-0.00237	-0.00233
	(!B * Y)	0.00609	0.00622	0.00612

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00087	0.00088	0.00087
	(!A * Y)	-0.00111	-0.00112	-0.00111
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00167	0.00168	0.00168
	(!A * Y)	-0.00217	-0.00218	-0.00218
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00334	0.00337	0.00333
	(!A * Y)	-0.00229	-0.00230	-0.00228
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.00664	0.00670	0.00665
	(!A * Y)	-0.00456	-0.00459	-0.00457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	**(!A * Y)**	-0.00083	-0.00088	-0.00087
	(!A * Y)	0.00114	0.00113	0.00112
sky130_fd_sc_hs__nand2_2	**(!A * Y)**	-0.00160	-0.00168	-0.00168
	(!A * Y)	0.00222	0.00221	0.00218
sky130_fd_sc_hs__nand2_4	**(!A * Y)**	-0.00315	-0.00336	-0.00333
	(!A * Y)	0.00237	0.00232	0.00229
sky130_fd_sc_hs__nand2_8	**(!A * Y)**	-0.00630	-0.00670	-0.00665
	(!A * Y)	0.00474	0.00465	0.00458

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00210	0.00268	0.00259	0.63734
sky130_fd_sc_hs__nand3b_2	0.00248	0.00508	0.00505	1.26866
sky130_fd_sc_hs__nand3b_4	0.00350	0.00733	0.00740	1.19908

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3b_1	0.00000	0.05123	0.08740
sky130_fd_sc_hs__nand3b_2	0.00000	0.04099	0.11345
sky130_fd_sc_hs__nand3b_4	0.00000	0.10511	0.18203

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)	0.10174	0.83288	7.37370
	B->Y (FR)	0.07926	1.08916	12.14010
	C->Y (FR)	0.08814	1.08878	12.01420
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.09887	0.73007	7.44765
	B->Y (FR)	0.06914	0.94802	12.07500
	C->Y (FR)	0.08067	0.96879	12.17020
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.12211	0.77565	7.49686
	B->Y (FR)	0.09434	0.96036	11.72710
	C->Y (FR)	0.12590	1.01155	12.02550

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)	0.14143	0.88631	6.79635
	B->Y (RF)	0.06002	0.75757	8.39673
	C->Y (RF)	0.06487	0.71953	7.88246
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.16665	0.92485	8.06688
	B->Y (RF)	0.06172	0.71294	9.14800
	C->Y (RF)	0.06609	0.65845	8.44687
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.13795	0.76546	6.14449
	B->Y (RF)	0.06593	0.62404	7.69074
	C->Y (RF)	0.07102	0.51906	6.30152

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	0.00425	0.00414	0.00552
	A_N	0.00243	0.00233	0.00375
	B	0.00035	0.00030	0.00041
	B	0.00275	0.00269	0.00286
	C	0.00062	0.00058	0.00067
	C	0.00341	0.00336	0.00351
sky130_fd_sc_hs__nand3b_2	A_N	0.00597	0.00601	0.00723
	A_N	0.00396	0.00401	0.00525
	B	0.00048	0.00031	0.00055
	B	0.00525	0.00485	0.00547
	C	0.00103	0.00094	0.00111
	C	0.00690	0.00678	0.00708
sky130_fd_sc_hs__nand3b_4	A_N	0.00797	0.00827	0.01066
	A_N	0.00494	0.00523	0.00765
	B	0.00056	0.00009	0.00053
	B	0.00736	0.00687	0.00746
	C	0.00158	0.00132	0.00170
	C	0.01072	0.01047	0.01095

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00297	0.00307	0.00499
	A_N	0.00479	0.00489	0.00674
	B	0.00365	0.00361	0.00365
	B	0.00125	0.00120	0.00124
	C	0.00419	0.00416	0.00427
	C	0.00134	0.00130	0.00133
sky130_fd_sc_hs__nand3b_2	A_N	0.00532	0.00546	0.00710
	A_N	0.00733	0.00747	0.00904
	B	0.00692	0.00683	0.00700
	B	0.00209	0.00201	0.00210
	C	0.00812	0.00806	0.00815
	C	0.00209	0.00201	0.00210
sky130_fd_sc_hs__nand3b_4	A_N	0.00733	0.00755	0.01122
	A_N	0.01037	0.01058	0.01375
	B	0.01023	0.01014	0.01026
	B	0.00337	0.00328	0.00341
	C	0.01334	0.01327	0.01355
	C	0.00379	0.00370	0.00381

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)	0.00331	0.00315	0.00455
	(B * !C * Y)	0.00125	0.00107	0.00248
	(!B * Y)	0.00329	0.00313	0.00453
	(!B * Y)	0.00125	0.00107	0.00248
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00503	0.00483	0.00603
	(B * !C * Y)	0.00242	0.00221	0.00342
	(!B * Y)	0.00495	0.00475	0.00595
	(!B * Y)	0.00242	0.00220	0.00342
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00603	0.00574	0.00803
	(B * !C * Y)	0.00236	0.00205	0.00435
	(!B * Y)	0.00590	0.00563	0.00791
	(!B * Y)	0.00232	0.00203	0.00433

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)	0.00020	0.00023	0.00205
	(B * !C * Y)	0.00232	0.00235	0.00416
	(!B * Y)	0.00020	0.00023	0.00207
	(!B * Y)	0.00226	0.00229	0.00412
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00050	0.00043	0.00187
	(B * !C * Y)	0.00321	0.00314	0.00456
	(!B * Y)	0.00058	0.00051	0.00196
	(!B * Y)	0.00312	0.00305	0.00450
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00103	0.00106	0.00409
	(B * !C * Y)	0.00493	0.00496	0.00793
	(!B * Y)	0.00113	0.00116	0.00424
	(!B * Y)	0.00474	0.00477	0.00784

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)	0.00097	0.00097	0.00097
	(A_N * C * Y)	-0.00109	-0.00109	-0.00109
	(A_N * !C * Y)	0.00063	0.00063	0.00063
	(A_N * !C * Y)	-0.00109	-0.00109	-0.00109
	(!A_N * !C * Y)	0.00038	0.00038	0.00038
	(!A_N * !C * Y)	-0.00128	-0.00129	-0.00128
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00180	0.00181	0.00180
	(A_N * C * Y)	-0.00224	-0.00225	-0.00224
	(A_N * !C * Y)	0.00113	0.00114	0.00113
	(A_N * !C * Y)	-0.00225	-0.00226	-0.00225
	(!A_N * !C * Y)	0.00081	0.00082	0.00083
	(!A_N * !C * Y)	-0.00240	-0.00243	-0.00241
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00362	0.00366	0.00365
	(A_N * C * Y)	-0.00217	-0.00218	-0.00218
	(A_N * !C * Y)	0.00207	0.00208	0.00207
	(A_N * !C * Y)	-0.00242	-0.00243	-0.00242
	(!A_N * !C * Y)	0.00151	0.00153	0.00156
	(!A_N * !C * Y)	-0.00264	-0.00266	-0.00264

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)	-0.00094	-0.00097	-0.00097
	(A_N * C * Y)	0.00112	0.00111	0.00109
	(A_N * !C * Y)	-0.00063	-0.00063	-0.00063
	(A_N * !C * Y)	0.00114	0.00114	0.00110
	(!A_N * !C * Y)	-0.00035	-0.00036	-0.00036
	(!A_N * !C * Y)	0.00130	0.00131	0.00129
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00172	-0.00181	-0.00180
	(A_N * C * Y)	0.00228	0.00228	0.00225
	(A_N * !C * Y)	-0.00113	-0.00114	-0.00113
	(A_N * !C * Y)	0.00232	0.00232	0.00226
	(!A_N * !C * Y)	-0.00077	-0.00077	-0.00079
	(!A_N * !C * Y)	0.00247	0.00248	0.00244
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00334	-0.00366	-0.00365
	(A_N * C * Y)	0.00244	0.00221	0.00219
	(A_N * !C * Y)	-0.00207	-0.00208	-0.00207
	(A_N * !C * Y)	0.00257	0.00258	0.00246
	(!A_N * !C * Y)	-0.00147	-0.00146	-0.00150
	(!A_N * !C * Y)	0.00275	0.00274	0.00267

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)	0.00084	0.00084	0.00084
	(A_N * B * Y)	-0.00107	-0.00107	-0.00107
	(A_N * !B * Y)	0.00084	0.00084	0.00084
	(A_N * !B * Y)	-0.00107	-0.00107	-0.00107
	(!A_N * !B * Y)	0.00081	0.00081	0.00080
	(!A_N * !B * Y)	-0.00111	-0.00111	-0.00111
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00183	0.00183	0.00182
	(A_N * B * Y)	-0.00215	-0.00216	-0.00215
	(A_N * !B * Y)	0.00182	0.00183	0.00181
	(A_N * !B * Y)	-0.00216	-0.00217	-0.00216
	(!A_N * !B * Y)	0.00161	0.00162	0.00160
	(!A_N * !B * Y)	-0.00237	-0.00238	-0.00237
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00347	0.00346	0.00345
	(A_N * B * Y)	-0.00223	-0.00222	-0.00222
	(A_N * !B * Y)	0.00345	0.00347	0.00344
	(A_N * !B * Y)	-0.00227	-0.00227	-0.00225
	(!A_N * !B * Y)	0.00317	0.00316	0.00315
	(!A_N * !B * Y)	-0.00256	-0.00255	-0.00252

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)	-0.00080	-0.00084	-0.00084
	(A_N * B * Y)	0.00107	0.00108	0.00107
	(A_N * !B * Y)	-0.00081	-0.00084	-0.00084
	(A_N * !B * Y)	0.00107	0.00109	0.00108
	(!A_N * !B * Y)	-0.00077	-0.00081	-0.00080
	(!A_N * !B * Y)	0.00111	0.00113	0.00111
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00173	-0.00183	-0.00182
	(A_N * B * Y)	0.00215	0.00217	0.00216
	(A_N * !B * Y)	-0.00176	-0.00183	-0.00181
	(A_N * !B * Y)	0.00216	0.00219	0.00216
	(!A_N * !B * Y)	-0.00154	-0.00162	-0.00160
	(!A_N * !B * Y)	0.00238	0.00240	0.00237
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00330	-0.00346	-0.00345
	(A_N * B * Y)	0.00225	0.00224	0.00222
	(A_N * !B * Y)	-0.00329	-0.00347	-0.00344
	(A_N * !B * Y)	0.00230	0.00229	0.00225
	(!A_N * !B * Y)	-0.00299	-0.00316	-0.00315
	(!A_N * !B * Y)	0.00259	0.00257	0.00252

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00271	0.00275	0.00266	0.63764
sky130_fd_sc_hs__nand3_2	0.00507	0.00550	0.00501	1.05761
sky130_fd_sc_hs__nand3_4	0.00757	0.00745	0.00748	1.25156

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	0.00828	0.05433
sky130_fd_sc_hs__nand3_2	0.00000	0.01655	0.10867
sky130_fd_sc_hs__nand3_4	0.00000	0.01952	0.10867

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)	0.06505	1.06285	11.98410
	B->Y (FR)	0.07952	1.07637	11.98440
	C->Y (FR)	0.08877	1.08987	12.01550
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.05839	0.95399	11.92570
	B->Y (FR)	0.07053	0.91548	11.06760
	C->Y (FR)	0.08252	0.93192	11.10720
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.06494	0.93967	11.99830
	B->Y (FR)	0.09741	0.96824	11.92390
	C->Y (FR)	0.11779	0.98555	11.81590

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.04816	0.76667	8.68792
	B->Y (RF)	0.05820	0.75828	8.41185
	C->Y (RF)	0.06205	0.71915	7.90132
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.03997	0.66106	8.23756
	B->Y (RF)	0.05421	0.65302	7.97952
	C->Y (RF)	0.06042	0.61513	7.43665
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.03248	0.52584	6.73689
	B->Y (RF)	0.04568	0.50929	6.29849
	C->Y (RF)	0.05052	0.46199	5.61101

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00020	-0.00023	-0.00012
	A	0.00242	0.00240	0.00258
	B	0.00021	0.00015	0.00024
	B	0.00336	0.00330	0.00346
	C	0.00042	0.00036	0.00046
	C	0.00413	0.00409	0.00423
sky130_fd_sc_hs__nand3_2	A	-0.00078	-0.00081	-0.00051
	A	0.00418	0.00393	0.00456
	B	0.00030	0.00013	0.00039
	B	0.00659	0.00643	0.00665
	C	0.00111	0.00094	0.00118
	C	0.00834	0.00818	0.00841
sky130_fd_sc_hs__nand3_4	A	-0.00164	-0.00178	-0.00125
	A	0.00570	0.00531	0.00624
	B	0.00036	-0.00010	0.00036
	B	0.00993	0.00952	0.01005
	C	0.00156	0.00128	0.00159
	C	0.01347	0.01318	0.01360

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00328	0.00318	0.00333
	A	0.00066	0.00062	0.00067
	B	0.00387	0.00383	0.00387
	B	0.00069	0.00064	0.00067
	C	0.00446	0.00443	0.00449
	C	0.00065	0.00060	0.00064
sky130_fd_sc_hs__nand3_2	A	0.00556	0.00551	0.00567
	A	0.00060	0.00051	0.00066
	B	0.00692	0.00684	0.00712
	B	0.00056	0.00044	0.00055
	C	0.00806	0.00797	0.00809
	C	0.00059	0.00049	0.00059
sky130_fd_sc_hs__nand3_4	A	0.00837	0.00829	0.00894
	A	0.00103	0.00090	0.00114
	B	0.01086	0.01075	0.01132
	B	0.00111	0.00100	0.00113
	C	0.01336	0.01333	0.01447
	C	0.00098	0.00086	0.00098

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00034	0.00034	0.00031
	(B * !C * Y)	-0.00126	-0.00126	-0.00132
	(!B * Y)	0.00034	0.00034	0.00032
	(!B * Y)	-0.00130	-0.00131	-0.00132
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00068	0.00067	0.00059
	(B * !C * Y)	-0.00233	-0.00233	-0.00248
	(!B * Y)	0.00069	0.00068	0.00064
	(!B * Y)	-0.00242	-0.00241	-0.00248
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00125	0.00124	0.00111
	(B * !C * Y)	-0.00279	-0.00280	-0.00307
	(!B * Y)	0.00127	0.00125	0.00119
	(!B * Y)	-0.00297	-0.00297	-0.00310

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00031	-0.00031	-0.00031
	(B * !C * Y)	0.00132	0.00134	0.00133
	(!B * Y)	-0.00031	-0.00032	-0.00031
	(!B * Y)	0.00133	0.00134	0.00133
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00058	-0.00058	-0.00058
	(B * !C * Y)	0.00250	0.00251	0.00249
	(!B * Y)	-0.00062	-0.00062	-0.00062
	(!B * Y)	0.00250	0.00251	0.00249
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00110	-0.00112	-0.00110
	(B * !C * Y)	0.00310	0.00315	0.00310
	(!B * Y)	-0.00114	-0.00116	-0.00114
	(!B * Y)	0.00310	0.00315	0.00310

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00043	0.00043	0.00043
	(A * !C * Y)	-0.00111	-0.00112	-0.00110
	(!A * C * Y)	0.00085	0.00085	0.00085
	(!A * C * Y)	-0.00111	-0.00111	-0.00111
	(!A * !C * Y)	0.00048	0.00048	0.00048
	(!A * !C * Y)	-0.00112	-0.00112	-0.00111
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00085	0.00086	0.00086
	(A * !C * Y)	-0.00233	-0.00235	-0.00232
	(!A * C * Y)	0.00167	0.00167	0.00168
	(!A * C * Y)	-0.00231	-0.00232	-0.00232
	(!A * !C * Y)	0.00099	0.00101	0.00100
	(!A * !C * Y)	-0.00234	-0.00236	-0.00235
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00154	0.00155	0.00156
	(A * !C * Y)	-0.00230	-0.00230	-0.00227
	(!A * C * Y)	0.00330	0.00335	0.00332
	(!A * C * Y)	-0.00229	-0.00231	-0.00229
	(!A * !C * Y)	0.00178	0.00179	0.00177
	(!A * !C * Y)	-0.00233	-0.00234	-0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00040	-0.00040	-0.00041
	(A * !C * Y)	0.00114	0.00115	0.00112
	(!A * C * Y)	-0.00080	-0.00085	-0.00085
	(!A * C * Y)	0.00114	0.00113	0.00112
	(!A * !C * Y)	-0.00048	-0.00048	-0.00048
	(!A * !C * Y)	0.00116	0.00117	0.00112
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00081	-0.00081	-0.00082
	(A * !C * Y)	0.00241	0.00241	0.00236
	(!A * C * Y)	-0.00159	-0.00167	-0.00168
	(!A * C * Y)	0.00238	0.00236	0.00233
	(!A * !C * Y)	-0.00099	-0.00101	-0.00100
	(!A * !C * Y)	0.00241	0.00241	0.00236
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00145	-0.00146	-0.00149
	(A * !C * Y)	0.00242	0.00243	0.00233
	(!A * C * Y)	-0.00309	-0.00335	-0.00332
	(!A * C * Y)	0.00242	0.00234	0.00231
	(!A * !C * Y)	-0.00178	-0.00179	-0.00177
	(!A * !C * Y)	0.00248	0.00251	0.00235

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00090	0.00091	0.00090
	(A * !B * Y)	-0.00112	-0.00113	-0.00112
	(!A * B * Y)	0.00089	0.00089	0.00089
	(!A * B * Y)	-0.00112	-0.00112	-0.00112
	(!A * !B * Y)	0.00090	0.00090	0.00090
	(!A * !B * Y)	-0.00112	-0.00112	-0.00112
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00165	0.00165	0.00165
	(A * !B * Y)	-0.00220	-0.00220	-0.00220
	(!A * B * Y)	0.00161	0.00163	0.00161
	(!A * B * Y)	-0.00220	-0.00221	-0.00220
	(!A * !B * Y)	0.00165	0.00166	0.00165
	(!A * !B * Y)	-0.00220	-0.00221	-0.00220
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00333	0.00336	0.00334
	(A * !B * Y)	-0.00232	-0.00233	-0.00233
	(!A * B * Y)	0.00328	0.00329	0.00327
	(!A * B * Y)	-0.00233	-0.00233	-0.00233
	(!A * !B * Y)	0.00331	0.00336	0.00333
	(!A * !B * Y)	-0.00231	-0.00234	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00087	-0.00091	-0.00090
	(A * !B * Y)	0.00112	0.00114	0.00112
	(!A * B * Y)	-0.00084	-0.00089	-0.00089
	(!A * B * Y)	0.00112	0.00113	0.00112
	(!A * !B * Y)	-0.00087	-0.00090	-0.00090
	(!A * !B * Y)	0.00112	0.00114	0.00112
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00158	-0.00165	-0.00165
	(A * !B * Y)	0.00220	0.00223	0.00221
	(!A * B * Y)	-0.00152	-0.00163	-0.00161
	(!A * B * Y)	0.00220	0.00222	0.00220
	(!A * !B * Y)	-0.00159	-0.00166	-0.00165
	(!A * !B * Y)	0.00221	0.00223	0.00221
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00321	-0.00336	-0.00334
	(A * !B * Y)	0.00233	0.00236	0.00233
	(!A * B * Y)	-0.00307	-0.00329	-0.00327
	(!A * B * Y)	0.00233	0.00235	0.00233
	(!A * !B * Y)	-0.00321	-0.00336	-0.00333
	(!A * !B * Y)	0.00233	0.00236	0.00233

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00213	0.00206	0.00274	0.00276	0.60199
sky130_fd_sc_hs__nand4bb_2	0.00242	0.00239	0.00514	0.00507	1.20798
sky130_fd_sc_hs__nand4bb_4	0.00338	0.00349	0.00999	0.01002	2.08240

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4bb_1	0.00000	0.09157	0.16821
sky130_fd_sc_hs__nand4bb_2	0.00000	0.06019	0.15445
sky130_fd_sc_hs__nand4bb_4	0.00000	0.19383	0.33770

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)	0.11738	0.86479	7.42388
	B_N->Y (RR)	0.13523	0.87975	7.42047
	C->Y (FR)	0.10358	1.09611	11.78130
	D->Y (FR)	0.11554	1.11079	11.80520
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.10644	0.73627	7.34008
	B_N->Y (RR)	0.12462	0.73751	7.04451
	C->Y (FR)	0.08570	0.95219	11.72380
	D->Y (FR)	0.09791	0.97074	11.79860
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.12717	0.67800	6.79560
	B_N->Y (RR)	0.14962	0.70628	6.88842
	C->Y (FR)	0.08323	0.85253	11.20990
	D->Y (FR)	0.09511	0.86928	11.27000

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)	0.16208	1.01219	8.07747
	B_N->Y (FF)	0.18145	1.03782	8.13771
	C->Y (RF)	0.10057	0.86743	9.22928
	D->Y (RF)	0.10770	0.84460	8.83275
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.18663	1.04733	9.75696
	B_N->Y (FF)	0.22256	1.09277	9.86644
	C->Y (RF)	0.10295	0.80532	10.18650
	D->Y (RF)	0.10901	0.78725	9.79472
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.18363	0.92971	9.24136
	B_N->Y (FF)	0.21313	0.96605	9.31877
	C->Y (RF)	0.10615	0.70052	9.85933
	D->Y (RF)	0.11172	0.67522	9.38161

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	0.00437	0.00425	0.00564
	A_N	0.00281	0.00269	0.00409
	B_N	0.00476	0.00460	0.00597
	B_N	0.00325	0.00309	0.00448
	C	0.00073	0.00064	0.00074
	C	0.00335	0.00326	0.00341
	D	0.00106	0.00097	0.00105
	D	0.00414	0.00405	0.00418
sky130_fd_sc_hs__nand4bb_2	A_N	0.00616	0.00617	0.00744
	A_N	0.00448	0.00450	0.00583
	B_N	0.00757	0.00743	0.00864
	B_N	0.00595	0.00582	0.00703
	C	0.00117	0.00096	0.00118
	C	0.00593	0.00547	0.00607
	D	0.00201	0.00185	0.00200
	D	0.00784	0.00745	0.00794
sky130_fd_sc_hs__nand4bb_4	A_N	0.01019	0.01033	0.01245
	A_N	0.00806	0.00821	0.01042
	B_N	0.01246	0.01228	0.01430
	B_N	0.01023	0.01007	0.01211
	C	0.00191	0.00145	0.00212
	C	0.01128	0.01081	0.01156
	D	0.00328	0.00299	0.00347
	D	0.01486	0.01456	0.01508

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00372	0.00374	0.00569
	A_N	0.00529	0.00531	0.00723
	B_N	0.00456	0.00464	0.00652
	B_N	0.00607	0.00615	0.00802
	C	0.00525	0.00519	0.00525
	C	0.00263	0.00257	0.00259
	D	0.00586	0.00581	0.00586
	D	0.00271	0.00264	0.00267
sky130_fd_sc_hs__nand4bb_2	A_N	0.00631	0.00641	0.00800
	A_N	0.00797	0.00808	0.00966
	B_N	0.00788	0.00798	0.00955
	B_N	0.00949	0.00959	0.01115
	C	0.00925	0.00914	0.00924
	C	0.00446	0.00434	0.00443
	D	0.01045	0.01036	0.01043
	D	0.00443	0.00431	0.00440
sky130_fd_sc_hs__nand4bb_4	A_N	0.01270	0.01295	0.01630
	A_N	0.01485	0.01508	0.01833
	B_N	0.01532	0.01546	0.01879
	B_N	0.01754	0.01768	0.02091
	C	0.01815	0.01784	0.01812
	C	0.00870	0.00839	0.00865
	D	0.02062	0.02032	0.02070
	D	0.00868	0.00837	0.00862

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)	0.00310	0.00295	0.00436
	(B_N * Y)	0.00113	0.00097	0.00238
	(!B_N * C * !D * Y)	0.00340	0.00325	0.00466
	(!B_N * C * !D * Y)	0.00142	0.00127	0.00268
	(!B_N * !C * Y)	0.00340	0.00325	0.00466
	(!B_N * !C * Y)	0.00142	0.00127	0.00268
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00461	0.00442	0.00563
	(B_N * Y)	0.00247	0.00226	0.00348
	(!B_N * C * !D * Y)	0.00498	0.00478	0.00599
	(!B_N * C * !D * Y)	0.00281	0.00261	0.00383
	(!B_N * !C * Y)	0.00498	0.00478	0.00599
	(!B_N * !C * Y)	0.00281	0.00261	0.00383
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00754	0.00725	0.00928
	(B_N * Y)	0.00447	0.00415	0.00619
	(!B_N * C * !D * Y)	0.00804	0.00775	0.00977
	(!B_N * C * !D * Y)	0.00493	0.00461	0.00666
	(!B_N * !C * Y)	0.00803	0.00774	0.00977
	(!B_N * !C * Y)	0.00493	0.00462	0.00666

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)	0.00033	0.00034	0.00219
	(B_N * Y)	0.00230	0.00231	0.00417
	(!B_N * C * !D * Y)	0.00006	0.00007	0.00190
	(!B_N * C * !D * Y)	0.00210	0.00212	0.00394
	(!B_N * !C * Y)	0.00004	0.00005	0.00189
	(!B_N * !C * Y)	0.00203	0.00205	0.00389
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00084	0.00079	0.00224
	(B_N * Y)	0.00300	0.00295	0.00440
	(!B_N * C * !D * Y)	0.00054	0.00048	0.00190
	(!B_N * C * !D * Y)	0.00284	0.00279	0.00417
	(!B_N * !C * Y)	0.00050	0.00045	0.00188
	(!B_N * !C * Y)	0.00269	0.00264	0.00407
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00165	0.00165	0.00455
	(B_N * Y)	0.00476	0.00475	0.00764
	(!B_N * C * !D * Y)	0.00128	0.00127	0.00411
	(!B_N * C * !D * Y)	0.00471	0.00469	0.00747
	(!B_N * !C * Y)	0.00122	0.00121	0.00408
	(!B_N * !C * Y)	0.00441	0.00440	0.00726

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)	0.00305	0.00285	0.00417
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00114	0.00093	0.00225
	(!C * Y)	0.00311	0.00296	0.00432
	(!C * Y)	0.00113	0.00097	0.00233
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00443	0.00418	0.00528
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00234	0.00208	0.00318
	(!C * Y)	0.00454	0.00435	0.00549
	(!C * Y)	0.00233	0.00213	0.00327
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00739	0.00699	0.00879
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00421	0.00382	0.00561
	(!C * Y)	0.00770	0.00739	0.00926
	(!C * Y)	0.00428	0.00395	0.00582

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)	0.00077	0.00082	0.00264
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00269	0.00275	0.00457
	(!C * Y)	0.00045	0.00050	0.00232
	(!C * Y)	0.00241	0.00247	0.00429
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00176	0.00171	0.00318
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00386	0.00382	0.00528
	(!C * Y)	0.00114	0.00108	0.00256
	(!C * Y)	0.00333	0.00327	0.00475
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00322	0.00319	0.00615
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00639	0.00637	0.00933
	(!C * Y)	0.00195	0.00192	0.00489
	(!C * Y)	0.00532	0.00529	0.00826

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)**	0.00093	0.00093	0.00093
	(A_N * B_N * D * Y)	-0.00115	-0.00115	-0.00114
	(A_N * B_N * !D * Y)	0.00064	0.00064	0.00063
	(A_N * B_N * !D * Y)	-0.00115	-0.00115	-0.00115
	(A_N * !B_N * D * Y)	0.00079	0.00079	0.00079
	(A_N * !B_N * D * Y)	-0.00129	-0.00130	-0.00128
	(A_N * !B_N * !D * Y)	0.00048	0.00047	0.00047
	(A_N * !B_N * !D * Y)	-0.00138	-0.00138	-0.00137
	(!A_N * B_N * D * Y)	0.00093	0.00094	0.00093
	(!A_N * B_N * D * Y)	-0.00115	-0.00115	-0.00114
	(!A_N * B_N * !D * Y)	0.00062	0.00062	0.00061
	(!A_N * B_N * !D * Y)	-0.00116	-0.00116	-0.00115
	(!A_N * !B_N * !D * Y)	0.00040	0.00040	0.00040
	(!A_N * !B_N * !D * Y)	-0.00129	-0.00129	-0.00129
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00175	0.00177	0.00175
	(A_N * B_N * D * Y)	-0.00223	-0.00225	-0.00224
	(A_N * B_N * !D * Y)	0.00113	0.00113	0.00112
	(A_N * B_N * !D * Y)	-0.00225	-0.00225	-0.00224
	(A_N * !B_N * D * Y)	0.00168	0.00169	0.00168
	(A_N * !B_N * D * Y)	-0.00233	-0.00234	-0.00231
	(A_N * !B_N * !D * Y)	0.00102	0.00103	0.00103
	(A_N * !B_N * !D * Y)	-0.00247	-0.00249	-0.00248
	(!A_N * B_N * D * Y)	0.00175	0.00177	0.00175
	(!A_N * B_N * D * Y)	-0.00223	-0.00225	-0.00224
	(!A_N * B_N * !D * Y)	0.00109	0.00109	0.00108
	(!A_N * B_N * !D * Y)	-0.00226	-0.00226	-0.00224
	(!A_N * !B_N * !D * Y)	0.00085	0.00086	0.00086
	(!A_N * !B_N * !D * Y)	-0.00231	-0.00233	-0.00232

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00349	0.00354	0.00350
	(A_N * B_N * D * Y)	-0.00437	-0.00438	-0.00438
	(A_N * B_N * !D * Y)	0.00223	0.00224	0.00222
	(A_N * B_N * !D * Y)	-0.00440	-0.00440	-0.00438
	(A_N * !B_N * D * Y)	0.00331	0.00334	0.00332
	(A_N * !B_N * D * Y)	-0.00461	-0.00464	-0.00456
	(A_N * !B_N * !D * Y)	0.00197	0.00197	0.00197
	(A_N * !B_N * !D * Y)	-0.00491	-0.00492	-0.00491
	(!A_N * B_N * D * Y)	0.00349	0.00352	0.00350
	(!A_N * B_N * D * Y)	-0.00437	-0.00439	-0.00438
	(!A_N * B_N * !D * Y)	0.00212	0.00215	0.00213
	(!A_N * B_N * !D * Y)	-0.00437	-0.00442	-0.00439
	(!A_N * !B_N * !D * Y)	0.00164	0.00166	0.00165
	(!A_N * !B_N * !D * Y)	-0.00456	-0.00460	-0.00459

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)**	-0.00091	-0.00093	-0.00093
	(A_N * B_N * D * Y)	0.00115	0.00116	0.00115
	(A_N * B_N * !D * Y)	-0.00064	-0.00064	-0.00063
	(A_N * B_N * !D * Y)	0.00115	0.00116	0.00116
	(A_N * !B_N * D * Y)	-0.00074	-0.00079	-0.00079
	(A_N * !B_N * D * Y)	0.00134	0.00131	0.00128
	(A_N * !B_N * !D * Y)	-0.00048	-0.00047	-0.00047
	(A_N * !B_N * !D * Y)	0.00140	0.00142	0.00141
	(!A_N * B_N * D * Y)	-0.00091	-0.00094	-0.00093
	(!A_N * B_N * D * Y)	0.00115	0.00116	0.00115
	(!A_N * B_N * !D * Y)	-0.00062	-0.00062	-0.00061
	(!A_N * B_N * !D * Y)	0.00117	0.00117	0.00116
	(!A_N * !B_N * !D * Y)	-0.00038	-0.00038	-0.00038
	(!A_N * !B_N * !D * Y)	0.00131	0.00132	0.00130
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00172	-0.00177	-0.00175
	(A_N * B_N * D * Y)	0.00224	0.00227	0.00225
	(A_N * B_N * !D * Y)	-0.00113	-0.00113	-0.00112
	(A_N * B_N * !D * Y)	0.00227	0.00226	0.00225
	(A_N * !B_N * D * Y)	-0.00159	-0.00169	-0.00168
	(A_N * !B_N * D * Y)	0.00243	0.00235	0.00231
	(A_N * !B_N * !D * Y)	-0.00102	-0.00103	-0.00103
	(A_N * !B_N * !D * Y)	0.00251	0.00259	0.00256
	(!A_N * B_N * D * Y)	-0.00171	-0.00177	-0.00175
	(!A_N * B_N * D * Y)	0.00225	0.00227	0.00225
	(!A_N * B_N * !D * Y)	-0.00109	-0.00109	-0.00108
	(!A_N * B_N * !D * Y)	0.00228	0.00228	0.00225
	(!A_N * !B_N * !D * Y)	-0.00082	-0.00083	-0.00082
	(!A_N * !B_N * !D * Y)	0.00235	0.00237	0.00235

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00343	-0.00350	-0.00350
	(A_N * B_N * D * Y)	0.00439	0.00438	0.00439
	(A_N * B_N * !D * Y)	-0.00223	-0.00224	-0.00222
	(A_N * B_N * !D * Y)	0.00443	0.00443	0.00440
	(A_N * !B_N * D * Y)	-0.00311	-0.00334	-0.00332
	(A_N * !B_N * D * Y)	0.00482	0.00465	0.00456
	(A_N * !B_N * !D * Y)	-0.00197	-0.00197	-0.00197
	(A_N * !B_N * !D * Y)	0.00499	0.00514	0.00507
	(!A_N * B_N * D * Y)	-0.00341	-0.00351	-0.00350
	(!A_N * B_N * D * Y)	0.00442	0.00439	0.00439
	(!A_N * B_N * !D * Y)	-0.00212	-0.00215	-0.00213
	(!A_N * B_N * !D * Y)	0.00448	0.00448	0.00442
	(!A_N * !B_N * !D * Y)	-0.00159	-0.00160	-0.00159
	(!A_N * !B_N * !D * Y)	0.00466	0.00469	0.00465

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)	0.00080	0.00081	0.00080
	(A_N * B_N * C * Y)	-0.00121	-0.00121	-0.00121
	(A_N * !C * Y)	0.00081	0.00082	0.00081
	(A_N * !C * Y)	-0.00121	-0.00121	-0.00121
	(A_N * !B_N * C * Y)	0.00079	0.00080	0.00079
	(A_N * !B_N * C * Y)	-0.00124	-0.00125	-0.00123
	(!A_N * B_N * C * Y)	0.00080	0.00081	0.00080
	(!A_N * B_N * C * Y)	-0.00121	-0.00121	-0.00121
	(!A_N * B_N * !C * Y)	0.00081	0.00082	0.00081
	(!A_N * B_N * !C * Y)	-0.00121	-0.00122	-0.00121
	(!A_N * !B_N * !C * Y)	0.00081	0.00082	0.00081
	(!A_N * !B_N * !C * Y)	-0.00121	-0.00122	-0.00121

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00167	0.00169	0.00168
	(A_N * B_N * C * Y)	-0.00218	-0.00219	-0.00218
	(A_N * !C * Y)	0.00170	0.00171	0.00170
	(A_N * !C * Y)	-0.00218	-0.00219	-0.00218
	(A_N * !B_N * C * Y)	0.00165	0.00167	0.00166
	(A_N * !B_N * C * Y)	-0.00225	-0.00226	-0.00224
	(!A_N * B_N * C * Y)	0.00167	0.00169	0.00168
	(!A_N * B_N * C * Y)	-0.00218	-0.00219	-0.00218
	(!A_N * B_N * !C * Y)	0.00170	0.00171	0.00170
	(!A_N * B_N * !C * Y)	-0.00219	-0.00219	-0.00218
	(!A_N * !B_N * !C * Y)	0.00170	0.00171	0.00170
	(!A_N * !B_N * !C * Y)	-0.00219	-0.00219	-0.00218
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00336	0.00337	0.00334
	(A_N * B_N * C * Y)	-0.00436	-0.00436	-0.00434
	(A_N * !C * Y)	0.00338	0.00340	0.00337
	(A_N * !C * Y)	-0.00435	-0.00436	-0.00434
	(A_N * !B_N * C * Y)	0.00329	0.00333	0.00330
	(A_N * !B_N * C * Y)	-0.00448	-0.00451	-0.00446
	(!A_N * B_N * C * Y)	0.00334	0.00335	0.00334
	(!A_N * B_N * C * Y)	-0.00434	-0.00435	-0.00435
	(!A_N * B_N * !C * Y)	0.00338	0.00339	0.00337
	(!A_N * B_N * !C * Y)	-0.00436	-0.00436	-0.00435
	(!A_N * !B_N * !C * Y)	0.00338	0.00340	0.00337
	(!A_N * !B_N * !C * Y)	-0.00436	-0.00437	-0.00435

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)**	-0.00076	-0.00081	-0.00080
	(A_N * B_N * C * Y)	0.00121	0.00122	0.00121
	(A_N * !C * Y)	-0.00078	-0.00082	-0.00081
	(A_N * !C * Y)	0.00121	0.00123	0.00121
	(A_N * !B_N * C * Y)	-0.00075	-0.00080	-0.00079
	(A_N * !B_N * C * Y)	0.00127	0.00125	0.00123
	(!A_N * B_N * C * Y)	-0.00076	-0.00081	-0.00080
	(!A_N * B_N * C * Y)	0.00121	0.00122	0.00121
	(!A_N * B_N * !C * Y)	-0.00078	-0.00082	-0.00081
	(!A_N * B_N * !C * Y)	0.00121	0.00123	0.00121
	(!A_N * !B_N * !C * Y)	-0.00078	-0.00082	-0.00081
	(!A_N * !B_N * !C * Y)	0.00121	0.00123	0.00121
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00159	-0.00169	-0.00168
	(A_N * B_N * C * Y)	0.00219	0.00221	0.00219
	(A_N * !C * Y)	-0.00163	-0.00171	-0.00170
	(A_N * !C * Y)	0.00219	0.00221	0.00219
	(A_N * !B_N * C * Y)	-0.00155	-0.00167	-0.00166
	(A_N * !B_N * C * Y)	0.00230	0.00226	0.00224
	(!A_N * B_N * C * Y)	-0.00159	-0.00169	-0.00168
	(!A_N * B_N * C * Y)	0.00219	0.00221	0.00219
	(!A_N * B_N * !C * Y)	-0.00164	-0.00171	-0.00170
	(!A_N * B_N * !C * Y)	0.00220	0.00221	0.00219
	(!A_N * !B_N * !C * Y)	-0.00163	-0.00171	-0.00170
	(!A_N * !B_N * !C * Y)	0.00220	0.00222	0.00219

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00317	-0.00337	-0.00334
	(A_N * B_N * C * Y)	0.00436	0.00440	0.00436
	(A_N * !C * Y)	-0.00326	-0.00340	-0.00337
	(A_N * !C * Y)	0.00438	0.00441	0.00436
	(A_N * !B_N * C * Y)	-0.00309	-0.00333	-0.00330
	(A_N * !B_N * C * Y)	0.00458	0.00451	0.00446
	(!A_N * B_N * C * Y)	-0.00317	-0.00335	-0.00334
	(!A_N * B_N * C * Y)	0.00436	0.00440	0.00436
	(!A_N * B_N * !C * Y)	-0.00326	-0.00339	-0.00337
	(!A_N * B_N * !C * Y)	0.00438	0.00441	0.00436
	(!A_N * !B_N * !C * Y)	-0.00325	-0.00340	-0.00337
	(!A_N * !B_N * !C * Y)	0.00440	0.00441	0.00436

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00209	0.00269	0.00269	0.00259	0.63455
sky130_fd_sc_hs__nand4b_2	0.00262	0.00529	0.00513	0.00513	1.21986
sky130_fd_sc_hs__nand4b_4	0.00364	0.00754	0.00769	0.00736	1.27572

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4b_1	0.00000	0.04862	0.08740
sky130_fd_sc_hs__nand4b_2	0.00000	0.03576	0.14967
sky130_fd_sc_hs__nand4b_4	0.00000	0.09918	0.18203

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)	0.10661	0.83094	7.21044
	B->Y (FR)	0.08294	1.09202	12.10880
	C->Y (FR)	0.09601	1.10483	12.12000
	D->Y (FR)	0.10143	1.10308	11.99690
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.10455	0.71144	6.98177
	B->Y (FR)	0.07437	0.93669	11.76050
	C->Y (FR)	0.08795	0.96280	11.90770
	D->Y (FR)	0.09813	0.97279	11.86440
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.12957	0.76534	7.43742
	B->Y (FR)	0.10304	0.96814	11.94790
	C->Y (FR)	0.12909	0.99932	11.97610
	D->Y (FR)	0.15233	1.03378	12.09440

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)	0.15815	1.02704	8.37371
	B->Y (RF)	0.07770	0.89363	9.90806
	C->Y (RF)	0.08810	0.86833	9.48501
	D->Y (RF)	0.09190	0.84213	9.09073
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.17720	1.03419	9.73010
	B->Y (RF)	0.08445	0.84164	10.83830
	C->Y (RF)	0.09487	0.79979	10.19560
	D->Y (RF)	0.10173	0.78155	9.81029
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.13723	0.75716	6.19781
	B->Y (RF)	0.07154	0.61841	7.67610
	C->Y (RF)	0.08284	0.58137	7.05189
	D->Y (RF)	0.08840	0.55612	6.56694

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	0.00428	0.00419	0.00553
	A_N	0.00262	0.00253	0.00391
	B	0.00037	0.00031	0.00041
	B	0.00290	0.00284	0.00300
	C	0.00074	0.00066	0.00074
	C	0.00366	0.00360	0.00373
	D	0.00098	0.00092	0.00100
	D	0.00438	0.00433	0.00446
sky130_fd_sc_hs__nand4b_2	A_N	0.00618	0.00619	0.00735
	A_N	0.00457	0.00459	0.00575
	B	0.00031	0.00011	0.00039
	B	0.00553	0.00506	0.00575
	C	0.00110	0.00090	0.00112
	C	0.00725	0.00681	0.00737
	D	0.00189	0.00170	0.00189
	D	0.00916	0.00866	0.00925
sky130_fd_sc_hs__nand4b_4	A_N	0.00795	0.00805	0.01038
	A_N	0.00561	0.00571	0.00807
	B	0.00039	-0.00010	0.00037
	B	0.00776	0.00703	0.00788
	C	0.00170	0.00116	0.00155
	C	0.01128	0.01073	0.01123
	D	0.00309	0.00272	0.00303
	D	0.01467	0.01427	0.01466

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00340	0.00347	0.00533
	A_N	0.00506	0.00513	0.00699
	B	0.00395	0.00391	0.00394
	B	0.00141	0.00137	0.00140
	C	0.00452	0.00447	0.00451
	C	0.00152	0.00147	0.00150
	D	0.00504	0.00500	0.00506
	D	0.00151	0.00146	0.00149
sky130_fd_sc_hs__nand4b_2	A_N	0.00617	0.00620	0.00778
	A_N	0.00778	0.00781	0.00938
	B	0.00799	0.00788	0.00800
	B	0.00272	0.00261	0.00270
	C	0.00911	0.00902	0.00911
	C	0.00282	0.00270	0.00279
	D	0.01037	0.01027	0.01034
	D	0.00279	0.00267	0.00276
sky130_fd_sc_hs__nand4b_4	A_N	0.00933	0.00942	0.01291
	A_N	0.01167	0.01175	0.01495
	B	0.01235	0.01224	0.01235
	B	0.00490	0.00477	0.00491
	C	0.01482	0.01469	0.01489
	C	0.00494	0.00481	0.00492
	D	0.01715	0.01704	0.01714
	D	0.00498	0.00486	0.00496

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)	0.00335	0.00319	0.00455
	(B * C * !D * Y)	0.00129	0.00112	0.00249
	(B * !C * Y)	0.00335	0.00319	0.00455
	(B * !C * Y)	0.00129	0.00112	0.00249
	(!B * Y)	0.00333	0.00317	0.00453
	(!B * Y)	0.00129	0.00112	0.00249
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00501	0.00479	0.00601
	(B * C * !D * Y)	0.00245	0.00221	0.00344
	(B * !C * Y)	0.00500	0.00479	0.00600
	(B * !C * Y)	0.00245	0.00221	0.00344
	(!B * Y)	0.00497	0.00476	0.00597
	(!B * Y)	0.00245	0.00222	0.00345
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00597	0.00565	0.00800
	(B * C * !D * Y)	0.00237	0.00204	0.00441
	(B * !C * Y)	0.00596	0.00564	0.00799
	(B * !C * Y)	0.00237	0.00204	0.00441
	(!B * Y)	0.00590	0.00558	0.00794
	(!B * Y)	0.00238	0.00205	0.00442

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)	0.00034	0.00035	0.00216
	(B * C * !D * Y)	0.00249	0.00251	0.00429
	(B * !C * Y)	0.00033	0.00035	0.00216
	(B * !C * Y)	0.00244	0.00246	0.00426
	(!B * Y)	0.00034	0.00035	0.00217
	(!B * Y)	0.00238	0.00241	0.00422
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00045	0.00034	0.00179
	(B * C * !D * Y)	0.00320	0.00309	0.00449
	(B * !C * Y)	0.00042	0.00031	0.00177
	(B * !C * Y)	0.00308	0.00297	0.00442
	(!B * Y)	0.00039	0.00029	0.00178
	(!B * Y)	0.00294	0.00284	0.00432
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00095	0.00094	0.00401
	(B * C * !D * Y)	0.00491	0.00489	0.00787
	(B * !C * Y)	0.00089	0.00087	0.00398
	(B * !C * Y)	0.00469	0.00467	0.00773
	(!B * Y)	0.00087	0.00085	0.00400
	(!B * Y)	0.00442	0.00441	0.00755

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)**	0.00096	0.00097	0.00096
	(A_N * C * D * Y)	-0.00109	-0.00110	-0.00109
	(A_N * C * !D * Y)	0.00063	0.00064	0.00063
	(A_N * C * !D * Y)	-0.00110	-0.00110	-0.00109
	(A_N * !C * Y)	0.00064	0.00064	0.00064
	(A_N * !C * Y)	-0.00110	-0.00110	-0.00110
	(!A_N * C * !D * Y)	0.00037	0.00037	0.00038
	(!A_N * C * !D * Y)	-0.00125	-0.00126	-0.00127
	(!A_N * !C * Y)	0.00039	0.00039	0.00039
	(!A_N * !C * Y)	-0.00128	-0.00128	-0.00127
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00175	0.00177	0.00176
	(A_N * C * D * Y)	-0.00232	-0.00234	-0.00232
	(A_N * C * !D * Y)	0.00112	0.00112	0.00112
	(A_N * C * !D * Y)	-0.00234	-0.00235	-0.00234
	(A_N * !C * Y)	0.00113	0.00114	0.00113
	(A_N * !C * Y)	-0.00234	-0.00236	-0.00234
	(!A_N * C * !D * Y)	0.00078	0.00078	0.00080
	(!A_N * C * !D * Y)	-0.00243	-0.00243	-0.00248
	(!A_N * !C * Y)	0.00083	0.00084	0.00083
	(!A_N * !C * Y)	-0.00248	-0.00250	-0.00250
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00336	0.00337	0.00336
	(A_N * C * D * Y)	-0.00242	-0.00242	-0.00242
	(A_N * C * !D * Y)	0.00204	0.00204	0.00203
	(A_N * C * !D * Y)	-0.00245	-0.00246	-0.00244
	(A_N * !C * Y)	0.00204	0.00206	0.00204
	(A_N * !C * Y)	-0.00245	-0.00247	-0.00245
	(!A_N * C * !D * Y)	0.00148	0.00149	0.00150
	(!A_N * C * !D * Y)	-0.00256	-0.00258	-0.00265
	(!A_N * !C * Y)	0.00156	0.00157	0.00156
	(!A_N * !C * Y)	-0.00266	-0.00267	-0.00268

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)	-0.00091	-0.00096	-0.00096
	(A_N * C * D * Y)	0.00114	0.00110	0.00110
	(A_N * C * !D * Y)	-0.00063	-0.00064	-0.00063
	(A_N * C * !D * Y)	0.00113	0.00111	0.00110
	(A_N * !C * Y)	-0.00064	-0.00064	-0.00064
	(A_N * !C * Y)	0.00114	0.00115	0.00111
	(!A_N * C * !D * Y)	-0.00036	-0.00036	-0.00037
	(!A_N * C * !D * Y)	0.00130	0.00131	0.00129
	(!A_N * !C * Y)	-0.00037	-0.00037	-0.00038
	(!A_N * !C * Y)	0.00130	0.00131	0.00129
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00166	-0.00177	-0.00176
	(A_N * C * D * Y)	0.00241	0.00235	0.00233
	(A_N * C * !D * Y)	-0.00112	-0.00112	-0.00112
	(A_N * C * !D * Y)	0.00237	0.00236	0.00234
	(A_N * !C * Y)	-0.00113	-0.00114	-0.00113
	(A_N * !C * Y)	0.00239	0.00242	0.00235
	(!A_N * C * !D * Y)	-0.00076	-0.00076	-0.00077
	(!A_N * C * !D * Y)	0.00257	0.00257	0.00253
	(!A_N * !C * Y)	-0.00078	-0.00078	-0.00080
	(!A_N * !C * Y)	0.00256	0.00257	0.00252

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00313	-0.00337	-0.00336
	(A_N * C * D * Y)	0.00262	0.00245	0.00243
	(A_N * C * !D * Y)	-0.00204	-0.00204	-0.00203
	(A_N * C * !D * Y)	0.00253	0.00248	0.00244
	(A_N * !C * Y)	-0.00204	-0.00206	-0.00204
	(A_N * !C * Y)	0.00263	0.00263	0.00248
	(!A_N * C * !D * Y)	-0.00141	-0.00142	-0.00145
	(!A_N * C * !D * Y)	0.00278	0.00279	0.00272
	(!A_N * !C * Y)	-0.00145	-0.00146	-0.00149
	(!A_N * !C * Y)	0.00278	0.00279	0.00272

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)**	0.00082	0.00083	0.00082
	(A_N * B * D * Y)	-0.00109	-0.00109	-0.00109
	(A_N * B * !D * Y)	0.00050	0.00050	0.00050
	(A_N * B * !D * Y)	-0.00109	-0.00109	-0.00109
	(A_N * !B * D * Y)	0.00083	0.00084	0.00083
	(A_N * !B * D * Y)	-0.00109	-0.00110	-0.00109
	(A_N * !B * !D * Y)	0.00049	0.00049	0.00049
	(A_N * !B * !D * Y)	-0.00109	-0.00110	-0.00109
	(!A_N * B * !D * Y)	0.00038	0.00038	0.00038
	(!A_N * B * !D * Y)	-0.00113	-0.00113	-0.00113
	(!A_N * !B * D * Y)	0.00080	0.00080	0.00080
	(!A_N * !B * D * Y)	-0.00113	-0.00112	-0.00112
	(!A_N * !B * !D * Y)	0.00044	0.00044	0.00044
	(!A_N * !B * !D * Y)	-0.00114	-0.00114	-0.00113

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00166	0.00167	0.00166
	(A_N * B * D * Y)	-0.00222	-0.00223	-0.00222
	(A_N * B * !D * Y)	0.00102	0.00101	0.00101
	(A_N * B * !D * Y)	-0.00224	-0.00224	-0.00224
	(A_N * !B * D * Y)	0.00168	0.00170	0.00168
	(A_N * !B * D * Y)	-0.00222	-0.00223	-0.00222
	(A_N * !B * !D * Y)	0.00102	0.00102	0.00101
	(A_N * !B * !D * Y)	-0.00223	-0.00224	-0.00223
	(!A_N * B * !D * Y)	0.00085	0.00085	0.00085
	(!A_N * B * !D * Y)	-0.00223	-0.00223	-0.00221
	(!A_N * !B * D * Y)	0.00168	0.00170	0.00168
	(!A_N * !B * D * Y)	-0.00222	-0.00224	-0.00222
	(!A_N * !B * !D * Y)	0.00099	0.00098	0.00098
	(!A_N * !B * !D * Y)	-0.00224	-0.00224	-0.00223
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00334	0.00336	0.00335
	(A_N * B * D * Y)	-0.00240	-0.00241	-0.00240
	(A_N * B * !D * Y)	0.00197	0.00196	0.00196
	(A_N * B * !D * Y)	-0.00243	-0.00243	-0.00242
	(A_N * !B * D * Y)	0.00339	0.00338	0.00339
	(A_N * !B * D * Y)	-0.00241	-0.00240	-0.00240
	(A_N * !B * !D * Y)	0.00195	0.00196	0.00194
	(A_N * !B * !D * Y)	-0.00241	-0.00241	-0.00240
	(!A_N * B * !D * Y)	0.00164	0.00165	0.00165
	(!A_N * B * !D * Y)	-0.00240	-0.00241	-0.00239
	(!A_N * !B * D * Y)	0.00339	0.00341	0.00339
	(!A_N * !B * D * Y)	-0.00241	-0.00241	-0.00240
	(!A_N * !B * !D * Y)	0.00188	0.00188	0.00187
	(!A_N * !B * !D * Y)	-0.00242	-0.00242	-0.00241

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)	-0.00077	-0.00083	-0.00082
	(A_N * B * D * Y)	0.00109	0.00111	0.00110
	(A_N * B * !D * Y)	-0.00050	-0.00050	-0.00050
	(A_N * B * !D * Y)	0.00109	0.00110	0.00109
	(A_N * !B * D * Y)	-0.00080	-0.00084	-0.00083
	(A_N * !B * D * Y)	0.00110	0.00111	0.00110
	(A_N * !B * !D * Y)	-0.00049	-0.00049	-0.00049
	(A_N * !B * !D * Y)	0.00109	0.00110	0.00110
	(!A_N * B * !D * Y)	-0.00037	-0.00037	-0.00037
	(!A_N * B * !D * Y)	0.00114	0.00115	0.00113
	(!A_N * !B * D * Y)	-0.00077	-0.00080	-0.00080
	(!A_N * !B * D * Y)	0.00114	0.00114	0.00113
	(!A_N * !B * !D * Y)	-0.00044	-0.00044	-0.00044
	(!A_N * !B * !D * Y)	0.00115	0.00115	0.00114
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00156	-0.00167	-0.00166
	(A_N * B * D * Y)	0.00223	0.00226	0.00223
	(A_N * B * !D * Y)	-0.00102	-0.00101	-0.00101
	(A_N * B * !D * Y)	0.00224	0.00225	0.00224
	(A_N * !B * D * Y)	-0.00161	-0.00170	-0.00168
	(A_N * !B * D * Y)	0.00222	0.00226	0.00223
	(A_N * !B * !D * Y)	-0.00102	-0.00102	-0.00101
	(A_N * !B * !D * Y)	0.00223	0.00225	0.00223
	(!A_N * B * !D * Y)	-0.00081	-0.00081	-0.00081
	(!A_N * B * !D * Y)	0.00225	0.00227	0.00224
	(!A_N * !B * D * Y)	-0.00160	-0.00170	-0.00168
	(!A_N * !B * D * Y)	0.00223	0.00226	0.00223
	(!A_N * !B * !D * Y)	-0.00099	-0.00098	-0.00098
	(!A_N * !B * !D * Y)	0.00225	0.00227	0.00224

sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	-0.00312	-0.00336	-0.00335
	(A_N * B * D * Y)	0.00244	0.00244	0.00241
	(A_N * B * !D * Y)	-0.00197	-0.00196	-0.00196
	(A_N * B * !D * Y)	0.00243	0.00244	0.00243
	(A_N * !B * D * Y)	-0.00326	-0.00338	-0.00339
	(A_N * !B * D * Y)	0.00241	0.00241	0.00241
	(A_N * !B * !D * Y)	-0.00195	-0.00196	-0.00194
	(A_N * !B * !D * Y)	0.00241	0.00243	0.00241
	(!A_N * B * !D * Y)	-0.00158	-0.00159	-0.00158
	(!A_N * B * !D * Y)	0.00245	0.00247	0.00243
	(!A_N * !B * D * Y)	-0.00323	-0.00341	-0.00339
	(!A_N * !B * D * Y)	0.00244	0.00241	0.00241
	(!A_N * !B * !D * Y)	-0.00188	-0.00188	-0.00187
	(!A_N * !B * !D * Y)	0.00248	0.00249	0.00243

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)**	0.00082	0.00083	0.00082
	(A_N * B * C * Y)	-0.00106	-0.00107	-0.00107
	(A_N * !C * Y)	0.00084	0.00084	0.00084
	(A_N * !C * Y)	-0.00106	-0.00107	-0.00107
	(A_N * !B * C * Y)	0.00082	0.00083	0.00082
	(A_N * !B * C * Y)	-0.00107	-0.00107	-0.00107
	(!A_N * B * !C * Y)	0.00081	0.00081	0.00080
	(!A_N * B * !C * Y)	-0.00110	-0.00110	-0.00110
	(!A_N * !B * C * Y)	0.00079	0.00079	0.00079
	(!A_N * !B * C * Y)	-0.00110	-0.00111	-0.00110
	(!A_N * !B * !C * Y)	0.00080	0.00080	0.00080
	(!A_N * !B * !C * Y)	-0.00110	-0.00110	-0.00110

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00164	0.00167	0.00165
	(A_N * B * C * Y)	-0.00220	-0.00222	-0.00221
	(A_N * !C * Y)	0.00169	0.00170	0.00169
	(A_N * !C * Y)	-0.00221	-0.00221	-0.00221
	(A_N * !B * C * Y)	0.00165	0.00166	0.00165
	(A_N * !B * C * Y)	-0.00220	-0.00221	-0.00221
	(!A_N * B * !C * Y)	0.00169	0.00170	0.00169
	(!A_N * B * !C * Y)	-0.00221	-0.00221	-0.00221
	(!A_N * !B * C * Y)	0.00165	0.00166	0.00165
	(!A_N * !B * C * Y)	-0.00220	-0.00221	-0.00221
	(!A_N * !B * !C * Y)	0.00169	0.00170	0.00169
	(!A_N * !B * !C * Y)	-0.00221	-0.00221	-0.00221
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00327	0.00331	0.00328
	(A_N * B * C * Y)	-0.00220	-0.00222	-0.00220
	(A_N * !C * Y)	0.00335	0.00338	0.00335
	(A_N * !C * Y)	-0.00220	-0.00221	-0.00220
	(A_N * !B * C * Y)	0.00327	0.00330	0.00328
	(A_N * !B * C * Y)	-0.00220	-0.00221	-0.00220
	(!A_N * B * !C * Y)	0.00335	0.00338	0.00335
	(!A_N * B * !C * Y)	-0.00221	-0.00222	-0.00220
	(!A_N * !B * C * Y)	0.00327	0.00330	0.00328
	(!A_N * !B * C * Y)	-0.00220	-0.00221	-0.00220
	(!A_N * !B * !C * Y)	0.00335	0.00339	0.00335
	(!A_N * !B * !C * Y)	-0.00221	-0.00222	-0.00220

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)**	-0.00077	-0.00083	-0.00082
	(A_N * B * C * Y)	0.00107	0.00108	0.00107
	(A_N * !C * Y)	-0.00081	-0.00084	-0.00084
	(A_N * !C * Y)	0.00107	0.00108	0.00107
	(A_N * !B * C * Y)	-0.00077	-0.00083	-0.00082
	(A_N * !B * C * Y)	0.00107	0.00108	0.00107
	(!A_N * B * !C * Y)	-0.00077	-0.00081	-0.00080
	(!A_N * B * !C * Y)	0.00110	0.00112	0.00110
	(!A_N * !B * C * Y)	-0.00074	-0.00079	-0.00079
	(!A_N * !B * C * Y)	0.00110	0.00111	0.00110
	(!A_N * !B * !C * Y)	-0.00078	-0.00080	-0.00080
	(!A_N * !B * !C * Y)	0.00110	0.00112	0.00110
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00154	-0.00167	-0.00165
	(A_N * B * C * Y)	0.00221	0.00223	0.00221
	(A_N * !C * Y)	-0.00163	-0.00170	-0.00169
	(A_N * !C * Y)	0.00222	0.00224	0.00221
	(A_N * !B * C * Y)	-0.00155	-0.00166	-0.00165
	(A_N * !B * C * Y)	0.00222	0.00223	0.00221
	(!A_N * B * !C * Y)	-0.00163	-0.00170	-0.00169
	(!A_N * B * !C * Y)	0.00222	0.00224	0.00221
	(!A_N * !B * C * Y)	-0.00155	-0.00166	-0.00165
	(!A_N * !B * C * Y)	0.00222	0.00223	0.00221
	(!A_N * !B * !C * Y)	-0.00163	-0.00170	-0.00169
	(!A_N * !B * !C * Y)	0.00222	0.00224	0.00221

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00305	-0.00331	-0.00328
	(A_N * B * C * Y)	0.00220	0.00224	0.00221
	(A_N * !C * Y)	-0.00322	-0.00338	-0.00335
	(A_N * !C * Y)	0.00221	0.00224	0.00221
	(A_N * !B * C * Y)	-0.00305	-0.00330	-0.00328
	(A_N * !B * C * Y)	0.00220	0.00223	0.00221
	(!A_N * B * !C * Y)	-0.00321	-0.00338	-0.00335
	(!A_N * B * !C * Y)	0.00221	0.00224	0.00221
	(!A_N * !B * C * Y)	-0.00305	-0.00330	-0.00328
	(!A_N * !B * C * Y)	0.00220	0.00223	0.00221
	(!A_N * !B * !C * Y)	-0.00322	-0.00339	-0.00335
	(!A_N * !B * !C * Y)	0.00221	0.00224	0.00221

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00262	0.00277	0.00273	0.00272	0.63969
sky130_fd_sc_hs__nand4_2	0.00511	0.00515	0.00520	0.00504	1.21392
sky130_fd_sc_hs__nand4_4	0.00770	0.00749	0.00749	0.00768	1.25093

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4_1	0.00000	0.00566	0.07244
sky130_fd_sc_hs__nand4_2	0.00000	0.01132	0.14489
sky130_fd_sc_hs__nand4_4	0.00000	0.01359	0.14489

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)	0.06890	1.06609	11.98630
	B->Y (FR)	0.08700	1.09751	12.17800
	C->Y (FR)	0.09904	1.11150	12.19250
	D->Y (FR)	0.10548	1.11020	12.05210
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.05804	0.92755	11.82400
	B->Y (FR)	0.07465	0.93892	11.74800
	C->Y (FR)	0.08629	0.95435	11.77780
	D->Y (FR)	0.09636	0.97234	11.84900
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.07441	0.94103	11.81860
	B->Y (FR)	0.10616	0.96646	11.78690
	C->Y (FR)	0.13444	1.01040	12.03030
	D->Y (FR)	0.15647	1.03844	12.04560

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.06050	0.87787	10.02010
	B->Y (RF)	0.07715	0.88843	9.85394
	C->Y (RF)	0.08630	0.86194	9.42051
	D->Y (RF)	0.09118	0.83613	9.02635
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.05617	0.83311	10.99550
	B->Y (RF)	0.07822	0.84108	10.84920
	C->Y (RF)	0.08907	0.79941	10.21170
	D->Y (RF)	0.09521	0.77883	9.81656
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.04377	0.61512	7.86090
	B->Y (RF)	0.06448	0.61362	7.58208
	C->Y (RF)	0.07601	0.57591	6.95278
	D->Y (RF)	0.08193	0.54982	6.46761

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00008	-0.00010	-0.00000
	A	0.00275	0.00274	0.00290
	B	0.00038	0.00031	0.00039
	B	0.00374	0.00368	0.00382
	C	0.00075	0.00067	0.00075
	C	0.00459	0.00451	0.00464
	D	0.00098	0.00091	0.00099
	D	0.00536	0.00530	0.00542
sky130_fd_sc_hs__nand4_2	A	-0.00070	-0.00072	-0.00043
	A	0.00454	0.00424	0.00495
	B	0.00042	0.00023	0.00048
	B	0.00683	0.00636	0.00701
	C	0.00105	0.00084	0.00105
	C	0.00861	0.00815	0.00872
	D	0.00190	0.00173	0.00188
	D	0.01047	0.01014	0.01055
sky130_fd_sc_hs__nand4_4	A	-0.00143	-0.00159	-0.00110
	A	0.00633	0.00615	0.00678
	B	0.00054	0.00002	0.00045
	B	0.01046	0.00989	0.01050
	C	0.00188	0.00135	0.00174
	C	0.01394	0.01340	0.01387
	D	0.00331	0.00295	0.00321
	D	0.01770	0.01735	0.01765

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00358	0.00341	0.00360
	A	0.00075	0.00070	0.00076
	B	0.00420	0.00415	0.00418
	B	0.00079	0.00074	0.00078
	C	0.00473	0.00469	0.00473
	C	0.00080	0.00075	0.00077
	D	0.00533	0.00528	0.00534
	D	0.00078	0.00072	0.00075
sky130_fd_sc_hs__nand4_2	A	0.00655	0.00647	0.00662
	A	0.00132	0.00121	0.00135
	B	0.00785	0.00774	0.00786
	B	0.00134	0.00123	0.00132
	C	0.00914	0.00905	0.00911
	C	0.00134	0.00122	0.00132
	D	0.01029	0.01019	0.01026
	D	0.00131	0.00120	0.00129
sky130_fd_sc_hs__nand4_4	A	0.01017	0.01000	0.01044
	A	0.00245	0.00228	0.00250
	B	0.01261	0.01247	0.01259
	B	0.00249	0.00237	0.00249
	C	0.01504	0.01495	0.01535
	C	0.00252	0.00238	0.00249
	D	0.01757	0.01747	0.01758
	D	0.00238	0.00226	0.00236

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)	0.00039	0.00039	0.00034
	(B * C * !D * Y)	-0.00118	-0.00119	-0.00127
	(B * !C * Y)	0.00038	0.00037	0.00034
	(B * !C * Y)	-0.00122	-0.00122	-0.00128
	(!B * Y)	0.00037	0.00037	0.00035
	(!B * Y)	-0.00126	-0.00127	-0.00129
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00071	0.00071	0.00060
	(B * C * !D * Y)	-0.00231	-0.00234	-0.00255
	(B * !C * Y)	0.00066	0.00066	0.00059
	(B * !C * Y)	-0.00241	-0.00244	-0.00257
	(!B * Y)	0.00067	0.00067	0.00063
	(!B * Y)	-0.00250	-0.00254	-0.00259
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00138	0.00137	0.00118
	(B * C * !D * Y)	-0.00263	-0.00264	-0.00307
	(B * !C * Y)	0.00128	0.00128	0.00116
	(B * !C * Y)	-0.00284	-0.00285	-0.00311
	(!B * Y)	0.00130	0.00128	0.00122
	(!B * Y)	-0.00302	-0.00300	-0.00314

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)	-0.00033	-0.00034	-0.00033
	(B * C * !D * Y)	0.00129	0.00130	0.00129
	(B * !C * Y)	-0.00033	-0.00034	-0.00033
	(B * !C * Y)	0.00129	0.00130	0.00129
	(!B * Y)	-0.00034	-0.00034	-0.00034
	(!B * Y)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00058	-0.00059	-0.00058
	(B * C * !D * Y)	0.00260	0.00263	0.00259
	(B * !C * Y)	-0.00059	-0.00059	-0.00058
	(B * !C * Y)	0.00261	0.00263	0.00259
	(!B * Y)	-0.00061	-0.00061	-0.00060
	(!B * Y)	0.00260	0.00262	0.00260
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00114	-0.00115	-0.00114
	(B * C * !D * Y)	0.00314	0.00319	0.00314
	(B * !C * Y)	-0.00114	-0.00116	-0.00114
	(B * !C * Y)	0.00314	0.00319	0.00314
	(!B * Y)	-0.00118	-0.00120	-0.00118
	(!B * Y)	0.00314	0.00320	0.00315

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)**	0.00038	0.00038	0.00039
	(A * C * !D * Y)	-0.00116	-0.00116	-0.00115
	(A * !C * Y)	0.00040	0.00041	0.00041
	(A * !C * Y)	-0.00116	-0.00116	-0.00115
	(!A * C * D * Y)	0.00080	0.00081	0.00081
	(!A * C * D * Y)	-0.00115	-0.00116	-0.00115
	(!A * C * !D * Y)	0.00047	0.00047	0.00046
	(!A * C * !D * Y)	-0.00117	-0.00117	-0.00116
	(!A * !C * Y)	0.00047	0.00047	0.00047
	(!A * !C * Y)	-0.00117	-0.00117	-0.00116
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00080	0.00080	0.00082
	(A * C * !D * Y)	-0.00221	-0.00222	-0.00219
	(A * !C * Y)	0.00081	0.00082	0.00082
	(A * !C * Y)	-0.00221	-0.00222	-0.00220
	(!A * C * D * Y)	0.00169	0.00169	0.00170
	(!A * C * D * Y)	-0.00221	-0.00221	-0.00221
	(!A * C * !D * Y)	0.00098	0.00099	0.00098
	(!A * C * !D * Y)	-0.00222	-0.00224	-0.00222
	(!A * !C * Y)	0.00095	0.00095	0.00094
	(!A * !C * Y)	-0.00223	-0.00223	-0.00222
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00153	0.00155	0.00157
	(A * C * !D * Y)	-0.00231	-0.00232	-0.00229
	(A * !C * Y)	0.00157	0.00159	0.00159
	(A * !C * Y)	-0.00231	-0.00232	-0.00229
	(!A * C * D * Y)	0.00332	0.00337	0.00334
	(!A * C * D * Y)	-0.00231	-0.00233	-0.00231
	(!A * C * !D * Y)	0.00187	0.00189	0.00187
	(!A * C * !D * Y)	-0.00234	-0.00236	-0.00233
	(!A * !C * Y)	0.00181	0.00181	0.00180
	(!A * !C * Y)	-0.00235	-0.00235	-0.00234

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)	-0.00037	-0.00037	-0.00038
	(A * C * !D * Y)	0.00119	0.00119	0.00117
	(A * !C * Y)	-0.00038	-0.00038	-0.00039
	(A * !C * Y)	0.00119	0.00119	0.00117
	(!A * C * D * Y)	-0.00075	-0.00081	-0.00081
	(!A * C * D * Y)	0.00120	0.00117	0.00116
	(!A * C * !D * Y)	-0.00047	-0.00047	-0.00046
	(!A * C * !D * Y)	0.00119	0.00117	0.00116
	(!A * !C * Y)	-0.00047	-0.00047	-0.00047
	(!A * !C * Y)	0.00120	0.00121	0.00117
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00075	-0.00076	-0.00077
	(A * C * !D * Y)	0.00227	0.00228	0.00223
	(A * !C * Y)	-0.00077	-0.00077	-0.00079
	(A * !C * Y)	0.00227	0.00228	0.00223
	(!A * C * D * Y)	-0.00156	-0.00169	-0.00170
	(!A * C * D * Y)	0.00230	0.00223	0.00222
	(!A * C * !D * Y)	-0.00098	-0.00099	-0.00098
	(!A * C * !D * Y)	0.00224	0.00224	0.00222
	(!A * !C * Y)	-0.00095	-0.00095	-0.00094
	(!A * !C * Y)	0.00229	0.00231	0.00224

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00144	-0.00146	-0.00148
	(A * C * !D * Y)	0.00243	0.00245	0.00235
	(A * !C * Y)	-0.00147	-0.00149	-0.00153
	(A * !C * Y)	0.00243	0.00245	0.00235
	(!A * C * D * Y)	-0.00304	-0.00337	-0.00334
	(!A * C * D * Y)	0.00253	0.00235	0.00233
	(!A * C * !D * Y)	-0.00187	-0.00189	-0.00187
	(!A * C * !D * Y)	0.00241	0.00237	0.00233
	(!A * !C * Y)	-0.00181	-0.00181	-0.00180
	(!A * !C * Y)	0.00251	0.00253	0.00238

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)**	0.00038	0.00038	0.00038
	(A * B * !D * Y)	-0.00114	-0.00115	-0.00114
	(A * !B * D * Y)	0.00080	0.00081	0.00080
	(A * !B * D * Y)	-0.00114	-0.00114	-0.00114
	(A * !B * !D * Y)	0.00045	0.00045	0.00044
	(A * !B * !D * Y)	-0.00114	-0.00115	-0.00114
	(!A * B * D * Y)	0.00078	0.00078	0.00078
	(!A * B * D * Y)	-0.00114	-0.00114	-0.00114
	(!A * B * !D * Y)	0.00045	0.00044	0.00044
	(!A * B * !D * Y)	-0.00114	-0.00114	-0.00114
	(!A * !B * D * Y)	0.00080	0.00080	0.00080
	(!A * !B * D * Y)	-0.00114	-0.00114	-0.00114
	(!A * !B * !D * Y)	0.00046	0.00046	0.00046
	(!A * !B * !D * Y)	-0.00114	-0.00115	-0.00114

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00086	0.00086	0.00086
	(A * B * !D * Y)	-0.00217	-0.00217	-0.00215
	(A * !B * D * Y)	0.00168	0.00169	0.00168
	(A * !B * D * Y)	-0.00221	-0.00222	-0.00221
	(A * !B * !D * Y)	0.00096	0.00097	0.00096
	(A * !B * !D * Y)	-0.00221	-0.00222	-0.00221
	(!A * B * D * Y)	0.00164	0.00165	0.00164
	(!A * B * D * Y)	-0.00220	-0.00221	-0.00221
	(!A * B * !D * Y)	0.00099	0.00099	0.00098
	(!A * B * !D * Y)	-0.00221	-0.00222	-0.00221
	(!A * !B * D * Y)	0.00168	0.00170	0.00168
	(!A * !B * D * Y)	-0.00221	-0.00222	-0.00221
	(!A * !B * !D * Y)	0.00100	0.00100	0.00099
	(!A * !B * !D * Y)	-0.00221	-0.00222	-0.00221
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00159	0.00160	0.00160
	(A * B * !D * Y)	-0.00220	-0.00221	-0.00219
	(A * !B * D * Y)	0.00326	0.00328	0.00326
	(A * !B * D * Y)	-0.00229	-0.00230	-0.00229
	(A * !B * !D * Y)	0.00180	0.00181	0.00180
	(A * !B * !D * Y)	-0.00229	-0.00230	-0.00229
	(!A * B * D * Y)	0.00317	0.00319	0.00317
	(!A * B * D * Y)	-0.00228	-0.00229	-0.00229
	(!A * B * !D * Y)	0.00182	0.00182	0.00181
	(!A * B * !D * Y)	-0.00230	-0.00230	-0.00230
	(!A * !B * D * Y)	0.00325	0.00328	0.00325
	(!A * !B * D * Y)	-0.00229	-0.00230	-0.00229
	(!A * !B * !D * Y)	0.00186	0.00187	0.00186
	(!A * !B * !D * Y)	-0.00229	-0.00230	-0.00229

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)	-0.00037	-0.00038	-0.00037
	(A * B * !D * Y)	0.00114	0.00115	0.00114
	(A * !B * D * Y)	-0.00077	-0.00081	-0.00080
	(A * !B * D * Y)	0.00114	0.00115	0.00114
	(A * !B * !D * Y)	-0.00045	-0.00045	-0.00044
	(A * !B * !D * Y)	0.00114	0.00115	0.00115
	(!A * B * D * Y)	-0.00072	-0.00078	-0.00078
	(!A * B * D * Y)	0.00114	0.00115	0.00114
	(!A * B * !D * Y)	-0.00045	-0.00044	-0.00044
	(!A * B * !D * Y)	0.00114	0.00115	0.00114
	(!A * !B * D * Y)	-0.00077	-0.00080	-0.00080
	(!A * !B * D * Y)	0.00114	0.00115	0.00114
	(!A * !B * !D * Y)	-0.00046	-0.00046	-0.00046
	(!A * !B * !D * Y)	0.00114	0.00115	0.00115
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00080	-0.00081	-0.00080
	(A * B * !D * Y)	0.00222	0.00223	0.00222
	(A * !B * D * Y)	-0.00160	-0.00169	-0.00168
	(A * !B * D * Y)	0.00221	0.00222	0.00221
	(A * !B * !D * Y)	-0.00096	-0.00097	-0.00096
	(A * !B * !D * Y)	0.00221	0.00222	0.00221
	(!A * B * D * Y)	-0.00151	-0.00165	-0.00164
	(!A * B * D * Y)	0.00223	0.00224	0.00221
	(!A * B * !D * Y)	-0.00099	-0.00099	-0.00098
	(!A * B * !D * Y)	0.00221	0.00223	0.00222
	(!A * !B * D * Y)	-0.00160	-0.00170	-0.00168
	(!A * !B * D * Y)	0.00221	0.00222	0.00221
	(!A * !B * !D * Y)	-0.00100	-0.00100	-0.00099
	(!A * !B * !D * Y)	0.00221	0.00223	0.00221

sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	-0.00150	-0.00151	-0.00150
	(A * B * !D * Y)	0.00230	0.00232	0.00230
	(A * !B * D * Y)	-0.00310	-0.00328	-0.00326
	(A * !B * D * Y)	0.00230	0.00230	0.00229
	(A * !B * !D * Y)	-0.00180	-0.00181	-0.00180
	(A * !B * !D * Y)	0.00229	0.00231	0.00230
	(!A * B * D * Y)	-0.00289	-0.00319	-0.00317
	(!A * B * D * Y)	0.00231	0.00232	0.00229
	(!A * B * !D * Y)	-0.00182	-0.00182	-0.00181
	(!A * B * !D * Y)	0.00230	0.00231	0.00230
	(!A * !B * D * Y)	-0.00311	-0.00328	-0.00325
	(!A * !B * D * Y)	0.00230	0.00230	0.00229
	(!A * !B * !D * Y)	-0.00186	-0.00187	-0.00186
	(!A * !B * !D * Y)	0.00229	0.00231	0.00230

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)**	0.00081	0.00081	0.00081
	(A * B * !C * Y)	-0.00118	-0.00119	-0.00118
	(A * !B * C * Y)	0.00079	0.00080	0.00079
	(A * !B * C * Y)	-0.00118	-0.00119	-0.00118
	(A * !B * !C * Y)	0.00080	0.00081	0.00080
	(A * !B * !C * Y)	-0.00118	-0.00119	-0.00118
	(!A * B * C * Y)	0.00079	0.00080	0.00079
	(!A * B * C * Y)	-0.00119	-0.00119	-0.00118
	(!A * !C * Y)	0.00080	0.00081	0.00080
	(!A * !C * Y)	-0.00118	-0.00119	-0.00118
	(!A * !B * C * Y)	0.00079	0.00080	0.00079
	(!A * !B * C * Y)	-0.00119	-0.00119	-0.00118

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00171	0.00173	0.00171
	(A * B * !C * Y)	-0.00218	-0.00219	-0.00218
	(A * !B * C * Y)	0.00165	0.00166	0.00165
	(A * !B * C * Y)	-0.00218	-0.00218	-0.00218
	(A * !B * !C * Y)	0.00171	0.00172	0.00171
	(A * !B * !C * Y)	-0.00218	-0.00219	-0.00218
	(!A * B * C * Y)	0.00163	0.00165	0.00164
	(!A * B * C * Y)	-0.00217	-0.00219	-0.00218
	(!A * !C * Y)	0.00171	0.00172	0.00171
	(!A * !C * Y)	-0.00218	-0.00219	-0.00218
	(!A * !B * C * Y)	0.00164	0.00166	0.00165
	(!A * !B * C * Y)	-0.00217	-0.00219	-0.00218
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00343	0.00345	0.00343
	(A * B * !C * Y)	-0.00234	-0.00234	-0.00233
	(A * !B * C * Y)	0.00332	0.00333	0.00331
	(A * !B * C * Y)	-0.00234	-0.00234	-0.00233
	(A * !B * !C * Y)	0.00343	0.00344	0.00342
	(A * !B * !C * Y)	-0.00233	-0.00234	-0.00233
	(!A * B * C * Y)	0.00329	0.00333	0.00330
	(!A * B * C * Y)	-0.00233	-0.00235	-0.00233
	(!A * !C * Y)	0.00343	0.00342	0.00342
	(!A * !C * Y)	-0.00233	-0.00234	-0.00233
	(!A * !B * C * Y)	0.00333	0.00334	0.00333
	(!A * !B * C * Y)	-0.00234	-0.00234	-0.00233

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)**	-0.00078	-0.00081	-0.00081
	(A * B * !C * Y)	0.00118	0.00121	0.00119
	(A * !B * C * Y)	-0.00074	-0.00080	-0.00079
	(A * !B * C * Y)	0.00118	0.00119	0.00119
	(A * !B * !C * Y)	-0.00078	-0.00081	-0.00080
	(A * !B * !C * Y)	0.00118	0.00120	0.00119
	(!A * B * C * Y)	-0.00074	-0.00080	-0.00079
	(!A * B * C * Y)	0.00119	0.00119	0.00119
	(!A * !C * Y)	-0.00078	-0.00081	-0.00080
	(!A * !C * Y)	0.00118	0.00121	0.00119
	(!A * !B * C * Y)	-0.00075	-0.00080	-0.00079
	(!A * !B * C * Y)	0.00120	0.00119	0.00119
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00164	-0.00172	-0.00171
	(A * B * !C * Y)	0.00218	0.00221	0.00218
	(A * !B * C * Y)	-0.00154	-0.00166	-0.00165
	(A * !B * C * Y)	0.00218	0.00220	0.00218
	(A * !B * !C * Y)	-0.00165	-0.00172	-0.00171
	(A * !B * !C * Y)	0.00218	0.00221	0.00218
	(!A * B * C * Y)	-0.00152	-0.00165	-0.00164
	(!A * B * C * Y)	0.00218	0.00220	0.00218
	(!A * !C * Y)	-0.00164	-0.00172	-0.00171
	(!A * !C * Y)	0.00218	0.00221	0.00218
	(!A * !B * C * Y)	-0.00154	-0.00166	-0.00165
	(!A * !B * C * Y)	0.00218	0.00220	0.00218

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00328	-0.00345	-0.00343
	(A * B * !C * Y)	0.00234	0.00237	0.00234
	(A * !B * C * Y)	-0.00310	-0.00333	-0.00331
	(A * !B * C * Y)	0.00234	0.00236	0.00234
	(A * !B * !C * Y)	-0.00329	-0.00344	-0.00342
	(A * !B * !C * Y)	0.00233	0.00237	0.00234
	(!A * B * C * Y)	-0.00304	-0.00333	-0.00330
	(!A * B * C * Y)	0.00234	0.00236	0.00234
	(!A * !C * Y)	-0.00329	-0.00342	-0.00342
	(!A * !C * Y)	0.00233	0.00237	0.00234
	(!A * !B * C * Y)	-0.00310	-0.00334	-0.00333
	(!A * !B * C * Y)	0.00234	0.00236	0.00234

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00262	0.00213	0.30735
sky130_fd_sc_hs__nor2b_2	0.00516	0.00247	0.56450
sky130_fd_sc_hs__nor2b_4	0.00850	0.00354	1.12327

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.05160	0.09245
sky130_fd_sc_hs__nor2b_2	0.00000	0.04172	0.06141
sky130_fd_sc_hs__nor2b_4	0.00000	0.11656	0.20222

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)	0.12942	1.32263	12.15310
	B_N->Y (RR)	0.14229	1.08277	7.73607
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.12241	1.14870	11.99610
	B_N->Y (RR)	0.12277	0.91262	7.62585
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.09480	0.97675	11.93170
	B_N->Y (RR)	0.11488	0.79583	7.88731

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.02794	0.44947	4.31545
	B_N->Y (FF)	0.11848	0.61363	3.17770
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.02549	0.39764	4.21163
	B_N->Y (FF)	0.13628	0.65299	3.54749
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.03451	0.48983	5.85640
	B_N->Y (FF)	0.13434	0.66286	4.12837

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00050	0.00045	0.00047
	A	0.00285	0.00280	0.00283
	B_N	0.00426	0.00412	0.00542
	B_N	0.00235	0.00221	0.00352
sky130_fd_sc_hs__nor2b_2	A	0.00106	0.00098	0.00103
	A	0.00575	0.00568	0.00577
	B_N	0.00617	0.00605	0.00728
	B_N	0.00429	0.00418	0.00544
sky130_fd_sc_hs__nor2b_4	A	0.00175	0.00169	0.00177
	A	0.00942	0.00927	0.00952
	B_N	0.00918	0.00906	0.01121
	B_N	0.00641	0.00630	0.00851

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00284	0.00277	0.00283
	A	0.00051	0.00043	0.00049
	B_N	0.00229	0.00239	0.00421
	B_N	0.00420	0.00427	0.00612
sky130_fd_sc_hs__nor2b_2	A	0.00543	0.00522	0.00537
	A	0.00079	0.00054	0.00067
	B_N	0.00385	0.00417	0.00558
	B_N	0.00573	0.00591	0.00745
sky130_fd_sc_hs__nor2b_4	A	0.00857	0.00813	0.00996
	A	0.00094	0.00051	0.00070
	B_N	0.00562	0.00606	0.00930
	B_N	0.00839	0.00880	0.01204

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00099	0.00090	0.00089
	(!B_N * !Y)	-0.00113	-0.00122	-0.00123
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00199	0.00185	0.00183
	(!B_N * !Y)	-0.00204	-0.00223	-0.00223
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00261	0.00227	0.00223
	(!B_N * !Y)	-0.00408	-0.00446	-0.00447

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00089	-0.00089	-0.00089
	(!B_N * !Y)	0.00123	0.00123	0.00123
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00182	-0.00183	-0.00182
	(!B_N * !Y)	0.00222	0.00225	0.00223
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00222	-0.00224	-0.00222
	(!B_N * !Y)	0.00443	0.00449	0.00447

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00265	0.00247	0.00382
	(A * !Y)	0.00055	0.00037	0.00173
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00348	0.00328	0.00440
	(A * !Y)	0.00113	0.00092	0.00206
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00540	0.00508	0.00716
	(A * !Y)	0.00189	0.00156	0.00366

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00087	0.00089	0.00279
	(A * !Y)	0.00297	0.00298	0.00488
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00181	0.00176	0.00335
	(A * !Y)	0.00415	0.00410	0.00569
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00218	0.00219	0.00540
	(A * !Y)	0.00568	0.00568	0.00889

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00263	0.00271	0.29940
sky130_fd_sc_hs__nor2_2	0.00416	0.00396	0.56424
sky130_fd_sc_hs__nor2_4	0.00793	0.00789	1.07781
sky130_fd_sc_hs__nor2_8	0.01544	0.01556	2.02414

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.00864	0.01811
sky130_fd_sc_hs__nor2_2	0.00000	0.01548	0.03622
sky130_fd_sc_hs__nor2_4	0.00000	0.03096	0.07244
sky130_fd_sc_hs__nor2_8	0.00000	0.06193	0.14489

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)	0.12615	1.30812	11.96750
	B->Y (FR)	0.10275	1.25525	11.76510
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.09969	1.12963	11.99320
	B->Y (FR)	0.06389	1.06563	11.78110
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.09874	0.98888	11.88440
	B->Y (FR)	0.06322	0.93217	11.72540
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.09483	0.87540	11.77410
	B->Y (FR)	0.06594	0.83368	11.72390

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.02813	0.44644	4.26040
	B->Y (RF)	0.02583	0.43786	4.24571
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.03429	0.53991	5.75469
	B->Y (RF)	0.02810	0.52284	5.73779
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.03382	0.48122	5.67658
	B->Y (RF)	0.02728	0.45880	5.61964
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.03244	0.42465	5.54563
	B->Y (RF)	0.03382	0.41219	5.53339

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00026	-0.00031	-0.00029
	A	0.00283	0.00277	0.00281
	B	-0.00032	-0.00034	-0.00014
	B	0.00227	0.00221	0.00246
sky130_fd_sc_hs__nor2_2	A	-0.00052	-0.00056	-0.00053
	A	0.00455	0.00452	0.00459
	B	-0.00038	-0.00039	-0.00013
	B	0.00335	0.00335	0.00362
sky130_fd_sc_hs__nor2_4	A	0.00013	0.00003	0.00010
	A	0.00994	0.00983	0.00998
	B	-0.00015	-0.00014	0.00039
	B	0.00741	0.00742	0.00797
sky130_fd_sc_hs__nor2_8	A	-0.00025	-0.00041	-0.00022
	A	0.01904	0.01887	0.01917
	B	-0.00095	-0.00090	0.00035
	B	0.01401	0.01383	0.01536

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00349	0.00342	0.00349
	A	0.00046	0.00036	0.00042
	B	0.00254	0.00252	0.00260
	B	-0.00005	-0.00008	-0.00001
sky130_fd_sc_hs__nor2_2	A	0.00580	0.00564	0.00584
	A	0.00081	0.00059	0.00066
	B	0.00293	0.00296	0.00348
	B	-0.00079	-0.00080	-0.00067
sky130_fd_sc_hs__nor2_4	A	0.01103	0.01055	0.01137
	A	0.00139	0.00092	0.00109
	B	0.00582	0.00577	0.00666
	B	-0.00171	-0.00181	-0.00144
sky130_fd_sc_hs__nor2_8	A	0.02106	0.02014	0.02183
	A	0.00214	0.00117	0.00165
	B	0.01151	0.01131	0.01247
	B	-0.00343	-0.00371	-0.00269

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00106	0.00097	0.00096
	(B * !Y)	-0.00096	-0.00106	-0.00107
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00139	0.00123	0.00121
	(B * !Y)	-0.00191	-0.00212	-0.00212
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00237	0.00199	0.00195
	(B * !Y)	-0.00380	-0.00428	-0.00429
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00455	0.00384	0.00376
	(B * !Y)	-0.00758	-0.00853	-0.00852

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00096	-0.00096	-0.00096
	(B * !Y)	0.00107	0.00107	0.00107
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00122	-0.00121	-0.00121
	(B * !Y)	0.00213	0.00212	0.00212
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00194	-0.00195	-0.00193
	(B * !Y)	0.00427	0.00430	0.00429
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00376	-0.00376	-0.00373
	(B * !Y)	0.00853	0.00856	0.00852

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00109	0.00109	0.00109
	(A * !Y)	-0.00057	-0.00057	-0.00057
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00120	0.00121	0.00120
	(A * !Y)	-0.00115	-0.00115	-0.00115
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00242	0.00244	0.00243
	(A * !Y)	-0.00227	-0.00228	-0.00227
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00475	0.00479	0.00478
	(A * !Y)	-0.00448	-0.00452	-0.00450

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	**(A * !Y)**	-0.00104	-0.00105	-0.00108
	(A * !Y)	0.00061	0.00061	0.00058
sky130_fd_sc_hs__nor2_2	**(A * !Y)**	-0.00106	-0.00107	-0.00118
	(A * !Y)	0.00129	0.00128	0.00119
sky130_fd_sc_hs__nor2_4	**(A * !Y)**	-0.00214	-0.00218	-0.00239
	(A * !Y)	0.00250	0.00251	0.00234
sky130_fd_sc_hs__nor2_8	**(A * !Y)**	-0.00428	-0.00433	-0.00472
	(A * !Y)	0.00495	0.00495	0.00463

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00258	0.00269	0.00207	0.19328
sky130_fd_sc_hs__nor3b_2	0.00505	0.00503	0.00246	0.36215
sky130_fd_sc_hs__nor3b_4	0.01013	0.01006	0.00347	0.65776

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3b_1	0.00000	0.04890	0.09463
sky130_fd_sc_hs__nor3b_2	0.00000	0.03633	0.06577
sky130_fd_sc_hs__nor3b_4	0.00000	0.10939	0.21093

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)	0.25317	1.56409	11.74560
	B->Y (FR)	0.23269	1.54921	12.07770
	C_N->Y (RR)	0.20770	1.28981	7.79134
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.23688	1.35818	11.67210
	B->Y (FR)	0.21255	1.34085	12.07390
	C_N->Y (RR)	0.16798	1.07900	7.80777
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.23611	1.19587	11.49710
	B->Y (FR)	0.21293	1.17946	11.93640
	C_N->Y (RR)	0.19268	1.00456	8.18660

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.02938	0.41105	3.48285
	B->Y (RF)	0.03120	0.41078	3.52869
	C_N->Y (FF)	0.12195	0.58729	2.80519
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.02544	0.36169	3.37318
	B->Y (RF)	0.02607	0.35491	3.34683
	C_N->Y (FF)	0.13851	0.62944	3.19755
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.02518	0.33255	3.32481
	B->Y (RF)	0.02596	0.32170	3.30298
	C_N->Y (FF)	0.14987	0.61977	3.03541

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00104	0.00097	0.00097
	A	0.00390	0.00384	0.00384
	B	0.00093	0.00085	0.00087
	B	0.00343	0.00335	0.00338
	C_N	0.00456	0.00439	0.00568
	C_N	0.00294	0.00277	0.00407
sky130_fd_sc_hs__nor3b_2	A	0.00161	0.00148	0.00150
	A	0.00762	0.00753	0.00754
	B	0.00160	0.00147	0.00153
	B	0.00652	0.00640	0.00647
	C_N	0.00666	0.00650	0.00772
	C_N	0.00516	0.00499	0.00623
sky130_fd_sc_hs__nor3b_4	A	0.00297	0.00273	0.00280
	A	0.01509	0.01483	0.01493
	B	0.00307	0.00281	0.00293
	B	0.01304	0.01268	0.01293
	C_N	0.01196	0.01181	0.01381
	C_N	0.01021	0.01005	0.01206

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00385	0.00374	0.00378
	A	0.00105	0.00094	0.00098
	B	0.00304	0.00297	0.00302
	B	0.00057	0.00048	0.00054
	C_N	0.00246	0.00253	0.00439
	C_N	0.00408	0.00414	0.00600
sky130_fd_sc_hs__nor3b_2	A	0.00775	0.00750	0.00755
	A	0.00187	0.00162	0.00170
	B	0.00572	0.00551	0.00564
	B	0.00084	0.00061	0.00074
	C_N	0.00425	0.00439	0.00598
	C_N	0.00576	0.00589	0.00747
sky130_fd_sc_hs__nor3b_4	A	0.01528	0.01476	0.01495
	A	0.00344	0.00290	0.00313
	B	0.01133	0.01088	0.01121
	B	0.00146	0.00092	0.00130
	C_N	0.00912	0.00952	0.01272
	C_N	0.01089	0.01124	0.01446

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)	0.00091	0.00090	0.00090
	(B * C_N * !Y)	-0.00100	-0.00104	-0.00104
	(B * !C_N * !Y)	0.00086	0.00086	0.00086
	(B * !C_N * !Y)	-0.00105	-0.00108	-0.00107
	(!B * !C_N * !Y)	0.00086	0.00086	0.00086
	(!B * !C_N * !Y)	-0.00098	-0.00104	-0.00104
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00184	0.00182	0.00181
	(B * C_N * !Y)	-0.00208	-0.00216	-0.00215
	(B * !C_N * !Y)	0.00182	0.00182	0.00181
	(B * !C_N * !Y)	-0.00210	-0.00216	-0.00215
	(!B * !C_N * !Y)	0.00183	0.00182	0.00181
	(!B * !C_N * !Y)	-0.00198	-0.00209	-0.00208
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00394	0.00390	0.00387
	(B * C_N * !Y)	-0.00396	-0.00413	-0.00411
	(B * !C_N * !Y)	0.00362	0.00362	0.00360
	(B * !C_N * !Y)	-0.00428	-0.00441	-0.00438
	(!B * !C_N * !Y)	0.00364	0.00362	0.00360
	(!B * !C_N * !Y)	-0.00407	-0.00426	-0.00424

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)	-0.00089	-0.00090	-0.00089
	(B * C_N * !Y)	0.00104	0.00105	0.00104
	(B * !C_N * !Y)	-0.00086	-0.00086	-0.00086
	(B * !C_N * !Y)	0.00107	0.00108	0.00107
	(!B * !C_N * !Y)	-0.00086	-0.00086	-0.00086
	(!B * !C_N * !Y)	0.00103	0.00104	0.00104
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00181	-0.00181	-0.00181
	(B * C_N * !Y)	0.00215	0.00216	0.00215
	(B * !C_N * !Y)	-0.00181	-0.00181	-0.00181
	(B * !C_N * !Y)	0.00216	0.00216	0.00215
	(!B * !C_N * !Y)	-0.00181	-0.00182	-0.00181
	(!B * !C_N * !Y)	0.00207	0.00209	0.00208
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00388	-0.00389	-0.00387
	(B * C_N * !Y)	0.00412	0.00413	0.00411
	(B * !C_N * !Y)	-0.00360	-0.00361	-0.00360
	(B * !C_N * !Y)	0.00439	0.00442	0.00438
	(!B * !C_N * !Y)	-0.00358	-0.00360	-0.00359
	(!B * !C_N * !Y)	0.00423	0.00426	0.00424

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)	0.00105	0.00106	0.00105
	(A * C_N * !Y)	-0.00062	-0.00063	-0.00062
	(A * !C_N * !Y)	0.00092	0.00093	0.00090
	(A * !C_N * !Y)	-0.00087	-0.00087	-0.00087
	(!A * !C_N * !Y)	0.00102	0.00091	0.00090
	(!A * !C_N * !Y)	-0.00106	-0.00118	-0.00118
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00186	0.00187	0.00186
	(A * C_N * !Y)	-0.00132	-0.00132	-0.00132
	(A * !C_N * !Y)	0.00184	0.00185	0.00182
	(A * !C_N * !Y)	-0.00157	-0.00157	-0.00156
	(!A * !C_N * !Y)	0.00201	0.00182	0.00179
	(!A * !C_N * !Y)	-0.00200	-0.00222	-0.00221
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00380	0.00379	0.00377
	(A * C_N * !Y)	-0.00264	-0.00262	-0.00262
	(A * !C_N * !Y)	0.00373	0.00374	0.00365
	(A * !C_N * !Y)	-0.00312	-0.00314	-0.00312
	(!A * !C_N * !Y)	0.00410	0.00361	0.00361
	(!A * !C_N * !Y)	-0.00388	-0.00439	-0.00443

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)	-0.00103	-0.00104	-0.00103
	(A * C_N * !Y)	0.00065	0.00064	0.00065
	(A * !C_N * !Y)	-0.00089	-0.00090	-0.00089
	(A * !C_N * !Y)	0.00087	0.00087	0.00087
	(!A * !C_N * !Y)	-0.00089	-0.00089	-0.00089
	(!A * !C_N * !Y)	0.00118	0.00118	0.00118
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00182	-0.00183	-0.00184
	(A * C_N * !Y)	0.00134	0.00135	0.00136
	(A * !C_N * !Y)	-0.00180	-0.00181	-0.00180
	(A * !C_N * !Y)	0.00157	0.00157	0.00156
	(!A * !C_N * !Y)	-0.00178	-0.00180	-0.00179
	(!A * !C_N * !Y)	0.00219	0.00222	0.00221
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00371	-0.00373	-0.00370
	(A * C_N * !Y)	0.00266	0.00268	0.00271
	(A * !C_N * !Y)	-0.00361	-0.00363	-0.00362
	(A * !C_N * !Y)	0.00312	0.00314	0.00312
	(!A * !C_N * !Y)	-0.00359	-0.00359	-0.00358
	(!A * !C_N * !Y)	0.00441	0.00442	0.00443

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00259	0.00243	0.00377
	(B * !Y)	0.00060	0.00042	0.00178
	(A * !B * !Y)	0.00266	0.00249	0.00382
	(A * !B * !Y)	0.00063	0.00045	0.00179
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00346	0.00325	0.00438
	(B * !Y)	0.00115	0.00093	0.00208
	(A * !B * !Y)	0.00361	0.00341	0.00449
	(A * !B * !Y)	0.00122	0.00100	0.00212
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00561	0.00530	0.00708
	(B * !Y)	0.00212	0.00180	0.00359
	(A * !B * !Y)	0.00590	0.00558	0.00727
	(A * !B * !Y)	0.00225	0.00192	0.00366

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00091	0.00094	0.00283
	(B * !Y)	0.00291	0.00294	0.00483
	(A * !B * !Y)	0.00091	0.00094	0.00283
	(A * !B * !Y)	0.00291	0.00294	0.00483
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00179	0.00174	0.00333
	(B * !Y)	0.00409	0.00404	0.00564
	(A * !B * !Y)	0.00179	0.00174	0.00333
	(A * !B * !Y)	0.00410	0.00405	0.00564
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00424	0.00425	0.00731
	(B * !Y)	0.00772	0.00771	0.01078
	(A * !B * !Y)	0.00424	0.00425	0.00731
	(A * !B * !Y)	0.00773	0.00772	0.01079

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00267	0.00290	0.00275	0.19651
sky130_fd_sc_hs__nor3_2	0.00411	0.00433	0.00401	0.37845
sky130_fd_sc_hs__nor3_4	0.00904	0.00891	0.00859	0.67222

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	0.00595	0.01811
sky130_fd_sc_hs__nor3_2	0.00000	0.01054	0.03622
sky130_fd_sc_hs__nor3_4	0.00000	0.02108	0.07244

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)	0.25842	1.57168	11.82150
	B->Y (FR)	0.24139	1.56107	12.15950
	C->Y (FR)	0.17835	1.45883	11.76580
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.19935	1.32186	11.77930
	B->Y (FR)	0.17650	1.30186	12.09570
	C->Y (FR)	0.09512	1.18410	11.68820
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.21380	1.18564	11.61650
	B->Y (FR)	0.18122	1.15360	11.95050
	C->Y (FR)	0.09982	1.03604	11.59910

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.03019	0.41386	3.50841
	B->Y (RF)	0.03255	0.41264	3.54522
	C->Y (RF)	0.02910	0.40585	3.53685
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.03798	0.50550	4.80226
	B->Y (RF)	0.03839	0.49189	4.76416
	C->Y (RF)	0.03080	0.47392	4.74336
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.03401	0.44924	4.58733
	B->Y (RF)	0.03719	0.44335	4.61130
	C->Y (RF)	0.03656	0.42625	4.58628

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00011	0.00003	0.00003
	A	0.00406	0.00398	0.00397
	B	0.00015	0.00005	0.00007
	B	0.00359	0.00350	0.00352
	C	0.00010	0.00004	0.00030
	C	0.00304	0.00298	0.00323
sky130_fd_sc_hs__nor3_2	A	0.00003	-0.00003	-0.00002
	A	0.00631	0.00626	0.00626
	B	0.00021	0.00014	0.00016
	B	0.00547	0.00541	0.00545
	C	0.00019	0.00016	0.00047
	C	0.00415	0.00413	0.00443
sky130_fd_sc_hs__nor3_4	A	-0.00012	-0.00028	-0.00025
	A	0.01338	0.01325	0.01328
	B	-0.00011	-0.00028	-0.00021
	B	0.01087	0.01069	0.01079
	C	-0.00049	-0.00052	0.00021
	C	0.00846	0.00824	0.00919

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00491	0.00481	0.00484
	A	0.00105	0.00094	0.00098
	B	0.00403	0.00394	0.00397
	B	0.00062	0.00052	0.00056
	C	0.00290	0.00290	0.00296
	C	-0.00002	-0.00005	0.00002
sky130_fd_sc_hs__nor3_2	A	0.00804	0.00783	0.00794
	A	0.00196	0.00172	0.00173
	B	0.00609	0.00589	0.00605
	B	0.00094	0.00072	0.00076
	C	0.00323	0.00322	0.00348
	C	-0.00073	-0.00074	-0.00061
sky130_fd_sc_hs__nor3_4	A	0.01718	0.01657	0.01654
	A	0.00408	0.00344	0.00346
	B	0.01261	0.01213	0.01245
	B	0.00178	0.00126	0.00146
	C	0.00743	0.00739	0.00798
	C	-0.00152	-0.00160	-0.00123

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00099	0.00099	0.00099
	(B * C * !Y)	-0.00103	-0.00106	-0.00105
	(B * !C * !Y)	0.00099	0.00099	0.00099
	(B * !C * !Y)	-0.00102	-0.00106	-0.00105
	(!B * C * !Y)	0.00099	0.00099	0.00099
	(!B * C * !Y)	-0.00095	-0.00102	-0.00101
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00115	0.00117	0.00116
	(B * C * !Y)	-0.00200	-0.00208	-0.00207
	(B * !C * !Y)	0.00116	0.00117	0.00116
	(B * !C * !Y)	-0.00198	-0.00208	-0.00207
	(!B * C * !Y)	0.00118	0.00117	0.00116
	(!B * C * !Y)	-0.00187	-0.00197	-0.00198
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00220	0.00223	0.00221
	(B * C * !Y)	-0.00427	-0.00445	-0.00442
	(B * !C * !Y)	0.00222	0.00223	0.00221
	(B * !C * !Y)	-0.00423	-0.00445	-0.00442
	(!B * C * !Y)	0.00225	0.00223	0.00221
	(!B * C * !Y)	-0.00397	-0.00425	-0.00422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00099	-0.00099	-0.00099
	(B * C * !Y)	0.00106	0.00106	0.00105
	(B * !C * !Y)	-0.00099	-0.00099	-0.00099
	(B * !C * !Y)	0.00106	0.00106	0.00105
	(!B * C * !Y)	-0.00099	-0.00099	-0.00098
	(!B * C * !Y)	0.00101	0.00102	0.00101
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00115	-0.00116	-0.00115
	(B * C * !Y)	0.00207	0.00208	0.00207
	(B * !C * !Y)	-0.00116	-0.00116	-0.00115
	(B * !C * !Y)	0.00207	0.00208	0.00207
	(!B * C * !Y)	-0.00116	-0.00116	-0.00116
	(!B * C * !Y)	0.00198	0.00197	0.00198
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00220	-0.00222	-0.00221
	(B * C * !Y)	0.00440	0.00445	0.00442
	(B * !C * !Y)	-0.00221	-0.00222	-0.00221
	(B * !C * !Y)	0.00442	0.00445	0.00442
	(!B * C * !Y)	-0.00221	-0.00221	-0.00220
	(!B * C * !Y)	0.00423	0.00425	0.00422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00105	0.00106	0.00103
	(A * C * !Y)	-0.00070	-0.00070	-0.00070
	(A * !C * !Y)	0.00102	0.00103	0.00102
	(A * !C * !Y)	-0.00061	-0.00061	-0.00061
	(!A * C * !Y)	0.00115	0.00103	0.00102
	(!A * C * !Y)	-0.00088	-0.00102	-0.00101
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00107	0.00108	0.00104
	(A * C * !Y)	-0.00152	-0.00153	-0.00153
	(A * !C * !Y)	0.00103	0.00104	0.00102
	(A * !C * !Y)	-0.00136	-0.00136	-0.00137
	(!A * C * !Y)	0.00128	0.00103	0.00101
	(!A * C * !Y)	-0.00191	-0.00219	-0.00219
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00244	0.00245	0.00239
	(A * C * !Y)	-0.00288	-0.00290	-0.00288
	(A * !C * !Y)	0.00238	0.00241	0.00238
	(A * !C * !Y)	-0.00248	-0.00251	-0.00250
	(!A * C * !Y)	0.00282	0.00241	0.00238
	(!A * C * !Y)	-0.00364	-0.00413	-0.00412

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00102	-0.00102	-0.00102
	(A * C * !Y)	0.00070	0.00070	0.00070
	(A * !C * !Y)	-0.00101	-0.00101	-0.00100
	(A * !C * !Y)	0.00063	0.00063	0.00063
	(!A * C * !Y)	-0.00101	-0.00102	-0.00101
	(!A * C * !Y)	0.00101	0.00102	0.00101
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00101	-0.00102	-0.00102
	(A * C * !Y)	0.00152	0.00153	0.00153
	(A * !C * !Y)	-0.00100	-0.00100	-0.00099
	(A * !C * !Y)	0.00140	0.00140	0.00141
	(!A * C * !Y)	-0.00101	-0.00101	-0.00100
	(!A * C * !Y)	0.00220	0.00219	0.00219
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00238	-0.00239	-0.00238
	(A * C * !Y)	0.00288	0.00290	0.00288
	(A * !C * !Y)	-0.00230	-0.00231	-0.00228
	(A * !C * !Y)	0.00258	0.00259	0.00261
	(!A * C * !Y)	-0.00237	-0.00237	-0.00236
	(!A * C * !Y)	0.00412	0.00413	0.00412

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00107	0.00107	0.00107
	(B * !Y)	-0.00057	-0.00057	-0.00057
	(A * !B * !Y)	0.00107	0.00108	0.00107
	(A * !B * !Y)	-0.00057	-0.00057	-0.00057
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00119	0.00120	0.00119
	(B * !Y)	-0.00114	-0.00114	-0.00114
	(A * !B * !Y)	0.00120	0.00120	0.00119
	(A * !B * !Y)	-0.00115	-0.00114	-0.00114
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00268	0.00270	0.00269
	(B * !Y)	-0.00233	-0.00235	-0.00234
	(A * !B * !Y)	0.00268	0.00270	0.00269
	(A * !B * !Y)	-0.00232	-0.00234	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00102	-0.00103	-0.00106
	(B * !Y)	0.00062	0.00061	0.00058
	(A * !B * !Y)	-0.00096	-0.00096	-0.00105
	(A * !B * !Y)	0.00065	0.00065	0.00058
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00104	-0.00105	-0.00117
	(B * !Y)	0.00128	0.00127	0.00117
	(A * !B * !Y)	-0.00090	-0.00092	-0.00114
	(A * !B * !Y)	0.00134	0.00135	0.00119
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00243	-0.00245	-0.00266
	(B * !Y)	0.00257	0.00258	0.00241
	(A * !B * !Y)	-0.00210	-0.00213	-0.00259
	(A * !B * !Y)	0.00274	0.00274	0.00242

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00271	0.00278	0.00220	0.00217	0.14334
sky130_fd_sc_hs__nor4bb_2	0.00504	0.00529	0.00255	0.00242	0.25816
sky130_fd_sc_hs__nor4bb_4	0.00995	0.01062	0.00352	0.00342	0.49926

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4bb_1	0.00000	0.08976	0.18203
sky130_fd_sc_hs__nor4bb_2	0.00000	0.05658	0.11708
sky130_fd_sc_hs__nor4bb_4	0.00000	0.18661	0.39296

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)	0.42677	1.85417	11.69820
	B->Y (FR)	0.40870	1.82796	11.94250
	C_N->Y (RR)	0.39678	1.62315	8.23171
	D_N->Y (RR)	0.26717	1.47723	7.98679
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.41786	1.64440	11.59140
	B->Y (FR)	0.39088	1.59867	11.79850
	C_N->Y (RR)	0.37208	1.40288	8.18920
	D_N->Y (RR)	0.22769	1.24509	7.94047
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.41342	1.45041	11.57160
	B->Y (FR)	0.38729	1.41486	11.81340
	C_N->Y (RR)	0.36452	1.25511	8.54510
	D_N->Y (RR)	0.22895	1.11520	8.35686

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.03100	0.39428	3.05016
	B->Y (RF)	0.03159	0.38982	3.01952
	C_N->Y (FF)	0.14749	0.61071	2.75984
	D_N->Y (FF)	0.12648	0.57507	2.62420
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.02665	0.34682	2.89833
	B->Y (RF)	0.02778	0.34512	2.89850
	C_N->Y (FF)	0.15768	0.64220	3.12355
	D_N->Y (FF)	0.13974	0.61982	3.05110
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.02777	0.33406	3.00322
	B->Y (RF)	0.02825	0.32140	2.92661
	C_N->Y (FF)	0.16007	0.61424	2.86553
	D_N->Y (FF)	0.15148	0.60689	2.84841

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00193	0.00184	0.00183
	A	0.00504	0.00495	0.00493
	B	0.00191	0.00180	0.00180
	B	0.00456	0.00447	0.00447
	C_N	0.00600	0.00580	0.00700
	C_N	0.00434	0.00413	0.00533
	D_N	0.00498	0.00477	0.00612
	D_N	0.00350	0.00329	0.00463
sky130_fd_sc_hs__nor4bb_2	A	0.00357	0.00342	0.00342
	A	0.00967	0.00953	0.00952
	B	0.00354	0.00338	0.00338
	B	0.00866	0.00848	0.00849
	C_N	0.00883	0.00863	0.00978
	C_N	0.00736	0.00715	0.00831
	D_N	0.00747	0.00727	0.00848
	D_N	0.00617	0.00597	0.00719
sky130_fd_sc_hs__nor4bb_4	A	0.00735	0.00702	0.00704
	A	0.01914	0.01880	0.01882
	B	0.00719	0.00688	0.00692
	B	0.01735	0.01705	0.01707
	C_N	0.01604	0.01574	0.01766
	C_N	0.01440	0.01410	0.01602
	D_N	0.01326	0.01304	0.01507
	D_N	0.01174	0.01152	0.01362

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00458	0.00446	0.00445
	A	0.00154	0.00141	0.00143
	B	0.00375	0.00365	0.00367
	B	0.00111	0.00099	0.00102
	C_N	0.00362	0.00359	0.00536
	C_N	0.00529	0.00525	0.00702
	D_N	0.00261	0.00266	0.00452
	D_N	0.00410	0.00413	0.00599
sky130_fd_sc_hs__nor4bb_2	A	0.00909	0.00881	0.00876
	A	0.00321	0.00291	0.00291
	B	0.00695	0.00673	0.00679
	B	0.00188	0.00164	0.00171
	C_N	0.00651	0.00640	0.00785
	C_N	0.00798	0.00787	0.00932
	D_N	0.00449	0.00459	0.00622
	D_N	0.00578	0.00588	0.00751
sky130_fd_sc_hs__nor4bb_4	A	0.01741	0.01684	0.01684
	A	0.00603	0.00540	0.00550
	B	0.01397	0.01349	0.01359
	B	0.00395	0.00345	0.00358
	C_N	0.01193	0.01186	0.01477
	C_N	0.01357	0.01348	0.01640
	D_N	0.00923	0.00954	0.01281
	D_N	0.01076	0.01105	0.01432

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)**	0.00103	0.00103	0.00102
	(B * C_N * D_N * !Y)	-0.00101	-0.00104	-0.00104
	(B * !D_N * !Y)	0.00104	0.00102	0.00102
	(B * !D_N * !Y)	-0.00101	-0.00104	-0.00104
	(B * !C_N * D_N * !Y)	0.00094	0.00095	0.00094
	(B * !C_N * D_N * !Y)	-0.00110	-0.00112	-0.00112
	(!B * C_N * !D_N * !Y)	0.00107	0.00106	0.00103
	(!B * C_N * !D_N * !Y)	-0.00094	-0.00099	-0.00098
	(!B * !C_N * D_N * !Y)	0.00094	0.00094	0.00094
	(!B * !C_N * D_N * !Y)	-0.00103	-0.00108	-0.00108
	(!B * !C_N * !D_N * !Y)	0.00094	0.00094	0.00094
	(!B * !C_N * !D_N * !Y)	-0.00103	-0.00108	-0.00108
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00182	0.00181	0.00180
	(B * C_N * D_N * !Y)	-0.00206	-0.00215	-0.00214
	(B * !D_N * !Y)	0.00182	0.00181	0.00180
	(B * !D_N * !Y)	-0.00206	-0.00215	-0.00214
	(B * !C_N * D_N * !Y)	0.00180	0.00181	0.00179
	(B * !C_N * D_N * !Y)	-0.00208	-0.00215	-0.00214
	(!B * C_N * !D_N * !Y)	0.00193	0.00186	0.00183
	(!B * C_N * !D_N * !Y)	-0.00193	-0.00203	-0.00202
	(!B * !C_N * D_N * !Y)	0.00180	0.00180	0.00179
	(!B * !C_N * D_N * !Y)	-0.00196	-0.00207	-0.00206
	(!B * !C_N * !D_N * !Y)	0.00179	0.00180	0.00179
	(!B * !C_N * !D_N * !Y)	-0.00196	-0.00207	-0.00206

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00352	0.00352	0.00349
	(B * C_N * D_N * !Y)	-0.00397	-0.00416	-0.00414
	(B * !D_N * !Y)	0.00354	0.00353	0.00350
	(B * !D_N * !Y)	-0.00397	-0.00416	-0.00413
	(B * !C_N * D_N * !Y)	0.00347	0.00351	0.00348
	(B * !C_N * D_N * !Y)	-0.00402	-0.00417	-0.00415
	(!B * C_N * !D_N * !Y)	0.00376	0.00363	0.00356
	(!B * C_N * !D_N * !Y)	-0.00371	-0.00392	-0.00389
	(!B * !C_N * D_N * !Y)	0.00351	0.00351	0.00349
	(!B * !C_N * D_N * !Y)	-0.00380	-0.00400	-0.00397
	(!B * !C_N * !D_N * !Y)	0.00351	0.00351	0.00348
	(!B * !C_N * !D_N * !Y)	-0.00380	-0.00400	-0.00397

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)**	-0.00102	-0.00102	-0.00101
	(B * C_N * D_N * !Y)	0.00104	0.00105	0.00104
	(B * !D_N * !Y)	-0.00102	-0.00102	-0.00102
	(B * !D_N * !Y)	0.00104	0.00105	0.00104
	(B * !C_N * D_N * !Y)	-0.00094	-0.00094	-0.00094
	(B * !C_N * D_N * !Y)	0.00112	0.00112	0.00112
	(!B * C_N * !D_N * !Y)	-0.00105	-0.00106	-0.00103
	(!B * C_N * !D_N * !Y)	0.00099	0.00099	0.00098
	(!B * !C_N * D_N * !Y)	-0.00094	-0.00094	-0.00094
	(!B * !C_N * D_N * !Y)	0.00108	0.00108	0.00108
	(!B * !C_N * !D_N * !Y)	-0.00094	-0.00094	-0.00094
	(!B * !C_N * !D_N * !Y)	0.00108	0.00108	0.00108

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00179	-0.00179	-0.00179
	(B * C_N * D_N * !Y)	0.00214	0.00215	0.00214
	(B * !D_N * !Y)	-0.00180	-0.00180	-0.00179
	(B * !D_N * !Y)	0.00214	0.00215	0.00214
	(B * !C_N * D_N * !Y)	-0.00179	-0.00179	-0.00179
	(B * !C_N * D_N * !Y)	0.00215	0.00215	0.00214
	(!B * C_N * !D_N * !Y)	-0.00187	-0.00186	-0.00183
	(!B * C_N * !D_N * !Y)	0.00201	0.00203	0.00202
	(!B * !C_N * D_N * !Y)	-0.00179	-0.00180	-0.00179
	(!B * !C_N * D_N * !Y)	0.00205	0.00207	0.00206
	(!B * !C_N * !D_N * !Y)	-0.00178	-0.00180	-0.00179
	(!B * !C_N * !D_N * !Y)	0.00205	0.00207	0.00206
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00349	-0.00349	-0.00348
	(B * C_N * D_N * !Y)	0.00414	0.00416	0.00414
	(B * !D_N * !Y)	-0.00350	-0.00351	-0.00349
	(B * !D_N * !Y)	0.00413	0.00416	0.00413
	(B * !C_N * D_N * !Y)	-0.00347	-0.00349	-0.00347
	(B * !C_N * D_N * !Y)	0.00415	0.00417	0.00415
	(!B * C_N * !D_N * !Y)	-0.00364	-0.00363	-0.00356
	(!B * C_N * !D_N * !Y)	0.00389	0.00392	0.00389
	(!B * !C_N * D_N * !Y)	-0.00347	-0.00349	-0.00348
	(!B * !C_N * D_N * !Y)	0.00397	0.00400	0.00397
	(!B * !C_N * !D_N * !Y)	-0.00347	-0.00349	-0.00347
	(!B * !C_N * !D_N * !Y)	0.00396	0.00400	0.00397

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)**	0.00109	0.00110	0.00109
	(A * C_N * D_N * !Y)	-0.00062	-0.00062	-0.00062
	(A * C_N * !D_N * !Y)	0.00119	0.00123	0.00122
	(A * C_N * !D_N * !Y)	-0.00072	-0.00072	-0.00072
	(A * !C_N * D_N * !Y)	0.00099	0.00099	0.00099
	(A * !C_N * D_N * !Y)	-0.00083	-0.00084	-0.00084
	(A * !C_N * !D_N * !Y)	0.00098	0.00099	0.00098
	(A * !C_N * !D_N * !Y)	-0.00087	-0.00087	-0.00087
	(!A * C_N * !D_N * !Y)	0.00120	0.00113	0.00110
	(!A * C_N * !D_N * !Y)	-0.00092	-0.00097	-0.00097
	(!A * !C_N * D_N * !Y)	0.00100	0.00099	0.00098
	(!A * !C_N * D_N * !Y)	-0.00111	-0.00113	-0.00113
	(!A * !C_N * !D_N * !Y)	0.00099	0.00099	0.00098
	(!A * !C_N * !D_N * !Y)	-0.00112	-0.00113	-0.00113
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00193	0.00195	0.00194
	(A * C_N * D_N * !Y)	-0.00137	-0.00138	-0.00137
	(A * C_N * !D_N * !Y)	0.00211	0.00221	0.00219
	(A * C_N * !D_N * !Y)	-0.00157	-0.00158	-0.00157
	(A * !C_N * D_N * !Y)	0.00189	0.00190	0.00188
	(A * !C_N * D_N * !Y)	-0.00165	-0.00166	-0.00165
	(A * !C_N * !D_N * !Y)	0.00188	0.00189	0.00188
	(A * !C_N * !D_N * !Y)	-0.00171	-0.00172	-0.00171
	(!A * C_N * !D_N * !Y)	0.00212	0.00202	0.00196
	(!A * C_N * !D_N * !Y)	-0.00201	-0.00211	-0.00210
	(!A * !C_N * D_N * !Y)	0.00193	0.00189	0.00187
	(!A * !C_N * D_N * !Y)	-0.00222	-0.00227	-0.00226
	(!A * !C_N * !D_N * !Y)	0.00189	0.00189	0.00187
	(!A * !C_N * !D_N * !Y)	-0.00225	-0.00227	-0.00226

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00373	0.00377	0.00374
	(A * C_N * D_N * !Y)	-0.00271	-0.00274	-0.00272
	(A * C_N * !D_N * !Y)	0.00417	0.00428	0.00428
	(A * C_N * !D_N * !Y)	-0.00308	-0.00312	-0.00307
	(A * !C_N * D_N * !Y)	0.00362	0.00368	0.00361
	(A * !C_N * D_N * !Y)	-0.00326	-0.00329	-0.00325
	(A * !C_N * !D_N * !Y)	0.00359	0.00366	0.00360
	(A * !C_N * !D_N * !Y)	-0.00342	-0.00344	-0.00341
	(!A * C_N * !D_N * !Y)	0.00419	0.00394	0.00379
	(!A * C_N * !D_N * !Y)	-0.00390	-0.00410	-0.00411
	(!A * !C_N * D_N * !Y)	0.00367	0.00362	0.00360
	(!A * !C_N * D_N * !Y)	-0.00437	-0.00448	-0.00447
	(!A * !C_N * !D_N * !Y)	0.00360	0.00361	0.00359
	(!A * !C_N * !D_N * !Y)	-0.00441	-0.00448	-0.00447

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)**	-0.00108	-0.00109	-0.00109
	(A * C_N * D_N * !Y)	0.00063	0.00063	0.00063
	(A * C_N * !D_N * !Y)	-0.00116	-0.00117	-0.00116
	(A * C_N * !D_N * !Y)	0.00072	0.00072	0.00072
	(A * !C_N * D_N * !Y)	-0.00098	-0.00098	-0.00098
	(A * !C_N * D_N * !Y)	0.00083	0.00084	0.00084
	(A * !C_N * !D_N * !Y)	-0.00098	-0.00098	-0.00098
	(A * !C_N * !D_N * !Y)	0.00087	0.00087	0.00087
	(!A * C_N * !D_N * !Y)	-0.00114	-0.00113	-0.00110
	(!A * C_N * !D_N * !Y)	0.00097	0.00097	0.00097
	(!A * !C_N * D_N * !Y)	-0.00097	-0.00098	-0.00098
	(!A * !C_N * D_N * !Y)	0.00113	0.00113	0.00113
	(!A * !C_N * !D_N * !Y)	-0.00098	-0.00098	-0.00098
	(!A * !C_N * !D_N * !Y)	0.00114	0.00113	0.00113
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00190	-0.00191	-0.00192
	(A * C_N * D_N * !Y)	0.00139	0.00140	0.00141
	(A * C_N * !D_N * !Y)	-0.00207	-0.00208	-0.00207
	(A * C_N * !D_N * !Y)	0.00157	0.00158	0.00157
	(A * !C_N * D_N * !Y)	-0.00187	-0.00188	-0.00187
	(A * !C_N * D_N * !Y)	0.00165	0.00166	0.00165
	(A * !C_N * !D_N * !Y)	-0.00187	-0.00188	-0.00187
	(A * !C_N * !D_N * !Y)	0.00171	0.00172	0.00171
	(!A * C_N * !D_N * !Y)	-0.00204	-0.00202	-0.00196
	(!A * C_N * !D_N * !Y)	0.00209	0.00211	0.00210
	(!A * !C_N * D_N * !Y)	-0.00186	-0.00187	-0.00187
	(!A * !C_N * D_N * !Y)	0.00225	0.00227	0.00226
	(!A * !C_N * !D_N * !Y)	-0.00188	-0.00187	-0.00187
	(!A * !C_N * !D_N * !Y)	0.00227	0.00227	0.00226

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	-0.00370	-0.00373	-0.00372
	(A * C_N * D_N * !Y)	0.00277	0.00279	0.00277
	(A * C_N * !D_N * !Y)	-0.00405	-0.00409	-0.00405
	(A * C_N * !D_N * !Y)	0.00308	0.00312	0.00307
	(A * !C_N * D_N * !Y)	-0.00360	-0.00362	-0.00359
	(A * !C_N * D_N * !Y)	0.00326	0.00329	0.00325
	(A * !C_N * !D_N * !Y)	-0.00359	-0.00361	-0.00359
	(A * !C_N * !D_N * !Y)	0.00342	0.00344	0.00341
	(!A * C_N * !D_N * !Y)	-0.00399	-0.00394	-0.00379
	(!A * C_N * !D_N * !Y)	0.00411	0.00410	0.00411
	(!A * !C_N * D_N * !Y)	-0.00360	-0.00360	-0.00359
	(!A * !C_N * D_N * !Y)	0.00447	0.00448	0.00447
	(!A * !C_N * !D_N * !Y)	-0.00358	-0.00360	-0.00359
	(!A * !C_N * !D_N * !Y)	0.00445	0.00448	0.00447

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4bb_1	**(B * !Y)**	0.00298	0.00280	0.00404
	(B * !Y)	0.00080	0.00061	0.00187
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00305	0.00286	0.00408
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00082	0.00063	0.00186
sky130_fd_sc_hs__nor4bb_2	**(B * !Y)**	0.00343	0.00324	0.00438
	(B * !Y)	0.00109	0.00089	0.00204
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00362	0.00342	0.00450
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00117	0.00096	0.00207
sky130_fd_sc_hs__nor4bb_4	**(B * !Y)**	0.00552	0.00521	0.00715
	(B * !Y)	0.00220	0.00188	0.00385
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00575	0.00543	0.00728
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00224	0.00191	0.00382

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00119	0.00118	0.00302
	(B * !Y)	0.00335	0.00335	0.00519
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00119	0.00118	0.00302
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00336	0.00335	0.00520
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00213	0.00208	0.00364
	(B * !Y)	0.00447	0.00442	0.00597
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00213	0.00209	0.00364
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00447	0.00442	0.00597
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00379	0.00380	0.00687
	(B * !Y)	0.00707	0.00707	0.01014
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00381	0.00382	0.00688
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00710	0.00710	0.01016

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)	0.00267	0.00248	0.00378
	(B * C_N * !Y)	0.00068	0.00049	0.00180
	(A * !B * C_N * !Y)	0.00275	0.00256	0.00384
	(A * !B * C_N * !Y)	0.00073	0.00054	0.00183
	(!C_N * !Y)	0.00283	0.00264	0.00396
	(!C_N * !Y)	0.00085	0.00066	0.00198
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00339	0.00320	0.00430
	(B * C_N * !Y)	0.00123	0.00104	0.00216
	(A * !B * C_N * !Y)	0.00361	0.00342	0.00446
	(A * !B * C_N * !Y)	0.00137	0.00117	0.00225
	(!C_N * !Y)	0.00355	0.00336	0.00450
	(!C_N * !Y)	0.00141	0.00122	0.00237
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00526	0.00496	0.00668
	(B * C_N * !Y)	0.00212	0.00179	0.00355
	(A * !B * C_N * !Y)	0.00563	0.00531	0.00694
	(A * !B * C_N * !Y)	0.00235	0.00201	0.00370
	(!C_N * !Y)	0.00550	0.00520	0.00701
	(!C_N * !Y)	0.00241	0.00209	0.00391

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)	0.00106	0.00106	0.00296
	(B * C_N * !Y)	0.00304	0.00305	0.00494
	(A * !B * C_N * !Y)	0.00106	0.00106	0.00296
	(A * !B * C_N * !Y)	0.00304	0.00305	0.00494
	(!C_N * !Y)	0.00085	0.00085	0.00275
	(!C_N * !Y)	0.00283	0.00284	0.00473
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00194	0.00190	0.00349
	(B * C_N * !Y)	0.00407	0.00404	0.00563
	(A * !B * C_N * !Y)	0.00194	0.00190	0.00349
	(A * !B * C_N * !Y)	0.00407	0.00404	0.00563
	(!C_N * !Y)	0.00169	0.00164	0.00323
	(!C_N * !Y)	0.00382	0.00378	0.00537
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00450	0.00454	0.00762
	(B * C_N * !Y)	0.00761	0.00765	0.01072
	(A * !B * C_N * !Y)	0.00451	0.00454	0.00762
	(A * !B * C_N * !Y)	0.00761	0.00765	0.01072
	(!C_N * !Y)	0.00402	0.00406	0.00714
	(!C_N * !Y)	0.00713	0.00716	0.01024

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00261	0.00271	0.00270	0.00210	0.14228
sky130_fd_sc_hs__nor4b_2	0.00514	0.00521	0.00524	0.00246	0.25783
sky130_fd_sc_hs__nor4b_4	0.01008	0.01014	0.01031	0.00370	0.49034

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4b_1	0.00000	0.04681	0.09824
sky130_fd_sc_hs__nor4b_2	0.00000	0.03215	0.07300
sky130_fd_sc_hs__nor4b_4	0.00000	0.10102	0.22539

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)	0.41073	1.83209	11.62140
	B->Y (FR)	0.39052	1.80402	11.86120
	C->Y (FR)	0.33166	1.74689	12.08570
	D_N->Y (RR)	0.27557	1.47744	7.92560
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.42062	1.64463	11.57430
	B->Y (FR)	0.39276	1.59995	11.78200
	C->Y (FR)	0.33086	1.54223	12.10010
	D_N->Y (RR)	0.23070	1.24591	7.92807
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.40990	1.44903	11.50360
	B->Y (FR)	0.38262	1.40758	11.73980
	C->Y (FR)	0.31662	1.34591	12.05840
	D_N->Y (RR)	0.23904	1.12177	8.30494

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.03120	0.39791	3.07976
	B->Y (RF)	0.03248	0.39617	3.06650
	C->Y (RF)	0.03271	0.38815	3.04976
	D_N->Y (FF)	0.12641	0.57790	2.64933
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.02689	0.34637	2.89326
	B->Y (RF)	0.02793	0.34485	2.89419
	C->Y (RF)	0.03002	0.34102	2.90808
	D_N->Y (FF)	0.14379	0.62245	3.04490
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.02713	0.32526	2.91289
	B->Y (RF)	0.02752	0.31613	2.88449
	C->Y (RF)	0.02774	0.30040	2.81249
	D_N->Y (FF)	0.14708	0.59840	2.81167

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00116	0.00107	0.00106
	A	0.00472	0.00465	0.00464
	B	0.00115	0.00105	0.00105
	B	0.00424	0.00415	0.00416
	C	0.00102	0.00093	0.00094
	C	0.00374	0.00365	0.00367
	D_N	0.00478	0.00458	0.00587
	D_N	0.00331	0.00310	0.00440
sky130_fd_sc_hs__nor4b_2	A	0.00213	0.00197	0.00197
	A	0.00985	0.00971	0.00970
	B	0.00215	0.00198	0.00198
	B	0.00878	0.00859	0.00860
	C	0.00208	0.00189	0.00195
	C	0.00770	0.00752	0.00758
	D_N	0.00724	0.00703	0.00823
	D_N	0.00629	0.00608	0.00729
sky130_fd_sc_hs__nor4b_4	A	0.00420	0.00387	0.00388
	A	0.01940	0.01907	0.01909
	B	0.00420	0.00384	0.00388
	B	0.01725	0.01690	0.01694
	C	0.00402	0.00367	0.00382
	C	0.01510	0.01477	0.01493
	D_N	0.01272	0.01244	0.01448
	D_N	0.01204	0.01176	0.01380

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00511	0.00500	0.00499
	A	0.00165	0.00152	0.00155
	B	0.00425	0.00414	0.00417
	B	0.00121	0.00110	0.00113
	C	0.00334	0.00329	0.00334
	C	0.00064	0.00058	0.00063
	D_N	0.00278	0.00284	0.00471
	D_N	0.00426	0.00431	0.00617
sky130_fd_sc_hs__nor4b_2	A	0.01058	0.01028	0.01020
	A	0.00317	0.00285	0.00284
	B	0.00840	0.00818	0.00822
	B	0.00193	0.00168	0.00175
	C	0.00643	0.00628	0.00640
	C	0.00086	0.00068	0.00081
	D_N	0.00496	0.00504	0.00665
	D_N	0.00591	0.00598	0.00759
sky130_fd_sc_hs__nor4b_4	A	0.02058	0.01999	0.01989
	A	0.00595	0.00531	0.00537
	B	0.01642	0.01591	0.01605
	B	0.00365	0.00312	0.00332
	C	0.01243	0.01208	0.01241
	C	0.00141	0.00099	0.00136
	D_N	0.00995	0.01021	0.01345
	D_N	0.01063	0.01087	0.01412

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)**	0.00091	0.00091	0.00091
	(B * C * D_N * !Y)	-0.00101	-0.00104	-0.00104
	(B * !D_N * !Y)	0.00087	0.00087	0.00087
	(B * !D_N * !Y)	-0.00105	-0.00108	-0.00107
	(B * !C * D_N * !Y)	0.00091	0.00091	0.00091
	(B * !C * D_N * !Y)	-0.00100	-0.00104	-0.00104
	(!B * C * D_N * !Y)	0.00091	0.00091	0.00091
	(!B * C * D_N * !Y)	-0.00094	-0.00100	-0.00099
	(!B * C * !D_N * !Y)	0.00087	0.00087	0.00087
	(!B * C * !D_N * !Y)	-0.00097	-0.00103	-0.00103
	(!B * !C * !D_N * !Y)	0.00087	0.00088	0.00087
	(!B * !C * !D_N * !Y)	-0.00097	-0.00102	-0.00102
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00183	0.00184	0.00183
	(B * C * D_N * !Y)	-0.00210	-0.00217	-0.00216
	(B * !D_N * !Y)	0.00183	0.00184	0.00183
	(B * !D_N * !Y)	-0.00210	-0.00217	-0.00216
	(B * !C * D_N * !Y)	0.00183	0.00184	0.00183
	(B * !C * D_N * !Y)	-0.00208	-0.00217	-0.00216
	(!B * C * D_N * !Y)	0.00183	0.00184	0.00183
	(!B * C * D_N * !Y)	-0.00196	-0.00208	-0.00207
	(!B * C * !D_N * !Y)	0.00183	0.00183	0.00183
	(!B * C * !D_N * !Y)	-0.00196	-0.00208	-0.00207
	(!B * !C * !D_N * !Y)	0.00184	0.00183	0.00183
	(!B * !C * !D_N * !Y)	-0.00195	-0.00205	-0.00204

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00358	0.00359	0.00357
	(B * C * D_N * !Y)	-0.00413	-0.00429	-0.00426
	(B * !D_N * !Y)	0.00357	0.00359	0.00357
	(B * !D_N * !Y)	-0.00413	-0.00427	-0.00426
	(B * !C * D_N * !Y)	0.00358	0.00359	0.00357
	(B * !C * D_N * !Y)	-0.00411	-0.00429	-0.00426
	(!B * C * D_N * !Y)	0.00358	0.00359	0.00357
	(!B * C * D_N * !Y)	-0.00386	-0.00410	-0.00408
	(!B * C * !D_N * !Y)	0.00357	0.00359	0.00357
	(!B * C * !D_N * !Y)	-0.00386	-0.00409	-0.00407
	(!B * !C * !D_N * !Y)	0.00359	0.00358	0.00357
	(!B * !C * !D_N * !Y)	-0.00384	-0.00404	-0.00402

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)**	-0.00091	-0.00091	-0.00090
	(B * C * D_N * !Y)	0.00104	0.00104	0.00104
	(B * !D_N * !Y)	-0.00087	-0.00087	-0.00087
	(B * !D_N * !Y)	0.00107	0.00108	0.00107
	(B * !C * D_N * !Y)	-0.00091	-0.00091	-0.00090
	(B * !C * D_N * !Y)	0.00104	0.00104	0.00104
	(!B * C * D_N * !Y)	-0.00090	-0.00091	-0.00090
	(!B * C * D_N * !Y)	0.00099	0.00100	0.00099
	(!B * C * !D_N * !Y)	-0.00087	-0.00087	-0.00087
	(!B * C * !D_N * !Y)	0.00103	0.00103	0.00103
	(!B * !C * !D_N * !Y)	-0.00087	-0.00087	-0.00087
	(!B * !C * !D_N * !Y)	0.00102	0.00102	0.00102

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00183	-0.00183	-0.00182
	(B * C * D_N * !Y)	0.00218	0.00217	0.00216
	(B * !D_N * !Y)	-0.00183	-0.00183	-0.00182
	(B * !D_N * !Y)	0.00218	0.00217	0.00216
	(B * !C * D_N * !Y)	-0.00183	-0.00183	-0.00182
	(B * !C * D_N * !Y)	0.00217	0.00217	0.00216
	(!B * C * D_N * !Y)	-0.00182	-0.00183	-0.00182
	(!B * C * D_N * !Y)	0.00206	0.00208	0.00207
	(!B * C * !D_N * !Y)	-0.00183	-0.00183	-0.00182
	(!B * C * !D_N * !Y)	0.00208	0.00208	0.00207
	(!B * !C * !D_N * !Y)	-0.00182	-0.00183	-0.00183
	(!B * !C * !D_N * !Y)	0.00203	0.00205	0.00204
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00356	-0.00357	-0.00356
	(B * C * D_N * !Y)	0.00427	0.00429	0.00426
	(B * !D_N * !Y)	-0.00357	-0.00357	-0.00356
	(B * !D_N * !Y)	0.00427	0.00427	0.00426
	(B * !C * D_N * !Y)	-0.00356	-0.00357	-0.00356
	(B * !C * D_N * !Y)	0.00427	0.00429	0.00426
	(!B * C * D_N * !Y)	-0.00355	-0.00357	-0.00356
	(!B * C * D_N * !Y)	0.00407	0.00410	0.00408
	(!B * C * !D_N * !Y)	-0.00356	-0.00357	-0.00356
	(!B * C * !D_N * !Y)	0.00407	0.00409	0.00407
	(!B * !C * !D_N * !Y)	-0.00356	-0.00358	-0.00356
	(!B * !C * !D_N * !Y)	0.00401	0.00404	0.00402

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)**	0.00094	0.00095	0.00094
	(A * C * D_N * !Y)	-0.00072	-0.00072	-0.00072
	(A * C * !D_N * !Y)	0.00089	0.00090	0.00089
	(A * C * !D_N * !Y)	-0.00079	-0.00079	-0.00079
	(A * !C * D_N * !Y)	0.00093	0.00094	0.00093
	(A * !C * D_N * !Y)	-0.00062	-0.00063	-0.00062
	(A * !C * !D_N * !Y)	0.00089	0.00091	0.00089
	(A * !C * !D_N * !Y)	-0.00075	-0.00076	-0.00076
	(!A * C * D_N * !Y)	0.00095	0.00094	0.00093
	(!A * C * D_N * !Y)	-0.00099	-0.00103	-0.00102
	(!A * C * !D_N * !Y)	0.00090	0.00090	0.00089
	(!A * C * !D_N * !Y)	-0.00104	-0.00106	-0.00106
	(!A * !C * !D_N * !Y)	0.00090	0.00090	0.00089
	(!A * !C * !D_N * !Y)	-0.00095	-0.00102	-0.00101
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00188	0.00189	0.00187
	(A * C * D_N * !Y)	-0.00156	-0.00157	-0.00156
	(A * C * !D_N * !Y)	0.00187	0.00188	0.00187
	(A * C * !D_N * !Y)	-0.00161	-0.00162	-0.00161
	(A * !C * D_N * !Y)	0.00186	0.00187	0.00186
	(A * !C * D_N * !Y)	-0.00135	-0.00136	-0.00135
	(A * !C * !D_N * !Y)	0.00187	0.00191	0.00188
	(A * !C * !D_N * !Y)	-0.00155	-0.00156	-0.00155
	(!A * C * D_N * !Y)	0.00191	0.00188	0.00186
	(!A * C * D_N * !Y)	-0.00210	-0.00217	-0.00217
	(!A * C * !D_N * !Y)	0.00188	0.00188	0.00186
	(!A * C * !D_N * !Y)	-0.00213	-0.00218	-0.00217
	(!A * !C * !D_N * !Y)	0.00188	0.00189	0.00186
	(!A * !C * !D_N * !Y)	-0.00198	-0.00207	-0.00207

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00368	0.00368	0.00365
	(A * C * D_N * !Y)	-0.00305	-0.00307	-0.00305
	(A * C * !D_N * !Y)	0.00368	0.00366	0.00364
	(A * C * !D_N * !Y)	-0.00316	-0.00318	-0.00316
	(A * !C * D_N * !Y)	0.00363	0.00365	0.00364
	(A * !C * D_N * !Y)	-0.00265	-0.00267	-0.00265
	(A * !C * !D_N * !Y)	0.00365	0.00365	0.00366
	(A * !C * !D_N * !Y)	-0.00302	-0.00305	-0.00303
	(!A * C * D_N * !Y)	0.00370	0.00368	0.00363
	(!A * C * D_N * !Y)	-0.00411	-0.00431	-0.00430
	(!A * C * !D_N * !Y)	0.00363	0.00367	0.00363
	(!A * C * !D_N * !Y)	-0.00418	-0.00431	-0.00429
	(!A * !C * !D_N * !Y)	0.00368	0.00368	0.00363
	(!A * !C * !D_N * !Y)	-0.00391	-0.00406	-0.00409

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)**	-0.00093	-0.00093	-0.00093
	(A * C * D_N * !Y)	0.00072	0.00072	0.00072
	(A * C * !D_N * !Y)	-0.00089	-0.00089	-0.00089
	(A * C * !D_N * !Y)	0.00079	0.00079	0.00079
	(A * !C * D_N * !Y)	-0.00093	-0.00093	-0.00092
	(A * !C * D_N * !Y)	0.00064	0.00064	0.00064
	(A * !C * !D_N * !Y)	-0.00089	-0.00089	-0.00089
	(A * !C * !D_N * !Y)	0.00075	0.00076	0.00076
	(!A * C * D_N * !Y)	-0.00092	-0.00093	-0.00093
	(!A * C * D_N * !Y)	0.00102	0.00103	0.00102
	(!A * C * !D_N * !Y)	-0.00089	-0.00089	-0.00089
	(!A * C * !D_N * !Y)	0.00106	0.00106	0.00106
	(!A * !C * !D_N * !Y)	-0.00089	-0.00090	-0.00089
	(!A * !C * !D_N * !Y)	0.00101	0.00102	0.00101
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00186	-0.00187	-0.00186
	(A * C * D_N * !Y)	0.00156	0.00157	0.00156
	(A * C * !D_N * !Y)	-0.00186	-0.00187	-0.00186
	(A * C * !D_N * !Y)	0.00161	0.00162	0.00161
	(A * !C * D_N * !Y)	-0.00185	-0.00185	-0.00184
	(A * !C * D_N * !Y)	0.00139	0.00138	0.00138
	(A * !C * !D_N * !Y)	-0.00187	-0.00188	-0.00187
	(A * !C * !D_N * !Y)	0.00155	0.00156	0.00155
	(!A * C * D_N * !Y)	-0.00185	-0.00186	-0.00186
	(!A * C * D_N * !Y)	0.00216	0.00217	0.00217
	(!A * C * !D_N * !Y)	-0.00187	-0.00186	-0.00186
	(!A * C * !D_N * !Y)	0.00219	0.00218	0.00217
	(!A * !C * !D_N * !Y)	-0.00186	-0.00187	-0.00186
	(!A * !C * !D_N * !Y)	0.00206	0.00207	0.00207

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00362	-0.00364	-0.00363
	(A * C * D_N * !Y)	0.00305	0.00307	0.00305
	(A * C * !D_N * !Y)	-0.00362	-0.00364	-0.00363
	(A * C * !D_N * !Y)	0.00316	0.00318	0.00316
	(A * !C * D_N * !Y)	-0.00361	-0.00361	-0.00360
	(A * !C * D_N * !Y)	0.00271	0.00271	0.00271
	(A * !C * !D_N * !Y)	-0.00364	-0.00365	-0.00364
	(A * !C * !D_N * !Y)	0.00302	0.00305	0.00303
	(!A * C * D_N * !Y)	-0.00362	-0.00363	-0.00362
	(!A * C * D_N * !Y)	0.00428	0.00431	0.00430
	(!A * C * !D_N * !Y)	-0.00361	-0.00364	-0.00362
	(!A * C * !D_N * !Y)	0.00426	0.00431	0.00429
	(!A * !C * !D_N * !Y)	-0.00362	-0.00362	-0.00363
	(!A * !C * !D_N * !Y)	0.00407	0.00406	0.00409

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)	0.00106	0.00106	0.00106
	(B * D_N * !Y)	-0.00062	-0.00063	-0.00062
	(B * !D_N * !Y)	0.00090	0.00091	0.00090
	(B * !D_N * !Y)	-0.00088	-0.00088	-0.00088
	(A * !B * D_N * !Y)	0.00106	0.00106	0.00106
	(A * !B * D_N * !Y)	-0.00062	-0.00062	-0.00062
	(A * !B * !D_N * !Y)	0.00092	0.00091	0.00090
	(A * !B * !D_N * !Y)	-0.00090	-0.00090	-0.00090
	(!A * !B * !D_N * !Y)	0.00101	0.00090	0.00090
	(!A * !B * !D_N * !Y)	-0.00105	-0.00118	-0.00119

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00201	0.00202	0.00201
	(B * D_N * !Y)	-0.00128	-0.00128	-0.00128
	(B * !D_N * !Y)	0.00191	0.00193	0.00192
	(B * !D_N * !Y)	-0.00156	-0.00158	-0.00157
	(A * !B * D_N * !Y)	0.00201	0.00202	0.00201
	(A * !B * D_N * !Y)	-0.00127	-0.00127	-0.00127
	(A * !B * !D_N * !Y)	0.00193	0.00191	0.00190
	(A * !B * !D_N * !Y)	-0.00161	-0.00163	-0.00161
	(!A * !B * !D_N * !Y)	0.00211	0.00191	0.00189
	(!A * !B * !D_N * !Y)	-0.00195	-0.00219	-0.00219
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00393	0.00396	0.00394
	(B * D_N * !Y)	-0.00253	-0.00255	-0.00254
	(B * !D_N * !Y)	0.00387	0.00391	0.00387
	(B * !D_N * !Y)	-0.00299	-0.00302	-0.00299
	(A * !B * D_N * !Y)	0.00393	0.00397	0.00394
	(A * !B * D_N * !Y)	-0.00251	-0.00254	-0.00253
	(A * !B * !D_N * !Y)	0.00396	0.00387	0.00385
	(A * !B * !D_N * !Y)	-0.00308	-0.00311	-0.00308
	(!A * !B * !D_N * !Y)	0.00434	0.00388	0.00383
	(!A * !B * !D_N * !Y)	-0.00373	-0.00425	-0.00425

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)**	-0.00104	-0.00104	-0.00104
	(B * D_N * !Y)	0.00064	0.00064	0.00065
	(B * !D_N * !Y)	-0.00090	-0.00090	-0.00089
	(B * !D_N * !Y)	0.00088	0.00088	0.00088
	(A * !B * D_N * !Y)	-0.00098	-0.00099	-0.00103
	(A * !B * D_N * !Y)	0.00067	0.00066	0.00064
	(A * !B * !D_N * !Y)	-0.00089	-0.00090	-0.00089
	(A * !B * !D_N * !Y)	0.00090	0.00090	0.00090
	(!A * !B * !D_N * !Y)	-0.00090	-0.00089	-0.00089
	(!A * !B * !D_N * !Y)	0.00119	0.00119	0.00119
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00198	-0.00198	-0.00198
	(B * D_N * !Y)	0.00131	0.00132	0.00131
	(B * !D_N * !Y)	-0.00190	-0.00191	-0.00190
	(B * !D_N * !Y)	0.00156	0.00158	0.00157
	(A * !B * D_N * !Y)	-0.00181	-0.00183	-0.00194
	(A * !B * D_N * !Y)	0.00139	0.00139	0.00132
	(A * !B * !D_N * !Y)	-0.00190	-0.00191	-0.00190
	(A * !B * !D_N * !Y)	0.00161	0.00163	0.00161
	(!A * !B * !D_N * !Y)	-0.00189	-0.00190	-0.00188
	(!A * !B * !D_N * !Y)	0.00218	0.00219	0.00219
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00384	-0.00389	-0.00389
	(B * D_N * !Y)	0.00259	0.00263	0.00262
	(B * !D_N * !Y)	-0.00384	-0.00387	-0.00384
	(B * !D_N * !Y)	0.00299	0.00302	0.00299
	(A * !B * D_N * !Y)	-0.00354	-0.00359	-0.00382
	(A * !B * D_N * !Y)	0.00273	0.00274	0.00262
	(A * !B * !D_N * !Y)	-0.00385	-0.00387	-0.00384
	(A * !B * !D_N * !Y)	0.00308	0.00311	0.00308
	(!A * !B * !D_N * !Y)	-0.00382	-0.00383	-0.00381
	(!A * !B * !D_N * !Y)	0.00423	0.00425	0.00425

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00269	0.00251	0.00385
	(C * !Y)	0.00061	0.00044	0.00177
	(B * !C * !Y)	0.00276	0.00259	0.00389
	(B * !C * !Y)	0.00065	0.00047	0.00179
	(A * !B * !C * !Y)	0.00284	0.00267	0.00395
	(A * !B * !C * !Y)	0.00069	0.00051	0.00182
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00349	0.00328	0.00442
	(C * !Y)	0.00113	0.00092	0.00206
	(B * !C * !Y)	0.00365	0.00344	0.00453
	(B * !C * !Y)	0.00121	0.00100	0.00211
	(A * !B * !C * !Y)	0.00387	0.00366	0.00468
	(A * !B * !C * !Y)	0.00135	0.00113	0.00220
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00538	0.00504	0.00691
	(C * !Y)	0.00190	0.00155	0.00343
	(B * !C * !Y)	0.00570	0.00536	0.00712
	(B * !C * !Y)	0.00208	0.00172	0.00354
	(A * !B * !C * !Y)	0.00612	0.00576	0.00741
	(A * !B * !C * !Y)	0.00233	0.00196	0.00370

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00089	0.00091	0.00280
	(C * !Y)	0.00297	0.00298	0.00488
	(B * !C * !Y)	0.00089	0.00091	0.00280
	(B * !C * !Y)	0.00297	0.00298	0.00488
	(A * !B * !C * !Y)	0.00089	0.00091	0.00280
	(A * !B * !C * !Y)	0.00297	0.00299	0.00488
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00179	0.00173	0.00333
	(C * !Y)	0.00414	0.00409	0.00568
	(B * !C * !Y)	0.00179	0.00173	0.00333
	(B * !C * !Y)	0.00414	0.00409	0.00568
	(A * !B * !C * !Y)	0.00179	0.00173	0.00333
	(A * !B * !C * !Y)	0.00414	0.00409	0.00568
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00371	0.00372	0.00682
	(C * !Y)	0.00718	0.00719	0.01028
	(B * !C * !Y)	0.00371	0.00373	0.00682
	(B * !C * !Y)	0.00718	0.00720	0.01029
	(A * !B * !C * !Y)	0.00371	0.00373	0.00682
	(A * !B * !C * !Y)	0.00718	0.00720	0.01029

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00255	0.00272	0.00271	0.00275	0.14325
sky130_fd_sc_hs__nor4_2	0.00393	0.00454	0.00450	0.00421	0.27062
sky130_fd_sc_hs__nor4_4	0.00777	0.00814	0.00793	0.00809	0.49135

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	0.00386	0.01811
sky130_fd_sc_hs__nor4_2	0.00000	0.00681	0.03622
sky130_fd_sc_hs__nor4_4	0.00000	0.01362	0.07244

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)	0.40206	1.82345	11.62300
	B->Y (FR)	0.38462	1.79801	11.86390
	C->Y (FR)	0.32564	1.74005	12.09320
	D->Y (FR)	0.22825	1.60252	11.58570
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.33232	1.55197	11.61640
	B->Y (FR)	0.30726	1.51560	11.82900
	C->Y (FR)	0.23441	1.44067	12.04290
	D->Y (FR)	0.12079	1.28631	11.49470
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.36054	1.39349	11.34870
	B->Y (FR)	0.33560	1.35577	11.59460
	C->Y (FR)	0.26900	1.29155	11.88230
	D->Y (FR)	0.14578	1.13247	11.37080

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.03002	0.39097	3.03732
	B->Y (RF)	0.03208	0.39637	3.07703
	C->Y (RF)	0.03285	0.38930	3.06662
	D->Y (RF)	0.02971	0.37605	3.03450
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.03713	0.47926	4.13516
	B->Y (RF)	0.04131	0.48376	4.19271
	C->Y (RF)	0.04186	0.46632	4.16388
	D->Y (RF)	0.03417	0.43802	4.05673
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.03843	0.43317	3.96020
	B->Y (RF)	0.04073	0.42952	3.96328
	C->Y (RF)	0.04224	0.42066	3.98870
	D->Y (RF)	0.03422	0.39658	3.95055

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00027	0.00018	0.00018
	A	0.00471	0.00464	0.00463
	B	0.00034	0.00025	0.00025
	B	0.00427	0.00418	0.00417
	C	0.00034	0.00024	0.00026
	C	0.00374	0.00364	0.00367
	D	0.00029	0.00021	0.00051
	D	0.00326	0.00319	0.00347
sky130_fd_sc_hs__nor4_2	A	0.00031	0.00023	0.00023
	A	0.00773	0.00766	0.00766
	B	0.00010	0.00001	0.00002
	B	0.00689	0.00681	0.00680
	C	0.00027	0.00015	0.00018
	C	0.00578	0.00568	0.00570
	D	0.00009	0.00002	0.00043
	D	0.00452	0.00447	0.00486
sky130_fd_sc_hs__nor4_4	A	0.00236	0.00218	0.00219
	A	0.01752	0.01737	0.01736
	B	0.00242	0.00220	0.00222
	B	0.01554	0.01534	0.01534
	C	0.00246	0.00225	0.00232
	C	0.01332	0.01311	0.01319
	D	0.00232	0.00213	0.00291
	D	0.01105	0.01087	0.01134

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00588	0.00577	0.00575
	A	0.00157	0.00145	0.00147
	B	0.00495	0.00487	0.00488
	B	0.00113	0.00102	0.00105
	C	0.00393	0.00388	0.00393
	C	0.00057	0.00050	0.00056
	D	0.00286	0.00286	0.00294
	D	-0.00010	-0.00010	-0.00003
sky130_fd_sc_hs__nor4_2	A	0.01010	0.00983	0.00973
	A	0.00302	0.00275	0.00270
	B	0.00855	0.00830	0.00825
	B	0.00196	0.00172	0.00170
	C	0.00606	0.00593	0.00597
	C	0.00062	0.00048	0.00052
	D	0.00369	0.00372	0.00383
	D	-0.00074	-0.00073	-0.00060
sky130_fd_sc_hs__nor4_4	A	0.02041	0.01986	0.01963
	A	0.00593	0.00537	0.00529
	B	0.01633	0.01583	0.01576
	B	0.00357	0.00307	0.00311
	C	0.01212	0.01176	0.01189
	C	0.00144	0.00104	0.00121
	D	0.00726	0.00718	0.00751
	D	-0.00145	-0.00158	-0.00123

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00094	0.00094	0.00093
	(B * D * !Y)	-0.00104	-0.00107	-0.00106
	(B * C * !D * !Y)	0.00094	0.00094	0.00093
	(B * C * !D * !Y)	-0.00104	-0.00107	-0.00106
	(B * !C * !D * !Y)	0.00094	0.00094	0.00093
	(B * !C * !D * !Y)	-0.00103	-0.00107	-0.00106
	(!B * C * D * !Y)	0.00094	0.00094	0.00093
	(!B * C * D * !Y)	-0.00097	-0.00102	-0.00102
	(!B * C * !D * !Y)	0.00094	0.00094	0.00093
	(!B * C * !D * !Y)	-0.00097	-0.00102	-0.00102
	(!B * !C * D * !Y)	0.00093	0.00095	0.00093
	(!B * !C * D * !Y)	-0.00096	-0.00101	-0.00100
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00094	0.00094	0.00093
	(B * D * !Y)	-0.00201	-0.00208	-0.00206
	(B * C * !D * !Y)	0.00094	0.00094	0.00093
	(B * C * !D * !Y)	-0.00201	-0.00208	-0.00206
	(B * !C * !D * !Y)	0.00094	0.00094	0.00093
	(B * !C * !D * !Y)	-0.00199	-0.00206	-0.00206
	(!B * C * D * !Y)	0.00094	0.00094	0.00093
	(!B * C * D * !Y)	-0.00185	-0.00197	-0.00196
	(!B * C * !D * !Y)	0.00094	0.00094	0.00093
	(!B * C * !D * !Y)	-0.00185	-0.00197	-0.00196
	(!B * !C * D * !Y)	0.00093	0.00094	0.00093
	(!B * !C * D * !Y)	-0.00182	-0.00193	-0.00193

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00195	0.00196	0.00194
	(B * D * !Y)	-0.00410	-0.00424	-0.00422
	(B * C * !D * !Y)	0.00195	0.00196	0.00194
	(B * C * !D * !Y)	-0.00410	-0.00424	-0.00422
	(B * !C * !D * !Y)	0.00195	0.00196	0.00194
	(B * !C * !D * !Y)	-0.00407	-0.00425	-0.00422
	(!B * C * D * !Y)	0.00195	0.00196	0.00194
	(!B * C * D * !Y)	-0.00382	-0.00405	-0.00404
	(!B * C * !D * !Y)	0.00195	0.00196	0.00194
	(!B * C * !D * !Y)	-0.00382	-0.00405	-0.00404
	(!B * !C * D * !Y)	0.00196	0.00196	0.00195
	(!B * !C * D * !Y)	-0.00377	-0.00398	-0.00397

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00094	-0.00094	-0.00093
	(B * D * !Y)	0.00107	0.00107	0.00106
	(B * C * !D * !Y)	-0.00094	-0.00094	-0.00093
	(B * C * !D * !Y)	0.00107	0.00107	0.00106
	(B * !C * !D * !Y)	-0.00093	-0.00094	-0.00093
	(B * !C * !D * !Y)	0.00106	0.00107	0.00106
	(!B * C * D * !Y)	-0.00094	-0.00093	-0.00093
	(!B * C * D * !Y)	0.00103	0.00102	0.00102
	(!B * C * !D * !Y)	-0.00093	-0.00093	-0.00093
	(!B * C * !D * !Y)	0.00102	0.00102	0.00102
	(!B * !C * D * !Y)	-0.00093	-0.00093	-0.00093
	(!B * !C * D * !Y)	0.00101	0.00101	0.00100

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00093	-0.00093	-0.00093
	(B * D * !Y)	0.00207	0.00208	0.00206
	(B * C * !D * !Y)	-0.00093	-0.00093	-0.00093
	(B * C * !D * !Y)	0.00207	0.00208	0.00206
	(B * !C * !D * !Y)	-0.00093	-0.00093	-0.00093
	(B * !C * !D * !Y)	0.00206	0.00206	0.00206
	(!B * C * D * !Y)	-0.00093	-0.00094	-0.00093
	(!B * C * D * !Y)	0.00197	0.00197	0.00196
	(!B * C * !D * !Y)	-0.00093	-0.00094	-0.00093
	(!B * C * !D * !Y)	0.00197	0.00197	0.00196
	(!B * !C * D * !Y)	-0.00093	-0.00093	-0.00093
	(!B * !C * D * !Y)	0.00191	0.00193	0.00193
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00195	-0.00195	-0.00194
	(B * D * !Y)	0.00424	0.00424	0.00422
	(B * C * !D * !Y)	-0.00194	-0.00194	-0.00194
	(B * C * !D * !Y)	0.00423	0.00424	0.00422
	(B * !C * !D * !Y)	-0.00194	-0.00195	-0.00194
	(B * !C * !D * !Y)	0.00423	0.00425	0.00422
	(!B * C * D * !Y)	-0.00194	-0.00195	-0.00194
	(!B * C * D * !Y)	0.00403	0.00405	0.00404
	(!B * C * !D * !Y)	-0.00194	-0.00195	-0.00194
	(!B * C * !D * !Y)	0.00402	0.00405	0.00404
	(!B * !C * D * !Y)	-0.00193	-0.00195	-0.00194
	(!B * !C * D * !Y)	0.00393	0.00398	0.00397

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)**	0.00090	0.00090	0.00090
	(A * C * D * !Y)	-0.00079	-0.00079	-0.00079
	(A * C * !D * !Y)	0.00090	0.00090	0.00090
	(A * C * !D * !Y)	-0.00076	-0.00076	-0.00076
	(A * !C * D * !Y)	0.00090	0.00091	0.00090
	(A * !C * D * !Y)	-0.00075	-0.00076	-0.00075
	(A * !C * !D * !Y)	0.00090	0.00090	0.00090
	(A * !C * !D * !Y)	-0.00067	-0.00067	-0.00067
	(!A * C * D * !Y)	0.00090	0.00091	0.00090
	(!A * C * D * !Y)	-0.00104	-0.00107	-0.00106
	(!A * C * !D * !Y)	0.00090	0.00091	0.00090
	(!A * C * !D * !Y)	-0.00103	-0.00107	-0.00106
	(!A * !C * D * !Y)	0.00090	0.00091	0.00090
	(!A * !C * D * !Y)	-0.00095	-0.00102	-0.00101
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00119	0.00120	0.00119
	(A * C * D * !Y)	-0.00161	-0.00162	-0.00161
	(A * C * !D * !Y)	0.00120	0.00119	0.00119
	(A * C * !D * !Y)	-0.00155	-0.00155	-0.00154
	(A * !C * D * !Y)	0.00118	0.00120	0.00118
	(A * !C * D * !Y)	-0.00152	-0.00153	-0.00152
	(A * !C * !D * !Y)	0.00118	0.00118	0.00118
	(A * !C * !D * !Y)	-0.00136	-0.00136	-0.00136
	(!A * C * D * !Y)	0.00119	0.00119	0.00117
	(!A * C * D * !Y)	-0.00209	-0.00215	-0.00215
	(!A * C * !D * !Y)	0.00120	0.00119	0.00117
	(!A * C * !D * !Y)	-0.00207	-0.00217	-0.00215
	(!A * !C * D * !Y)	0.00119	0.00119	0.00117
	(!A * !C * D * !Y)	-0.00191	-0.00204	-0.00204

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00202	0.00203	0.00201
	(A * C * D * !Y)	-0.00319	-0.00321	-0.00319
	(A * C * !D * !Y)	0.00202	0.00203	0.00201
	(A * C * !D * !Y)	-0.00308	-0.00310	-0.00309
	(A * !C * D * !Y)	0.00202	0.00202	0.00203
	(A * !C * D * !Y)	-0.00302	-0.00305	-0.00303
	(A * !C * !D * !Y)	0.00203	0.00202	0.00201
	(A * !C * !D * !Y)	-0.00273	-0.00271	-0.00270
	(!A * C * D * !Y)	0.00203	0.00203	0.00201
	(!A * C * D * !Y)	-0.00425	-0.00437	-0.00435
	(!A * C * !D * !Y)	0.00205	0.00203	0.00201
	(!A * C * !D * !Y)	-0.00420	-0.00436	-0.00435
	(!A * !C * D * !Y)	0.00205	0.00204	0.00201
	(!A * !C * D * !Y)	-0.00388	-0.00415	-0.00411

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)**	-0.00089	-0.00090	-0.00090
	(A * C * D * !Y)	0.00079	0.00079	0.00079
	(A * C * !D * !Y)	-0.00089	-0.00090	-0.00090
	(A * C * !D * !Y)	0.00076	0.00076	0.00076
	(A * !C * D * !Y)	-0.00089	-0.00090	-0.00090
	(A * !C * D * !Y)	0.00075	0.00076	0.00075
	(A * !C * !D * !Y)	-0.00090	-0.00090	-0.00089
	(A * !C * !D * !Y)	0.00068	0.00068	0.00068
	(!A * C * D * !Y)	-0.00090	-0.00090	-0.00090
	(!A * C * D * !Y)	0.00107	0.00107	0.00106
	(!A * C * !D * !Y)	-0.00089	-0.00090	-0.00090
	(!A * C * !D * !Y)	0.00106	0.00107	0.00106
	(!A * !C * D * !Y)	-0.00090	-0.00090	-0.00089
	(!A * !C * D * !Y)	0.00101	0.00102	0.00101
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00118	-0.00119	-0.00118
	(A * C * D * !Y)	0.00161	0.00162	0.00161
	(A * C * !D * !Y)	-0.00118	-0.00119	-0.00118
	(A * C * !D * !Y)	0.00155	0.00155	0.00154
	(A * !C * D * !Y)	-0.00118	-0.00118	-0.00117
	(A * !C * D * !Y)	0.00152	0.00153	0.00152
	(A * !C * !D * !Y)	-0.00118	-0.00118	-0.00118
	(A * !C * !D * !Y)	0.00139	0.00138	0.00138
	(!A * C * D * !Y)	-0.00117	-0.00118	-0.00117
	(!A * C * D * !Y)	0.00214	0.00215	0.00215
	(!A * C * !D * !Y)	-0.00117	-0.00118	-0.00117
	(!A * C * !D * !Y)	0.00215	0.00217	0.00215
	(!A * !C * D * !Y)	-0.00117	-0.00117	-0.00117
	(!A * !C * D * !Y)	0.00203	0.00204	0.00204

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	-0.00200	-0.00201	-0.00201
	(A * C * D * !Y)	0.00319	0.00321	0.00319
	(A * C * !D * !Y)	-0.00200	-0.00201	-0.00201
	(A * C * !D * !Y)	0.00308	0.00310	0.00309
	(A * !C * D * !Y)	-0.00201	-0.00202	-0.00202
	(A * !C * D * !Y)	0.00302	0.00305	0.00303
	(A * !C * !D * !Y)	-0.00200	-0.00200	-0.00199
	(A * !C * !D * !Y)	0.00275	0.00275	0.00275
	(!A * C * D * !Y)	-0.00201	-0.00201	-0.00201
	(!A * C * D * !Y)	0.00436	0.00437	0.00435
	(!A * C * !D * !Y)	-0.00201	-0.00201	-0.00201
	(!A * C * !D * !Y)	0.00437	0.00436	0.00435
	(!A * !C * D * !Y)	-0.00202	-0.00203	-0.00201
	(!A * !C * D * !Y)	0.00412	0.00415	0.00411

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00092	0.00092	0.00091
	(B * D * !Y)	-0.00072	-0.00072	-0.00072
	(B * !D * !Y)	0.00091	0.00092	0.00091
	(B * !D * !Y)	-0.00063	-0.00063	-0.00063
	(A * !B * D * !Y)	0.00094	0.00093	0.00091
	(A * !B * D * !Y)	-0.00074	-0.00074	-0.00074
	(A * !B * !D * !Y)	0.00091	0.00092	0.00091
	(A * !B * !D * !Y)	-0.00063	-0.00063	-0.00063
	(!A * !B * D * !Y)	0.00104	0.00092	0.00091
	(!A * !B * D * !Y)	-0.00090	-0.00103	-0.00103

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00118	0.00119	0.00117
	(B * D * !Y)	-0.00146	-0.00147	-0.00146
	(B * !D * !Y)	0.00117	0.00117	0.00116
	(B * !D * !Y)	-0.00128	-0.00128	-0.00128
	(A * !B * D * !Y)	0.00122	0.00119	0.00116
	(A * !B * D * !Y)	-0.00150	-0.00151	-0.00150
	(A * !B * !D * !Y)	0.00117	0.00118	0.00116
	(A * !B * !D * !Y)	-0.00128	-0.00128	-0.00128
	(!A * !B * D * !Y)	0.00140	0.00117	0.00116
	(!A * !B * D * !Y)	-0.00183	-0.00211	-0.00211
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00199	0.00198	0.00195
	(B * D * !Y)	-0.00291	-0.00295	-0.00293
	(B * !D * !Y)	0.00194	0.00195	0.00193
	(B * !D * !Y)	-0.00261	-0.00262	-0.00262
	(A * !B * D * !Y)	0.00205	0.00194	0.00194
	(A * !B * D * !Y)	-0.00301	-0.00304	-0.00302
	(A * !B * !D * !Y)	0.00198	0.00196	0.00194
	(A * !B * !D * !Y)	-0.00264	-0.00261	-0.00261
	(!A * !B * D * !Y)	0.00247	0.00196	0.00192
	(!A * !B * D * !Y)	-0.00363	-0.00423	-0.00425

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00091	-0.00091	-0.00091
	(B * D * !Y)	0.00072	0.00072	0.00072
	(B * !D * !Y)	-0.00090	-0.00090	-0.00089
	(B * !D * !Y)	0.00065	0.00065	0.00065
	(A * !B * D * !Y)	-0.00091	-0.00091	-0.00091
	(A * !B * D * !Y)	0.00074	0.00074	0.00074
	(A * !B * !D * !Y)	-0.00085	-0.00086	-0.00089
	(A * !B * !D * !Y)	0.00067	0.00067	0.00065
	(!A * !B * D * !Y)	-0.00091	-0.00091	-0.00090
	(!A * !B * D * !Y)	0.00104	0.00103	0.00103
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00116	-0.00117	-0.00117
	(B * D * !Y)	0.00146	0.00147	0.00146
	(B * !D * !Y)	-0.00113	-0.00113	-0.00112
	(B * !D * !Y)	0.00133	0.00133	0.00133
	(A * !B * D * !Y)	-0.00116	-0.00117	-0.00116
	(A * !B * D * !Y)	0.00150	0.00151	0.00150
	(A * !B * !D * !Y)	-0.00101	-0.00102	-0.00112
	(A * !B * !D * !Y)	0.00140	0.00139	0.00132
	(!A * !B * D * !Y)	-0.00114	-0.00115	-0.00114
	(!A * !B * D * !Y)	0.00209	0.00211	0.00211
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00193	-0.00195	-0.00194
	(B * D * !Y)	0.00291	0.00295	0.00293
	(B * !D * !Y)	-0.00190	-0.00190	-0.00189
	(B * !D * !Y)	0.00269	0.00269	0.00269
	(A * !B * D * !Y)	-0.00193	-0.00194	-0.00194
	(A * !B * D * !Y)	0.00301	0.00304	0.00302
	(A * !B * !D * !Y)	-0.00170	-0.00171	-0.00183
	(A * !B * !D * !Y)	0.00277	0.00275	0.00269
	(!A * !B * D * !Y)	-0.00192	-0.00192	-0.00190
	(!A * !B * D * !Y)	0.00423	0.00423	0.00425

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00105	0.00106	0.00106
	(C * !Y)	-0.00058	-0.00058	-0.00058
	(B * !C * !Y)	0.00106	0.00106	0.00106
	(B * !C * !Y)	-0.00058	-0.00058	-0.00057
	(A * !B * !C * !Y)	0.00106	0.00106	0.00106
	(A * !B * !C * !Y)	-0.00058	-0.00058	-0.00058
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00129	0.00131	0.00129
	(C * !Y)	-0.00114	-0.00116	-0.00114
	(B * !C * !Y)	0.00129	0.00131	0.00129
	(B * !C * !Y)	-0.00113	-0.00115	-0.00114
	(A * !B * !C * !Y)	0.00129	0.00131	0.00129
	(A * !B * !C * !Y)	-0.00113	-0.00115	-0.00114
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00244	0.00244	0.00243
	(C * !Y)	-0.00229	-0.00229	-0.00228
	(B * !C * !Y)	0.00244	0.00244	0.00243
	(B * !C * !Y)	-0.00229	-0.00228	-0.00227
	(A * !B * !C * !Y)	0.00243	0.00245	0.00243
	(A * !B * !C * !Y)	-0.00228	-0.00229	-0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00100	-0.00101	-0.00105
	(C * !Y)	0.00063	0.00062	0.00059
	(B * !C * !Y)	-0.00094	-0.00094	-0.00104
	(B * !C * !Y)	0.00067	0.00067	0.00060
	(A * !B * !C * !Y)	-0.00085	-0.00086	-0.00101
	(A * !B * !C * !Y)	0.00072	0.00072	0.00061
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00118	-0.00120	-0.00128
	(C * !Y)	0.00124	0.00125	0.00117
	(B * !C * !Y)	-0.00100	-0.00102	-0.00124
	(B * !C * !Y)	0.00134	0.00135	0.00118
	(A * !B * !C * !Y)	-0.00082	-0.00084	-0.00119
	(A * !B * !C * !Y)	0.00146	0.00146	0.00122
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00218	-0.00220	-0.00240
	(C * !Y)	0.00251	0.00250	0.00234
	(B * !C * !Y)	-0.00189	-0.00191	-0.00233
	(B * !C * !Y)	0.00269	0.00267	0.00237
	(A * !B * !C * !Y)	-0.00147	-0.00150	-0.00221
	(A * !B * !C * !Y)	0.00295	0.00292	0.00244

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00257	0.00269	0.00261	0.00278	0.00271	0.30342
sky130_fd_sc_hs__o2111ai_2	0.00497	0.00503	0.00522	0.00509	0.00507	0.55970
sky130_fd_sc_hs__o2111ai_4	0.00991	0.01006	0.00765	0.00772	0.00765	1.00387

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	0.00739	0.07244
sky130_fd_sc_hs__o2111ai_2	0.00000	0.01478	0.14489
sky130_fd_sc_hs__o2111ai_4	0.00000	0.01937	0.18111

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)	0.25955	1.45992	12.21860
	A2->Y (FR)	0.23764	1.40755	12.01590
	B1->Y (FR)	0.09616	0.90154	8.54660
	C1->Y (FR)	0.08471	0.88945	8.54020
	D1->Y (FR)	0.07084	0.87512	8.52230
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.25824	1.29647	12.11470
	A2->Y (FR)	0.22420	1.23257	11.91180
	B1->Y (FR)	0.08897	0.81342	8.38161
	C1->Y (FR)	0.07595	0.79851	8.36133
	D1->Y (FR)	0.05839	0.77924	8.33027
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.26252	1.16870	11.97720
	A2->Y (FR)	0.22387	1.10437	11.81280
	B1->Y (FR)	0.15453	1.00353	11.13530
	C1->Y (FR)	0.11965	0.94358	10.74470
	D1->Y (FR)	0.08979	0.93354	11.05590

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.11086	0.69238	5.77253
	A2->Y (RF)	0.09516	0.66542	5.67654
	B1->Y (RF)	0.10311	0.71600	6.23641
	C1->Y (RF)	0.09338	0.74106	6.65414
	D1->Y (RF)	0.07863	0.73506	6.81828
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.11933	0.64201	5.90445
	A2->Y (RF)	0.09860	0.61075	5.80897
	B1->Y (RF)	0.11076	0.66193	6.36012
	C1->Y (RF)	0.09859	0.70251	6.99617
	D1->Y (RF)	0.07519	0.69244	7.15867
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.11197	0.55368	5.61386
	A2->Y (RF)	0.09813	0.53920	5.71066
	B1->Y (RF)	0.08471	0.56456	6.30021
	C1->Y (RF)	0.07284	0.59892	6.89316
	D1->Y (RF)	0.04913	0.59183	7.13087

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00138	0.00128	0.00127
	A1	0.00632	0.00622	0.00621
	A2	0.00141	0.00130	0.00145
	A2	0.00581	0.00571	0.00585
	B1	0.00076	0.00067	0.00083
	B1	0.00499	0.00490	0.00504
	C1	0.00038	0.00029	0.00044
	C1	0.00416	0.00407	0.00422
	D1	0.00007	0.00000	0.00016
	D1	0.00331	0.00325	0.00344
sky130_fd_sc_hs__o2111ai_2	A1	0.00220	0.00199	0.00197
	A1	0.01210	0.01191	0.01187
	A2	0.00222	0.00198	0.00230
	A2	0.01096	0.01073	0.01100
	B1	0.00095	0.00078	0.00109
	B1	0.00965	0.00940	0.00970
	C1	0.00032	0.00008	0.00044
	C1	0.00784	0.00760	0.00725
	D1	-0.00085	-0.00098	-0.00056
	D1	0.00554	0.00542	0.00595

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00390	0.00342	0.00342
	A1	0.02325	0.02271	0.02275
	A2	0.00381	0.00341	0.00402
	A2	0.02115	0.02075	0.02127
	B1	0.00168	0.00119	0.00161
	B1	0.01646	0.01589	0.01631
	C1	0.00049	-0.00012	0.00039
	C1	0.01307	0.01223	0.01294
	D1	-0.00150	-0.00182	-0.00126
	D1	0.00883	0.00827	0.00908

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.00645	0.00637	0.00638
	A1	0.00133	0.00125	0.00125
	A2	0.00543	0.00539	0.00555
	A2	0.00082	0.00077	0.00078
	B1	0.00568	0.00561	0.00570
	B1	0.00140	0.00131	0.00132
	C1	0.00518	0.00510	0.00514
	C1	0.00140	0.00131	0.00132
	D1	0.00456	0.00448	0.00452
	D1	0.00137	0.00128	0.00132

sky130_fd_sc_hs__o2111ai_2	**A1**	0.01325	0.01304	0.01339
	A1	0.00297	0.00276	0.00277
	A2	0.01069	0.01059	0.01064
	A2	0.00150	0.00138	0.00146
	B1	0.01178	0.01162	0.01200
	B1	0.00298	0.00279	0.00281
	C1	0.01054	0.01036	0.01049
	C1	0.00301	0.00283	0.00287
	D1	0.00926	0.00904	0.00930
	D1	0.00296	0.00277	0.00289
sky130_fd_sc_hs__o2111ai_4	**A1**	0.02528	0.02480	0.02505
	A1	0.00518	0.00468	0.00474
	A2	0.02024	0.01998	0.02017
	A2	0.00203	0.00174	0.00198
	B1	0.02159	0.02146	0.02142
	B1	0.00655	0.00639	0.00641
	C1	0.01927	0.01915	0.01940
	C1	0.00661	0.00645	0.00647
	D1	0.01671	0.01655	0.01684
	D1	0.00657	0.00638	0.00649

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)**	0.00103	0.00095	0.00094
	(A2 * B1 * C1 * D1 * !Y)	-0.00096	-0.00106	-0.00107
	(A2 * B1 * C1 * !D1 * Y)	0.00093	0.00094	0.00093
	(A2 * B1 * C1 * !D1 * Y)	-0.00105	-0.00107	-0.00107
	(A2 * B1 * !C1 * Y)	0.00093	0.00094	0.00093
	(A2 * B1 * !C1 * Y)	-0.00105	-0.00107	-0.00107
	(A2 * !B1 * Y)	0.00094	0.00094	0.00093
	(A2 * !B1 * Y)	-0.00105	-0.00107	-0.00107
	(!A2 * B1 * C1 * !D1 * Y)	0.00085	0.00086	0.00085
	(!A2 * B1 * C1 * !D1 * Y)	-0.00108	-0.00109	-0.00108
	(!A2 * B1 * !C1 * D1 * Y)	0.00085	0.00086	0.00085
	(!A2 * B1 * !C1 * D1 * Y)	-0.00108	-0.00109	-0.00108
	(!A2 * B1 * !C1 * !D1 * Y)	0.00086	0.00087	0.00086
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00109	-0.00109	-0.00108
	(!A2 * !B1 * C1 * D1 * Y)	0.00087	0.00088	0.00087
	(!A2 * !B1 * C1 * D1 * Y)	-0.00108	-0.00109	-0.00108
	(!A2 * !B1 * !D1 * Y)	0.00087	0.00087	0.00087
	(!A2 * !B1 * !D1 * Y)	-0.00108	-0.00108	-0.00108
	(!A2 * !B1 * !C1 * D1 * Y)	0.00087	0.00087	0.00087
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00108	-0.00108	-0.00108

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00198	0.00183	0.00181
	(A2 * B1 * C1 * D1 * !Y)	-0.00193	-0.00214	-0.00214
	(A2 * B1 * C1 * !D1 * Y)	0.00180	0.00182	0.00181
	(A2 * B1 * C1 * !D1 * Y)	-0.00210	-0.00216	-0.00215
	(A2 * B1 * !C1 * Y)	0.00180	0.00182	0.00181
	(A2 * B1 * !C1 * Y)	-0.00210	-0.00216	-0.00215
	(A2 * !B1 * Y)	0.00180	0.00182	0.00181
	(A2 * !B1 * Y)	-0.00210	-0.00216	-0.00215
	(!A2 * B1 * C1 * !D1 * Y)	0.00163	0.00164	0.00163
	(!A2 * B1 * C1 * !D1 * Y)	-0.00219	-0.00220	-0.00219
	(!A2 * B1 * !C1 * D1 * Y)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * D1 * Y)	-0.00219	-0.00220	-0.00219
	(!A2 * B1 * !C1 * !D1 * Y)	0.00164	0.00165	0.00165
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00219	-0.00220	-0.00219
	(!A2 * !B1 * C1 * D1 * Y)	0.00167	0.00169	0.00168
	(!A2 * !B1 * C1 * D1 * Y)	-0.00219	-0.00220	-0.00219
	(!A2 * !B1 * !D1 * Y)	0.00167	0.00169	0.00168
	(!A2 * !B1 * !D1 * Y)	-0.00219	-0.00220	-0.00219
	(!A2 * !B1 * !C1 * D1 * Y)	0.00167	0.00169	0.00168
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00219	-0.00220	-0.00219

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00397	0.00372	0.00368
	(A2 * B1 * C1 * D1 * !Y)	-0.00379	-0.00414	-0.00415
	(A2 * B1 * C1 * !D1 * Y)	0.00353	0.00355	0.00353
	(A2 * B1 * C1 * !D1 * Y)	-0.00421	-0.00431	-0.00431
	(A2 * B1 * !C1 * Y)	0.00353	0.00355	0.00353
	(A2 * B1 * !C1 * Y)	-0.00421	-0.00431	-0.00431
	(A2 * !B1 * Y)	0.00353	0.00356	0.00353
	(A2 * !B1 * Y)	-0.00421	-0.00431	-0.00431
	(!A2 * B1 * C1 * !D1 * Y)	0.00320	0.00319	0.00318
	(!A2 * B1 * C1 * !D1 * Y)	-0.00438	-0.00437	-0.00437
	(!A2 * B1 * !C1 * D1 * Y)	0.00322	0.00322	0.00321
	(!A2 * B1 * !C1 * D1 * Y)	-0.00438	-0.00438	-0.00437
	(!A2 * B1 * !C1 * !D1 * Y)	0.00322	0.00322	0.00321
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00438	-0.00438	-0.00437
	(!A2 * !B1 * C1 * D1 * Y)	0.00326	0.00328	0.00327
	(!A2 * !B1 * C1 * D1 * Y)	-0.00436	-0.00438	-0.00437
	(!A2 * !B1 * !D1 * Y)	0.00326	0.00329	0.00327
	(!A2 * !B1 * !D1 * Y)	-0.00436	-0.00438	-0.00437
	(!A2 * !B1 * !C1 * D1 * Y)	0.00326	0.00329	0.00327
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00436	-0.00438	-0.00437

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)**	-0.00093	-0.00094	-0.00093
	(A2 * B1 * C1 * D1 * !Y)	0.00107	0.00108	0.00107
	(A2 * B1 * C1 * !D1 * Y)	-0.00093	-0.00094	-0.00093
	(A2 * B1 * C1 * !D1 * Y)	0.00107	0.00107	0.00107
	(A2 * B1 * !C1 * Y)	-0.00093	-0.00094	-0.00093
	(A2 * B1 * !C1 * Y)	0.00107	0.00107	0.00107
	(A2 * !B1 * Y)	-0.00093	-0.00094	-0.00093
	(A2 * !B1 * Y)	0.00107	0.00107	0.00107
	(!A2 * B1 * C1 * !D1 * Y)	-0.00079	-0.00086	-0.00085
	(!A2 * B1 * C1 * !D1 * Y)	0.00109	0.00109	0.00109
	(!A2 * B1 * !C1 * D1 * Y)	-0.00081	-0.00086	-0.00085
	(!A2 * B1 * !C1 * D1 * Y)	0.00109	0.00109	0.00109
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00081	-0.00087	-0.00086
	(!A2 * B1 * !C1 * !D1 * Y)	0.00109	0.00109	0.00109
	(!A2 * !B1 * C1 * D1 * Y)	-0.00084	-0.00088	-0.00087
	(!A2 * !B1 * C1 * D1 * Y)	0.00109	0.00110	0.00109
	(!A2 * !B1 * !D1 * Y)	-0.00084	-0.00087	-0.00087
	(!A2 * !B1 * !D1 * Y)	0.00109	0.00110	0.00109
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00084	-0.00087	-0.00087
	(!A2 * !B1 * !C1 * D1 * Y)	0.00109	0.00110	0.00109

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00181	-0.00181	-0.00180
	(A2 * B1 * C1 * D1 * !Y)	0.00214	0.00215	0.00214
	(A2 * B1 * C1 * !D1 * Y)	-0.00180	-0.00181	-0.00180
	(A2 * B1 * C1 * !D1 * Y)	0.00215	0.00216	0.00215
	(A2 * B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180
	(A2 * B1 * !C1 * Y)	0.00215	0.00216	0.00215
	(A2 * !B1 * Y)	-0.00180	-0.00181	-0.00180
	(A2 * !B1 * Y)	0.00214	0.00216	0.00215
	(!A2 * B1 * C1 * !D1 * Y)	-0.00152	-0.00164	-0.00163
	(!A2 * B1 * C1 * !D1 * Y)	0.00221	0.00222	0.00220
	(!A2 * B1 * !C1 * D1 * Y)	-0.00154	-0.00166	-0.00165
	(!A2 * B1 * !C1 * D1 * Y)	0.00220	0.00222	0.00220
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00154	-0.00165	-0.00165
	(!A2 * B1 * !C1 * !D1 * Y)	0.00220	0.00222	0.00220
	(!A2 * !B1 * C1 * D1 * Y)	-0.00159	-0.00169	-0.00168
	(!A2 * !B1 * C1 * D1 * Y)	0.00219	0.00221	0.00220
	(!A2 * !B1 * !D1 * Y)	-0.00159	-0.00169	-0.00168
	(!A2 * !B1 * !D1 * Y)	0.00219	0.00221	0.00220
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00159	-0.00169	-0.00168
	(!A2 * !B1 * !C1 * D1 * Y)	0.00219	0.00221	0.00220

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00369	-0.00368	-0.00368
	(A2 * B1 * C1 * D1 * !Y)	0.00415	0.00414	0.00415
	(A2 * B1 * C1 * !D1 * Y)	-0.00353	-0.00352	-0.00352
	(A2 * B1 * C1 * !D1 * Y)	0.00432	0.00431	0.00431
	(A2 * B1 * !C1 * Y)	-0.00353	-0.00352	-0.00352
	(A2 * B1 * !C1 * Y)	0.00433	0.00431	0.00431
	(A2 * !B1 * Y)	-0.00352	-0.00352	-0.00352
	(A2 * !B1 * Y)	0.00429	0.00431	0.00431
	(!A2 * B1 * C1 * !D1 * Y)	-0.00293	-0.00319	-0.00318
	(!A2 * B1 * C1 * !D1 * Y)	0.00438	0.00441	0.00438
	(!A2 * B1 * !C1 * D1 * Y)	-0.00298	-0.00322	-0.00321
	(!A2 * B1 * !C1 * D1 * Y)	0.00438	0.00442	0.00438
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00298	-0.00322	-0.00321
	(!A2 * B1 * !C1 * !D1 * Y)	0.00438	0.00442	0.00438
	(!A2 * !B1 * C1 * D1 * Y)	-0.00311	-0.00328	-0.00327
	(!A2 * !B1 * C1 * D1 * Y)	0.00438	0.00441	0.00438
	(!A2 * !B1 * !D1 * Y)	-0.00311	-0.00329	-0.00327
	(!A2 * !B1 * !D1 * Y)	0.00438	0.00441	0.00438
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00311	-0.00329	-0.00327
	(!A2 * !B1 * !C1 * D1 * Y)	0.00438	0.00441	0.00438

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)**	0.00103	0.00102	0.00102
	(A1 * B1 * C1 * D1 * !Y)	-0.00057	-0.00057	-0.00056
	(A1 * B1 * C1 * !D1 * Y)	0.00092	0.00092	0.00091
	(A1 * B1 * C1 * !D1 * Y)	-0.00104	-0.00105	-0.00105
	(A1 * B1 * !C1 * D1 * Y)	0.00092	0.00092	0.00091
	(A1 * B1 * !C1 * D1 * Y)	-0.00104	-0.00105	-0.00105
	(A1 * B1 * !C1 * !D1 * Y)	0.00092	0.00092	0.00091
	(A1 * B1 * !C1 * !D1 * Y)	-0.00104	-0.00105	-0.00105
	(A1 * !B1 * C1 * D1 * Y)	0.00091	0.00092	0.00091
	(A1 * !B1 * C1 * D1 * Y)	-0.00103	-0.00105	-0.00105
	(A1 * !B1 * !D1 * Y)	0.00091	0.00092	0.00091
	(A1 * !B1 * !D1 * Y)	-0.00103	-0.00105	-0.00105
	(A1 * !B1 * !C1 * D1 * Y)	0.00091	0.00092	0.00091
	(A1 * !B1 * !C1 * D1 * Y)	-0.00103	-0.00105	-0.00105
	(!A1 * B1 * C1 * !D1 * Y)	0.00082	0.00083	0.00083
	(!A1 * B1 * C1 * !D1 * Y)	-0.00107	-0.00107	-0.00107
	(!A1 * B1 * !C1 * D1 * Y)	0.00083	0.00084	0.00083
	(!A1 * B1 * !C1 * D1 * Y)	-0.00107	-0.00107	-0.00107
	(!A1 * B1 * !C1 * !D1 * Y)	0.00083	0.00084	0.00083
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00107	-0.00107	-0.00107
	(!A1 * !B1 * C1 * D1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !B1 * C1 * D1 * Y)	-0.00106	-0.00107	-0.00107
	(!A1 * !B1 * !D1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !D1 * Y)	-0.00106	-0.00107	-0.00107
	(!A1 * !B1 * !C1 * D1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00106	-0.00107	-0.00107

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00200	0.00198	0.00198
	(A1 * B1 * C1 * D1 * !Y)	-0.00117	-0.00116	-0.00115
	(A1 * B1 * C1 * !D1 * Y)	0.00176	0.00178	0.00177
	(A1 * B1 * C1 * !D1 * Y)	-0.00206	-0.00213	-0.00211
	(A1 * B1 * !C1 * D1 * Y)	0.00176	0.00178	0.00177
	(A1 * B1 * !C1 * D1 * Y)	-0.00206	-0.00213	-0.00212
	(A1 * B1 * !C1 * !D1 * Y)	0.00177	0.00178	0.00176
	(A1 * B1 * !C1 * !D1 * Y)	-0.00207	-0.00213	-0.00212
	(A1 * !B1 * C1 * D1 * Y)	0.00176	0.00178	0.00177
	(A1 * !B1 * C1 * D1 * Y)	-0.00206	-0.00213	-0.00212
	(A1 * !B1 * !D1 * Y)	0.00176	0.00178	0.00176
	(A1 * !B1 * !D1 * Y)	-0.00207	-0.00213	-0.00212
	(A1 * !B1 * !C1 * D1 * Y)	0.00177	0.00178	0.00176
	(A1 * !B1 * !C1 * D1 * Y)	-0.00207	-0.00213	-0.00212
	(!A1 * B1 * C1 * !D1 * Y)	0.00158	0.00159	0.00159
	(!A1 * B1 * C1 * !D1 * Y)	-0.00216	-0.00217	-0.00216
	(!A1 * B1 * !C1 * D1 * Y)	0.00160	0.00161	0.00161
	(!A1 * B1 * !C1 * D1 * Y)	-0.00216	-0.00217	-0.00216
	(!A1 * B1 * !C1 * !D1 * Y)	0.00160	0.00161	0.00161
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00216	-0.00217	-0.00216
	(!A1 * !B1 * C1 * D1 * Y)	0.00163	0.00164	0.00164
	(!A1 * !B1 * C1 * D1 * Y)	-0.00216	-0.00217	-0.00216
	(!A1 * !B1 * !D1 * Y)	0.00164	0.00164	0.00164
	(!A1 * !B1 * !D1 * Y)	-0.00216	-0.00217	-0.00216
	(!A1 * !B1 * !C1 * D1 * Y)	0.00164	0.00164	0.00164
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00216	-0.00217	-0.00216

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00406	0.00410	0.00408
	(A1 * B1 * C1 * D1 * !Y)	-0.00229	-0.00231	-0.00230
	(A1 * B1 * C1 * !D1 * Y)	0.00358	0.00363	0.00359
	(A1 * B1 * C1 * !D1 * Y)	-0.00419	-0.00430	-0.00428
	(A1 * B1 * !C1 * D1 * Y)	0.00358	0.00363	0.00359
	(A1 * B1 * !C1 * D1 * Y)	-0.00419	-0.00430	-0.00428
	(A1 * B1 * !C1 * !D1 * Y)	0.00359	0.00363	0.00359
	(A1 * B1 * !C1 * !D1 * Y)	-0.00419	-0.00431	-0.00429
	(A1 * !B1 * C1 * D1 * Y)	0.00358	0.00363	0.00359
	(A1 * !B1 * C1 * D1 * Y)	-0.00419	-0.00430	-0.00428
	(A1 * !B1 * !D1 * Y)	0.00359	0.00363	0.00359
	(A1 * !B1 * !D1 * Y)	-0.00419	-0.00429	-0.00429
	(A1 * !B1 * !C1 * D1 * Y)	0.00359	0.00363	0.00359
	(A1 * !B1 * !C1 * D1 * Y)	-0.00419	-0.00429	-0.00429
	(!A1 * B1 * C1 * !D1 * Y)	0.00322	0.00326	0.00324
	(!A1 * B1 * C1 * !D1 * Y)	-0.00436	-0.00439	-0.00437
	(!A1 * B1 * !C1 * D1 * Y)	0.00328	0.00329	0.00326
	(!A1 * B1 * !C1 * D1 * Y)	-0.00437	-0.00439	-0.00437
	(!A1 * B1 * !C1 * !D1 * Y)	0.00327	0.00327	0.00326
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00437	-0.00438	-0.00437
	(!A1 * !B1 * C1 * D1 * Y)	0.00332	0.00334	0.00333
	(!A1 * !B1 * C1 * D1 * Y)	-0.00437	-0.00438	-0.00437
	(!A1 * !B1 * !D1 * Y)	0.00332	0.00334	0.00332
	(!A1 * !B1 * !D1 * Y)	-0.00437	-0.00438	-0.00437
	(!A1 * !B1 * !C1 * D1 * Y)	0.00332	0.00334	0.00332
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00437	-0.00438	-0.00437

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)**	-0.00097	-0.00097	-0.00101
	(A1 * B1 * C1 * D1 * !Y)	0.00061	0.00061	0.00058
	(A1 * B1 * C1 * !D1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * B1 * C1 * !D1 * Y)	0.00105	0.00105	0.00105
	(A1 * B1 * !C1 * D1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * B1 * !C1 * D1 * Y)	0.00105	0.00105	0.00105
	(A1 * B1 * !C1 * !D1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * B1 * !C1 * !D1 * Y)	0.00105	0.00105	0.00105
	(A1 * !B1 * C1 * D1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * !B1 * C1 * D1 * Y)	0.00105	0.00105	0.00105
	(A1 * !B1 * !D1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * !B1 * !D1 * Y)	0.00105	0.00105	0.00105
	(A1 * !B1 * !C1 * D1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * !B1 * !C1 * D1 * Y)	0.00105	0.00105	0.00105
	(!A1 * B1 * C1 * !D1 * Y)	-0.00076	-0.00083	-0.00083
	(!A1 * B1 * C1 * !D1 * Y)	0.00107	0.00108	0.00107
	(!A1 * B1 * !C1 * D1 * Y)	-0.00078	-0.00084	-0.00083
	(!A1 * B1 * !C1 * D1 * Y)	0.00107	0.00108	0.00107
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00078	-0.00084	-0.00083
	(!A1 * B1 * !C1 * !D1 * Y)	0.00107	0.00108	0.00107
	(!A1 * !B1 * C1 * D1 * Y)	-0.00081	-0.00086	-0.00085
	(!A1 * !B1 * C1 * D1 * Y)	0.00106	0.00108	0.00107
	(!A1 * !B1 * !D1 * Y)	-0.00081	-0.00086	-0.00085
	(!A1 * !B1 * !D1 * Y)	0.00106	0.00108	0.00107
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00081	-0.00086	-0.00085
	(!A1 * !B1 * !C1 * D1 * Y)	0.00106	0.00108	0.00107

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00183	-0.00184	-0.00195
	(A1 * B1 * C1 * D1 * !Y)	0.00129	0.00129	0.00119
	(A1 * B1 * C1 * !D1 * Y)	-0.00176	-0.00177	-0.00176
	(A1 * B1 * C1 * !D1 * Y)	0.00212	0.00213	0.00211
	(A1 * B1 * !C1 * D1 * Y)	-0.00175	-0.00177	-0.00176
	(A1 * B1 * !C1 * D1 * Y)	0.00210	0.00213	0.00212
	(A1 * B1 * !C1 * !D1 * Y)	-0.00176	-0.00177	-0.00176
	(A1 * B1 * !C1 * !D1 * Y)	0.00211	0.00213	0.00212
	(A1 * !B1 * C1 * D1 * Y)	-0.00176	-0.00177	-0.00176
	(A1 * !B1 * C1 * D1 * Y)	0.00211	0.00213	0.00212
	(A1 * !B1 * !D1 * Y)	-0.00176	-0.00177	-0.00176
	(A1 * !B1 * !D1 * Y)	0.00211	0.00213	0.00212
	(A1 * !B1 * !C1 * D1 * Y)	-0.00176	-0.00177	-0.00176
	(A1 * !B1 * !C1 * D1 * Y)	0.00211	0.00213	0.00212
	(!A1 * B1 * C1 * !D1 * Y)	-0.00147	-0.00159	-0.00159
	(!A1 * B1 * C1 * !D1 * Y)	0.00216	0.00218	0.00217
	(!A1 * B1 * !C1 * D1 * Y)	-0.00150	-0.00161	-0.00161
	(!A1 * B1 * !C1 * D1 * Y)	0.00216	0.00219	0.00217
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00150	-0.00161	-0.00161
	(!A1 * B1 * !C1 * !D1 * Y)	0.00216	0.00219	0.00217
	(!A1 * !B1 * C1 * D1 * Y)	-0.00155	-0.00164	-0.00164
	(!A1 * !B1 * C1 * D1 * Y)	0.00216	0.00218	0.00217
	(!A1 * !B1 * !D1 * Y)	-0.00155	-0.00164	-0.00164
	(!A1 * !B1 * !D1 * Y)	0.00216	0.00218	0.00217
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00155	-0.00164	-0.00164
	(!A1 * !B1 * !C1 * D1 * Y)	0.00216	0.00218	0.00217

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00377	-0.00379	-0.00403
	(A1 * B1 * C1 * D1 * !Y)	0.00260	0.00259	0.00238
	(A1 * B1 * C1 * !D1 * Y)	-0.00358	-0.00360	-0.00358
	(A1 * B1 * C1 * !D1 * Y)	0.00429	0.00430	0.00428
	(A1 * B1 * !C1 * D1 * Y)	-0.00358	-0.00360	-0.00358
	(A1 * B1 * !C1 * D1 * Y)	0.00429	0.00430	0.00428
	(A1 * B1 * !C1 * !D1 * Y)	-0.00359	-0.00360	-0.00358
	(A1 * B1 * !C1 * !D1 * Y)	0.00430	0.00431	0.00429
	(A1 * !B1 * C1 * D1 * Y)	-0.00357	-0.00360	-0.00358
	(A1 * !B1 * C1 * D1 * Y)	0.00426	0.00430	0.00428
	(A1 * !B1 * !D1 * Y)	-0.00357	-0.00358	-0.00358
	(A1 * !B1 * !D1 * Y)	0.00427	0.00429	0.00429
	(A1 * !B1 * !C1 * D1 * Y)	-0.00357	-0.00358	-0.00358
	(A1 * !B1 * !C1 * D1 * Y)	0.00427	0.00429	0.00429
	(!A1 * B1 * C1 * !D1 * Y)	-0.00299	-0.00326	-0.00324
	(!A1 * B1 * C1 * !D1 * Y)	0.00437	0.00441	0.00438
	(!A1 * B1 * !C1 * D1 * Y)	-0.00304	-0.00329	-0.00326
	(!A1 * B1 * !C1 * D1 * Y)	0.00437	0.00441	0.00438
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00304	-0.00327	-0.00326
	(!A1 * B1 * !C1 * !D1 * Y)	0.00437	0.00441	0.00438
	(!A1 * !B1 * C1 * D1 * Y)	-0.00316	-0.00334	-0.00333
	(!A1 * !B1 * C1 * D1 * Y)	0.00437	0.00440	0.00438
	(!A1 * !B1 * !D1 * Y)	-0.00316	-0.00334	-0.00332
	(!A1 * !B1 * !D1 * Y)	0.00437	0.00440	0.00438
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00316	-0.00334	-0.00332
	(!A1 * !B1 * !C1 * D1 * Y)	0.00437	0.00440	0.00438

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)**	0.00080	0.00080	0.00080
	(A2 * C1 * !D1 * Y)	-0.00108	-0.00108	-0.00108
	(A2 * !C1 * D1 * Y)	0.00083	0.00083	0.00083
	(A2 * !C1 * D1 * Y)	-0.00108	-0.00109	-0.00108
	(A2 * !C1 * !D1 * Y)	0.00083	0.00083	0.00083
	(A2 * !C1 * !D1 * Y)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * C1 * !D1 * Y)	0.00080	0.00080	0.00080
	(A1 * !A2 * C1 * !D1 * Y)	-0.00108	-0.00108	-0.00108
	(A1 * !A2 * !C1 * D1 * Y)	0.00083	0.00083	0.00083
	(A1 * !A2 * !C1 * D1 * Y)	-0.00108	-0.00108	-0.00108
	(A1 * !A2 * !C1 * !D1 * Y)	0.00083	0.00083	0.00083
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00108	-0.00108	-0.00108
	(!A1 * !A2 * C1 * D1 * Y)	0.00043	0.00043	0.00043
	(!A1 * !A2 * C1 * D1 * Y)	-0.00106	-0.00105	-0.00105
	(!A1 * !A2 * C1 * !D1 * Y)	0.00048	0.00048	0.00048
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00109	-0.00109	-0.00108
	(!A1 * !A2 * !C1 * D1 * Y)	0.00051	0.00051	0.00051
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00108	-0.00109	-0.00108
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00051	0.00052	0.00052
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00108	-0.00109	-0.00108

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00171	0.00172	0.00171
	(A2 * C1 * !D1 * Y)	-0.00225	-0.00226	-0.00225
	(A2 * !C1 * D1 * Y)	0.00175	0.00176	0.00175
	(A2 * !C1 * D1 * Y)	-0.00225	-0.00226	-0.00225
	(A2 * !C1 * !D1 * Y)	0.00175	0.00177	0.00175
	(A2 * !C1 * !D1 * Y)	-0.00225	-0.00226	-0.00225
	(A1 * !A2 * C1 * !D1 * Y)	0.00170	0.00171	0.00171
	(A1 * !A2 * C1 * !D1 * Y)	-0.00225	-0.00225	-0.00225
	(A1 * !A2 * !C1 * D1 * Y)	0.00175	0.00177	0.00175
	(A1 * !A2 * !C1 * D1 * Y)	-0.00225	-0.00226	-0.00225
	(A1 * !A2 * !C1 * !D1 * Y)	0.00175	0.00176	0.00175
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00225	-0.00225	-0.00225
	(!A1 * !A2 * C1 * D1 * Y)	0.00091	0.00091	0.00093
	(!A1 * !A2 * C1 * D1 * Y)	-0.00218	-0.00219	-0.00216
	(!A1 * !A2 * C1 * !D1 * Y)	0.00103	0.00104	0.00103
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00225	-0.00226	-0.00225
	(!A1 * !A2 * !C1 * D1 * Y)	0.00105	0.00106	0.00105
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00225	-0.00226	-0.00225
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00107	0.00109	0.00108
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00224	-0.00226	-0.00225

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00327	0.00329	0.00328
	(A2 * C1 * !D1 * Y)	-0.00235	-0.00236	-0.00235
	(A2 * !C1 * D1 * Y)	0.00336	0.00340	0.00337
	(A2 * !C1 * D1 * Y)	-0.00235	-0.00237	-0.00235
	(A2 * !C1 * !D1 * Y)	0.00336	0.00340	0.00337
	(A2 * !C1 * !D1 * Y)	-0.00235	-0.00236	-0.00235
	(A1 * !A2 * C1 * !D1 * Y)	0.00326	0.00329	0.00327
	(A1 * !A2 * C1 * !D1 * Y)	-0.00235	-0.00236	-0.00235
	(A1 * !A2 * !C1 * D1 * Y)	0.00337	0.00339	0.00337
	(A1 * !A2 * !C1 * D1 * Y)	-0.00235	-0.00236	-0.00235
	(A1 * !A2 * !C1 * !D1 * Y)	0.00336	0.00340	0.00337
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00235	-0.00236	-0.00235
	(!A1 * !A2 * C1 * D1 * Y)	0.00168	0.00169	0.00170
	(!A1 * !A2 * C1 * D1 * Y)	-0.00223	-0.00223	-0.00220
	(!A1 * !A2 * C1 * !D1 * Y)	0.00190	0.00190	0.00189
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00236	-0.00238	-0.00237
	(!A1 * !A2 * !C1 * D1 * Y)	0.00196	0.00196	0.00194
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00236	-0.00237	-0.00235
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00200	0.00201	0.00199
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00236	-0.00237	-0.00235

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)**	-0.00075	-0.00080	-0.00080
	(A2 * C1 * !D1 * Y)	0.00108	0.00109	0.00109
	(A2 * !C1 * D1 * Y)	-0.00079	-0.00083	-0.00083
	(A2 * !C1 * D1 * Y)	0.00108	0.00110	0.00109
	(A2 * !C1 * !D1 * Y)	-0.00080	-0.00083	-0.00083
	(A2 * !C1 * !D1 * Y)	0.00108	0.00110	0.00109
	(A1 * !A2 * C1 * !D1 * Y)	-0.00073	-0.00080	-0.00080
	(A1 * !A2 * C1 * !D1 * Y)	0.00108	0.00110	0.00108
	(A1 * !A2 * !C1 * D1 * Y)	-0.00078	-0.00083	-0.00083
	(A1 * !A2 * !C1 * D1 * Y)	0.00108	0.00110	0.00109
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00079	-0.00083	-0.00083
	(A1 * !A2 * !C1 * !D1 * Y)	0.00108	0.00110	0.00109
	(!A1 * !A2 * C1 * D1 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * C1 * D1 * Y)	0.00109	0.00109	0.00109
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * C1 * !D1 * Y)	0.00109	0.00109	0.00108
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00051	-0.00051	-0.00051
	(!A1 * !A2 * !C1 * D1 * Y)	0.00108	0.00109	0.00109
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00051	-0.00052	-0.00052
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00108	0.00109	0.00109

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00161	-0.00172	-0.00171
	(A2 * C1 * !D1 * Y)	0.00226	0.00228	0.00225
	(A2 * !C1 * D1 * Y)	-0.00169	-0.00176	-0.00175
	(A2 * !C1 * D1 * Y)	0.00226	0.00228	0.00226
	(A2 * !C1 * !D1 * Y)	-0.00170	-0.00177	-0.00175
	(A2 * !C1 * !D1 * Y)	0.00226	0.00228	0.00226
	(A1 * !A2 * C1 * !D1 * Y)	-0.00158	-0.00171	-0.00171
	(A1 * !A2 * C1 * !D1 * Y)	0.00226	0.00228	0.00225
	(A1 * !A2 * !C1 * D1 * Y)	-0.00168	-0.00177	-0.00175
	(A1 * !A2 * !C1 * D1 * Y)	0.00226	0.00228	0.00225
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00169	-0.00176	-0.00175
	(A1 * !A2 * !C1 * !D1 * Y)	0.00226	0.00228	0.00225
	(!A1 * !A2 * C1 * D1 * Y)	-0.00086	-0.00086	-0.00085
	(!A1 * !A2 * C1 * D1 * Y)	0.00227	0.00227	0.00226
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A2 * C1 * !D1 * Y)	0.00225	0.00227	0.00225
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00105	-0.00106	-0.00105
	(!A1 * !A2 * !C1 * D1 * Y)	0.00227	0.00227	0.00226
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00107	-0.00109	-0.00108
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00225	0.00227	0.00226

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00304	-0.00329	-0.00328
	(A2 * C1 * !D1 * Y)	0.00237	0.00239	0.00236
	(A2 * !C1 * D1 * Y)	-0.00323	-0.00340	-0.00337
	(A2 * !C1 * D1 * Y)	0.00236	0.00239	0.00236
	(A2 * !C1 * !D1 * Y)	-0.00324	-0.00340	-0.00337
	(A2 * !C1 * !D1 * Y)	0.00236	0.00239	0.00236
	(A1 * !A2 * C1 * !D1 * Y)	-0.00300	-0.00329	-0.00327
	(A1 * !A2 * C1 * !D1 * Y)	0.00237	0.00239	0.00236
	(A1 * !A2 * !C1 * D1 * Y)	-0.00320	-0.00339	-0.00337
	(A1 * !A2 * !C1 * D1 * Y)	0.00235	0.00236	0.00236
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00322	-0.00340	-0.00337
	(A1 * !A2 * !C1 * !D1 * Y)	0.00235	0.00236	0.00236
	(!A1 * !A2 * C1 * D1 * Y)	-0.00156	-0.00158	-0.00157
	(!A1 * !A2 * C1 * D1 * Y)	0.00236	0.00238	0.00237
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00190	-0.00190	-0.00189
	(!A1 * !A2 * C1 * !D1 * Y)	0.00236	0.00239	0.00237
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00196	-0.00196	-0.00194
	(!A1 * !A2 * !C1 * D1 * Y)	0.00238	0.00238	0.00236
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00200	-0.00201	-0.00199
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00238	0.00238	0.00236

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)**	0.00085	0.00085	0.00085
	(A2 * B1 * !D1 * Y)	-0.00112	-0.00112	-0.00112
	(A2 * !B1 * D1 * Y)	0.00043	0.00043	0.00043
	(A2 * !B1 * D1 * Y)	-0.00112	-0.00112	-0.00111
	(A2 * !B1 * !D1 * Y)	0.00048	0.00048	0.00048
	(A2 * !B1 * !D1 * Y)	-0.00113	-0.00113	-0.00112
	(A1 * !A2 * B1 * !D1 * Y)	0.00085	0.00085	0.00085
	(A1 * !A2 * B1 * !D1 * Y)	-0.00112	-0.00113	-0.00112
	(!A2 * !B1 * D1 * Y)	0.00043	0.00043	0.00043
	(!A2 * !B1 * D1 * Y)	-0.00112	-0.00112	-0.00111
	(!A2 * !B1 * !D1 * Y)	0.00048	0.00048	0.00048
	(!A2 * !B1 * !D1 * Y)	-0.00113	-0.00113	-0.00112
	(!A1 * !A2 * B1 * D1 * Y)	0.00042	0.00042	0.00041
	(!A1 * !A2 * B1 * D1 * Y)	-0.00112	-0.00113	-0.00111
	(!A1 * !A2 * B1 * !D1 * Y)	0.00050	0.00051	0.00050
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00112	-0.00113	-0.00112

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00166	0.00167	0.00166
	(A2 * B1 * !D1 * Y)	-0.00219	-0.00219	-0.00219
	(A2 * !B1 * D1 * Y)	0.00086	0.00086	0.00086
	(A2 * !B1 * D1 * Y)	-0.00219	-0.00219	-0.00217
	(A2 * !B1 * !D1 * Y)	0.00100	0.00100	0.00099
	(A2 * !B1 * !D1 * Y)	-0.00221	-0.00221	-0.00220
	(A1 * !A2 * B1 * !D1 * Y)	0.00166	0.00167	0.00167
	(A1 * !A2 * B1 * !D1 * Y)	-0.00219	-0.00219	-0.00219
	(!A2 * !B1 * D1 * Y)	0.00086	0.00086	0.00086
	(!A2 * !B1 * D1 * Y)	-0.00219	-0.00219	-0.00217
	(!A2 * !B1 * !D1 * Y)	0.00099	0.00100	0.00099
	(!A2 * !B1 * !D1 * Y)	-0.00220	-0.00221	-0.00220
	(!A1 * !A2 * B1 * D1 * Y)	0.00081	0.00082	0.00083
	(!A1 * !A2 * B1 * D1 * Y)	-0.00219	-0.00220	-0.00217
	(!A1 * !A2 * B1 * !D1 * Y)	0.00101	0.00101	0.00100
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00220	-0.00220	-0.00219

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00329	0.00334	0.00331
	(A2 * B1 * !D1 * Y)	-0.00230	-0.00233	-0.00231
	(A2 * !B1 * D1 * Y)	0.00161	0.00162	0.00162
	(A2 * !B1 * D1 * Y)	-0.00231	-0.00232	-0.00230
	(A2 * !B1 * !D1 * Y)	0.00184	0.00184	0.00183
	(A2 * !B1 * !D1 * Y)	-0.00235	-0.00236	-0.00234
	(A1 * !A2 * B1 * !D1 * Y)	0.00331	0.00332	0.00331
	(A1 * !A2 * B1 * !D1 * Y)	-0.00232	-0.00232	-0.00231
	(!A2 * !B1 * D1 * Y)	0.00161	0.00162	0.00162
	(!A2 * !B1 * D1 * Y)	-0.00232	-0.00232	-0.00230
	(!A2 * !B1 * !D1 * Y)	0.00184	0.00184	0.00183
	(!A2 * !B1 * !D1 * Y)	-0.00235	-0.00236	-0.00234
	(!A1 * !A2 * B1 * D1 * Y)	0.00155	0.00156	0.00156
	(!A1 * !A2 * B1 * D1 * Y)	-0.00231	-0.00232	-0.00229
	(!A1 * !A2 * B1 * !D1 * Y)	0.00190	0.00190	0.00189
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00233	-0.00234	-0.00233

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)**	-0.00079	-0.00085	-0.00085
	(A2 * B1 * !D1 * Y)	0.00117	0.00113	0.00112
	(A2 * !B1 * D1 * Y)	-0.00040	-0.00041	-0.00041
	(A2 * !B1 * D1 * Y)	0.00115	0.00115	0.00113
	(A2 * !B1 * !D1 * Y)	-0.00048	-0.00048	-0.00048
	(A2 * !B1 * !D1 * Y)	0.00118	0.00118	0.00113
	(A1 * !A2 * B1 * !D1 * Y)	-0.00078	-0.00085	-0.00085
	(A1 * !A2 * B1 * !D1 * Y)	0.00118	0.00113	0.00112
	(!A2 * !B1 * D1 * Y)	-0.00040	-0.00041	-0.00041
	(!A2 * !B1 * D1 * Y)	0.00115	0.00115	0.00113
	(!A2 * !B1 * !D1 * Y)	-0.00048	-0.00048	-0.00048
	(!A2 * !B1 * !D1 * Y)	0.00118	0.00118	0.00113
	(!A1 * !A2 * B1 * D1 * Y)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * B1 * D1 * Y)	0.00115	0.00115	0.00113
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00050	-0.00051	-0.00050
	(!A1 * !A2 * B1 * !D1 * Y)	0.00117	0.00114	0.00112

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00153	-0.00167	-0.00166
	(A2 * B1 * !D1 * Y)	0.00228	0.00221	0.00219
	(A2 * !B1 * D1 * Y)	-0.00080	-0.00080	-0.00082
	(A2 * !B1 * D1 * Y)	0.00225	0.00226	0.00221
	(A2 * !B1 * !D1 * Y)	-0.00100	-0.00100	-0.00099
	(A2 * !B1 * !D1 * Y)	0.00226	0.00227	0.00221
	(A1 * !A2 * B1 * !D1 * Y)	-0.00152	-0.00167	-0.00167
	(A1 * !A2 * B1 * !D1 * Y)	0.00229	0.00221	0.00219
	(!A2 * !B1 * D1 * Y)	-0.00080	-0.00080	-0.00082
	(!A2 * !B1 * D1 * Y)	0.00225	0.00226	0.00221
	(!A2 * !B1 * !D1 * Y)	-0.00099	-0.00100	-0.00099
	(!A2 * !B1 * !D1 * Y)	0.00226	0.00227	0.00221
	(!A1 * !A2 * B1 * D1 * Y)	-0.00077	-0.00078	-0.00080
	(!A1 * !A2 * B1 * D1 * Y)	0.00226	0.00227	0.00221
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00101	-0.00101	-0.00100
	(!A1 * !A2 * B1 * !D1 * Y)	0.00225	0.00222	0.00219

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00300	-0.00334	-0.00331
	(A2 * B1 * !D1 * Y)	0.00254	0.00234	0.00232
	(A2 * !B1 * D1 * Y)	-0.00149	-0.00151	-0.00155
	(A2 * !B1 * D1 * Y)	0.00246	0.00247	0.00236
	(A2 * !B1 * !D1 * Y)	-0.00184	-0.00184	-0.00183
	(A2 * !B1 * !D1 * Y)	0.00254	0.00254	0.00238
	(A1 * !A2 * B1 * !D1 * Y)	-0.00299	-0.00332	-0.00331
	(A1 * !A2 * B1 * !D1 * Y)	0.00256	0.00235	0.00232
	(!A2 * !B1 * D1 * Y)	-0.00149	-0.00151	-0.00155
	(!A2 * !B1 * D1 * Y)	0.00246	0.00247	0.00236
	(!A2 * !B1 * !D1 * Y)	-0.00184	-0.00184	-0.00183
	(!A2 * !B1 * !D1 * Y)	0.00254	0.00254	0.00238
	(!A1 * !A2 * B1 * D1 * Y)	-0.00145	-0.00146	-0.00150
	(!A1 * !A2 * B1 * D1 * Y)	0.00246	0.00247	0.00236
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00190	-0.00190	-0.00189
	(!A1 * !A2 * B1 * !D1 * Y)	0.00251	0.00239	0.00233

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00032	0.00032	0.00031
	(A2 * !C1 * Y)	-0.00130	-0.00131	-0.00132
	(A2 * !B1 * C1 * Y)	0.00033	0.00033	0.00030
	(A2 * !B1 * C1 * Y)	-0.00126	-0.00126	-0.00132
	(!A2 * !C1 * Y)	0.00032	0.00032	0.00031
	(!A2 * !C1 * Y)	-0.00129	-0.00131	-0.00132
	(!A2 * !B1 * C1 * Y)	0.00033	0.00033	0.00030
	(!A2 * !B1 * C1 * Y)	-0.00125	-0.00127	-0.00132
	(!A1 * !A2 * B1 * C1 * Y)	0.00037	0.00037	0.00032
	(!A1 * !A2 * B1 * C1 * Y)	-0.00118	-0.00118	-0.00130

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00073	0.00074	0.00069
	(A2 * !C1 * Y)	-0.00246	-0.00249	-0.00254
	(A2 * !B1 * C1 * Y)	0.00075	0.00075	0.00067
	(A2 * !B1 * C1 * Y)	-0.00237	-0.00239	-0.00253
	(!A2 * !C1 * Y)	0.00073	0.00073	0.00069
	(!A2 * !C1 * Y)	-0.00246	-0.00247	-0.00254
	(!A2 * !B1 * C1 * Y)	0.00075	0.00075	0.00067
	(!A2 * !B1 * C1 * Y)	-0.00237	-0.00239	-0.00253
	(!A1 * !A2 * B1 * C1 * Y)	0.00080	0.00080	0.00068
	(!A1 * !A2 * B1 * C1 * Y)	-0.00223	-0.00224	-0.00250
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00131	0.00129	0.00124
	(A2 * !C1 * Y)	-0.00296	-0.00295	-0.00309
	(A2 * !B1 * C1 * Y)	0.00134	0.00133	0.00120
	(A2 * !B1 * C1 * Y)	-0.00279	-0.00279	-0.00306
	(!A2 * !C1 * Y)	0.00130	0.00131	0.00124
	(!A2 * !C1 * Y)	-0.00294	-0.00298	-0.00309
	(!A2 * !B1 * C1 * Y)	0.00133	0.00134	0.00120
	(!A2 * !B1 * C1 * Y)	-0.00277	-0.00281	-0.00306
	(!A1 * !A2 * B1 * C1 * Y)	0.00146	0.00145	0.00122
	(!A1 * !A2 * B1 * C1 * Y)	-0.00251	-0.00253	-0.00300

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00030	-0.00030	-0.00030
	(A2 * !C1 * Y)	0.00132	0.00134	0.00133
	(A2 * !B1 * C1 * Y)	-0.00029	-0.00030	-0.00029
	(A2 * !B1 * C1 * Y)	0.00132	0.00134	0.00133
	(!A2 * !C1 * Y)	-0.00030	-0.00030	-0.00030
	(!A2 * !C1 * Y)	0.00132	0.00134	0.00133
	(!A2 * !B1 * C1 * Y)	-0.00030	-0.00030	-0.00029
	(!A2 * !B1 * C1 * Y)	0.00132	0.00134	0.00132
	(!A1 * !A2 * B1 * C1 * Y)	-0.00030	-0.00030	-0.00029
	(!A1 * !A2 * B1 * C1 * Y)	0.00132	0.00134	0.00133
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00067	-0.00067	-0.00067
	(A2 * !C1 * Y)	0.00256	0.00257	0.00255
	(A2 * !B1 * C1 * Y)	-0.00065	-0.00066	-0.00065
	(A2 * !B1 * C1 * Y)	0.00254	0.00257	0.00255
	(!A2 * !C1 * Y)	-0.00067	-0.00067	-0.00067
	(!A2 * !C1 * Y)	0.00256	0.00257	0.00255
	(!A2 * !B1 * C1 * Y)	-0.00065	-0.00066	-0.00065
	(!A2 * !B1 * C1 * Y)	0.00254	0.00257	0.00255
	(!A1 * !A2 * B1 * C1 * Y)	-0.00065	-0.00066	-0.00065
	(!A1 * !A2 * B1 * C1 * Y)	0.00256	0.00259	0.00255
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00119	-0.00121	-0.00119
	(A2 * !C1 * Y)	0.00309	0.00314	0.00310
	(A2 * !B1 * C1 * Y)	-0.00117	-0.00118	-0.00116
	(A2 * !B1 * C1 * Y)	0.00309	0.00314	0.00309
	(!A2 * !C1 * Y)	-0.00121	-0.00120	-0.00119
	(!A2 * !C1 * Y)	0.00311	0.00312	0.00310
	(!A2 * !B1 * C1 * Y)	-0.00118	-0.00117	-0.00116
	(!A2 * !B1 * C1 * Y)	0.00311	0.00311	0.00309
	(!A1 * !A2 * B1 * C1 * Y)	-0.00117	-0.00118	-0.00116
	(!A1 * !A2 * B1 * C1 * Y)	0.00310	0.00313	0.00309

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00248	0.00255	0.00236	0.00257	0.00259	0.63385
sky130_fd_sc_hs__o2111a_2	0.00251	0.00251	0.00248	0.00257	0.00267	1.30692
sky130_fd_sc_hs__o2111a_4	0.00477	0.00517	0.00438	0.00452	0.00456	2.44852

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111a_1	0.00000	0.04375	0.29906
sky130_fd_sc_hs__o2111a_2	0.00000	0.04934	0.18357
sky130_fd_sc_hs__o2111a_4	0.00000	0.12100	0.60534

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)	0.20459	0.97669	7.80842
	A2->X (RR)	0.18516	0.95026	7.72042
	B1->X (RR)	0.19600	0.98353	7.79644
	C1->X (RR)	0.18736	0.98762	7.76347
	D1->X (RR)	0.17390	0.96479	7.59168
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.22580	0.89572	8.04362
	A2->X (RR)	0.20611	0.87040	7.96671
	B1->X (RR)	0.21804	0.90741	8.05319
	C1->X (RR)	0.20882	0.91721	8.04488
	D1->X (RR)	0.19399	0.89621	7.88242
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.25542	0.83205	8.01748
	A2->X (RR)	0.23812	0.81795	7.96881
	B1->X (RR)	0.24682	0.85116	8.07677
	C1->X (RR)	0.23678	0.87789	8.12386
	D1->X (RR)	0.21433	0.85127	7.93301

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.35880	1.00929	5.61979
	A2->X (FF)	0.33749	0.96076	5.18766
	B1->X (FF)	0.18179	0.81112	4.82500
	C1->X (FF)	0.16549	0.78529	4.72438
	D1->X (FF)	0.14061	0.74569	4.59498
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.42752	1.07847	6.05280
	A2->X (FF)	0.40523	1.02550	5.65645
	B1->X (FF)	0.18715	0.81571	5.25559
	C1->X (FF)	0.17351	0.79541	5.16638
	D1->X (FF)	0.15110	0.76226	5.03873
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.48173	1.09726	6.10820
	A2->X (FF)	0.46167	1.05614	5.80066
	B1->X (FF)	0.23431	0.83451	5.28540
	C1->X (FF)	0.21697	0.81048	5.18546
	D1->X (FF)	0.18967	0.77481	5.05010

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.00793	0.00798	0.00815
	A1	0.00300	0.00305	0.00327
	A2	0.00699	0.00699	0.00739
	A2	0.00255	0.00254	0.00301
	B1	0.00713	0.00716	0.00780
	B1	0.00317	0.00319	0.00389
	C1	0.00662	0.00662	0.00738
	C1	0.00316	0.00316	0.00398
	D1	0.00610	0.00605	0.00707
	D1	0.00315	0.00309	0.00418
sky130_fd_sc_hs__o2111a_2	A1	0.00962	0.00988	0.01011
	A1	0.00469	0.00495	0.00525
	A2	0.00865	0.00887	0.00927
	A2	0.00425	0.00447	0.00495
	B1	0.00884	0.00904	0.00949
	B1	0.00477	0.00496	0.00548
	C1	0.00829	0.00845	0.00901
	C1	0.00475	0.00492	0.00554
	D1	0.00780	0.00787	0.00876
	D1	0.00475	0.00483	0.00582

sky130_fd_sc_hs__o2111a_4	**A1**	0.01976	0.02012	0.02051
	A1	0.00972	0.01007	0.01061
	A2	0.01811	0.01844	0.01916
	A2	0.00883	0.00917	0.01004
	B1	0.01817	0.01848	0.01962
	B1	0.01004	0.01035	0.01159
	C1	0.01706	0.01735	0.01859
	C1	0.01004	0.01031	0.01164
	D1	0.01586	0.01601	0.01816
	D1	0.01001	0.01017	0.01251

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00302	0.00309	0.00386
	A1	0.00773	0.00779	0.00805
	A2	0.00306	0.00309	0.00463
	A2	0.00725	0.00732	0.00857
	B1	0.00252	0.00255	0.00452
	B1	0.00639	0.00641	0.00828
	C1	0.00224	0.00224	0.00432
	C1	0.00568	0.00567	0.00760
	D1	0.00190	0.00188	0.00394
	D1	0.00488	0.00484	0.00678

sky130_fd_sc_hs__o2111a_2	**A1**	0.00448	0.00474	0.00506
	A1	0.00918	0.00943	0.00972
	A2	0.00453	0.00459	0.00700
	A2	0.00868	0.00894	0.01019
	B1	0.00392	0.00415	0.00564
	B1	0.00792	0.00812	0.00953
	C1	0.00365	0.00383	0.00570
	C1	0.00717	0.00733	0.00880
	D1	0.00327	0.00336	0.00523
	D1	0.00634	0.00643	0.00793
sky130_fd_sc_hs__o2111a_4	**A1**	0.00862	0.00903	0.01089
	A1	0.01819	0.01865	0.01925
	A2	0.00868	0.00888	0.01152
	A2	0.01745	0.01780	0.02018
	B1	0.00765	0.00814	0.01252
	B1	0.01562	0.01609	0.01976
	C1	0.00713	0.00750	0.01258
	C1	0.01409	0.01447	0.01820
	D1	0.00607	0.00653	0.01091
	D1	0.01195	0.01239	0.01624

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)**	0.00104	0.00095	0.00094
	(A2 * B1 * C1 * D1 * X)	-0.00086	-0.00097	-0.00098
	(A2 * B1 * C1 * !D1 * !X)	0.00094	0.00094	0.00094
	(A2 * B1 * C1 * !D1 * !X)	-0.00096	-0.00098	-0.00098
	(A2 * B1 * !C1 * !X)	0.00094	0.00094	0.00094
	(A2 * B1 * !C1 * !X)	-0.00096	-0.00098	-0.00098
	(A2 * !B1 * !X)	0.00094	0.00094	0.00094
	(A2 * !B1 * !X)	-0.00096	-0.00098	-0.00098
	(!A2 * B1 * C1 * !D1 * !X)	0.00085	0.00086	0.00085
	(!A2 * B1 * C1 * !D1 * !X)	-0.00099	-0.00100	-0.00099
	(!A2 * B1 * !C1 * D1 * !X)	0.00086	0.00086	0.00086
	(!A2 * B1 * !C1 * D1 * !X)	-0.00099	-0.00099	-0.00099
	(!A2 * B1 * !C1 * !D1 * !X)	0.00086	0.00086	0.00086
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00099	-0.00100	-0.00099
	(!A2 * !B1 * C1 * D1 * !X)	0.00088	0.00089	0.00088
	(!A2 * !B1 * C1 * D1 * !X)	-0.00099	-0.00100	-0.00099
	(!A2 * !B1 * !D1 * !X)	0.00087	0.00088	0.00088
	(!A2 * !B1 * !D1 * !X)	-0.00099	-0.00100	-0.00099
	(!A2 * !B1 * !C1 * D1 * !X)	0.00087	0.00088	0.00088
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00099	-0.00100	-0.00099

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00108	0.00099	0.00098
	(A2 * B1 * C1 * D1 * X)	-0.00086	-0.00096	-0.00097
	(A2 * B1 * C1 * !D1 * !X)	0.00098	0.00098	0.00098
	(A2 * B1 * C1 * !D1 * !X)	-0.00095	-0.00097	-0.00097
	(A2 * B1 * !C1 * !X)	0.00098	0.00098	0.00098
	(A2 * B1 * !C1 * !X)	-0.00095	-0.00097	-0.00097
	(A2 * !B1 * !X)	0.00098	0.00098	0.00098
	(A2 * !B1 * !X)	-0.00095	-0.00097	-0.00097
	(!A2 * B1 * C1 * !D1 * !X)	0.00089	0.00090	0.00089
	(!A2 * B1 * C1 * !D1 * !X)	-0.00098	-0.00099	-0.00098
	(!A2 * B1 * !C1 * D1 * !X)	0.00090	0.00091	0.00090
	(!A2 * B1 * !C1 * D1 * !X)	-0.00098	-0.00099	-0.00098
	(!A2 * B1 * !C1 * !D1 * !X)	0.00090	0.00091	0.00090
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00098	-0.00099	-0.00098
	(!A2 * !B1 * C1 * D1 * !X)	0.00091	0.00092	0.00092
	(!A2 * !B1 * C1 * D1 * !X)	-0.00098	-0.00099	-0.00098
	(!A2 * !B1 * !D1 * !X)	0.00092	0.00092	0.00092
	(!A2 * !B1 * !D1 * !X)	-0.00098	-0.00098	-0.00098
	(!A2 * !B1 * !C1 * D1 * !X)	0.00092	0.00092	0.00092
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00098	-0.00098	-0.00098

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00209	0.00191	0.00188
	(A2 * B1 * C1 * D1 * X)	-0.00168	-0.00189	-0.00191
	(A2 * B1 * C1 * !D1 * !X)	0.00174	0.00174	0.00173
	(A2 * B1 * C1 * !D1 * !X)	-0.00201	-0.00206	-0.00205
	(A2 * B1 * !C1 * !X)	0.00174	0.00174	0.00173
	(A2 * B1 * !C1 * !X)	-0.00201	-0.00206	-0.00205
	(A2 * !B1 * !X)	0.00174	0.00174	0.00173
	(A2 * !B1 * !X)	-0.00201	-0.00206	-0.00205
	(!A2 * B1 * C1 * !D1 * !X)	0.00158	0.00159	0.00158
	(!A2 * B1 * C1 * !D1 * !X)	-0.00209	-0.00210	-0.00208
	(!A2 * B1 * !C1 * D1 * !X)	0.00159	0.00158	0.00159
	(!A2 * B1 * !C1 * D1 * !X)	-0.00208	-0.00208	-0.00208
	(!A2 * B1 * !C1 * !D1 * !X)	0.00159	0.00161	0.00159
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00209	-0.00210	-0.00208
	(!A2 * !B1 * C1 * D1 * !X)	0.00162	0.00163	0.00162
	(!A2 * !B1 * C1 * D1 * !X)	-0.00208	-0.00209	-0.00208
	(!A2 * !B1 * !D1 * !X)	0.00162	0.00162	0.00162
	(!A2 * !B1 * !D1 * !X)	-0.00208	-0.00208	-0.00208
	(!A2 * !B1 * !C1 * D1 * !X)	0.00162	0.00162	0.00162
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00208	-0.00208	-0.00208

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)**	-0.00093	-0.00093	-0.00093
	(A2 * B1 * C1 * D1 * X)	0.00098	0.00098	0.00098
	(A2 * B1 * C1 * !D1 * !X)	-0.00094	-0.00094	-0.00094
	(A2 * B1 * C1 * !D1 * !X)	0.00098	0.00099	0.00098
	(A2 * B1 * !C1 * !X)	-0.00094	-0.00094	-0.00094
	(A2 * B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(A2 * !B1 * !X)	-0.00094	-0.00094	-0.00094
	(A2 * !B1 * !X)	0.00098	0.00099	0.00098
	(!A2 * B1 * C1 * !D1 * !X)	-0.00079	-0.00086	-0.00085
	(!A2 * B1 * C1 * !D1 * !X)	0.00100	0.00100	0.00100
	(!A2 * B1 * !C1 * D1 * !X)	-0.00081	-0.00086	-0.00086
	(!A2 * B1 * !C1 * D1 * !X)	0.00100	0.00100	0.00100
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00081	-0.00086	-0.00086
	(!A2 * B1 * !C1 * !D1 * !X)	0.00100	0.00100	0.00100
	(!A2 * !B1 * C1 * D1 * !X)	-0.00084	-0.00089	-0.00088
	(!A2 * !B1 * C1 * D1 * !X)	0.00099	0.00101	0.00100
	(!A2 * !B1 * !D1 * !X)	-0.00084	-0.00088	-0.00088
	(!A2 * !B1 * !D1 * !X)	0.00099	0.00101	0.00100
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00084	-0.00088	-0.00088
	(!A2 * !B1 * !C1 * D1 * !X)	0.00099	0.00101	0.00100

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00097	-0.00097	-0.00097
	(A2 * B1 * C1 * D1 * X)	0.00097	0.00097	0.00097
	(A2 * B1 * C1 * !D1 * !X)	-0.00098	-0.00098	-0.00097
	(A2 * B1 * C1 * !D1 * !X)	0.00097	0.00098	0.00097
	(A2 * B1 * !C1 * !X)	-0.00097	-0.00098	-0.00097
	(A2 * B1 * !C1 * !X)	0.00097	0.00098	0.00097
	(A2 * !B1 * !X)	-0.00097	-0.00098	-0.00097
	(A2 * !B1 * !X)	0.00097	0.00098	0.00097
	(!A2 * B1 * C1 * !D1 * !X)	-0.00084	-0.00090	-0.00089
	(!A2 * B1 * C1 * !D1 * !X)	0.00099	0.00099	0.00099
	(!A2 * B1 * !C1 * D1 * !X)	-0.00085	-0.00091	-0.00090
	(!A2 * B1 * !C1 * D1 * !X)	0.00099	0.00099	0.00099
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00085	-0.00091	-0.00090
	(!A2 * B1 * !C1 * !D1 * !X)	0.00099	0.00099	0.00099
	(!A2 * !B1 * C1 * D1 * !X)	-0.00088	-0.00092	-0.00092
	(!A2 * !B1 * C1 * D1 * !X)	0.00099	0.00099	0.00099
	(!A2 * !B1 * !D1 * !X)	-0.00088	-0.00092	-0.00092
	(!A2 * !B1 * !D1 * !X)	0.00099	0.00099	0.00099
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00088	-0.00092	-0.00092
	(!A2 * !B1 * !C1 * D1 * !X)	0.00099	0.00099	0.00099

sky130_fd_sc_hs__o2111a_4	(A2 * B1 * C1 * D1 * X)	-0.00187	-0.00188	-0.00186
	(A2 * B1 * C1 * D1 * X)	0.00191	0.00192	0.00191
	(A2 * B1 * C1 * !D1 * !X)	-0.00173	-0.00173	-0.00173
	(A2 * B1 * C1 * !D1 * !X)	0.00205	0.00206	0.00205
	(A2 * B1 * !C1 * !X)	-0.00173	-0.00173	-0.00173
	(A2 * B1 * !C1 * !X)	0.00205	0.00206	0.00205
	(A2 * !B1 * !X)	-0.00173	-0.00173	-0.00173
	(A2 * !B1 * !X)	0.00205	0.00206	0.00205
	(!A2 * B1 * C1 * !D1 * !X)	-0.00148	-0.00159	-0.00158
	(!A2 * B1 * C1 * !D1 * !X)	0.00209	0.00211	0.00209
	(!A2 * B1 * !C1 * D1 * !X)	-0.00149	-0.00158	-0.00159
	(!A2 * B1 * !C1 * D1 * !X)	0.00208	0.00211	0.00209
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00149	-0.00161	-0.00159
	(!A2 * B1 * !C1 * !D1 * !X)	0.00209	0.00211	0.00209
	(!A2 * !B1 * C1 * D1 * !X)	-0.00155	-0.00163	-0.00162
	(!A2 * !B1 * C1 * D1 * !X)	0.00208	0.00210	0.00209
	(!A2 * !B1 * !D1 * !X)	-0.00155	-0.00162	-0.00162
	(!A2 * !B1 * !D1 * !X)	0.00208	0.00210	0.00209
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00155	-0.00162	-0.00162
	(!A2 * !B1 * !C1 * D1 * !X)	0.00208	0.00210	0.00209

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)**	0.00099	0.00098	0.00098
	(A1 * B1 * C1 * D1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * B1 * C1 * !D1 * !X)	0.00090	0.00089	0.00089
	(A1 * B1 * C1 * !D1 * !X)	-0.00095	-0.00096	-0.00096
	(A1 * B1 * !C1 * D1 * !X)	0.00090	0.00089	0.00089
	(A1 * B1 * !C1 * D1 * !X)	-0.00095	-0.00096	-0.00096
	(A1 * B1 * !C1 * !D1 * !X)	0.00090	0.00090	0.00089
	(A1 * B1 * !C1 * !D1 * !X)	-0.00095	-0.00096	-0.00096
	(A1 * !B1 * C1 * D1 * !X)	0.00089	0.00090	0.00089
	(A1 * !B1 * C1 * D1 * !X)	-0.00094	-0.00096	-0.00096
	(A1 * !B1 * !D1 * !X)	0.00089	0.00090	0.00089
	(A1 * !B1 * !D1 * !X)	-0.00094	-0.00096	-0.00096
	(A1 * !B1 * !C1 * D1 * !X)	0.00089	0.00090	0.00089
	(A1 * !B1 * !C1 * D1 * !X)	-0.00094	-0.00096	-0.00096
	(!A1 * B1 * C1 * !D1 * !X)	0.00080	0.00081	0.00080
	(!A1 * B1 * C1 * !D1 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * B1 * !C1 * D1 * !X)	0.00081	0.00082	0.00082
	(!A1 * B1 * !C1 * D1 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * B1 * !C1 * !D1 * !X)	0.00081	0.00082	0.00081
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * !B1 * C1 * D1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * C1 * D1 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * !B1 * !D1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !D1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !B1 * !C1 * D1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00097	-0.00098	-0.00098

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00099	0.00098	0.00098
	(A1 * B1 * C1 * D1 * X)	-0.00053	-0.00052	-0.00052
	(A1 * B1 * C1 * !D1 * !X)	0.00089	0.00090	0.00090
	(A1 * B1 * C1 * !D1 * !X)	-0.00092	-0.00093	-0.00094
	(A1 * B1 * !C1 * D1 * !X)	0.00089	0.00090	0.00090
	(A1 * B1 * !C1 * D1 * !X)	-0.00092	-0.00093	-0.00094
	(A1 * B1 * !C1 * !D1 * !X)	0.00089	0.00090	0.00090
	(A1 * B1 * !C1 * !D1 * !X)	-0.00092	-0.00094	-0.00094
	(A1 * !B1 * C1 * D1 * !X)	0.00089	0.00090	0.00090
	(A1 * !B1 * C1 * D1 * !X)	-0.00092	-0.00093	-0.00094
	(A1 * !B1 * !D1 * !X)	0.00089	0.00090	0.00090
	(A1 * !B1 * !D1 * !X)	-0.00092	-0.00094	-0.00094
	(A1 * !B1 * !C1 * D1 * !X)	0.00089	0.00090	0.00090
	(A1 * !B1 * !C1 * D1 * !X)	-0.00092	-0.00094	-0.00094
	(!A1 * B1 * C1 * !D1 * !X)	0.00081	0.00082	0.00082
	(!A1 * B1 * C1 * !D1 * !X)	-0.00095	-0.00096	-0.00095
	(!A1 * B1 * !C1 * D1 * !X)	0.00082	0.00083	0.00082
	(!A1 * B1 * !C1 * D1 * !X)	-0.00095	-0.00096	-0.00095
	(!A1 * B1 * !C1 * !D1 * !X)	0.00082	0.00083	0.00082
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * !B1 * C1 * D1 * !X)	0.00084	0.00085	0.00084
	(!A1 * !B1 * C1 * D1 * !X)	-0.00095	-0.00096	-0.00095
	(!A1 * !B1 * !D1 * !X)	0.00084	0.00085	0.00084
	(!A1 * !B1 * !D1 * !X)	-0.00095	-0.00096	-0.00095
	(!A1 * !B1 * !C1 * D1 * !X)	0.00084	0.00084	0.00084
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00095	-0.00095	-0.00095

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00218	0.00216	0.00215
	(A1 * B1 * C1 * D1 * X)	-0.00108	-0.00106	-0.00106
	(A1 * B1 * C1 * !D1 * !X)	0.00181	0.00185	0.00183
	(A1 * B1 * C1 * !D1 * !X)	-0.00201	-0.00206	-0.00206
	(A1 * B1 * !C1 * D1 * !X)	0.00181	0.00185	0.00183
	(A1 * B1 * !C1 * D1 * !X)	-0.00201	-0.00206	-0.00206
	(A1 * B1 * !C1 * !D1 * !X)	0.00182	0.00184	0.00183
	(A1 * B1 * !C1 * !D1 * !X)	-0.00201	-0.00207	-0.00206
	(A1 * !B1 * C1 * D1 * !X)	0.00182	0.00185	0.00183
	(A1 * !B1 * C1 * D1 * !X)	-0.00202	-0.00206	-0.00206
	(A1 * !B1 * !D1 * !X)	0.00182	0.00184	0.00183
	(A1 * !B1 * !D1 * !X)	-0.00202	-0.00206	-0.00206
	(A1 * !B1 * !C1 * D1 * !X)	0.00182	0.00184	0.00183
	(A1 * !B1 * !C1 * D1 * !X)	-0.00202	-0.00206	-0.00206
	(!A1 * B1 * C1 * !D1 * !X)	0.00164	0.00165	0.00164
	(!A1 * B1 * C1 * !D1 * !X)	-0.00210	-0.00210	-0.00210
	(!A1 * B1 * !C1 * D1 * !X)	0.00165	0.00166	0.00165
	(!A1 * B1 * !C1 * D1 * !X)	-0.00210	-0.00211	-0.00210
	(!A1 * B1 * !C1 * !D1 * !X)	0.00165	0.00166	0.00165
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00210	-0.00210	-0.00210
	(!A1 * !B1 * C1 * D1 * !X)	0.00169	0.00170	0.00169
	(!A1 * !B1 * C1 * D1 * !X)	-0.00210	-0.00210	-0.00210
	(!A1 * !B1 * !D1 * !X)	0.00169	0.00170	0.00169
	(!A1 * !B1 * !D1 * !X)	-0.00210	-0.00211	-0.00210
	(!A1 * !B1 * !C1 * D1 * !X)	0.00169	0.00170	0.00169
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00210	-0.00211	-0.00210

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)**	-0.00093	-0.00094	-0.00097
	(A1 * B1 * C1 * D1 * X)	0.00058	0.00058	0.00055
	(A1 * B1 * C1 * !D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * B1 * C1 * !D1 * !X)	0.00096	0.00096	0.00096
	(A1 * B1 * !C1 * D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * B1 * !C1 * D1 * !X)	0.00096	0.00096	0.00096
	(A1 * B1 * !C1 * !D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * B1 * !C1 * !D1 * !X)	0.00096	0.00096	0.00096
	(A1 * !B1 * C1 * D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * C1 * D1 * !X)	0.00096	0.00096	0.00096
	(A1 * !B1 * !D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * !D1 * !X)	0.00096	0.00096	0.00096
	(A1 * !B1 * !C1 * D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * !C1 * D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * B1 * C1 * !D1 * !X)	-0.00074	-0.00081	-0.00080
	(!A1 * B1 * C1 * !D1 * !X)	0.00098	0.00098	0.00098
	(!A1 * B1 * !C1 * D1 * !X)	-0.00076	-0.00082	-0.00082
	(!A1 * B1 * !C1 * D1 * !X)	0.00098	0.00098	0.00098
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00076	-0.00082	-0.00081
	(!A1 * B1 * !C1 * !D1 * !X)	0.00098	0.00098	0.00098
	(!A1 * !B1 * C1 * D1 * !X)	-0.00080	-0.00084	-0.00083
	(!A1 * !B1 * C1 * D1 * !X)	0.00097	0.00099	0.00098
	(!A1 * !B1 * !D1 * !X)	-0.00080	-0.00084	-0.00083
	(!A1 * !B1 * !D1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00080	-0.00084	-0.00083
	(!A1 * !B1 * !C1 * D1 * !X)	0.00097	0.00099	0.00098

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00093	-0.00094	-0.00097
	(A1 * B1 * C1 * D1 * X)	0.00056	0.00056	0.00053
	(A1 * B1 * C1 * !D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * B1 * C1 * !D1 * !X)	0.00094	0.00093	0.00094
	(A1 * B1 * !C1 * D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * B1 * !C1 * D1 * !X)	0.00094	0.00093	0.00094
	(A1 * B1 * !C1 * !D1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * B1 * !C1 * !D1 * !X)	0.00094	0.00094	0.00094
	(A1 * !B1 * C1 * D1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * C1 * D1 * !X)	0.00094	0.00093	0.00094
	(A1 * !B1 * !D1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * !B1 * !D1 * !X)	0.00094	0.00094	0.00094
	(A1 * !B1 * !C1 * D1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * !B1 * !C1 * D1 * !X)	0.00094	0.00094	0.00094
	(!A1 * B1 * C1 * !D1 * !X)	-0.00076	-0.00082	-0.00082
	(!A1 * B1 * C1 * !D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * B1 * !C1 * D1 * !X)	-0.00077	-0.00083	-0.00082
	(!A1 * B1 * !C1 * D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00077	-0.00083	-0.00082
	(!A1 * B1 * !C1 * !D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * !B1 * C1 * D1 * !X)	-0.00081	-0.00085	-0.00084
	(!A1 * !B1 * C1 * D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * !B1 * !D1 * !X)	-0.00081	-0.00085	-0.00084
	(!A1 * !B1 * !D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00081	-0.00084	-0.00084
	(!A1 * !B1 * !C1 * D1 * !X)	0.00096	0.00096	0.00096

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00205	-0.00205	-0.00213
	(A1 * B1 * C1 * D1 * X)	0.00116	0.00116	0.00109
	(A1 * B1 * C1 * !D1 * !X)	-0.00181	-0.00183	-0.00182
	(A1 * B1 * C1 * !D1 * !X)	0.00207	0.00206	0.00206
	(A1 * B1 * !C1 * D1 * !X)	-0.00181	-0.00183	-0.00182
	(A1 * B1 * !C1 * D1 * !X)	0.00207	0.00206	0.00206
	(A1 * B1 * !C1 * !D1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * B1 * !C1 * !D1 * !X)	0.00206	0.00207	0.00206
	(A1 * !B1 * C1 * D1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * !B1 * C1 * D1 * !X)	0.00206	0.00206	0.00206
	(A1 * !B1 * !D1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * !B1 * !D1 * !X)	0.00206	0.00206	0.00206
	(A1 * !B1 * !C1 * D1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * !B1 * !C1 * D1 * !X)	0.00206	0.00206	0.00206
	(!A1 * B1 * C1 * !D1 * !X)	-0.00151	-0.00165	-0.00164
	(!A1 * B1 * C1 * !D1 * !X)	0.00210	0.00211	0.00210
	(!A1 * B1 * !C1 * D1 * !X)	-0.00153	-0.00166	-0.00165
	(!A1 * B1 * !C1 * D1 * !X)	0.00210	0.00212	0.00210
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00153	-0.00166	-0.00165
	(!A1 * B1 * !C1 * !D1 * !X)	0.00210	0.00212	0.00210
	(!A1 * !B1 * C1 * D1 * !X)	-0.00160	-0.00170	-0.00169
	(!A1 * !B1 * C1 * D1 * !X)	0.00210	0.00211	0.00210
	(!A1 * !B1 * !D1 * !X)	-0.00160	-0.00170	-0.00169
	(!A1 * !B1 * !D1 * !X)	0.00210	0.00212	0.00210
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00160	-0.00170	-0.00169
	(!A1 * !B1 * !C1 * D1 * !X)	0.00210	0.00212	0.00210

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)**	0.00078	0.00079	0.00078
	(A2 * C1 * !D1 * !X)	-0.00086	-0.00086	-0.00086
	(A2 * !C1 * D1 * !X)	0.00080	0.00081	0.00081
	(A2 * !C1 * D1 * !X)	-0.00085	-0.00086	-0.00086
	(A2 * !C1 * !D1 * !X)	0.00080	0.00081	0.00080
	(A2 * !C1 * !D1 * !X)	-0.00085	-0.00086	-0.00086
	(A1 * !A2 * C1 * !D1 * !X)	0.00078	0.00078	0.00078
	(A1 * !A2 * C1 * !D1 * !X)	-0.00085	-0.00086	-0.00086
	(A1 * !A2 * !C1 * D1 * !X)	0.00081	0.00081	0.00081
	(A1 * !A2 * !C1 * D1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * !C1 * !D1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * C1 * D1 * !X)	0.00042	0.00042	0.00041
	(!A1 * !A2 * C1 * D1 * !X)	-0.00083	-0.00083	-0.00082
	(!A1 * !A2 * C1 * !D1 * !X)	0.00046	0.00047	0.00046
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * !C1 * D1 * !X)	0.00049	0.00049	0.00048
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00049	0.00050	0.00049
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00085	-0.00086	-0.00086

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00081	0.00082	0.00081
	(A2 * C1 * !D1 * !X)	-0.00098	-0.00098	-0.00098
	(A2 * !C1 * D1 * !X)	0.00082	0.00083	0.00083
	(A2 * !C1 * D1 * !X)	-0.00098	-0.00098	-0.00098
	(A2 * !C1 * !D1 * !X)	0.00082	0.00083	0.00083
	(A2 * !C1 * !D1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * C1 * !D1 * !X)	0.00081	0.00082	0.00081
	(A1 * !A2 * C1 * !D1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !C1 * D1 * !X)	0.00083	0.00083	0.00083
	(A1 * !A2 * !C1 * D1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !C1 * !D1 * !X)	0.00083	0.00083	0.00083
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !A2 * C1 * D1 * !X)	0.00045	0.00045	0.00044
	(!A1 * !A2 * C1 * D1 * !X)	-0.00095	-0.00095	-0.00094
	(!A1 * !A2 * C1 * !D1 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !A2 * !C1 * D1 * !X)	0.00052	0.00052	0.00051
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00052	0.00053	0.00052
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00098	-0.00098	-0.00098

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00158	0.00159	0.00159
	(A2 * C1 * !D1 * !X)	-0.00168	-0.00169	-0.00169
	(A2 * !C1 * D1 * !X)	0.00161	0.00161	0.00162
	(A2 * !C1 * D1 * !X)	-0.00168	-0.00168	-0.00169
	(A2 * !C1 * !D1 * !X)	0.00161	0.00162	0.00162
	(A2 * !C1 * !D1 * !X)	-0.00168	-0.00169	-0.00169
	(A1 * !A2 * C1 * !D1 * !X)	0.00158	0.00159	0.00159
	(A1 * !A2 * C1 * !D1 * !X)	-0.00168	-0.00169	-0.00169
	(A1 * !A2 * !C1 * D1 * !X)	0.00162	0.00163	0.00163
	(A1 * !A2 * !C1 * D1 * !X)	-0.00168	-0.00169	-0.00169
	(A1 * !A2 * !C1 * !D1 * !X)	0.00162	0.00163	0.00162
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00168	-0.00169	-0.00169
	(!A1 * !A2 * C1 * D1 * !X)	0.00082	0.00083	0.00083
	(!A1 * !A2 * C1 * D1 * !X)	-0.00162	-0.00162	-0.00161
	(!A1 * !A2 * C1 * !D1 * !X)	0.00095	0.00095	0.00094
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00169	-0.00171	-0.00170
	(!A1 * !A2 * !C1 * D1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00168	-0.00170	-0.00169
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00097	0.00097	0.00096
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00169	-0.00170	-0.00169

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)**	-0.00073	-0.00079	-0.00078
	(A2 * C1 * !D1 * !X)	0.00086	0.00087	0.00086
	(A2 * !C1 * D1 * !X)	-0.00078	-0.00081	-0.00081
	(A2 * !C1 * D1 * !X)	0.00086	0.00087	0.00086
	(A2 * !C1 * !D1 * !X)	-0.00078	-0.00081	-0.00080
	(A2 * !C1 * !D1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * C1 * !D1 * !X)	-0.00071	-0.00078	-0.00078
	(A1 * !A2 * C1 * !D1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * !C1 * D1 * !X)	-0.00077	-0.00081	-0.00081
	(A1 * !A2 * !C1 * D1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00077	-0.00081	-0.00080
	(A1 * !A2 * !C1 * !D1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * C1 * D1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * C1 * D1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * C1 * !D1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00049	-0.00049	-0.00048
	(!A1 * !A2 * !C1 * D1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00086	0.00086	0.00086

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00075	-0.00082	-0.00081
	(A2 * C1 * !D1 * !X)	0.00098	0.00099	0.00098
	(A2 * !C1 * D1 * !X)	-0.00080	-0.00083	-0.00083
	(A2 * !C1 * D1 * !X)	0.00098	0.00099	0.00098
	(A2 * !C1 * !D1 * !X)	-0.00080	-0.00083	-0.00083
	(A2 * !C1 * !D1 * !X)	0.00098	0.00099	0.00098
	(A1 * !A2 * C1 * !D1 * !X)	-0.00074	-0.00082	-0.00081
	(A1 * !A2 * C1 * !D1 * !X)	0.00098	0.00099	0.00098
	(A1 * !A2 * !C1 * D1 * !X)	-0.00079	-0.00083	-0.00083
	(A1 * !A2 * !C1 * D1 * !X)	0.00098	0.00099	0.00098
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00080	-0.00083	-0.00083
	(A1 * !A2 * !C1 * !D1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * C1 * D1 * !X)	-0.00040	-0.00041	-0.00040
	(!A1 * !A2 * C1 * D1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * C1 * !D1 * !X)	0.00099	0.00099	0.00098
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00052	-0.00052	-0.00051
	(!A1 * !A2 * !C1 * D1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00098	0.00099	0.00098

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00148	-0.00159	-0.00159
	(A2 * C1 * !D1 * !X)	0.00169	0.00171	0.00169
	(A2 * !C1 * D1 * !X)	-0.00156	-0.00161	-0.00162
	(A2 * !C1 * D1 * !X)	0.00170	0.00171	0.00169
	(A2 * !C1 * !D1 * !X)	-0.00157	-0.00162	-0.00162
	(A2 * !C1 * !D1 * !X)	0.00170	0.00171	0.00169
	(A1 * !A2 * C1 * !D1 * !X)	-0.00146	-0.00159	-0.00159
	(A1 * !A2 * C1 * !D1 * !X)	0.00170	0.00171	0.00169
	(A1 * !A2 * !C1 * D1 * !X)	-0.00155	-0.00163	-0.00163
	(A1 * !A2 * !C1 * D1 * !X)	0.00169	0.00171	0.00169
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00155	-0.00163	-0.00162
	(A1 * !A2 * !C1 * !D1 * !X)	0.00169	0.00171	0.00169
	(!A1 * !A2 * C1 * D1 * !X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * C1 * D1 * !X)	0.00169	0.00171	0.00170
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00095	-0.00095	-0.00094
	(!A1 * !A2 * C1 * !D1 * !X)	0.00169	0.00171	0.00170
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00094	-0.00095	-0.00094
	(!A1 * !A2 * !C1 * D1 * !X)	0.00170	0.00170	0.00170
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00097	-0.00097	-0.00096
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00171	0.00171	0.00170

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)**	0.00081	0.00081	0.00081
	(A2 * B1 * !D1 * !X)	-0.00091	-0.00091	-0.00091
	(A2 * !B1 * D1 * !X)	0.00038	0.00038	0.00038
	(A2 * !B1 * D1 * !X)	-0.00091	-0.00091	-0.00090
	(A2 * !B1 * !D1 * !X)	0.00043	0.00043	0.00043
	(A2 * !B1 * !D1 * !X)	-0.00092	-0.00092	-0.00091
	(A1 * !A2 * B1 * !D1 * !X)	0.00081	0.00081	0.00081
	(A1 * !A2 * B1 * !D1 * !X)	-0.00091	-0.00091	-0.00091
	(!A2 * !B1 * D1 * !X)	0.00038	0.00038	0.00038
	(!A2 * !B1 * D1 * !X)	-0.00091	-0.00091	-0.00090
	(!A2 * !B1 * !D1 * !X)	0.00043	0.00043	0.00043
	(!A2 * !B1 * !D1 * !X)	-0.00092	-0.00092	-0.00091
	(!A1 * !A2 * B1 * D1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * B1 * D1 * !X)	-0.00091	-0.00091	-0.00090
	(!A1 * !A2 * B1 * !D1 * !X)	0.00047	0.00048	0.00047
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00091	-0.00092	-0.00091

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00081	0.00082	0.00082
	(A2 * B1 * !D1 * !X)	-0.00101	-0.00102	-0.00101
	(A2 * !B1 * D1 * !X)	0.00040	0.00041	0.00041
	(A2 * !B1 * D1 * !X)	-0.00101	-0.00102	-0.00101
	(A2 * !B1 * !D1 * !X)	0.00046	0.00047	0.00046
	(A2 * !B1 * !D1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !A2 * B1 * !D1 * !X)	0.00081	0.00082	0.00082
	(A1 * !A2 * B1 * !D1 * !X)	-0.00101	-0.00102	-0.00101
	(!A2 * !B1 * D1 * !X)	0.00040	0.00041	0.00041
	(!A2 * !B1 * D1 * !X)	-0.00101	-0.00102	-0.00101
	(!A2 * !B1 * !D1 * !X)	0.00046	0.00047	0.00046
	(!A2 * !B1 * !D1 * !X)	-0.00102	-0.00102	-0.00102
	(!A1 * !A2 * B1 * D1 * !X)	0.00040	0.00041	0.00041
	(!A1 * !A2 * B1 * D1 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * B1 * !D1 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00101	-0.00102	-0.00101

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00167	0.00169	0.00168
	(A2 * B1 * !D1 * !X)	-0.00173	-0.00174	-0.00173
	(A2 * !B1 * D1 * !X)	0.00084	0.00084	0.00084
	(A2 * !B1 * D1 * !X)	-0.00173	-0.00174	-0.00172
	(A2 * !B1 * !D1 * !X)	0.00096	0.00097	0.00096
	(A2 * !B1 * !D1 * !X)	-0.00175	-0.00175	-0.00174
	(A1 * !A2 * B1 * !D1 * !X)	0.00167	0.00169	0.00168
	(A1 * !A2 * B1 * !D1 * !X)	-0.00173	-0.00174	-0.00173
	(!A2 * !B1 * D1 * !X)	0.00083	0.00084	0.00084
	(!A2 * !B1 * D1 * !X)	-0.00173	-0.00174	-0.00172
	(!A2 * !B1 * !D1 * !X)	0.00095	0.00097	0.00096
	(!A2 * !B1 * !D1 * !X)	-0.00173	-0.00175	-0.00174
	(!A1 * !A2 * B1 * D1 * !X)	0.00079	0.00080	0.00082
	(!A1 * !A2 * B1 * D1 * !X)	-0.00172	-0.00174	-0.00171
	(!A1 * !A2 * B1 * !D1 * !X)	0.00100	0.00101	0.00100
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00175	-0.00176	-0.00174

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)**	-0.00075	-0.00081	-0.00081
	(A2 * B1 * !D1 * !X)	0.00096	0.00092	0.00091
	(A2 * !B1 * D1 * !X)	-0.00036	-0.00036	-0.00037
	(A2 * !B1 * D1 * !X)	0.00093	0.00094	0.00092
	(A2 * !B1 * !D1 * !X)	-0.00043	-0.00043	-0.00043
	(A2 * !B1 * !D1 * !X)	0.00097	0.00097	0.00092
	(A1 * !A2 * B1 * !D1 * !X)	-0.00074	-0.00081	-0.00081
	(A1 * !A2 * B1 * !D1 * !X)	0.00096	0.00092	0.00091
	(!A2 * !B1 * D1 * !X)	-0.00036	-0.00036	-0.00037
	(!A2 * !B1 * D1 * !X)	0.00094	0.00094	0.00092
	(!A2 * !B1 * !D1 * !X)	-0.00043	-0.00043	-0.00043
	(!A2 * !B1 * !D1 * !X)	0.00097	0.00097	0.00092
	(!A1 * !A2 * B1 * D1 * !X)	-0.00035	-0.00036	-0.00036
	(!A1 * !A2 * B1 * D1 * !X)	0.00094	0.00094	0.00092
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * B1 * !D1 * !X)	0.00096	0.00093	0.00091

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00076	-0.00082	-0.00082
	(A2 * B1 * !D1 * !X)	0.00105	0.00103	0.00102
	(A2 * !B1 * D1 * !X)	-0.00038	-0.00038	-0.00039
	(A2 * !B1 * D1 * !X)	0.00104	0.00105	0.00102
	(A2 * !B1 * !D1 * !X)	-0.00046	-0.00047	-0.00046
	(A2 * !B1 * !D1 * !X)	0.00106	0.00107	0.00103
	(A1 * !A2 * B1 * !D1 * !X)	-0.00076	-0.00082	-0.00082
	(A1 * !A2 * B1 * !D1 * !X)	0.00106	0.00102	0.00102
	(!A2 * !B1 * D1 * !X)	-0.00038	-0.00038	-0.00039
	(!A2 * !B1 * D1 * !X)	0.00104	0.00105	0.00102
	(!A2 * !B1 * !D1 * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !D1 * !X)	0.00106	0.00107	0.00103
	(!A1 * !A2 * B1 * D1 * !X)	-0.00037	-0.00038	-0.00038
	(!A1 * !A2 * B1 * D1 * !X)	0.00104	0.00105	0.00102
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * B1 * !D1 * !X)	0.00104	0.00103	0.00102

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00156	-0.00169	-0.00168
	(A2 * B1 * !D1 * !X)	0.00180	0.00174	0.00174
	(A2 * !B1 * D1 * !X)	-0.00078	-0.00079	-0.00081
	(A2 * !B1 * D1 * !X)	0.00178	0.00179	0.00175
	(A2 * !B1 * !D1 * !X)	-0.00096	-0.00097	-0.00096
	(A2 * !B1 * !D1 * !X)	0.00180	0.00182	0.00175
	(A1 * !A2 * B1 * !D1 * !X)	-0.00154	-0.00169	-0.00168
	(A1 * !A2 * B1 * !D1 * !X)	0.00181	0.00174	0.00174
	(!A2 * !B1 * D1 * !X)	-0.00078	-0.00079	-0.00081
	(!A2 * !B1 * D1 * !X)	0.00178	0.00179	0.00175
	(!A2 * !B1 * !D1 * !X)	-0.00095	-0.00097	-0.00096
	(!A2 * !B1 * !D1 * !X)	0.00180	0.00182	0.00175
	(!A1 * !A2 * B1 * D1 * !X)	-0.00076	-0.00077	-0.00078
	(!A1 * !A2 * B1 * D1 * !X)	0.00179	0.00180	0.00175
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00100	-0.00101	-0.00100
	(!A1 * !A2 * B1 * !D1 * !X)	0.00178	0.00176	0.00174

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00033	0.00033	0.00032
	(A2 * !C1 * !X)	-0.00110	-0.00111	-0.00113
	(A2 * !B1 * C1 * !X)	0.00033	0.00034	0.00031
	(A2 * !B1 * C1 * !X)	-0.00106	-0.00108	-0.00112
	(!A2 * !C1 * !X)	0.00033	0.00033	0.00032
	(!A2 * !C1 * !X)	-0.00110	-0.00111	-0.00113
	(!A2 * !B1 * C1 * !X)	0.00033	0.00034	0.00031
	(!A2 * !B1 * C1 * !X)	-0.00107	-0.00107	-0.00112
	(!A1 * !A2 * B1 * C1 * !X)	0.00038	0.00038	0.00033
	(!A1 * !A2 * B1 * C1 * !X)	-0.00099	-0.00100	-0.00111

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00035	0.00035	0.00033
	(A2 * !C1 * !X)	-0.00123	-0.00124	-0.00126
	(A2 * !B1 * C1 * !X)	0.00035	0.00035	0.00032
	(A2 * !B1 * C1 * !X)	-0.00119	-0.00120	-0.00125
	(!A2 * !C1 * !X)	0.00035	0.00035	0.00033
	(!A2 * !C1 * !X)	-0.00123	-0.00124	-0.00126
	(!A2 * !B1 * C1 * !X)	0.00035	0.00035	0.00032
	(!A2 * !B1 * C1 * !X)	-0.00119	-0.00120	-0.00125
	(!A1 * !A2 * B1 * C1 * !X)	0.00039	0.00039	0.00033
	(!A1 * !A2 * B1 * C1 * !X)	-0.00111	-0.00112	-0.00124
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00073	0.00073	0.00068
	(A2 * !C1 * !X)	-0.00203	-0.00204	-0.00210
	(A2 * !B1 * C1 * !X)	0.00071	0.00071	0.00064
	(A2 * !B1 * C1 * !X)	-0.00193	-0.00195	-0.00209
	(!A2 * !C1 * !X)	0.00072	0.00073	0.00068
	(!A2 * !C1 * !X)	-0.00202	-0.00204	-0.00210
	(!A2 * !B1 * C1 * !X)	0.00071	0.00072	0.00064
	(!A2 * !B1 * C1 * !X)	-0.00194	-0.00196	-0.00209
	(!A1 * !A2 * B1 * C1 * !X)	0.00077	0.00078	0.00065
	(!A1 * !A2 * B1 * C1 * !X)	-0.00179	-0.00182	-0.00206

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00031	-0.00031	-0.00031
	(A2 * !C1 * !X)	0.00112	0.00114	0.00113
	(A2 * !B1 * C1 * !X)	-0.00030	-0.00031	-0.00030
	(A2 * !B1 * C1 * !X)	0.00112	0.00114	0.00113
	(!A2 * !C1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !C1 * !X)	0.00112	0.00113	0.00113
	(!A2 * !B1 * C1 * !X)	-0.00030	-0.00031	-0.00030
	(!A2 * !B1 * C1 * !X)	0.00112	0.00113	0.00113
	(!A1 * !A2 * B1 * C1 * !X)	-0.00030	-0.00031	-0.00030
	(!A1 * !A2 * B1 * C1 * !X)	0.00112	0.00113	0.00113
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00032	-0.00032	-0.00032
	(A2 * !C1 * !X)	0.00126	0.00127	0.00126
	(A2 * !B1 * C1 * !X)	-0.00031	-0.00032	-0.00031
	(A2 * !B1 * C1 * !X)	0.00126	0.00127	0.00126
	(!A2 * !C1 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * !C1 * !X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * !X)	-0.00031	-0.00032	-0.00031
	(!A2 * !B1 * C1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * B1 * C1 * !X)	-0.00031	-0.00032	-0.00031
	(!A1 * !A2 * B1 * C1 * !X)	0.00126	0.00127	0.00126
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00066	-0.00066	-0.00065
	(A2 * !C1 * !X)	0.00212	0.00213	0.00211
	(A2 * !B1 * C1 * !X)	-0.00063	-0.00064	-0.00063
	(A2 * !B1 * C1 * !X)	0.00210	0.00212	0.00211
	(!A2 * !C1 * !X)	-0.00066	-0.00066	-0.00065
	(!A2 * !C1 * !X)	0.00212	0.00212	0.00211
	(!A2 * !B1 * C1 * !X)	-0.00063	-0.00064	-0.00063
	(!A2 * !B1 * C1 * !X)	0.00210	0.00212	0.00211
	(!A1 * !A2 * B1 * C1 * !X)	-0.00064	-0.00064	-0.00063
	(!A1 * !A2 * B1 * C1 * !X)	0.00212	0.00212	0.00211

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00258	0.00270	0.00274	0.00268	0.30080
sky130_fd_sc_hs__o211ai_2	0.00500	0.00515	0.00515	0.00503	0.56132
sky130_fd_sc_hs__o211ai_4	0.00985	0.01017	0.00735	0.00759	1.08796

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.01038	0.05433
sky130_fd_sc_hs__o211ai_2	0.00000	0.02076	0.10867
sky130_fd_sc_hs__o211ai_4	0.00000	0.02794	0.14489

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)	0.23276	1.42509	12.12520
	A2->Y (FR)	0.21048	1.37226	11.92360
	B1->Y (FR)	0.08692	0.89624	8.57347
	C1->Y (FR)	0.07101	0.88023	8.55732
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.21466	1.24949	12.08650
	A2->Y (FR)	0.18177	1.18576	11.88380
	B1->Y (FR)	0.07159	0.79449	8.36519
	C1->Y (FR)	0.05213	0.76926	8.31214
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.19992	1.10312	12.12040
	A2->Y (FR)	0.16881	1.04683	11.98130
	B1->Y (FR)	0.10461	0.94671	11.21610
	C1->Y (FR)	0.06829	0.90947	11.07110

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.08265	0.60898	5.28385
	A2->Y (RF)	0.07078	0.58693	5.20630
	B1->Y (RF)	0.07544	0.64951	5.86921
	C1->Y (RF)	0.06360	0.65430	6.09750
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.07710	0.53554	5.18850
	A2->Y (RF)	0.06557	0.51868	5.17656
	B1->Y (RF)	0.07054	0.59329	5.96785
	C1->Y (RF)	0.05404	0.59730	6.20919
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.07662	0.49447	5.41212
	A2->Y (RF)	0.06108	0.46629	5.28634
	B1->Y (RF)	0.06405	0.53967	6.15753
	C1->Y (RF)	0.04926	0.55765	6.63174

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00107	0.00097	0.00097
	A1	0.00537	0.00529	0.00528
	A2	0.00108	0.00099	0.00115
	A2	0.00487	0.00478	0.00492
	B1	0.00045	0.00035	0.00053
	B1	0.00412	0.00402	0.00417
	C1	0.00004	-0.00003	0.00014
	C1	0.00315	0.00308	0.00325
sky130_fd_sc_hs__o211ai_2	A1	0.00127	0.00110	0.00110
	A1	0.00998	0.00981	0.00982
	A2	0.00128	0.00111	0.00144
	A2	0.00887	0.00869	0.00899
	B1	0.00035	0.00017	0.00052
	B1	0.00772	0.00752	0.00784
	C1	-0.00087	-0.00097	-0.00052
	C1	0.00530	0.00499	0.00564
sky130_fd_sc_hs__o211ai_4	A1	0.00247	0.00206	0.00209
	A1	0.01938	0.01901	0.01905
	A2	0.00245	0.00205	0.00272
	A2	0.01718	0.01679	0.01738
	B1	0.00030	-0.00009	0.00038
	B1	0.01236	0.01161	0.01238
	C1	-0.00176	-0.00195	-0.00139
	C1	0.00805	0.00789	0.00842

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00577	0.00571	0.00576
	A1	0.00136	0.00128	0.00129
	A2	0.00476	0.00472	0.00490
	A2	0.00085	0.00079	0.00081
	B1	0.00507	0.00499	0.00527
	B1	0.00141	0.00133	0.00134
	C1	0.00446	0.00438	0.00472
	C1	0.00141	0.00132	0.00136
sky130_fd_sc_hs__o211ai_2	A1	0.01118	0.01096	0.01099
	A1	0.00228	0.00206	0.00208
	A2	0.00864	0.00858	0.00863
	A2	0.00078	0.00068	0.00077
	B1	0.00962	0.00949	0.00949
	B1	0.00227	0.00210	0.00214
	C1	0.00828	0.00811	0.00826
	C1	0.00222	0.00206	0.00217
sky130_fd_sc_hs__o211ai_4	A1	0.02040	0.01997	0.02048
	A1	0.00306	0.00260	0.00269
	A2	0.01546	0.01527	0.01605
	A2	0.00014	-0.00011	0.00017
	B1	0.01649	0.01639	0.01637
	B1	0.00454	0.00439	0.00443
	C1	0.01409	0.01403	0.01437
	C1	0.00450	0.00434	0.00445

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)**	0.00103	0.00095	0.00094
	(A2 * B1 * C1 * !Y)	-0.00095	-0.00106	-0.00106
	(A2 * B1 * !C1 * Y)	0.00094	0.00094	0.00094
	(A2 * B1 * !C1 * Y)	-0.00104	-0.00106	-0.00106
	(A2 * !B1 * Y)	0.00094	0.00094	0.00094
	(A2 * !B1 * Y)	-0.00104	-0.00106	-0.00106
	(!A2 * B1 * !C1 * Y)	0.00086	0.00087	0.00086
	(!A2 * B1 * !C1 * Y)	-0.00107	-0.00108	-0.00107
	(!A2 * !B1 * C1 * Y)	0.00087	0.00088	0.00088
	(!A2 * !B1 * C1 * Y)	-0.00107	-0.00108	-0.00108
	(!A2 * !B1 * !C1 * Y)	0.00087	0.00088	0.00087
	(!A2 * !B1 * !C1 * Y)	-0.00107	-0.00108	-0.00108
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00203	0.00186	0.00184
	(A2 * B1 * C1 * !Y)	-0.00193	-0.00216	-0.00216
	(A2 * B1 * !C1 * Y)	0.00183	0.00184	0.00183
	(A2 * B1 * !C1 * Y)	-0.00211	-0.00217	-0.00216
	(A2 * !B1 * Y)	0.00183	0.00184	0.00183
	(A2 * !B1 * Y)	-0.00211	-0.00217	-0.00216
	(!A2 * B1 * !C1 * Y)	0.00170	0.00169	0.00169
	(!A2 * B1 * !C1 * Y)	-0.00221	-0.00221	-0.00221
	(!A2 * !B1 * C1 * Y)	0.00170	0.00172	0.00171
	(!A2 * !B1 * C1 * Y)	-0.00221	-0.00223	-0.00221
	(!A2 * !B1 * !C1 * Y)	0.00170	0.00172	0.00171
	(!A2 * !B1 * !C1 * Y)	-0.00221	-0.00223	-0.00221

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00399	0.00364	0.00359
	(A2 * B1 * C1 * !Y)	-0.00382	-0.00428	-0.00429
	(A2 * B1 * !C1 * Y)	0.00359	0.00361	0.00358
	(A2 * B1 * !C1 * Y)	-0.00418	-0.00431	-0.00428
	(A2 * !B1 * Y)	0.00359	0.00361	0.00358
	(A2 * !B1 * Y)	-0.00418	-0.00430	-0.00428
	(!A2 * B1 * !C1 * Y)	0.00326	0.00326	0.00325
	(!A2 * B1 * !C1 * Y)	-0.00439	-0.00439	-0.00438
	(!A2 * !B1 * C1 * Y)	0.00330	0.00334	0.00331
	(!A2 * !B1 * C1 * Y)	-0.00438	-0.00441	-0.00438
	(!A2 * !B1 * !C1 * Y)	0.00330	0.00333	0.00331
	(!A2 * !B1 * !C1 * Y)	-0.00438	-0.00440	-0.00438

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)**	-0.00093	-0.00094	-0.00093
	(A2 * B1 * C1 * !Y)	0.00106	0.00107	0.00106
	(A2 * B1 * !C1 * Y)	-0.00094	-0.00094	-0.00094
	(A2 * B1 * !C1 * Y)	0.00106	0.00106	0.00106
	(A2 * !B1 * Y)	-0.00094	-0.00094	-0.00094
	(A2 * !B1 * Y)	0.00106	0.00106	0.00106
	(!A2 * B1 * !C1 * Y)	-0.00081	-0.00087	-0.00086
	(!A2 * B1 * !C1 * Y)	0.00107	0.00108	0.00108
	(!A2 * !B1 * C1 * Y)	-0.00084	-0.00088	-0.00088
	(!A2 * !B1 * C1 * Y)	0.00107	0.00109	0.00108
	(!A2 * !B1 * !C1 * Y)	-0.00084	-0.00088	-0.00087
	(!A2 * !B1 * !C1 * Y)	0.00107	0.00109	0.00108

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00184	-0.00183	-0.00183
	(A2 * B1 * C1 * !Y)	0.00217	0.00216	0.00216
	(A2 * B1 * !C1 * Y)	-0.00183	-0.00183	-0.00183
	(A2 * B1 * !C1 * Y)	0.00217	0.00217	0.00216
	(A2 * !B1 * Y)	-0.00183	-0.00183	-0.00183
	(A2 * !B1 * Y)	0.00216	0.00217	0.00216
	(!A2 * B1 * !C1 * Y)	-0.00159	-0.00169	-0.00169
	(!A2 * B1 * !C1 * Y)	0.00221	0.00224	0.00222
	(!A2 * !B1 * C1 * Y)	-0.00163	-0.00172	-0.00171
	(!A2 * !B1 * C1 * Y)	0.00221	0.00224	0.00222
	(!A2 * !B1 * !C1 * Y)	-0.00164	-0.00172	-0.00171
	(!A2 * !B1 * !C1 * Y)	0.00221	0.00224	0.00222
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00358	-0.00359	-0.00357
	(A2 * B1 * C1 * !Y)	0.00429	0.00431	0.00429
	(A2 * B1 * !C1 * Y)	-0.00359	-0.00359	-0.00358
	(A2 * B1 * !C1 * Y)	0.00431	0.00431	0.00428
	(A2 * !B1 * Y)	-0.00359	-0.00359	-0.00358
	(A2 * !B1 * Y)	0.00429	0.00430	0.00428
	(!A2 * B1 * !C1 * Y)	-0.00304	-0.00326	-0.00325
	(!A2 * B1 * !C1 * Y)	0.00439	0.00444	0.00440
	(!A2 * !B1 * C1 * Y)	-0.00315	-0.00334	-0.00331
	(!A2 * !B1 * C1 * Y)	0.00438	0.00442	0.00440
	(!A2 * !B1 * !C1 * Y)	-0.00315	-0.00333	-0.00331
	(!A2 * !B1 * !C1 * Y)	0.00438	0.00442	0.00440

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)**	0.00102	0.00101	0.00101
	(A1 * B1 * C1 * !Y)	-0.00060	-0.00059	-0.00059
	(A1 * B1 * !C1 * Y)	0.00092	0.00091	0.00091
	(A1 * B1 * !C1 * Y)	-0.00105	-0.00106	-0.00106
	(A1 * !B1 * C1 * Y)	0.00091	0.00091	0.00091
	(A1 * !B1 * C1 * Y)	-0.00104	-0.00106	-0.00106
	(A1 * !B1 * !C1 * Y)	0.00091	0.00092	0.00091
	(A1 * !B1 * !C1 * Y)	-0.00104	-0.00106	-0.00106
	(!A1 * B1 * !C1 * Y)	0.00084	0.00084	0.00084
	(!A1 * B1 * !C1 * Y)	-0.00108	-0.00109	-0.00108
	(!A1 * !B1 * C1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !B1 * C1 * Y)	-0.00108	-0.00109	-0.00108
	(!A1 * !B1 * !C1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !C1 * Y)	-0.00108	-0.00109	-0.00108
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00207	0.00209	0.00208
	(A1 * B1 * C1 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * B1 * !C1 * Y)	0.00185	0.00186	0.00184
	(A1 * B1 * !C1 * Y)	-0.00209	-0.00214	-0.00214
	(A1 * !B1 * C1 * Y)	0.00185	0.00186	0.00184
	(A1 * !B1 * C1 * Y)	-0.00209	-0.00214	-0.00214
	(A1 * !B1 * !C1 * Y)	0.00185	0.00185	0.00184
	(A1 * !B1 * !C1 * Y)	-0.00209	-0.00214	-0.00214
	(!A1 * B1 * !C1 * Y)	0.00168	0.00170	0.00168
	(!A1 * B1 * !C1 * Y)	-0.00218	-0.00220	-0.00219
	(!A1 * !B1 * C1 * Y)	0.00171	0.00172	0.00170
	(!A1 * !B1 * C1 * Y)	-0.00219	-0.00220	-0.00219
	(!A1 * !B1 * !C1 * Y)	0.00169	0.00172	0.00170
	(!A1 * !B1 * !C1 * Y)	-0.00218	-0.00220	-0.00219

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00405	0.00409	0.00407
	(A1 * B1 * C1 * !Y)	-0.00230	-0.00232	-0.00230
	(A1 * B1 * !C1 * Y)	0.00361	0.00361	0.00358
	(A1 * B1 * !C1 * Y)	-0.00421	-0.00426	-0.00428
	(A1 * !B1 * C1 * Y)	0.00361	0.00361	0.00358
	(A1 * !B1 * C1 * Y)	-0.00421	-0.00430	-0.00428
	(A1 * !B1 * !C1 * Y)	0.00361	0.00362	0.00358
	(A1 * !B1 * !C1 * Y)	-0.00421	-0.00431	-0.00429
	(!A1 * B1 * !C1 * Y)	0.00326	0.00328	0.00325
	(!A1 * B1 * !C1 * Y)	-0.00441	-0.00442	-0.00440
	(!A1 * !B1 * C1 * Y)	0.00329	0.00332	0.00330
	(!A1 * !B1 * C1 * Y)	-0.00439	-0.00441	-0.00440
	(!A1 * !B1 * !C1 * Y)	0.00330	0.00332	0.00330
	(!A1 * !B1 * !C1 * Y)	-0.00439	-0.00441	-0.00440

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)**	-0.00096	-0.00096	-0.00100
	(A1 * B1 * C1 * !Y)	0.00063	0.00063	0.00060
	(A1 * B1 * !C1 * Y)	-0.00092	-0.00091	-0.00091
	(A1 * B1 * !C1 * Y)	0.00106	0.00106	0.00106
	(A1 * !B1 * C1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * !B1 * C1 * Y)	0.00106	0.00106	0.00106
	(A1 * !B1 * !C1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * !B1 * !C1 * Y)	0.00106	0.00106	0.00106
	(!A1 * B1 * !C1 * Y)	-0.00078	-0.00084	-0.00084
	(!A1 * B1 * !C1 * Y)	0.00108	0.00109	0.00109
	(!A1 * !B1 * C1 * Y)	-0.00081	-0.00086	-0.00085
	(!A1 * !B1 * C1 * Y)	0.00108	0.00110	0.00109
	(!A1 * !B1 * !C1 * Y)	-0.00082	-0.00086	-0.00085
	(!A1 * !B1 * !C1 * Y)	0.00108	0.00110	0.00109
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00193	-0.00194	-0.00206
	(A1 * B1 * C1 * !Y)	0.00128	0.00127	0.00118
	(A1 * B1 * !C1 * Y)	-0.00183	-0.00184	-0.00183
	(A1 * B1 * !C1 * Y)	0.00214	0.00214	0.00214
	(A1 * !B1 * C1 * Y)	-0.00184	-0.00183	-0.00183
	(A1 * !B1 * C1 * Y)	0.00214	0.00214	0.00214
	(A1 * !B1 * !C1 * Y)	-0.00182	-0.00184	-0.00183
	(A1 * !B1 * !C1 * Y)	0.00213	0.00214	0.00214
	(!A1 * B1 * !C1 * Y)	-0.00158	-0.00170	-0.00168
	(!A1 * B1 * !C1 * Y)	0.00219	0.00220	0.00219
	(!A1 * !B1 * C1 * Y)	-0.00163	-0.00172	-0.00170
	(!A1 * !B1 * C1 * Y)	0.00219	0.00221	0.00219
	(!A1 * !B1 * !C1 * Y)	-0.00163	-0.00172	-0.00170
	(!A1 * !B1 * !C1 * Y)	0.00219	0.00221	0.00219

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00379	-0.00382	-0.00403
	(A1 * B1 * C1 * !Y)	0.00256	0.00255	0.00237
	(A1 * B1 * !C1 * Y)	-0.00358	-0.00356	-0.00357
	(A1 * B1 * !C1 * Y)	0.00429	0.00426	0.00428
	(A1 * !B1 * C1 * Y)	-0.00356	-0.00359	-0.00357
	(A1 * !B1 * C1 * Y)	0.00426	0.00430	0.00428
	(A1 * !B1 * !C1 * Y)	-0.00357	-0.00359	-0.00357
	(A1 * !B1 * !C1 * Y)	0.00428	0.00431	0.00429
	(!A1 * B1 * !C1 * Y)	-0.00303	-0.00328	-0.00325
	(!A1 * B1 * !C1 * Y)	0.00441	0.00444	0.00441
	(!A1 * !B1 * C1 * Y)	-0.00314	-0.00332	-0.00330
	(!A1 * !B1 * C1 * Y)	0.00439	0.00444	0.00441
	(!A1 * !B1 * !C1 * Y)	-0.00314	-0.00332	-0.00330
	(!A1 * !B1 * !C1 * Y)	0.00439	0.00444	0.00441

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00083	0.00084	0.00084
	(A2 * !C1 * Y)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * !C1 * Y)	0.00084	0.00084	0.00084
	(A1 * !A2 * !C1 * Y)	-0.00114	-0.00114	-0.00114
	(!A1 * !A2 * C1 * Y)	0.00043	0.00043	0.00043
	(!A1 * !A2 * C1 * Y)	-0.00114	-0.00114	-0.00113
	(!A1 * !A2 * !C1 * Y)	0.00052	0.00052	0.00052
	(!A1 * !A2 * !C1 * Y)	-0.00115	-0.00115	-0.00114
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00167	0.00168	0.00167
	(A2 * !C1 * Y)	-0.00223	-0.00223	-0.00223
	(A1 * !A2 * !C1 * Y)	0.00168	0.00168	0.00168
	(A1 * !A2 * !C1 * Y)	-0.00223	-0.00223	-0.00223
	(!A1 * !A2 * C1 * Y)	0.00081	0.00082	0.00083
	(!A1 * !A2 * C1 * Y)	-0.00222	-0.00224	-0.00221
	(!A1 * !A2 * !C1 * Y)	0.00099	0.00099	0.00098
	(!A1 * !A2 * !C1 * Y)	-0.00225	-0.00225	-0.00224
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00331	0.00331	0.00332
	(A2 * !C1 * Y)	-0.00224	-0.00223	-0.00223
	(A1 * !A2 * !C1 * Y)	0.00332	0.00334	0.00331
	(A1 * !A2 * !C1 * Y)	-0.00224	-0.00224	-0.00223
	(!A1 * !A2 * C1 * Y)	0.00159	0.00159	0.00161
	(!A1 * !A2 * C1 * Y)	-0.00223	-0.00223	-0.00220
	(!A1 * !A2 * !C1 * Y)	0.00191	0.00191	0.00190
	(!A1 * !A2 * !C1 * Y)	-0.00226	-0.00226	-0.00225

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00079	-0.00084	-0.00084
	(A2 * !C1 * Y)	0.00116	0.00116	0.00114
	(A1 * !A2 * !C1 * Y)	-0.00079	-0.00084	-0.00084
	(A1 * !A2 * !C1 * Y)	0.00118	0.00116	0.00114
	(!A1 * !A2 * C1 * Y)	-0.00040	-0.00040	-0.00041
	(!A1 * !A2 * C1 * Y)	0.00117	0.00118	0.00115
	(!A1 * !A2 * !C1 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * !C1 * Y)	0.00119	0.00118	0.00115
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00157	-0.00168	-0.00167
	(A2 * !C1 * Y)	0.00227	0.00227	0.00224
	(A1 * !A2 * !C1 * Y)	-0.00156	-0.00168	-0.00168
	(A1 * !A2 * !C1 * Y)	0.00230	0.00226	0.00224
	(!A1 * !A2 * C1 * Y)	-0.00076	-0.00077	-0.00079
	(!A1 * !A2 * C1 * Y)	0.00230	0.00231	0.00225
	(!A1 * !A2 * !C1 * Y)	-0.00099	-0.00099	-0.00098
	(!A1 * !A2 * !C1 * Y)	0.00234	0.00232	0.00225
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00312	-0.00331	-0.00332
	(A2 * !C1 * Y)	0.00232	0.00227	0.00224
	(A1 * !A2 * !C1 * Y)	-0.00308	-0.00334	-0.00331
	(A1 * !A2 * !C1 * Y)	0.00238	0.00224	0.00224
	(!A1 * !A2 * C1 * Y)	-0.00148	-0.00149	-0.00153
	(!A1 * !A2 * C1 * Y)	0.00236	0.00237	0.00227
	(!A1 * !A2 * !C1 * Y)	-0.00191	-0.00191	-0.00190
	(!A1 * !A2 * !C1 * Y)	0.00244	0.00241	0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00034	0.00034	0.00032
	(A2 * !B1 * Y)	-0.00129	-0.00129	-0.00131
	(!A2 * !B1 * Y)	0.00034	0.00034	0.00032
	(!A2 * !B1 * Y)	-0.00127	-0.00129	-0.00131
	(!A1 * !A2 * B1 * Y)	0.00037	0.00036	0.00032
	(!A1 * !A2 * B1 * Y)	-0.00122	-0.00121	-0.00130
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00071	0.00071	0.00067
	(A2 * !B1 * Y)	-0.00246	-0.00247	-0.00255
	(!A2 * !B1 * Y)	0.00071	0.00071	0.00067
	(!A2 * !B1 * Y)	-0.00247	-0.00247	-0.00255
	(!A1 * !A2 * B1 * Y)	0.00072	0.00072	0.00064
	(!A1 * !A2 * B1 * Y)	-0.00234	-0.00236	-0.00253
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00136	0.00135	0.00128
	(A2 * !B1 * Y)	-0.00289	-0.00289	-0.00303
	(!A2 * !B1 * Y)	0.00135	0.00136	0.00128
	(!A2 * !B1 * Y)	-0.00288	-0.00292	-0.00303
	(!A1 * !A2 * B1 * Y)	0.00138	0.00138	0.00122
	(!A1 * !A2 * B1 * Y)	-0.00261	-0.00263	-0.00298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00031	-0.00031	-0.00031
	(A2 * !B1 * Y)	0.00131	0.00132	0.00131
	(!A2 * !B1 * Y)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * Y)	0.00131	0.00132	0.00131
	(!A1 * !A2 * B1 * Y)	-0.00031	-0.00031	-0.00030
	(!A1 * !A2 * B1 * Y)	0.00131	0.00133	0.00131
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00065	-0.00065	-0.00064
	(A2 * !B1 * Y)	0.00257	0.00258	0.00256
	(!A2 * !B1 * Y)	-0.00065	-0.00065	-0.00064
	(!A2 * !B1 * Y)	0.00257	0.00258	0.00256
	(!A1 * !A2 * B1 * Y)	-0.00063	-0.00063	-0.00062
	(!A1 * !A2 * B1 * Y)	0.00257	0.00260	0.00256
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00125	-0.00125	-0.00123
	(A2 * !B1 * Y)	0.00305	0.00308	0.00303
	(!A2 * !B1 * Y)	-0.00125	-0.00124	-0.00123
	(!A2 * !B1 * Y)	0.00305	0.00306	0.00303
	(!A1 * !A2 * B1 * Y)	-0.00120	-0.00121	-0.00119
	(!A1 * !A2 * B1 * Y)	0.00305	0.00307	0.00303

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00250	0.00270	0.00248	0.00244	0.66429
sky130_fd_sc_hs__o211a_2	0.00265	0.00265	0.00265	0.00258	1.29708
sky130_fd_sc_hs__o211a_4	0.00479	0.00457	0.00476	0.00419	2.46530

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	0.03827	0.13588
sky130_fd_sc_hs__o211a_2	0.00000	0.05318	0.13949
sky130_fd_sc_hs__o211a_4	0.00000	0.13711	0.43777

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)	0.18282	0.95344	7.76626
	A2->X (RR)	0.16514	0.92807	7.67259
	B1->X (RR)	0.17329	0.96072	7.72928
	C1->X (RR)	0.16224	0.94224	7.55344
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.18461	0.84664	7.87308
	A2->X (RR)	0.16377	0.82041	7.78958
	B1->X (RR)	0.17634	0.86738	7.89045
	C1->X (RR)	0.16524	0.85628	7.74995
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.18279	0.76530	7.98752
	A2->X (RR)	0.17267	0.74365	7.89327
	B1->X (RR)	0.17285	0.77685	7.97903
	C1->X (RR)	0.15976	0.75854	7.81905

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.33070	0.98166	5.59684
	A2->X (FF)	0.30767	0.93263	5.16905
	B1->X (FF)	0.14268	0.76749	4.86809
	C1->X (FF)	0.12818	0.74205	4.77017
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.39242	1.03508	5.90059
	A2->X (FF)	0.36754	0.98251	5.49901
	B1->X (FF)	0.17212	0.79293	5.14400
	C1->X (FF)	0.15555	0.76699	5.04321
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.35998	0.96329	5.77833
	A2->X (FF)	0.33285	0.90931	5.35305
	B1->X (FF)	0.17342	0.75038	4.98459
	C1->X (FF)	0.17068	0.74263	4.93175

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00737	0.00739	0.00759
	A1	0.00313	0.00314	0.00341
	A2	0.00666	0.00664	0.00708
	A2	0.00270	0.00266	0.00318
	B1	0.00666	0.00663	0.00721
	B1	0.00316	0.00312	0.00378
	C1	0.00614	0.00609	0.00714
	C1	0.00314	0.00308	0.00414
sky130_fd_sc_hs__o211a_2	A1	0.00897	0.00918	0.00943
	A1	0.00451	0.00472	0.00508
	A2	0.00801	0.00817	0.00860
	A2	0.00404	0.00420	0.00477
	B1	0.00824	0.00839	0.00896
	B1	0.00455	0.00470	0.00538
	C1	0.00768	0.00778	0.00873
	C1	0.00454	0.00465	0.00574
sky130_fd_sc_hs__o211a_4	A1	0.01658	0.01704	0.01766
	A1	0.00853	0.00898	0.00975
	A2	0.01445	0.01482	0.01587
	A2	0.00753	0.00790	0.00914
	B1	0.01537	0.01573	0.01725
	B1	0.00883	0.00919	0.01085
	C1	0.01393	0.01420	0.01676
	C1	0.00884	0.00911	0.01191

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00288	0.00290	0.00321
	A1	0.00700	0.00701	0.00727
	A2	0.00265	0.00264	0.00395
	A2	0.00647	0.00651	0.00773
	B1	0.00237	0.00234	0.00400
	B1	0.00585	0.00582	0.00726
	C1	0.00209	0.00205	0.00375
	C1	0.00511	0.00506	0.00660
sky130_fd_sc_hs__o211a_2	A1	0.00412	0.00416	0.00467
	A1	0.00845	0.00864	0.00893
	A2	0.00414	0.00424	0.00565
	A2	0.00795	0.00814	0.00944
	B1	0.00366	0.00385	0.00576
	B1	0.00733	0.00750	0.00899
	C1	0.00337	0.00351	0.00549
	C1	0.00652	0.00666	0.00822
sky130_fd_sc_hs__o211a_4	A1	0.00775	0.00834	0.00962
	A1	0.01556	0.01615	0.01684
	A2	0.00802	0.00854	0.01238
	A2	0.01467	0.01517	0.01783
	B1	0.00657	0.00720	0.01157
	B1	0.01309	0.01354	0.01729
	C1	0.00640	0.00689	0.01124
	C1	0.01155	0.01203	0.01598

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)**	0.00101	0.00092	0.00091
	(A2 * B1 * C1 * X)	-0.00086	-0.00097	-0.00098
	(A2 * B1 * !C1 * !X)	0.00080	0.00080	0.00080
	(A2 * B1 * !C1 * !X)	-0.00106	-0.00108	-0.00108
	(A2 * !B1 * !X)	0.00080	0.00080	0.00080
	(A2 * !B1 * !X)	-0.00106	-0.00108	-0.00108
	(!A2 * B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(!A2 * B1 * !C1 * !X)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * C1 * !X)	0.00075	0.00076	0.00075
	(!A2 * !B1 * C1 * !X)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * !C1 * !X)	0.00075	0.00076	0.00075
	(!A2 * !B1 * !C1 * !X)	-0.00110	-0.00111	-0.00110
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00111	0.00103	0.00102
	(A2 * B1 * C1 * X)	-0.00083	-0.00094	-0.00095
	(A2 * B1 * !C1 * !X)	0.00087	0.00088	0.00087
	(A2 * B1 * !C1 * !X)	-0.00107	-0.00109	-0.00108
	(A2 * !B1 * !X)	0.00087	0.00088	0.00087
	(A2 * !B1 * !X)	-0.00107	-0.00109	-0.00108
	(!A2 * B1 * !C1 * !X)	0.00080	0.00080	0.00080
	(!A2 * B1 * !C1 * !X)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * C1 * !X)	0.00082	0.00083	0.00082
	(!A2 * !B1 * C1 * !X)	-0.00111	-0.00111	-0.00111
	(!A2 * !B1 * !C1 * !X)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !C1 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00199	0.00183	0.00180
	(A2 * B1 * C1 * X)	-0.00172	-0.00193	-0.00194
	(A2 * B1 * !C1 * !X)	0.00177	0.00179	0.00177
	(A2 * B1 * !C1 * !X)	-0.00192	-0.00197	-0.00196
	(A2 * !B1 * !X)	0.00177	0.00179	0.00177
	(A2 * !B1 * !X)	-0.00192	-0.00197	-0.00196
	(!A2 * B1 * !C1 * !X)	0.00164	0.00165	0.00164
	(!A2 * B1 * !C1 * !X)	-0.00199	-0.00200	-0.00200
	(!A2 * !B1 * C1 * !X)	0.00166	0.00168	0.00167
	(!A2 * !B1 * C1 * !X)	-0.00199	-0.00200	-0.00200
	(!A2 * !B1 * !C1 * !X)	0.00167	0.00168	0.00168
	(!A2 * !B1 * !C1 * !X)	-0.00199	-0.00199	-0.00200

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)**	-0.00090	-0.00090	-0.00090
	(A2 * B1 * C1 * X)	0.00097	0.00098	0.00098
	(A2 * B1 * !C1 * !X)	-0.00080	-0.00080	-0.00080
	(A2 * B1 * !C1 * !X)	0.00107	0.00109	0.00108
	(A2 * !B1 * !X)	-0.00080	-0.00080	-0.00080
	(A2 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A2 * B1 * !C1 * !X)	-0.00069	-0.00075	-0.00074
	(!A2 * B1 * !C1 * !X)	0.00111	0.00111	0.00110
	(!A2 * !B1 * C1 * !X)	-0.00072	-0.00076	-0.00075
	(!A2 * !B1 * C1 * !X)	0.00111	0.00111	0.00110
	(!A2 * !B1 * !C1 * !X)	-0.00072	-0.00076	-0.00075
	(!A2 * !B1 * !C1 * !X)	0.00111	0.00111	0.00110

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00101	-0.00101	-0.00101
	(A2 * B1 * C1 * X)	0.00095	0.00095	0.00095
	(A2 * B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * !C1 * !X)	0.00109	0.00109	0.00108
	(A2 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A2 * !B1 * !X)	0.00109	0.00109	0.00108
	(!A2 * B1 * !C1 * !X)	-0.00075	-0.00080	-0.00080
	(!A2 * B1 * !C1 * !X)	0.00111	0.00111	0.00111
	(!A2 * !B1 * C1 * !X)	-0.00078	-0.00083	-0.00082
	(!A2 * !B1 * C1 * !X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * !C1 * !X)	-0.00078	-0.00082	-0.00082
	(!A2 * !B1 * !C1 * !X)	0.00111	0.00112	0.00111
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00179	-0.00180	-0.00178
	(A2 * B1 * C1 * X)	0.00194	0.00195	0.00194
	(A2 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(A2 * B1 * !C1 * !X)	0.00196	0.00197	0.00196
	(A2 * !B1 * !X)	-0.00177	-0.00178	-0.00177
	(A2 * !B1 * !X)	0.00196	0.00197	0.00196
	(!A2 * B1 * !C1 * !X)	-0.00156	-0.00165	-0.00164
	(!A2 * B1 * !C1 * !X)	0.00201	0.00201	0.00200
	(!A2 * !B1 * C1 * !X)	-0.00161	-0.00168	-0.00167
	(!A2 * !B1 * C1 * !X)	0.00201	0.00201	0.00200
	(!A2 * !B1 * !C1 * !X)	-0.00162	-0.00168	-0.00168
	(!A2 * !B1 * !C1 * !X)	0.00201	0.00201	0.00200

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)**	0.00117	0.00117	0.00117
	(A1 * B1 * C1 * X)	-0.00052	-0.00053	-0.00052
	(A1 * B1 * !C1 * !X)	0.00105	0.00105	0.00105
	(A1 * B1 * !C1 * !X)	-0.00096	-0.00098	-0.00098
	(A1 * !B1 * C1 * !X)	0.00105	0.00105	0.00105
	(A1 * !B1 * C1 * !X)	-0.00096	-0.00098	-0.00098
	(A1 * !B1 * !C1 * !X)	0.00105	0.00106	0.00105
	(A1 * !B1 * !C1 * !X)	-0.00096	-0.00098	-0.00098
	(!A1 * B1 * !C1 * !X)	0.00098	0.00098	0.00098
	(!A1 * B1 * !C1 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * !B1 * C1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !B1 * C1 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * !B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !B1 * !C1 * !X)	-0.00100	-0.00101	-0.00100
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00103	0.00103	0.00102
	(A1 * B1 * C1 * X)	-0.00053	-0.00052	-0.00052
	(A1 * B1 * !C1 * !X)	0.00087	0.00087	0.00086
	(A1 * B1 * !C1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !B1 * C1 * !X)	0.00085	0.00087	0.00086
	(A1 * !B1 * C1 * !X)	-0.00100	-0.00103	-0.00102
	(A1 * !B1 * !C1 * !X)	0.00085	0.00087	0.00086
	(A1 * !B1 * !C1 * !X)	-0.00101	-0.00103	-0.00102
	(!A1 * B1 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * B1 * !C1 * !X)	-0.00104	-0.00105	-0.00104
	(!A1 * !B1 * C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !B1 * C1 * !X)	-0.00105	-0.00105	-0.00105
	(!A1 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !B1 * !C1 * !X)	-0.00105	-0.00105	-0.00105

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00173	0.00174	0.00173
	(A1 * B1 * C1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * B1 * !C1 * !X)	0.00151	0.00153	0.00151
	(A1 * B1 * !C1 * !X)	-0.00192	-0.00197	-0.00196
	(A1 * !B1 * C1 * !X)	0.00151	0.00151	0.00151
	(A1 * !B1 * C1 * !X)	-0.00192	-0.00196	-0.00196
	(A1 * !B1 * !C1 * !X)	0.00151	0.00153	0.00151
	(A1 * !B1 * !C1 * !X)	-0.00192	-0.00197	-0.00196
	(!A1 * B1 * !C1 * !X)	0.00138	0.00139	0.00138
	(!A1 * B1 * !C1 * !X)	-0.00201	-0.00202	-0.00201
	(!A1 * !B1 * C1 * !X)	0.00140	0.00141	0.00141
	(!A1 * !B1 * C1 * !X)	-0.00199	-0.00201	-0.00201
	(!A1 * !B1 * !C1 * !X)	0.00140	0.00142	0.00141
	(!A1 * !B1 * !C1 * !X)	-0.00200	-0.00201	-0.00201

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)**	-0.00113	-0.00113	-0.00116
	(A1 * B1 * C1 * X)	0.00057	0.00057	0.00054
	(A1 * B1 * !C1 * !X)	-0.00104	-0.00105	-0.00105
	(A1 * B1 * !C1 * !X)	0.00097	0.00098	0.00098
	(A1 * !B1 * C1 * !X)	-0.00104	-0.00105	-0.00105
	(A1 * !B1 * C1 * !X)	0.00097	0.00098	0.00098
	(A1 * !B1 * !C1 * !X)	-0.00104	-0.00105	-0.00105
	(A1 * !B1 * !C1 * !X)	0.00097	0.00098	0.00098
	(!A1 * B1 * !C1 * !X)	-0.00093	-0.00098	-0.00098
	(!A1 * B1 * !C1 * !X)	0.00101	0.00101	0.00100
	(!A1 * !B1 * C1 * !X)	-0.00096	-0.00100	-0.00099
	(!A1 * !B1 * C1 * !X)	0.00101	0.00101	0.00100
	(!A1 * !B1 * !C1 * !X)	-0.00096	-0.00100	-0.00099
	(!A1 * !B1 * !C1 * !X)	0.00101	0.00101	0.00100
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00098	-0.00098	-0.00102
	(A1 * B1 * C1 * X)	0.00057	0.00056	0.00054
	(A1 * B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * B1 * !C1 * !X)	0.00103	0.00102	0.00102
	(A1 * !B1 * C1 * !X)	-0.00085	-0.00086	-0.00086
	(A1 * !B1 * C1 * !X)	0.00102	0.00103	0.00102
	(A1 * !B1 * !C1 * !X)	-0.00085	-0.00086	-0.00086
	(A1 * !B1 * !C1 * !X)	0.00103	0.00103	0.00102
	(!A1 * B1 * !C1 * !X)	-0.00073	-0.00079	-0.00078
	(!A1 * B1 * !C1 * !X)	0.00104	0.00105	0.00105
	(!A1 * !B1 * C1 * !X)	-0.00077	-0.00081	-0.00080
	(!A1 * !B1 * C1 * !X)	0.00105	0.00106	0.00105
	(!A1 * !B1 * !C1 * !X)	-0.00077	-0.00081	-0.00080
	(!A1 * !B1 * !C1 * !X)	0.00105	0.00106	0.00105

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00163	-0.00163	-0.00171
	(A1 * B1 * C1 * X)	0.00117	0.00116	0.00110
	(A1 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * !C1 * !X)	0.00197	0.00197	0.00196
	(A1 * !B1 * C1 * !X)	-0.00151	-0.00151	-0.00151
	(A1 * !B1 * C1 * !X)	0.00197	0.00196	0.00196
	(A1 * !B1 * !C1 * !X)	-0.00151	-0.00151	-0.00151
	(A1 * !B1 * !C1 * !X)	0.00196	0.00197	0.00196
	(!A1 * B1 * !C1 * !X)	-0.00128	-0.00139	-0.00138
	(!A1 * B1 * !C1 * !X)	0.00201	0.00202	0.00201
	(!A1 * !B1 * C1 * !X)	-0.00135	-0.00141	-0.00141
	(!A1 * !B1 * C1 * !X)	0.00201	0.00202	0.00201
	(!A1 * !B1 * !C1 * !X)	-0.00135	-0.00142	-0.00141
	(!A1 * !B1 * !C1 * !X)	0.00201	0.00203	0.00201

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00068	0.00069	0.00068
	(A2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !A2 * !C1 * !X)	0.00068	0.00069	0.00069
	(A1 * !A2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(!A1 * !A2 * C1 * !X)	0.00035	0.00035	0.00035
	(!A1 * !A2 * C1 * !X)	-0.00113	-0.00114	-0.00112
	(!A1 * !A2 * !C1 * !X)	0.00043	0.00043	0.00043
	(!A1 * !A2 * !C1 * !X)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00079	0.00080	0.00080
	(A2 * !C1 * !X)	-0.00105	-0.00106	-0.00105
	(A1 * !A2 * !C1 * !X)	0.00080	0.00080	0.00080
	(A1 * !A2 * !C1 * !X)	-0.00106	-0.00106	-0.00105
	(!A1 * !A2 * C1 * !X)	0.00040	0.00040	0.00039
	(!A1 * !A2 * C1 * !X)	-0.00107	-0.00107	-0.00106
	(!A1 * !A2 * !C1 * !X)	0.00048	0.00048	0.00047
	(!A1 * !A2 * !C1 * !X)	-0.00108	-0.00108	-0.00107
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00174	0.00176	0.00174
	(A2 * !C1 * !X)	-0.00180	-0.00180	-0.00180
	(A1 * !A2 * !C1 * !X)	0.00174	0.00174	0.00174
	(A1 * !A2 * !C1 * !X)	-0.00180	-0.00180	-0.00179
	(!A1 * !A2 * C1 * !X)	0.00103	0.00104	0.00102
	(!A1 * !A2 * C1 * !X)	-0.00180	-0.00180	-0.00179
	(!A1 * !A2 * !C1 * !X)	0.00117	0.00117	0.00116
	(!A1 * !A2 * !C1 * !X)	-0.00182	-0.00182	-0.00181

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00064	-0.00069	-0.00068
	(A2 * !C1 * !X)	0.00115	0.00114	0.00112
	(A1 * !A2 * !C1 * !X)	-0.00063	-0.00069	-0.00069
	(A1 * !A2 * !C1 * !X)	0.00115	0.00114	0.00112
	(!A1 * !A2 * C1 * !X)	-0.00032	-0.00032	-0.00033
	(!A1 * !A2 * C1 * !X)	0.00115	0.00116	0.00114
	(!A1 * !A2 * !C1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * !C1 * !X)	0.00118	0.00116	0.00114
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00075	-0.00080	-0.00080
	(A2 * !C1 * !X)	0.00109	0.00107	0.00106
	(A1 * !A2 * !C1 * !X)	-0.00074	-0.00080	-0.00080
	(A1 * !A2 * !C1 * !X)	0.00110	0.00107	0.00106
	(!A1 * !A2 * C1 * !X)	-0.00036	-0.00036	-0.00037
	(!A1 * !A2 * C1 * !X)	0.00109	0.00110	0.00107
	(!A1 * !A2 * !C1 * !X)	-0.00048	-0.00048	-0.00047
	(!A1 * !A2 * !C1 * !X)	0.00113	0.00112	0.00108
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00166	-0.00176	-0.00174
	(A2 * !C1 * !X)	0.00185	0.00181	0.00180
	(A1 * !A2 * !C1 * !X)	-0.00165	-0.00174	-0.00174
	(A1 * !A2 * !C1 * !X)	0.00186	0.00181	0.00180
	(!A1 * !A2 * C1 * !X)	-0.00097	-0.00097	-0.00098
	(!A1 * !A2 * C1 * !X)	0.00186	0.00186	0.00182
	(!A1 * !A2 * !C1 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * !C1 * !X)	0.00191	0.00189	0.00183

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00028	0.00028	0.00027
	(A2 * !B1 * !X)	-0.00122	-0.00123	-0.00125
	(!A2 * !B1 * !X)	0.00028	0.00028	0.00027
	(!A2 * !B1 * !X)	-0.00123	-0.00123	-0.00125
	(!A1 * !A2 * B1 * !X)	0.00032	0.00032	0.00027
	(!A1 * !A2 * B1 * !X)	-0.00116	-0.00117	-0.00124
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00034	0.00035	0.00033
	(A2 * !B1 * !X)	-0.00117	-0.00119	-0.00120
	(!A2 * !B1 * !X)	0.00034	0.00035	0.00033
	(!A2 * !B1 * !X)	-0.00118	-0.00118	-0.00120
	(!A1 * !A2 * B1 * !X)	0.00038	0.00038	0.00034
	(!A1 * !A2 * B1 * !X)	-0.00112	-0.00113	-0.00120
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00052	0.00052	0.00049
	(A2 * !B1 * !X)	-0.00199	-0.00200	-0.00203
	(!A2 * !B1 * !X)	0.00051	0.00052	0.00049
	(!A2 * !B1 * !X)	-0.00197	-0.00200	-0.00203
	(!A1 * !A2 * B1 * !X)	0.00058	0.00058	0.00049
	(!A1 * !A2 * B1 * !X)	-0.00186	-0.00187	-0.00201

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00026	-0.00026	-0.00026
	(A2 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A2 * !B1 * !X)	-0.00026	-0.00026	-0.00026
	(!A2 * !B1 * !X)	0.00124	0.00126	0.00125
	(!A1 * !A2 * B1 * !X)	-0.00025	-0.00026	-0.00025
	(!A1 * !A2 * B1 * !X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00032	-0.00033	-0.00032
	(A2 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A2 * !B1 * !X)	-0.00032	-0.00033	-0.00032
	(!A2 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A2 * B1 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * B1 * !X)	0.00120	0.00121	0.00120
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00047	-0.00048	-0.00047
	(A2 * !B1 * !X)	0.00203	0.00205	0.00204
	(!A2 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * !B1 * !X)	0.00203	0.00205	0.00204
	(!A1 * !A2 * B1 * !X)	-0.00046	-0.00046	-0.00045
	(!A1 * !A2 * B1 * !X)	0.00203	0.00204	0.00204

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00271	0.00279	0.00272	0.30354
sky130_fd_sc_hs__o21ai_2	0.00548	0.00508	0.00501	0.59503
sky130_fd_sc_hs__o21ai_4	0.00966	0.01003	0.00751	1.05857

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ai_1	0.00000	0.01243	0.03622
sky130_fd_sc_hs__o21ai_2	0.00000	0.02486	0.07244
sky130_fd_sc_hs__o21ai_4	0.00000	0.03613	0.10867

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)	0.18614	1.37824	12.13790
	A2->Y (FR)	0.16293	1.32522	11.93340
	B1->Y (FR)	0.06096	0.86483	8.50773
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.16150	1.18982	12.19000
	A2->Y (FR)	0.13005	1.13097	11.98010
	B1->Y (FR)	0.04589	0.78163	8.55118
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.15629	1.05137	11.96200
	A2->Y (FR)	0.12619	0.99917	11.88150
	B1->Y (FR)	0.06399	0.92495	11.39840

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.05332	0.53594	4.90754
	A2->Y (RF)	0.04596	0.52053	4.85785
	B1->Y (RF)	0.04461	0.57066	5.36657
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.04482	0.47324	4.87859
	A2->Y (RF)	0.03994	0.46301	4.89432
	B1->Y (RF)	0.02993	0.49034	5.40875
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.04338	0.42385	4.77152
	A2->Y (RF)	0.03814	0.40899	4.76056
	B1->Y (RF)	0.02575	0.42818	5.28469

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00044	0.00034	0.00034
	A1	0.00432	0.00422	0.00424
	A2	0.00048	0.00040	0.00057
	A2	0.00380	0.00370	0.00387
	B1	-0.00016	-0.00020	-0.00001
	B1	0.00303	0.00298	0.00321
sky130_fd_sc_hs__o21ai_2	A1	0.00051	0.00032	0.00034
	A1	0.00790	0.00768	0.00776
	A2	0.00053	0.00041	0.00077
	A2	0.00664	0.00654	0.00686
	B1	-0.00103	-0.00105	-0.00060
	B1	0.00481	0.00476	0.00525
sky130_fd_sc_hs__o21ai_4	A1	0.00078	0.00042	0.00051
	A1	0.01508	0.01474	0.01484
	A2	0.00062	0.00038	0.00114
	A2	0.01287	0.01240	0.01338
	B1	-0.00191	-0.00196	-0.00140
	B1	0.00754	0.00716	0.00808

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00470	0.00463	0.00462
	A1	0.00078	0.00069	0.00071
	A2	0.00365	0.00361	0.00379
	A2	0.00027	0.00022	0.00025
	B1	0.00388	0.00382	0.00393
	B1	0.00075	0.00066	0.00072
sky130_fd_sc_hs__o21ai_2	A1	0.00868	0.00850	0.00861
	A1	0.00120	0.00100	0.00105
	A2	0.00623	0.00618	0.00630
	A2	-0.00004	-0.00011	-0.00000
	B1	0.00693	0.00678	0.00704
	B1	0.00119	0.00104	0.00119
sky130_fd_sc_hs__o21ai_4	A1	0.01633	0.01593	0.01617
	A1	0.00190	0.00148	0.00161
	A2	0.01167	0.01152	0.01214
	A2	-0.00086	-0.00102	-0.00070
	B1	0.01255	0.01246	0.01267
	B1	0.00337	0.00321	0.00334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00114	0.00105	0.00104
	(A2 * B1 * !Y)	-0.00094	-0.00104	-0.00105
	(A2 * !B1 * Y)	0.00096	0.00096	0.00095
	(A2 * !B1 * Y)	-0.00111	-0.00113	-0.00112
	(!A2 * !B1 * Y)	0.00089	0.00090	0.00090
	(!A2 * !B1 * Y)	-0.00114	-0.00115	-0.00115
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00213	0.00196	0.00193
	(A2 * B1 * !Y)	-0.00189	-0.00211	-0.00212
	(A2 * !B1 * Y)	0.00182	0.00183	0.00182
	(A2 * !B1 * Y)	-0.00219	-0.00224	-0.00223
	(!A2 * !B1 * Y)	0.00169	0.00171	0.00170
	(!A2 * !B1 * Y)	-0.00227	-0.00228	-0.00227
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00391	0.00358	0.00353
	(A2 * B1 * !Y)	-0.00378	-0.00422	-0.00422
	(A2 * !B1 * Y)	0.00352	0.00354	0.00352
	(A2 * !B1 * Y)	-0.00413	-0.00425	-0.00423
	(!A2 * !B1 * Y)	0.00327	0.00330	0.00327
	(!A2 * !B1 * Y)	-0.00433	-0.00435	-0.00433

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00103	-0.00104	-0.00103
	(A2 * B1 * !Y)	0.00103	0.00105	0.00105
	(A2 * !B1 * Y)	-0.00095	-0.00096	-0.00095
	(A2 * !B1 * Y)	0.00113	0.00113	0.00112
	(!A2 * !B1 * Y)	-0.00086	-0.00090	-0.00090
	(!A2 * !B1 * Y)	0.00116	0.00116	0.00115
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00193	-0.00194	-0.00192
	(A2 * B1 * !Y)	0.00212	0.00213	0.00212
	(A2 * !B1 * Y)	-0.00182	-0.00182	-0.00182
	(A2 * !B1 * Y)	0.00223	0.00224	0.00223
	(!A2 * !B1 * Y)	-0.00162	-0.00171	-0.00170
	(!A2 * !B1 * Y)	0.00228	0.00229	0.00228
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00353	-0.00353	-0.00352
	(A2 * B1 * !Y)	0.00422	0.00422	0.00422
	(A2 * !B1 * Y)	-0.00352	-0.00352	-0.00351
	(A2 * !B1 * Y)	0.00424	0.00425	0.00423
	(!A2 * !B1 * Y)	-0.00311	-0.00330	-0.00327
	(!A2 * !B1 * Y)	0.00435	0.00437	0.00434

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00106	0.00107	0.00107
	(A1 * B1 * !Y)	-0.00056	-0.00057	-0.00056
	(A1 * !B1 * Y)	0.00087	0.00087	0.00086
	(A1 * !B1 * Y)	-0.00113	-0.00115	-0.00115
	(!A1 * !B1 * Y)	0.00081	0.00081	0.00081
	(!A1 * !B1 * Y)	-0.00117	-0.00117	-0.00117
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00192	0.00193	0.00193
	(A1 * B1 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * !B1 * Y)	0.00176	0.00179	0.00177
	(A1 * !B1 * Y)	-0.00200	-0.00206	-0.00205
	(!A1 * !B1 * Y)	0.00164	0.00166	0.00165
	(!A1 * !B1 * Y)	-0.00210	-0.00211	-0.00210
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00406	0.00409	0.00407
	(A1 * B1 * !Y)	-0.00230	-0.00231	-0.00230
	(A1 * !B1 * Y)	0.00356	0.00359	0.00357
	(A1 * !B1 * Y)	-0.00418	-0.00430	-0.00429
	(!A1 * !B1 * Y)	0.00332	0.00334	0.00333
	(!A1 * !B1 * Y)	-0.00441	-0.00442	-0.00441

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00102	-0.00102	-0.00106
	(A1 * B1 * !Y)	0.00061	0.00061	0.00058
	(A1 * !B1 * Y)	-0.00087	-0.00086	-0.00086
	(A1 * !B1 * Y)	0.00115	0.00115	0.00115
	(!A1 * !B1 * Y)	-0.00077	-0.00081	-0.00081
	(!A1 * !B1 * Y)	0.00117	0.00118	0.00117
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00181	-0.00182	-0.00191
	(A1 * B1 * !Y)	0.00125	0.00124	0.00117
	(A1 * !B1 * Y)	-0.00175	-0.00177	-0.00176
	(A1 * !B1 * Y)	0.00204	0.00206	0.00205
	(!A1 * !B1 * Y)	-0.00157	-0.00166	-0.00165
	(!A1 * !B1 * Y)	0.00211	0.00213	0.00211
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00379	-0.00383	-0.00404
	(A1 * B1 * !Y)	0.00252	0.00254	0.00236
	(A1 * !B1 * Y)	-0.00356	-0.00357	-0.00356
	(A1 * !B1 * Y)	0.00428	0.00430	0.00429
	(!A1 * !B1 * Y)	-0.00315	-0.00334	-0.00333
	(!A1 * !B1 * Y)	0.00443	0.00447	0.00442

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00037	0.00037	0.00034
	(!A1 * !A2 * Y)	-0.00131	-0.00132	-0.00136
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00074	0.00074	0.00069
	(!A1 * !A2 * Y)	-0.00240	-0.00240	-0.00250
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00130	0.00130	0.00120
	(!A1 * !A2 * Y)	-0.00279	-0.00280	-0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00033	-0.00033	-0.00032
	(!A1 * !A2 * Y)	0.00137	0.00139	0.00137
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00066	-0.00067	-0.00066
	(!A1 * !A2 * Y)	0.00250	0.00255	0.00252
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * Y)	0.00302	0.00305	0.00300

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00232	0.00235	0.00234	0.65722
sky130_fd_sc_hs__o21a_2	0.00253	0.00250	0.00260	1.29226
sky130_fd_sc_hs__o21a_4	0.00484	0.00448	0.00432	2.47232

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21a_1	0.00000	0.05493	0.13149
sky130_fd_sc_hs__o21a_2	0.00000	0.05207	0.09540
sky130_fd_sc_hs__o21a_4	0.00000	0.13521	0.27020

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)	0.12406	0.88805	7.59761
	A2->X (RR)	0.11207	0.86065	7.48455
	B1->X (RR)	0.11585	0.86942	7.43454
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.12830	0.79199	7.79540
	A2->X (RR)	0.11729	0.77191	7.71182
	B1->X (RR)	0.11994	0.78470	7.64761
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.13267	0.70632	7.75619
	A2->X (RR)	0.12470	0.68383	7.66116
	B1->X (RR)	0.12037	0.69222	7.60299

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.25868	0.88442	5.20503
	A2->X (FF)	0.23312	0.82972	4.76066
	B1->X (FF)	0.11957	0.70922	4.51785
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.33835	0.96444	5.62895
	A2->X (FF)	0.31539	0.91476	5.22792
	B1->X (FF)	0.14005	0.73572	4.87597
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.32228	0.91536	5.58465
	A2->X (FF)	0.29242	0.85994	5.16257
	B1->X (FF)	0.15070	0.71449	4.83467

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00583	0.00584	0.00618
	A1	0.00252	0.00253	0.00293
	A2	0.00481	0.00477	0.00548
	A2	0.00200	0.00194	0.00267
	B1	0.00521	0.00516	0.00645
	B1	0.00268	0.00262	0.00393
sky130_fd_sc_hs__o21a_2	A1	0.00767	0.00788	0.00822
	A1	0.00405	0.00427	0.00474
	A2	0.00669	0.00684	0.00745
	A2	0.00362	0.00382	0.00452
	B1	0.00691	0.00699	0.00794
	B1	0.00411	0.00419	0.00528
sky130_fd_sc_hs__o21a_4	A1	0.01478	0.01516	0.01596
	A1	0.00798	0.00836	0.00942
	A2	0.01256	0.01285	0.01421
	A2	0.00693	0.00723	0.00886
	B1	0.01317	0.01340	0.01585
	B1	0.00823	0.00846	0.01117

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00237	0.00240	0.00308
	A1	0.00563	0.00570	0.00604
	A2	0.00240	0.00252	0.00398
	A2	0.00514	0.00527	0.00663
	B1	0.00187	0.00195	0.00414
	B1	0.00446	0.00448	0.00652
sky130_fd_sc_hs__o21a_2	A1	0.00388	0.00415	0.00507
	A1	0.00742	0.00771	0.00809
	A2	0.00395	0.00416	0.00600
	A2	0.00692	0.00723	0.00862
	B1	0.00338	0.00354	0.00554
	B1	0.00620	0.00633	0.00790
sky130_fd_sc_hs__o21a_4	A1	0.00707	0.00755	0.00959
	A1	0.01375	0.01436	0.01512
	A2	0.00731	0.00779	0.01149
	A2	0.01280	0.01343	0.01620
	B1	0.00632	0.00675	0.01126
	B1	0.01134	0.01174	0.01569

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00092	0.00084	0.00083
	(A2 * B1 * X)	-0.00088	-0.00098	-0.00099
	(A2 * !B1 * !X)	0.00082	0.00083	0.00083
	(A2 * !B1 * !X)	-0.00097	-0.00099	-0.00098
	(!A2 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A2 * !B1 * !X)	-0.00100	-0.00100	-0.00100
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00109	0.00100	0.00099
	(A2 * B1 * X)	-0.00086	-0.00096	-0.00097
	(A2 * !B1 * !X)	0.00099	0.00099	0.00099
	(A2 * !B1 * !X)	-0.00095	-0.00097	-0.00097
	(!A2 * !B1 * !X)	0.00093	0.00093	0.00093
	(!A2 * !B1 * !X)	-0.00098	-0.00098	-0.00098
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00202	0.00187	0.00184
	(A2 * B1 * X)	-0.00168	-0.00188	-0.00189
	(A2 * !B1 * !X)	0.00179	0.00181	0.00179
	(A2 * !B1 * !X)	-0.00189	-0.00195	-0.00193
	(!A2 * !B1 * !X)	0.00168	0.00170	0.00169
	(!A2 * !B1 * !X)	-0.00197	-0.00198	-0.00197

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00082	-0.00082	-0.00082
	(A2 * B1 * X)	0.00099	0.00100	0.00099
	(A2 * !B1 * !X)	-0.00082	-0.00082	-0.00082
	(A2 * !B1 * !X)	0.00099	0.00099	0.00098
	(!A2 * !B1 * !X)	-0.00073	-0.00078	-0.00077
	(!A2 * !B1 * !X)	0.00100	0.00101	0.00100
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00098	-0.00098	-0.00098
	(A2 * B1 * X)	0.00097	0.00097	0.00097
	(A2 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(A2 * !B1 * !X)	0.00097	0.00098	0.00097
	(!A2 * !B1 * !X)	-0.00089	-0.00093	-0.00093
	(!A2 * !B1 * !X)	0.00099	0.00099	0.00099
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00183	-0.00184	-0.00183
	(A2 * B1 * X)	0.00189	0.00190	0.00189
	(A2 * !B1 * !X)	-0.00179	-0.00179	-0.00179
	(A2 * !B1 * !X)	0.00193	0.00195	0.00193
	(!A2 * !B1 * !X)	-0.00162	-0.00170	-0.00169
	(!A2 * !B1 * !X)	0.00199	0.00198	0.00198

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00086	0.00085	0.00085
	(A1 * B1 * X)	-0.00056	-0.00055	-0.00055
	(A1 * !B1 * !X)	0.00079	0.00079	0.00078
	(A1 * !B1 * !X)	-0.00094	-0.00095	-0.00095
	(!A1 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !B1 * !X)	-0.00097	-0.00097	-0.00097
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00098	0.00098	0.00097
	(A1 * B1 * X)	-0.00053	-0.00052	-0.00052
	(A1 * !B1 * !X)	0.00088	0.00090	0.00089
	(A1 * !B1 * !X)	-0.00092	-0.00094	-0.00094
	(!A1 * !B1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !B1 * !X)	-0.00096	-0.00096	-0.00096
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00168	0.00170	0.00169
	(A1 * B1 * X)	-0.00105	-0.00105	-0.00105
	(A1 * !B1 * !X)	0.00150	0.00149	0.00150
	(A1 * !B1 * !X)	-0.00188	-0.00192	-0.00191
	(!A1 * !B1 * !X)	0.00140	0.00140	0.00139
	(!A1 * !B1 * !X)	-0.00197	-0.00197	-0.00196

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00080	-0.00080	-0.00084
	(A1 * B1 * X)	0.00060	0.00060	0.00057
	(A1 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !B1 * !X)	0.00095	0.00095	0.00095
	(!A1 * !B1 * !X)	-0.00069	-0.00073	-0.00073
	(!A1 * !B1 * !X)	0.00098	0.00098	0.00097
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00093	-0.00093	-0.00097
	(A1 * B1 * X)	0.00056	0.00056	0.00053
	(A1 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(A1 * !B1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !B1 * !X)	-0.00080	-0.00083	-0.00083
	(!A1 * !B1 * !X)	0.00096	0.00097	0.00096
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00158	-0.00159	-0.00167
	(A1 * B1 * X)	0.00115	0.00114	0.00108
	(A1 * !B1 * !X)	-0.00150	-0.00149	-0.00149
	(A1 * !B1 * !X)	0.00193	0.00192	0.00191
	(!A1 * !B1 * !X)	-0.00133	-0.00140	-0.00139
	(!A1 * !B1 * !X)	0.00198	0.00198	0.00197

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00034	0.00034	0.00031
	(!A1 * !A2 * !X)	-0.00104	-0.00105	-0.00109
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00037	0.00037	0.00034
	(!A1 * !A2 * !X)	-0.00118	-0.00119	-0.00123
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00058	0.00058	0.00052
	(!A1 * !A2 * !X)	-0.00201	-0.00202	-0.00210

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00030	-0.00031	-0.00030
	(!A1 * !A2 * !X)	0.00109	0.00111	0.00109
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * !X)	0.00123	0.00124	0.00124
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * !X)	0.00211	0.00213	0.00211

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00257	0.00287	0.00225	0.30566
sky130_fd_sc_hs__o21bai_2	0.00545	0.00501	0.00248	0.58774
sky130_fd_sc_hs__o21bai_4	0.00977	0.00997	0.00336	1.09019

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21bai_1	0.00000	0.05538	0.08740
sky130_fd_sc_hs__o21bai_2	0.00000	0.04929	0.07722
sky130_fd_sc_hs__o21bai_4	0.00000	0.12173	0.18203

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)	0.17448	1.37126	12.17910
	A2->Y (FR)	0.15377	1.32101	11.98280
	B1_N->Y (RR)	0.09450	0.61831	3.70740
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.15906	1.18128	12.06800
	A2->Y (FR)	0.12883	1.12469	11.85660
	B1_N->Y (RR)	0.09224	0.56909	3.80073
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.16061	1.05801	12.05500
	A2->Y (FR)	0.12888	1.00472	11.92150
	B1_N->Y (RR)	0.12439	0.76487	7.18542

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.05410	0.53734	4.94415
	A2->Y (RF)	0.04705	0.52340	4.90196
	B1_N->Y (FF)	0.13635	0.69434	3.83208
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.05041	0.47422	4.85542
	A2->Y (RF)	0.04465	0.46446	4.87103
	B1_N->Y (FF)	0.14705	0.72156	4.33539
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.05849	0.43859	4.91759
	A2->Y (RF)	0.04640	0.41818	4.84430
	B1_N->Y (FF)	0.13617	0.64316	4.03917

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00040	0.00032	0.00033
	A1	0.00340	0.00332	0.00334
	A2	0.00039	0.00033	0.00050
	A2	0.00300	0.00292	0.00309
	B1_N	0.00419	0.00405	0.00528
	B1_N	0.00279	0.00266	0.00394
sky130_fd_sc_hs__o21bai_2	A1	0.00048	0.00030	0.00033
	A1	0.00650	0.00633	0.00638
	A2	0.00052	0.00038	0.00078
	A2	0.00517	0.00504	0.00543
	B1_N	0.00576	0.00576	0.00687
	B1_N	0.00472	0.00472	0.00587
sky130_fd_sc_hs__o21bai_4	A1	0.00089	0.00056	0.00065
	A1	0.01263	0.01231	0.01242
	A2	0.00081	0.00050	0.00135
	A2	0.01033	0.00999	0.01085
	B1_N	0.00770	0.00775	0.01024
	B1_N	0.00728	0.00734	0.00987

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00434	0.00428	0.00432
	A1	0.00133	0.00126	0.00127
	A2	0.00336	0.00334	0.00356
	A2	0.00071	0.00068	0.00070
	B1_N	0.00339	0.00339	0.00523
	B1_N	0.00482	0.00481	0.00664
sky130_fd_sc_hs__o21bai_2	A1	0.00864	0.00844	0.00861
	A1	0.00259	0.00239	0.00244
	A2	0.00622	0.00615	0.00625
	A2	0.00147	0.00140	0.00151
	B1_N	0.00656	0.00658	0.00811
	B1_N	0.00766	0.00765	0.00914
sky130_fd_sc_hs__o21bai_4	A1	0.01720	0.01678	0.01720
	A1	0.00545	0.00502	0.00515
	A2	0.01238	0.01221	0.01271
	A2	0.00269	0.00250	0.00282
	B1_N	0.01307	0.01303	0.01654
	B1_N	0.01366	0.01360	0.01681

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)	0.00093	0.00094	0.00093
	(A2 * B1_N * Y)	-0.00103	-0.00106	-0.00106
	(A2 * !B1_N * !Y)	0.00102	0.00094	0.00093
	(A2 * !B1_N * !Y)	-0.00095	-0.00106	-0.00106
	(!A2 * B1_N * Y)	0.00089	0.00089	0.00089
	(!A2 * B1_N * Y)	-0.00108	-0.00108	-0.00108
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00191	0.00192	0.00191
	(A2 * B1_N * Y)	-0.00216	-0.00222	-0.00221
	(A2 * !B1_N * !Y)	0.00214	0.00196	0.00194
	(A2 * !B1_N * !Y)	-0.00196	-0.00218	-0.00218
	(!A2 * B1_N * Y)	0.00182	0.00184	0.00183
	(!A2 * B1_N * Y)	-0.00224	-0.00226	-0.00225
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00358	0.00360	0.00357
	(A2 * B1_N * Y)	-0.00418	-0.00430	-0.00428
	(A2 * !B1_N * !Y)	0.00398	0.00363	0.00358
	(A2 * !B1_N * !Y)	-0.00382	-0.00427	-0.00427
	(!A2 * B1_N * Y)	0.00340	0.00344	0.00341
	(!A2 * B1_N * Y)	-0.00437	-0.00439	-0.00437

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)	-0.00093	-0.00093	-0.00093
	(A2 * B1_N * Y)	0.00106	0.00107	0.00106
	(A2 * !B1_N * !Y)	-0.00093	-0.00093	-0.00093
	(A2 * !B1_N * !Y)	0.00106	0.00107	0.00106
	(!A2 * B1_N * Y)	-0.00086	-0.00089	-0.00089
	(!A2 * B1_N * Y)	0.00108	0.00109	0.00108
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00191	-0.00191	-0.00191
	(A2 * B1_N * Y)	0.00221	0.00222	0.00221
	(A2 * !B1_N * !Y)	-0.00194	-0.00194	-0.00193
	(A2 * !B1_N * !Y)	0.00219	0.00219	0.00218
	(!A2 * B1_N * Y)	-0.00177	-0.00184	-0.00183
	(!A2 * B1_N * Y)	0.00226	0.00228	0.00226
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00357	-0.00357	-0.00356
	(A2 * B1_N * Y)	0.00429	0.00430	0.00428
	(A2 * !B1_N * !Y)	-0.00358	-0.00358	-0.00356
	(A2 * !B1_N * !Y)	0.00427	0.00429	0.00427
	(!A2 * B1_N * Y)	-0.00328	-0.00344	-0.00341
	(!A2 * B1_N * Y)	0.00441	0.00444	0.00439

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)	0.00096	0.00097	0.00096
	(A1 * B1_N * Y)	-0.00114	-0.00115	-0.00115
	(A1 * !B1_N * !Y)	0.00109	0.00109	0.00109
	(A1 * !B1_N * !Y)	-0.00064	-0.00064	-0.00064
	(!A1 * B1_N * Y)	0.00090	0.00091	0.00091
	(!A1 * B1_N * Y)	-0.00117	-0.00118	-0.00118
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00173	0.00174	0.00174
	(A1 * B1_N * Y)	-0.00201	-0.00207	-0.00206
	(A1 * !B1_N * !Y)	0.00190	0.00191	0.00190
	(A1 * !B1_N * !Y)	-0.00114	-0.00114	-0.00113
	(!A1 * B1_N * Y)	0.00166	0.00168	0.00167
	(!A1 * B1_N * Y)	-0.00210	-0.00211	-0.00210
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00355	0.00356	0.00354
	(A1 * B1_N * Y)	-0.00419	-0.00428	-0.00427
	(A1 * !B1_N * !Y)	0.00403	0.00402	0.00400
	(A1 * !B1_N * !Y)	-0.00234	-0.00233	-0.00231
	(!A1 * B1_N * Y)	0.00339	0.00336	0.00338
	(!A1 * B1_N * Y)	-0.00440	-0.00437	-0.00439

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)	-0.00095	-0.00095	-0.00095
	(A1 * B1_N * Y)	0.00114	0.00115	0.00115
	(A1 * !B1_N * !Y)	-0.00104	-0.00104	-0.00108
	(A1 * !B1_N * !Y)	0.00069	0.00069	0.00065
	(!A1 * B1_N * Y)	-0.00088	-0.00091	-0.00091
	(!A1 * B1_N * Y)	0.00119	0.00119	0.00118
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00173	-0.00174	-0.00173
	(A1 * B1_N * Y)	0.00205	0.00207	0.00206
	(A1 * !B1_N * !Y)	-0.00178	-0.00180	-0.00189
	(A1 * !B1_N * !Y)	0.00123	0.00124	0.00116
	(!A1 * B1_N * Y)	-0.00161	-0.00168	-0.00167
	(!A1 * B1_N * Y)	0.00211	0.00212	0.00211
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00352	-0.00354	-0.00352
	(A1 * B1_N * Y)	0.00426	0.00428	0.00427
	(A1 * !B1_N * !Y)	-0.00373	-0.00377	-0.00396
	(A1 * !B1_N * !Y)	0.00255	0.00255	0.00238
	(!A1 * B1_N * Y)	-0.00326	-0.00336	-0.00338
	(!A1 * B1_N * Y)	0.00441	0.00445	0.00440

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)	0.00337	0.00319	0.00458
	(!A1 * !A2 * Y)	0.00122	0.00104	0.00243
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00487	0.00466	0.00588
	(!A1 * !A2 * Y)	0.00243	0.00222	0.00344
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00587	0.00558	0.00793
	(!A1 * !A2 * Y)	0.00256	0.00225	0.00460

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)	0.00017	0.00016	0.00201
	(!A1 * !A2 * Y)	0.00234	0.00233	0.00417
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00053	0.00045	0.00192
	(!A1 * !A2 * Y)	0.00301	0.00293	0.00439
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00100	0.00106	0.00415
	(!A1 * !A2 * Y)	0.00441	0.00446	0.00752

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00236	0.00251	0.00206	0.60324
sky130_fd_sc_hs__o21ba_2	0.00245	0.00258	0.00219	1.19459
sky130_fd_sc_hs__o21ba_4	0.00491	0.00467	0.00265	2.25161

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.08300	0.10668
sky130_fd_sc_hs__o21ba_2	0.00000	0.09502	0.12362
sky130_fd_sc_hs__o21ba_4	0.00000	0.14607	0.27381

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)	0.13969	0.92129	7.64332
	A2->X (RR)	0.12771	0.89663	7.54157
	B1_N->X (FR)	0.22749	1.15200	8.87879
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.13734	0.79526	7.62588
	A2->X (RR)	0.12427	0.77325	7.53701
	B1_N->X (FR)	0.23201	1.03051	8.80763
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.14439	0.72015	7.70544
	A2->X (RR)	0.13736	0.69825	7.61119
	B1_N->X (FR)	0.24889	1.00747	9.38612

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.27177	0.89637	5.11944
	A2->X (FF)	0.25037	0.84830	4.69297
	B1_N->X (RF)	0.15982	0.53226	2.50845
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.33258	0.95595	5.52900
	A2->X (FF)	0.31064	0.90807	5.12476
	B1_N->X (RF)	0.18231	0.54457	2.67923
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.32209	0.91073	5.40297
	A2->X (FF)	0.29253	0.85553	4.98105
	B1_N->X (RF)	0.18978	0.53020	2.58056

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00618	0.00619	0.00653
	A1	0.00342	0.00344	0.00383
	A2	0.00530	0.00523	0.00591
	A2	0.00291	0.00285	0.00352
	B1_N	0.00555	0.00564	0.00746
	B1_N	0.00685	0.00695	0.00882
sky130_fd_sc_hs__o21ba_2	A1	0.00761	0.00783	0.00817
	A1	0.00477	0.00499	0.00547
	A2	0.00669	0.00684	0.00745
	A2	0.00424	0.00439	0.00500
	B1_N	0.00683	0.00707	0.00890
	B1_N	0.00828	0.00852	0.01043
sky130_fd_sc_hs__o21ba_4	A1	0.01472	0.01508	0.01588
	A1	0.00907	0.00945	0.01049
	A2	0.01252	0.01281	0.01416
	A2	0.00804	0.00834	0.00994
	B1_N	0.01286	0.01340	0.01483
	B1_N	0.01413	0.01468	0.01634

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00236	0.00245	0.00300
	A1	0.00508	0.00517	0.00553
	A2	0.00236	0.00247	0.00385
	A2	0.00470	0.00480	0.00617
	B1_N	0.00612	0.00588	0.00718
	B1_N	0.00483	0.00460	0.00587
sky130_fd_sc_hs__o21ba_2	A1	0.00364	0.00391	0.00460
	A1	0.00645	0.00671	0.00709
	A2	0.00363	0.00384	0.00552
	A2	0.00604	0.00632	0.00773
	B1_N	0.00775	0.00764	0.00881
	B1_N	0.00633	0.00618	0.00732
sky130_fd_sc_hs__o21ba_4	A1	0.00685	0.00734	0.00823
	A1	0.01244	0.01306	0.01380
	A2	0.00707	0.00763	0.01129
	A2	0.01147	0.01204	0.01487
	B1_N	0.01281	0.01309	0.01425
	B1_N	0.01157	0.01184	0.01291

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)	0.00082	0.00082	0.00082
	(A2 * B1_N * !X)	-0.00098	-0.00099	-0.00099
	(A2 * !B1_N * X)	0.00092	0.00083	0.00082
	(A2 * !B1_N * X)	-0.00088	-0.00099	-0.00100
	(!A2 * B1_N * !X)	0.00079	0.00079	0.00079
	(!A2 * B1_N * !X)	-0.00101	-0.00101	-0.00101
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00093	0.00094	0.00093
	(A2 * B1_N * !X)	-0.00095	-0.00097	-0.00097
	(A2 * !B1_N * X)	0.00103	0.00094	0.00093
	(A2 * !B1_N * X)	-0.00086	-0.00096	-0.00097
	(!A2 * B1_N * !X)	0.00089	0.00089	0.00089
	(!A2 * B1_N * !X)	-0.00098	-0.00098	-0.00098
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00183	0.00184	0.00183
	(A2 * B1_N * !X)	-0.00193	-0.00198	-0.00197
	(A2 * !B1_N * X)	0.00203	0.00187	0.00184
	(A2 * !B1_N * X)	-0.00174	-0.00196	-0.00196
	(!A2 * B1_N * !X)	0.00174	0.00176	0.00175
	(!A2 * B1_N * !X)	-0.00201	-0.00202	-0.00201

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)	-0.00082	-0.00082	-0.00082
	(A2 * B1_N * !X)	0.00100	0.00100	0.00099
	(A2 * !B1_N * X)	-0.00081	-0.00081	-0.00081
	(A2 * !B1_N * X)	0.00099	0.00100	0.00100
	(!A2 * B1_N * !X)	-0.00076	-0.00079	-0.00079
	(!A2 * B1_N * !X)	0.00102	0.00102	0.00101
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00093	-0.00093	-0.00093
	(A2 * B1_N * !X)	0.00097	0.00098	0.00097
	(A2 * !B1_N * X)	-0.00093	-0.00093	-0.00093
	(A2 * !B1_N * X)	0.00097	0.00098	0.00097
	(!A2 * B1_N * !X)	-0.00085	-0.00089	-0.00089
	(!A2 * B1_N * !X)	0.00099	0.00100	0.00099
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00183	-0.00183	-0.00182
	(A2 * B1_N * !X)	0.00197	0.00198	0.00197
	(A2 * !B1_N * X)	-0.00183	-0.00184	-0.00183
	(A2 * !B1_N * X)	0.00196	0.00197	0.00196
	(!A2 * B1_N * !X)	-0.00170	-0.00176	-0.00175
	(!A2 * B1_N * !X)	0.00204	0.00202	0.00202

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)	0.00088	0.00087	0.00087
	(A1 * B1_N * !X)	-0.00099	-0.00099	-0.00100
	(A1 * !B1_N * X)	0.00092	0.00091	0.00091
	(A1 * !B1_N * X)	-0.00062	-0.00062	-0.00061
	(!A1 * B1_N * !X)	0.00083	0.00084	0.00083
	(!A1 * B1_N * !X)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00095	0.00096	0.00095
	(A1 * B1_N * !X)	-0.00096	-0.00098	-0.00098
	(A1 * !B1_N * X)	0.00102	0.00103	0.00102
	(A1 * !B1_N * X)	-0.00057	-0.00058	-0.00057
	(!A1 * B1_N * !X)	0.00091	0.00092	0.00091
	(!A1 * B1_N * !X)	-0.00099	-0.00100	-0.00100
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00154	0.00155	0.00155
	(A1 * B1_N * !X)	-0.00193	-0.00197	-0.00197
	(A1 * !B1_N * X)	0.00173	0.00174	0.00174
	(A1 * !B1_N * X)	-0.00111	-0.00111	-0.00111
	(!A1 * B1_N * !X)	0.00145	0.00147	0.00146
	(!A1 * B1_N * !X)	-0.00202	-0.00203	-0.00203

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)	-0.00087	-0.00086	-0.00086
	(A1 * B1_N * !X)	0.00100	0.00099	0.00100
	(A1 * !B1_N * X)	-0.00087	-0.00087	-0.00090
	(A1 * !B1_N * X)	0.00065	0.00065	0.00063
	(!A1 * B1_N * !X)	-0.00080	-0.00084	-0.00083
	(!A1 * B1_N * !X)	0.00102	0.00103	0.00102
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00095	-0.00096	-0.00095
	(A1 * B1_N * !X)	0.00098	0.00098	0.00098
	(A1 * !B1_N * X)	-0.00098	-0.00098	-0.00101
	(A1 * !B1_N * X)	0.00062	0.00062	0.00059
	(!A1 * B1_N * !X)	-0.00088	-0.00092	-0.00091
	(!A1 * B1_N * !X)	0.00100	0.00101	0.00100
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00154	-0.00155	-0.00154
	(A1 * B1_N * !X)	0.00197	0.00197	0.00197
	(A1 * !B1_N * X)	-0.00163	-0.00164	-0.00172
	(A1 * !B1_N * X)	0.00121	0.00120	0.00114
	(!A1 * B1_N * !X)	-0.00140	-0.00147	-0.00146
	(!A1 * B1_N * !X)	0.00205	0.00205	0.00203

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)	0.00311	0.00295	0.00437
	(!A1 * !A2 * !X)	0.00112	0.00095	0.00238
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00340	0.00323	0.00460
	(!A1 * !A2 * !X)	0.00131	0.00112	0.00250
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00475	0.00452	0.00555
	(!A1 * !A2 * !X)	0.00217	0.00194	0.00298

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)	0.00023	0.00027	0.00210
	(!A1 * !A2 * !X)	0.00224	0.00228	0.00411
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00019	0.00019	0.00202
	(!A1 * !A2 * !X)	0.00231	0.00231	0.00414
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00037	0.00029	0.00155
	(!A1 * !A2 * !X)	0.00298	0.00290	0.00416

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00266	0.00282	0.00278	0.00271	0.00275	0.29865
sky130_fd_sc_hs__o221ai_2	0.00545	0.00498	0.00573	0.00499	0.00505	0.57517
sky130_fd_sc_hs__o221ai_4	0.01034	0.00988	0.01048	0.00985	0.01006	1.10744

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.01259	0.05433
sky130_fd_sc_hs__o221ai_2	0.00000	0.02517	0.10867
sky130_fd_sc_hs__o221ai_4	0.00000	0.05034	0.21733

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)	0.26796	1.46303	12.12840
	A2->Y (FR)	0.24408	1.40706	11.92520
	B1->Y (FR)	0.20150	1.37866	11.98810
	B2->Y (FR)	0.17567	1.32518	11.78760
	C1->Y (FR)	0.06685	0.86432	8.43402
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.23884	1.26461	12.06220
	A2->Y (FR)	0.20884	1.20632	11.84950
	B1->Y (FR)	0.18068	1.19295	11.96610
	B2->Y (FR)	0.14839	1.13483	11.75020
	C1->Y (FR)	0.05206	0.77568	8.37314
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.22710	1.11950	11.98980
	A2->Y (FR)	0.19837	1.06733	11.82990
	B1->Y (FR)	0.17681	1.07043	12.13160
	B2->Y (FR)	0.14517	1.01289	11.96530
	C1->Y (FR)	0.05128	0.72005	8.43929

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.10250	0.63953	5.30833
	A2->Y (RF)	0.09154	0.62359	5.27512
	B1->Y (RF)	0.09237	0.67597	5.92274
	B2->Y (RF)	0.07922	0.65308	5.83348
	C1->Y (RF)	0.07632	0.68910	6.28645
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.08258	0.55213	5.30532
	A2->Y (RF)	0.07271	0.54005	5.33082
	B1->Y (RF)	0.07197	0.58814	5.93147
	B2->Y (RF)	0.06221	0.58604	6.08078
	C1->Y (RF)	0.04181	0.59034	6.41387
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.08738	0.50996	5.46379
	A2->Y (RF)	0.07519	0.49287	5.47145
	B1->Y (RF)	0.07769	0.55596	6.23062
	B2->Y (RF)	0.06460	0.53844	6.26229
	C1->Y (RF)	0.04453	0.55441	6.77089

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00143	0.00131	0.00130
	A1	0.00666	0.00657	0.00655
	A2	0.00149	0.00136	0.00151
	A2	0.00619	0.00609	0.00620
	B1	0.00050	0.00037	0.00037
	B1	0.00503	0.00489	0.00490
	B2	0.00051	0.00043	0.00058
	B2	0.00443	0.00434	0.00448
	C1	-0.00026	-0.00032	-0.00014
	C1	0.00363	0.00357	0.00374
sky130_fd_sc_hs__o221ai_2	A1	0.00230	0.00204	0.00202
	A1	0.01239	0.01215	0.01215
	A2	0.00233	0.00210	0.00245
	A2	0.01112	0.01091	0.01121
	B1	0.00065	0.00034	0.00037
	B1	0.00944	0.00911	0.00920
	B2	0.00068	0.00045	0.00082
	B2	0.00816	0.00793	0.00827
	C1	-0.00097	-0.00106	-0.00061
	C1	0.00629	0.00619	0.00663

sky130_fd_sc_hs__o221ai_4	**A1**	0.00388	0.00340	0.00341
	A1	0.02384	0.02342	0.02342
	A2	0.00400	0.00354	0.00420
	A2	0.02148	0.02107	0.02165
	B1	0.00088	0.00032	0.00045
	B1	0.01825	0.01766	0.01783
	B2	0.00090	0.00043	0.00132
	B2	0.01585	0.01515	0.01618
	C1	-0.00181	-0.00198	-0.00074
	C1	0.01261	0.01248	0.01373

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.00730	0.00722	0.00720
	A1	0.00181	0.00173	0.00172
	A2	0.00621	0.00615	0.00614
	A2	0.00120	0.00115	0.00114
	B1	0.00635	0.00628	0.00657
	B1	0.00183	0.00175	0.00174
	B2	0.00528	0.00522	0.00548
	B2	0.00135	0.00130	0.00129
	C1	0.00566	0.00557	0.00558
	C1	0.00186	0.00177	0.00179

sky130_fd_sc_hs__o221ai_2	**A1**	0.01371	0.01357	0.01347
	A1	0.00313	0.00293	0.00292
	A2	0.01135	0.01127	0.01161
	A2	0.00201	0.00191	0.00193
	B1	0.01202	0.01181	0.01233
	B1	0.00319	0.00298	0.00297
	B2	0.00954	0.00944	0.00986
	B2	0.00200	0.00190	0.00194
	C1	0.01026	0.01009	0.01021
	C1	0.00317	0.00298	0.00309
sky130_fd_sc_hs__o221ai_4	**A1**	0.02713	0.02680	0.02726
	A1	0.00624	0.00583	0.00586
	A2	0.02249	0.02226	0.02283
	A2	0.00394	0.00364	0.00379
	B1	0.02361	0.02317	0.02342
	B1	0.00630	0.00587	0.00595
	B2	0.01909	0.01882	0.01947
	B2	0.00404	0.00374	0.00394
	C1	0.02032	0.01992	0.02039
	C1	0.00623	0.00583	0.00618

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)**	0.00108	0.00100	0.00099
	(A2 * B2 * C1 * !Y)	-0.00098	-0.00108	-0.00108
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00099	0.00100	0.00099
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00106	-0.00108	-0.00108
	(A2 * B1 * !B2 * C1 * !Y)	0.00108	0.00100	0.00099
	(A2 * B1 * !B2 * C1 * !Y)	-0.00098	-0.00108	-0.00108
	(A2 * !B1 * !B2 * Y)	0.00099	0.00100	0.00099
	(A2 * !B1 * !B2 * Y)	-0.00106	-0.00108	-0.00108
	(!A2 * B2 * !C1 * Y)	0.00090	0.00091	0.00090
	(!A2 * B2 * !C1 * Y)	-0.00110	-0.00110	-0.00110
	(!A2 * B1 * !B2 * !C1 * Y)	0.00091	0.00092	0.00091
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * !B2 * C1 * Y)	0.00093	0.00093	0.00092
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00093	0.00093	0.00092
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00110	-0.00110	-0.00110

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00210	0.00192	0.00190
	(A2 * B2 * C1 * !Y)	-0.00192	-0.00214	-0.00215
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00183	0.00184	0.00183
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00217	-0.00222	-0.00221
	(A2 * B1 * !B2 * C1 * !Y)	0.00210	0.00192	0.00190
	(A2 * B1 * !B2 * C1 * !Y)	-0.00192	-0.00214	-0.00215
	(A2 * !B1 * !B2 * Y)	0.00183	0.00184	0.00183
	(A2 * !B1 * !B2 * Y)	-0.00217	-0.00222	-0.00221
	(!A2 * B2 * !C1 * Y)	0.00164	0.00166	0.00164
	(!A2 * B2 * !C1 * Y)	-0.00226	-0.00227	-0.00226
	(!A2 * B1 * !B2 * !C1 * Y)	0.00166	0.00168	0.00166
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00226	-0.00227	-0.00226
	(!A2 * !B1 * !B2 * C1 * Y)	0.00170	0.00169	0.00170
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00225	-0.00226	-0.00226
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00170	0.00171	0.00170
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00225	-0.00227	-0.00226

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00416	0.00379	0.00374
	(A2 * B2 * C1 * !Y)	-0.00376	-0.00422	-0.00423
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00371	0.00372	0.00370
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00417	-0.00428	-0.00425
	(A2 * B1 * !B2 * C1 * !Y)	0.00416	0.00379	0.00374
	(A2 * B1 * !B2 * C1 * !Y)	-0.00376	-0.00422	-0.00423
	(A2 * !B1 * !B2 * Y)	0.00371	0.00372	0.00370
	(A2 * !B1 * !B2 * Y)	-0.00417	-0.00428	-0.00425
	(!A2 * B2 * !C1 * Y)	0.00331	0.00334	0.00331
	(!A2 * B2 * !C1 * Y)	-0.00434	-0.00437	-0.00435
	(!A2 * B1 * !B2 * !C1 * Y)	0.00335	0.00333	0.00335
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00435	-0.00433	-0.00435
	(!A2 * !B1 * !B2 * C1 * Y)	0.00340	0.00344	0.00342
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00434	-0.00436	-0.00435
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00340	0.00344	0.00342
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00434	-0.00436	-0.00435

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)**	-0.00099	-0.00099	-0.00099
	(A2 * B2 * C1 * !Y)	0.00109	0.00108	0.00108
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00099	-0.00100	-0.00099
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00108	0.00109	0.00108
	(A2 * B1 * !B2 * C1 * !Y)	-0.00099	-0.00099	-0.00099
	(A2 * B1 * !B2 * C1 * !Y)	0.00109	0.00108	0.00108
	(A2 * !B1 * !B2 * Y)	-0.00099	-0.00100	-0.00099
	(A2 * !B1 * !B2 * Y)	0.00108	0.00109	0.00108
	(!A2 * B2 * !C1 * Y)	-0.00084	-0.00091	-0.00090
	(!A2 * B2 * !C1 * Y)	0.00111	0.00111	0.00110
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00086	-0.00092	-0.00091
	(!A2 * B1 * !B2 * !C1 * Y)	0.00111	0.00111	0.00110
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00088	-0.00093	-0.00092
	(!A2 * !B1 * !B2 * C1 * Y)	0.00110	0.00111	0.00110
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00088	-0.00093	-0.00092
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00110	0.00111	0.00110

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00190	-0.00190	-0.00189
	(A2 * B2 * C1 * !Y)	0.00215	0.00216	0.00215
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00183	-0.00183	-0.00182
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00222	0.00222	0.00221
	(A2 * B1 * !B2 * C1 * !Y)	-0.00190	-0.00190	-0.00189
	(A2 * B1 * !B2 * C1 * !Y)	0.00215	0.00216	0.00215
	(A2 * !B1 * !B2 * Y)	-0.00183	-0.00183	-0.00182
	(A2 * !B1 * !B2 * Y)	0.00222	0.00222	0.00221
	(!A2 * B2 * !C1 * Y)	-0.00152	-0.00166	-0.00164
	(!A2 * B2 * !C1 * Y)	0.00226	0.00228	0.00227
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00156	-0.00168	-0.00166
	(!A2 * B1 * !B2 * !C1 * Y)	0.00226	0.00228	0.00226
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00161	-0.00169	-0.00170
	(!A2 * !B1 * !B2 * C1 * Y)	0.00225	0.00228	0.00227
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00161	-0.00171	-0.00170
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00225	0.00228	0.00227

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00373	-0.00374	-0.00372
	(A2 * B2 * C1 * !Y)	0.00423	0.00425	0.00423
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00370	-0.00371	-0.00369
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00426	0.00428	0.00425
	(A2 * B1 * !B2 * C1 * !Y)	-0.00373	-0.00374	-0.00372
	(A2 * B1 * !B2 * C1 * !Y)	0.00423	0.00425	0.00423
	(A2 * !B1 * !B2 * Y)	-0.00368	-0.00370	-0.00369
	(A2 * !B1 * !B2 * Y)	0.00423	0.00428	0.00425
	(!A2 * B2 * !C1 * Y)	-0.00306	-0.00334	-0.00331
	(!A2 * B2 * !C1 * Y)	0.00434	0.00440	0.00436
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00314	-0.00333	-0.00335
	(!A2 * B1 * !B2 * !C1 * Y)	0.00436	0.00439	0.00436
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00325	-0.00344	-0.00342
	(!A2 * !B1 * !B2 * C1 * Y)	0.00435	0.00440	0.00436
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00325	-0.00344	-0.00342
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00435	0.00440	0.00436

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)**	0.00105	0.00105	0.00105
	(A1 * B2 * C1 * !Y)	-0.00063	-0.00063	-0.00063
	(A1 * B2 * !C1 * Y)	0.00091	0.00091	0.00090
	(A1 * B2 * !C1 * Y)	-0.00114	-0.00116	-0.00115
	(A1 * B1 * !B2 * C1 * !Y)	0.00106	0.00105	0.00105
	(A1 * B1 * !B2 * C1 * !Y)	-0.00064	-0.00063	-0.00063
	(A1 * B1 * !B2 * !C1 * Y)	0.00090	0.00090	0.00090
	(A1 * B1 * !B2 * !C1 * Y)	-0.00113	-0.00116	-0.00115
	(A1 * !B1 * !B2 * C1 * Y)	0.00091	0.00090	0.00090
	(A1 * !B1 * !B2 * C1 * Y)	-0.00114	-0.00116	-0.00115
	(A1 * !B1 * !B2 * !C1 * Y)	0.00091	0.00091	0.00090
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00114	-0.00116	-0.00115
	(!A1 * B2 * !C1 * Y)	0.00082	0.00082	0.00082
	(!A1 * B2 * !C1 * Y)	-0.00118	-0.00118	-0.00118
	(!A1 * B1 * !B2 * !C1 * Y)	0.00082	0.00083	0.00083
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00117	-0.00118	-0.00118
	(!A1 * !B1 * !B2 * C1 * Y)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00117	-0.00118	-0.00118
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00083	0.00084	0.00084
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00117	-0.00118	-0.00118

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00191	0.00190	0.00190
	(A1 * B2 * C1 * !Y)	-0.00115	-0.00113	-0.00113
	(A1 * B2 * !C1 * Y)	0.00173	0.00174	0.00173
	(A1 * B2 * !C1 * Y)	-0.00200	-0.00206	-0.00205
	(A1 * B1 * !B2 * C1 * !Y)	0.00191	0.00190	0.00190
	(A1 * B1 * !B2 * C1 * !Y)	-0.00115	-0.00113	-0.00113
	(A1 * B1 * !B2 * !C1 * Y)	0.00173	0.00174	0.00173
	(A1 * B1 * !B2 * !C1 * Y)	-0.00200	-0.00206	-0.00205
	(A1 * !B1 * !B2 * C1 * Y)	0.00173	0.00174	0.00173
	(A1 * !B1 * !B2 * C1 * Y)	-0.00200	-0.00205	-0.00204
	(A1 * !B1 * !B2 * !C1 * Y)	0.00173	0.00175	0.00173
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00200	-0.00206	-0.00205
	(!A1 * B2 * !C1 * Y)	0.00156	0.00157	0.00156
	(!A1 * B2 * !C1 * Y)	-0.00210	-0.00210	-0.00210
	(!A1 * B1 * !B2 * !C1 * Y)	0.00157	0.00159	0.00158
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00210	-0.00211	-0.00210
	(!A1 * !B1 * !B2 * C1 * Y)	0.00161	0.00162	0.00161
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00210	-0.00211	-0.00210
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00161	0.00161	0.00161
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00210	-0.00210	-0.00210

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00382	0.00385	0.00383
	(A1 * B2 * C1 * !Y)	-0.00225	-0.00227	-0.00226
	(A1 * B2 * !C1 * Y)	0.00337	0.00339	0.00337
	(A1 * B2 * !C1 * Y)	-0.00413	-0.00424	-0.00422
	(A1 * B1 * !B2 * C1 * !Y)	0.00382	0.00385	0.00383
	(A1 * B1 * !B2 * C1 * !Y)	-0.00225	-0.00227	-0.00226
	(A1 * B1 * !B2 * !C1 * Y)	0.00337	0.00339	0.00337
	(A1 * B1 * !B2 * !C1 * Y)	-0.00413	-0.00424	-0.00422
	(A1 * !B1 * !B2 * C1 * Y)	0.00337	0.00339	0.00338
	(A1 * !B1 * !B2 * C1 * Y)	-0.00413	-0.00422	-0.00421
	(A1 * !B1 * !B2 * !C1 * Y)	0.00337	0.00341	0.00337
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00413	-0.00425	-0.00423
	(!A1 * B2 * !C1 * Y)	0.00304	0.00305	0.00304
	(!A1 * B2 * !C1 * Y)	-0.00432	-0.00433	-0.00432
	(!A1 * B1 * !B2 * !C1 * Y)	0.00308	0.00310	0.00307
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00433	-0.00434	-0.00432
	(!A1 * !B1 * !B2 * C1 * Y)	0.00314	0.00315	0.00314
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00431	-0.00434	-0.00432
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00314	0.00315	0.00313
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00431	-0.00434	-0.00432

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)**	-0.00099	-0.00100	-0.00104
	(A1 * B2 * C1 * !Y)	0.00068	0.00068	0.00064
	(A1 * B2 * !C1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * B2 * !C1 * Y)	0.00116	0.00116	0.00115
	(A1 * B1 * !B2 * C1 * !Y)	-0.00099	-0.00100	-0.00104
	(A1 * B1 * !B2 * C1 * !Y)	0.00068	0.00068	0.00064
	(A1 * B1 * !B2 * !C1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * B1 * !B2 * !C1 * Y)	0.00116	0.00116	0.00115
	(A1 * !B1 * !B2 * C1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !B1 * !B2 * C1 * Y)	0.00116	0.00116	0.00115
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !B1 * !B2 * !C1 * Y)	0.00116	0.00116	0.00115
	(!A1 * B2 * !C1 * Y)	-0.00076	-0.00082	-0.00082
	(!A1 * B2 * !C1 * Y)	0.00118	0.00118	0.00118
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00078	-0.00083	-0.00083
	(!A1 * B1 * !B2 * !C1 * Y)	0.00119	0.00118	0.00118
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00079	-0.00084	-0.00083
	(!A1 * !B1 * !B2 * C1 * Y)	0.00118	0.00119	0.00118
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00079	-0.00084	-0.00084
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00118	0.00118	0.00118

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00178	-0.00180	-0.00188
	(A1 * B2 * C1 * !Y)	0.00123	0.00123	0.00116
	(A1 * B2 * !C1 * Y)	-0.00173	-0.00173	-0.00173
	(A1 * B2 * !C1 * Y)	0.00206	0.00206	0.00205
	(A1 * B1 * !B2 * C1 * !Y)	-0.00178	-0.00179	-0.00188
	(A1 * B1 * !B2 * C1 * !Y)	0.00123	0.00123	0.00116
	(A1 * B1 * !B2 * !C1 * Y)	-0.00173	-0.00173	-0.00173
	(A1 * B1 * !B2 * !C1 * Y)	0.00206	0.00206	0.00205
	(A1 * !B1 * !B2 * C1 * Y)	-0.00172	-0.00173	-0.00173
	(A1 * !B1 * !B2 * C1 * Y)	0.00204	0.00205	0.00204
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00173	-0.00173	-0.00173
	(A1 * !B1 * !B2 * !C1 * Y)	0.00206	0.00206	0.00205
	(!A1 * B2 * !C1 * Y)	-0.00145	-0.00157	-0.00156
	(!A1 * B2 * !C1 * Y)	0.00210	0.00212	0.00211
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00148	-0.00159	-0.00158
	(!A1 * B1 * !B2 * !C1 * Y)	0.00210	0.00212	0.00211
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00154	-0.00162	-0.00161
	(!A1 * !B1 * !B2 * C1 * Y)	0.00211	0.00212	0.00211
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00154	-0.00161	-0.00161
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00211	0.00212	0.00211

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00360	-0.00363	-0.00380
	(A1 * B2 * C1 * !Y)	0.00247	0.00246	0.00231
	(A1 * B2 * !C1 * Y)	-0.00337	-0.00338	-0.00337
	(A1 * B2 * !C1 * Y)	0.00423	0.00424	0.00422
	(A1 * B1 * !B2 * C1 * !Y)	-0.00360	-0.00363	-0.00380
	(A1 * B1 * !B2 * C1 * !Y)	0.00247	0.00247	0.00232
	(A1 * B1 * !B2 * !C1 * Y)	-0.00337	-0.00338	-0.00337
	(A1 * B1 * !B2 * !C1 * Y)	0.00424	0.00424	0.00422
	(A1 * !B1 * !B2 * C1 * Y)	-0.00336	-0.00337	-0.00337
	(A1 * !B1 * !B2 * C1 * Y)	0.00420	0.00422	0.00421
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00336	-0.00338	-0.00337
	(A1 * !B1 * !B2 * !C1 * Y)	0.00421	0.00425	0.00423
	(!A1 * B2 * !C1 * Y)	-0.00282	-0.00305	-0.00304
	(!A1 * B2 * !C1 * Y)	0.00432	0.00436	0.00433
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00289	-0.00310	-0.00307
	(!A1 * B1 * !B2 * !C1 * Y)	0.00433	0.00436	0.00433
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00297	-0.00315	-0.00314
	(!A1 * !B1 * !B2 * C1 * Y)	0.00431	0.00437	0.00434
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00298	-0.00315	-0.00313
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00431	0.00437	0.00434

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)**	0.00113	0.00105	0.00104
	(A2 * B2 * C1 * !Y)	-0.00094	-0.00105	-0.00105
	(A2 * !B2 * !C1 * Y)	0.00090	0.00090	0.00089
	(A2 * !B2 * !C1 * Y)	-0.00117	-0.00117	-0.00117
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00094	0.00095	0.00094
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00113	-0.00115	-0.00115
	(A1 * !A2 * B2 * C1 * !Y)	0.00113	0.00105	0.00104
	(A1 * !A2 * B2 * C1 * !Y)	-0.00094	-0.00105	-0.00105
	(A1 * !A2 * !B2 * !C1 * Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00117	-0.00117	-0.00117
	(!A1 * !A2 * B2 * C1 * Y)	0.00046	0.00046	0.00045
	(!A1 * !A2 * B2 * C1 * Y)	-0.00113	-0.00116	-0.00115
	(!A1 * !A2 * B2 * !C1 * Y)	0.00056	0.00056	0.00055
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00113	-0.00116	-0.00115
	(!A1 * !A2 * !B2 * C1 * Y)	0.00047	0.00048	0.00048
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00116	-0.00117	-0.00115
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00058	0.00059	0.00058
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00117	-0.00118	-0.00117

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00222	0.00205	0.00204
	(A2 * B2 * C1 * !Y)	-0.00187	-0.00208	-0.00208
	(A2 * !B2 * !C1 * Y)	0.00171	0.00172	0.00171
	(A2 * !B2 * !C1 * Y)	-0.00232	-0.00232	-0.00231
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00184	0.00185	0.00184
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00223	-0.00228	-0.00227
	(A1 * !A2 * B2 * C1 * !Y)	0.00222	0.00205	0.00204
	(A1 * !A2 * B2 * C1 * !Y)	-0.00187	-0.00208	-0.00208
	(A1 * !A2 * !B2 * !C1 * Y)	0.00170	0.00172	0.00171
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * B2 * C1 * Y)	0.00083	0.00083	0.00083
	(!A1 * !A2 * B2 * C1 * Y)	-0.00223	-0.00228	-0.00228
	(!A1 * !A2 * B2 * !C1 * Y)	0.00102	0.00102	0.00102
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00224	-0.00229	-0.00227
	(!A1 * !A2 * !B2 * C1 * Y)	0.00087	0.00089	0.00088
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00230	-0.00232	-0.00228
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00108	0.00109	0.00108
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00231	-0.00233	-0.00231

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00419	0.00386	0.00381
	(A2 * B2 * C1 * !Y)	-0.00367	-0.00413	-0.00413
	(A2 * !B2 * !C1 * Y)	0.00330	0.00335	0.00332
	(A2 * !B2 * !C1 * Y)	-0.00444	-0.00448	-0.00446
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00355	0.00359	0.00356
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00428	-0.00440	-0.00438
	(A1 * !A2 * B2 * C1 * !Y)	0.00419	0.00385	0.00381
	(A1 * !A2 * B2 * C1 * !Y)	-0.00367	-0.00413	-0.00413
	(A1 * !A2 * !B2 * !C1 * Y)	0.00332	0.00334	0.00332
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00447	-0.00447	-0.00446
	(!A1 * !A2 * B2 * C1 * Y)	0.00155	0.00156	0.00155
	(!A1 * !A2 * B2 * C1 * Y)	-0.00428	-0.00441	-0.00439
	(!A1 * !A2 * B2 * !C1 * Y)	0.00190	0.00192	0.00191
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00428	-0.00442	-0.00438
	(!A1 * !A2 * !B2 * C1 * Y)	0.00165	0.00165	0.00166
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00445	-0.00445	-0.00441
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00203	0.00204	0.00201
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00449	-0.00450	-0.00447

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)**	-0.00103	-0.00104	-0.00103
	(A2 * B2 * C1 * !Y)	0.00105	0.00106	0.00105
	(A2 * !B2 * !C1 * Y)	-0.00086	-0.00090	-0.00089
	(A2 * !B2 * !C1 * Y)	0.00118	0.00118	0.00117
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00094	-0.00094	-0.00094
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00115	0.00115	0.00115
	(A1 * !A2 * B2 * C1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * B2 * C1 * !Y)	0.00105	0.00106	0.00105
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00084	-0.00090	-0.00089
	(A1 * !A2 * !B2 * !C1 * Y)	0.00117	0.00118	0.00117
	(!A1 * !A2 * B2 * C1 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * B2 * C1 * Y)	0.00117	0.00118	0.00115
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00056	-0.00056	-0.00055
	(!A1 * !A2 * B2 * !C1 * Y)	0.00116	0.00117	0.00115
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00045	-0.00045	-0.00046
	(!A1 * !A2 * !B2 * C1 * Y)	0.00119	0.00119	0.00117
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00058	-0.00059	-0.00058
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00118	0.00118	0.00117

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00203	-0.00204	-0.00203
	(A2 * B2 * C1 * !Y)	0.00208	0.00209	0.00208
	(A2 * !B2 * !C1 * Y)	-0.00162	-0.00172	-0.00171
	(A2 * !B2 * !C1 * Y)	0.00235	0.00234	0.00232
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00184	-0.00184	-0.00184
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00228	0.00229	0.00227
	(A1 * !A2 * B2 * C1 * !Y)	-0.00203	-0.00203	-0.00203
	(A1 * !A2 * B2 * C1 * !Y)	0.00208	0.00209	0.00208
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00160	-0.00172	-0.00171
	(A1 * !A2 * !B2 * !C1 * Y)	0.00235	0.00234	0.00232
	(!A1 * !A2 * B2 * C1 * Y)	-0.00081	-0.00081	-0.00082
	(!A1 * !A2 * B2 * C1 * Y)	0.00233	0.00233	0.00228
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00102	-0.00102	-0.00102
	(!A1 * !A2 * B2 * !C1 * Y)	0.00229	0.00229	0.00227
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00081	-0.00081	-0.00084
	(!A1 * !A2 * !B2 * C1 * Y)	0.00239	0.00239	0.00233
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00108	-0.00109	-0.00108
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00236	0.00234	0.00232

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00381	-0.00382	-0.00380
	(A2 * B2 * C1 * !Y)	0.00413	0.00416	0.00413
	(A2 * !B2 * !C1 * Y)	-0.00308	-0.00335	-0.00332
	(A2 * !B2 * !C1 * Y)	0.00450	0.00453	0.00447
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00355	-0.00356	-0.00355
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00438	0.00440	0.00438
	(A1 * !A2 * B2 * C1 * !Y)	-0.00381	-0.00381	-0.00380
	(A1 * !A2 * B2 * C1 * !Y)	0.00413	0.00415	0.00413
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00305	-0.00334	-0.00332
	(A1 * !A2 * !B2 * !C1 * Y)	0.00452	0.00447	0.00447
	(!A1 * !A2 * B2 * C1 * Y)	-0.00152	-0.00153	-0.00154
	(!A1 * !A2 * B2 * C1 * Y)	0.00448	0.00452	0.00439
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00190	-0.00192	-0.00191
	(!A1 * !A2 * B2 * !C1 * Y)	0.00438	0.00442	0.00438
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00152	-0.00153	-0.00156
	(!A1 * !A2 * !B2 * C1 * Y)	0.00458	0.00462	0.00450
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00203	-0.00204	-0.00201
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00455	0.00459	0.00447

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)**	0.00103	0.00103	0.00102
	(A2 * B1 * C1 * !Y)	-0.00058	-0.00057	-0.00057
	(A2 * B1 * !C1 * Y)	0.00090	0.00091	0.00090
	(A2 * B1 * !C1 * Y)	-0.00106	-0.00107	-0.00107
	(A2 * !B1 * !C1 * Y)	0.00085	0.00085	0.00085
	(A2 * !B1 * !C1 * Y)	-0.00110	-0.00110	-0.00109
	(A1 * !A2 * B1 * C1 * !Y)	0.00101	0.00103	0.00102
	(A1 * !A2 * B1 * C1 * !Y)	-0.00056	-0.00057	-0.00057
	(A1 * !A2 * B1 * !C1 * Y)	0.00089	0.00090	0.00090
	(A1 * !A2 * B1 * !C1 * Y)	-0.00105	-0.00107	-0.00107
	(A1 * !A2 * !B1 * !C1 * Y)	0.00085	0.00086	0.00085
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00109	-0.00110	-0.00109
	(!A1 * !A2 * B1 * C1 * Y)	0.00042	0.00042	0.00042
	(!A1 * !A2 * B1 * C1 * Y)	-0.00107	-0.00108	-0.00107
	(!A1 * !A2 * B1 * !C1 * Y)	0.00052	0.00052	0.00052
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00107	-0.00108	-0.00108
	(!A1 * !A2 * !B1 * C1 * Y)	0.00044	0.00044	0.00045
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00109	-0.00109	-0.00108
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00055	0.00055	0.00055
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00111	-0.00111	-0.00110

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00188	0.00190	0.00189
	(A2 * B1 * C1 * !Y)	-0.00112	-0.00113	-0.00113
	(A2 * B1 * !C1 * Y)	0.00171	0.00172	0.00171
	(A2 * B1 * !C1 * Y)	-0.00201	-0.00206	-0.00205
	(A2 * !B1 * !C1 * Y)	0.00160	0.00159	0.00160
	(A2 * !B1 * !C1 * Y)	-0.00209	-0.00209	-0.00210
	(A1 * !A2 * B1 * C1 * !Y)	0.00188	0.00190	0.00189
	(A1 * !A2 * B1 * C1 * !Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A2 * B1 * !C1 * Y)	0.00171	0.00172	0.00171
	(A1 * !A2 * B1 * !C1 * Y)	-0.00201	-0.00206	-0.00205
	(A1 * !A2 * !B1 * !C1 * Y)	0.00160	0.00161	0.00160
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00209	-0.00211	-0.00210
	(!A1 * !A2 * B1 * C1 * Y)	0.00075	0.00075	0.00075
	(!A1 * !A2 * B1 * C1 * Y)	-0.00201	-0.00207	-0.00205
	(!A1 * !A2 * B1 * !C1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00202	-0.00207	-0.00206
	(!A1 * !A2 * !B1 * C1 * Y)	0.00079	0.00080	0.00080
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00208	-0.00209	-0.00207
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00100	0.00099	0.00099
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00211	-0.00210	-0.00210

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00387	0.00387	0.00385
	(A2 * B1 * C1 * !Y)	-0.00229	-0.00227	-0.00225
	(A2 * B1 * !C1 * Y)	0.00346	0.00348	0.00348
	(A2 * B1 * !C1 * Y)	-0.00404	-0.00415	-0.00413
	(A2 * !B1 * !C1 * Y)	0.00323	0.00324	0.00323
	(A2 * !B1 * !C1 * Y)	-0.00424	-0.00424	-0.00423
	(A1 * !A2 * B1 * C1 * !Y)	0.00383	0.00387	0.00385
	(A1 * !A2 * B1 * C1 * !Y)	-0.00225	-0.00227	-0.00225
	(A1 * !A2 * B1 * !C1 * Y)	0.00347	0.00348	0.00348
	(A1 * !A2 * B1 * !C1 * Y)	-0.00405	-0.00415	-0.00413
	(A1 * !A2 * !B1 * !C1 * Y)	0.00323	0.00325	0.00323
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00424	-0.00425	-0.00423
	(!A1 * !A2 * B1 * C1 * Y)	0.00150	0.00151	0.00150
	(!A1 * !A2 * B1 * C1 * Y)	-0.00405	-0.00417	-0.00414
	(!A1 * !A2 * B1 * !C1 * Y)	0.00186	0.00187	0.00186
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00406	-0.00417	-0.00414
	(!A1 * !A2 * !B1 * C1 * Y)	0.00158	0.00160	0.00160
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00419	-0.00422	-0.00418
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00196	0.00196	0.00196
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00424	-0.00424	-0.00424

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)**	-0.00098	-0.00098	-0.00101
	(A2 * B1 * C1 * !Y)	0.00062	0.00061	0.00058
	(A2 * B1 * !C1 * Y)	-0.00090	-0.00089	-0.00089
	(A2 * B1 * !C1 * Y)	0.00107	0.00107	0.00107
	(A2 * !B1 * !C1 * Y)	-0.00082	-0.00085	-0.00085
	(A2 * !B1 * !C1 * Y)	0.00110	0.00111	0.00110
	(A1 * !A2 * B1 * C1 * !Y)	-0.00098	-0.00098	-0.00101
	(A1 * !A2 * B1 * C1 * !Y)	0.00062	0.00061	0.00058
	(A1 * !A2 * B1 * !C1 * Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * B1 * !C1 * Y)	0.00108	0.00107	0.00107
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00081	-0.00086	-0.00085
	(A1 * !A2 * !B1 * !C1 * Y)	0.00110	0.00111	0.00110
	(!A1 * !A2 * B1 * C1 * Y)	-0.00041	-0.00041	-0.00042
	(!A1 * !A2 * B1 * C1 * Y)	0.00108	0.00108	0.00107
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * B1 * !C1 * Y)	0.00108	0.00108	0.00108
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * !B1 * C1 * Y)	0.00111	0.00111	0.00110
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00055	-0.00055	-0.00055
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00111	0.00111	0.00110

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00177	-0.00179	-0.00187
	(A2 * B1 * C1 * !Y)	0.00123	0.00123	0.00116
	(A2 * B1 * !C1 * Y)	-0.00171	-0.00171	-0.00171
	(A2 * B1 * !C1 * Y)	0.00205	0.00206	0.00205
	(A2 * !B1 * !C1 * Y)	-0.00151	-0.00159	-0.00160
	(A2 * !B1 * !C1 * Y)	0.00212	0.00213	0.00210
	(A1 * !A2 * B1 * C1 * !Y)	-0.00177	-0.00179	-0.00187
	(A1 * !A2 * B1 * C1 * !Y)	0.00123	0.00123	0.00116
	(A1 * !A2 * B1 * !C1 * Y)	-0.00170	-0.00171	-0.00171
	(A1 * !A2 * B1 * !C1 * Y)	0.00204	0.00206	0.00205
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00149	-0.00161	-0.00160
	(A1 * !A2 * !B1 * !C1 * Y)	0.00212	0.00213	0.00210
	(!A1 * !A2 * B1 * C1 * Y)	-0.00074	-0.00073	-0.00075
	(!A1 * !A2 * B1 * C1 * Y)	0.00208	0.00207	0.00205
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !A2 * B1 * !C1 * Y)	0.00207	0.00207	0.00206
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00075	-0.00075	-0.00076
	(!A1 * !A2 * !B1 * C1 * Y)	0.00214	0.00214	0.00211
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00100	-0.00099	-0.00099
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00211	0.00212	0.00210

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00363	-0.00366	-0.00382
	(A2 * B1 * C1 * !Y)	0.00246	0.00246	0.00231
	(A2 * B1 * !C1 * Y)	-0.00346	-0.00348	-0.00347
	(A2 * B1 * !C1 * Y)	0.00411	0.00415	0.00413
	(A2 * !B1 * !C1 * Y)	-0.00302	-0.00324	-0.00323
	(A2 * !B1 * !C1 * Y)	0.00430	0.00429	0.00424
	(A1 * !A2 * B1 * C1 * !Y)	-0.00362	-0.00365	-0.00381
	(A1 * !A2 * B1 * C1 * !Y)	0.00246	0.00246	0.00231
	(A1 * !A2 * B1 * !C1 * Y)	-0.00347	-0.00348	-0.00347
	(A1 * !A2 * B1 * !C1 * Y)	0.00415	0.00415	0.00413
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00299	-0.00325	-0.00323
	(A1 * !A2 * !B1 * !C1 * Y)	0.00430	0.00429	0.00424
	(!A1 * !A2 * B1 * C1 * Y)	-0.00146	-0.00147	-0.00149
	(!A1 * !A2 * B1 * C1 * Y)	0.00419	0.00419	0.00414
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !A2 * B1 * !C1 * Y)	0.00416	0.00417	0.00414
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00149	-0.00148	-0.00151
	(!A1 * !A2 * !B1 * C1 * Y)	0.00436	0.00435	0.00426
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00196	-0.00196	-0.00196
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00431	0.00429	0.00425

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)	0.00041	0.00041	0.00038
	(A2 * !B1 * !B2 * Y)	-0.00132	-0.00133	-0.00137
	(!A2 * !B1 * !B2 * Y)	0.00041	0.00041	0.00038
	(!A2 * !B1 * !B2 * Y)	-0.00131	-0.00133	-0.00137
	(!A1 * !A2 * B2 * Y)	0.00045	0.00044	0.00037
	(!A1 * !A2 * B2 * Y)	-0.00121	-0.00122	-0.00135
	(!A1 * !A2 * B1 * !B2 * Y)	0.00044	0.00045	0.00037
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00122	-0.00124	-0.00135
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00075	0.00075	0.00069
	(A2 * !B1 * !B2 * Y)	-0.00244	-0.00244	-0.00255
	(!A2 * !B1 * !B2 * Y)	0.00075	0.00075	0.00069
	(!A2 * !B1 * !B2 * Y)	-0.00244	-0.00244	-0.00255
	(!A1 * !A2 * B2 * Y)	0.00081	0.00081	0.00068
	(!A1 * !A2 * B2 * Y)	-0.00223	-0.00225	-0.00252
	(!A1 * !A2 * B1 * !B2 * Y)	0.00081	0.00081	0.00069
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00227	-0.00228	-0.00252
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00129	0.00129	0.00120
	(A2 * !B1 * !B2 * Y)	-0.00497	-0.00498	-0.00517
	(!A2 * !B1 * !B2 * Y)	0.00130	0.00129	0.00120
	(!A2 * !B1 * !B2 * Y)	-0.00498	-0.00499	-0.00517
	(!A1 * !A2 * B2 * Y)	0.00141	0.00141	0.00118
	(!A1 * !A2 * B2 * Y)	-0.00459	-0.00461	-0.00510
	(!A1 * !A2 * B1 * !B2 * Y)	0.00142	0.00141	0.00120
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00466	-0.00467	-0.00511

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)	-0.00037	-0.00037	-0.00036
	(A2 * !B1 * !B2 * Y)	0.00138	0.00140	0.00138
	(!A2 * !B1 * !B2 * Y)	-0.00037	-0.00037	-0.00036
	(!A2 * !B1 * !B2 * Y)	0.00138	0.00139	0.00138
	(!A1 * !A2 * B2 * Y)	-0.00036	-0.00036	-0.00035
	(!A1 * !A2 * B2 * Y)	0.00139	0.00140	0.00138
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * B1 * !B2 * Y)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00067	-0.00067	-0.00066
	(A2 * !B1 * !B2 * Y)	0.00257	0.00260	0.00256
	(!A2 * !B1 * !B2 * Y)	-0.00067	-0.00067	-0.00066
	(!A2 * !B1 * !B2 * Y)	0.00257	0.00258	0.00256
	(!A1 * !A2 * B2 * Y)	-0.00064	-0.00065	-0.00064
	(!A1 * !A2 * B2 * Y)	0.00254	0.00260	0.00256
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * B1 * !B2 * Y)	0.00255	0.00258	0.00256
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00116	-0.00117	-0.00115
	(A2 * !B1 * !B2 * Y)	0.00521	0.00527	0.00519
	(!A2 * !B1 * !B2 * Y)	-0.00115	-0.00116	-0.00115
	(!A2 * !B1 * !B2 * Y)	0.00516	0.00522	0.00519
	(!A1 * !A2 * B2 * Y)	-0.00111	-0.00113	-0.00110
	(!A1 * !A2 * B2 * Y)	0.00517	0.00527	0.00519
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * !A2 * B1 * !B2 * Y)	0.00517	0.00522	0.00519

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00246	0.00244	0.00239	0.00256	0.00251	0.63445
sky130_fd_sc_hs__o221a_2	0.00261	0.00257	0.00256	0.00268	0.00263	1.29053
sky130_fd_sc_hs__o221a_4	0.00489	0.00442	0.00521	0.00444	0.00452	2.44768

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.04139	0.13588
sky130_fd_sc_hs__o221a_2	0.00000	0.05478	0.13949
sky130_fd_sc_hs__o221a_4	0.00000	0.11084	0.27898

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)	0.20573	0.99818	7.94186
	A2->X (RR)	0.19513	0.98315	7.86991
	B1->X (RR)	0.19459	1.01361	7.91979
	B2->X (RR)	0.18502	0.99014	7.81720
	C1->X (RR)	0.17748	0.98462	7.69823
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.20181	0.88090	8.08890
	A2->X (RR)	0.19228	0.86818	8.02566
	B1->X (RR)	0.19101	0.90166	8.09499
	B2->X (RR)	0.18549	0.88464	8.01624
	C1->X (RR)	0.17514	0.87938	7.90832
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.21282	0.80273	8.04008
	A2->X (RR)	0.20363	0.79169	7.97363
	B1->X (RR)	0.20339	0.82459	8.04978
	B2->X (RR)	0.19283	0.80135	7.95340
	C1->X (RR)	0.18253	0.79840	7.84694

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.35850	1.04011	5.71308
	A2->X (FF)	0.33376	0.98925	5.33375
	B1->X (FF)	0.30763	0.97765	5.49329
	B2->X (FF)	0.28417	0.92878	5.13001
	C1->X (FF)	0.13052	0.75951	4.82954
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.42888	1.09681	6.07346
	A2->X (FF)	0.40082	1.04057	5.70927
	B1->X (FF)	0.36541	1.02483	5.86470
	B2->X (FF)	0.34265	0.97703	5.51590
	C1->X (FF)	0.15357	0.78038	5.12437
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.38225	1.00928	5.94192
	A2->X (FF)	0.35235	0.95259	5.56464
	B1->X (FF)	0.34120	0.96065	5.77204
	B2->X (FF)	0.31000	0.90558	5.40652
	C1->X (FF)	0.14238	0.72824	5.07048

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.00867	0.00857	0.00865
	A1	0.00377	0.00367	0.00378
	A2	0.00774	0.00773	0.00799
	A2	0.00332	0.00331	0.00362
	B1	0.00777	0.00771	0.00792
	B1	0.00375	0.00369	0.00394
	B2	0.00693	0.00683	0.00727
	B2	0.00323	0.00313	0.00363
	C1	0.00724	0.00713	0.00801
	C1	0.00376	0.00365	0.00459
sky130_fd_sc_hs__o221a_2	A1	0.01049	0.01057	0.01066
	A1	0.00522	0.00531	0.00545
	A2	0.00946	0.00966	0.00995
	A2	0.00470	0.00490	0.00527
	B1	0.00949	0.00961	0.00983
	B1	0.00520	0.00532	0.00560
	B2	0.00867	0.00874	0.00915
	B2	0.00475	0.00483	0.00531
	C1	0.00888	0.00890	0.00972
	C1	0.00523	0.00526	0.00618

sky130_fd_sc_hs__o221a_4	**A1**	0.01945	0.01976	0.02015
	A1	0.00986	0.01018	0.01071
	A2	0.01714	0.01751	0.01827
	A2	0.00878	0.00915	0.01006
	B1	0.01804	0.01833	0.01896
	B1	0.00984	0.01013	0.01089
	B2	0.01565	0.01591	0.01691
	B2	0.00881	0.00908	0.01022
	C1	0.01632	0.01649	0.01837
	C1	0.00984	0.01001	0.01211

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00314	0.00310	0.00395
	A1	0.00788	0.00783	0.00806
	A2	0.00321	0.00316	0.00457
	A2	0.00737	0.00737	0.00852
	B1	0.00265	0.00269	0.00305
	B1	0.00666	0.00667	0.00697
	B2	0.00255	0.00258	0.00435
	B2	0.00622	0.00622	0.00753
	C1	0.00200	0.00198	0.00365
	C1	0.00553	0.00550	0.00700

sky130_fd_sc_hs__o221a_2	**A1**	0.00442	0.00447	0.00548
	A1	0.00949	0.00962	0.00986
	A2	0.00442	0.00460	0.00659
	A2	0.00897	0.00914	0.01034
	B1	0.00387	0.00406	0.00545
	B1	0.00812	0.00830	0.00867
	B2	0.00380	0.00395	0.00613
	B2	0.00765	0.00782	0.00920
	C1	0.00321	0.00338	0.00538
	C1	0.00691	0.00706	0.00860
sky130_fd_sc_hs__o221a_4	**A1**	0.00831	0.00857	0.00943
	A1	0.01745	0.01794	0.01851
	A2	0.00863	0.00850	0.01301
	A2	0.01644	0.01690	0.01943
	B1	0.00721	0.00762	0.00948
	B1	0.01528	0.01575	0.01649
	B2	0.00748	0.00787	0.01153
	B2	0.01422	0.01470	0.01745
	C1	0.00643	0.00681	0.01074
	C1	0.01301	0.01338	0.01647

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)**	0.00098	0.00089	0.00088
	(A2 * B2 * C1 * X)	-0.00084	-0.00094	-0.00096
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00076	0.00076	0.00076
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00105	-0.00107	-0.00107
	(A2 * B1 * !B2 * C1 * X)	0.00098	0.00089	0.00088
	(A2 * B1 * !B2 * C1 * X)	-0.00084	-0.00094	-0.00096
	(A2 * !B1 * !B2 * !X)	0.00076	0.00076	0.00076
	(A2 * !B1 * !B2 * !X)	-0.00105	-0.00107	-0.00107
	(!A2 * B2 * !C1 * !X)	0.00069	0.00070	0.00069
	(!A2 * B2 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(!A2 * B1 * !B2 * !C1 * !X)	0.00070	0.00071	0.00070
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(!A2 * !B1 * !B2 * C1 * !X)	0.00070	0.00071	0.00070
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00108	-0.00109	-0.00108
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00070	0.00070	0.00070
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00109	-0.00109	-0.00108

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00110	0.00102	0.00101
	(A2 * B2 * C1 * X)	-0.00084	-0.00094	-0.00095
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00088	0.00089	0.00088
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00106	-0.00108	-0.00108
	(A2 * B1 * !B2 * C1 * X)	0.00110	0.00102	0.00101
	(A2 * B1 * !B2 * C1 * X)	-0.00084	-0.00094	-0.00095
	(A2 * !B1 * !B2 * !X)	0.00088	0.00089	0.00088
	(A2 * !B1 * !B2 * !X)	-0.00106	-0.00108	-0.00108
	(!A2 * B2 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A2 * B2 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(!A2 * B1 * !B2 * !C1 * !X)	0.00081	0.00082	0.00081
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(!A2 * !B1 * !B2 * C1 * !X)	0.00081	0.00082	0.00081
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00109	-0.00109	-0.00109
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00109	-0.00109	-0.00109

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00204	0.00188	0.00186
	(A2 * B2 * C1 * X)	-0.00166	-0.00187	-0.00188
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00170	0.00171	0.00170
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00199	-0.00204	-0.00203
	(A2 * B1 * !B2 * C1 * X)	0.00204	0.00188	0.00186
	(A2 * B1 * !B2 * C1 * X)	-0.00166	-0.00187	-0.00188
	(A2 * !B1 * !B2 * !X)	0.00170	0.00171	0.00170
	(A2 * !B1 * !B2 * !X)	-0.00199	-0.00204	-0.00203
	(!A2 * B2 * !C1 * !X)	0.00155	0.00157	0.00156
	(!A2 * B2 * !C1 * !X)	-0.00206	-0.00207	-0.00206
	(!A2 * B1 * !B2 * !C1 * !X)	0.00157	0.00158	0.00157
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00206	-0.00207	-0.00206
	(!A2 * !B1 * !B2 * C1 * !X)	0.00158	0.00160	0.00159
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00205	-0.00207	-0.00206
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00158	0.00158	0.00159
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00205	-0.00206	-0.00206

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)**	-0.00087	-0.00087	-0.00087
	(A2 * B2 * C1 * X)	0.00095	0.00095	0.00096
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00076	-0.00076	-0.00076
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00107	0.00108	0.00107
	(A2 * B1 * !B2 * C1 * X)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * !B2 * C1 * X)	0.00095	0.00095	0.00096
	(A2 * !B1 * !B2 * !X)	-0.00076	-0.00076	-0.00076
	(A2 * !B1 * !B2 * !X)	0.00107	0.00108	0.00107
	(!A2 * B2 * !C1 * !X)	-0.00064	-0.00070	-0.00069
	(!A2 * B2 * !C1 * !X)	0.00109	0.00109	0.00109
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00066	-0.00071	-0.00070
	(!A2 * B1 * !B2 * !C1 * !X)	0.00109	0.00109	0.00109
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00066	-0.00071	-0.00070
	(!A2 * !B1 * !B2 * C1 * !X)	0.00109	0.00109	0.00109
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00067	-0.00070	-0.00070
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00109	0.00109	0.00109

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00101	-0.00101	-0.00100
	(A2 * B2 * C1 * X)	0.00095	0.00095	0.00095
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00088	-0.00088	-0.00088
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00108	0.00108	0.00108
	(A2 * B1 * !B2 * C1 * X)	-0.00101	-0.00101	-0.00100
	(A2 * B1 * !B2 * C1 * X)	0.00095	0.00095	0.00095
	(A2 * !B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(A2 * !B1 * !B2 * !X)	0.00108	0.00108	0.00108
	(!A2 * B2 * !C1 * !X)	-0.00074	-0.00081	-0.00080
	(!A2 * B2 * !C1 * !X)	0.00110	0.00110	0.00109
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00076	-0.00082	-0.00081
	(!A2 * B1 * !B2 * !C1 * !X)	0.00110	0.00110	0.00109
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00078	-0.00082	-0.00081
	(!A2 * !B1 * !B2 * C1 * !X)	0.00109	0.00110	0.00109
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00078	-0.00082	-0.00082
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00109	0.00110	0.00109

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00185	-0.00185	-0.00184
	(A2 * B2 * C1 * X)	0.00187	0.00188	0.00188
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00170	-0.00170	-0.00169
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00203	0.00204	0.00203
	(A2 * B1 * !B2 * C1 * X)	-0.00185	-0.00185	-0.00184
	(A2 * B1 * !B2 * C1 * X)	0.00187	0.00188	0.00188
	(A2 * !B1 * !B2 * !X)	-0.00170	-0.00170	-0.00169
	(A2 * !B1 * !B2 * !X)	0.00203	0.00204	0.00203
	(!A2 * B2 * !C1 * !X)	-0.00147	-0.00157	-0.00156
	(!A2 * B2 * !C1 * !X)	0.00207	0.00208	0.00207
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00149	-0.00158	-0.00157
	(!A2 * B1 * !B2 * !C1 * !X)	0.00207	0.00208	0.00207
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00152	-0.00160	-0.00159
	(!A2 * !B1 * !B2 * C1 * !X)	0.00207	0.00208	0.00207
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00152	-0.00158	-0.00159
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00207	0.00208	0.00207

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)**	0.00090	0.00090	0.00090
	(A1 * B2 * C1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * B2 * !C1 * !X)	0.00079	0.00079	0.00078
	(A1 * B2 * !C1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * B1 * !B2 * C1 * X)	0.00090	0.00090	0.00090
	(A1 * B1 * !B2 * C1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * B1 * !B2 * !C1 * !X)	0.00078	0.00079	0.00078
	(A1 * B1 * !B2 * !C1 * !X)	-0.00097	-0.00098	-0.00098
	(A1 * !B1 * !B2 * C1 * !X)	0.00079	0.00079	0.00078
	(A1 * !B1 * !B2 * C1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !B1 * !B2 * !C1 * !X)	0.00079	0.00079	0.00078
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * B2 * !C1 * !X)	0.00070	0.00071	0.00071
	(!A1 * B2 * !C1 * !X)	-0.00100	-0.00101	-0.00100
	(!A1 * B1 * !B2 * !C1 * !X)	0.00071	0.00072	0.00071
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00100	-0.00101	-0.00100
	(!A1 * !B1 * !B2 * C1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00101	-0.00101	-0.00100
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00100	-0.00100	-0.00100

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00102	0.00102	0.00101
	(A1 * B2 * C1 * X)	-0.00053	-0.00052	-0.00052
	(A1 * B2 * !C1 * !X)	0.00090	0.00090	0.00089
	(A1 * B2 * !C1 * !X)	-0.00097	-0.00098	-0.00098
	(A1 * B1 * !B2 * C1 * X)	0.00102	0.00102	0.00101
	(A1 * B1 * !B2 * C1 * X)	-0.00053	-0.00052	-0.00052
	(A1 * B1 * !B2 * !C1 * !X)	0.00090	0.00090	0.00089
	(A1 * B1 * !B2 * !C1 * !X)	-0.00097	-0.00098	-0.00098
	(A1 * !B1 * !B2 * C1 * !X)	0.00090	0.00090	0.00089
	(A1 * !B1 * !B2 * C1 * !X)	-0.00097	-0.00098	-0.00098
	(A1 * !B1 * !B2 * !C1 * !X)	0.00090	0.00090	0.00089
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * B2 * !C1 * !X)	0.00081	0.00081	0.00081
	(!A1 * B2 * !C1 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * B1 * !B2 * !C1 * !X)	0.00082	0.00082	0.00082
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00099	-0.00100	-0.00100
	(!A1 * !B1 * !B2 * C1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00100	-0.00100	-0.00099
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00100	-0.00100	-0.00099

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00164	0.00166	0.00165
	(A1 * B2 * C1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * B2 * !C1 * !X)	0.00145	0.00147	0.00146
	(A1 * B2 * !C1 * !X)	-0.00187	-0.00192	-0.00191
	(A1 * B1 * !B2 * C1 * X)	0.00164	0.00166	0.00165
	(A1 * B1 * !B2 * C1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * B1 * !B2 * !C1 * !X)	0.00145	0.00147	0.00146
	(A1 * B1 * !B2 * !C1 * !X)	-0.00187	-0.00192	-0.00191
	(A1 * !B1 * !B2 * C1 * !X)	0.00145	0.00147	0.00146
	(A1 * !B1 * !B2 * C1 * !X)	-0.00187	-0.00192	-0.00191
	(A1 * !B1 * !B2 * !C1 * !X)	0.00145	0.00147	0.00146
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00188	-0.00192	-0.00191
	(!A1 * B2 * !C1 * !X)	0.00130	0.00131	0.00131
	(!A1 * B2 * !C1 * !X)	-0.00195	-0.00196	-0.00196
	(!A1 * B1 * !B2 * !C1 * !X)	0.00132	0.00133	0.00132
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00195	-0.00196	-0.00196
	(!A1 * !B1 * !B2 * C1 * !X)	0.00134	0.00133	0.00134
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00195	-0.00195	-0.00195
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00134	0.00133	0.00134
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00195	-0.00195	-0.00195

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)**	-0.00085	-0.00086	-0.00089
	(A1 * B2 * C1 * X)	0.00057	0.00057	0.00054
	(A1 * B2 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * B2 * !C1 * !X)	0.00099	0.00098	0.00098
	(A1 * B1 * !B2 * C1 * X)	-0.00085	-0.00086	-0.00089
	(A1 * B1 * !B2 * C1 * X)	0.00057	0.00057	0.00054
	(A1 * B1 * !B2 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * B1 * !B2 * !C1 * !X)	0.00099	0.00098	0.00098
	(A1 * !B1 * !B2 * C1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !B1 * !B2 * C1 * !X)	0.00099	0.00098	0.00098
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !B1 * !B2 * !C1 * !X)	0.00099	0.00099	0.00098
	(!A1 * B2 * !C1 * !X)	-0.00065	-0.00071	-0.00071
	(!A1 * B2 * !C1 * !X)	0.00101	0.00101	0.00100
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00067	-0.00072	-0.00071
	(!A1 * B1 * !B2 * !C1 * !X)	0.00101	0.00101	0.00100
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00068	-0.00072	-0.00072
	(!A1 * !B1 * !B2 * C1 * !X)	0.00101	0.00101	0.00101
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00068	-0.00072	-0.00071
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00100	0.00101	0.00101

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00096	-0.00097	-0.00101
	(A1 * B2 * C1 * X)	0.00057	0.00057	0.00054
	(A1 * B2 * !C1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * B2 * !C1 * !X)	0.00098	0.00098	0.00098
	(A1 * B1 * !B2 * C1 * X)	-0.00096	-0.00097	-0.00101
	(A1 * B1 * !B2 * C1 * X)	0.00057	0.00057	0.00054
	(A1 * B1 * !B2 * !C1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * B1 * !B2 * !C1 * !X)	0.00098	0.00098	0.00098
	(A1 * !B1 * !B2 * C1 * !X)	-0.00090	-0.00090	-0.00089
	(A1 * !B1 * !B2 * C1 * !X)	0.00098	0.00098	0.00098
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * !B2 * !C1 * !X)	0.00098	0.00098	0.00098
	(!A1 * B2 * !C1 * !X)	-0.00075	-0.00081	-0.00081
	(!A1 * B2 * !C1 * !X)	0.00100	0.00100	0.00100
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00082	-0.00082
	(!A1 * B1 * !B2 * !C1 * !X)	0.00100	0.00100	0.00100
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00079	-0.00083	-0.00083
	(!A1 * !B1 * !B2 * C1 * !X)	0.00100	0.00100	0.00100
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00079	-0.00083	-0.00083
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00100	0.00100	0.00100

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00155	-0.00156	-0.00164
	(A1 * B2 * C1 * X)	0.00114	0.00114	0.00107
	(A1 * B2 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * B2 * !C1 * !X)	0.00192	0.00192	0.00191
	(A1 * B1 * !B2 * C1 * X)	-0.00155	-0.00156	-0.00164
	(A1 * B1 * !B2 * C1 * X)	0.00114	0.00114	0.00107
	(A1 * B1 * !B2 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * B1 * !B2 * !C1 * !X)	0.00192	0.00192	0.00191
	(A1 * !B1 * !B2 * C1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !B1 * !B2 * C1 * !X)	0.00191	0.00192	0.00191
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !B1 * !B2 * !C1 * !X)	0.00192	0.00192	0.00191
	(!A1 * B2 * !C1 * !X)	-0.00120	-0.00131	-0.00131
	(!A1 * B2 * !C1 * !X)	0.00195	0.00197	0.00196
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00123	-0.00133	-0.00132
	(!A1 * B1 * !B2 * !C1 * !X)	0.00196	0.00197	0.00196
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00125	-0.00133	-0.00134
	(!A1 * !B1 * !B2 * C1 * !X)	0.00195	0.00197	0.00196
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00126	-0.00133	-0.00134
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00195	0.00197	0.00196

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)**	0.00091	0.00083	0.00082
	(A2 * B2 * C1 * X)	-0.00086	-0.00097	-0.00097
	(A2 * !B2 * !C1 * !X)	0.00074	0.00074	0.00074
	(A2 * !B2 * !C1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00077	0.00078	0.00078
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00099	-0.00102	-0.00101
	(A1 * !A2 * B2 * C1 * X)	0.00091	0.00083	0.00082
	(A1 * !A2 * B2 * C1 * X)	-0.00086	-0.00097	-0.00097
	(A1 * !A2 * !B2 * !C1 * !X)	0.00073	0.00074	0.00074
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00102	-0.00103	-0.00102
	(!A1 * !A2 * B2 * C1 * !X)	0.00036	0.00036	0.00036
	(!A1 * !A2 * B2 * C1 * !X)	-0.00099	-0.00102	-0.00101
	(!A1 * !A2 * B2 * !C1 * !X)	0.00044	0.00044	0.00044
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00099	-0.00102	-0.00101
	(!A1 * !A2 * !B2 * C1 * !X)	0.00037	0.00037	0.00038
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00102	-0.00103	-0.00101
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00046	0.00047	0.00046
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00103	-0.00103	-0.00103

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00106	0.00097	0.00096
	(A2 * B2 * C1 * X)	-0.00084	-0.00094	-0.00095
	(A2 * !B2 * !C1 * !X)	0.00084	0.00084	0.00083
	(A2 * !B2 * !C1 * !X)	-0.00104	-0.00104	-0.00104
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00089	0.00089	0.00089
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00100	-0.00102	-0.00102
	(A1 * !A2 * B2 * C1 * X)	0.00106	0.00097	0.00096
	(A1 * !A2 * B2 * C1 * X)	-0.00084	-0.00094	-0.00095
	(A1 * !A2 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00104	-0.00104	-0.00104
	(!A1 * !A2 * B2 * C1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A2 * B2 * C1 * !X)	-0.00101	-0.00103	-0.00102
	(!A1 * !A2 * B2 * !C1 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00101	-0.00103	-0.00102
	(!A1 * !A2 * !B2 * C1 * !X)	0.00041	0.00042	0.00043
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00103	-0.00104	-0.00102
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00052	0.00052	0.00052
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00104	-0.00105	-0.00104

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00223	0.00208	0.00205
	(A2 * B2 * C1 * X)	-0.00167	-0.00188	-0.00189
	(A2 * !B2 * !C1 * !X)	0.00182	0.00184	0.00183
	(A2 * !B2 * !C1 * !X)	-0.00205	-0.00206	-0.00205
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00191	0.00193	0.00191
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00198	-0.00203	-0.00202
	(A1 * !A2 * B2 * C1 * X)	0.00223	0.00208	0.00205
	(A1 * !A2 * B2 * C1 * X)	-0.00167	-0.00188	-0.00189
	(A1 * !A2 * !B2 * !C1 * !X)	0.00182	0.00183	0.00183
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00205	-0.00206	-0.00205
	(!A1 * !A2 * B2 * C1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A2 * B2 * C1 * !X)	-0.00199	-0.00205	-0.00204
	(!A1 * !A2 * B2 * !C1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00200	-0.00205	-0.00203
	(!A1 * !A2 * !B2 * C1 * !X)	0.00104	0.00104	0.00106
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00206	-0.00206	-0.00204
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00122	0.00122	0.00122
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00207	-0.00207	-0.00207

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)**	-0.00082	-0.00082	-0.00081
	(A2 * B2 * C1 * X)	0.00097	0.00097	0.00097
	(A2 * !B2 * !C1 * !X)	-0.00070	-0.00074	-0.00074
	(A2 * !B2 * !C1 * !X)	0.00104	0.00104	0.00103
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00077	-0.00078	-0.00077
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00101	0.00102	0.00101
	(A1 * !A2 * B2 * C1 * X)	-0.00082	-0.00082	-0.00081
	(A1 * !A2 * B2 * C1 * X)	0.00097	0.00098	0.00097
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00070	-0.00074	-0.00074
	(A1 * !A2 * !B2 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !A2 * B2 * C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * B2 * C1 * !X)	0.00103	0.00103	0.00101
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B2 * !C1 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * !B2 * C1 * !X)	0.00104	0.00104	0.00103
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00104	0.00104	0.00103

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00095	-0.00095	-0.00095
	(A2 * B2 * C1 * X)	0.00095	0.00096	0.00095
	(A2 * !B2 * !C1 * !X)	-0.00079	-0.00084	-0.00083
	(A2 * !B2 * !C1 * !X)	0.00105	0.00105	0.00104
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00088	-0.00089	-0.00088
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00102	0.00102	0.00102
	(A1 * !A2 * B2 * C1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * !A2 * B2 * C1 * X)	0.00095	0.00095	0.00095
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00079	-0.00084	-0.00083
	(A1 * !A2 * !B2 * !C1 * !X)	0.00105	0.00105	0.00104
	(!A1 * !A2 * B2 * C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * B2 * C1 * !X)	0.00104	0.00105	0.00102
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * B2 * !C1 * !X)	0.00103	0.00104	0.00102
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !B2 * C1 * !X)	0.00106	0.00106	0.00104
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00106	0.00105	0.00104

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00205	-0.00205	-0.00204
	(A2 * B2 * C1 * X)	0.00188	0.00189	0.00189
	(A2 * !B2 * !C1 * !X)	-0.00175	-0.00184	-0.00183
	(A2 * !B2 * !C1 * !X)	0.00208	0.00207	0.00206
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00191	-0.00192	-0.00191
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00202	0.00203	0.00202
	(A1 * !A2 * B2 * C1 * X)	-0.00205	-0.00206	-0.00204
	(A1 * !A2 * B2 * C1 * X)	0.00188	0.00190	0.00189
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00174	-0.00183	-0.00183
	(A1 * !A2 * !B2 * !C1 * !X)	0.00208	0.00207	0.00206
	(!A1 * !A2 * B2 * C1 * !X)	-0.00100	-0.00100	-0.00101
	(!A1 * !A2 * B2 * C1 * !X)	0.00207	0.00208	0.00204
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A2 * B2 * !C1 * !X)	0.00204	0.00205	0.00203
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00101	-0.00101	-0.00102
	(!A1 * !A2 * !B2 * C1 * !X)	0.00211	0.00211	0.00208
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00210	0.00210	0.00208

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)**	0.00102	0.00101	0.00101
	(A2 * B1 * C1 * X)	-0.00055	-0.00054	-0.00054
	(A2 * B1 * !C1 * !X)	0.00087	0.00088	0.00087
	(A2 * B1 * !C1 * !X)	-0.00100	-0.00102	-0.00101
	(A2 * !B1 * !C1 * !X)	0.00083	0.00083	0.00083
	(A2 * !B1 * !C1 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * B1 * C1 * X)	0.00101	0.00101	0.00101
	(A1 * !A2 * B1 * C1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * B1 * !C1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * B1 * !C1 * !X)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	0.00082	0.00083	0.00083
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00103	-0.00103	-0.00103
	(!A1 * !A2 * B1 * C1 * !X)	0.00042	0.00042	0.00042
	(!A1 * !A2 * B1 * C1 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * B1 * !C1 * !X)	0.00051	0.00050	0.00050
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * !B1 * C1 * !X)	0.00043	0.00043	0.00044
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00103	-0.00103	-0.00102
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00053	0.00053	0.00052
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00104	-0.00104	-0.00103

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00108	0.00109	0.00109
	(A2 * B1 * C1 * X)	-0.00052	-0.00053	-0.00052
	(A2 * B1 * !C1 * !X)	0.00095	0.00096	0.00095
	(A2 * B1 * !C1 * !X)	-0.00097	-0.00099	-0.00099
	(A2 * !B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(A2 * !B1 * !C1 * !X)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * B1 * C1 * X)	0.00108	0.00109	0.00109
	(A1 * !A2 * B1 * C1 * X)	-0.00052	-0.00053	-0.00052
	(A1 * !A2 * B1 * !C1 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * B1 * !C1 * !X)	-0.00098	-0.00100	-0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * B1 * C1 * !X)	0.00044	0.00044	0.00044
	(!A1 * !A2 * B1 * C1 * !X)	-0.00099	-0.00101	-0.00100
	(!A1 * !A2 * B1 * !C1 * !X)	0.00054	0.00053	0.00053
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00100	-0.00101	-0.00100
	(!A1 * !A2 * !B1 * C1 * !X)	0.00046	0.00046	0.00047
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00102	-0.00101	-0.00100
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00055	0.00056	0.00056
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00102	-0.00103	-0.00102

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00171	0.00172	0.00171
	(A2 * B1 * C1 * X)	-0.00105	-0.00106	-0.00105
	(A2 * B1 * !C1 * !X)	0.00148	0.00149	0.00149
	(A2 * B1 * !C1 * !X)	-0.00191	-0.00195	-0.00194
	(A2 * !B1 * !C1 * !X)	0.00141	0.00142	0.00141
	(A2 * !B1 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * B1 * C1 * X)	0.00171	0.00172	0.00171
	(A1 * !A2 * B1 * C1 * X)	-0.00105	-0.00106	-0.00105
	(A1 * !A2 * B1 * !C1 * !X)	0.00148	0.00150	0.00149
	(A1 * !A2 * B1 * !C1 * !X)	-0.00191	-0.00195	-0.00194
	(A1 * !A2 * !B1 * !C1 * !X)	0.00140	0.00142	0.00140
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(!A1 * !A2 * B1 * C1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !A2 * B1 * C1 * !X)	-0.00192	-0.00197	-0.00195
	(!A1 * !A2 * B1 * !C1 * !X)	0.00079	0.00080	0.00079
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00193	-0.00197	-0.00196
	(!A1 * !A2 * !B1 * C1 * !X)	0.00065	0.00066	0.00068
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00198	-0.00198	-0.00197
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00083	0.00083	0.00084
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00200	-0.00200	-0.00200

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)**	-0.00096	-0.00097	-0.00100
	(A2 * B1 * C1 * X)	0.00058	0.00058	0.00055
	(A2 * B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * !C1 * !X)	0.00101	0.00102	0.00101
	(A2 * !B1 * !C1 * !X)	-0.00079	-0.00083	-0.00083
	(A2 * !B1 * !C1 * !X)	0.00104	0.00104	0.00103
	(A1 * !A2 * B1 * C1 * X)	-0.00096	-0.00097	-0.00100
	(A1 * !A2 * B1 * C1 * X)	0.00059	0.00059	0.00055
	(A1 * !A2 * B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * B1 * !C1 * !X)	0.00102	0.00101	0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00078	-0.00083	-0.00083
	(A1 * !A2 * !B1 * !C1 * !X)	0.00104	0.00104	0.00103
	(!A1 * !A2 * B1 * C1 * !X)	-0.00041	-0.00041	-0.00042
	(!A1 * !A2 * B1 * C1 * !X)	0.00103	0.00103	0.00101
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00051	-0.00050	-0.00050
	(!A1 * !A2 * B1 * !C1 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * !B1 * C1 * !X)	0.00105	0.00105	0.00104
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00053	-0.00053	-0.00052
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00104	0.00104	0.00103

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00104	-0.00105	-0.00108
	(A2 * B1 * C1 * X)	0.00056	0.00056	0.00054
	(A2 * B1 * !C1 * !X)	-0.00095	-0.00095	-0.00095
	(A2 * B1 * !C1 * !X)	0.00099	0.00099	0.00099
	(A2 * !B1 * !C1 * !X)	-0.00086	-0.00090	-0.00090
	(A2 * !B1 * !C1 * !X)	0.00103	0.00103	0.00102
	(A1 * !A2 * B1 * C1 * X)	-0.00105	-0.00105	-0.00108
	(A1 * !A2 * B1 * C1 * X)	0.00057	0.00057	0.00054
	(A1 * !A2 * B1 * !C1 * !X)	-0.00095	-0.00095	-0.00095
	(A1 * !A2 * B1 * !C1 * !X)	0.00100	0.00100	0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00085	-0.00090	-0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !A2 * B1 * C1 * !X)	-0.00043	-0.00043	-0.00044
	(!A1 * !A2 * B1 * C1 * !X)	0.00101	0.00102	0.00100
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00054	-0.00053	-0.00053
	(!A1 * !A2 * B1 * !C1 * !X)	0.00101	0.00101	0.00100
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !B1 * C1 * !X)	0.00104	0.00104	0.00102
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00055	-0.00056	-0.00056
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00103	0.00103	0.00102

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00161	-0.00162	-0.00170
	(A2 * B1 * C1 * X)	0.00115	0.00115	0.00108
	(A2 * B1 * !C1 * !X)	-0.00148	-0.00149	-0.00148
	(A2 * B1 * !C1 * !X)	0.00195	0.00195	0.00194
	(A2 * !B1 * !C1 * !X)	-0.00134	-0.00142	-0.00141
	(A2 * !B1 * !C1 * !X)	0.00201	0.00201	0.00199
	(A1 * !A2 * B1 * C1 * X)	-0.00161	-0.00162	-0.00170
	(A1 * !A2 * B1 * C1 * X)	0.00115	0.00115	0.00108
	(A1 * !A2 * B1 * !C1 * !X)	-0.00148	-0.00149	-0.00148
	(A1 * !A2 * B1 * !C1 * !X)	0.00195	0.00195	0.00194
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00133	-0.00142	-0.00140
	(A1 * !A2 * !B1 * !C1 * !X)	0.00201	0.00201	0.00199
	(!A1 * !A2 * B1 * C1 * !X)	-0.00063	-0.00064	-0.00064
	(!A1 * !A2 * B1 * C1 * !X)	0.00198	0.00198	0.00195
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * B1 * !C1 * !X)	0.00197	0.00197	0.00196
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00064	-0.00064	-0.00065
	(!A1 * !A2 * !B1 * C1 * !X)	0.00203	0.00203	0.00201
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00083	-0.00084
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00201	0.00202	0.00201

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)	0.00036	0.00037	0.00033
	(A2 * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00124
	(!A2 * !B1 * !B2 * !X)	0.00037	0.00037	0.00033
	(!A2 * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00124
	(!A1 * !A2 * B2 * !X)	0.00037	0.00037	0.00031
	(!A1 * !A2 * B2 * !X)	-0.00111	-0.00112	-0.00123
	(!A1 * !A2 * B1 * !B2 * !X)	0.00037	0.00037	0.00032
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00113	-0.00114	-0.00123
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00042	0.00042	0.00039
	(A2 * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00125
	(!A2 * !B1 * !B2 * !X)	0.00042	0.00042	0.00039
	(!A2 * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00125
	(!A1 * !A2 * B2 * !X)	0.00044	0.00044	0.00038
	(!A1 * !A2 * B2 * !X)	-0.00111	-0.00112	-0.00124
	(!A1 * !A2 * B1 * !B2 * !X)	0.00044	0.00044	0.00038
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00112	-0.00113	-0.00124
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00062	0.00062	0.00056
	(A2 * !B1 * !B2 * !X)	-0.00226	-0.00227	-0.00235
	(!A2 * !B1 * !B2 * !X)	0.00062	0.00062	0.00056
	(!A2 * !B1 * !B2 * !X)	-0.00226	-0.00227	-0.00235
	(!A1 * !A2 * B2 * !X)	0.00064	0.00064	0.00053
	(!A1 * !A2 * B2 * !X)	-0.00210	-0.00211	-0.00232
	(!A1 * !A2 * B1 * !B2 * !X)	0.00064	0.00064	0.00054
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00213	-0.00214	-0.00232

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)	-0.00032	-0.00032	-0.00032
	(A2 * !B1 * !B2 * !X)	0.00125	0.00126	0.00125
	(!A2 * !B1 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * !B1 * !B2 * !X)	0.00125	0.00126	0.00125
	(!A1 * !A2 * B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * B2 * !X)	0.00125	0.00126	0.00125
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * B1 * !B2 * !X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !B1 * !B2 * !X)	0.00125	0.00126	0.00126
	(!A2 * !B1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * !B2 * !X)	0.00125	0.00126	0.00126
	(!A1 * !A2 * B2 * !X)	-0.00037	-0.00037	-0.00036
	(!A1 * !A2 * B2 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B1 * !B2 * !X)	0.00125	0.00126	0.00126
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00053	-0.00054	-0.00054
	(A2 * !B1 * !B2 * !X)	0.00235	0.00237	0.00236
	(!A2 * !B1 * !B2 * !X)	-0.00054	-0.00054	-0.00054
	(!A2 * !B1 * !B2 * !X)	0.00235	0.00237	0.00236
	(!A1 * !A2 * B2 * !X)	-0.00052	-0.00052	-0.00051
	(!A1 * !A2 * B2 * !X)	0.00237	0.00237	0.00236
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * B1 * !B2 * !X)	0.00236	0.00237	0.00236

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00266	0.00263	0.00272	0.00279	0.30090
sky130_fd_sc_hs__o22ai_2	0.00500	0.00518	0.00517	0.00509	0.55977
sky130_fd_sc_hs__o22ai_4	0.01032	0.00986	0.01077	0.01007	1.06048

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22ai_1	0.00000	0.01280	0.03622
sky130_fd_sc_hs__o22ai_2	0.00000	0.02560	0.07244
sky130_fd_sc_hs__o22ai_4	0.00000	0.05120	0.14489

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)	0.22451	1.41312	12.11580
	A2->Y (FR)	0.19714	1.35675	11.90950
	B1->Y (FR)	0.14390	1.32872	12.03320
	B2->Y (FR)	0.12030	1.27500	11.83050
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.21876	1.24686	12.07030
	A2->Y (FR)	0.18494	1.18312	11.86540
	B1->Y (FR)	0.13476	1.15783	11.95340
	B2->Y (FR)	0.09832	1.09500	11.74960
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.20582	1.08936	11.85210
	A2->Y (FR)	0.17542	1.03790	11.73110
	B1->Y (FR)	0.12764	1.01334	11.85860
	B2->Y (FR)	0.09554	0.95737	11.69940

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.06511	0.55821	4.95386
	A2->Y (RF)	0.05737	0.54570	4.93036
	B1->Y (RF)	0.05231	0.58464	5.39397
	B2->Y (RF)	0.04526	0.57003	5.34370
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.06482	0.51015	4.94142
	A2->Y (RF)	0.05530	0.49414	4.90436
	B1->Y (RF)	0.05097	0.53629	5.44385
	B2->Y (RF)	0.04092	0.51400	5.36204
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.05285	0.43572	4.79007
	A2->Y (RF)	0.04530	0.41852	4.76203
	B1->Y (RF)	0.03967	0.45995	5.35588
	B2->Y (RF)	0.04105	0.47506	5.51582

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00105	0.00093	0.00093
	A1	0.00552	0.00542	0.00542
	A2	0.00109	0.00100	0.00117
	A2	0.00494	0.00485	0.00502
	B1	-0.00007	-0.00016	-0.00015
	B1	0.00370	0.00360	0.00363
	B2	-0.00004	-0.00009	0.00009
	B2	0.00314	0.00304	0.00326
sky130_fd_sc_hs__o22ai_2	A1	0.00188	0.00164	0.00165
	A1	0.01079	0.01056	0.01060
	A2	0.00184	0.00162	0.00198
	A2	0.00967	0.00947	0.00982
	B1	-0.00030	-0.00045	-0.00041
	B1	0.00723	0.00708	0.00716
	B2	-0.00036	-0.00047	-0.00002
	B2	0.00596	0.00585	0.00629
sky130_fd_sc_hs__o22ai_4	A1	0.00290	0.00244	0.00252
	A1	0.02049	0.02010	0.02018
	A2	0.00289	0.00257	0.00338
	A2	0.01806	0.01773	0.01852
	B1	-0.00077	-0.00110	-0.00093
	B1	0.01419	0.01382	0.01406
	B2	-0.00074	-0.00099	0.00005
	B2	0.01183	0.01129	0.01258

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00596	0.00591	0.00596
	A1	0.00130	0.00122	0.00122
	A2	0.00481	0.00476	0.00479
	A2	0.00076	0.00071	0.00072
	B1	0.00501	0.00494	0.00506
	B1	0.00132	0.00123	0.00127
	B2	0.00397	0.00393	0.00413
	B2	0.00084	0.00078	0.00082
sky130_fd_sc_hs__o22ai_2	A1	0.01216	0.01195	0.01190
	A1	0.00296	0.00277	0.00274
	A2	0.00976	0.00968	0.00986
	A2	0.00156	0.00146	0.00148
	B1	0.01029	0.01007	0.01012
	B1	0.00297	0.00273	0.00280
	B2	0.00767	0.00761	0.00796
	B2	0.00148	0.00138	0.00150
sky130_fd_sc_hs__o22ai_4	A1	0.02299	0.02253	0.02272
	A1	0.00481	0.00438	0.00441
	A2	0.01839	0.01809	0.01844
	A2	0.00252	0.00223	0.00240
	B1	0.01949	0.01900	0.01951
	B1	0.00486	0.00435	0.00459
	B2	0.01492	0.01461	0.01497
	B2	0.00259	0.00229	0.00267

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00107	0.00099	0.00098
	(A2 * B2 * !Y)	-0.00099	-0.00109	-0.00109
	(A2 * B1 * !B2 * !Y)	0.00107	0.00099	0.00098
	(A2 * B1 * !B2 * !Y)	-0.00099	-0.00109	-0.00109
	(A2 * !B1 * !B2 * Y)	0.00098	0.00099	0.00098
	(A2 * !B1 * !B2 * Y)	-0.00106	-0.00109	-0.00109
	(!A2 * !B1 * !B2 * Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * !B2 * Y)	-0.00110	-0.00111	-0.00110
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00200	0.00184	0.00182
	(A2 * B2 * !Y)	-0.00193	-0.00214	-0.00214
	(A2 * B1 * !B2 * !Y)	0.00200	0.00184	0.00182
	(A2 * B1 * !B2 * !Y)	-0.00193	-0.00214	-0.00214
	(A2 * !B1 * !B2 * Y)	0.00182	0.00183	0.00182
	(A2 * !B1 * !B2 * Y)	-0.00210	-0.00215	-0.00215
	(!A2 * !B1 * !B2 * Y)	0.00170	0.00171	0.00169
	(!A2 * !B1 * !B2 * Y)	-0.00220	-0.00221	-0.00220
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00407	0.00372	0.00366
	(A2 * B2 * !Y)	-0.00372	-0.00422	-0.00423
	(A2 * B1 * !B2 * !Y)	0.00407	0.00372	0.00366
	(A2 * B1 * !B2 * !Y)	-0.00372	-0.00422	-0.00423
	(A2 * !B1 * !B2 * Y)	0.00354	0.00358	0.00355
	(A2 * !B1 * !B2 * Y)	-0.00422	-0.00436	-0.00433
	(!A2 * !B1 * !B2 * Y)	0.00332	0.00334	0.00331
	(!A2 * !B1 * !B2 * Y)	-0.00444	-0.00446	-0.00443

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * B2 * !Y)	0.00109	0.00109	0.00109
	(A2 * B1 * !B2 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * B1 * !B2 * !Y)	0.00109	0.00109	0.00109
	(A2 * !B1 * !B2 * Y)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !B2 * Y)	0.00109	0.00109	0.00109
	(!A2 * !B1 * !B2 * Y)	-0.00087	-0.00093	-0.00092
	(!A2 * !B1 * !B2 * Y)	0.00111	0.00111	0.00110
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00182	-0.00182	-0.00182
	(A2 * B2 * !Y)	0.00214	0.00214	0.00214
	(A2 * B1 * !B2 * !Y)	-0.00182	-0.00182	-0.00182
	(A2 * B1 * !B2 * !Y)	0.00214	0.00214	0.00214
	(A2 * !B1 * !B2 * Y)	-0.00181	-0.00181	-0.00181
	(A2 * !B1 * !B2 * Y)	0.00214	0.00215	0.00215
	(!A2 * !B1 * !B2 * Y)	-0.00161	-0.00171	-0.00169
	(!A2 * !B1 * !B2 * Y)	0.00222	0.00222	0.00220
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00366	-0.00366	-0.00364
	(A2 * B2 * !Y)	0.00423	0.00426	0.00423
	(A2 * B1 * !B2 * !Y)	-0.00366	-0.00366	-0.00364
	(A2 * B1 * !B2 * !Y)	0.00423	0.00426	0.00423
	(A2 * !B1 * !B2 * Y)	-0.00354	-0.00356	-0.00355
	(A2 * !B1 * !B2 * Y)	0.00434	0.00436	0.00433
	(!A2 * !B1 * !B2 * Y)	-0.00312	-0.00334	-0.00331
	(!A2 * !B1 * !B2 * Y)	0.00444	0.00449	0.00445

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00097	0.00097	0.00097
	(A1 * B2 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * B1 * !B2 * !Y)	0.00097	0.00097	0.00097
	(A1 * B1 * !B2 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * !B1 * !B2 * Y)	0.00090	0.00090	0.00089
	(A1 * !B1 * !B2 * Y)	-0.00102	-0.00104	-0.00103
	(!A1 * !B1 * !B2 * Y)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !B2 * Y)	-0.00105	-0.00106	-0.00106
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00209	0.00209	0.00208
	(A1 * B2 * !Y)	-0.00116	-0.00115	-0.00115
	(A1 * B1 * !B2 * !Y)	0.00209	0.00209	0.00208
	(A1 * B1 * !B2 * !Y)	-0.00116	-0.00115	-0.00115
	(A1 * !B1 * !B2 * Y)	0.00183	0.00181	0.00181
	(A1 * !B1 * !B2 * Y)	-0.00213	-0.00217	-0.00216
	(!A1 * !B1 * !B2 * Y)	0.00169	0.00170	0.00169
	(!A1 * !B1 * !B2 * Y)	-0.00222	-0.00223	-0.00222
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00381	0.00383	0.00382
	(A1 * B2 * !Y)	-0.00224	-0.00225	-0.00224
	(A1 * B1 * !B2 * !Y)	0.00380	0.00384	0.00382
	(A1 * B1 * !B2 * !Y)	-0.00223	-0.00225	-0.00224
	(A1 * !B1 * !B2 * Y)	0.00349	0.00352	0.00350
	(A1 * !B1 * !B2 * Y)	-0.00399	-0.00408	-0.00406
	(!A1 * !B1 * !B2 * Y)	0.00327	0.00329	0.00326
	(!A1 * !B1 * !B2 * Y)	-0.00420	-0.00421	-0.00419

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00092	-0.00092	-0.00096
	(A1 * B2 * !Y)	0.00063	0.00063	0.00059
	(A1 * B1 * !B2 * !Y)	-0.00092	-0.00092	-0.00096
	(A1 * B1 * !B2 * !Y)	0.00063	0.00063	0.00059
	(A1 * !B1 * !B2 * Y)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * !B2 * Y)	0.00104	0.00104	0.00103
	(!A1 * !B1 * !B2 * Y)	-0.00079	-0.00084	-0.00083
	(!A1 * !B1 * !B2 * Y)	0.00106	0.00107	0.00106
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00193	-0.00194	-0.00206
	(A1 * B2 * !Y)	0.00129	0.00128	0.00119
	(A1 * B1 * !B2 * !Y)	-0.00193	-0.00194	-0.00206
	(A1 * B1 * !B2 * !Y)	0.00129	0.00128	0.00119
	(A1 * !B1 * !B2 * Y)	-0.00181	-0.00181	-0.00181
	(A1 * !B1 * !B2 * Y)	0.00217	0.00217	0.00216
	(!A1 * !B1 * !B2 * Y)	-0.00161	-0.00170	-0.00169
	(!A1 * !B1 * !B2 * Y)	0.00223	0.00225	0.00223
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00360	-0.00362	-0.00379
	(A1 * B2 * !Y)	0.00244	0.00244	0.00230
	(A1 * B1 * !B2 * !Y)	-0.00360	-0.00362	-0.00379
	(A1 * B1 * !B2 * !Y)	0.00244	0.00244	0.00230
	(A1 * !B1 * !B2 * Y)	-0.00349	-0.00350	-0.00349
	(A1 * !B1 * !B2 * Y)	0.00407	0.00408	0.00406
	(!A1 * !B1 * !B2 * Y)	-0.00308	-0.00329	-0.00326
	(!A1 * !B1 * !B2 * Y)	0.00421	0.00423	0.00420

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00111	0.00103	0.00102
	(A2 * B2 * !Y)	-0.00096	-0.00106	-0.00106
	(A1 * !A2 * B2 * !Y)	0.00111	0.00103	0.00102
	(A1 * !A2 * B2 * !Y)	-0.00096	-0.00106	-0.00106
	(!A1 * !A2 * B2 * Y)	0.00038	0.00038	0.00038
	(!A1 * !A2 * B2 * Y)	-0.00128	-0.00131	-0.00130
	(!A1 * !A2 * !B2 * Y)	0.00044	0.00044	0.00040
	(!A1 * !A2 * !B2 * Y)	-0.00124	-0.00125	-0.00132
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00200	0.00183	0.00181
	(A2 * B2 * !Y)	-0.00195	-0.00218	-0.00218
	(A1 * !A2 * B2 * !Y)	0.00200	0.00183	0.00181
	(A1 * !A2 * B2 * !Y)	-0.00195	-0.00218	-0.00218
	(!A1 * !A2 * B2 * Y)	0.00063	0.00063	0.00063
	(!A1 * !A2 * B2 * Y)	-0.00252	-0.00258	-0.00257
	(!A1 * !A2 * !B2 * Y)	0.00075	0.00075	0.00067
	(!A1 * !A2 * !B2 * Y)	-0.00246	-0.00247	-0.00262
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00425	0.00392	0.00388
	(A2 * B2 * !Y)	-0.00365	-0.00412	-0.00412
	(A1 * !A2 * B2 * !Y)	0.00425	0.00392	0.00388
	(A1 * !A2 * B2 * !Y)	-0.00365	-0.00412	-0.00412
	(!A1 * !A2 * B2 * Y)	0.00119	0.00120	0.00119
	(!A1 * !A2 * B2 * Y)	-0.00512	-0.00527	-0.00523
	(!A1 * !A2 * !B2 * Y)	0.00140	0.00139	0.00126
	(!A1 * !A2 * !B2 * Y)	-0.00504	-0.00506	-0.00530

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00101	-0.00102	-0.00101
	(A2 * B2 * !Y)	0.00105	0.00107	0.00106
	(A1 * !A2 * B2 * !Y)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * B2 * !Y)	0.00105	0.00107	0.00106
	(!A1 * !A2 * B2 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B2 * Y)	0.00131	0.00132	0.00130
	(!A1 * !A2 * !B2 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !B2 * Y)	0.00132	0.00133	0.00132
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00181	-0.00181	-0.00180
	(A2 * B2 * !Y)	0.00218	0.00218	0.00218
	(A1 * !A2 * B2 * !Y)	-0.00181	-0.00181	-0.00180
	(A1 * !A2 * B2 * !Y)	0.00218	0.00218	0.00218
	(!A1 * !A2 * B2 * Y)	-0.00063	-0.00063	-0.00063
	(!A1 * !A2 * B2 * Y)	0.00258	0.00258	0.00257
	(!A1 * !A2 * !B2 * Y)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !B2 * Y)	0.00263	0.00265	0.00263
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00388	-0.00388	-0.00386
	(A2 * B2 * !Y)	0.00412	0.00413	0.00412
	(A1 * !A2 * B2 * !Y)	-0.00388	-0.00389	-0.00386
	(A1 * !A2 * B2 * !Y)	0.00412	0.00414	0.00412
	(!A1 * !A2 * B2 * Y)	-0.00119	-0.00120	-0.00119
	(!A1 * !A2 * B2 * Y)	0.00526	0.00527	0.00523
	(!A1 * !A2 * !B2 * Y)	-0.00122	-0.00122	-0.00121
	(!A1 * !A2 * !B2 * Y)	0.00535	0.00537	0.00533

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00104	0.00105	0.00105
	(A2 * B1 * !Y)	-0.00056	-0.00056	-0.00056
	(A1 * !A2 * B1 * !Y)	0.00104	0.00105	0.00105
	(A1 * !A2 * B1 * !Y)	-0.00056	-0.00056	-0.00056
	(!A1 * !A2 * B1 * Y)	0.00031	0.00031	0.00031
	(!A1 * !A2 * B1 * Y)	-0.00128	-0.00129	-0.00129
	(!A1 * !A2 * !B1 * Y)	0.00038	0.00037	0.00033
	(!A1 * !A2 * !B1 * Y)	-0.00123	-0.00123	-0.00131
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00197	0.00200	0.00199
	(A2 * B1 * !Y)	-0.00114	-0.00116	-0.00115
	(A1 * !A2 * B1 * !Y)	0.00199	0.00200	0.00199
	(A1 * !A2 * B1 * !Y)	-0.00117	-0.00116	-0.00115
	(!A1 * !A2 * B1 * Y)	0.00060	0.00060	0.00060
	(!A1 * !A2 * B1 * Y)	-0.00246	-0.00254	-0.00252
	(!A1 * !A2 * !B1 * Y)	0.00073	0.00072	0.00064
	(!A1 * !A2 * !B1 * Y)	-0.00243	-0.00244	-0.00257
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00388	0.00389	0.00387
	(A2 * B1 * !Y)	-0.00229	-0.00228	-0.00226
	(A1 * !A2 * B1 * !Y)	0.00386	0.00389	0.00387
	(A1 * !A2 * B1 * !Y)	-0.00227	-0.00228	-0.00226
	(!A1 * !A2 * B1 * Y)	0.00112	0.00113	0.00113
	(!A1 * !A2 * B1 * Y)	-0.00485	-0.00498	-0.00493
	(!A1 * !A2 * !B1 * Y)	0.00133	0.00133	0.00120
	(!A1 * !A2 * !B1 * Y)	-0.00477	-0.00481	-0.00504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00099	-0.00101	-0.00104
	(A2 * B1 * !Y)	0.00060	0.00060	0.00057
	(A1 * !A2 * B1 * !Y)	-0.00100	-0.00101	-0.00104
	(A1 * !A2 * B1 * !Y)	0.00061	0.00060	0.00057
	(!A1 * !A2 * B1 * Y)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * B1 * Y)	0.00128	0.00129	0.00129
	(!A1 * !A2 * !B1 * Y)	-0.00032	-0.00032	-0.00031
	(!A1 * !A2 * !B1 * Y)	0.00132	0.00133	0.00131
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00183	-0.00186	-0.00197
	(A2 * B1 * !Y)	0.00128	0.00129	0.00119
	(A1 * !A2 * B1 * !Y)	-0.00183	-0.00186	-0.00197
	(A1 * !A2 * B1 * !Y)	0.00127	0.00129	0.00119
	(!A1 * !A2 * B1 * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * B1 * Y)	0.00251	0.00254	0.00252
	(!A1 * !A2 * !B1 * Y)	-0.00061	-0.00061	-0.00060
	(!A1 * !A2 * !B1 * Y)	0.00259	0.00262	0.00259
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00364	-0.00368	-0.00384
	(A2 * B1 * !Y)	0.00245	0.00247	0.00231
	(A1 * !A2 * B1 * !Y)	-0.00365	-0.00368	-0.00384
	(A1 * !A2 * B1 * !Y)	0.00247	0.00247	0.00231
	(!A1 * !A2 * B1 * Y)	-0.00112	-0.00113	-0.00113
	(!A1 * !A2 * B1 * Y)	0.00495	0.00498	0.00493
	(!A1 * !A2 * !B1 * Y)	-0.00114	-0.00116	-0.00114
	(!A1 * !A2 * !B1 * Y)	0.00505	0.00513	0.00506

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00230	0.00240	0.00249	0.00267	0.66689
sky130_fd_sc_hs__o22a_2	0.00247	0.00253	0.00264	0.00262	1.30236
sky130_fd_sc_hs__o22a_4	0.00481	0.00447	0.00497	0.00469	2.47204

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	0.03715	0.09179
sky130_fd_sc_hs__o22a_2	0.00000	0.04636	0.09540
sky130_fd_sc_hs__o22a_4	0.00000	0.09421	0.19080

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)	0.14086	0.91551	7.68530
	A2->X (RR)	0.13210	0.89363	7.58787
	B1->X (RR)	0.12984	0.89960	7.45293
	B2->X (RR)	0.11993	0.86900	7.36207
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.14331	0.81792	7.89319
	A2->X (RR)	0.13381	0.79998	7.81361
	B1->X (RR)	0.13208	0.81339	7.71338
	B2->X (RR)	0.12112	0.78582	7.63001
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.14986	0.74308	7.96006
	A2->X (RR)	0.14523	0.72492	7.87278
	B1->X (RR)	0.13752	0.73385	7.76837
	B2->X (RR)	0.13390	0.72343	7.70858

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.28403	0.94989	5.48344
	A2->X (FF)	0.26058	0.90041	5.10297
	B1->X (FF)	0.22444	0.87293	5.20145
	B2->X (FF)	0.20013	0.82406	4.86885
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.35790	1.01546	5.86291
	A2->X (FF)	0.33367	0.96586	5.49872
	B1->X (FF)	0.29091	0.93537	5.58876
	B2->X (FF)	0.26443	0.88730	5.24220
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.34159	0.96567	5.81657
	A2->X (FF)	0.31195	0.91029	5.44510
	B1->X (FF)	0.28683	0.90074	5.59634
	B2->X (FF)	0.25902	0.84761	5.24357

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00713	0.00714	0.00740
	A1	0.00299	0.00301	0.00334
	A2	0.00619	0.00614	0.00668
	A2	0.00250	0.00246	0.00307
	B1	0.00630	0.00626	0.00694
	B1	0.00296	0.00292	0.00365
	B2	0.00564	0.00557	0.00660
	B2	0.00257	0.00250	0.00354
sky130_fd_sc_hs__o22a_2	A1	0.00889	0.00912	0.00940
	A1	0.00455	0.00478	0.00518
	A2	0.00790	0.00808	0.00858
	A2	0.00404	0.00424	0.00487
	B1	0.00800	0.00813	0.00877
	B1	0.00458	0.00470	0.00549
	B2	0.00704	0.00713	0.00803
	B2	0.00411	0.00420	0.00525
sky130_fd_sc_hs__o22a_4	A1	0.01762	0.01803	0.01872
	A1	0.00936	0.00978	0.01062
	A2	0.01534	0.01569	0.01682
	A2	0.00822	0.00858	0.00992
	B1	0.01606	0.01634	0.01783
	B1	0.00936	0.00965	0.01138
	B2	0.01380	0.01400	0.01602
	B2	0.00823	0.00844	0.01071

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00266	0.00270	0.00310
	A1	0.00663	0.00669	0.00700
	A2	0.00257	0.00263	0.00423
	A2	0.00616	0.00623	0.00756
	B1	0.00194	0.00191	0.00257
	B1	0.00534	0.00530	0.00573
	B2	0.00165	0.00170	0.00339
	B2	0.00474	0.00478	0.00626
sky130_fd_sc_hs__o22a_2	A1	0.00404	0.00431	0.00538
	A1	0.00830	0.00855	0.00891
	A2	0.00406	0.00433	0.00692
	A2	0.00780	0.00810	0.00946
	B1	0.00322	0.00328	0.00447
	B1	0.00669	0.00686	0.00728
	B2	0.00320	0.00341	0.00522
	B2	0.00617	0.00638	0.00785
sky130_fd_sc_hs__o22a_4	A1	0.00776	0.00833	0.01006
	A1	0.01573	0.01630	0.01701
	A2	0.00780	0.00836	0.01228
	A2	0.01476	0.01538	0.01809
	B1	0.00644	0.00681	0.00876
	B1	0.01323	0.01368	0.01451
	B2	0.00671	0.00712	0.01065
	B2	0.01233	0.01273	0.01569

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00089	0.00081	0.00080
	(A2 * B2 * X)	-0.00089	-0.00099	-0.00100
	(A2 * B1 * !B2 * X)	0.00089	0.00081	0.00080
	(A2 * B1 * !B2 * X)	-0.00089	-0.00099	-0.00100
	(A2 * !B1 * !B2 * !X)	0.00079	0.00080	0.00079
	(A2 * !B1 * !B2 * !X)	-0.00098	-0.00100	-0.00100
	(!A2 * !B1 * !B2 * !X)	0.00074	0.00074	0.00074
	(!A2 * !B1 * !B2 * !X)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00103	0.00095	0.00094
	(A2 * B2 * X)	-0.00088	-0.00098	-0.00099
	(A2 * B1 * !B2 * X)	0.00103	0.00095	0.00094
	(A2 * B1 * !B2 * X)	-0.00088	-0.00098	-0.00099
	(A2 * !B1 * !B2 * !X)	0.00093	0.00094	0.00094
	(A2 * !B1 * !B2 * !X)	-0.00096	-0.00099	-0.00098
	(!A2 * !B1 * !B2 * !X)	0.00088	0.00088	0.00088
	(!A2 * !B1 * !B2 * !X)	-0.00100	-0.00100	-0.00100
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00197	0.00182	0.00179
	(A2 * B2 * X)	-0.00168	-0.00189	-0.00190
	(A2 * B1 * !B2 * X)	0.00197	0.00182	0.00179
	(A2 * B1 * !B2 * X)	-0.00168	-0.00189	-0.00190
	(A2 * !B1 * !B2 * !X)	0.00174	0.00176	0.00174
	(A2 * !B1 * !B2 * !X)	-0.00190	-0.00195	-0.00194
	(!A2 * !B1 * !B2 * !X)	0.00163	0.00164	0.00163
	(!A2 * !B1 * !B2 * !X)	-0.00199	-0.00200	-0.00199

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00079	-0.00080	-0.00079
	(A2 * B2 * X)	0.00100	0.00101	0.00100
	(A2 * B1 * !B2 * X)	-0.00079	-0.00080	-0.00079
	(A2 * B1 * !B2 * X)	0.00100	0.00101	0.00100
	(A2 * !B1 * !B2 * !X)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00100	0.00100	0.00100
	(!A2 * !B1 * !B2 * !X)	-0.00069	-0.00074	-0.00074
	(!A2 * !B1 * !B2 * !X)	0.00102	0.00103	0.00102
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00093	-0.00093	-0.00093
	(A2 * B2 * X)	0.00099	0.00099	0.00099
	(A2 * B1 * !B2 * X)	-0.00093	-0.00093	-0.00093
	(A2 * B1 * !B2 * X)	0.00099	0.00099	0.00099
	(A2 * !B1 * !B2 * !X)	-0.00093	-0.00094	-0.00093
	(A2 * !B1 * !B2 * !X)	0.00099	0.00099	0.00098
	(!A2 * !B1 * !B2 * !X)	-0.00084	-0.00088	-0.00088
	(!A2 * !B1 * !B2 * !X)	0.00100	0.00101	0.00100
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00179	-0.00179	-0.00178
	(A2 * B2 * X)	0.00190	0.00190	0.00190
	(A2 * B1 * !B2 * X)	-0.00179	-0.00179	-0.00178
	(A2 * B1 * !B2 * X)	0.00190	0.00191	0.00190
	(A2 * !B1 * !B2 * !X)	-0.00174	-0.00174	-0.00174
	(A2 * !B1 * !B2 * !X)	0.00194	0.00195	0.00194
	(!A2 * !B1 * !B2 * !X)	-0.00155	-0.00164	-0.00163
	(!A2 * !B1 * !B2 * !X)	0.00201	0.00200	0.00199

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00089	0.00089	0.00089
	(A1 * B2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * B1 * !B2 * X)	0.00089	0.00089	0.00089
	(A1 * B1 * !B2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !B1 * !B2 * !X)	0.00078	0.00078	0.00077
	(A1 * !B1 * !B2 * !X)	-0.00098	-0.00099	-0.00099
	(!A1 * !B1 * !B2 * !X)	0.00072	0.00072	0.00071
	(!A1 * !B1 * !B2 * !X)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00097	0.00097	0.00096
	(A1 * B2 * X)	-0.00055	-0.00055	-0.00054
	(A1 * B1 * !B2 * X)	0.00097	0.00097	0.00096
	(A1 * B1 * !B2 * X)	-0.00055	-0.00055	-0.00054
	(A1 * !B1 * !B2 * !X)	0.00091	0.00090	0.00090
	(A1 * !B1 * !B2 * !X)	-0.00094	-0.00095	-0.00095
	(!A1 * !B1 * !B2 * !X)	0.00084	0.00085	0.00084
	(!A1 * !B1 * !B2 * !X)	-0.00096	-0.00097	-0.00096
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00167	0.00168	0.00167
	(A1 * B2 * X)	-0.00107	-0.00108	-0.00107
	(A1 * B1 * !B2 * X)	0.00167	0.00168	0.00167
	(A1 * B1 * !B2 * X)	-0.00107	-0.00108	-0.00107
	(A1 * !B1 * !B2 * !X)	0.00148	0.00150	0.00148
	(A1 * !B1 * !B2 * !X)	-0.00189	-0.00193	-0.00193
	(!A1 * !B1 * !B2 * !X)	0.00138	0.00138	0.00137
	(!A1 * !B1 * !B2 * !X)	-0.00199	-0.00199	-0.00199

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00084	-0.00084	-0.00088
	(A1 * B2 * X)	0.00058	0.00058	0.00055
	(A1 * B1 * !B2 * X)	-0.00084	-0.00084	-0.00088
	(A1 * B1 * !B2 * X)	0.00058	0.00058	0.00055
	(A1 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !B2 * !X)	0.00100	0.00099	0.00099
	(!A1 * !B1 * !B2 * !X)	-0.00067	-0.00072	-0.00071
	(!A1 * !B1 * !B2 * !X)	0.00102	0.00102	0.00101
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00092	-0.00092	-0.00096
	(A1 * B2 * X)	0.00059	0.00059	0.00056
	(A1 * B1 * !B2 * X)	-0.00092	-0.00092	-0.00096
	(A1 * B1 * !B2 * X)	0.00059	0.00059	0.00056
	(A1 * !B1 * !B2 * !X)	-0.00090	-0.00090	-0.00089
	(A1 * !B1 * !B2 * !X)	0.00095	0.00095	0.00095
	(!A1 * !B1 * !B2 * !X)	-0.00080	-0.00085	-0.00084
	(!A1 * !B1 * !B2 * !X)	0.00097	0.00097	0.00097
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00156	-0.00157	-0.00166
	(A1 * B2 * X)	0.00117	0.00117	0.00110
	(A1 * B1 * !B2 * X)	-0.00157	-0.00157	-0.00166
	(A1 * B1 * !B2 * X)	0.00117	0.00117	0.00110
	(A1 * !B1 * !B2 * !X)	-0.00148	-0.00148	-0.00148
	(A1 * !B1 * !B2 * !X)	0.00194	0.00193	0.00193
	(!A1 * !B1 * !B2 * !X)	-0.00129	-0.00138	-0.00137
	(!A1 * !B1 * !B2 * !X)	0.00200	0.00200	0.00199

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00095	0.00086	0.00085
	(A2 * B2 * X)	-0.00091	-0.00101	-0.00102
	(A1 * !A2 * B2 * X)	0.00095	0.00086	0.00085
	(A1 * !A2 * B2 * X)	-0.00091	-0.00101	-0.00102
	(!A1 * !A2 * B2 * !X)	0.00026	0.00026	0.00026
	(!A1 * !A2 * B2 * !X)	-0.00125	-0.00127	-0.00127
	(!A1 * !A2 * !B2 * !X)	0.00031	0.00031	0.00027
	(!A1 * !A2 * !B2 * !X)	-0.00122	-0.00123	-0.00128
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00108	0.00099	0.00098
	(A2 * B2 * X)	-0.00084	-0.00094	-0.00095
	(A1 * !A2 * B2 * X)	0.00108	0.00099	0.00098
	(A1 * !A2 * B2 * X)	-0.00084	-0.00094	-0.00095
	(!A1 * !A2 * B2 * !X)	0.00031	0.00032	0.00031
	(!A1 * !A2 * B2 * !X)	-0.00122	-0.00124	-0.00123
	(!A1 * !A2 * !B2 * !X)	0.00037	0.00038	0.00033
	(!A1 * !A2 * !B2 * !X)	-0.00117	-0.00118	-0.00125
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00207	0.00191	0.00189
	(A2 * B2 * X)	-0.00167	-0.00188	-0.00189
	(A1 * !A2 * B2 * X)	0.00207	0.00191	0.00189
	(A1 * !A2 * B2 * X)	-0.00167	-0.00188	-0.00189
	(!A1 * !A2 * B2 * !X)	0.00080	0.00081	0.00080
	(!A1 * !A2 * B2 * !X)	-0.00224	-0.00229	-0.00228
	(!A1 * !A2 * !B2 * !X)	0.00089	0.00089	0.00083
	(!A1 * !A2 * !B2 * !X)	-0.00219	-0.00221	-0.00231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00085	-0.00085	-0.00084
	(A2 * B2 * X)	0.00102	0.00103	0.00102
	(A1 * !A2 * B2 * X)	-0.00085	-0.00085	-0.00084
	(A1 * !A2 * B2 * X)	0.00102	0.00102	0.00102
	(!A1 * !A2 * B2 * !X)	-0.00026	-0.00026	-0.00026
	(!A1 * !A2 * B2 * !X)	0.00126	0.00128	0.00127
	(!A1 * !A2 * !B2 * !X)	-0.00026	-0.00026	-0.00026
	(!A1 * !A2 * !B2 * !X)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00098	-0.00098	-0.00098
	(A2 * B2 * X)	0.00095	0.00096	0.00095
	(A1 * !A2 * B2 * X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * B2 * X)	0.00095	0.00095	0.00095
	(!A1 * !A2 * B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * B2 * !X)	0.00124	0.00124	0.00123
	(!A1 * !A2 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * !B2 * !X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00188	-0.00188	-0.00187
	(A2 * B2 * X)	0.00188	0.00189	0.00189
	(A1 * !A2 * B2 * X)	-0.00188	-0.00189	-0.00187
	(A1 * !A2 * B2 * X)	0.00188	0.00190	0.00189
	(!A1 * !A2 * B2 * !X)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * B2 * !X)	0.00228	0.00229	0.00228
	(!A1 * !A2 * !B2 * !X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !B2 * !X)	0.00231	0.00236	0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00116	0.00116	0.00115
	(A2 * B1 * X)	-0.00053	-0.00053	-0.00052
	(A1 * !A2 * B1 * X)	0.00115	0.00116	0.00115
	(A1 * !A2 * B1 * X)	-0.00053	-0.00053	-0.00052
	(!A1 * !A2 * B1 * !X)	0.00052	0.00052	0.00052
	(!A1 * !A2 * B1 * !X)	-0.00111	-0.00113	-0.00112
	(!A1 * !A2 * !B1 * !X)	0.00057	0.00057	0.00054
	(!A1 * !A2 * !B1 * !X)	-0.00108	-0.00109	-0.00114
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00099	0.00099	0.00099
	(A2 * B1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * B1 * X)	0.00099	0.00099	0.00099
	(A1 * !A2 * B1 * X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * B1 * !X)	0.00031	0.00031	0.00031
	(!A1 * !A2 * B1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !A2 * !B1 * !X)	0.00037	0.00036	0.00032
	(!A1 * !A2 * !B1 * !X)	-0.00111	-0.00111	-0.00118
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00176	0.00177	0.00177
	(A2 * B1 * X)	-0.00107	-0.00107	-0.00106
	(A1 * !A2 * B1 * X)	0.00176	0.00177	0.00177
	(A1 * !A2 * B1 * X)	-0.00106	-0.00107	-0.00106
	(!A1 * !A2 * B1 * !X)	0.00050	0.00049	0.00049
	(!A1 * !A2 * B1 * !X)	-0.00230	-0.00233	-0.00231
	(!A1 * !A2 * !B1 * !X)	0.00058	0.00057	0.00052
	(!A1 * !A2 * !B1 * !X)	-0.00225	-0.00226	-0.00236

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00111	-0.00112	-0.00115
	(A2 * B1 * X)	0.00056	0.00056	0.00053
	(A1 * !A2 * B1 * X)	-0.00111	-0.00112	-0.00115
	(A1 * !A2 * B1 * X)	0.00056	0.00056	0.00053
	(!A1 * !A2 * B1 * !X)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * B1 * !X)	0.00113	0.00113	0.00112
	(!A1 * !A2 * !B1 * !X)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * !B1 * !X)	0.00114	0.00116	0.00115
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00095	-0.00095	-0.00098
	(A2 * B1 * X)	0.00057	0.00057	0.00054
	(A1 * !A2 * B1 * X)	-0.00095	-0.00095	-0.00098
	(A1 * !A2 * B1 * X)	0.00057	0.00057	0.00054
	(!A1 * !A2 * B1 * !X)	-0.00030	-0.00031	-0.00031
	(!A1 * !A2 * B1 * !X)	0.00116	0.00116	0.00116
	(!A1 * !A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * !B1 * !X)	0.00119	0.00119	0.00119
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00167	-0.00168	-0.00175
	(A2 * B1 * X)	0.00116	0.00116	0.00109
	(A1 * !A2 * B1 * X)	-0.00167	-0.00168	-0.00175
	(A1 * !A2 * B1 * X)	0.00116	0.00116	0.00109
	(!A1 * !A2 * B1 * !X)	-0.00048	-0.00049	-0.00049
	(!A1 * !A2 * B1 * !X)	0.00232	0.00233	0.00231
	(!A1 * !A2 * !B1 * !X)	-0.00050	-0.00050	-0.00049
	(!A1 * !A2 * !B1 * !X)	0.00238	0.00238	0.00237

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00216	0.00236	0.00260	0.00277	0.30426
sky130_fd_sc_hs__o2bb2ai_2	0.00492	0.00432	0.00530	0.00493	0.60185
sky130_fd_sc_hs__o2bb2ai_4	0.01007	0.01017	0.00984	0.01017	1.10347

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.06137	0.17119
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.12274	0.34237
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.11210	0.15934

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)	0.11239	0.64834	3.77407
	A2_N->Y (RR)	0.10773	0.63186	3.62342
	B1->Y (FR)	0.17374	1.36729	12.14030
	B2->Y (FR)	0.15139	1.31607	11.93900
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.10003	0.55677	3.74179
	A2_N->Y (RR)	0.09335	0.53416	3.59027
	B1->Y (FR)	0.15458	1.17465	12.10900
	B2->Y (FR)	0.12534	1.11860	11.89770
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.10741	0.50211	3.61781
	A2_N->Y (RR)	0.10052	0.48829	3.44821
	B1->Y (FR)	0.16251	1.06197	12.14940
	B2->Y (FR)	0.13179	1.00348	12.01160

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)	0.15862	0.74236	4.06859
	A2_N->Y (FF)	0.14265	0.70924	3.95096
	B1->Y (RF)	0.05484	0.54061	4.96027
	B2->Y (RF)	0.04666	0.52472	4.91063
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.13877	0.67871	4.02848
	A2_N->Y (FF)	0.12944	0.65079	3.92561
	B1->Y (RF)	0.04829	0.47507	4.90511
	B2->Y (RF)	0.04246	0.46462	4.91439
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.14545	0.68649	4.49139
	A2_N->Y (FF)	0.12632	0.64168	4.30833
	B1->Y (RF)	0.05359	0.43918	4.95234
	B2->Y (RF)	0.04307	0.41826	4.86974

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	0.00478	0.00478	0.00590
	A1_N	0.00279	0.00279	0.00397
	A2_N	0.00433	0.00425	0.00575
	A2_N	0.00280	0.00272	0.00433
	B1	0.00037	0.00028	0.00029
	B1	0.00333	0.00325	0.00327
	B2	0.00037	0.00030	0.00047
	B2	0.00288	0.00281	0.00298
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00884	0.00876	0.01091
	A1_N	0.00446	0.00439	0.00660
	A2_N	0.00758	0.00747	0.01094
	A2_N	0.00465	0.00455	0.00820
	B1	0.00052	0.00035	0.00037
	B1	0.00645	0.00628	0.00634
	B2	0.00054	0.00043	0.00079
	B2	0.00513	0.00503	0.00540
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01927	0.01921	0.02180
	A1_N	0.00980	0.00971	0.01231
	A2_N	0.01670	0.01631	0.02088
	A2_N	0.00975	0.00937	0.01414
	B1	0.00078	0.00042	0.00050
	B1	0.01259	0.01227	0.01239
	B2	0.00069	0.00043	0.00118
	B2	0.01036	0.00978	0.01082

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00361	0.00369	0.00564
	A1_N	0.00558	0.00566	0.00756
	A2_N	0.00339	0.00335	0.00544
	A2_N	0.00495	0.00490	0.00696
	B1	0.00436	0.00430	0.00440
	B1	0.00138	0.00130	0.00132
	B2	0.00335	0.00332	0.00342
	B2	0.00079	0.00076	0.00078
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00657	0.00657	0.01043
	A1_N	0.01091	0.01086	0.01473
	A2_N	0.00615	0.00613	0.01035
	A2_N	0.00914	0.00910	0.01330
	B1	0.00848	0.00830	0.00841
	B1	0.00253	0.00234	0.00239
	B2	0.00608	0.00600	0.00622
	B2	0.00140	0.00133	0.00144
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01428	0.01395	0.01917
	A1_N	0.02369	0.02329	0.02842
	A2_N	0.01272	0.01225	0.01794
	A2_N	0.01984	0.01935	0.02486
	B1	0.01758	0.01719	0.01767
	B1	0.00573	0.00529	0.00542
	B2	0.01278	0.01257	0.01301
	B2	0.00290	0.00269	0.00302

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)	0.00402	0.00388	0.00511
	(A2_N * !B1 * !B2 * Y)	0.00140	0.00125	0.00248
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00076	0.00077	0.00077
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00785	0.00752	0.01002
	(A2_N * !B1 * !B2 * Y)	0.00221	0.00185	0.00436
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00150	0.00151	0.00149
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00208	-0.00208	-0.00207
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.01721	0.01648	0.01930
	(A2_N * !B1 * !B2 * Y)	0.00507	0.00429	0.00717
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00337	0.00339	0.00336
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00438	-0.00440	-0.00437

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)	0.00037	0.00040	0.00229
	(A2_N * !B1 * !B2 * Y)	0.00302	0.00305	0.00492
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00073	-0.00077	-0.00077
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00088	0.00087	0.00086
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00060	0.00051	0.00437
	(A2_N * !B1 * !B2 * Y)	0.00630	0.00621	0.01002
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00142	-0.00151	-0.00149
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00211	0.00211	0.00208
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00146	0.00099	0.00595
	(A2_N * !B1 * !B2 * Y)	0.01371	0.01322	0.01807
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00318	-0.00339	-0.00336
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00446	0.00444	0.00439

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)	0.00362	0.00345	0.00516
	(A1_N * !B1 * !B2 * Y)	0.00140	0.00122	0.00294
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00030	0.00030	0.00029
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00106	-0.00107	-0.00108
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00670	0.00641	0.00991
	(A1_N * !B1 * !B2 * Y)	0.00240	0.00209	0.00560
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00056	0.00057	0.00054
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00199	-0.00200	-0.00203
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.01491	0.01405	0.01857
	(A1_N * !B1 * !B2 * Y)	0.00500	0.00414	0.00866
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00128	0.00128	0.00121
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00505	-0.00506	-0.00520

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	0.00007	0.00217
	(A1_N * !B1 * !B2 * Y)	0.00239	0.00231	0.00441
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00028	-0.00028	-0.00028
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00108	0.00110	0.00108
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00013	0.00002	0.00422
	(A1_N * !B1 * !B2 * Y)	0.00447	0.00436	0.00856
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00052	-0.00052	-0.00052
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00204	0.00205	0.00204
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00015	-0.00072	0.00480
	(A1_N * !B1 * !B2 * Y)	0.00982	0.00928	0.01475
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00118	-0.00119	-0.00116
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00524	0.00529	0.00521

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)	0.00094	0.00094	0.00094
	(A1_N * A2_N * B2 * Y)	-0.00106	-0.00108	-0.00108
	(A1_N * A2_N * !B2 * Y)	0.00089	0.00089	0.00089
	(A1_N * A2_N * !B2 * Y)	-0.00109	-0.00109	-0.00109
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00103	0.00095	0.00094
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00097	-0.00107	-0.00108
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00186	0.00187	0.00186
	(A1_N * A2_N * B2 * Y)	-0.00216	-0.00221	-0.00220
	(A1_N * A2_N * !B2 * Y)	0.00178	0.00180	0.00178
	(A1_N * A2_N * !B2 * Y)	-0.00223	-0.00225	-0.00224
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00208	0.00190	0.00188
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00196	-0.00217	-0.00218
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00360	0.00361	0.00359
	(A1_N * A2_N * B2 * Y)	-0.00419	-0.00430	-0.00428
	(A1_N * A2_N * !B2 * Y)	0.00341	0.00344	0.00341
	(A1_N * A2_N * !B2 * Y)	-0.00438	-0.00440	-0.00438
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00401	0.00364	0.00359
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00381	-0.00428	-0.00429

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)	-0.00093	-0.00093	-0.00093
	(A1_N * A2_N * B2 * Y)	0.00108	0.00109	0.00108
	(A1_N * A2_N * !B2 * Y)	-0.00086	-0.00089	-0.00089
	(A1_N * A2_N * !B2 * Y)	0.00110	0.00112	0.00110
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00108	0.00109	0.00108
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00185	-0.00185	-0.00185
	(A1_N * A2_N * B2 * Y)	0.00221	0.00221	0.00220
	(A1_N * A2_N * !B2 * Y)	-0.00172	-0.00179	-0.00178
	(A1_N * A2_N * !B2 * Y)	0.00225	0.00228	0.00225
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00188	-0.00188	-0.00187
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00218	0.00219	0.00218
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00359	-0.00359	-0.00358
	(A1_N * A2_N * B2 * Y)	0.00429	0.00430	0.00428
	(A1_N * A2_N * !B2 * Y)	-0.00328	-0.00344	-0.00341
	(A1_N * A2_N * !B2 * Y)	0.00440	0.00442	0.00439
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00358	-0.00359	-0.00357
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00429	0.00431	0.00429

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)	0.00098	0.00098	0.00097
	(A1_N * A2_N * B1 * Y)	-0.00107	-0.00109	-0.00109
	(A1_N * A2_N * !B1 * Y)	0.00092	0.00093	0.00093
	(A1_N * A2_N * !B1 * Y)	-0.00110	-0.00110	-0.00110
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00104	0.00105	0.00104
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00063	-0.00064	-0.00063
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00173	0.00172	0.00173
	(A1_N * A2_N * B1 * Y)	-0.00199	-0.00204	-0.00204
	(A1_N * A2_N * !B1 * Y)	0.00165	0.00167	0.00166
	(A1_N * A2_N * !B1 * Y)	-0.00208	-0.00209	-0.00209
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00188	0.00189	0.00189
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00113	-0.00113	-0.00113
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00357	0.00363	0.00359
	(A1_N * A2_N * B1 * Y)	-0.00419	-0.00434	-0.00432
	(A1_N * A2_N * !B1 * Y)	0.00341	0.00344	0.00341
	(A1_N * A2_N * !B1 * Y)	-0.00441	-0.00443	-0.00441
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00407	0.00411	0.00408
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00231	-0.00233	-0.00231

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)	-0.00097	-0.00097	-0.00097
	(A1_N * A2_N * B1 * Y)	0.00108	0.00109	0.00109
	(A1_N * A2_N * !B1 * Y)	-0.00089	-0.00093	-0.00093
	(A1_N * A2_N * !B1 * Y)	0.00111	0.00112	0.00111
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00100	-0.00100	-0.00104
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00068	0.00068	0.00065
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00171	-0.00172	-0.00172
	(A1_N * A2_N * B1 * Y)	0.00203	0.00205	0.00204
	(A1_N * A2_N * !B1 * Y)	-0.00160	-0.00167	-0.00166
	(A1_N * A2_N * !B1 * Y)	0.00210	0.00211	0.00210
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00177	-0.00178	-0.00187
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00123	0.00123	0.00116
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00357	-0.00360	-0.00358
	(A1_N * A2_N * B1 * Y)	0.00431	0.00434	0.00432
	(A1_N * A2_N * !B1 * Y)	-0.00328	-0.00344	-0.00341
	(A1_N * A2_N * !B1 * Y)	0.00444	0.00446	0.00443
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00380	-0.00385	-0.00405
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00253	0.00255	0.00238

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00215	0.00230	0.00231	0.00251	0.64430
sky130_fd_sc_hs__o2bb2a_2	0.00216	0.00239	0.00247	0.00257	1.22378
sky130_fd_sc_hs__o2bb2a_4	0.00214	0.00232	0.00460	0.00456	2.44893

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.11562	0.19046
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.10272	0.20741
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.20693	0.27498

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)	0.22934	1.14666	8.90131
	A2_N->X (FR)	0.21384	1.11075	8.75446
	B1->X (RR)	0.13423	0.89336	7.52935
	B2->X (RR)	0.12267	0.86947	7.43037
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.24821	1.06084	9.01129
	A2_N->X (FR)	0.23119	1.02571	8.86916
	B1->X (RR)	0.13920	0.79816	7.69492
	B2->X (RR)	0.12626	0.77753	7.61351
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.28923	1.03044	9.24486
	A2_N->X (FR)	0.27274	1.00075	9.11395
	B1->X (RR)	0.15675	0.72622	7.75449
	B2->X (RR)	0.14048	0.69777	7.64058

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)	0.18038	0.56584	2.63836
	A2_N->X (RF)	0.17672	0.54921	2.49860
	B1->X (FF)	0.26991	0.90102	5.24536
	B2->X (FF)	0.25003	0.85311	4.81835
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.21094	0.57451	2.65675
	A2_N->X (RF)	0.20774	0.55826	2.51759
	B1->X (FF)	0.34707	0.97376	5.58209
	B2->X (FF)	0.32486	0.92618	5.18439
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.23076	0.60527	2.98227
	A2_N->X (RF)	0.22734	0.59666	2.85763
	B1->X (FF)	0.34602	0.94383	5.63466
	B2->X (FF)	0.31072	0.88163	5.20975

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	0.00532	0.00548	0.00742
	A1_N	0.00722	0.00737	0.00937
	A2_N	0.00508	0.00513	0.00727
	A2_N	0.00651	0.00655	0.00869
	B1	0.00594	0.00595	0.00628
	B1	0.00317	0.00318	0.00351
	B2	0.00509	0.00503	0.00570
	B2	0.00266	0.00259	0.00328
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00721	0.00756	0.00950
	A1_N	0.00915	0.00950	0.01149
	A2_N	0.00689	0.00716	0.00930
	A2_N	0.00840	0.00868	0.01093
	B1	0.00789	0.00811	0.00843
	B1	0.00492	0.00514	0.00559
	B2	0.00699	0.00715	0.00773
	B2	0.00441	0.00457	0.00528
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01384	0.01455	0.01663
	A1_N	0.01509	0.01580	0.01815
	A2_N	0.01357	0.01416	0.01640
	A2_N	0.01435	0.01494	0.01739
	B1	0.01539	0.01576	0.01653
	B1	0.00979	0.01018	0.01121
	B2	0.01291	0.01324	0.01458
	B2	0.00833	0.00867	0.01028

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00677	0.00667	0.00775
	A1_N	0.00486	0.00472	0.00583
	A2_N	0.00627	0.00613	0.00787
	A2_N	0.00486	0.00470	0.00642
	B1	0.00251	0.00259	0.00297
	B1	0.00525	0.00532	0.00568
	B2	0.00251	0.00259	0.00412
	B2	0.00489	0.00497	0.00634
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00844	0.00862	0.00960
	A1_N	0.00650	0.00661	0.00760
	A2_N	0.00798	0.00808	0.00959
	A2_N	0.00649	0.00655	0.00807
	B1	0.00390	0.00389	0.00489
	B1	0.00683	0.00714	0.00751
	B2	0.00391	0.00423	0.00596
	B2	0.00645	0.00675	0.00814
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01284	0.01347	0.01446
	A1_N	0.01162	0.01217	0.01310
	A2_N	0.01228	0.01290	0.01454
	A2_N	0.01161	0.01211	0.01366
	B1	0.00736	0.00732	0.01025
	B1	0.01293	0.01348	0.01416
	B2	0.00739	0.00775	0.01079
	B2	0.01189	0.01242	0.01521

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)	0.00362	0.00350	0.00478
	(A2_N * !B1 * !B2 * !X)	0.00103	0.00089	0.00218
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00081	0.00082	0.00081
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00383	0.00370	0.00494
	(A2_N * !B1 * !B2 * !X)	0.00116	0.00102	0.00226
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00085	0.00086	0.00085
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00081	-0.00081	-0.00081
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00453	0.00440	0.00550
	(A2_N * !B1 * !B2 * !X)	0.00186	0.00172	0.00282
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00085	0.00086	0.00085
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00079	-0.00079	-0.00079

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)	0.00037	0.00041	0.00234
	(A2_N * !B1 * !B2 * !X)	0.00299	0.00304	0.00494
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00077	-0.00081	-0.00081
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00086	0.00085	0.00083
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00038	0.00042	0.00232
	(A2_N * !B1 * !B2 * !X)	0.00308	0.00312	0.00499
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00081	-0.00086	-0.00085
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00084	0.00083	0.00081
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00073	0.00075	0.00256
	(A2_N * !B1 * !B2 * !X)	0.00344	0.00345	0.00524
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00080	-0.00085	-0.00085
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00082	0.00081	0.00080

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)	0.00326	0.00309	0.00488
	(A1_N * !B1 * !B2 * !X)	0.00111	0.00095	0.00273
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00028	0.00028	0.00027
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00104	-0.00105	-0.00107
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00351	0.00334	0.00506
	(A1_N * !B1 * !B2 * !X)	0.00125	0.00107	0.00280
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00032	0.00033	0.00031
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00106	-0.00107	-0.00108
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00419	0.00401	0.00556
	(A1_N * !B1 * !B2 * !X)	0.00196	0.00178	0.00333
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00029	0.00030	0.00028
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00103	-0.00104	-0.00106

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)	0.00010	0.00004	0.00220
	(A1_N * !B1 * !B2 * !X)	0.00227	0.00221	0.00436
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00026	-0.00026	-0.00026
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00107	0.00109	0.00107
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00009	0.00002	0.00213
	(A1_N * !B1 * !B2 * !X)	0.00237	0.00230	0.00441
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00108	0.00110	0.00109
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00049	0.00037	0.00236
	(A1_N * !B1 * !B2 * !X)	0.00274	0.00263	0.00461
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00028	-0.00028	-0.00027
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00107	0.00107	0.00106

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)	0.00082	0.00082	0.00082
	(A1_N * A2_N * B2 * !X)	-0.00095	-0.00097	-0.00097
	(A1_N * A2_N * !B2 * !X)	0.00078	0.00078	0.00078
	(A1_N * A2_N * !B2 * !X)	-0.00098	-0.00098	-0.00098
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00092	0.00083	0.00082
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00086	-0.00096	-0.00097
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00092	0.00093	0.00092
	(A1_N * A2_N * B2 * !X)	-0.00098	-0.00100	-0.00100
	(A1_N * A2_N * !B2 * !X)	0.00088	0.00088	0.00088
	(A1_N * A2_N * !B2 * !X)	-0.00100	-0.00100	-0.00101
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00102	0.00093	0.00092
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00088	-0.00099	-0.00100
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00165	0.00166	0.00165
	(A1_N * A2_N * B2 * !X)	-0.00193	-0.00198	-0.00198
	(A1_N * A2_N * !B2 * !X)	0.00156	0.00158	0.00157
	(A1_N * A2_N * !B2 * !X)	-0.00201	-0.00203	-0.00202
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00186	0.00168	0.00165
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00173	-0.00197	-0.00198

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)	-0.00081	-0.00082	-0.00081
	(A1_N * A2_N * B2 * !X)	0.00097	0.00098	0.00097
	(A1_N * A2_N * !B2 * !X)	-0.00075	-0.00078	-0.00078
	(A1_N * A2_N * !B2 * !X)	0.00099	0.00099	0.00099
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00081	-0.00081	-0.00081
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00097	0.00097	0.00097
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00092	-0.00092	-0.00092
	(A1_N * A2_N * B2 * !X)	0.00100	0.00100	0.00100
	(A1_N * A2_N * !B2 * !X)	-0.00085	-0.00088	-0.00088
	(A1_N * A2_N * !B2 * !X)	0.00101	0.00102	0.00101
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00092	-0.00091	-0.00091
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00100	0.00100	0.00100
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00165	-0.00164	-0.00164
	(A1_N * A2_N * B2 * !X)	0.00200	0.00198	0.00198
	(A1_N * A2_N * !B2 * !X)	-0.00150	-0.00158	-0.00157
	(A1_N * A2_N * !B2 * !X)	0.00204	0.00206	0.00203
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00165	-0.00164	-0.00164
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00198	0.00197	0.00198

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)	0.00088	0.00088	0.00088
	(A1_N * A2_N * B1 * !X)	-0.00097	-0.00098	-0.00099
	(A1_N * A2_N * !B1 * !X)	0.00083	0.00084	0.00084
	(A1_N * A2_N * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00094	0.00094	0.00094
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00059	-0.00059	-0.00059
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00099	0.00100	0.00099
	(A1_N * A2_N * B1 * !X)	-0.00094	-0.00096	-0.00096
	(A1_N * A2_N * !B1 * !X)	0.00095	0.00096	0.00095
	(A1_N * A2_N * !B1 * !X)	-0.00097	-0.00098	-0.00098
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00098	0.00099	0.00099
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00062	-0.00063	-0.00063
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00158	0.00161	0.00159
	(A1_N * A2_N * B1 * !X)	-0.00190	-0.00197	-0.00196
	(A1_N * A2_N * !B1 * !X)	0.00151	0.00153	0.00152
	(A1_N * A2_N * !B1 * !X)	-0.00200	-0.00202	-0.00201
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00174	0.00176	0.00175
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00113	-0.00114	-0.00114

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)	-0.00088	-0.00087	-0.00087
	(A1_N * A2_N * B1 * !X)	0.00099	0.00098	0.00099
	(A1_N * A2_N * !B1 * !X)	-0.00080	-0.00084	-0.00084
	(A1_N * A2_N * !B1 * !X)	0.00101	0.00101	0.00101
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00089	-0.00090	-0.00093
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00063	0.00063	0.00060
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00099	-0.00098	-0.00099
	(A1_N * A2_N * B1 * !X)	0.00097	0.00096	0.00096
	(A1_N * A2_N * !B1 * !X)	-0.00092	-0.00096	-0.00095
	(A1_N * A2_N * !B1 * !X)	0.00098	0.00099	0.00098
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00094	-0.00095	-0.00098
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00067	0.00067	0.00064
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00158	-0.00160	-0.00159
	(A1_N * A2_N * B1 * !X)	0.00195	0.00197	0.00196
	(A1_N * A2_N * !B1 * !X)	-0.00146	-0.00153	-0.00152
	(A1_N * A2_N * !B1 * !X)	0.00202	0.00203	0.00202
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00161	-0.00162	-0.00173
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00127	0.00126	0.00117

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00253	0.00267	0.00260	0.00270	0.00277	0.19587
sky130_fd_sc_hs__o311ai_2	0.00492	0.00506	0.00515	0.00516	0.00525	0.34953
sky130_fd_sc_hs__o311ai_4	0.00969	0.00974	0.01026	0.00786	0.00743	0.68673

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.01102	0.05433
sky130_fd_sc_hs__o311ai_2	0.00000	0.02205	0.10867
sky130_fd_sc_hs__o311ai_4	0.00000	0.02824	0.14489

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)	0.38869	1.70962	11.93840
	A2->Y (FR)	0.37085	1.69726	12.27540
	A3->Y (FR)	0.30790	1.59347	11.87880
	B1->Y (FR)	0.07999	0.80571	7.32258
	C1->Y (FR)	0.06618	0.79248	7.30344
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.41098	1.54088	11.74010
	A2->Y (FR)	0.38008	1.50734	12.05110
	A3->Y (FR)	0.31476	1.41026	11.74360
	B1->Y (FR)	0.07831	0.74410	7.19860
	C1->Y (FR)	0.06226	0.72733	7.19026
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.36678	1.33724	11.74470
	A2->Y (FR)	0.34391	1.32013	12.15320
	A3->Y (FR)	0.27094	1.20989	11.79310
	B1->Y (FR)	0.10799	0.85589	9.00616
	C1->Y (FR)	0.07533	0.82941	9.03739

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.08198	0.54564	4.19265
	A2->Y (RF)	0.08244	0.54366	4.22988
	A3->Y (RF)	0.06877	0.52205	4.18219
	B1->Y (RF)	0.07201	0.57725	4.74189
	C1->Y (RF)	0.06194	0.58333	4.88634
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.09159	0.51688	4.19734
	A2->Y (RF)	0.08686	0.50028	4.16072
	A3->Y (RF)	0.07384	0.47917	4.11738
	B1->Y (RF)	0.08046	0.54831	4.74037
	C1->Y (RF)	0.06759	0.57578	5.11562
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.08833	0.46465	4.19456
	A2->Y (RF)	0.08272	0.44846	4.16543
	A3->Y (RF)	0.06721	0.42358	4.11206
	B1->Y (RF)	0.07762	0.53507	5.18605
	C1->Y (RF)	0.05957	0.53797	5.44043

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00083	0.00073	0.00072
	A1	0.00580	0.00571	0.00568
	A2	0.00089	0.00077	0.00077
	A2	0.00534	0.00523	0.00522
	A3	0.00087	0.00077	0.00098
	A3	0.00477	0.00468	0.00488
	B1	0.00013	0.00005	0.00029
	B1	0.00436	0.00426	0.00448
	C1	-0.00025	-0.00034	-0.00008
	C1	0.00351	0.00342	0.00366
sky130_fd_sc_hs__o311ai_2	A1	0.00193	0.00170	0.00167
	A1	0.01201	0.01180	0.01172
	A2	0.00195	0.00170	0.00171
	A2	0.01095	0.01071	0.01069
	A3	0.00193	0.00165	0.00212
	A3	0.00984	0.00958	0.01002
	B1	0.00031	0.00011	0.00069
	B1	0.00887	0.00861	0.00915
	C1	-0.00051	-0.00072	-0.00011
	C1	0.00695	0.00673	0.00731

sky130_fd_sc_hs__o311ai_4	**A1**	0.00281	0.00246	0.00243
	A1	0.02253	0.02219	0.02210
	A2	0.00292	0.00248	0.00251
	A2	0.02042	0.02000	0.02000
	A3	0.00292	0.00239	0.00329
	A3	0.01844	0.01794	0.01878
	B1	0.00037	-0.00020	0.00044
	B1	0.01516	0.01450	0.01516
	C1	-0.00139	-0.00168	-0.00101
	C1	0.01092	0.01049	0.01134

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.00685	0.00678	0.00674
	A1	0.00180	0.00170	0.00168
	A2	0.00592	0.00586	0.00587
	A2	0.00135	0.00126	0.00125
	A3	0.00478	0.00476	0.00482
	A3	0.00072	0.00069	0.00070
	B1	0.00604	0.00595	0.00592
	B1	0.00188	0.00178	0.00177
	C1	0.00552	0.00543	0.00547
	C1	0.00186	0.00176	0.00179

sky130_fd_sc_hs__o311ai_2	**A1**	0.01399	0.01377	0.01370
	A1	0.00377	0.00352	0.00347
	A2	0.01166	0.01150	0.01156
	A2	0.00239	0.00222	0.00222
	A3	0.00949	0.00943	0.00953
	A3	0.00124	0.00113	0.00119
	B1	0.01219	0.01202	0.01206
	B1	0.00381	0.00360	0.00358
	C1	0.01102	0.01082	0.01083
	C1	0.00380	0.00356	0.00364
sky130_fd_sc_hs__o311ai_4	**A1**	0.02545	0.02501	0.02498
	A1	0.00546	0.00500	0.00496
	A2	0.02141	0.02098	0.02115
	A2	0.00342	0.00296	0.00302
	A3	0.01655	0.01634	0.01675
	A3	0.00038	0.00016	0.00041
	B1	0.02144	0.02125	0.02116
	B1	0.00698	0.00680	0.00673
	C1	0.01885	0.01873	0.01874
	C1	0.00700	0.00680	0.00684

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)**	0.00092	0.00093	0.00092
	(A2 * B1 * !C1 * Y)	-0.00105	-0.00108	-0.00107
	(A2 * A3 * B1 * C1 * !Y)	0.00092	0.00093	0.00092
	(A2 * A3 * B1 * C1 * !Y)	-0.00105	-0.00108	-0.00108
	(A2 * !B1 * Y)	0.00092	0.00093	0.00092
	(A2 * !B1 * Y)	-0.00105	-0.00108	-0.00107
	(A2 * !A3 * B1 * C1 * !Y)	0.00092	0.00093	0.00092
	(A2 * !A3 * B1 * C1 * !Y)	-0.00104	-0.00108	-0.00108
	(!A2 * A3 * B1 * C1 * !Y)	0.00092	0.00092	0.00092
	(!A2 * A3 * B1 * C1 * !Y)	-0.00098	-0.00104	-0.00103
	(!A2 * A3 * B1 * !C1 * Y)	0.00092	0.00092	0.00092
	(!A2 * A3 * B1 * !C1 * Y)	-0.00098	-0.00104	-0.00103
	(!A2 * A3 * !B1 * Y)	0.00092	0.00092	0.00092
	(!A2 * A3 * !B1 * Y)	-0.00098	-0.00104	-0.00103
	(!A2 * !A3 * B1 * !C1 * Y)	0.00085	0.00086	0.00085
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00109	-0.00110	-0.00109
	(!A2 * !A3 * !B1 * C1 * Y)	0.00086	0.00086	0.00086
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00110	-0.00110	-0.00109
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00086	0.00087	0.00086
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00110	-0.00110	-0.00109

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00179	0.00181	0.00180
	(A2 * B1 * !C1 * Y)	-0.00207	-0.00214	-0.00213
	(A2 * A3 * B1 * C1 * !Y)	0.00181	0.00181	0.00180
	(A2 * A3 * B1 * C1 * !Y)	-0.00205	-0.00214	-0.00213
	(A2 * !B1 * Y)	0.00179	0.00181	0.00180
	(A2 * !B1 * Y)	-0.00207	-0.00214	-0.00213
	(A2 * !A3 * B1 * C1 * !Y)	0.00181	0.00181	0.00180
	(A2 * !A3 * B1 * C1 * !Y)	-0.00204	-0.00214	-0.00213
	(!A2 * A3 * B1 * C1 * !Y)	0.00182	0.00181	0.00180
	(!A2 * A3 * B1 * C1 * !Y)	-0.00192	-0.00205	-0.00204
	(!A2 * A3 * B1 * !C1 * Y)	0.00179	0.00180	0.00180
	(!A2 * A3 * B1 * !C1 * Y)	-0.00194	-0.00206	-0.00204
	(!A2 * A3 * !B1 * Y)	0.00179	0.00180	0.00180
	(!A2 * A3 * !B1 * Y)	-0.00194	-0.00206	-0.00204
	(!A2 * !A3 * B1 * !C1 * Y)	0.00163	0.00163	0.00163
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00219	-0.00219	-0.00219
	(!A2 * !A3 * !B1 * C1 * Y)	0.00167	0.00167	0.00166
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00220	-0.00220	-0.00219
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00167	0.00167	0.00166
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00220	-0.00220	-0.00219

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00361	0.00362	0.00359
	(A2 * B1 * !C1 * Y)	-0.00414	-0.00427	-0.00425
	(A2 * A3 * B1 * C1 * !Y)	0.00362	0.00362	0.00359
	(A2 * A3 * B1 * C1 * !Y)	-0.00413	-0.00427	-0.00425
	(A2 * !B1 * Y)	0.00361	0.00362	0.00359
	(A2 * !B1 * Y)	-0.00414	-0.00427	-0.00425
	(A2 * !A3 * B1 * C1 * !Y)	0.00362	0.00362	0.00359
	(A2 * !A3 * B1 * C1 * !Y)	-0.00411	-0.00426	-0.00425
	(!A2 * A3 * B1 * C1 * !Y)	0.00363	0.00362	0.00360
	(!A2 * A3 * B1 * C1 * !Y)	-0.00387	-0.00411	-0.00408
	(!A2 * A3 * B1 * !C1 * Y)	0.00360	0.00361	0.00359
	(!A2 * A3 * B1 * !C1 * Y)	-0.00389	-0.00411	-0.00408
	(!A2 * A3 * !B1 * Y)	0.00360	0.00361	0.00359
	(!A2 * A3 * !B1 * Y)	-0.00389	-0.00411	-0.00408
	(!A2 * !A3 * B1 * !C1 * Y)	0.00328	0.00328	0.00327
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00439	-0.00439	-0.00438
	(!A2 * !A3 * !B1 * C1 * Y)	0.00331	0.00334	0.00332
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00437	-0.00439	-0.00438
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00332	0.00333	0.00332
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00438	-0.00439	-0.00438

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)**	-0.00092	-0.00092	-0.00092
	(A2 * B1 * !C1 * Y)	0.00108	0.00108	0.00107
	(A2 * A3 * B1 * C1 * !Y)	-0.00092	-0.00092	-0.00092
	(A2 * A3 * B1 * C1 * !Y)	0.00108	0.00108	0.00108
	(A2 * !B1 * Y)	-0.00092	-0.00092	-0.00092
	(A2 * !B1 * Y)	0.00108	0.00108	0.00107
	(A2 * !A3 * B1 * C1 * !Y)	-0.00092	-0.00092	-0.00092
	(A2 * !A3 * B1 * C1 * !Y)	0.00108	0.00109	0.00108
	(!A2 * A3 * B1 * C1 * !Y)	-0.00092	-0.00092	-0.00092
	(!A2 * A3 * B1 * C1 * !Y)	0.00104	0.00104	0.00103
	(!A2 * A3 * B1 * !C1 * Y)	-0.00092	-0.00092	-0.00092
	(!A2 * A3 * B1 * !C1 * Y)	0.00104	0.00104	0.00103
	(!A2 * A3 * !B1 * Y)	-0.00092	-0.00092	-0.00092
	(!A2 * A3 * !B1 * Y)	0.00104	0.00104	0.00103
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00080	-0.00086	-0.00085
	(!A2 * !A3 * B1 * !C1 * Y)	0.00110	0.00110	0.00110
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00083	-0.00086	-0.00086
	(!A2 * !A3 * !B1 * C1 * Y)	0.00110	0.00110	0.00110
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00083	-0.00087	-0.00086
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00110	0.00110	0.00110

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00179	-0.00180	-0.00179
	(A2 * B1 * !C1 * Y)	0.00213	0.00214	0.00213
	(A2 * A3 * B1 * C1 * !Y)	-0.00180	-0.00180	-0.00180
	(A2 * A3 * B1 * C1 * !Y)	0.00213	0.00214	0.00213
	(A2 * !B1 * Y)	-0.00179	-0.00180	-0.00179
	(A2 * !B1 * Y)	0.00213	0.00214	0.00213
	(A2 * !A3 * B1 * C1 * !Y)	-0.00180	-0.00180	-0.00180
	(A2 * !A3 * B1 * C1 * !Y)	0.00213	0.00214	0.00213
	(!A2 * A3 * B1 * C1 * !Y)	-0.00179	-0.00181	-0.00180
	(!A2 * A3 * B1 * C1 * !Y)	0.00203	0.00205	0.00204
	(!A2 * A3 * B1 * !C1 * Y)	-0.00179	-0.00180	-0.00179
	(!A2 * A3 * B1 * !C1 * Y)	0.00203	0.00206	0.00204
	(!A2 * A3 * !B1 * Y)	-0.00179	-0.00180	-0.00179
	(!A2 * A3 * !B1 * Y)	0.00204	0.00206	0.00204
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00152	-0.00163	-0.00163
	(!A2 * !A3 * B1 * !C1 * Y)	0.00219	0.00222	0.00219
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00157	-0.00167	-0.00166
	(!A2 * !A3 * !B1 * C1 * Y)	0.00221	0.00222	0.00220
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00158	-0.00167	-0.00166
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00221	0.00222	0.00220

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00359	-0.00360	-0.00359
	(A2 * B1 * !C1 * Y)	0.00426	0.00427	0.00425
	(A2 * A3 * B1 * C1 * !Y)	-0.00359	-0.00360	-0.00359
	(A2 * A3 * B1 * C1 * !Y)	0.00426	0.00427	0.00425
	(A2 * !B1 * Y)	-0.00359	-0.00360	-0.00359
	(A2 * !B1 * Y)	0.00426	0.00427	0.00425
	(A2 * !A3 * B1 * C1 * !Y)	-0.00359	-0.00359	-0.00359
	(A2 * !A3 * B1 * C1 * !Y)	0.00426	0.00426	0.00425
	(!A2 * A3 * B1 * C1 * !Y)	-0.00358	-0.00361	-0.00359
	(!A2 * A3 * B1 * C1 * !Y)	0.00407	0.00411	0.00408
	(!A2 * A3 * B1 * !C1 * Y)	-0.00358	-0.00360	-0.00359
	(!A2 * A3 * B1 * !C1 * Y)	0.00407	0.00411	0.00408
	(!A2 * A3 * !B1 * Y)	-0.00358	-0.00360	-0.00359
	(!A2 * A3 * !B1 * Y)	0.00408	0.00411	0.00408
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00308	-0.00328	-0.00327
	(!A2 * !A3 * B1 * !C1 * Y)	0.00440	0.00443	0.00439
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00315	-0.00334	-0.00332
	(!A2 * !A3 * !B1 * C1 * Y)	0.00438	0.00443	0.00439
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00316	-0.00333	-0.00332
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00438	0.00443	0.00439

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)**	0.00095	0.00095	0.00093
	(A1 * A3 * B1 * C1 * !Y)	-0.00074	-0.00074	-0.00073
	(A1 * A3 * B1 * !C1 * Y)	0.00087	0.00088	0.00088
	(A1 * A3 * B1 * !C1 * Y)	-0.00083	-0.00083	-0.00083
	(A1 * A3 * !B1 * Y)	0.00087	0.00088	0.00088
	(A1 * A3 * !B1 * Y)	-0.00083	-0.00083	-0.00083
	(A1 * !A3 * B1 * C1 * !Y)	0.00093	0.00092	0.00092
	(A1 * !A3 * B1 * C1 * !Y)	-0.00065	-0.00065	-0.00065
	(A1 * !A3 * B1 * !C1 * Y)	0.00088	0.00088	0.00088
	(A1 * !A3 * B1 * !C1 * Y)	-0.00108	-0.00109	-0.00109
	(A1 * !A3 * !B1 * C1 * Y)	0.00088	0.00088	0.00088
	(A1 * !A3 * !B1 * C1 * Y)	-0.00108	-0.00109	-0.00109
	(A1 * !A3 * !B1 * !C1 * Y)	0.00088	0.00088	0.00088
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00108	-0.00109	-0.00109
	(!A1 * A3 * B1 * C1 * !Y)	0.00105	0.00093	0.00092
	(!A1 * A3 * B1 * C1 * !Y)	-0.00091	-0.00105	-0.00105
	(!A1 * A3 * B1 * !C1 * Y)	0.00088	0.00088	0.00088
	(!A1 * A3 * B1 * !C1 * Y)	-0.00107	-0.00109	-0.00109
	(!A1 * A3 * !B1 * Y)	0.00088	0.00088	0.00088
	(!A1 * A3 * !B1 * Y)	-0.00107	-0.00109	-0.00109
	(!A1 * !A3 * B1 * !C1 * Y)	0.00081	0.00081	0.00080
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00111	-0.00111	-0.00111
	(!A1 * !A3 * !B1 * C1 * Y)	0.00082	0.00082	0.00081
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00112	-0.00112	-0.00111
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00082	0.00082	0.00081
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00112	-0.00112	-0.00111

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00189	0.00189	0.00185
	(A1 * A3 * B1 * C1 * !Y)	-0.00154	-0.00154	-0.00153
	(A1 * A3 * B1 * !C1 * Y)	0.00181	0.00182	0.00181
	(A1 * A3 * B1 * !C1 * Y)	-0.00165	-0.00167	-0.00166
	(A1 * A3 * !B1 * Y)	0.00181	0.00182	0.00181
	(A1 * A3 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(A1 * !A3 * B1 * C1 * !Y)	0.00186	0.00184	0.00183
	(A1 * !A3 * B1 * C1 * !Y)	-0.00136	-0.00135	-0.00135
	(A1 * !A3 * B1 * !C1 * Y)	0.00180	0.00182	0.00181
	(A1 * !A3 * B1 * !C1 * Y)	-0.00209	-0.00214	-0.00215
	(A1 * !A3 * !B1 * C1 * Y)	0.00180	0.00182	0.00181
	(A1 * !A3 * !B1 * C1 * Y)	-0.00209	-0.00214	-0.00215
	(A1 * !A3 * !B1 * !C1 * Y)	0.00182	0.00182	0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00212	-0.00214	-0.00216
	(!A1 * A3 * B1 * C1 * !Y)	0.00206	0.00185	0.00182
	(!A1 * A3 * B1 * C1 * !Y)	-0.00193	-0.00218	-0.00218
	(!A1 * A3 * B1 * !C1 * Y)	0.00182	0.00183	0.00181
	(!A1 * A3 * B1 * !C1 * Y)	-0.00215	-0.00219	-0.00218
	(!A1 * A3 * !B1 * Y)	0.00182	0.00183	0.00181
	(!A1 * A3 * !B1 * Y)	-0.00215	-0.00219	-0.00218
	(!A1 * !A3 * B1 * !C1 * Y)	0.00163	0.00165	0.00164
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00222	-0.00224	-0.00223
	(!A1 * !A3 * !B1 * C1 * Y)	0.00167	0.00167	0.00167
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00224	-0.00223	-0.00223
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00167	0.00168	0.00167
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00224	-0.00224	-0.00223

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00370	0.00372	0.00365
	(A1 * A3 * B1 * C1 * !Y)	-0.00295	-0.00295	-0.00294
	(A1 * A3 * B1 * !C1 * Y)	0.00358	0.00357	0.00356
	(A1 * A3 * B1 * !C1 * Y)	-0.00323	-0.00326	-0.00323
	(A1 * A3 * !B1 * Y)	0.00359	0.00357	0.00356
	(A1 * A3 * !B1 * Y)	-0.00324	-0.00326	-0.00323
	(A1 * !A3 * B1 * C1 * !Y)	0.00360	0.00363	0.00361
	(A1 * !A3 * B1 * C1 * !Y)	-0.00258	-0.00260	-0.00260
	(A1 * !A3 * B1 * !C1 * Y)	0.00355	0.00357	0.00355
	(A1 * !A3 * B1 * !C1 * Y)	-0.00415	-0.00424	-0.00422
	(A1 * !A3 * !B1 * C1 * Y)	0.00355	0.00357	0.00355
	(A1 * !A3 * !B1 * C1 * Y)	-0.00415	-0.00424	-0.00422
	(A1 * !A3 * !B1 * !C1 * Y)	0.00355	0.00357	0.00355
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00415	-0.00424	-0.00423
	(!A1 * A3 * B1 * C1 * !Y)	0.00406	0.00366	0.00360
	(!A1 * A3 * B1 * C1 * !Y)	-0.00369	-0.00421	-0.00424
	(!A1 * A3 * B1 * !C1 * Y)	0.00355	0.00359	0.00355
	(!A1 * A3 * B1 * !C1 * Y)	-0.00419	-0.00431	-0.00429
	(!A1 * A3 * !B1 * Y)	0.00355	0.00359	0.00355
	(!A1 * A3 * !B1 * Y)	-0.00419	-0.00431	-0.00429
	(!A1 * !A3 * B1 * !C1 * Y)	0.00323	0.00324	0.00322
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00439	-0.00440	-0.00439
	(!A1 * !A3 * !B1 * C1 * Y)	0.00328	0.00326	0.00327
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00438	-0.00438	-0.00439
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00328	0.00328	0.00327
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00438	-0.00440	-0.00439

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)**	-0.00092	-0.00092	-0.00091
	(A1 * A3 * B1 * C1 * !Y)	0.00074	0.00074	0.00073
	(A1 * A3 * B1 * !C1 * Y)	-0.00087	-0.00088	-0.00087
	(A1 * A3 * B1 * !C1 * Y)	0.00083	0.00083	0.00083
	(A1 * A3 * !B1 * Y)	-0.00087	-0.00088	-0.00087
	(A1 * A3 * !B1 * Y)	0.00083	0.00083	0.00083
	(A1 * !A3 * B1 * C1 * !Y)	-0.00091	-0.00091	-0.00090
	(A1 * !A3 * B1 * C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * !A3 * B1 * !C1 * Y)	-0.00088	-0.00088	-0.00087
	(A1 * !A3 * B1 * !C1 * Y)	0.00109	0.00109	0.00109
	(A1 * !A3 * !B1 * C1 * Y)	-0.00088	-0.00088	-0.00087
	(A1 * !A3 * !B1 * C1 * Y)	0.00110	0.00109	0.00109
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00088	-0.00088	-0.00087
	(A1 * !A3 * !B1 * !C1 * Y)	0.00110	0.00109	0.00109
	(!A1 * A3 * B1 * C1 * !Y)	-0.00091	-0.00091	-0.00091
	(!A1 * A3 * B1 * C1 * !Y)	0.00106	0.00105	0.00105
	(!A1 * A3 * B1 * !C1 * Y)	-0.00088	-0.00088	-0.00087
	(!A1 * A3 * B1 * !C1 * Y)	0.00109	0.00109	0.00109
	(!A1 * A3 * !B1 * Y)	-0.00087	-0.00088	-0.00087
	(!A1 * A3 * !B1 * Y)	0.00108	0.00109	0.00109
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00074	-0.00081	-0.00080
	(!A1 * !A3 * B1 * !C1 * Y)	0.00111	0.00112	0.00111
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00077	-0.00082	-0.00081
	(!A1 * !A3 * !B1 * C1 * Y)	0.00112	0.00112	0.00112
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00078	-0.00082	-0.00081
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00112	0.00112	0.00112

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00184	-0.00184	-0.00183
	(A1 * A3 * B1 * C1 * !Y)	0.00154	0.00154	0.00153
	(A1 * A3 * B1 * !C1 * Y)	-0.00180	-0.00181	-0.00181
	(A1 * A3 * B1 * !C1 * Y)	0.00165	0.00167	0.00166
	(A1 * A3 * !B1 * Y)	-0.00180	-0.00181	-0.00181
	(A1 * A3 * !B1 * Y)	0.00166	0.00167	0.00166
	(A1 * !A3 * B1 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A3 * B1 * C1 * !Y)	0.00140	0.00140	0.00140
	(A1 * !A3 * B1 * !C1 * Y)	-0.00180	-0.00180	-0.00181
	(A1 * !A3 * B1 * !C1 * Y)	0.00216	0.00214	0.00215
	(A1 * !A3 * !B1 * C1 * Y)	-0.00180	-0.00180	-0.00181
	(A1 * !A3 * !B1 * C1 * Y)	0.00216	0.00214	0.00215
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00181	-0.00180	-0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	0.00216	0.00214	0.00216
	(!A1 * A3 * B1 * C1 * !Y)	-0.00182	-0.00182	-0.00181
	(!A1 * A3 * B1 * C1 * !Y)	0.00219	0.00218	0.00218
	(!A1 * A3 * B1 * !C1 * Y)	-0.00181	-0.00181	-0.00181
	(!A1 * A3 * B1 * !C1 * Y)	0.00220	0.00219	0.00218
	(!A1 * A3 * !B1 * Y)	-0.00180	-0.00181	-0.00181
	(!A1 * A3 * !B1 * Y)	0.00217	0.00219	0.00218
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00152	-0.00165	-0.00164
	(!A1 * !A3 * B1 * !C1 * Y)	0.00223	0.00225	0.00223
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00158	-0.00167	-0.00167
	(!A1 * !A3 * !B1 * C1 * Y)	0.00224	0.00225	0.00223
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00158	-0.00168	-0.00167
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00224	0.00225	0.00223

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00361	-0.00362	-0.00361
	(A1 * A3 * B1 * C1 * !Y)	0.00295	0.00295	0.00294
	(A1 * A3 * B1 * !C1 * Y)	-0.00354	-0.00356	-0.00354
	(A1 * A3 * B1 * !C1 * Y)	0.00323	0.00326	0.00323
	(A1 * A3 * !B1 * Y)	-0.00354	-0.00356	-0.00354
	(A1 * A3 * !B1 * Y)	0.00324	0.00326	0.00323
	(A1 * !A3 * B1 * C1 * !Y)	-0.00356	-0.00356	-0.00353
	(A1 * !A3 * B1 * C1 * !Y)	0.00266	0.00266	0.00269
	(A1 * !A3 * B1 * !C1 * Y)	-0.00354	-0.00356	-0.00354
	(A1 * !A3 * B1 * !C1 * Y)	0.00422	0.00424	0.00422
	(A1 * !A3 * !B1 * C1 * Y)	-0.00353	-0.00356	-0.00354
	(A1 * !A3 * !B1 * C1 * Y)	0.00420	0.00424	0.00422
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00353	-0.00356	-0.00354
	(A1 * !A3 * !B1 * !C1 * Y)	0.00421	0.00424	0.00423
	(!A1 * A3 * B1 * C1 * !Y)	-0.00359	-0.00358	-0.00358
	(!A1 * A3 * B1 * C1 * !Y)	0.00424	0.00421	0.00424
	(!A1 * A3 * B1 * !C1 * Y)	-0.00354	-0.00355	-0.00354
	(!A1 * A3 * B1 * !C1 * Y)	0.00430	0.00431	0.00429
	(!A1 * A3 * !B1 * Y)	-0.00353	-0.00355	-0.00354
	(!A1 * A3 * !B1 * Y)	0.00427	0.00431	0.00429
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00301	-0.00324	-0.00322
	(!A1 * !A3 * B1 * !C1 * Y)	0.00440	0.00442	0.00439
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00309	-0.00326	-0.00327
	(!A1 * !A3 * !B1 * C1 * Y)	0.00438	0.00443	0.00440
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00309	-0.00328	-0.00327
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00438	0.00443	0.00440

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)**	0.00099	0.00099	0.00099
	(A2 * B1 * C1 * !Y)	-0.00057	-0.00057	-0.00056
	(A2 * B1 * !C1 * Y)	0.00090	0.00090	0.00089
	(A2 * B1 * !C1 * Y)	-0.00102	-0.00104	-0.00104
	(A2 * !B1 * C1 * Y)	0.00090	0.00090	0.00089
	(A2 * !B1 * C1 * Y)	-0.00102	-0.00104	-0.00104
	(A2 * !B1 * !C1 * Y)	0.00090	0.00090	0.00089
	(A2 * !B1 * !C1 * Y)	-0.00102	-0.00104	-0.00104
	(A1 * !A2 * B1 * C1 * !Y)	0.00099	0.00099	0.00099
	(A1 * !A2 * B1 * C1 * !Y)	-0.00057	-0.00057	-0.00056
	(A1 * !A2 * B1 * !C1 * Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * B1 * !C1 * Y)	-0.00093	-0.00099	-0.00098
	(A1 * !A2 * !B1 * C1 * Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * C1 * Y)	-0.00093	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !C1 * Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00093	-0.00099	-0.00099
	(!A1 * !A2 * B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00106	-0.00106	-0.00106
	(!A1 * !A2 * !B1 * C1 * Y)	0.00084	0.00083	0.00083
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00106	-0.00106	-0.00106
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00084	0.00083	0.00083
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00106	-0.00106	-0.00106

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00202	0.00204	0.00203
	(A2 * B1 * C1 * !Y)	-0.00116	-0.00117	-0.00116
	(A2 * B1 * !C1 * Y)	0.00178	0.00180	0.00179
	(A2 * B1 * !C1 * Y)	-0.00210	-0.00217	-0.00216
	(A2 * !B1 * C1 * Y)	0.00178	0.00179	0.00179
	(A2 * !B1 * C1 * Y)	-0.00210	-0.00217	-0.00216
	(A2 * !B1 * !C1 * Y)	0.00178	0.00180	0.00178
	(A2 * !B1 * !C1 * Y)	-0.00210	-0.00217	-0.00216
	(A1 * !A2 * B1 * C1 * !Y)	0.00202	0.00204	0.00203
	(A1 * !A2 * B1 * C1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * !A2 * B1 * !C1 * Y)	0.00179	0.00180	0.00178
	(A1 * !A2 * B1 * !C1 * Y)	-0.00197	-0.00205	-0.00204
	(A1 * !A2 * !B1 * C1 * Y)	0.00179	0.00180	0.00178
	(A1 * !A2 * !B1 * C1 * Y)	-0.00197	-0.00206	-0.00205
	(A1 * !A2 * !B1 * !C1 * Y)	0.00179	0.00180	0.00178
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00198	-0.00207	-0.00206
	(!A1 * !A2 * B1 * !C1 * Y)	0.00162	0.00164	0.00162
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00220	-0.00222	-0.00221
	(!A1 * !A2 * !B1 * C1 * Y)	0.00165	0.00166	0.00165
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00221	-0.00221	-0.00221
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00165	0.00167	0.00165
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00221	-0.00222	-0.00221

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00411	0.00415	0.00413
	(A2 * B1 * C1 * !Y)	-0.00231	-0.00233	-0.00231
	(A2 * B1 * !C1 * Y)	0.00345	0.00345	0.00342
	(A2 * B1 * !C1 * Y)	-0.00442	-0.00452	-0.00451
	(A2 * !B1 * C1 * Y)	0.00345	0.00345	0.00342
	(A2 * !B1 * C1 * Y)	-0.00443	-0.00454	-0.00451
	(A2 * !B1 * !C1 * Y)	0.00345	0.00346	0.00342
	(A2 * !B1 * !C1 * Y)	-0.00443	-0.00453	-0.00453
	(A1 * !A2 * B1 * C1 * !Y)	0.00412	0.00415	0.00413
	(A1 * !A2 * B1 * C1 * !Y)	-0.00231	-0.00232	-0.00231
	(A1 * !A2 * B1 * !C1 * Y)	0.00341	0.00346	0.00342
	(A1 * !A2 * B1 * !C1 * Y)	-0.00405	-0.00423	-0.00421
	(A1 * !A2 * !B1 * C1 * Y)	0.00342	0.00346	0.00342
	(A1 * !A2 * !B1 * C1 * Y)	-0.00405	-0.00425	-0.00422
	(A1 * !A2 * !B1 * !C1 * Y)	0.00342	0.00346	0.00342
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00407	-0.00427	-0.00426
	(!A1 * !A2 * B1 * !C1 * Y)	0.00312	0.00314	0.00313
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00462	-0.00463	-0.00463
	(!A1 * !A2 * !B1 * C1 * Y)	0.00318	0.00320	0.00317
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00464	-0.00465	-0.00463
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00319	0.00321	0.00318
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00464	-0.00465	-0.00463

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)**	-0.00093	-0.00094	-0.00098
	(A2 * B1 * C1 * !Y)	0.00061	0.00061	0.00058
	(A2 * B1 * !C1 * Y)	-0.00090	-0.00090	-0.00089
	(A2 * B1 * !C1 * Y)	0.00104	0.00104	0.00104
	(A2 * !B1 * C1 * Y)	-0.00090	-0.00090	-0.00089
	(A2 * !B1 * C1 * Y)	0.00104	0.00104	0.00104
	(A2 * !B1 * !C1 * Y)	-0.00090	-0.00089	-0.00089
	(A2 * !B1 * !C1 * Y)	0.00104	0.00104	0.00104
	(A1 * !A2 * B1 * C1 * !Y)	-0.00087	-0.00087	-0.00097
	(A1 * !A2 * B1 * C1 * !Y)	0.00065	0.00065	0.00058
	(A1 * !A2 * B1 * !C1 * Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(A1 * !A2 * !B1 * C1 * Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !B1 * C1 * Y)	0.00098	0.00099	0.00098
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00089	-0.00089	-0.00089
	(A1 * !A2 * !B1 * !C1 * Y)	0.00099	0.00099	0.00099
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00076	-0.00082	-0.00082
	(!A1 * !A2 * B1 * !C1 * Y)	0.00106	0.00106	0.00106
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00079	-0.00083	-0.00083
	(!A1 * !A2 * !B1 * C1 * Y)	0.00106	0.00107	0.00106
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00079	-0.00083	-0.00083
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00106	0.00107	0.00106

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00191	-0.00193	-0.00201
	(A2 * B1 * C1 * !Y)	0.00127	0.00127	0.00119
	(A2 * B1 * !C1 * Y)	-0.00178	-0.00179	-0.00178
	(A2 * B1 * !C1 * Y)	0.00217	0.00217	0.00216
	(A2 * !B1 * C1 * Y)	-0.00177	-0.00179	-0.00178
	(A2 * !B1 * C1 * Y)	0.00215	0.00217	0.00216
	(A2 * !B1 * !C1 * Y)	-0.00178	-0.00179	-0.00178
	(A2 * !B1 * !C1 * Y)	0.00215	0.00217	0.00216
	(A1 * !A2 * B1 * C1 * !Y)	-0.00173	-0.00175	-0.00197
	(A1 * !A2 * B1 * C1 * !Y)	0.00138	0.00138	0.00121
	(A1 * !A2 * B1 * !C1 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * B1 * !C1 * Y)	0.00204	0.00205	0.00204
	(A1 * !A2 * !B1 * C1 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B1 * C1 * Y)	0.00204	0.00206	0.00205
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !C1 * Y)	0.00205	0.00207	0.00206
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00150	-0.00164	-0.00162
	(!A1 * !A2 * B1 * !C1 * Y)	0.00221	0.00223	0.00221
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00157	-0.00166	-0.00165
	(!A1 * !A2 * !B1 * C1 * Y)	0.00222	0.00223	0.00221
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00157	-0.00167	-0.00165
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00222	0.00223	0.00221

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00385	-0.00389	-0.00409
	(A2 * B1 * C1 * !Y)	0.00256	0.00256	0.00238
	(A2 * B1 * !C1 * Y)	-0.00342	-0.00342	-0.00342
	(A2 * B1 * !C1 * Y)	0.00451	0.00452	0.00451
	(A2 * !B1 * C1 * Y)	-0.00342	-0.00343	-0.00342
	(A2 * !B1 * C1 * Y)	0.00452	0.00454	0.00451
	(A2 * !B1 * !C1 * Y)	-0.00342	-0.00342	-0.00341
	(A2 * !B1 * !C1 * Y)	0.00453	0.00453	0.00453
	(A1 * !A2 * B1 * C1 * !Y)	-0.00357	-0.00360	-0.00403
	(A1 * !A2 * B1 * C1 * !Y)	0.00272	0.00272	0.00239
	(A1 * !A2 * B1 * !C1 * Y)	-0.00341	-0.00343	-0.00342
	(A1 * !A2 * B1 * !C1 * Y)	0.00422	0.00423	0.00421
	(A1 * !A2 * !B1 * C1 * Y)	-0.00341	-0.00344	-0.00342
	(A1 * !A2 * !B1 * C1 * Y)	0.00421	0.00425	0.00422
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00341	-0.00342	-0.00342
	(A1 * !A2 * !B1 * !C1 * Y)	0.00425	0.00427	0.00426
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00292	-0.00314	-0.00313
	(!A1 * !A2 * B1 * !C1 * Y)	0.00464	0.00467	0.00463
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00302	-0.00320	-0.00317
	(!A1 * !A2 * !B1 * C1 * Y)	0.00464	0.00468	0.00463
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00302	-0.00321	-0.00318
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00464	0.00467	0.00463

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00083	0.00084	0.00083
	(A3 * !C1 * Y)	-0.00113	-0.00114	-0.00113
	(A2 * !A3 * !C1 * Y)	0.00083	0.00083	0.00083
	(A2 * !A3 * !C1 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A2 * !A3 * !C1 * Y)	0.00083	0.00083	0.00083
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00113	-0.00113	-0.00113
	(!A1 * !A2 * !A3 * C1 * Y)	0.00041	0.00041	0.00041
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00114	-0.00114	-0.00113
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00050	0.00050	0.00050
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00172	0.00173	0.00172
	(A3 * !C1 * Y)	-0.00223	-0.00223	-0.00222
	(A2 * !A3 * !C1 * Y)	0.00172	0.00173	0.00172
	(A2 * !A3 * !C1 * Y)	-0.00222	-0.00223	-0.00222
	(A1 * !A2 * !A3 * !C1 * Y)	0.00172	0.00174	0.00172
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00221	-0.00222	-0.00222
	(!A1 * !A2 * !A3 * C1 * Y)	0.00085	0.00086	0.00086
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00222	-0.00224	-0.00221
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00104	0.00105	0.00104
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00224	-0.00226	-0.00224
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00320	0.00321	0.00321
	(A3 * !C1 * Y)	-0.00255	-0.00256	-0.00256
	(A2 * !A3 * !C1 * Y)	0.00320	0.00323	0.00321
	(A2 * !A3 * !C1 * Y)	-0.00255	-0.00256	-0.00256
	(A1 * !A2 * !A3 * !C1 * Y)	0.00320	0.00320	0.00321
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00255	-0.00256	-0.00256
	(!A1 * !A2 * !A3 * C1 * Y)	0.00154	0.00156	0.00155
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00258	-0.00259	-0.00256
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00189	0.00192	0.00189
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00262	-0.00265	-0.00262

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00078	-0.00083	-0.00083
	(A3 * !C1 * Y)	0.00116	0.00115	0.00114
	(A2 * !A3 * !C1 * Y)	-0.00078	-0.00083	-0.00083
	(A2 * !A3 * !C1 * Y)	0.00116	0.00115	0.00114
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00077	-0.00083	-0.00083
	(A1 * !A2 * !A3 * !C1 * Y)	0.00117	0.00115	0.00114
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00038	-0.00038	-0.00039
	(!A1 * !A2 * !A3 * C1 * Y)	0.00116	0.00117	0.00114
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00121	0.00118	0.00115
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00164	-0.00173	-0.00172
	(A3 * !C1 * Y)	0.00226	0.00226	0.00223
	(A2 * !A3 * !C1 * Y)	-0.00163	-0.00173	-0.00172
	(A2 * !A3 * !C1 * Y)	0.00227	0.00226	0.00223
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00161	-0.00173	-0.00172
	(A1 * !A2 * !A3 * !C1 * Y)	0.00228	0.00222	0.00223
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00080	-0.00080	-0.00082
	(!A1 * !A2 * !A3 * C1 * Y)	0.00231	0.00230	0.00225
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00104	-0.00105	-0.00104
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00232	0.00231	0.00225

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00301	-0.00321	-0.00321
	(A3 * !C1 * Y)	0.00268	0.00256	0.00256
	(A2 * !A3 * !C1 * Y)	-0.00297	-0.00323	-0.00321
	(A2 * !A3 * !C1 * Y)	0.00270	0.00256	0.00256
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00292	-0.00320	-0.00321
	(A1 * !A2 * !A3 * !C1 * Y)	0.00273	0.00258	0.00256
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00143	-0.00144	-0.00147
	(!A1 * !A2 * !A3 * C1 * Y)	0.00272	0.00272	0.00263
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00189	-0.00192	-0.00189
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00281	0.00275	0.00264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00036	0.00036	0.00035
	(A3 * !B1 * Y)	-0.00133	-0.00134	-0.00135
	(A2 * !A3 * !B1 * Y)	0.00036	0.00036	0.00035
	(A2 * !A3 * !B1 * Y)	-0.00132	-0.00134	-0.00135
	(!A2 * !A3 * !B1 * Y)	0.00036	0.00036	0.00035
	(!A2 * !A3 * !B1 * Y)	-0.00133	-0.00134	-0.00135
	(!A1 * !A2 * !A3 * B1 * Y)	0.00040	0.00039	0.00035
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00125	-0.00125	-0.00134
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00070	0.00071	0.00067
	(A3 * !B1 * Y)	-0.00258	-0.00261	-0.00266
	(A2 * !A3 * !B1 * Y)	0.00071	0.00070	0.00067
	(A2 * !A3 * !B1 * Y)	-0.00258	-0.00259	-0.00266
	(!A2 * !A3 * !B1 * Y)	0.00070	0.00071	0.00067
	(!A2 * !A3 * !B1 * Y)	-0.00257	-0.00261	-0.00266
	(!A1 * !A2 * !A3 * B1 * Y)	0.00076	0.00076	0.00066
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00241	-0.00243	-0.00263
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00132	0.00131	0.00125
	(A3 * !B1 * Y)	-0.00287	-0.00287	-0.00300
	(A2 * !A3 * !B1 * Y)	0.00132	0.00132	0.00125
	(A2 * !A3 * !B1 * Y)	-0.00288	-0.00290	-0.00300
	(!A2 * !A3 * !B1 * Y)	0.00132	0.00132	0.00125
	(!A2 * !A3 * !B1 * Y)	-0.00288	-0.00289	-0.00300
	(!A1 * !A2 * !A3 * B1 * Y)	0.00142	0.00142	0.00123
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00256	-0.00258	-0.00294

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00034	-0.00034	-0.00034
	(A3 * !B1 * Y)	0.00135	0.00137	0.00135
	(A2 * !A3 * !B1 * Y)	-0.00034	-0.00034	-0.00034
	(A2 * !A3 * !B1 * Y)	0.00136	0.00137	0.00135
	(!A2 * !A3 * !B1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !A3 * !B1 * Y)	0.00135	0.00136	0.00135
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00034	-0.00034	-0.00033
	(!A1 * !A2 * !A3 * B1 * Y)	0.00135	0.00136	0.00135
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00065	-0.00066	-0.00065
	(A3 * !B1 * Y)	0.00266	0.00270	0.00266
	(A2 * !A3 * !B1 * Y)	-0.00066	-0.00066	-0.00065
	(A2 * !A3 * !B1 * Y)	0.00267	0.00268	0.00266
	(!A2 * !A3 * !B1 * Y)	-0.00065	-0.00065	-0.00065
	(!A2 * !A3 * !B1 * Y)	0.00266	0.00268	0.00266
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00064	-0.00064	-0.00063
	(!A1 * !A2 * !A3 * B1 * Y)	0.00267	0.00268	0.00266
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00122	-0.00123	-0.00121
	(A3 * !B1 * Y)	0.00301	0.00305	0.00300
	(A2 * !A3 * !B1 * Y)	-0.00122	-0.00122	-0.00121
	(A2 * !A3 * !B1 * Y)	0.00302	0.00302	0.00300
	(!A2 * !A3 * !B1 * Y)	-0.00122	-0.00121	-0.00121
	(!A2 * !A3 * !B1 * Y)	0.00302	0.00301	0.00300
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00119	-0.00118	-0.00117
	(!A1 * !A2 * !A3 * B1 * Y)	0.00301	0.00302	0.00300

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00243	0.00291	0.00250	0.00245	0.00252	0.65688
sky130_fd_sc_hs__o311a_2	0.00270	0.00270	0.00270	0.00267	0.00266	1.28617
sky130_fd_sc_hs__o311a_4	0.00445	0.00489	0.00452	0.00552	0.00476	2.52901

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.03929	0.13588
sky130_fd_sc_hs__o311a_2	0.00000	0.05227	0.11351
sky130_fd_sc_hs__o311a_4	0.00000	0.10846	0.27898

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)	0.19486	0.98895	7.99376
	A2->X (RR)	0.19045	0.98233	7.93276
	A3->X (RR)	0.17491	0.95278	7.80906
	B1->X (RR)	0.18148	0.99251	7.94592
	C1->X (RR)	0.17258	0.98070	7.76605
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.19859	0.87080	7.97776
	A2->X (RR)	0.18979	0.85574	7.90056
	A3->X (RR)	0.16778	0.82862	7.80954
	B1->X (RR)	0.18952	0.89469	8.00790
	C1->X (RR)	0.17891	0.88326	7.86097
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.21184	0.80554	8.09479
	A2->X (RR)	0.19930	0.78562	8.01653
	A3->X (RR)	0.18291	0.76416	7.91961
	B1->X (RR)	0.20389	0.83095	8.12469
	C1->X (RR)	0.18736	0.81136	7.92532

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.57832	1.24520	5.97821
	A2->X (FF)	0.56048	1.22889	6.02576
	A3->X (FF)	0.47021	1.10257	5.50055
	B1->X (FF)	0.14282	0.78392	5.01063
	C1->X (FF)	0.13025	0.75738	4.92473
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.60456	1.26237	6.26248
	A2->X (FF)	0.57483	1.24160	6.35000
	A3->X (FF)	0.52151	1.15264	5.94498
	B1->X (FF)	0.17556	0.80905	5.32135
	C1->X (FF)	0.15905	0.78371	5.22105
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.68417	1.31534	6.35143
	A2->X (FF)	0.65894	1.28875	6.41047
	A3->X (FF)	0.56888	1.15757	5.90977
	B1->X (FF)	0.16132	0.74996	5.26479
	C1->X (FF)	0.14334	0.72226	5.16426

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.00886	0.00877	0.00883
	A1	0.00402	0.00393	0.00403
	A2	0.00802	0.00798	0.00808
	A2	0.00352	0.00347	0.00361
	A3	0.00659	0.00657	0.00691
	A3	0.00267	0.00265	0.00306
	B1	0.00807	0.00799	0.00844
	B1	0.00405	0.00396	0.00446
	C1	0.00763	0.00753	0.00838
	C1	0.00403	0.00393	0.00484
sky130_fd_sc_hs__o311a_2	A1	0.01035	0.01035	0.01040
	A1	0.00513	0.00512	0.00525
	A2	0.00926	0.00946	0.00965
	A2	0.00455	0.00475	0.00505
	A3	0.00824	0.00841	0.00872
	A3	0.00404	0.00421	0.00465
	B1	0.00952	0.00954	0.00990
	B1	0.00524	0.00527	0.00570
	C1	0.00899	0.00897	0.00970
	C1	0.00524	0.00522	0.00608

sky130_fd_sc_hs__o311a_4	**A1**	0.01962	0.02003	0.02050
	A1	0.01055	0.01097	0.01156
	A2	0.01794	0.01837	0.01885
	A2	0.00950	0.00993	0.01057
	A3	0.01516	0.01556	0.01648
	A3	0.00776	0.00817	0.00929
	B1	0.01853	0.01880	0.01979
	B1	0.01055	0.01081	0.01189
	C1	0.01711	0.01734	0.01925
	C1	0.01055	0.01080	0.01290

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00297	0.00294	0.00322
	A1	0.00772	0.00770	0.00771
	A2	0.00299	0.00296	0.00322
	A2	0.00738	0.00734	0.00747
	A3	0.00300	0.00292	0.00434
	A3	0.00676	0.00680	0.00790
	B1	0.00211	0.00212	0.00378
	B1	0.00618	0.00616	0.00761
	C1	0.00186	0.00182	0.00375
	C1	0.00553	0.00550	0.00700

sky130_fd_sc_hs__o311a_2	**A1**	0.00420	0.00436	0.00463
	A1	0.00930	0.00948	0.00955
	A2	0.00421	0.00440	0.00601
	A2	0.00877	0.00896	0.00920
	A3	0.00420	0.00429	0.00544
	A3	0.00823	0.00844	0.00942
	B1	0.00374	0.00390	0.00595
	B1	0.00802	0.00818	0.00965
	C1	0.00341	0.00354	0.00560
	C1	0.00722	0.00735	0.00886
sky130_fd_sc_hs__o311a_4	**A1**	0.00876	0.00926	0.00986
	A1	0.01759	0.01811	0.01844
	A2	0.00864	0.00909	0.01143
	A2	0.01681	0.01725	0.01780
	A3	0.00874	0.00911	0.01241
	A3	0.01582	0.01623	0.01868
	B1	0.00731	0.00757	0.01137
	B1	0.01535	0.01558	0.01844
	C1	0.00665	0.00703	0.01108
	C1	0.01331	0.01369	0.01678

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)**	0.00081	0.00082	0.00081
	(A2 * B1 * !C1 * !X)	-0.00105	-0.00107	-0.00107
	(A2 * A3 * B1 * C1 * X)	0.00095	0.00095	0.00095
	(A2 * A3 * B1 * C1 * X)	-0.00091	-0.00093	-0.00093
	(A2 * !B1 * !X)	0.00081	0.00082	0.00081
	(A2 * !B1 * !X)	-0.00105	-0.00107	-0.00107
	(A2 * !A3 * B1 * C1 * X)	0.00095	0.00095	0.00095
	(A2 * !A3 * B1 * C1 * X)	-0.00091	-0.00093	-0.00093
	(!A2 * A3 * B1 * C1 * X)	0.00095	0.00095	0.00095
	(!A2 * A3 * B1 * C1 * X)	-0.00085	-0.00090	-0.00090
	(!A2 * A3 * B1 * !C1 * !X)	0.00081	0.00081	0.00081
	(!A2 * A3 * B1 * !C1 * !X)	-0.00099	-0.00104	-0.00103
	(!A2 * A3 * !B1 * !X)	0.00081	0.00081	0.00081
	(!A2 * A3 * !B1 * !X)	-0.00099	-0.00104	-0.00103
	(!A2 * !A3 * B1 * !C1 * !X)	0.00076	0.00077	0.00076
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(!A2 * !A3 * !B1 * C1 * !X)	0.00078	0.00078	0.00078
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00108	-0.00109	-0.00108
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00078	0.00078	0.00078
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00086	0.00086	0.00086
	(A2 * B1 * !C1 * !X)	-0.00115	-0.00118	-0.00117
	(A2 * A3 * B1 * C1 * X)	0.00097	0.00098	0.00098
	(A2 * A3 * B1 * C1 * X)	-0.00103	-0.00106	-0.00106
	(A2 * !B1 * !X)	0.00086	0.00086	0.00086
	(A2 * !B1 * !X)	-0.00115	-0.00118	-0.00117
	(A2 * !A3 * B1 * C1 * X)	0.00097	0.00098	0.00098
	(A2 * !A3 * B1 * C1 * X)	-0.00102	-0.00106	-0.00106
	(!A2 * A3 * B1 * C1 * X)	0.00098	0.00097	0.00098
	(!A2 * A3 * B1 * C1 * X)	-0.00095	-0.00102	-0.00101
	(!A2 * A3 * B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(!A2 * A3 * B1 * !C1 * !X)	-0.00107	-0.00113	-0.00113
	(!A2 * A3 * !B1 * !X)	0.00086	0.00086	0.00086
	(!A2 * A3 * !B1 * !X)	-0.00107	-0.00113	-0.00113
	(!A2 * !A3 * B1 * !C1 * !X)	0.00079	0.00080	0.00079
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00119	-0.00120	-0.00119
	(!A2 * !A3 * !B1 * C1 * !X)	0.00080	0.00081	0.00080
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00120	-0.00120	-0.00120
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00120	-0.00120	-0.00120

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00147	0.00148	0.00147
	(A2 * B1 * !C1 * !X)	-0.00191	-0.00195	-0.00196
	(A2 * A3 * B1 * C1 * X)	0.00147	0.00148	0.00147
	(A2 * A3 * B1 * C1 * X)	-0.00191	-0.00195	-0.00196
	(A2 * !B1 * !X)	0.00147	0.00148	0.00147
	(A2 * !B1 * !X)	-0.00191	-0.00196	-0.00196
	(A2 * !A3 * B1 * C1 * X)	0.00148	0.00148	0.00147
	(A2 * !A3 * B1 * C1 * X)	-0.00189	-0.00196	-0.00196
	(!A2 * A3 * B1 * C1 * X)	0.00149	0.00148	0.00147
	(!A2 * A3 * B1 * C1 * X)	-0.00177	-0.00189	-0.00188
	(!A2 * A3 * B1 * !C1 * !X)	0.00147	0.00148	0.00147
	(!A2 * A3 * B1 * !C1 * !X)	-0.00179	-0.00188	-0.00187
	(!A2 * A3 * !B1 * !X)	0.00147	0.00148	0.00147
	(!A2 * A3 * !B1 * !X)	-0.00179	-0.00188	-0.00188
	(!A2 * !A3 * B1 * !C1 * !X)	0.00136	0.00137	0.00136
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00200	-0.00201	-0.00200
	(!A2 * !A3 * !B1 * C1 * !X)	0.00138	0.00139	0.00138
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00200	-0.00201	-0.00200
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00139	0.00139	0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00200	-0.00200	-0.00200

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)**	-0.00081	-0.00081	-0.00081
	(A2 * B1 * !C1 * !X)	0.00108	0.00107	0.00107
	(A2 * A3 * B1 * C1 * X)	-0.00095	-0.00094	-0.00094
	(A2 * A3 * B1 * C1 * X)	0.00094	0.00093	0.00093
	(A2 * !B1 * !X)	-0.00081	-0.00081	-0.00081
	(A2 * !B1 * !X)	0.00108	0.00107	0.00107
	(A2 * !A3 * B1 * C1 * X)	-0.00095	-0.00095	-0.00094
	(A2 * !A3 * B1 * C1 * X)	0.00094	0.00094	0.00093
	(!A2 * A3 * B1 * C1 * X)	-0.00094	-0.00094	-0.00094
	(!A2 * A3 * B1 * C1 * X)	0.00090	0.00090	0.00090
	(!A2 * A3 * B1 * !C1 * !X)	-0.00081	-0.00081	-0.00081
	(!A2 * A3 * B1 * !C1 * !X)	0.00104	0.00104	0.00103
	(!A2 * A3 * !B1 * !X)	-0.00081	-0.00081	-0.00081
	(!A2 * A3 * !B1 * !X)	0.00104	0.00104	0.00103
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00073	-0.00077	-0.00076
	(!A2 * !A3 * B1 * !C1 * !X)	0.00109	0.00109	0.00109
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00075	-0.00078	-0.00078
	(!A2 * !A3 * !B1 * C1 * !X)	0.00109	0.00109	0.00109
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00075	-0.00078	-0.00078
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00109	0.00109	0.00109

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00086	-0.00086	-0.00086
	(A2 * B1 * !C1 * !X)	0.00118	0.00118	0.00117
	(A2 * A3 * B1 * C1 * X)	-0.00097	-0.00097	-0.00097
	(A2 * A3 * B1 * C1 * X)	0.00106	0.00107	0.00106
	(A2 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A2 * !B1 * !X)	0.00118	0.00118	0.00117
	(A2 * !A3 * B1 * C1 * X)	-0.00097	-0.00097	-0.00097
	(A2 * !A3 * B1 * C1 * X)	0.00106	0.00106	0.00106
	(!A2 * A3 * B1 * C1 * X)	-0.00097	-0.00097	-0.00097
	(!A2 * A3 * B1 * C1 * X)	0.00102	0.00102	0.00101
	(!A2 * A3 * B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(!A2 * A3 * B1 * !C1 * !X)	0.00113	0.00113	0.00113
	(!A2 * A3 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(!A2 * A3 * !B1 * !X)	0.00113	0.00113	0.00113
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00074	-0.00080	-0.00079
	(!A2 * !A3 * B1 * !C1 * !X)	0.00121	0.00120	0.00120
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00076	-0.00081	-0.00080
	(!A2 * !A3 * !B1 * C1 * !X)	0.00121	0.00121	0.00120
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00076	-0.00081	-0.00080
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00121	0.00121	0.00120

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00147	-0.00146	-0.00147
	(A2 * B1 * !C1 * !X)	0.00197	0.00195	0.00196
	(A2 * A3 * B1 * C1 * X)	-0.00147	-0.00146	-0.00146
	(A2 * A3 * B1 * C1 * X)	0.00197	0.00195	0.00196
	(A2 * !B1 * !X)	-0.00147	-0.00147	-0.00147
	(A2 * !B1 * !X)	0.00196	0.00196	0.00196
	(A2 * !A3 * B1 * C1 * X)	-0.00147	-0.00147	-0.00146
	(A2 * !A3 * B1 * C1 * X)	0.00196	0.00197	0.00196
	(!A2 * A3 * B1 * C1 * X)	-0.00146	-0.00147	-0.00146
	(!A2 * A3 * B1 * C1 * X)	0.00188	0.00189	0.00188
	(!A2 * A3 * B1 * !C1 * !X)	-0.00147	-0.00147	-0.00147
	(!A2 * A3 * B1 * !C1 * !X)	0.00188	0.00188	0.00187
	(!A2 * A3 * !B1 * !X)	-0.00146	-0.00147	-0.00147
	(!A2 * A3 * !B1 * !X)	0.00186	0.00188	0.00188
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00127	-0.00137	-0.00136
	(!A2 * !A3 * B1 * !C1 * !X)	0.00200	0.00201	0.00200
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00131	-0.00139	-0.00138
	(!A2 * !A3 * !B1 * C1 * !X)	0.00200	0.00202	0.00200
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00139	-0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00200	0.00202	0.00200

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)**	0.00099	0.00100	0.00098
	(A1 * A3 * B1 * C1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * A3 * B1 * !C1 * !X)	0.00081	0.00081	0.00081
	(A1 * A3 * B1 * !C1 * !X)	-0.00093	-0.00094	-0.00093
	(A1 * A3 * !B1 * !X)	0.00081	0.00081	0.00081
	(A1 * A3 * !B1 * !X)	-0.00093	-0.00094	-0.00093
	(A1 * !A3 * B1 * C1 * X)	0.00098	0.00098	0.00098
	(A1 * !A3 * B1 * C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * !A3 * B1 * !C1 * !X)	0.00082	0.00082	0.00081
	(A1 * !A3 * B1 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * !B1 * C1 * !X)	0.00082	0.00082	0.00081
	(A1 * !A3 * !B1 * C1 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * !B1 * !C1 * !X)	0.00082	0.00081	0.00081
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00113	-0.00114	-0.00114
	(!A1 * A3 * B1 * C1 * X)	0.00108	0.00099	0.00097
	(!A1 * A3 * B1 * C1 * X)	-0.00085	-0.00098	-0.00098
	(!A1 * A3 * B1 * !C1 * !X)	0.00081	0.00082	0.00081
	(!A1 * A3 * B1 * !C1 * !X)	-0.00111	-0.00114	-0.00114
	(!A1 * A3 * !B1 * !X)	0.00081	0.00082	0.00081
	(!A1 * A3 * !B1 * !X)	-0.00111	-0.00114	-0.00114
	(!A1 * !A3 * B1 * !C1 * !X)	0.00077	0.00076	0.00076
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00116	-0.00116	-0.00115
	(!A1 * !A3 * !B1 * C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00094	0.00094	0.00091
	(A1 * A3 * B1 * C1 * X)	-0.00076	-0.00077	-0.00077
	(A1 * A3 * B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(A1 * A3 * B1 * !C1 * !X)	-0.00085	-0.00086	-0.00085
	(A1 * A3 * !B1 * !X)	0.00086	0.00087	0.00086
	(A1 * A3 * !B1 * !X)	-0.00085	-0.00086	-0.00085
	(A1 * !A3 * B1 * C1 * X)	0.00091	0.00090	0.00090
	(A1 * !A3 * B1 * C1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * !A3 * B1 * !C1 * !X)	0.00087	0.00086	0.00086
	(A1 * !A3 * B1 * !C1 * !X)	-0.00110	-0.00111	-0.00111
	(A1 * !A3 * !B1 * C1 * !X)	0.00087	0.00087	0.00086
	(A1 * !A3 * !B1 * C1 * !X)	-0.00110	-0.00112	-0.00111
	(A1 * !A3 * !B1 * !C1 * !X)	0.00087	0.00086	0.00086
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00110	-0.00112	-0.00111
	(!A1 * A3 * B1 * C1 * X)	0.00103	0.00091	0.00090
	(!A1 * A3 * B1 * C1 * X)	-0.00095	-0.00108	-0.00109
	(!A1 * A3 * B1 * !C1 * !X)	0.00087	0.00087	0.00086
	(!A1 * A3 * B1 * !C1 * !X)	-0.00110	-0.00112	-0.00111
	(!A1 * A3 * !B1 * !X)	0.00087	0.00087	0.00086
	(!A1 * A3 * !B1 * !X)	-0.00110	-0.00112	-0.00111
	(!A1 * !A3 * B1 * !C1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * !A3 * !B1 * C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00115	-0.00115	-0.00114
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00115	-0.00115	-0.00114

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00173	0.00174	0.00171
	(A1 * A3 * B1 * C1 * X)	-0.00142	-0.00144	-0.00143
	(A1 * A3 * B1 * !C1 * !X)	0.00171	0.00170	0.00170
	(A1 * A3 * B1 * !C1 * !X)	-0.00153	-0.00155	-0.00154
	(A1 * A3 * !B1 * !X)	0.00171	0.00170	0.00170
	(A1 * A3 * !B1 * !X)	-0.00154	-0.00155	-0.00154
	(A1 * !A3 * B1 * C1 * X)	0.00170	0.00171	0.00170
	(A1 * !A3 * B1 * C1 * X)	-0.00123	-0.00124	-0.00124
	(A1 * !A3 * B1 * !C1 * !X)	0.00168	0.00171	0.00170
	(A1 * !A3 * B1 * !C1 * !X)	-0.00190	-0.00195	-0.00194
	(A1 * !A3 * !B1 * C1 * !X)	0.00169	0.00171	0.00170
	(A1 * !A3 * !B1 * C1 * !X)	-0.00190	-0.00195	-0.00194
	(A1 * !A3 * !B1 * !C1 * !X)	0.00169	0.00170	0.00170
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00190	-0.00195	-0.00194
	(!A1 * A3 * B1 * C1 * X)	0.00190	0.00172	0.00170
	(!A1 * A3 * B1 * C1 * X)	-0.00173	-0.00195	-0.00195
	(!A1 * A3 * B1 * !C1 * !X)	0.00171	0.00171	0.00170
	(!A1 * A3 * B1 * !C1 * !X)	-0.00191	-0.00194	-0.00194
	(!A1 * A3 * !B1 * !X)	0.00171	0.00171	0.00170
	(!A1 * A3 * !B1 * !X)	-0.00191	-0.00195	-0.00194
	(!A1 * !A3 * B1 * !C1 * !X)	0.00154	0.00156	0.00155
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00197	-0.00199	-0.00198
	(!A1 * !A3 * !B1 * C1 * !X)	0.00158	0.00159	0.00158
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00199	-0.00199	-0.00198
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00159	0.00159	0.00158
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00199	-0.00199	-0.00198

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)**	-0.00098	-0.00098	-0.00097
	(A1 * A3 * B1 * C1 * X)	0.00071	0.00071	0.00071
	(A1 * A3 * B1 * !C1 * !X)	-0.00081	-0.00081	-0.00081
	(A1 * A3 * B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(A1 * A3 * !B1 * !X)	-0.00081	-0.00081	-0.00081
	(A1 * A3 * !B1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A3 * B1 * C1 * X)	-0.00096	-0.00097	-0.00096
	(A1 * !A3 * B1 * C1 * X)	0.00063	0.00063	0.00064
	(A1 * !A3 * B1 * !C1 * !X)	-0.00081	-0.00081	-0.00081
	(A1 * !A3 * B1 * !C1 * !X)	0.00114	0.00114	0.00113
	(A1 * !A3 * !B1 * C1 * !X)	-0.00081	-0.00081	-0.00081
	(A1 * !A3 * !B1 * C1 * !X)	0.00114	0.00114	0.00113
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00081	-0.00081	-0.00081
	(A1 * !A3 * !B1 * !C1 * !X)	0.00114	0.00114	0.00114
	(!A1 * A3 * B1 * C1 * X)	-0.00097	-0.00097	-0.00096
	(!A1 * A3 * B1 * C1 * X)	0.00098	0.00098	0.00098
	(!A1 * A3 * B1 * !C1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * A3 * B1 * !C1 * !X)	0.00114	0.00114	0.00114
	(!A1 * A3 * !B1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * A3 * !B1 * !X)	0.00114	0.00114	0.00114
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00072	-0.00076	-0.00076
	(!A1 * !A3 * B1 * !C1 * !X)	0.00116	0.00116	0.00116
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00074	-0.00078	-0.00077
	(!A1 * !A3 * !B1 * C1 * !X)	0.00115	0.00117	0.00116
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00074	-0.00078	-0.00077
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00115	0.00116	0.00116

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00089	-0.00090	-0.00089
	(A1 * A3 * B1 * C1 * X)	0.00076	0.00077	0.00077
	(A1 * A3 * B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * A3 * B1 * !C1 * !X)	0.00085	0.00086	0.00085
	(A1 * A3 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * A3 * !B1 * !X)	0.00085	0.00086	0.00085
	(A1 * !A3 * B1 * C1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * !A3 * B1 * C1 * X)	0.00070	0.00070	0.00070
	(A1 * !A3 * B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A3 * B1 * !C1 * !X)	0.00112	0.00111	0.00111
	(A1 * !A3 * !B1 * C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A3 * !B1 * C1 * !X)	0.00112	0.00112	0.00111
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A3 * !B1 * !C1 * !X)	0.00112	0.00112	0.00111
	(!A1 * A3 * B1 * C1 * X)	-0.00089	-0.00089	-0.00089
	(!A1 * A3 * B1 * C1 * X)	0.00109	0.00109	0.00109
	(!A1 * A3 * B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * A3 * B1 * !C1 * !X)	0.00112	0.00112	0.00111
	(!A1 * A3 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * A3 * !B1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00073	-0.00079	-0.00079
	(!A1 * !A3 * B1 * !C1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00076	-0.00081	-0.00080
	(!A1 * !A3 * !B1 * C1 * !X)	0.00115	0.00115	0.00114
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00076	-0.00081	-0.00080
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00115	0.00115	0.00114

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00168	-0.00170	-0.00169
	(A1 * A3 * B1 * C1 * X)	0.00142	0.00144	0.00143
	(A1 * A3 * B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * A3 * B1 * !C1 * !X)	0.00153	0.00155	0.00154
	(A1 * A3 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * A3 * !B1 * !X)	0.00154	0.00155	0.00154
	(A1 * !A3 * B1 * C1 * X)	-0.00167	-0.00167	-0.00165
	(A1 * !A3 * B1 * C1 * X)	0.00128	0.00128	0.00129
	(A1 * !A3 * B1 * !C1 * !X)	-0.00168	-0.00170	-0.00169
	(A1 * !A3 * B1 * !C1 * !X)	0.00195	0.00195	0.00194
	(A1 * !A3 * !B1 * C1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * !A3 * !B1 * C1 * !X)	0.00195	0.00195	0.00194
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * !A3 * !B1 * !C1 * !X)	0.00196	0.00195	0.00194
	(!A1 * A3 * B1 * C1 * X)	-0.00169	-0.00168	-0.00168
	(!A1 * A3 * B1 * C1 * X)	0.00195	0.00195	0.00195
	(!A1 * A3 * B1 * !C1 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * A3 * B1 * !C1 * !X)	0.00195	0.00194	0.00194
	(!A1 * A3 * !B1 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * A3 * !B1 * !X)	0.00195	0.00195	0.00194
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00145	-0.00156	-0.00155
	(!A1 * !A3 * B1 * !C1 * !X)	0.00199	0.00200	0.00199
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00150	-0.00159	-0.00158
	(!A1 * !A3 * !B1 * C1 * !X)	0.00199	0.00200	0.00199
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00151	-0.00159	-0.00158
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00199	0.00200	0.00199

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)**	0.00091	0.00090	0.00090
	(A2 * B1 * C1 * X)	-0.00057	-0.00057	-0.00056
	(A2 * B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(A2 * B1 * !C1 * !X)	-0.00098	-0.00100	-0.00100
	(A2 * !B1 * C1 * !X)	0.00080	0.00081	0.00080
	(A2 * !B1 * C1 * !X)	-0.00098	-0.00100	-0.00100
	(A2 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(A2 * !B1 * !C1 * !X)	-0.00097	-0.00100	-0.00100
	(A1 * !A2 * B1 * C1 * X)	0.00091	0.00091	0.00090
	(A1 * !A2 * B1 * C1 * X)	-0.00057	-0.00057	-0.00056
	(A1 * !A2 * B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * B1 * !C1 * !X)	-0.00092	-0.00095	-0.00095
	(A1 * !A2 * !B1 * C1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * C1 * !X)	-0.00092	-0.00096	-0.00095
	(A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00092	-0.00096	-0.00096
	(!A1 * !A2 * B1 * !C1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00101	-0.00102	-0.00102
	(!A1 * !A2 * !B1 * C1 * !X)	0.00076	0.00077	0.00077
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00102	-0.00102	-0.00102
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00076	0.00077	0.00077
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00102	-0.00102	-0.00102

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00100	0.00100	0.00100
	(A2 * B1 * C1 * X)	-0.00057	-0.00057	-0.00057
	(A2 * B1 * !C1 * !X)	0.00087	0.00087	0.00086
	(A2 * B1 * !C1 * !X)	-0.00107	-0.00108	-0.00108
	(A2 * !B1 * C1 * !X)	0.00087	0.00087	0.00086
	(A2 * !B1 * C1 * !X)	-0.00107	-0.00109	-0.00108
	(A2 * !B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(A2 * !B1 * !C1 * !X)	-0.00105	-0.00108	-0.00108
	(A1 * !A2 * B1 * C1 * X)	0.00100	0.00100	0.00100
	(A1 * !A2 * B1 * C1 * X)	-0.00057	-0.00057	-0.00057
	(A1 * !A2 * B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * B1 * !C1 * !X)	-0.00098	-0.00103	-0.00102
	(A1 * !A2 * !B1 * C1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * !B1 * C1 * !X)	-0.00098	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00103	-0.00103
	(!A1 * !A2 * B1 * !C1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * C1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00174	0.00172	0.00172
	(A2 * B1 * C1 * X)	-0.00113	-0.00112	-0.00111
	(A2 * B1 * !C1 * !X)	0.00149	0.00151	0.00150
	(A2 * B1 * !C1 * !X)	-0.00195	-0.00201	-0.00200
	(A2 * !B1 * C1 * !X)	0.00149	0.00151	0.00150
	(A2 * !B1 * C1 * !X)	-0.00195	-0.00201	-0.00200
	(A2 * !B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(A2 * !B1 * !C1 * !X)	-0.00195	-0.00201	-0.00200
	(A1 * !A2 * B1 * C1 * X)	0.00174	0.00172	0.00172
	(A1 * !A2 * B1 * C1 * X)	-0.00113	-0.00112	-0.00111
	(A1 * !A2 * B1 * !C1 * !X)	0.00149	0.00150	0.00150
	(A1 * !A2 * B1 * !C1 * !X)	-0.00183	-0.00191	-0.00190
	(A1 * !A2 * !B1 * C1 * !X)	0.00149	0.00150	0.00150
	(A1 * !A2 * !B1 * C1 * !X)	-0.00183	-0.00191	-0.00190
	(A1 * !A2 * !B1 * !C1 * !X)	0.00149	0.00150	0.00150
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00183	-0.00192	-0.00191
	(!A1 * !A2 * B1 * !C1 * !X)	0.00137	0.00138	0.00137
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00204	-0.00204	-0.00204
	(!A1 * !A2 * !B1 * C1 * !X)	0.00139	0.00141	0.00140
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00204	-0.00205	-0.00204
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00139	0.00140	0.00140
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00204	-0.00205	-0.00204

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)**	-0.00083	-0.00083	-0.00089
	(A2 * B1 * C1 * X)	0.00063	0.00063	0.00058
	(A2 * B1 * !C1 * !X)	-0.00080	-0.00080	-0.00080
	(A2 * B1 * !C1 * !X)	0.00100	0.00100	0.00100
	(A2 * !B1 * C1 * !X)	-0.00080	-0.00080	-0.00080
	(A2 * !B1 * C1 * !X)	0.00100	0.00100	0.00100
	(A2 * !B1 * !C1 * !X)	-0.00080	-0.00080	-0.00080
	(A2 * !B1 * !C1 * !X)	0.00101	0.00100	0.00100
	(A1 * !A2 * B1 * C1 * X)	-0.00077	-0.00077	-0.00088
	(A1 * !A2 * B1 * C1 * X)	0.00067	0.00067	0.00059
	(A1 * !A2 * B1 * !C1 * !X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * B1 * !C1 * !X)	0.00095	0.00095	0.00095
	(A1 * !A2 * !B1 * C1 * !X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * !B1 * C1 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !C1 * !X)	0.00096	0.00096	0.00096
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00070	-0.00076	-0.00075
	(!A1 * !A2 * B1 * !C1 * !X)	0.00101	0.00102	0.00102
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00074	-0.00077	-0.00077
	(!A1 * !A2 * !B1 * C1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00074	-0.00077	-0.00077
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00102	0.00102	0.00102

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00095	-0.00095	-0.00099
	(A2 * B1 * C1 * X)	0.00061	0.00061	0.00058
	(A2 * B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A2 * B1 * !C1 * !X)	0.00109	0.00108	0.00108
	(A2 * !B1 * C1 * !X)	-0.00086	-0.00086	-0.00086
	(A2 * !B1 * C1 * !X)	0.00109	0.00109	0.00108
	(A2 * !B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A2 * !B1 * !C1 * !X)	0.00108	0.00108	0.00108
	(A1 * !A2 * B1 * C1 * X)	-0.00088	-0.00088	-0.00097
	(A1 * !A2 * B1 * C1 * X)	0.00066	0.00065	0.00059
	(A1 * !A2 * B1 * !C1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * B1 * !C1 * !X)	0.00103	0.00103	0.00102
	(A1 * !A2 * !B1 * C1 * !X)	-0.00085	-0.00087	-0.00086
	(A1 * !A2 * !B1 * C1 * !X)	0.00102	0.00103	0.00103
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * !B1 * !C1 * !X)	0.00103	0.00103	0.00103
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00073	-0.00079	-0.00079
	(!A1 * !A2 * B1 * !C1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00076	-0.00080	-0.00080
	(!A1 * !A2 * !B1 * C1 * !X)	0.00112	0.00112	0.00111
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00080	-0.00080
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00112	0.00112	0.00111

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00156	-0.00157	-0.00169
	(A2 * B1 * C1 * X)	0.00126	0.00126	0.00115
	(A2 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00149
	(A2 * B1 * !C1 * !X)	0.00201	0.00201	0.00200
	(A2 * !B1 * C1 * !X)	-0.00148	-0.00150	-0.00149
	(A2 * !B1 * C1 * !X)	0.00199	0.00201	0.00200
	(A2 * !B1 * !C1 * !X)	-0.00149	-0.00150	-0.00149
	(A2 * !B1 * !C1 * !X)	0.00199	0.00201	0.00200
	(A1 * !A2 * B1 * C1 * X)	-0.00144	-0.00145	-0.00167
	(A1 * !A2 * B1 * C1 * X)	0.00134	0.00133	0.00116
	(A1 * !A2 * B1 * !C1 * !X)	-0.00148	-0.00150	-0.00149
	(A1 * !A2 * B1 * !C1 * !X)	0.00189	0.00191	0.00190
	(A1 * !A2 * !B1 * C1 * !X)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * !B1 * C1 * !X)	0.00189	0.00191	0.00190
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * !B1 * !C1 * !X)	0.00190	0.00192	0.00191
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00128	-0.00138	-0.00137
	(!A1 * !A2 * B1 * !C1 * !X)	0.00204	0.00206	0.00205
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00133	-0.00141	-0.00140
	(!A1 * !A2 * !B1 * C1 * !X)	0.00205	0.00206	0.00205
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00133	-0.00140	-0.00140
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00205	0.00206	0.00205

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00072	0.00073	0.00072
	(A3 * !C1 * !X)	-0.00103	-0.00104	-0.00103
	(A2 * !A3 * !C1 * !X)	0.00072	0.00073	0.00072
	(A2 * !A3 * !C1 * !X)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * !A3 * !C1 * !X)	0.00072	0.00072	0.00072
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00104	-0.00104	-0.00104
	(!A1 * !A2 * !A3 * C1 * !X)	0.00042	0.00042	0.00039
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00104	-0.00104	-0.00103
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00104	-0.00104	-0.00104
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00080	0.00080	0.00080
	(A3 * !C1 * !X)	-0.00107	-0.00108	-0.00107
	(A2 * !A3 * !C1 * !X)	0.00080	0.00080	0.00080
	(A2 * !A3 * !C1 * !X)	-0.00108	-0.00108	-0.00107
	(A1 * !A2 * !A3 * !C1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00108	-0.00108	-0.00107
	(!A1 * !A2 * !A3 * C1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00109	-0.00110	-0.00108
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00048	0.00047	0.00047
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00110	-0.00110	-0.00110
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00157	0.00158	0.00158
	(A3 * !C1 * !X)	-0.00231	-0.00232	-0.00232
	(A2 * !A3 * !C1 * !X)	0.00157	0.00158	0.00158
	(A2 * !A3 * !C1 * !X)	-0.00231	-0.00232	-0.00232
	(A1 * !A2 * !A3 * !C1 * !X)	0.00157	0.00159	0.00158
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00231	-0.00233	-0.00232
	(!A1 * !A2 * !A3 * C1 * !X)	0.00088	0.00088	0.00087
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00233	-0.00234	-0.00231
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00104	0.00104	0.00104
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00233	-0.00234	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00068	-0.00073	-0.00072
	(A3 * !C1 * !X)	0.00107	0.00106	0.00104
	(A2 * !A3 * !C1 * !X)	-0.00068	-0.00072	-0.00072
	(A2 * !A3 * !C1 * !X)	0.00107	0.00105	0.00104
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00067	-0.00072	-0.00072
	(A1 * !A2 * !A3 * !C1 * !X)	0.00107	0.00105	0.00104
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00036	-0.00036	-0.00037
	(!A1 * !A2 * !A3 * C1 * !X)	0.00106	0.00107	0.00104
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00109	0.00107	0.00104
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00076	-0.00080	-0.00080
	(A3 * !C1 * !X)	0.00111	0.00109	0.00108
	(A2 * !A3 * !C1 * !X)	-0.00075	-0.00080	-0.00080
	(A2 * !A3 * !C1 * !X)	0.00111	0.00109	0.00108
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00074	-0.00081	-0.00080
	(A1 * !A2 * !A3 * !C1 * !X)	0.00112	0.00109	0.00108
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00035	-0.00036	-0.00037
	(!A1 * !A2 * !A3 * C1 * !X)	0.00111	0.00112	0.00110
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00048	-0.00047	-0.00047
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00117	0.00114	0.00111

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00151	-0.00158	-0.00158
	(A3 * !C1 * !X)	0.00238	0.00236	0.00233
	(A2 * !A3 * !C1 * !X)	-0.00149	-0.00158	-0.00158
	(A2 * !A3 * !C1 * !X)	0.00237	0.00235	0.00233
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00149	-0.00159	-0.00158
	(A1 * !A2 * !A3 * !C1 * !X)	0.00240	0.00236	0.00233
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00080	-0.00081	-0.00082
	(!A1 * !A2 * !A3 * C1 * !X)	0.00239	0.00240	0.00235
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00104	-0.00104	-0.00104
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00243	0.00240	0.00234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00032	0.00032	0.00031
	(A3 * !B1 * !X)	-0.00121	-0.00122	-0.00123
	(A2 * !A3 * !B1 * !X)	0.00032	0.00032	0.00031
	(A2 * !A3 * !B1 * !X)	-0.00121	-0.00122	-0.00123
	(!A2 * !A3 * !B1 * !X)	0.00032	0.00032	0.00031
	(!A2 * !A3 * !B1 * !X)	-0.00121	-0.00122	-0.00123
	(!A1 * !A2 * !A3 * B1 * !X)	0.00039	0.00039	0.00033
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00112	-0.00112	-0.00122
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00036	0.00036	0.00035
	(A3 * !B1 * !X)	-0.00122	-0.00123	-0.00125
	(A2 * !A3 * !B1 * !X)	0.00036	0.00036	0.00035
	(A2 * !A3 * !B1 * !X)	-0.00123	-0.00123	-0.00125
	(!A2 * !A3 * !B1 * !X)	0.00036	0.00036	0.00035
	(!A2 * !A3 * !B1 * !X)	-0.00122	-0.00123	-0.00125
	(!A1 * !A2 * !A3 * B1 * !X)	0.00039	0.00039	0.00035
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00115	-0.00116	-0.00124
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00066	0.00066	0.00062
	(A3 * !B1 * !X)	-0.00228	-0.00230	-0.00234
	(A2 * !A3 * !B1 * !X)	0.00066	0.00066	0.00062
	(A2 * !A3 * !B1 * !X)	-0.00228	-0.00230	-0.00234
	(!A2 * !A3 * !B1 * !X)	0.00066	0.00066	0.00062
	(!A2 * !A3 * !B1 * !X)	-0.00228	-0.00229	-0.00234
	(!A1 * !A2 * !A3 * B1 * !X)	0.00072	0.00072	0.00061
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00212	-0.00213	-0.00231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(A3 * !B1 * !X)	0.00123	0.00124	0.00123
	(A2 * !A3 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(A2 * !A3 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A2 * !A3 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !A3 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00030	-0.00030	-0.00029
	(!A1 * !A2 * !A3 * B1 * !X)	0.00123	0.00124	0.00123
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A3 * !B1 * !X)	0.00124	0.00126	0.00125
	(A2 * !A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A2 * !A3 * !B1 * !X)	0.00124	0.00126	0.00125
	(!A2 * !A3 * !B1 * !X)	-0.00033	-0.00034	-0.00034
	(!A2 * !A3 * !B1 * !X)	0.00124	0.00125	0.00125
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * !A3 * B1 * !X)	0.00125	0.00125	0.00125
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00061	-0.00061	-0.00060
	(A3 * !B1 * !X)	0.00236	0.00236	0.00235
	(A2 * !A3 * !B1 * !X)	-0.00061	-0.00061	-0.00060
	(A2 * !A3 * !B1 * !X)	0.00236	0.00236	0.00235
	(!A2 * !A3 * !B1 * !X)	-0.00061	-0.00060	-0.00060
	(!A2 * !A3 * !B1 * !X)	0.00236	0.00236	0.00235
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00059	-0.00058	-0.00057
	(!A1 * !A2 * !A3 * B1 * !X)	0.00236	0.00235	0.00235

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00250	0.00295	0.00289	0.00262	0.19832
sky130_fd_sc_hs__o31ai_2	0.00510	0.00500	0.00529	0.00522	0.35409
sky130_fd_sc_hs__o31ai_4	0.00978	0.00981	0.01028	0.00769	0.67782

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31ai_1	0.00000	0.01243	0.03622
sky130_fd_sc_hs__o31ai_2	0.00000	0.02485	0.07245
sky130_fd_sc_hs__o31ai_4	0.00000	0.03386	0.10867

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)	0.32705	1.65015	11.96030
	A2->Y (FR)	0.31722	1.64403	12.30350
	A3->Y (FR)	0.25585	1.54191	11.90750
	B1->Y (FR)	0.06094	0.78758	7.31897
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.33676	1.46624	11.74520
	A2->Y (FR)	0.30384	1.43130	12.05490
	A3->Y (FR)	0.24130	1.33593	11.75060
	B1->Y (FR)	0.05355	0.72366	7.23017
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.30981	1.28092	11.70680
	A2->Y (FR)	0.28010	1.25115	12.06410
	A3->Y (FR)	0.21296	1.15456	11.78010
	B1->Y (FR)	0.06971	0.82427	9.03268

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.05427	0.48975	3.99932
	A2->Y (RF)	0.05617	0.48358	3.98307
	A3->Y (RF)	0.04761	0.46734	3.94578
	B1->Y (RF)	0.04549	0.51987	4.34275
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.05519	0.45479	3.97134
	A2->Y (RF)	0.05450	0.44254	3.94198
	A3->Y (RF)	0.04747	0.42711	3.91476
	B1->Y (RF)	0.04203	0.47724	4.34765
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.05480	0.41314	3.94874
	A2->Y (RF)	0.05280	0.39808	3.90168
	A3->Y (RF)	0.04264	0.37351	3.80997
	B1->Y (RF)	0.04121	0.46520	4.70118

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00048	0.00040	0.00039
	A1	0.00493	0.00484	0.00483
	A2	0.00052	0.00039	0.00039
	A2	0.00463	0.00451	0.00451
	A3	0.00051	0.00039	0.00062
	A3	0.00406	0.00395	0.00417
	B1	-0.00018	-0.00022	0.00005
	B1	0.00352	0.00347	0.00372
sky130_fd_sc_hs__o31ai_2	A1	0.00094	0.00071	0.00070
	A1	0.00990	0.00969	0.00964
	A2	0.00097	0.00074	0.00076
	A2	0.00872	0.00851	0.00851
	A3	0.00092	0.00066	0.00118
	A3	0.00768	0.00742	0.00793
	B1	-0.00092	-0.00098	-0.00037
	B1	0.00634	0.00624	0.00683
sky130_fd_sc_hs__o31ai_4	A1	0.00144	0.00105	0.00105
	A1	0.01883	0.01843	0.01839
	A2	0.00146	0.00104	0.00111
	A2	0.01661	0.01619	0.01625
	A3	0.00136	0.00089	0.00197
	A3	0.01446	0.01402	0.01505
	B1	-0.00173	-0.00191	-0.00117
	B1	0.01031	0.00994	0.01083

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00589	0.00580	0.00578
	A1	0.00143	0.00133	0.00132
	A2	0.00509	0.00499	0.00498
	A2	0.00091	0.00082	0.00081
	A3	0.00396	0.00393	0.00396
	A3	0.00031	0.00027	0.00029
	B1	0.00502	0.00494	0.00499
	B1	0.00143	0.00133	0.00137
sky130_fd_sc_hs__o31ai_2	A1	0.01204	0.01181	0.01175
	A1	0.00307	0.00282	0.00278
	A2	0.00965	0.00949	0.00954
	A2	0.00176	0.00159	0.00162
	A3	0.00752	0.00745	0.00755
	A3	0.00054	0.00046	0.00054
	B1	0.01006	0.00989	0.00992
	B1	0.00309	0.00288	0.00298
sky130_fd_sc_hs__o31ai_4	A1	0.02224	0.02175	0.02175
	A1	0.00487	0.00437	0.00434
	A2	0.01775	0.01735	0.01747
	A2	0.00235	0.00194	0.00207
	A3	0.01330	0.01313	0.01347
	A3	-0.00020	-0.00040	-0.00007
	B1	0.01788	0.01769	0.01782
	B1	0.00637	0.00617	0.00620

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)**	0.00092	0.00093	0.00092
	(A2 * A3 * B1 * !Y)	-0.00102	-0.00105	-0.00104
	(A2 * !B1 * Y)	0.00092	0.00093	0.00092
	(A2 * !B1 * Y)	-0.00102	-0.00105	-0.00104
	(A2 * !A3 * B1 * !Y)	0.00093	0.00093	0.00092
	(A2 * !A3 * B1 * !Y)	-0.00101	-0.00105	-0.00104
	(!A2 * A3 * B1 * !Y)	0.00093	0.00092	0.00092
	(!A2 * A3 * B1 * !Y)	-0.00094	-0.00101	-0.00100
	(!A2 * A3 * !B1 * Y)	0.00092	0.00092	0.00092
	(!A2 * A3 * !B1 * Y)	-0.00095	-0.00101	-0.00100
	(!A2 * !A3 * !B1 * Y)	0.00087	0.00087	0.00087
	(!A2 * !A3 * !B1 * Y)	-0.00107	-0.00107	-0.00107
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00187	0.00187	0.00186
	(A2 * A3 * B1 * !Y)	-0.00208	-0.00216	-0.00216
	(A2 * !B1 * Y)	0.00186	0.00187	0.00186
	(A2 * !B1 * Y)	-0.00210	-0.00217	-0.00216
	(A2 * !A3 * B1 * !Y)	0.00187	0.00187	0.00186
	(A2 * !A3 * B1 * !Y)	-0.00207	-0.00216	-0.00216
	(!A2 * A3 * B1 * !Y)	0.00188	0.00187	0.00186
	(!A2 * A3 * B1 * !Y)	-0.00194	-0.00208	-0.00206
	(!A2 * A3 * !B1 * Y)	0.00186	0.00187	0.00186
	(!A2 * A3 * !B1 * Y)	-0.00196	-0.00208	-0.00207
	(!A2 * !A3 * !B1 * Y)	0.00172	0.00173	0.00171
	(!A2 * !A3 * !B1 * Y)	-0.00222	-0.00224	-0.00222

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00360	0.00361	0.00358
	(A2 * A3 * B1 * !Y)	-0.00414	-0.00428	-0.00427
	(A2 * !B1 * Y)	0.00359	0.00361	0.00358
	(A2 * !B1 * Y)	-0.00416	-0.00429	-0.00428
	(A2 * !A3 * B1 * !Y)	0.00361	0.00361	0.00358
	(A2 * !A3 * B1 * !Y)	-0.00411	-0.00428	-0.00427
	(!A2 * A3 * B1 * !Y)	0.00362	0.00361	0.00358
	(!A2 * A3 * B1 * !Y)	-0.00386	-0.00412	-0.00408
	(!A2 * A3 * !B1 * Y)	0.00358	0.00360	0.00358
	(!A2 * A3 * !B1 * Y)	-0.00389	-0.00413	-0.00409
	(!A2 * !A3 * !B1 * Y)	0.00331	0.00332	0.00331
	(!A2 * !A3 * !B1 * Y)	-0.00439	-0.00440	-0.00440

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)**	-0.00092	-0.00092	-0.00092
	(A2 * A3 * B1 * !Y)	0.00105	0.00105	0.00104
	(A2 * !B1 * Y)	-0.00092	-0.00092	-0.00092
	(A2 * !B1 * Y)	0.00105	0.00105	0.00104
	(A2 * !A3 * B1 * !Y)	-0.00092	-0.00092	-0.00092
	(A2 * !A3 * B1 * !Y)	0.00105	0.00105	0.00104
	(!A2 * A3 * B1 * !Y)	-0.00092	-0.00092	-0.00092
	(!A2 * A3 * B1 * !Y)	0.00100	0.00101	0.00100
	(!A2 * A3 * !B1 * Y)	-0.00092	-0.00092	-0.00092
	(!A2 * A3 * !B1 * Y)	0.00100	0.00101	0.00100
	(!A2 * !A3 * !B1 * Y)	-0.00083	-0.00087	-0.00087
	(!A2 * !A3 * !B1 * Y)	0.00107	0.00107	0.00107

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00186	-0.00186	-0.00186
	(A2 * A3 * B1 * !Y)	0.00216	0.00216	0.00216
	(A2 * !B1 * Y)	-0.00186	-0.00186	-0.00185
	(A2 * !B1 * Y)	0.00216	0.00217	0.00216
	(A2 * !A3 * B1 * !Y)	-0.00186	-0.00186	-0.00186
	(A2 * !A3 * B1 * !Y)	0.00216	0.00216	0.00216
	(!A2 * A3 * B1 * !Y)	-0.00185	-0.00186	-0.00186
	(!A2 * A3 * B1 * !Y)	0.00205	0.00208	0.00206
	(!A2 * A3 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(!A2 * A3 * !B1 * Y)	0.00206	0.00208	0.00207
	(!A2 * !A3 * !B1 * Y)	-0.00161	-0.00173	-0.00171
	(!A2 * !A3 * !B1 * Y)	0.00222	0.00225	0.00223
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00359	-0.00358	-0.00358
	(A2 * A3 * B1 * !Y)	0.00428	0.00428	0.00427
	(A2 * !B1 * Y)	-0.00356	-0.00358	-0.00357
	(A2 * !B1 * Y)	0.00426	0.00429	0.00428
	(A2 * !A3 * B1 * !Y)	-0.00358	-0.00358	-0.00358
	(A2 * !A3 * B1 * !Y)	0.00428	0.00428	0.00427
	(!A2 * A3 * B1 * !Y)	-0.00357	-0.00360	-0.00358
	(!A2 * A3 * B1 * !Y)	0.00407	0.00412	0.00408
	(!A2 * A3 * !B1 * Y)	-0.00357	-0.00359	-0.00357
	(!A2 * A3 * !B1 * Y)	0.00409	0.00413	0.00409
	(!A2 * !A3 * !B1 * Y)	-0.00312	-0.00332	-0.00331
	(!A2 * !A3 * !B1 * Y)	0.00441	0.00445	0.00441

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)**	0.00108	0.00109	0.00106
	(A1 * A3 * B1 * !Y)	-0.00076	-0.00077	-0.00077
	(A1 * A3 * !B1 * Y)	0.00091	0.00092	0.00091
	(A1 * A3 * !B1 * Y)	-0.00096	-0.00097	-0.00096
	(A1 * !A3 * B1 * !Y)	0.00106	0.00106	0.00105
	(A1 * !A3 * B1 * !Y)	-0.00069	-0.00068	-0.00068
	(A1 * !A3 * !B1 * Y)	0.00092	0.00092	0.00091
	(A1 * !A3 * !B1 * Y)	-0.00121	-0.00122	-0.00122
	(!A1 * A3 * B1 * !Y)	0.00118	0.00107	0.00105
	(!A1 * A3 * B1 * !Y)	-0.00095	-0.00109	-0.00109
	(!A1 * A3 * !B1 * Y)	0.00092	0.00092	0.00091
	(!A1 * A3 * !B1 * Y)	-0.00121	-0.00123	-0.00122
	(!A1 * !A3 * !B1 * Y)	0.00085	0.00084	0.00084
	(!A1 * !A3 * !B1 * Y)	-0.00125	-0.00124	-0.00125
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00189	0.00189	0.00185
	(A1 * A3 * B1 * !Y)	-0.00150	-0.00151	-0.00150
	(A1 * A3 * !B1 * Y)	0.00180	0.00181	0.00180
	(A1 * A3 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * !A3 * B1 * !Y)	0.00186	0.00185	0.00183
	(A1 * !A3 * B1 * !Y)	-0.00133	-0.00132	-0.00131
	(A1 * !A3 * !B1 * Y)	0.00179	0.00181	0.00180
	(A1 * !A3 * !B1 * Y)	-0.00208	-0.00215	-0.00214
	(!A1 * A3 * B1 * !Y)	0.00207	0.00185	0.00182
	(!A1 * A3 * B1 * !Y)	-0.00189	-0.00215	-0.00214
	(!A1 * A3 * !B1 * Y)	0.00181	0.00182	0.00180
	(!A1 * A3 * !B1 * Y)	-0.00213	-0.00218	-0.00216
	(!A1 * !A3 * !B1 * Y)	0.00166	0.00168	0.00166
	(!A1 * !A3 * !B1 * Y)	-0.00222	-0.00222	-0.00221

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00373	0.00376	0.00367
	(A1 * A3 * B1 * !Y)	-0.00298	-0.00302	-0.00299
	(A1 * A3 * !B1 * Y)	0.00359	0.00359	0.00356
	(A1 * A3 * !B1 * Y)	-0.00328	-0.00331	-0.00328
	(A1 * !A3 * B1 * !Y)	0.00364	0.00366	0.00363
	(A1 * !A3 * B1 * !Y)	-0.00262	-0.00263	-0.00262
	(A1 * !A3 * !B1 * Y)	0.00357	0.00358	0.00356
	(A1 * !A3 * !B1 * Y)	-0.00419	-0.00427	-0.00427
	(!A1 * A3 * B1 * !Y)	0.00412	0.00366	0.00362
	(!A1 * A3 * B1 * !Y)	-0.00370	-0.00427	-0.00427
	(!A1 * A3 * !B1 * Y)	0.00356	0.00357	0.00356
	(!A1 * A3 * !B1 * Y)	-0.00425	-0.00433	-0.00432
	(!A1 * !A3 * !B1 * Y)	0.00331	0.00331	0.00330
	(!A1 * !A3 * !B1 * Y)	-0.00443	-0.00443	-0.00443

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)**	-0.00105	-0.00105	-0.00105
	(A1 * A3 * B1 * !Y)	0.00076	0.00077	0.00077
	(A1 * A3 * !B1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * A3 * !B1 * Y)	0.00096	0.00097	0.00096
	(A1 * !A3 * B1 * !Y)	-0.00104	-0.00104	-0.00103
	(A1 * !A3 * B1 * !Y)	0.00070	0.00070	0.00070
	(A1 * !A3 * !B1 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * !A3 * !B1 * Y)	0.00122	0.00122	0.00122
	(!A1 * A3 * B1 * !Y)	-0.00105	-0.00105	-0.00104
	(!A1 * A3 * B1 * !Y)	0.00109	0.00109	0.00109
	(!A1 * A3 * !B1 * Y)	-0.00092	-0.00091	-0.00091
	(!A1 * A3 * !B1 * Y)	0.00123	0.00123	0.00122
	(!A1 * !A3 * !B1 * Y)	-0.00080	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * Y)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00183	-0.00185	-0.00184
	(A1 * A3 * B1 * !Y)	0.00150	0.00151	0.00150
	(A1 * A3 * !B1 * Y)	-0.00179	-0.00180	-0.00179
	(A1 * A3 * !B1 * Y)	0.00164	0.00165	0.00164
	(A1 * !A3 * B1 * !Y)	-0.00179	-0.00180	-0.00178
	(A1 * !A3 * B1 * !Y)	0.00137	0.00137	0.00137
	(A1 * !A3 * !B1 * Y)	-0.00179	-0.00180	-0.00179
	(A1 * !A3 * !B1 * Y)	0.00213	0.00215	0.00214
	(!A1 * A3 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A3 * B1 * !Y)	0.00213	0.00215	0.00214
	(!A1 * A3 * !B1 * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * A3 * !B1 * Y)	0.00215	0.00218	0.00216
	(!A1 * !A3 * !B1 * Y)	-0.00158	-0.00168	-0.00166
	(!A1 * !A3 * !B1 * Y)	0.00223	0.00224	0.00222

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00363	-0.00366	-0.00364
	(A1 * A3 * B1 * !Y)	0.00298	0.00302	0.00299
	(A1 * A3 * !B1 * Y)	-0.00355	-0.00357	-0.00355
	(A1 * A3 * !B1 * Y)	0.00328	0.00331	0.00328
	(A1 * !A3 * B1 * !Y)	-0.00356	-0.00357	-0.00354
	(A1 * !A3 * B1 * !Y)	0.00273	0.00273	0.00273
	(A1 * !A3 * !B1 * Y)	-0.00354	-0.00355	-0.00355
	(A1 * !A3 * !B1 * Y)	0.00425	0.00427	0.00427
	(!A1 * A3 * B1 * !Y)	-0.00360	-0.00361	-0.00359
	(!A1 * A3 * B1 * !Y)	0.00425	0.00427	0.00427
	(!A1 * A3 * !B1 * Y)	-0.00354	-0.00355	-0.00355
	(!A1 * A3 * !B1 * Y)	0.00431	0.00433	0.00432
	(!A1 * !A3 * !B1 * Y)	-0.00310	-0.00331	-0.00330
	(!A1 * !A3 * !B1 * Y)	0.00443	0.00448	0.00443

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00113	0.00113	0.00113
	(A2 * B1 * !Y)	-0.00058	-0.00058	-0.00058
	(A2 * !B1 * Y)	0.00088	0.00088	0.00088
	(A2 * !B1 * Y)	-0.00119	-0.00121	-0.00121
	(A1 * !A2 * B1 * !Y)	0.00112	0.00113	0.00113
	(A1 * !A2 * B1 * !Y)	-0.00057	-0.00058	-0.00057
	(A1 * !A2 * !B1 * Y)	0.00087	0.00088	0.00087
	(A1 * !A2 * !B1 * Y)	-0.00109	-0.00115	-0.00115
	(!A1 * !A2 * !B1 * Y)	0.00082	0.00082	0.00081
	(!A1 * !A2 * !B1 * Y)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00211	0.00212	0.00211
	(A2 * B1 * !Y)	-0.00115	-0.00115	-0.00115
	(A2 * !B1 * Y)	0.00175	0.00176	0.00176
	(A2 * !B1 * Y)	-0.00220	-0.00226	-0.00225
	(A1 * !A2 * B1 * !Y)	0.00211	0.00212	0.00211
	(A1 * !A2 * B1 * !Y)	-0.00115	-0.00115	-0.00114
	(A1 * !A2 * !B1 * Y)	0.00175	0.00177	0.00175
	(A1 * !A2 * !B1 * Y)	-0.00205	-0.00215	-0.00213
	(!A1 * !A2 * !B1 * Y)	0.00164	0.00164	0.00164
	(!A1 * !A2 * !B1 * Y)	-0.00231	-0.00231	-0.00231
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00410	0.00414	0.00412
	(A2 * B1 * !Y)	-0.00227	-0.00229	-0.00228
	(A2 * !B1 * Y)	0.00344	0.00347	0.00344
	(A2 * !B1 * Y)	-0.00434	-0.00448	-0.00446
	(A1 * !A2 * B1 * !Y)	0.00411	0.00415	0.00412
	(A1 * !A2 * B1 * !Y)	-0.00227	-0.00229	-0.00227
	(A1 * !A2 * !B1 * Y)	0.00346	0.00348	0.00344
	(A1 * !A2 * !B1 * Y)	-0.00404	-0.00420	-0.00418
	(!A1 * !A2 * !B1 * Y)	0.00322	0.00324	0.00321
	(!A1 * !A2 * !B1 * Y)	-0.00458	-0.00459	-0.00457

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00108	-0.00108	-0.00112
	(A2 * B1 * !Y)	0.00063	0.00063	0.00059
	(A2 * !B1 * Y)	-0.00087	-0.00088	-0.00087
	(A2 * !B1 * Y)	0.00121	0.00121	0.00121
	(A1 * !A2 * B1 * !Y)	-0.00101	-0.00102	-0.00111
	(A1 * !A2 * B1 * !Y)	0.00066	0.00066	0.00059
	(A1 * !A2 * !B1 * Y)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * !B1 * Y)	0.00115	0.00115	0.00115
	(!A1 * !A2 * !B1 * Y)	-0.00078	-0.00082	-0.00081
	(!A1 * !A2 * !B1 * Y)	0.00124	0.00124	0.00123
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00198	-0.00201	-0.00209
	(A2 * B1 * !Y)	0.00125	0.00125	0.00118
	(A2 * !B1 * Y)	-0.00175	-0.00175	-0.00175
	(A2 * !B1 * Y)	0.00224	0.00226	0.00225
	(A1 * !A2 * B1 * !Y)	-0.00181	-0.00183	-0.00205
	(A1 * !A2 * B1 * !Y)	0.00135	0.00136	0.00119
	(A1 * !A2 * !B1 * Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A2 * !B1 * Y)	0.00213	0.00215	0.00213
	(!A1 * !A2 * !B1 * Y)	-0.00155	-0.00164	-0.00164
	(!A1 * !A2 * !B1 * Y)	0.00232	0.00233	0.00231
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00388	-0.00392	-0.00409
	(A2 * B1 * !Y)	0.00249	0.00249	0.00234
	(A2 * !B1 * Y)	-0.00343	-0.00345	-0.00343
	(A2 * !B1 * Y)	0.00445	0.00448	0.00446
	(A1 * !A2 * B1 * !Y)	-0.00355	-0.00359	-0.00401
	(A1 * !A2 * B1 * !Y)	0.00269	0.00270	0.00237
	(A1 * !A2 * !B1 * Y)	-0.00343	-0.00345	-0.00343
	(A1 * !A2 * !B1 * Y)	0.00418	0.00420	0.00418
	(!A1 * !A2 * !B1 * Y)	-0.00303	-0.00324	-0.00321
	(!A1 * !A2 * !B1 * Y)	0.00458	0.00463	0.00458

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)	0.00038	0.00038	0.00035
	(!A1 * !A2 * !A3 * Y)	-0.00124	-0.00125	-0.00130
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00074	0.00074	0.00067
	(!A1 * !A2 * !A3 * Y)	-0.00245	-0.00246	-0.00259
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00133	0.00132	0.00120
	(!A1 * !A2 * !A3 * Y)	-0.00283	-0.00283	-0.00308

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)	-0.00033	-0.00034	-0.00033
	(!A1 * !A2 * !A3 * Y)	0.00130	0.00131	0.00130
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00065	-0.00065	-0.00064
	(!A1 * !A2 * !A3 * Y)	0.00261	0.00263	0.00261
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00117	-0.00116	-0.00115
	(!A1 * !A2 * !A3 * Y)	0.00312	0.00313	0.00311

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00247	0.00242	0.00242	0.00224	0.63254
sky130_fd_sc_hs__o31a_2	0.00262	0.00254	0.00257	0.00269	1.16744
sky130_fd_sc_hs__o31a_4	0.00445	0.00477	0.00475	0.00472	2.45017

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.05648	0.13149
sky130_fd_sc_hs__o31a_2	0.00000	0.05021	0.09540
sky130_fd_sc_hs__o31a_4	0.00000	0.10175	0.19080

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)	0.13579	0.91830	7.66844
	A2->X (RR)	0.13278	0.90642	7.58217
	A3->X (RR)	0.12009	0.88048	7.47210
	B1->X (RR)	0.12429	0.90014	7.48347
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.13996	0.82443	7.79525
	A2->X (RR)	0.13781	0.81566	7.73084
	A3->X (RR)	0.12463	0.79445	7.64129
	B1->X (RR)	0.12947	0.82063	7.64236
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.14633	0.73419	7.86105
	A2->X (RR)	0.14081	0.71920	7.78105
	A3->X (RR)	0.12840	0.69873	7.68395
	B1->X (RR)	0.13467	0.73148	7.69905

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.45254	1.08781	5.52391
	A2->X (FF)	0.42578	1.06680	5.52749
	A3->X (FF)	0.36784	0.97622	5.04486
	B1->X (FF)	0.13090	0.73869	4.65516
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.58471	1.21833	5.82640
	A2->X (FF)	0.55703	1.19887	5.89747
	A3->X (FF)	0.49903	1.09915	5.44088
	B1->X (FF)	0.14490	0.74360	4.83843
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.57397	1.18222	5.99562
	A2->X (FF)	0.54726	1.15673	6.02026
	A3->X (FF)	0.47063	1.03846	5.52936
	B1->X (FF)	0.13463	0.70133	5.00324

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00715	0.00705	0.00722
	A1	0.00312	0.00303	0.00327
	A2	0.00624	0.00621	0.00646
	A2	0.00270	0.00267	0.00299
	A3	0.00527	0.00521	0.00571
	A3	0.00214	0.00208	0.00260
	B1	0.00630	0.00621	0.00744
	B1	0.00325	0.00316	0.00440
sky130_fd_sc_hs__o31a_2	A1	0.00901	0.00909	0.00924
	A1	0.00473	0.00482	0.00510
	A2	0.00806	0.00823	0.00846
	A2	0.00429	0.00447	0.00483
	A3	0.00711	0.00725	0.00762
	A3	0.00372	0.00387	0.00437
	B1	0.00815	0.00819	0.00903
	B1	0.00470	0.00474	0.00572
sky130_fd_sc_hs__o31a_4	A1	0.01709	0.01748	0.01810
	A1	0.00930	0.00970	0.01058
	A2	0.01552	0.01590	0.01657
	A2	0.00830	0.00869	0.00962
	A3	0.01293	0.01326	0.01447
	A3	0.00680	0.00715	0.00863
	B1	0.01553	0.01575	0.01770
	B1	0.00928	0.00951	0.01172

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00247	0.00239	0.00269
	A1	0.00645	0.00641	0.00650
	A2	0.00247	0.00234	0.00294
	A2	0.00593	0.00594	0.00623
	A3	0.00247	0.00252	0.00399
	A3	0.00550	0.00554	0.00675
	B1	0.00190	0.00197	0.00409
	B1	0.00503	0.00507	0.00708
sky130_fd_sc_hs__o31a_2	A1	0.00388	0.00396	0.00469
	A1	0.00810	0.00819	0.00827
	A2	0.00390	0.00403	0.00507
	A2	0.00757	0.00770	0.00799
	A3	0.00388	0.00397	0.00527
	A3	0.00716	0.00731	0.00849
	B1	0.00319	0.00335	0.00516
	B1	0.00669	0.00684	0.00842
sky130_fd_sc_hs__o31a_4	A1	0.00768	0.00822	0.00875
	A1	0.01541	0.01597	0.01631
	A2	0.00741	0.00790	0.00883
	A2	0.01449	0.01502	0.01566
	A3	0.00764	0.00786	0.01173
	A3	0.01355	0.01399	0.01662
	B1	0.00638	0.00693	0.01056
	B1	0.01280	0.01313	0.01626

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)**	0.00089	0.00089	0.00089
	(A2 * A3 * B1 * X)	-0.00091	-0.00093	-0.00093
	(A2 * !B1 * !X)	0.00076	0.00076	0.00076
	(A2 * !B1 * !X)	-0.00104	-0.00106	-0.00106
	(A2 * !A3 * B1 * X)	0.00089	0.00089	0.00089
	(A2 * !A3 * B1 * X)	-0.00090	-0.00093	-0.00093
	(!A2 * A3 * B1 * X)	0.00089	0.00089	0.00089
	(!A2 * A3 * B1 * X)	-0.00084	-0.00090	-0.00089
	(!A2 * A3 * !B1 * !X)	0.00075	0.00076	0.00076
	(!A2 * A3 * !B1 * !X)	-0.00097	-0.00103	-0.00102
	(!A2 * !A3 * !B1 * !X)	0.00071	0.00071	0.00071
	(!A2 * !A3 * !B1 * !X)	-0.00108	-0.00108	-0.00108
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00098	0.00098	0.00098
	(A2 * A3 * B1 * X)	-0.00095	-0.00098	-0.00097
	(A2 * !B1 * !X)	0.00091	0.00091	0.00091
	(A2 * !B1 * !X)	-0.00102	-0.00105	-0.00104
	(A2 * !A3 * B1 * X)	0.00098	0.00098	0.00098
	(A2 * !A3 * B1 * X)	-0.00094	-0.00098	-0.00098
	(!A2 * A3 * B1 * X)	0.00098	0.00098	0.00098
	(!A2 * A3 * B1 * X)	-0.00088	-0.00094	-0.00094
	(!A2 * A3 * !B1 * !X)	0.00091	0.00091	0.00091
	(!A2 * A3 * !B1 * !X)	-0.00096	-0.00101	-0.00101
	(!A2 * !A3 * !B1 * !X)	0.00085	0.00086	0.00085
	(!A2 * !A3 * !B1 * !X)	-0.00106	-0.00106	-0.00106

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00150	0.00150	0.00149
	(A2 * A3 * B1 * X)	-0.00190	-0.00196	-0.00195
	(A2 * !B1 * !X)	0.00149	0.00150	0.00148
	(A2 * !B1 * !X)	-0.00190	-0.00196	-0.00195
	(A2 * !A3 * B1 * X)	0.00151	0.00150	0.00149
	(A2 * !A3 * B1 * X)	-0.00186	-0.00195	-0.00194
	(!A2 * A3 * B1 * X)	0.00151	0.00150	0.00149
	(!A2 * A3 * B1 * X)	-0.00173	-0.00187	-0.00186
	(!A2 * A3 * !B1 * !X)	0.00149	0.00149	0.00148
	(!A2 * A3 * !B1 * !X)	-0.00176	-0.00187	-0.00186
	(!A2 * !A3 * !B1 * !X)	0.00137	0.00139	0.00138
	(!A2 * !A3 * !B1 * !X)	-0.00200	-0.00202	-0.00201

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)**	-0.00089	-0.00089	-0.00088
	(A2 * A3 * B1 * X)	0.00094	0.00094	0.00093
	(A2 * !B1 * !X)	-0.00076	-0.00076	-0.00075
	(A2 * !B1 * !X)	0.00107	0.00107	0.00106
	(A2 * !A3 * B1 * X)	-0.00088	-0.00089	-0.00088
	(A2 * !A3 * B1 * X)	0.00092	0.00094	0.00093
	(!A2 * A3 * B1 * X)	-0.00088	-0.00089	-0.00088
	(!A2 * A3 * B1 * X)	0.00090	0.00090	0.00089
	(!A2 * A3 * !B1 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * A3 * !B1 * !X)	0.00103	0.00103	0.00102
	(!A2 * !A3 * !B1 * !X)	-0.00067	-0.00071	-0.00071
	(!A2 * !A3 * !B1 * !X)	0.00108	0.00109	0.00108

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00098	-0.00098	-0.00097
	(A2 * A3 * B1 * X)	0.00098	0.00098	0.00097
	(A2 * !B1 * !X)	-0.00091	-0.00091	-0.00090
	(A2 * !B1 * !X)	0.00105	0.00105	0.00104
	(A2 * !A3 * B1 * X)	-0.00098	-0.00098	-0.00097
	(A2 * !A3 * B1 * X)	0.00098	0.00098	0.00098
	(!A2 * A3 * B1 * X)	-0.00097	-0.00098	-0.00097
	(!A2 * A3 * B1 * X)	0.00094	0.00094	0.00094
	(!A2 * A3 * !B1 * !X)	-0.00091	-0.00091	-0.00090
	(!A2 * A3 * !B1 * !X)	0.00101	0.00101	0.00101
	(!A2 * !A3 * !B1 * !X)	-0.00081	-0.00086	-0.00085
	(!A2 * !A3 * !B1 * !X)	0.00106	0.00107	0.00106
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00148	-0.00149	-0.00148
	(A2 * A3 * B1 * X)	0.00195	0.00196	0.00195
	(A2 * !B1 * !X)	-0.00148	-0.00148	-0.00148
	(A2 * !B1 * !X)	0.00195	0.00196	0.00195
	(A2 * !A3 * B1 * X)	-0.00148	-0.00148	-0.00148
	(A2 * !A3 * B1 * X)	0.00194	0.00195	0.00194
	(!A2 * A3 * B1 * X)	-0.00148	-0.00149	-0.00148
	(!A2 * A3 * B1 * X)	0.00185	0.00187	0.00186
	(!A2 * A3 * !B1 * !X)	-0.00148	-0.00149	-0.00148
	(!A2 * A3 * !B1 * !X)	0.00185	0.00187	0.00186
	(!A2 * !A3 * !B1 * !X)	-0.00131	-0.00139	-0.00138
	(!A2 * !A3 * !B1 * !X)	0.00203	0.00203	0.00201

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)**	0.00087	0.00088	0.00084
	(A1 * A3 * B1 * X)	-0.00065	-0.00065	-0.00064
	(A1 * A3 * !B1 * !X)	0.00078	0.00079	0.00078
	(A1 * A3 * !B1 * !X)	-0.00072	-0.00073	-0.00073
	(A1 * !A3 * B1 * X)	0.00083	0.00083	0.00082
	(A1 * !A3 * B1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * !A3 * !B1 * !X)	0.00079	0.00079	0.00078
	(A1 * !A3 * !B1 * !X)	-0.00094	-0.00095	-0.00095
	(!A1 * A3 * B1 * X)	0.00095	0.00084	0.00082
	(!A1 * A3 * B1 * X)	-0.00078	-0.00092	-0.00092
	(!A1 * A3 * !B1 * !X)	0.00079	0.00079	0.00078
	(!A1 * A3 * !B1 * !X)	-0.00094	-0.00096	-0.00095
	(!A1 * !A3 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A3 * !B1 * !X)	-0.00097	-0.00097	-0.00097
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00095	0.00096	0.00093
	(A1 * A3 * B1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A3 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * A3 * !B1 * !X)	-0.00074	-0.00075	-0.00074
	(A1 * !A3 * B1 * X)	0.00092	0.00092	0.00091
	(A1 * !A3 * B1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A3 * !B1 * !X)	0.00088	0.00088	0.00087
	(A1 * !A3 * !B1 * !X)	-0.00096	-0.00097	-0.00096
	(!A1 * A3 * B1 * X)	0.00104	0.00092	0.00091
	(!A1 * A3 * B1 * X)	-0.00080	-0.00094	-0.00094
	(!A1 * A3 * !B1 * !X)	0.00088	0.00088	0.00087
	(!A1 * A3 * !B1 * !X)	-0.00096	-0.00097	-0.00097
	(!A1 * !A3 * !B1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A3 * !B1 * !X)	-0.00099	-0.00099	-0.00098

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00183	0.00185	0.00180
	(A1 * A3 * B1 * X)	-0.00136	-0.00137	-0.00136
	(A1 * A3 * !B1 * !X)	0.00177	0.00178	0.00177
	(A1 * A3 * !B1 * !X)	-0.00147	-0.00147	-0.00146
	(A1 * !A3 * B1 * X)	0.00178	0.00178	0.00178
	(A1 * !A3 * B1 * X)	-0.00120	-0.00120	-0.00121
	(A1 * !A3 * !B1 * !X)	0.00177	0.00178	0.00177
	(A1 * !A3 * !B1 * !X)	-0.00191	-0.00194	-0.00194
	(!A1 * A3 * B1 * X)	0.00200	0.00180	0.00177
	(!A1 * A3 * B1 * X)	-0.00166	-0.00191	-0.00192
	(!A1 * A3 * !B1 * !X)	0.00177	0.00178	0.00177
	(!A1 * A3 * !B1 * !X)	-0.00186	-0.00192	-0.00191
	(!A1 * !A3 * !B1 * !X)	0.00166	0.00166	0.00166
	(!A1 * !A3 * !B1 * !X)	-0.00199	-0.00198	-0.00198

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)**	-0.00082	-0.00082	-0.00082
	(A1 * A3 * B1 * X)	0.00065	0.00065	0.00064
	(A1 * A3 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * A3 * !B1 * !X)	0.00072	0.00073	0.00073
	(A1 * !A3 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * !A3 * B1 * X)	0.00058	0.00058	0.00058
	(A1 * !A3 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A3 * !B1 * !X)	0.00095	0.00095	0.00095
	(!A1 * A3 * B1 * X)	-0.00082	-0.00082	-0.00081
	(!A1 * A3 * B1 * X)	0.00092	0.00092	0.00092
	(!A1 * A3 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * A3 * !B1 * !X)	0.00096	0.00096	0.00095
	(!A1 * !A3 * !B1 * !X)	-0.00069	-0.00073	-0.00073
	(!A1 * !A3 * !B1 * !X)	0.00098	0.00098	0.00097
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00090	-0.00091	-0.00091
	(A1 * A3 * B1 * X)	0.00066	0.00066	0.00066
	(A1 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * A3 * !B1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A3 * B1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A3 * B1 * X)	0.00060	0.00060	0.00060
	(A1 * !A3 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A3 * !B1 * !X)	0.00097	0.00097	0.00096
	(!A1 * A3 * B1 * X)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * B1 * X)	0.00093	0.00094	0.00094
	(!A1 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * A3 * !B1 * !X)	0.00096	0.00097	0.00097
	(!A1 * !A3 * !B1 * !X)	-0.00078	-0.00082	-0.00082
	(!A1 * !A3 * !B1 * !X)	0.00099	0.00099	0.00099

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00177	-0.00178	-0.00177
	(A1 * A3 * B1 * X)	0.00136	0.00137	0.00136
	(A1 * A3 * !B1 * !X)	-0.00177	-0.00177	-0.00176
	(A1 * A3 * !B1 * !X)	0.00147	0.00147	0.00146
	(A1 * !A3 * B1 * X)	-0.00175	-0.00175	-0.00174
	(A1 * !A3 * B1 * X)	0.00124	0.00125	0.00125
	(A1 * !A3 * !B1 * !X)	-0.00176	-0.00177	-0.00176
	(A1 * !A3 * !B1 * !X)	0.00193	0.00194	0.00194
	(!A1 * A3 * B1 * X)	-0.00176	-0.00176	-0.00176
	(!A1 * A3 * B1 * X)	0.00191	0.00191	0.00192
	(!A1 * A3 * !B1 * !X)	-0.00176	-0.00177	-0.00176
	(!A1 * A3 * !B1 * !X)	0.00191	0.00192	0.00191
	(!A1 * !A3 * !B1 * !X)	-0.00159	-0.00166	-0.00166
	(!A1 * !A3 * !B1 * !X)	0.00200	0.00200	0.00199

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00089	0.00089	0.00089
	(A2 * B1 * X)	-0.00053	-0.00053	-0.00052
	(A2 * !B1 * !X)	0.00078	0.00078	0.00077
	(A2 * !B1 * !X)	-0.00096	-0.00098	-0.00097
	(A1 * !A2 * B1 * X)	0.00089	0.00089	0.00089
	(A1 * !A2 * B1 * X)	-0.00053	-0.00052	-0.00052
	(A1 * !A2 * !B1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !B1 * !X)	-0.00088	-0.00093	-0.00092
	(!A1 * !A2 * !B1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A2 * !B1 * !X)	-0.00099	-0.00099	-0.00099

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00103	0.00103	0.00103
	(A2 * B1 * X)	-0.00053	-0.00052	-0.00052
	(A2 * !B1 * !X)	0.00089	0.00091	0.00090
	(A2 * !B1 * !X)	-0.00096	-0.00099	-0.00099
	(A1 * !A2 * B1 * X)	0.00103	0.00103	0.00103
	(A1 * !A2 * B1 * X)	-0.00053	-0.00052	-0.00052
	(A1 * !A2 * !B1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A2 * !B1 * !X)	-0.00090	-0.00095	-0.00094
	(!A1 * !A2 * !B1 * !X)	0.00085	0.00084	0.00084
	(!A1 * !A2 * !B1 * !X)	-0.00101	-0.00100	-0.00100
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00177	0.00177	0.00176
	(A2 * B1 * X)	-0.00117	-0.00116	-0.00116
	(A2 * !B1 * !X)	0.00161	0.00161	0.00159
	(A2 * !B1 * !X)	-0.00196	-0.00201	-0.00201
	(A1 * !A2 * B1 * X)	0.00175	0.00177	0.00176
	(A1 * !A2 * B1 * X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !X)	0.00159	0.00160	0.00159
	(A1 * !A2 * !B1 * !X)	-0.00181	-0.00191	-0.00190
	(!A1 * !A2 * !B1 * !X)	0.00148	0.00148	0.00147
	(!A1 * !A2 * !B1 * !X)	-0.00210	-0.00210	-0.00209

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00084	-0.00084	-0.00088
	(A2 * B1 * X)	0.00057	0.00057	0.00054
	(A2 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * !X)	0.00098	0.00098	0.00097
	(A1 * !A2 * B1 * X)	-0.00078	-0.00079	-0.00087
	(A1 * !A2 * B1 * X)	0.00060	0.00060	0.00054
	(A1 * !A2 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * !B1 * !X)	0.00092	0.00093	0.00092
	(!A1 * !A2 * !B1 * !X)	-0.00068	-0.00072	-0.00072
	(!A1 * !A2 * !B1 * !X)	0.00099	0.00100	0.00099
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00098	-0.00098	-0.00102
	(A2 * B1 * X)	0.00057	0.00057	0.00054
	(A2 * !B1 * !X)	-0.00089	-0.00090	-0.00090
	(A2 * !B1 * !X)	0.00099	0.00099	0.00099
	(A1 * !A2 * B1 * X)	-0.00092	-0.00093	-0.00101
	(A1 * !A2 * B1 * X)	0.00060	0.00060	0.00054
	(A1 * !A2 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !B1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !A2 * !B1 * !X)	-0.00080	-0.00084	-0.00084
	(!A1 * !A2 * !B1 * !X)	0.00101	0.00101	0.00101
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00162	-0.00163	-0.00174
	(A2 * B1 * X)	0.00127	0.00127	0.00119
	(A2 * !B1 * !X)	-0.00159	-0.00160	-0.00159
	(A2 * !B1 * !X)	0.00201	0.00201	0.00201
	(A1 * !A2 * B1 * X)	-0.00151	-0.00151	-0.00171
	(A1 * !A2 * B1 * X)	0.00135	0.00134	0.00120
	(A1 * !A2 * !B1 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * !A2 * !B1 * !X)	0.00189	0.00191	0.00190
	(!A1 * !A2 * !B1 * !X)	-0.00138	-0.00148	-0.00147
	(!A1 * !A2 * !B1 * !X)	0.00211	0.00211	0.00210

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)	0.00032	0.00032	0.00029
	(!A1 * !A2 * !A3 * !X)	-0.00099	-0.00099	-0.00104
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00041	0.00041	0.00037
	(!A1 * !A2 * !A3 * !X)	-0.00123	-0.00124	-0.00129
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00061	0.00061	0.00054
	(!A1 * !A2 * !A3 * !X)	-0.00230	-0.00231	-0.00244

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)	-0.00028	-0.00028	-0.00028
	(!A1 * !A2 * !A3 * !X)	0.00104	0.00105	0.00105
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * !A3 * !X)	0.00130	0.00130	0.00130
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00053	-0.00052	-0.00052
	(!A1 * !A2 * !A3 * !X)	0.00246	0.00246	0.00245

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00250	0.00277	0.00270	0.00267	0.00277	0.19692
sky130_fd_sc_hs__o32ai_2	0.00529	0.00495	0.00540	0.00511	0.00519	0.35792
sky130_fd_sc_hs__o32ai_4	0.00996	0.01002	0.01018	0.01044	0.01012	0.67687

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.01188	0.03622
sky130_fd_sc_hs__o32ai_2	0.00000	0.02376	0.07244
sky130_fd_sc_hs__o32ai_4	0.00000	0.04752	0.14489

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)	0.38856	1.71024	11.98010
	A2->Y (FR)	0.36795	1.69331	12.31540
	A3->Y (FR)	0.30479	1.58964	11.91720
	B1->Y (FR)	0.14324	1.15207	9.56788
	B2->Y (FR)	0.11994	1.10302	9.40624
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.39912	1.51855	11.76680
	A2->Y (FR)	0.37333	1.49976	12.16740
	A3->Y (FR)	0.29789	1.38395	11.76380
	B1->Y (FR)	0.14457	1.04715	9.64682
	B2->Y (FR)	0.10582	0.98219	9.46220
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.39379	1.35581	11.68890
	A2->Y (FR)	0.36910	1.33687	12.09900
	A3->Y (FR)	0.29253	1.22588	11.74410
	B1->Y (FR)	0.13777	0.92865	9.52535
	B2->Y (FR)	0.10096	0.87169	9.40338

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.06536	0.50721	4.01218
	A2->Y (RF)	0.06697	0.50813	4.06030
	A3->Y (RF)	0.05842	0.49419	4.03399
	B1->Y (RF)	0.05216	0.52616	4.37807
	B2->Y (RF)	0.04521	0.51091	4.33371
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.06594	0.46321	3.90229
	A2->Y (RF)	0.06798	0.46821	4.00207
	A3->Y (RF)	0.05785	0.45128	3.96642
	B1->Y (RF)	0.05146	0.48103	4.34545
	B2->Y (RF)	0.04328	0.46826	4.35695
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.06877	0.43454	3.99800
	A2->Y (RF)	0.06481	0.41840	3.94995
	A3->Y (RF)	0.05324	0.39566	3.89089
	B1->Y (RF)	0.06363	0.49459	4.72386
	B2->Y (RF)	0.05395	0.49166	4.86216

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00108	0.00098	0.00096
	A1	0.00611	0.00602	0.00599
	A2	0.00116	0.00103	0.00103
	A2	0.00570	0.00559	0.00558
	A3	0.00114	0.00104	0.00126
	A3	0.00511	0.00501	0.00522
	B1	-0.00007	-0.00016	-0.00014
	B1	0.00418	0.00407	0.00409
	B2	-0.00005	-0.00011	0.00015
	B2	0.00366	0.00357	0.00382
sky130_fd_sc_hs__o32ai_2	A1	0.00193	0.00168	0.00166
	A1	0.01254	0.01232	0.01225
	A2	0.00206	0.00179	0.00179
	A2	0.01128	0.01103	0.01103
	A3	0.00198	0.00167	0.00218
	A3	0.01031	0.01000	0.01050
	B1	-0.00031	-0.00047	-0.00041
	B1	0.00834	0.00814	0.00820
	B2	-0.00042	-0.00054	0.00004
	B2	0.00725	0.00710	0.00766

sky130_fd_sc_hs__o32ai_4	**A1**	0.00386	0.00339	0.00337
	A1	0.02468	0.02423	0.02415
	A2	0.00392	0.00339	0.00346
	A2	0.02248	0.02199	0.02203
	A3	0.00391	0.00332	0.00450
	A3	0.02030	0.01972	0.02084
	B1	-0.00066	-0.00108	-0.00091
	B1	0.01685	0.01638	0.01658
	B2	-0.00077	-0.00107	0.00008
	B2	0.01450	0.01414	0.01524

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.00709	0.00700	0.00695
	A1	0.00192	0.00183	0.00179
	A2	0.00607	0.00601	0.00598
	A2	0.00134	0.00126	0.00124
	A3	0.00494	0.00491	0.00491
	A3	0.00076	0.00073	0.00072
	B1	0.00606	0.00596	0.00599
	B1	0.00195	0.00185	0.00187
	B2	0.00504	0.00497	0.00500
	B2	0.00145	0.00137	0.00138

sky130_fd_sc_hs__o32ai_2	**A1**	0.01483	0.01462	0.01443
	A1	0.00398	0.00377	0.00368
	A2	0.01264	0.01247	0.01241
	A2	0.00308	0.00288	0.00282
	A3	0.01029	0.01022	0.01023
	A3	0.00153	0.00145	0.00145
	B1	0.01245	0.01222	0.01226
	B1	0.00416	0.00390	0.00393
	B2	0.01015	0.01004	0.01006
	B2	0.00275	0.00261	0.00268
sky130_fd_sc_hs__o32ai_4	**A1**	0.02887	0.02841	0.02827
	A1	0.00760	0.00715	0.00705
	A2	0.02472	0.02430	0.02431
	A2	0.00546	0.00505	0.00505
	A3	0.01990	0.01966	0.01987
	A3	0.00270	0.00247	0.00264
	B1	0.02465	0.02411	0.02425
	B1	0.00780	0.00724	0.00738
	B2	0.02004	0.01971	0.02005
	B2	0.00529	0.00495	0.00516

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)**	0.00094	0.00094	0.00094
	(A2 * A3 * B2 * !Y)	-0.00104	-0.00107	-0.00106
	(A2 * A3 * B1 * !B2 * !Y)	0.00094	0.00094	0.00094
	(A2 * A3 * B1 * !B2 * !Y)	-0.00104	-0.00107	-0.00106
	(A2 * !B1 * !B2 * Y)	0.00094	0.00094	0.00094
	(A2 * !B1 * !B2 * Y)	-0.00104	-0.00107	-0.00106
	(A2 * !A3 * B2 * !Y)	0.00094	0.00094	0.00094
	(A2 * !A3 * B2 * !Y)	-0.00103	-0.00107	-0.00106
	(A2 * !A3 * B1 * !B2 * !Y)	0.00094	0.00094	0.00094
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00103	-0.00106	-0.00106
	(!A2 * A3 * B2 * !Y)	0.00094	0.00094	0.00094
	(!A2 * A3 * B2 * !Y)	-0.00096	-0.00102	-0.00102
	(!A2 * A3 * B1 * !B2 * !Y)	0.00094	0.00094	0.00094
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00096	-0.00102	-0.00102
	(!A2 * A3 * !B1 * !B2 * Y)	0.00094	0.00094	0.00094
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00097	-0.00102	-0.00102
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00088	0.00089	0.00088
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00108	-0.00109	-0.00108

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00194	0.00195	0.00194
	(A2 * A3 * B2 * !Y)	-0.00215	-0.00223	-0.00221
	(A2 * A3 * B1 * !B2 * !Y)	0.00194	0.00195	0.00194
	(A2 * A3 * B1 * !B2 * !Y)	-0.00215	-0.00223	-0.00221
	(A2 * !B1 * !B2 * Y)	0.00194	0.00195	0.00194
	(A2 * !B1 * !B2 * Y)	-0.00216	-0.00223	-0.00221
	(A2 * !A3 * B2 * !Y)	0.00195	0.00195	0.00194
	(A2 * !A3 * B2 * !Y)	-0.00214	-0.00223	-0.00221
	(A2 * !A3 * B1 * !B2 * !Y)	0.00195	0.00195	0.00194
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00214	-0.00223	-0.00221
	(!A2 * A3 * B2 * !Y)	0.00196	0.00195	0.00194
	(!A2 * A3 * B2 * !Y)	-0.00201	-0.00213	-0.00212
	(!A2 * A3 * B1 * !B2 * !Y)	0.00196	0.00195	0.00194
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00201	-0.00213	-0.00212
	(!A2 * A3 * !B1 * !B2 * Y)	0.00194	0.00195	0.00194
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00203	-0.00214	-0.00213
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00179	0.00180	0.00179
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00229	-0.00229	-0.00228

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00366	0.00367	0.00364
	(A2 * A3 * B2 * !Y)	-0.00418	-0.00433	-0.00430
	(A2 * A3 * B1 * !B2 * !Y)	0.00366	0.00367	0.00364
	(A2 * A3 * B1 * !B2 * !Y)	-0.00418	-0.00433	-0.00430
	(A2 * !B1 * !B2 * Y)	0.00365	0.00367	0.00364
	(A2 * !B1 * !B2 * Y)	-0.00419	-0.00430	-0.00430
	(A2 * !A3 * B2 * !Y)	0.00367	0.00367	0.00364
	(A2 * !A3 * B2 * !Y)	-0.00415	-0.00433	-0.00430
	(A2 * !A3 * B1 * !B2 * !Y)	0.00367	0.00367	0.00364
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00415	-0.00433	-0.00430
	(!A2 * A3 * B2 * !Y)	0.00368	0.00367	0.00365
	(!A2 * A3 * B2 * !Y)	-0.00391	-0.00415	-0.00412
	(!A2 * A3 * B1 * !B2 * !Y)	0.00368	0.00367	0.00365
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00391	-0.00415	-0.00412
	(!A2 * A3 * !B1 * !B2 * Y)	0.00365	0.00366	0.00364
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00394	-0.00415	-0.00413
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00337	0.00340	0.00337
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00444	-0.00445	-0.00443

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)**	-0.00094	-0.00094	-0.00094
	(A2 * A3 * B2 * !Y)	0.00106	0.00107	0.00106
	(A2 * A3 * B1 * !B2 * !Y)	-0.00094	-0.00094	-0.00094
	(A2 * A3 * B1 * !B2 * !Y)	0.00107	0.00107	0.00106
	(A2 * !B1 * !B2 * Y)	-0.00094	-0.00094	-0.00094
	(A2 * !B1 * !B2 * Y)	0.00107	0.00107	0.00106
	(A2 * !A3 * B2 * !Y)	-0.00094	-0.00094	-0.00094
	(A2 * !A3 * B2 * !Y)	0.00107	0.00107	0.00106
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00094	-0.00094	-0.00094
	(A2 * !A3 * B1 * !B2 * !Y)	0.00107	0.00107	0.00106
	(!A2 * A3 * B2 * !Y)	-0.00094	-0.00094	-0.00093
	(!A2 * A3 * B2 * !Y)	0.00102	0.00102	0.00102
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00094	-0.00094	-0.00093
	(!A2 * A3 * B1 * !B2 * !Y)	0.00102	0.00102	0.00102
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00094	-0.00094	-0.00094
	(!A2 * A3 * !B1 * !B2 * Y)	0.00102	0.00102	0.00102
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00084	-0.00089	-0.00088
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00108	0.00109	0.00108

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00194	-0.00194	-0.00193
	(A2 * A3 * B2 * !Y)	0.00222	0.00223	0.00221
	(A2 * A3 * B1 * !B2 * !Y)	-0.00194	-0.00194	-0.00193
	(A2 * A3 * B1 * !B2 * !Y)	0.00222	0.00223	0.00221
	(A2 * !B1 * !B2 * Y)	-0.00194	-0.00194	-0.00193
	(A2 * !B1 * !B2 * Y)	0.00223	0.00223	0.00221
	(A2 * !A3 * B2 * !Y)	-0.00194	-0.00194	-0.00193
	(A2 * !A3 * B2 * !Y)	0.00222	0.00223	0.00221
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00194	-0.00194	-0.00193
	(A2 * !A3 * B1 * !B2 * !Y)	0.00223	0.00223	0.00221
	(!A2 * A3 * B2 * !Y)	-0.00194	-0.00194	-0.00194
	(!A2 * A3 * B2 * !Y)	0.00213	0.00213	0.00212
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00194	-0.00194	-0.00194
	(!A2 * A3 * B1 * !B2 * !Y)	0.00213	0.00213	0.00212
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00193	-0.00194	-0.00193
	(!A2 * A3 * !B1 * !B2 * Y)	0.00213	0.00214	0.00213
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00169	-0.00180	-0.00179
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00229	0.00231	0.00229

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00364	-0.00365	-0.00364
	(A2 * A3 * B2 * !Y)	0.00430	0.00433	0.00430
	(A2 * A3 * B1 * !B2 * !Y)	-0.00364	-0.00365	-0.00364
	(A2 * A3 * B1 * !B2 * !Y)	0.00430	0.00433	0.00430
	(A2 * !B1 * !B2 * Y)	-0.00364	-0.00364	-0.00364
	(A2 * !B1 * !B2 * Y)	0.00430	0.00430	0.00430
	(A2 * !A3 * B2 * !Y)	-0.00364	-0.00365	-0.00363
	(A2 * !A3 * B2 * !Y)	0.00430	0.00433	0.00430
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00364	-0.00365	-0.00363
	(A2 * !A3 * B1 * !B2 * !Y)	0.00431	0.00433	0.00430
	(!A2 * A3 * B2 * !Y)	-0.00364	-0.00365	-0.00364
	(!A2 * A3 * B2 * !Y)	0.00412	0.00415	0.00412
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00364	-0.00365	-0.00364
	(!A2 * A3 * B1 * !B2 * !Y)	0.00412	0.00415	0.00412
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00363	-0.00365	-0.00364
	(!A2 * A3 * !B1 * !B2 * Y)	0.00413	0.00415	0.00413
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00318	-0.00340	-0.00337
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00445	0.00448	0.00444

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)**	0.00094	0.00094	0.00092
	(A1 * A3 * B2 * !Y)	-0.00080	-0.00080	-0.00079
	(A1 * A3 * B1 * !B2 * !Y)	0.00094	0.00094	0.00092
	(A1 * A3 * B1 * !B2 * !Y)	-0.00080	-0.00080	-0.00079
	(A1 * A3 * !B1 * !B2 * Y)	0.00090	0.00091	0.00090
	(A1 * A3 * !B1 * !B2 * Y)	-0.00085	-0.00086	-0.00085
	(A1 * !A3 * B2 * !Y)	0.00092	0.00092	0.00091
	(A1 * !A3 * B2 * !Y)	-0.00071	-0.00070	-0.00070
	(A1 * !A3 * B1 * !B2 * !Y)	0.00092	0.00092	0.00091
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00071	-0.00070	-0.00070
	(A1 * !A3 * !B1 * !B2 * Y)	0.00091	0.00091	0.00090
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00110	-0.00111	-0.00111
	(!A1 * A3 * B2 * !Y)	0.00104	0.00093	0.00091
	(!A1 * A3 * B2 * !Y)	-0.00097	-0.00111	-0.00111
	(!A1 * A3 * B1 * !B2 * !Y)	0.00104	0.00093	0.00091
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00097	-0.00111	-0.00111
	(!A1 * A3 * !B1 * !B2 * Y)	0.00091	0.00091	0.00090
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00110	-0.00112	-0.00111
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00084	0.00085	0.00084
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00113	-0.00114	-0.00113

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00182	0.00184	0.00182
	(A1 * A3 * B2 * !Y)	-0.00147	-0.00148	-0.00147
	(A1 * A3 * B1 * !B2 * !Y)	0.00182	0.00184	0.00182
	(A1 * A3 * B1 * !B2 * !Y)	-0.00147	-0.00148	-0.00147
	(A1 * A3 * !B1 * !B2 * Y)	0.00178	0.00178	0.00177
	(A1 * A3 * !B1 * !B2 * Y)	-0.00163	-0.00164	-0.00163
	(A1 * !A3 * B2 * !Y)	0.00182	0.00181	0.00180
	(A1 * !A3 * B2 * !Y)	-0.00132	-0.00130	-0.00130
	(A1 * !A3 * B1 * !B2 * !Y)	0.00179	0.00181	0.00180
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00129	-0.00130	-0.00130
	(A1 * !A3 * !B1 * !B2 * Y)	0.00176	0.00178	0.00177
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00207	-0.00211	-0.00211
	(!A1 * A3 * B2 * !Y)	0.00201	0.00182	0.00179
	(!A1 * A3 * B2 * !Y)	-0.00188	-0.00212	-0.00212
	(!A1 * A3 * B1 * !B2 * !Y)	0.00201	0.00182	0.00179
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00188	-0.00212	-0.00212
	(!A1 * A3 * !B1 * !B2 * Y)	0.00178	0.00179	0.00177
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00210	-0.00215	-0.00214
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00163	0.00165	0.00164
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00218	-0.00219	-0.00219

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00376	0.00379	0.00372
	(A1 * A3 * B2 * !Y)	-0.00300	-0.00300	-0.00299
	(A1 * A3 * B1 * !B2 * !Y)	0.00377	0.00379	0.00372
	(A1 * A3 * B1 * !B2 * !Y)	-0.00300	-0.00300	-0.00299
	(A1 * A3 * !B1 * !B2 * Y)	0.00365	0.00366	0.00365
	(A1 * A3 * !B1 * !B2 * Y)	-0.00326	-0.00328	-0.00326
	(A1 * !A3 * B2 * !Y)	0.00367	0.00370	0.00368
	(A1 * !A3 * B2 * !Y)	-0.00264	-0.00266	-0.00266
	(A1 * !A3 * B1 * !B2 * !Y)	0.00373	0.00370	0.00368
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00269	-0.00266	-0.00266
	(A1 * !A3 * !B1 * !B2 * Y)	0.00367	0.00367	0.00365
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00422	-0.00427	-0.00426
	(!A1 * A3 * B2 * !Y)	0.00413	0.00373	0.00367
	(!A1 * A3 * B2 * !Y)	-0.00377	-0.00434	-0.00432
	(!A1 * A3 * B1 * !B2 * !Y)	0.00413	0.00373	0.00367
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00376	-0.00434	-0.00433
	(!A1 * A3 * !B1 * !B2 * Y)	0.00363	0.00369	0.00365
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00423	-0.00437	-0.00435
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00336	0.00339	0.00337
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00443	-0.00445	-0.00444

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)**	-0.00091	-0.00091	-0.00091
	(A1 * A3 * B2 * !Y)	0.00080	0.00080	0.00079
	(A1 * A3 * B1 * !B2 * !Y)	-0.00091	-0.00091	-0.00091
	(A1 * A3 * B1 * !B2 * !Y)	0.00080	0.00080	0.00079
	(A1 * A3 * !B1 * !B2 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * A3 * !B1 * !B2 * Y)	0.00085	0.00086	0.00085
	(A1 * !A3 * B2 * !Y)	-0.00090	-0.00090	-0.00089
	(A1 * !A3 * B2 * !Y)	0.00072	0.00072	0.00073
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00090	-0.00090	-0.00089
	(A1 * !A3 * B1 * !B2 * !Y)	0.00072	0.00072	0.00073
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A3 * !B1 * !B2 * Y)	0.00111	0.00111	0.00111
	(!A1 * A3 * B2 * !Y)	-0.00091	-0.00091	-0.00091
	(!A1 * A3 * B2 * !Y)	0.00111	0.00111	0.00111
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00091	-0.00091	-0.00091
	(!A1 * A3 * B1 * !B2 * !Y)	0.00111	0.00111	0.00111
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !B1 * !B2 * Y)	0.00110	0.00112	0.00111
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00079	-0.00085	-0.00084
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00113	0.00114	0.00114

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00179	-0.00181	-0.00180
	(A1 * A3 * B2 * !Y)	0.00147	0.00148	0.00147
	(A1 * A3 * B1 * !B2 * !Y)	-0.00179	-0.00181	-0.00180
	(A1 * A3 * B1 * !B2 * !Y)	0.00147	0.00148	0.00147
	(A1 * A3 * !B1 * !B2 * Y)	-0.00176	-0.00177	-0.00176
	(A1 * A3 * !B1 * !B2 * Y)	0.00163	0.00164	0.00163
	(A1 * !A3 * B2 * !Y)	-0.00177	-0.00177	-0.00176
	(A1 * !A3 * B2 * !Y)	0.00133	0.00133	0.00134
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00177	-0.00177	-0.00176
	(A1 * !A3 * B1 * !B2 * !Y)	0.00133	0.00133	0.00134
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00176	-0.00176	-0.00176
	(A1 * !A3 * !B1 * !B2 * Y)	0.00210	0.00211	0.00211
	(!A1 * A3 * B2 * !Y)	-0.00178	-0.00179	-0.00178
	(!A1 * A3 * B2 * !Y)	0.00210	0.00212	0.00212
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00178	-0.00179	-0.00178
	(!A1 * A3 * B1 * !B2 * !Y)	0.00210	0.00212	0.00212
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00176	-0.00177	-0.00176
	(!A1 * A3 * !B1 * !B2 * Y)	0.00213	0.00215	0.00214
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00154	-0.00165	-0.00164
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00220	0.00221	0.00219

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00369	-0.00369	-0.00368
	(A1 * A3 * B2 * !Y)	0.00300	0.00300	0.00299
	(A1 * A3 * B1 * !B2 * !Y)	-0.00369	-0.00369	-0.00368
	(A1 * A3 * B1 * !B2 * !Y)	0.00300	0.00300	0.00299
	(A1 * A3 * !B1 * !B2 * Y)	-0.00363	-0.00365	-0.00364
	(A1 * A3 * !B1 * !B2 * Y)	0.00326	0.00328	0.00326
	(A1 * !A3 * B2 * !Y)	-0.00363	-0.00363	-0.00360
	(A1 * !A3 * B2 * !Y)	0.00272	0.00272	0.00274
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00363	-0.00363	-0.00360
	(A1 * !A3 * B1 * !B2 * !Y)	0.00272	0.00272	0.00274
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00362	-0.00365	-0.00364
	(A1 * !A3 * !B1 * !B2 * Y)	0.00424	0.00427	0.00426
	(!A1 * A3 * B2 * !Y)	-0.00367	-0.00368	-0.00365
	(!A1 * A3 * B2 * !Y)	0.00433	0.00434	0.00432
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00367	-0.00368	-0.00365
	(!A1 * A3 * B1 * !B2 * !Y)	0.00433	0.00434	0.00433
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00362	-0.00365	-0.00364
	(!A1 * A3 * !B1 * !B2 * Y)	0.00432	0.00437	0.00435
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00317	-0.00339	-0.00337
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00446	0.00448	0.00445

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00098	0.00098	0.00098
	(A2 * B2 * !Y)	-0.00059	-0.00058	-0.00058
	(A2 * B1 * !B2 * !Y)	0.00097	0.00098	0.00098
	(A2 * B1 * !B2 * !Y)	-0.00058	-0.00058	-0.00058
	(A2 * !B1 * !B2 * Y)	0.00091	0.00090	0.00090
	(A2 * !B1 * !B2 * Y)	-0.00102	-0.00104	-0.00104
	(A1 * !A2 * B2 * !Y)	0.00098	0.00098	0.00098
	(A1 * !A2 * B2 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * !A2 * B1 * !B2 * !Y)	0.00098	0.00098	0.00098
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * !A2 * !B1 * !B2 * Y)	0.00090	0.00090	0.00090
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00094	-0.00097	-0.00098
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00106	-0.00107	-0.00106
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00215	0.00216	0.00215
	(A2 * B2 * !Y)	-0.00116	-0.00116	-0.00115
	(A2 * B1 * !B2 * !Y)	0.00216	0.00216	0.00215
	(A2 * B1 * !B2 * !Y)	-0.00116	-0.00116	-0.00115
	(A2 * !B1 * !B2 * Y)	0.00175	0.00176	0.00176
	(A2 * !B1 * !B2 * Y)	-0.00224	-0.00230	-0.00230
	(A1 * !A2 * B2 * !Y)	0.00215	0.00216	0.00215
	(A1 * !A2 * B2 * !Y)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * B1 * !B2 * !Y)	0.00215	0.00217	0.00215
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !B2 * Y)	0.00175	0.00177	0.00176
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00208	-0.00216	-0.00215
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00163	0.00165	0.00164
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00235	-0.00236	-0.00235

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00407	0.00409	0.00408
	(A2 * B2 * !Y)	-0.00228	-0.00229	-0.00228
	(A2 * B1 * !B2 * !Y)	0.00407	0.00410	0.00408
	(A2 * B1 * !B2 * !Y)	-0.00228	-0.00229	-0.00228
	(A2 * !B1 * !B2 * Y)	0.00342	0.00344	0.00342
	(A2 * !B1 * !B2 * Y)	-0.00432	-0.00444	-0.00443
	(A1 * !A2 * B2 * !Y)	0.00406	0.00410	0.00408
	(A1 * !A2 * B2 * !Y)	-0.00227	-0.00229	-0.00228
	(A1 * !A2 * B1 * !B2 * !Y)	0.00406	0.00410	0.00408
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00227	-0.00229	-0.00228
	(A1 * !A2 * !B1 * !B2 * Y)	0.00342	0.00345	0.00342
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00399	-0.00411	-0.00413
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00319	0.00320	0.00319
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00454	-0.00454	-0.00454

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00093	-0.00093	-0.00097
	(A2 * B2 * !Y)	0.00063	0.00063	0.00060
	(A2 * B1 * !B2 * !Y)	-0.00093	-0.00093	-0.00097
	(A2 * B1 * !B2 * !Y)	0.00063	0.00063	0.00060
	(A2 * !B1 * !B2 * Y)	-0.00090	-0.00090	-0.00090
	(A2 * !B1 * !B2 * Y)	0.00104	0.00104	0.00104
	(A1 * !A2 * B2 * !Y)	-0.00086	-0.00086	-0.00096
	(A1 * !A2 * B2 * !Y)	0.00068	0.00067	0.00060
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00086	-0.00086	-0.00096
	(A1 * !A2 * B1 * !B2 * !Y)	0.00068	0.00067	0.00060
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !B1 * !B2 * Y)	0.00098	0.00097	0.00098
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00079	-0.00084	-0.00083
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00107	0.00107	0.00107
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00200	-0.00202	-0.00213
	(A2 * B2 * !Y)	0.00128	0.00129	0.00119
	(A2 * B1 * !B2 * !Y)	-0.00200	-0.00202	-0.00213
	(A2 * B1 * !B2 * !Y)	0.00128	0.00129	0.00119
	(A2 * !B1 * !B2 * Y)	-0.00175	-0.00175	-0.00175
	(A2 * !B1 * !B2 * Y)	0.00229	0.00230	0.00230
	(A1 * !A2 * B2 * !Y)	-0.00185	-0.00188	-0.00210
	(A1 * !A2 * B2 * !Y)	0.00136	0.00137	0.00120
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00185	-0.00188	-0.00210
	(A1 * !A2 * B1 * !B2 * !Y)	0.00136	0.00137	0.00120
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A2 * !B1 * !B2 * Y)	0.00215	0.00216	0.00215
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00154	-0.00165	-0.00164
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00237	0.00237	0.00235

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00381	-0.00384	-0.00404
	(A2 * B2 * !Y)	0.00254	0.00253	0.00235
	(A2 * B1 * !B2 * !Y)	-0.00379	-0.00384	-0.00404
	(A2 * B1 * !B2 * !Y)	0.00251	0.00253	0.00235
	(A2 * !B1 * !B2 * Y)	-0.00341	-0.00342	-0.00342
	(A2 * !B1 * !B2 * Y)	0.00442	0.00444	0.00443
	(A1 * !A2 * B2 * !Y)	-0.00351	-0.00354	-0.00397
	(A1 * !A2 * B2 * !Y)	0.00270	0.00269	0.00236
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00349	-0.00354	-0.00397
	(A1 * !A2 * B1 * !B2 * !Y)	0.00267	0.00269	0.00236
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00341	-0.00340	-0.00341
	(A1 * !A2 * !B1 * !B2 * Y)	0.00412	0.00411	0.00413
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00301	-0.00320	-0.00319
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00455	0.00458	0.00454

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00110	0.00101	0.00100
	(A3 * B2 * !Y)	-0.00094	-0.00104	-0.00105
	(A2 * !A3 * B2 * !Y)	0.00110	0.00101	0.00100
	(A2 * !A3 * B2 * !Y)	-0.00094	-0.00104	-0.00105
	(A1 * !A2 * !A3 * B2 * !Y)	0.00110	0.00101	0.00100
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00094	-0.00104	-0.00105
	(!A1 * !A2 * !A3 * B2 * Y)	0.00037	0.00037	0.00036
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00125	-0.00128	-0.00127
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00043	0.00043	0.00038
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00120	-0.00121	-0.00129

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00197	0.00183	0.00181
	(A3 * B2 * !Y)	-0.00187	-0.00206	-0.00207
	(A2 * !A3 * B2 * !Y)	0.00196	0.00183	0.00181
	(A2 * !A3 * B2 * !Y)	-0.00187	-0.00206	-0.00207
	(A1 * !A2 * !A3 * B2 * !Y)	0.00196	0.00183	0.00181
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00187	-0.00207	-0.00207
	(!A1 * !A2 * !A3 * B2 * Y)	0.00058	0.00058	0.00058
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00247	-0.00253	-0.00253
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00071	0.00071	0.00062
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00237	-0.00239	-0.00255
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00417	0.00385	0.00380
	(A3 * B2 * !Y)	-0.00372	-0.00417	-0.00416
	(A2 * !A3 * B2 * !Y)	0.00417	0.00385	0.00380
	(A2 * !A3 * B2 * !Y)	-0.00372	-0.00417	-0.00416
	(A1 * !A2 * !A3 * B2 * !Y)	0.00417	0.00384	0.00380
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00372	-0.00417	-0.00416
	(!A1 * !A2 * !A3 * B2 * Y)	0.00117	0.00117	0.00116
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00514	-0.00527	-0.00524
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00142	0.00142	0.00124
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00496	-0.00498	-0.00530

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00100	-0.00100	-0.00099
	(A3 * B2 * !Y)	0.00105	0.00105	0.00105
	(A2 * !A3 * B2 * !Y)	-0.00099	-0.00100	-0.00099
	(A2 * !A3 * B2 * !Y)	0.00104	0.00105	0.00105
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * !A3 * B2 * !Y)	0.00104	0.00105	0.00105
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00037	-0.00036	-0.00036
	(!A1 * !A2 * !A3 * B2 * Y)	0.00128	0.00128	0.00127
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00129	0.00130	0.00130
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00181	-0.00180	-0.00181
	(A3 * B2 * !Y)	0.00206	0.00206	0.00207
	(A2 * !A3 * B2 * !Y)	-0.00181	-0.00181	-0.00181
	(A2 * !A3 * B2 * !Y)	0.00206	0.00206	0.00207
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00181	-0.00181	-0.00181
	(A1 * !A2 * !A3 * B2 * !Y)	0.00207	0.00208	0.00207
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * !A3 * B2 * Y)	0.00253	0.00253	0.00253
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00257	0.00258	0.00257
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00381	-0.00381	-0.00379
	(A3 * B2 * !Y)	0.00416	0.00418	0.00416
	(A2 * !A3 * B2 * !Y)	-0.00381	-0.00381	-0.00379
	(A2 * !A3 * B2 * !Y)	0.00417	0.00418	0.00416
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00381	-0.00381	-0.00379
	(A1 * !A2 * !A3 * B2 * !Y)	0.00417	0.00418	0.00416
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * !A3 * B2 * Y)	0.00526	0.00527	0.00524
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00118	-0.00118	-0.00117
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00536	0.00537	0.00534

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00104	0.00105	0.00105
	(A3 * B1 * !Y)	-0.00057	-0.00057	-0.00056
	(A2 * !A3 * B1 * !Y)	0.00104	0.00105	0.00105
	(A2 * !A3 * B1 * !Y)	-0.00057	-0.00057	-0.00056
	(A1 * !A2 * !A3 * B1 * !Y)	0.00104	0.00105	0.00105
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * B1 * Y)	0.00031	0.00031	0.00031
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00128	-0.00129	-0.00128
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00037	0.00037	0.00033
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00122	-0.00123	-0.00130
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00205	0.00205	0.00204
	(A3 * B1 * !Y)	-0.00118	-0.00117	-0.00116
	(A2 * !A3 * B1 * !Y)	0.00204	0.00206	0.00204
	(A2 * !A3 * B1 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * !A2 * !A3 * B1 * !Y)	0.00204	0.00206	0.00204
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * !A3 * B1 * Y)	0.00062	0.00062	0.00061
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00253	-0.00256	-0.00256
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00075	0.00074	0.00065
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00243	-0.00244	-0.00260

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00402	0.00403	0.00401
	(A3 * B1 * !Y)	-0.00233	-0.00232	-0.00230
	(A2 * !A3 * B1 * !Y)	0.00400	0.00403	0.00401
	(A2 * !A3 * B1 * !Y)	-0.00231	-0.00232	-0.00230
	(A1 * !A2 * !A3 * B1 * !Y)	0.00400	0.00406	0.00401
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00231	-0.00234	-0.00230
	(!A1 * !A2 * !A3 * B1 * Y)	0.00117	0.00117	0.00117
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00498	-0.00507	-0.00506
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00143	0.00143	0.00125
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00480	-0.00486	-0.00516

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00099	-0.00101	-0.00104
	(A3 * B1 * !Y)	0.00060	0.00061	0.00058
	(A2 * !A3 * B1 * !Y)	-0.00099	-0.00101	-0.00104
	(A2 * !A3 * B1 * !Y)	0.00060	0.00061	0.00058
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00100	-0.00101	-0.00104
	(A1 * !A2 * !A3 * B1 * !Y)	0.00061	0.00061	0.00058
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * B1 * Y)	0.00128	0.00129	0.00128
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00132	0.00132	0.00131

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00190	-0.00192	-0.00203
	(A3 * B1 * !Y)	0.00129	0.00129	0.00120
	(A2 * !A3 * B1 * !Y)	-0.00190	-0.00192	-0.00203
	(A2 * !A3 * B1 * !Y)	0.00129	0.00130	0.00120
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00191	-0.00192	-0.00203
	(A1 * !A2 * !A3 * B1 * !Y)	0.00130	0.00130	0.00120
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00061	-0.00061	-0.00061
	(!A1 * !A2 * !A3 * B1 * Y)	0.00255	0.00256	0.00256
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00062	-0.00062	-0.00061
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00263	0.00263	0.00262
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00374	-0.00379	-0.00398
	(A3 * B1 * !Y)	0.00252	0.00254	0.00237
	(A2 * !A3 * B1 * !Y)	-0.00376	-0.00379	-0.00398
	(A2 * !A3 * B1 * !Y)	0.00254	0.00254	0.00237
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00375	-0.00376	-0.00398
	(A1 * !A2 * !A3 * B1 * !Y)	0.00254	0.00252	0.00237
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00117	-0.00117	-0.00117
	(!A1 * !A2 * !A3 * B1 * Y)	0.00506	0.00507	0.00506
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00120	-0.00119	-0.00118
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00521	0.00523	0.00520

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00250	0.00243	0.00243	0.00244	0.00249	0.64511
sky130_fd_sc_hs__o32a_2	0.00262	0.00257	0.00263	0.00283	0.00264	1.27552
sky130_fd_sc_hs__o32a_4	0.00446	0.00478	0.00448	0.00608	0.00476	2.45886

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.03350	0.09179
sky130_fd_sc_hs__o32a_2	0.00000	0.04136	0.09540
sky130_fd_sc_hs__o32a_4	0.00000	0.08419	0.19080

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)	0.15364	0.95717	7.92184
	A2->X (RR)	0.15005	0.94765	7.85129
	A3->X (RR)	0.13890	0.92559	7.75408
	B1->X (RR)	0.13923	0.93972	7.67311
	B2->X (RR)	0.12914	0.91266	7.58291
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.15694	0.84877	8.02047
	A2->X (RR)	0.15483	0.84273	7.97056
	A3->X (RR)	0.14480	0.82547	7.89623
	B1->X (RR)	0.14329	0.84511	7.84417
	B2->X (RR)	0.13294	0.82113	7.76647
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.17405	0.78131	8.02773
	A2->X (RR)	0.16547	0.76457	7.95166
	A3->X (RR)	0.15024	0.73887	7.84467
	B1->X (RR)	0.16224	0.78091	7.83994
	B2->X (RR)	0.14499	0.74735	7.74189

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.49461	1.17943	5.80408
	A2->X (FF)	0.46709	1.16056	5.85229
	A3->X (FF)	0.40830	1.06444	5.42257
	B1->X (FF)	0.24073	0.90817	5.31427
	B2->X (FF)	0.21407	0.85326	5.01328
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.63440	1.31738	6.25273
	A2->X (FF)	0.60793	1.30015	6.36614
	A3->X (FF)	0.55111	1.20109	5.95238
	B1->X (FF)	0.32346	0.98178	5.74757
	B2->X (FF)	0.29465	0.93020	5.43584
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.61777	1.26436	6.24091
	A2->X (FF)	0.58968	1.23681	6.30328
	A3->X (FF)	0.50395	1.11219	5.86356
	B1->X (FF)	0.29758	0.91410	5.69858
	B2->X (FF)	0.26161	0.85276	5.38932

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.00856	0.00847	0.00857
	A1	0.00372	0.00362	0.00377
	A2	0.00764	0.00765	0.00782
	A2	0.00330	0.00331	0.00354
	A3	0.00666	0.00665	0.00700
	A3	0.00273	0.00272	0.00314
	B1	0.00762	0.00753	0.00812
	B1	0.00369	0.00360	0.00425
	B2	0.00661	0.00648	0.00740
	B2	0.00318	0.00306	0.00404
sky130_fd_sc_hs__o32a_2	A1	0.01042	0.01050	0.01060
	A1	0.00521	0.00529	0.00548
	A2	0.00949	0.00969	0.00989
	A2	0.00477	0.00498	0.00526
	A3	0.00853	0.00872	0.00904
	A3	0.00422	0.00441	0.00484
	B1	0.00942	0.00948	0.01000
	B1	0.00509	0.00515	0.00580
	B2	0.00833	0.00838	0.00913
	B2	0.00468	0.00473	0.00561

sky130_fd_sc_hs__o32a_4	**A1**	0.02019	0.02057	0.02111
	A1	0.01071	0.01110	0.01179
	A2	0.01836	0.01874	0.01928
	A2	0.00960	0.01000	0.01070
	A3	0.01571	0.01613	0.01709
	A3	0.00815	0.00859	0.00979
	B1	0.01881	0.01898	0.02027
	B1	0.01043	0.01061	0.01214
	B2	0.01625	0.01651	0.01830
	B2	0.00947	0.00974	0.01180

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00283	0.00276	0.00318
	A1	0.00751	0.00747	0.00755
	A2	0.00284	0.00284	0.00348
	A2	0.00701	0.00700	0.00726
	A3	0.00273	0.00278	0.00418
	A3	0.00655	0.00659	0.00775
	B1	0.00190	0.00190	0.00257
	B1	0.00589	0.00590	0.00629
	B2	0.00193	0.00195	0.00386
	B2	0.00541	0.00544	0.00691

sky130_fd_sc_hs__o32a_2	**A1**	0.00456	0.00468	0.00546
	A1	0.00968	0.00981	0.00992
	A2	0.00459	0.00473	0.00615
	A2	0.00918	0.00934	0.00962
	A3	0.00472	0.00483	0.00659
	A3	0.00877	0.00894	0.01012
	B1	0.00357	0.00373	0.00489
	B1	0.00796	0.00815	0.00855
	B2	0.00365	0.00378	0.00628
	B2	0.00736	0.00756	0.00903
sky130_fd_sc_hs__o32a_4	**A1**	0.00830	0.00882	0.01199
	A1	0.01776	0.01827	0.01861
	A2	0.00828	0.00877	0.01179
	A2	0.01692	0.01742	0.01802
	A3	0.00830	0.00867	0.01165
	A3	0.01567	0.01615	0.01872
	B1	0.00660	0.00687	0.00883
	B1	0.01516	0.01552	0.01628
	B2	0.00659	0.00706	0.01143
	B2	0.01351	0.01397	0.01689

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)**	0.00090	0.00090	0.00090
	(A2 * A3 * B2 * X)	-0.00092	-0.00094	-0.00094
	(A2 * A3 * B1 * !B2 * X)	0.00090	0.00090	0.00090
	(A2 * A3 * B1 * !B2 * X)	-0.00092	-0.00094	-0.00094
	(A2 * !B1 * !B2 * !X)	0.00077	0.00077	0.00077
	(A2 * !B1 * !B2 * !X)	-0.00105	-0.00108	-0.00107
	(A2 * !A3 * B2 * X)	0.00090	0.00090	0.00090
	(A2 * !A3 * B2 * X)	-0.00091	-0.00094	-0.00094
	(A2 * !A3 * B1 * !B2 * X)	0.00090	0.00090	0.00090
	(A2 * !A3 * B1 * !B2 * X)	-0.00091	-0.00094	-0.00094
	(!A2 * A3 * B2 * X)	0.00091	0.00090	0.00090
	(!A2 * A3 * B2 * X)	-0.00085	-0.00091	-0.00090
	(!A2 * A3 * B1 * !B2 * X)	0.00091	0.00090	0.00090
	(!A2 * A3 * B1 * !B2 * X)	-0.00085	-0.00091	-0.00090
	(!A2 * A3 * !B1 * !B2 * !X)	0.00076	0.00077	0.00077
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00099	-0.00104	-0.00104
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00072	0.00072	0.00072
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00109	-0.00109	-0.00109

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00101	0.00101	0.00100
	(A2 * A3 * B2 * X)	-0.00092	-0.00094	-0.00094
	(A2 * A3 * B1 * !B2 * X)	0.00101	0.00101	0.00100
	(A2 * A3 * B1 * !B2 * X)	-0.00092	-0.00094	-0.00094
	(A2 * !B1 * !B2 * !X)	0.00088	0.00088	0.00088
	(A2 * !B1 * !B2 * !X)	-0.00105	-0.00107	-0.00107
	(A2 * !A3 * B2 * X)	0.00101	0.00101	0.00100
	(A2 * !A3 * B2 * X)	-0.00091	-0.00094	-0.00094
	(A2 * !A3 * B1 * !B2 * X)	0.00101	0.00101	0.00100
	(A2 * !A3 * B1 * !B2 * X)	-0.00091	-0.00094	-0.00094
	(!A2 * A3 * B2 * X)	0.00101	0.00101	0.00100
	(!A2 * A3 * B2 * X)	-0.00085	-0.00091	-0.00090
	(!A2 * A3 * B1 * !B2 * X)	0.00101	0.00101	0.00100
	(!A2 * A3 * B1 * !B2 * X)	-0.00085	-0.00091	-0.00090
	(!A2 * A3 * !B1 * !B2 * !X)	0.00088	0.00088	0.00088
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00098	-0.00104	-0.00103
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00082	0.00083	0.00082
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00109	-0.00109	-0.00108

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00155	0.00156	0.00154
	(A2 * A3 * B2 * X)	-0.00184	-0.00191	-0.00190
	(A2 * A3 * B1 * !B2 * X)	0.00155	0.00156	0.00154
	(A2 * A3 * B1 * !B2 * X)	-0.00184	-0.00191	-0.00190
	(A2 * !B1 * !B2 * !X)	0.00155	0.00156	0.00154
	(A2 * !B1 * !B2 * !X)	-0.00185	-0.00191	-0.00190
	(A2 * !A3 * B2 * X)	0.00155	0.00156	0.00154
	(A2 * !A3 * B2 * X)	-0.00183	-0.00191	-0.00190
	(A2 * !A3 * B1 * !B2 * X)	0.00155	0.00156	0.00154
	(A2 * !A3 * B1 * !B2 * X)	-0.00182	-0.00191	-0.00190
	(!A2 * A3 * B2 * X)	0.00156	0.00156	0.00154
	(!A2 * A3 * B2 * X)	-0.00171	-0.00183	-0.00182
	(!A2 * A3 * B1 * !B2 * X)	0.00156	0.00156	0.00154
	(!A2 * A3 * B1 * !B2 * X)	-0.00171	-0.00183	-0.00182
	(!A2 * A3 * !B1 * !B2 * !X)	0.00155	0.00156	0.00154
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00172	-0.00183	-0.00182
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00143	0.00145	0.00144
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00195	-0.00196	-0.00195

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)**	-0.00090	-0.00090	-0.00090
	(A2 * A3 * B2 * X)	0.00094	0.00095	0.00094
	(A2 * A3 * B1 * !B2 * X)	-0.00090	-0.00090	-0.00090
	(A2 * A3 * B1 * !B2 * X)	0.00095	0.00095	0.00094
	(A2 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00076
	(A2 * !B1 * !B2 * !X)	0.00108	0.00108	0.00107
	(A2 * !A3 * B2 * X)	-0.00089	-0.00090	-0.00090
	(A2 * !A3 * B2 * X)	0.00093	0.00095	0.00094
	(A2 * !A3 * B1 * !B2 * X)	-0.00089	-0.00090	-0.00090
	(A2 * !A3 * B1 * !B2 * X)	0.00093	0.00095	0.00094
	(!A2 * A3 * B2 * X)	-0.00090	-0.00090	-0.00090
	(!A2 * A3 * B2 * X)	0.00091	0.00091	0.00090
	(!A2 * A3 * B1 * !B2 * X)	-0.00090	-0.00090	-0.00090
	(!A2 * A3 * B1 * !B2 * X)	0.00091	0.00091	0.00090
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00076	-0.00077	-0.00076
	(!A2 * A3 * !B1 * !B2 * !X)	0.00104	0.00104	0.00104
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00068	-0.00072	-0.00072
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00110	0.00110	0.00109

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00101	-0.00101	-0.00100
	(A2 * A3 * B2 * X)	0.00095	0.00095	0.00094
	(A2 * A3 * B1 * !B2 * X)	-0.00101	-0.00101	-0.00100
	(A2 * A3 * B1 * !B2 * X)	0.00095	0.00095	0.00094
	(A2 * !B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(A2 * !B1 * !B2 * !X)	0.00107	0.00108	0.00107
	(A2 * !A3 * B2 * X)	-0.00101	-0.00101	-0.00100
	(A2 * !A3 * B2 * X)	0.00095	0.00095	0.00094
	(A2 * !A3 * B1 * !B2 * X)	-0.00100	-0.00101	-0.00100
	(A2 * !A3 * B1 * !B2 * X)	0.00094	0.00095	0.00094
	(!A2 * A3 * B2 * X)	-0.00100	-0.00100	-0.00100
	(!A2 * A3 * B2 * X)	0.00091	0.00091	0.00090
	(!A2 * A3 * B1 * !B2 * X)	-0.00100	-0.00100	-0.00100
	(!A2 * A3 * B1 * !B2 * X)	0.00091	0.00091	0.00090
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(!A2 * A3 * !B1 * !B2 * !X)	0.00103	0.00104	0.00103
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00078	-0.00083	-0.00082
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00109	0.00109	0.00109

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00154	-0.00155	-0.00154
	(A2 * A3 * B2 * X)	0.00190	0.00191	0.00190
	(A2 * A3 * B1 * !B2 * X)	-0.00154	-0.00154	-0.00154
	(A2 * A3 * B1 * !B2 * X)	0.00190	0.00191	0.00190
	(A2 * !B1 * !B2 * !X)	-0.00154	-0.00154	-0.00154
	(A2 * !B1 * !B2 * !X)	0.00190	0.00191	0.00190
	(A2 * !A3 * B2 * X)	-0.00154	-0.00155	-0.00154
	(A2 * !A3 * B2 * X)	0.00190	0.00191	0.00190
	(A2 * !A3 * B1 * !B2 * X)	-0.00154	-0.00155	-0.00154
	(A2 * !A3 * B1 * !B2 * X)	0.00190	0.00191	0.00190
	(!A2 * A3 * B2 * X)	-0.00154	-0.00154	-0.00154
	(!A2 * A3 * B2 * X)	0.00183	0.00183	0.00182
	(!A2 * A3 * B1 * !B2 * X)	-0.00153	-0.00154	-0.00154
	(!A2 * A3 * B1 * !B2 * X)	0.00181	0.00183	0.00182
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00154	-0.00155	-0.00154
	(!A2 * A3 * !B1 * !B2 * !X)	0.00181	0.00183	0.00182
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00136	-0.00145	-0.00144
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00197	0.00197	0.00196

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)**	0.00086	0.00087	0.00084
	(A1 * A3 * B2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A3 * B1 * !B2 * X)	0.00087	0.00087	0.00084
	(A1 * A3 * B1 * !B2 * X)	-0.00064	-0.00065	-0.00065
	(A1 * A3 * !B1 * !B2 * !X)	0.00078	0.00079	0.00078
	(A1 * A3 * !B1 * !B2 * !X)	-0.00073	-0.00073	-0.00073
	(A1 * !A3 * B2 * X)	0.00083	0.00083	0.00082
	(A1 * !A3 * B2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * !A3 * B1 * !B2 * X)	0.00083	0.00083	0.00082
	(A1 * !A3 * B1 * !B2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * !A3 * !B1 * !B2 * !X)	0.00079	0.00079	0.00078
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * A3 * B2 * X)	0.00095	0.00083	0.00082
	(!A1 * A3 * B2 * X)	-0.00079	-0.00092	-0.00093
	(!A1 * A3 * B1 * !B2 * X)	0.00095	0.00084	0.00082
	(!A1 * A3 * B1 * !B2 * X)	-0.00079	-0.00092	-0.00093
	(!A1 * A3 * !B1 * !B2 * !X)	0.00079	0.00079	0.00078
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00094	-0.00096	-0.00096
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00097	-0.00098	-0.00097

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00098	0.00099	0.00095
	(A1 * A3 * B2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A3 * B1 * !B2 * X)	0.00098	0.00099	0.00095
	(A1 * A3 * B1 * !B2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A3 * !B1 * !B2 * !X)	0.00089	0.00090	0.00089
	(A1 * A3 * !B1 * !B2 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A3 * B2 * X)	0.00094	0.00094	0.00093
	(A1 * !A3 * B2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * !A3 * B1 * !B2 * X)	0.00094	0.00094	0.00093
	(A1 * !A3 * B1 * !B2 * X)	-0.00057	-0.00057	-0.00057
	(A1 * !A3 * !B1 * !B2 * !X)	0.00090	0.00090	0.00089
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00095	-0.00096	-0.00096
	(!A1 * A3 * B2 * X)	0.00106	0.00095	0.00093
	(!A1 * A3 * B2 * X)	-0.00079	-0.00093	-0.00093
	(!A1 * A3 * B1 * !B2 * X)	0.00106	0.00095	0.00093
	(!A1 * A3 * B1 * !B2 * X)	-0.00079	-0.00093	-0.00093
	(!A1 * A3 * !B1 * !B2 * !X)	0.00090	0.00090	0.00089
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00095	-0.00097	-0.00096
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00098	-0.00098	-0.00098

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00163	0.00165	0.00160
	(A1 * A3 * B2 * X)	-0.00145	-0.00145	-0.00144
	(A1 * A3 * B1 * !B2 * X)	0.00163	0.00165	0.00160
	(A1 * A3 * B1 * !B2 * X)	-0.00145	-0.00145	-0.00144
	(A1 * A3 * !B1 * !B2 * !X)	0.00158	0.00159	0.00158
	(A1 * A3 * !B1 * !B2 * !X)	-0.00154	-0.00154	-0.00154
	(A1 * !A3 * B2 * X)	0.00160	0.00159	0.00158
	(A1 * !A3 * B2 * X)	-0.00130	-0.00129	-0.00129
	(A1 * !A3 * B1 * !B2 * X)	0.00160	0.00159	0.00158
	(A1 * !A3 * B1 * !B2 * X)	-0.00130	-0.00129	-0.00129
	(A1 * !A3 * !B1 * !B2 * !X)	0.00159	0.00160	0.00158
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00199	-0.00202	-0.00201
	(!A1 * A3 * B2 * X)	0.00181	0.00161	0.00158
	(!A1 * A3 * B2 * X)	-0.00176	-0.00203	-0.00204
	(!A1 * A3 * B1 * !B2 * X)	0.00181	0.00161	0.00158
	(!A1 * A3 * B1 * !B2 * X)	-0.00176	-0.00203	-0.00204
	(!A1 * A3 * !B1 * !B2 * !X)	0.00158	0.00160	0.00158
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00197	-0.00203	-0.00202
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00147	0.00148	0.00148
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00208	-0.00208	-0.00208

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)**	-0.00082	-0.00083	-0.00082
	(A1 * A3 * B2 * X)	0.00065	0.00065	0.00065
	(A1 * A3 * B1 * !B2 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A3 * B1 * !B2 * X)	0.00064	0.00065	0.00065
	(A1 * A3 * !B1 * !B2 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * A3 * !B1 * !B2 * !X)	0.00073	0.00073	0.00073
	(A1 * !A3 * B2 * X)	-0.00081	-0.00081	-0.00080
	(A1 * !A3 * B2 * X)	0.00058	0.00059	0.00059
	(A1 * !A3 * B1 * !B2 * X)	-0.00081	-0.00081	-0.00080
	(A1 * !A3 * B1 * !B2 * X)	0.00058	0.00059	0.00059
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A3 * !B1 * !B2 * !X)	0.00095	0.00095	0.00095
	(!A1 * A3 * B2 * X)	-0.00082	-0.00082	-0.00081
	(!A1 * A3 * B2 * X)	0.00093	0.00093	0.00093
	(!A1 * A3 * B1 * !B2 * X)	-0.00082	-0.00082	-0.00081
	(!A1 * A3 * B1 * !B2 * X)	0.00093	0.00093	0.00093
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * A3 * !B1 * !B2 * !X)	0.00096	0.00096	0.00096
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00069	-0.00073	-0.00073
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00098	0.00098	0.00098

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00093	-0.00094	-0.00093
	(A1 * A3 * B2 * X)	0.00065	0.00065	0.00065
	(A1 * A3 * B1 * !B2 * X)	-0.00093	-0.00094	-0.00093
	(A1 * A3 * B1 * !B2 * X)	0.00065	0.00065	0.00065
	(A1 * A3 * !B1 * !B2 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * A3 * !B1 * !B2 * !X)	0.00074	0.00074	0.00074
	(A1 * !A3 * B2 * X)	-0.00092	-0.00092	-0.00092
	(A1 * !A3 * B2 * X)	0.00059	0.00059	0.00059
	(A1 * !A3 * B1 * !B2 * X)	-0.00092	-0.00092	-0.00091
	(A1 * !A3 * B1 * !B2 * X)	0.00059	0.00059	0.00059
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !A3 * !B1 * !B2 * !X)	0.00097	0.00096	0.00096
	(!A1 * A3 * B2 * X)	-0.00093	-0.00093	-0.00092
	(!A1 * A3 * B2 * X)	0.00093	0.00093	0.00093
	(!A1 * A3 * B1 * !B2 * X)	-0.00093	-0.00093	-0.00092
	(!A1 * A3 * B1 * !B2 * X)	0.00093	0.00093	0.00093
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00089	-0.00089	-0.00089
	(!A1 * A3 * !B1 * !B2 * !X)	0.00096	0.00097	0.00096
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00078	-0.00084	-0.00083
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00098	0.00099	0.00098

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00158	-0.00158	-0.00158
	(A1 * A3 * B2 * X)	0.00145	0.00145	0.00144
	(A1 * A3 * B1 * !B2 * X)	-0.00158	-0.00158	-0.00158
	(A1 * A3 * B1 * !B2 * X)	0.00145	0.00145	0.00144
	(A1 * A3 * !B1 * !B2 * !X)	-0.00157	-0.00158	-0.00158
	(A1 * A3 * !B1 * !B2 * !X)	0.00154	0.00154	0.00154
	(A1 * !A3 * B2 * X)	-0.00156	-0.00156	-0.00155
	(A1 * !A3 * B2 * X)	0.00131	0.00132	0.00133
	(A1 * !A3 * B1 * !B2 * X)	-0.00156	-0.00156	-0.00155
	(A1 * !A3 * B1 * !B2 * X)	0.00132	0.00132	0.00133
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00158	-0.00159	-0.00158
	(A1 * !A3 * !B1 * !B2 * !X)	0.00202	0.00202	0.00201
	(!A1 * A3 * B2 * X)	-0.00157	-0.00157	-0.00156
	(!A1 * A3 * B2 * X)	0.00203	0.00203	0.00204
	(!A1 * A3 * B1 * !B2 * X)	-0.00157	-0.00157	-0.00156
	(!A1 * A3 * B1 * !B2 * X)	0.00203	0.00203	0.00204
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00158	-0.00158	-0.00158
	(!A1 * A3 * !B1 * !B2 * !X)	0.00203	0.00203	0.00202
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00138	-0.00148	-0.00148
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00208	0.00210	0.00208

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00089	0.00089	0.00089
	(A2 * B2 * X)	-0.00053	-0.00052	-0.00052
	(A2 * B1 * !B2 * X)	0.00089	0.00089	0.00089
	(A2 * B1 * !B2 * X)	-0.00053	-0.00052	-0.00052
	(A2 * !B1 * !B2 * !X)	0.00080	0.00080	0.00079
	(A2 * !B1 * !B2 * !X)	-0.00094	-0.00096	-0.00096
	(A1 * !A2 * B2 * X)	0.00089	0.00089	0.00089
	(A1 * !A2 * B2 * X)	-0.00053	-0.00052	-0.00052
	(A1 * !A2 * B1 * !B2 * X)	0.00089	0.00089	0.00089
	(A1 * !A2 * B1 * !B2 * X)	-0.00053	-0.00052	-0.00052
	(A1 * !A2 * !B1 * !B2 * !X)	0.00079	0.00080	0.00079
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00086	-0.00090	-0.00090
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00073	0.00074	0.00073
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00098	-0.00098	-0.00098
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00103	0.00103	0.00102
	(A2 * B2 * X)	-0.00053	-0.00052	-0.00052
	(A2 * B1 * !B2 * X)	0.00103	0.00103	0.00102
	(A2 * B1 * !B2 * X)	-0.00053	-0.00052	-0.00052
	(A2 * !B1 * !B2 * !X)	0.00091	0.00090	0.00090
	(A2 * !B1 * !B2 * !X)	-0.00097	-0.00098	-0.00098
	(A1 * !A2 * B2 * X)	0.00103	0.00103	0.00102
	(A1 * !A2 * B2 * X)	-0.00053	-0.00052	-0.00052
	(A1 * !A2 * B1 * !B2 * X)	0.00103	0.00103	0.00102
	(A1 * !A2 * B1 * !B2 * X)	-0.00053	-0.00052	-0.00052
	(A1 * !A2 * !B1 * !B2 * !X)	0.00089	0.00091	0.00090
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00089	-0.00093	-0.00093
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00083	0.00084	0.00084
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00100	-0.00101	-0.00100

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00167	0.00167	0.00166
	(A2 * B2 * X)	-0.00106	-0.00105	-0.00105
	(A2 * B1 * !B2 * X)	0.00167	0.00167	0.00166
	(A2 * B1 * !B2 * X)	-0.00106	-0.00105	-0.00105
	(A2 * !B1 * !B2 * !X)	0.00152	0.00154	0.00153
	(A2 * !B1 * !B2 * !X)	-0.00178	-0.00185	-0.00184
	(A1 * !A2 * B2 * X)	0.00167	0.00167	0.00166
	(A1 * !A2 * B2 * X)	-0.00105	-0.00105	-0.00104
	(A1 * !A2 * B1 * !B2 * X)	0.00168	0.00167	0.00166
	(A1 * !A2 * B1 * !B2 * X)	-0.00107	-0.00105	-0.00104
	(A1 * !A2 * !B1 * !B2 * !X)	0.00153	0.00155	0.00153
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00166	-0.00174	-0.00173
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00142	0.00144	0.00143
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00190	-0.00191	-0.00190

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00084	-0.00085	-0.00088
	(A2 * B2 * X)	0.00056	0.00056	0.00053
	(A2 * B1 * !B2 * X)	-0.00084	-0.00085	-0.00088
	(A2 * B1 * !B2 * X)	0.00056	0.00056	0.00053
	(A2 * !B1 * !B2 * !X)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00096	0.00096	0.00096
	(A1 * !A2 * B2 * X)	-0.00078	-0.00079	-0.00087
	(A1 * !A2 * B2 * X)	0.00060	0.00060	0.00054
	(A1 * !A2 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00087
	(A1 * !A2 * B1 * !B2 * X)	0.00060	0.00060	0.00054
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00079	-0.00078	-0.00079
	(A1 * !A2 * !B1 * !B2 * !X)	0.00090	0.00090	0.00090
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00069	-0.00074	-0.00073
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00098	0.00098	0.00098
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00097	-0.00098	-0.00102
	(A2 * B2 * X)	0.00056	0.00056	0.00053
	(A2 * B1 * !B2 * X)	-0.00097	-0.00098	-0.00102
	(A2 * B1 * !B2 * X)	0.00057	0.00056	0.00053
	(A2 * !B1 * !B2 * !X)	-0.00090	-0.00090	-0.00089
	(A2 * !B1 * !B2 * !X)	0.00099	0.00098	0.00098
	(A1 * !A2 * B2 * X)	-0.00092	-0.00092	-0.00100
	(A1 * !A2 * B2 * X)	0.00060	0.00060	0.00054
	(A1 * !A2 * B1 * !B2 * X)	-0.00092	-0.00092	-0.00100
	(A1 * !A2 * B1 * !B2 * X)	0.00060	0.00060	0.00054
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !B1 * !B2 * !X)	0.00093	0.00093	0.00093
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00079	-0.00084	-0.00084
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00100	0.00101	0.00100

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00152	-0.00153	-0.00164
	(A2 * B2 * X)	0.00116	0.00117	0.00108
	(A2 * B1 * !B2 * X)	-0.00152	-0.00153	-0.00164
	(A2 * B1 * !B2 * X)	0.00117	0.00117	0.00108
	(A2 * !B1 * !B2 * !X)	-0.00152	-0.00153	-0.00152
	(A2 * !B1 * !B2 * !X)	0.00184	0.00185	0.00184
	(A1 * !A2 * B2 * X)	-0.00139	-0.00141	-0.00162
	(A1 * !A2 * B2 * X)	0.00124	0.00124	0.00109
	(A1 * !A2 * B1 * !B2 * X)	-0.00140	-0.00141	-0.00162
	(A1 * !A2 * B1 * !B2 * X)	0.00124	0.00124	0.00109
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00153	-0.00153	-0.00152
	(A1 * !A2 * !B1 * !B2 * !X)	0.00174	0.00174	0.00173
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00134	-0.00144	-0.00143
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00190	0.00191	0.00190

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00099	0.00091	0.00090
	(A3 * B2 * X)	-0.00087	-0.00097	-0.00097
	(A2 * !A3 * B2 * X)	0.00100	0.00091	0.00090
	(A2 * !A3 * B2 * X)	-0.00087	-0.00097	-0.00097
	(A1 * !A2 * !A3 * B2 * X)	0.00100	0.00091	0.00090
	(A1 * !A2 * !A3 * B2 * X)	-0.00087	-0.00097	-0.00097
	(!A1 * !A2 * !A3 * B2 * !X)	0.00033	0.00033	0.00033
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00118	-0.00120	-0.00120
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00039	0.00039	0.00035
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00113	-0.00115	-0.00121

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00120	0.00111	0.00110
	(A3 * B2 * X)	-0.00097	-0.00106	-0.00107
	(A2 * !A3 * B2 * X)	0.00119	0.00111	0.00110
	(A2 * !A3 * B2 * X)	-0.00096	-0.00106	-0.00107
	(A1 * !A2 * !A3 * B2 * X)	0.00119	0.00111	0.00110
	(A1 * !A2 * !A3 * B2 * X)	-0.00096	-0.00106	-0.00107
	(!A1 * !A2 * !A3 * B2 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00135	-0.00137	-0.00136
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00047	0.00047	0.00042
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00129	-0.00130	-0.00137
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00216	0.00196	0.00193
	(A3 * B2 * X)	-0.00201	-0.00225	-0.00227
	(A2 * !A3 * B2 * X)	0.00216	0.00196	0.00193
	(A2 * !A3 * B2 * X)	-0.00200	-0.00225	-0.00227
	(A1 * !A2 * !A3 * B2 * X)	0.00216	0.00196	0.00193
	(A1 * !A2 * !A3 * B2 * X)	-0.00200	-0.00225	-0.00227
	(!A1 * !A2 * !A3 * B2 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00290	-0.00296	-0.00295
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00069	0.00070	0.00062
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00283	-0.00285	-0.00299

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00090	-0.00090	-0.00090
	(A3 * B2 * X)	0.00098	0.00097	0.00097
	(A2 * !A3 * B2 * X)	-0.00090	-0.00090	-0.00090
	(A2 * !A3 * B2 * X)	0.00098	0.00097	0.00097
	(A1 * !A2 * !A3 * B2 * X)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !A3 * B2 * X)	0.00098	0.00098	0.00097
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * !A3 * B2 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00033	-0.00034	-0.00033
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00121	0.00122	0.00122
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00110	-0.00109	-0.00109
	(A3 * B2 * X)	0.00107	0.00106	0.00107
	(A2 * !A3 * B2 * X)	-0.00110	-0.00110	-0.00109
	(A2 * !A3 * B2 * X)	0.00106	0.00107	0.00107
	(A1 * !A2 * !A3 * B2 * X)	-0.00110	-0.00110	-0.00109
	(A1 * !A2 * !A3 * B2 * X)	0.00107	0.00107	0.00107
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !A3 * B2 * !X)	0.00137	0.00137	0.00136
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00139	0.00139	0.00138
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00192	-0.00192	-0.00191
	(A3 * B2 * X)	0.00227	0.00228	0.00227
	(A2 * !A3 * B2 * X)	-0.00192	-0.00192	-0.00191
	(A2 * !A3 * B2 * X)	0.00227	0.00227	0.00227
	(A1 * !A2 * !A3 * B2 * X)	-0.00192	-0.00192	-0.00191
	(A1 * !A2 * !A3 * B2 * X)	0.00227	0.00227	0.00227
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * !A3 * B2 * !X)	0.00296	0.00296	0.00295
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00302	0.00305	0.00301

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00092	0.00093	0.00093
	(A3 * B1 * X)	-0.00052	-0.00053	-0.00053
	(A2 * !A3 * B1 * X)	0.00093	0.00093	0.00093
	(A2 * !A3 * B1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * !A3 * B1 * X)	0.00093	0.00093	0.00093
	(A1 * !A2 * !A3 * B1 * X)	-0.00054	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * B1 * !X)	0.00028	0.00028	0.00027
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00033	0.00033	0.00029
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00112	-0.00112	-0.00119
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00103	0.00104	0.00104
	(A3 * B1 * X)	-0.00052	-0.00053	-0.00053
	(A2 * !A3 * B1 * X)	0.00104	0.00104	0.00104
	(A2 * !A3 * B1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * !A3 * B1 * X)	0.00104	0.00104	0.00104
	(A1 * !A2 * !A3 * B1 * X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * B1 * !X)	0.00032	0.00031	0.00031
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00119	-0.00120	-0.00120
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00038	0.00038	0.00033
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00113	-0.00113	-0.00121

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00179	0.00180	0.00179
	(A3 * B1 * X)	-0.00107	-0.00107	-0.00106
	(A2 * !A3 * B1 * X)	0.00179	0.00180	0.00179
	(A2 * !A3 * B1 * X)	-0.00107	-0.00107	-0.00106
	(A1 * !A2 * !A3 * B1 * X)	0.00179	0.00180	0.00179
	(A1 * !A2 * !A3 * B1 * X)	-0.00107	-0.00108	-0.00106
	(!A1 * !A2 * !A3 * B1 * !X)	0.00056	0.00057	0.00056
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00225	-0.00229	-0.00228
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00068	0.00068	0.00059
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00219	-0.00220	-0.00234

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00088	-0.00088	-0.00092
	(A3 * B1 * X)	0.00057	0.00057	0.00054
	(A2 * !A3 * B1 * X)	-0.00088	-0.00088	-0.00092
	(A2 * !A3 * B1 * X)	0.00058	0.00057	0.00054
	(A1 * !A2 * !A3 * B1 * X)	-0.00088	-0.00089	-0.00092
	(A1 * !A2 * !A3 * B1 * X)	0.00057	0.00057	0.00054
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00027	-0.00028	-0.00027
	(!A1 * !A2 * !A3 * B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00028	-0.00028	-0.00028
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00120	0.00120	0.00120

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00099	-0.00100	-0.00103
	(A3 * B1 * X)	0.00058	0.00057	0.00054
	(A2 * !A3 * B1 * X)	-0.00099	-0.00100	-0.00103
	(A2 * !A3 * B1 * X)	0.00058	0.00057	0.00054
	(A1 * !A2 * !A3 * B1 * X)	-0.00099	-0.00100	-0.00103
	(A1 * !A2 * !A3 * B1 * X)	0.00057	0.00057	0.00054
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * B1 * !X)	0.00120	0.00120	0.00120
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00032	-0.00032	-0.00031
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00122	0.00122	0.00122
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00168	-0.00169	-0.00177
	(A3 * B1 * X)	0.00116	0.00116	0.00109
	(A2 * !A3 * B1 * X)	-0.00168	-0.00169	-0.00177
	(A2 * !A3 * B1 * X)	0.00116	0.00116	0.00109
	(A1 * !A2 * !A3 * B1 * X)	-0.00168	-0.00169	-0.00177
	(A1 * !A2 * !A3 * B1 * X)	0.00116	0.00116	0.00109
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * B1 * !X)	0.00230	0.00229	0.00228
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00234	0.00236	0.00235

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00256	0.00262	0.00272	0.00271	0.00276	0.14144
sky130_fd_sc_hs__o41ai_2	0.00502	0.00513	0.00491	0.00505	0.00535	0.26058
sky130_fd_sc_hs__o41ai_4	0.00974	0.00970	0.00986	0.01010	0.00743	0.49305

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.01207	0.03622
sky130_fd_sc_hs__o41ai_2	0.00000	0.02413	0.07244
sky130_fd_sc_hs__o41ai_4	0.00000	0.03128	0.10866

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)	0.51177	1.93415	11.66370
	A2->Y (FR)	0.48788	1.90119	11.89650
	A3->Y (FR)	0.43081	1.84588	12.12800
	A4->Y (FR)	0.33492	1.70576	11.61660
	B1->Y (FR)	0.05662	0.73556	6.50885
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.52709	1.75113	11.67730
	A2->Y (FR)	0.49875	1.70662	11.89090
	A3->Y (FR)	0.43321	1.64583	12.17940
	A4->Y (FR)	0.29883	1.47092	11.63680
	B1->Y (FR)	0.04476	0.65941	6.34078
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.49164	1.52968	11.51940
	A2->Y (FR)	0.46340	1.48887	11.76590
	A3->Y (FR)	0.39977	1.42648	12.05670
	A4->Y (FR)	0.27311	1.26422	11.55510
	B1->Y (FR)	0.06003	0.76101	7.95765

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.05483	0.46993	3.49104
	A2->Y (RF)	0.05603	0.46377	3.47259
	A3->Y (RF)	0.05591	0.45499	3.45514
	A4->Y (RF)	0.04814	0.43929	3.42292
	B1->Y (RF)	0.04195	0.48902	3.72549
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.05242	0.43344	3.45655
	A2->Y (RF)	0.05359	0.42729	3.43835
	A3->Y (RF)	0.05364	0.41604	3.40991
	A4->Y (RF)	0.04565	0.39714	3.37710
	B1->Y (RF)	0.03751	0.45123	3.75456
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.05487	0.39934	3.42169
	A2->Y (RF)	0.05418	0.38915	3.38166
	A3->Y (RF)	0.05250	0.37501	3.34340
	A4->Y (RF)	0.04199	0.34946	3.26962
	B1->Y (RF)	0.03902	0.45229	4.12470

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00084	0.00072	0.00069
	A1	0.00586	0.00575	0.00571
	A2	0.00087	0.00075	0.00073
	A2	0.00534	0.00523	0.00520
	A3	0.00086	0.00074	0.00073
	A3	0.00486	0.00474	0.00473
	A4	0.00085	0.00073	0.00100
	A4	0.00434	0.00423	0.00448
	B1	-0.00029	-0.00033	0.00002
	B1	0.00385	0.00378	0.00417
sky130_fd_sc_hs__o41ai_2	A1	0.00123	0.00099	0.00095
	A1	0.01137	0.01113	0.01106
	A2	0.00128	0.00102	0.00098
	A2	0.01030	0.01005	0.01000
	A3	0.00132	0.00108	0.00108
	A3	0.00918	0.00893	0.00892
	A4	0.00125	0.00099	0.00160
	A4	0.00806	0.00778	0.00836
	B1	-0.00127	-0.00130	-0.00053
	B1	0.00712	0.00702	0.00778

sky130_fd_sc_hs__o41ai_4	**A1**	0.00214	0.00172	0.00166
	A1	0.02201	0.02160	0.02148
	A2	0.00219	0.00175	0.00172
	A2	0.01983	0.01937	0.01928
	A3	0.00216	0.00171	0.00176
	A3	0.01771	0.01725	0.01724
	A4	0.00209	0.00155	0.00280
	A4	0.01543	0.01493	0.01608
	B1	-0.00194	-0.00206	-0.00117
	B1	0.01196	0.01172	0.01266

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.00669	0.00659	0.00650
	A1	0.00168	0.00157	0.00152
	A2	0.00574	0.00564	0.00558
	A2	0.00121	0.00111	0.00108
	A3	0.00472	0.00466	0.00464
	A3	0.00061	0.00056	0.00055
	A4	0.00363	0.00362	0.00364
	A4	0.00000	-0.00001	0.00001
	B1	0.00568	0.00559	0.00557
	B1	0.00172	0.00161	0.00163

sky130_fd_sc_hs__o41ai_2	**A1**	0.01400	0.01373	0.01349
	A1	0.00398	0.00371	0.00357
	A2	0.01181	0.01162	0.01148
	A2	0.00271	0.00251	0.00244
	A3	0.00972	0.00958	0.00952
	A3	0.00170	0.00155	0.00152
	A4	0.00703	0.00702	0.00710
	A4	-0.00002	-0.00004	0.00006
	B1	0.01188	0.01168	0.01167
	B1	0.00392	0.00373	0.00378
sky130_fd_sc_hs__o41ai_4	**A1**	0.02632	0.02578	0.02540
	A1	0.00669	0.00615	0.00595
	A2	0.02210	0.02164	0.02144
	A2	0.00438	0.00393	0.00386
	A3	0.01802	0.01768	0.01770
	A3	0.00214	0.00180	0.00186
	A4	0.01304	0.01296	0.01327
	A4	-0.00081	-0.00091	-0.00059
	B1	0.02119	0.02099	0.02090
	B1	0.00814	0.00793	0.00790

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)**	0.00093	0.00094	0.00093
	(A2 * A4 * B1 * !Y)	-0.00105	-0.00108	-0.00108
	(A2 * A3 * !A4 * B1 * !Y)	0.00093	0.00094	0.00093
	(A2 * A3 * !A4 * B1 * !Y)	-0.00105	-0.00108	-0.00108
	(A2 * !B1 * Y)	0.00093	0.00094	0.00093
	(A2 * !B1 * Y)	-0.00105	-0.00108	-0.00108
	(A2 * !A3 * !A4 * B1 * !Y)	0.00093	0.00094	0.00093
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00105	-0.00108	-0.00108
	(!A2 * A3 * A4 * B1 * !Y)	0.00093	0.00093	0.00093
	(!A2 * A3 * A4 * B1 * !Y)	-0.00098	-0.00104	-0.00104
	(!A2 * A3 * !B1 * Y)	0.00093	0.00093	0.00093
	(!A2 * A3 * !B1 * Y)	-0.00098	-0.00104	-0.00104
	(!A2 * A3 * !A4 * B1 * !Y)	0.00093	0.00093	0.00093
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00098	-0.00104	-0.00104
	(!A2 * !A3 * A4 * B1 * !Y)	0.00093	0.00094	0.00093
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00097	-0.00102	-0.00102
	(!A2 * !A3 * A4 * !B1 * Y)	0.00093	0.00094	0.00093
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00097	-0.00102	-0.00102
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00086	0.00087	0.00086
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00110	-0.00110	-0.00110

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00185	0.00186	0.00185
	(A2 * A4 * B1 * !Y)	-0.00207	-0.00215	-0.00214
	(A2 * A3 * !A4 * B1 * !Y)	0.00185	0.00186	0.00185
	(A2 * A3 * !A4 * B1 * !Y)	-0.00207	-0.00215	-0.00214
	(A2 * !B1 * Y)	0.00185	0.00186	0.00185
	(A2 * !B1 * Y)	-0.00207	-0.00215	-0.00214
	(A2 * !A3 * !A4 * B1 * !Y)	0.00185	0.00186	0.00185
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00206	-0.00214	-0.00214
	(!A2 * A3 * A4 * B1 * !Y)	0.00185	0.00186	0.00185
	(!A2 * A3 * A4 * B1 * !Y)	-0.00194	-0.00206	-0.00205
	(!A2 * A3 * !B1 * Y)	0.00185	0.00186	0.00185
	(!A2 * A3 * !B1 * Y)	-0.00194	-0.00206	-0.00205
	(!A2 * A3 * !A4 * B1 * !Y)	0.00185	0.00186	0.00185
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00194	-0.00206	-0.00205
	(!A2 * !A3 * A4 * B1 * !Y)	0.00185	0.00185	0.00185
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00191	-0.00202	-0.00201
	(!A2 * !A3 * A4 * !B1 * Y)	0.00184	0.00185	0.00185
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00192	-0.00202	-0.00201
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00171	0.00172	0.00171
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00220	-0.00221	-0.00220

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00357	0.00358	0.00356
	(A2 * A4 * B1 * !Y)	-0.00414	-0.00430	-0.00427
	(A2 * A3 * !A4 * B1 * !Y)	0.00357	0.00358	0.00356
	(A2 * A3 * !A4 * B1 * !Y)	-0.00414	-0.00430	-0.00427
	(A2 * !B1 * Y)	0.00357	0.00358	0.00356
	(A2 * !B1 * Y)	-0.00414	-0.00430	-0.00427
	(A2 * !A3 * !A4 * B1 * !Y)	0.00357	0.00358	0.00356
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00410	-0.00430	-0.00427
	(!A2 * A3 * A4 * B1 * !Y)	0.00356	0.00358	0.00356
	(!A2 * A3 * A4 * B1 * !Y)	-0.00384	-0.00408	-0.00406
	(!A2 * A3 * !B1 * Y)	0.00356	0.00358	0.00356
	(!A2 * A3 * !B1 * Y)	-0.00384	-0.00408	-0.00406
	(!A2 * A3 * !A4 * B1 * !Y)	0.00357	0.00358	0.00356
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00384	-0.00408	-0.00406
	(!A2 * !A3 * A4 * B1 * !Y)	0.00357	0.00357	0.00356
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00380	-0.00402	-0.00400
	(!A2 * !A3 * A4 * !B1 * Y)	0.00357	0.00356	0.00356
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00381	-0.00402	-0.00400
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00329	0.00331	0.00328
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00439	-0.00441	-0.00438

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)**	-0.00093	-0.00093	-0.00093
	(A2 * A4 * B1 * !Y)	0.00109	0.00109	0.00108
	(A2 * A3 * !A4 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(A2 * A3 * !A4 * B1 * !Y)	0.00109	0.00108	0.00108
	(A2 * !B1 * Y)	-0.00093	-0.00093	-0.00093
	(A2 * !B1 * Y)	0.00108	0.00109	0.00108
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(A2 * !A3 * !A4 * B1 * !Y)	0.00108	0.00109	0.00108
	(!A2 * A3 * A4 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A2 * A3 * A4 * B1 * !Y)	0.00104	0.00104	0.00104
	(!A2 * A3 * !B1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * A3 * !B1 * Y)	0.00104	0.00104	0.00104
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A2 * A3 * !A4 * B1 * !Y)	0.00104	0.00104	0.00104
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A2 * !A3 * A4 * B1 * !Y)	0.00102	0.00102	0.00102
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * !A3 * A4 * !B1 * Y)	0.00102	0.00102	0.00102
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00082	-0.00087	-0.00086
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00110	0.00111	0.00110

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00185	-0.00185	-0.00184
	(A2 * A4 * B1 * !Y)	0.00215	0.00215	0.00214
	(A2 * A3 * !A4 * B1 * !Y)	-0.00185	-0.00185	-0.00184
	(A2 * A3 * !A4 * B1 * !Y)	0.00215	0.00215	0.00214
	(A2 * !B1 * Y)	-0.00185	-0.00185	-0.00184
	(A2 * !B1 * Y)	0.00214	0.00215	0.00214
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00185	-0.00185	-0.00184
	(A2 * !A3 * !A4 * B1 * !Y)	0.00214	0.00214	0.00214
	(!A2 * A3 * A4 * B1 * !Y)	-0.00185	-0.00185	-0.00184
	(!A2 * A3 * A4 * B1 * !Y)	0.00205	0.00206	0.00205
	(!A2 * A3 * !B1 * Y)	-0.00184	-0.00185	-0.00184
	(!A2 * A3 * !B1 * Y)	0.00204	0.00206	0.00205
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00185	-0.00185	-0.00184
	(!A2 * A3 * !A4 * B1 * !Y)	0.00205	0.00206	0.00205
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00184	-0.00185	-0.00185
	(!A2 * !A3 * A4 * B1 * !Y)	0.00200	0.00202	0.00201
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !A3 * A4 * !B1 * Y)	0.00200	0.00202	0.00201
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00162	-0.00172	-0.00171
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00222	0.00222	0.00220

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00356	-0.00356	-0.00355
	(A2 * A4 * B1 * !Y)	0.00429	0.00430	0.00427
	(A2 * A3 * !A4 * B1 * !Y)	-0.00356	-0.00356	-0.00355
	(A2 * A3 * !A4 * B1 * !Y)	0.00429	0.00430	0.00427
	(A2 * !B1 * Y)	-0.00356	-0.00356	-0.00355
	(A2 * !B1 * Y)	0.00429	0.00430	0.00427
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00355	-0.00356	-0.00355
	(A2 * !A3 * !A4 * B1 * !Y)	0.00428	0.00430	0.00427
	(!A2 * A3 * A4 * B1 * !Y)	-0.00354	-0.00356	-0.00355
	(!A2 * A3 * A4 * B1 * !Y)	0.00404	0.00408	0.00406
	(!A2 * A3 * !B1 * Y)	-0.00354	-0.00356	-0.00355
	(!A2 * A3 * !B1 * Y)	0.00404	0.00408	0.00406
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00354	-0.00356	-0.00355
	(!A2 * A3 * !A4 * B1 * !Y)	0.00404	0.00408	0.00406
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00354	-0.00356	-0.00355
	(!A2 * !A3 * A4 * B1 * !Y)	0.00398	0.00402	0.00400
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00355	-0.00356	-0.00355
	(!A2 * !A3 * A4 * !B1 * Y)	0.00399	0.00402	0.00400
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00310	-0.00331	-0.00328
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00440	0.00443	0.00440

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)**	0.00090	0.00091	0.00090
	(A1 * A3 * A4 * B1 * !Y)	-0.00078	-0.00079	-0.00078
	(A1 * A3 * !B1 * Y)	0.00090	0.00091	0.00090
	(A1 * A3 * !B1 * Y)	-0.00079	-0.00080	-0.00080
	(A1 * A3 * !A4 * B1 * !Y)	0.00090	0.00091	0.00090
	(A1 * A3 * !A4 * B1 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * !A3 * A4 * B1 * !Y)	0.00090	0.00092	0.00090
	(A1 * !A3 * A4 * B1 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * !A3 * A4 * !B1 * Y)	0.00090	0.00092	0.00090
	(A1 * !A3 * A4 * !B1 * Y)	-0.00078	-0.00079	-0.00078
	(A1 * !A3 * !A4 * B1 * !Y)	0.00091	0.00090	0.00090
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00066	-0.00065	-0.00065
	(A1 * !A3 * !A4 * !B1 * Y)	0.00090	0.00090	0.00090
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00102	-0.00105	-0.00104
	(!A1 * A3 * A4 * B1 * !Y)	0.00091	0.00091	0.00090
	(!A1 * A3 * A4 * B1 * !Y)	-0.00102	-0.00105	-0.00105
	(!A1 * A3 * !B1 * Y)	0.00091	0.00091	0.00090
	(!A1 * A3 * !B1 * Y)	-0.00102	-0.00105	-0.00105
	(!A1 * A3 * !A4 * B1 * !Y)	0.00091	0.00091	0.00090
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00101	-0.00105	-0.00105
	(!A1 * !A3 * A4 * B1 * !Y)	0.00091	0.00091	0.00090
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00093	-0.00100	-0.00099
	(!A1 * !A3 * A4 * !B1 * Y)	0.00090	0.00091	0.00090
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00093	-0.00100	-0.00099
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00083	0.00084	0.00083
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00107	-0.00107	-0.00107

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00186	0.00187	0.00185
	(A1 * A3 * A4 * B1 * !Y)	-0.00162	-0.00163	-0.00162
	(A1 * A3 * !B1 * Y)	0.00187	0.00186	0.00185
	(A1 * A3 * !B1 * Y)	-0.00165	-0.00166	-0.00165
	(A1 * A3 * !A4 * B1 * !Y)	0.00186	0.00187	0.00185
	(A1 * A3 * !A4 * B1 * !Y)	-0.00157	-0.00158	-0.00157
	(A1 * !A3 * A4 * B1 * !Y)	0.00186	0.00189	0.00186
	(A1 * !A3 * A4 * B1 * !Y)	-0.00154	-0.00156	-0.00154
	(A1 * !A3 * A4 * !B1 * Y)	0.00185	0.00189	0.00185
	(A1 * !A3 * A4 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(A1 * !A3 * !A4 * B1 * !Y)	0.00187	0.00186	0.00185
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00138	-0.00137	-0.00136
	(A1 * !A3 * !A4 * !B1 * Y)	0.00185	0.00186	0.00185
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00210	-0.00216	-0.00215
	(!A1 * A3 * A4 * B1 * !Y)	0.00187	0.00187	0.00185
	(!A1 * A3 * A4 * B1 * !Y)	-0.00214	-0.00220	-0.00218
	(!A1 * A3 * !B1 * Y)	0.00187	0.00187	0.00185
	(!A1 * A3 * !B1 * Y)	-0.00214	-0.00220	-0.00219
	(!A1 * A3 * !A4 * B1 * !Y)	0.00187	0.00187	0.00185
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00212	-0.00219	-0.00218
	(!A1 * !A3 * A4 * B1 * !Y)	0.00186	0.00187	0.00185
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00197	-0.00208	-0.00207
	(!A1 * !A3 * A4 * !B1 * Y)	0.00185	0.00187	0.00185
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00199	-0.00208	-0.00207
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00170	0.00171	0.00170
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00223	-0.00224	-0.00223

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00354	0.00355	0.00353
	(A1 * A3 * A4 * B1 * !Y)	-0.00307	-0.00310	-0.00308
	(A1 * A3 * !B1 * Y)	0.00353	0.00356	0.00352
	(A1 * A3 * !B1 * Y)	-0.00312	-0.00315	-0.00313
	(A1 * A3 * !A4 * B1 * !Y)	0.00354	0.00354	0.00353
	(A1 * A3 * !A4 * B1 * !Y)	-0.00299	-0.00299	-0.00298
	(A1 * !A3 * A4 * B1 * !Y)	0.00353	0.00351	0.00353
	(A1 * !A3 * A4 * B1 * !Y)	-0.00294	-0.00297	-0.00295
	(A1 * !A3 * A4 * !B1 * Y)	0.00352	0.00359	0.00352
	(A1 * !A3 * A4 * !B1 * Y)	-0.00312	-0.00315	-0.00313
	(A1 * !A3 * !A4 * B1 * !Y)	0.00351	0.00354	0.00352
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00259	-0.00261	-0.00260
	(A1 * !A3 * !A4 * !B1 * Y)	0.00351	0.00352	0.00352
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00413	-0.00421	-0.00421
	(!A1 * A3 * A4 * B1 * !Y)	0.00355	0.00352	0.00352
	(!A1 * A3 * A4 * B1 * !Y)	-0.00412	-0.00424	-0.00423
	(!A1 * A3 * !B1 * Y)	0.00355	0.00352	0.00352
	(!A1 * A3 * !B1 * Y)	-0.00413	-0.00424	-0.00423
	(!A1 * A3 * !A4 * B1 * !Y)	0.00357	0.00352	0.00352
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00408	-0.00424	-0.00423
	(!A1 * !A3 * A4 * B1 * !Y)	0.00355	0.00356	0.00352
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00377	-0.00405	-0.00400
	(!A1 * !A3 * A4 * !B1 * Y)	0.00351	0.00356	0.00352
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00379	-0.00398	-0.00400
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00325	0.00328	0.00326
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00436	-0.00438	-0.00437

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)**	-0.00090	-0.00090	-0.00090
	(A1 * A3 * A4 * B1 * !Y)	0.00078	0.00079	0.00078
	(A1 * A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * A3 * !B1 * Y)	0.00079	0.00080	0.00080
	(A1 * A3 * !A4 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A3 * !A4 * B1 * !Y)	0.00075	0.00076	0.00075
	(A1 * !A3 * A4 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * A4 * B1 * !Y)	0.00074	0.00074	0.00074
	(A1 * !A3 * A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * A4 * !B1 * Y)	0.00078	0.00079	0.00078
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A3 * !A4 * B1 * !Y)	0.00067	0.00067	0.00067
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * !A4 * !B1 * Y)	0.00105	0.00105	0.00104
	(!A1 * A3 * A4 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * A4 * B1 * !Y)	0.00105	0.00105	0.00105
	(!A1 * A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !B1 * Y)	0.00105	0.00105	0.00105
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !A4 * B1 * !Y)	0.00105	0.00105	0.00105
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * A4 * B1 * !Y)	0.00099	0.00100	0.00099
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * A4 * !B1 * Y)	0.00099	0.00100	0.00099
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00079	-0.00084	-0.00083
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00107	0.00108	0.00107

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00184	-0.00186	-0.00185
	(A1 * A3 * A4 * B1 * !Y)	0.00162	0.00163	0.00162
	(A1 * A3 * !B1 * Y)	-0.00184	-0.00185	-0.00185
	(A1 * A3 * !B1 * Y)	0.00165	0.00166	0.00165
	(A1 * A3 * !A4 * B1 * !Y)	-0.00184	-0.00185	-0.00185
	(A1 * A3 * !A4 * B1 * !Y)	0.00157	0.00158	0.00157
	(A1 * !A3 * A4 * B1 * !Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A3 * A4 * B1 * !Y)	0.00154	0.00156	0.00154
	(A1 * !A3 * A4 * !B1 * Y)	-0.00184	-0.00185	-0.00185
	(A1 * !A3 * A4 * !B1 * Y)	0.00164	0.00165	0.00164
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00184	-0.00184	-0.00184
	(A1 * !A3 * !A4 * B1 * !Y)	0.00139	0.00139	0.00139
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00184	-0.00186	-0.00185
	(A1 * !A3 * !A4 * !B1 * Y)	0.00213	0.00216	0.00215
	(!A1 * A3 * A4 * B1 * !Y)	-0.00185	-0.00185	-0.00185
	(!A1 * A3 * A4 * B1 * !Y)	0.00219	0.00220	0.00218
	(!A1 * A3 * !B1 * Y)	-0.00185	-0.00185	-0.00185
	(!A1 * A3 * !B1 * Y)	0.00219	0.00220	0.00219
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00185	-0.00185	-0.00185
	(!A1 * A3 * !A4 * B1 * !Y)	0.00219	0.00219	0.00218
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00184	-0.00186	-0.00185
	(!A1 * !A3 * A4 * B1 * !Y)	0.00206	0.00208	0.00207
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00184	-0.00185	-0.00185
	(!A1 * !A3 * A4 * !B1 * Y)	0.00206	0.00208	0.00207
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00160	-0.00171	-0.00170
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00224	0.00225	0.00224

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00350	-0.00353	-0.00351
	(A1 * A3 * A4 * B1 * !Y)	0.00307	0.00310	0.00308
	(A1 * A3 * !B1 * Y)	-0.00350	-0.00353	-0.00351
	(A1 * A3 * !B1 * Y)	0.00312	0.00315	0.00313
	(A1 * A3 * !A4 * B1 * !Y)	-0.00352	-0.00353	-0.00351
	(A1 * A3 * !A4 * B1 * !Y)	0.00299	0.00299	0.00298
	(A1 * !A3 * A4 * B1 * !Y)	-0.00350	-0.00351	-0.00352
	(A1 * !A3 * A4 * B1 * !Y)	0.00294	0.00297	0.00295
	(A1 * !A3 * A4 * !B1 * Y)	-0.00351	-0.00353	-0.00351
	(A1 * !A3 * A4 * !B1 * Y)	0.00312	0.00315	0.00313
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00349	-0.00350	-0.00348
	(A1 * !A3 * !A4 * B1 * !Y)	0.00267	0.00268	0.00266
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00351	-0.00351	-0.00351
	(A1 * !A3 * !A4 * !B1 * Y)	0.00423	0.00421	0.00421
	(!A1 * A3 * A4 * B1 * !Y)	-0.00352	-0.00352	-0.00351
	(!A1 * A3 * A4 * B1 * !Y)	0.00423	0.00424	0.00423
	(!A1 * A3 * !B1 * Y)	-0.00352	-0.00352	-0.00351
	(!A1 * A3 * !B1 * Y)	0.00424	0.00424	0.00423
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00353	-0.00352	-0.00351
	(!A1 * A3 * !A4 * B1 * !Y)	0.00426	0.00424	0.00423
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00350	-0.00354	-0.00351
	(!A1 * !A3 * A4 * B1 * !Y)	0.00398	0.00405	0.00400
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00350	-0.00350	-0.00351
	(!A1 * !A3 * A4 * !B1 * Y)	0.00398	0.00398	0.00400
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00306	-0.00328	-0.00326
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00438	0.00441	0.00438

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)**	0.00095	0.00095	0.00094
	(A2 * A4 * B1 * !Y)	-0.00073	-0.00073	-0.00073
	(A2 * A4 * !B1 * Y)	0.00090	0.00091	0.00090
	(A2 * A4 * !B1 * Y)	-0.00082	-0.00082	-0.00082
	(A2 * !A4 * B1 * !Y)	0.00095	0.00094	0.00094
	(A2 * !A4 * B1 * !Y)	-0.00064	-0.00064	-0.00064
	(A2 * !A4 * !B1 * Y)	0.00091	0.00091	0.00090
	(A2 * !A4 * !B1 * Y)	-0.00105	-0.00108	-0.00107
	(A1 * !A2 * A4 * B1 * !Y)	0.00097	0.00096	0.00094
	(A1 * !A2 * A4 * B1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * A4 * !B1 * Y)	0.00090	0.00092	0.00090
	(A1 * !A2 * A4 * !B1 * Y)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * !A4 * B1 * !Y)	0.00096	0.00095	0.00094
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00065	-0.00064	-0.00064
	(A1 * !A2 * !A4 * !B1 * Y)	0.00090	0.00091	0.00090
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00097	-0.00101	-0.00101
	(!A1 * !A2 * A4 * B1 * !Y)	0.00108	0.00095	0.00094
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00090	-0.00104	-0.00104
	(!A1 * !A2 * A4 * !B1 * Y)	0.00091	0.00091	0.00090
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00106	-0.00108	-0.00107
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00110	-0.00110	-0.00110

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00176	0.00178	0.00176
	(A2 * A4 * B1 * !Y)	-0.00148	-0.00149	-0.00148
	(A2 * A4 * !B1 * Y)	0.00176	0.00176	0.00175
	(A2 * A4 * !B1 * Y)	-0.00163	-0.00165	-0.00163
	(A2 * !A4 * B1 * !Y)	0.00175	0.00176	0.00175
	(A2 * !A4 * B1 * !Y)	-0.00131	-0.00132	-0.00132
	(A2 * !A4 * !B1 * Y)	0.00174	0.00176	0.00175
	(A2 * !A4 * !B1 * Y)	-0.00207	-0.00212	-0.00212
	(A1 * !A2 * A4 * B1 * !Y)	0.00179	0.00179	0.00176
	(A1 * !A2 * A4 * B1 * !Y)	-0.00152	-0.00154	-0.00153
	(A1 * !A2 * A4 * !B1 * Y)	0.00174	0.00178	0.00175
	(A1 * !A2 * A4 * !B1 * Y)	-0.00160	-0.00162	-0.00160
	(A1 * !A2 * !A4 * B1 * !Y)	0.00178	0.00177	0.00176
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00133	-0.00131	-0.00131
	(A1 * !A2 * !A4 * !B1 * Y)	0.00174	0.00176	0.00175
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00192	-0.00200	-0.00199
	(!A1 * !A2 * A4 * B1 * !Y)	0.00197	0.00177	0.00175
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00185	-0.00212	-0.00212
	(!A1 * !A2 * A4 * !B1 * Y)	0.00174	0.00175	0.00175
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00206	-0.00212	-0.00211
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00161	0.00162	0.00162
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00217	-0.00218	-0.00218

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00361	0.00365	0.00361
	(A2 * A4 * B1 * !Y)	-0.00297	-0.00298	-0.00296
	(A2 * A4 * !B1 * Y)	0.00362	0.00361	0.00359
	(A2 * A4 * !B1 * Y)	-0.00321	-0.00323	-0.00321
	(A2 * !A4 * B1 * !Y)	0.00365	0.00361	0.00359
	(A2 * !A4 * B1 * !Y)	-0.00270	-0.00267	-0.00266
	(A2 * !A4 * !B1 * Y)	0.00360	0.00361	0.00358
	(A2 * !A4 * !B1 * Y)	-0.00417	-0.00428	-0.00426
	(A1 * !A2 * A4 * B1 * !Y)	0.00372	0.00361	0.00359
	(A1 * !A2 * A4 * B1 * !Y)	-0.00306	-0.00309	-0.00307
	(A1 * !A2 * A4 * !B1 * Y)	0.00360	0.00365	0.00359
	(A1 * !A2 * A4 * !B1 * Y)	-0.00318	-0.00321	-0.00319
	(A1 * !A2 * !A4 * B1 * !Y)	0.00365	0.00362	0.00359
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00268	-0.00266	-0.00265
	(A1 * !A2 * !A4 * !B1 * Y)	0.00360	0.00360	0.00358
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00384	-0.00398	-0.00396
	(!A1 * !A2 * A4 * B1 * !Y)	0.00413	0.00363	0.00359
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00376	-0.00432	-0.00434
	(!A1 * !A2 * A4 * !B1 * Y)	0.00360	0.00361	0.00358
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00425	-0.00433	-0.00432
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00331	0.00333	0.00330
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00445	-0.00446	-0.00444

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)**	-0.00094	-0.00094	-0.00093
	(A2 * A4 * B1 * !Y)	0.00073	0.00073	0.00073
	(A2 * A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A2 * A4 * !B1 * Y)	0.00082	0.00082	0.00082
	(A2 * !A4 * B1 * !Y)	-0.00093	-0.00093	-0.00092
	(A2 * !A4 * B1 * !Y)	0.00066	0.00066	0.00066
	(A2 * !A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A2 * !A4 * !B1 * Y)	0.00107	0.00108	0.00107
	(A1 * !A2 * A4 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * !A2 * A4 * B1 * !Y)	0.00075	0.00075	0.00075
	(A1 * !A2 * A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * A4 * !B1 * Y)	0.00081	0.00082	0.00081
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00087	-0.00088	-0.00092
	(A1 * !A2 * !A4 * B1 * !Y)	0.00069	0.00068	0.00066
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !A4 * !B1 * Y)	0.00101	0.00101	0.00101
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !A2 * A4 * B1 * !Y)	0.00104	0.00104	0.00104
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * A4 * !B1 * Y)	0.00108	0.00108	0.00107
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00079	-0.00084	-0.00083
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00110	0.00111	0.00110

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00175	-0.00176	-0.00175
	(A2 * A4 * B1 * !Y)	0.00148	0.00149	0.00148
	(A2 * A4 * !B1 * Y)	-0.00174	-0.00175	-0.00174
	(A2 * A4 * !B1 * Y)	0.00163	0.00165	0.00163
	(A2 * !A4 * B1 * !Y)	-0.00174	-0.00175	-0.00173
	(A2 * !A4 * B1 * !Y)	0.00135	0.00135	0.00135
	(A2 * !A4 * !B1 * Y)	-0.00174	-0.00174	-0.00174
	(A2 * !A4 * !B1 * Y)	0.00214	0.00212	0.00212
	(A1 * !A2 * A4 * B1 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A2 * A4 * B1 * !Y)	0.00152	0.00154	0.00153
	(A1 * !A2 * A4 * !B1 * Y)	-0.00174	-0.00175	-0.00174
	(A1 * !A2 * A4 * !B1 * Y)	0.00160	0.00162	0.00160
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00162	-0.00163	-0.00169
	(A1 * !A2 * !A4 * B1 * !Y)	0.00140	0.00140	0.00136
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00174	-0.00175	-0.00174
	(A1 * !A2 * !A4 * !B1 * Y)	0.00198	0.00200	0.00199
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00175	-0.00175	-0.00174
	(!A1 * !A2 * A4 * B1 * !Y)	0.00212	0.00212	0.00212
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00174	-0.00175	-0.00174
	(!A1 * !A2 * A4 * !B1 * Y)	0.00211	0.00212	0.00211
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00152	-0.00162	-0.00162
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00219	0.00220	0.00218

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00359	-0.00360	-0.00359
	(A2 * A4 * B1 * !Y)	0.00297	0.00298	0.00296
	(A2 * A4 * !B1 * Y)	-0.00358	-0.00359	-0.00358
	(A2 * A4 * !B1 * Y)	0.00321	0.00323	0.00321
	(A2 * !A4 * B1 * !Y)	-0.00357	-0.00358	-0.00356
	(A2 * !A4 * B1 * !Y)	0.00270	0.00271	0.00272
	(A2 * !A4 * !B1 * Y)	-0.00356	-0.00359	-0.00358
	(A2 * !A4 * !B1 * Y)	0.00424	0.00428	0.00426
	(A1 * !A2 * A4 * B1 * !Y)	-0.00358	-0.00360	-0.00359
	(A1 * !A2 * A4 * B1 * !Y)	0.00306	0.00309	0.00307
	(A1 * !A2 * A4 * !B1 * Y)	-0.00357	-0.00359	-0.00358
	(A1 * !A2 * A4 * !B1 * Y)	0.00318	0.00321	0.00319
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00333	-0.00335	-0.00348
	(A1 * !A2 * !A4 * B1 * !Y)	0.00282	0.00281	0.00274
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00357	-0.00359	-0.00357
	(A1 * !A2 * !A4 * !B1 * Y)	0.00395	0.00398	0.00396
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00355	-0.00357	-0.00355
	(!A1 * !A2 * A4 * B1 * !Y)	0.00430	0.00432	0.00434
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00356	-0.00358	-0.00357
	(!A1 * !A2 * A4 * !B1 * Y)	0.00430	0.00433	0.00432
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00311	-0.00333	-0.00330
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00445	0.00448	0.00445

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00102	0.00103	0.00103
	(A3 * B1 * !Y)	-0.00057	-0.00057	-0.00057
	(A3 * !B1 * Y)	0.00090	0.00091	0.00090
	(A3 * !B1 * Y)	-0.00106	-0.00108	-0.00108
	(A2 * !A3 * B1 * !Y)	0.00102	0.00103	0.00103
	(A2 * !A3 * B1 * !Y)	-0.00057	-0.00057	-0.00057
	(A2 * !A3 * !B1 * Y)	0.00089	0.00090	0.00090
	(A2 * !A3 * !B1 * Y)	-0.00097	-0.00103	-0.00102
	(A1 * !A2 * !A3 * B1 * !Y)	0.00103	0.00103	0.00103
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00057	-0.00057	-0.00057
	(A1 * !A2 * !A3 * !B1 * Y)	0.00090	0.00090	0.00090
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00096	-0.00100	-0.00100
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00110	-0.00110	-0.00110
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00199	0.00200	0.00199
	(A3 * B1 * !Y)	-0.00118	-0.00118	-0.00117
	(A3 * !B1 * Y)	0.00176	0.00179	0.00177
	(A3 * !B1 * Y)	-0.00207	-0.00215	-0.00215
	(A2 * !A3 * B1 * !Y)	0.00199	0.00200	0.00199
	(A2 * !A3 * B1 * !Y)	-0.00117	-0.00117	-0.00117
	(A2 * !A3 * !B1 * Y)	0.00177	0.00179	0.00177
	(A2 * !A3 * !B1 * Y)	-0.00193	-0.00204	-0.00203
	(A1 * !A2 * !A3 * B1 * !Y)	0.00199	0.00200	0.00199
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * !A2 * !A3 * !B1 * Y)	0.00176	0.00178	0.00177
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00189	-0.00199	-0.00198
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00164	0.00165	0.00164
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00220	-0.00221	-0.00220

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00409	0.00410	0.00409
	(A3 * B1 * !Y)	-0.00228	-0.00228	-0.00227
	(A3 * !B1 * Y)	0.00362	0.00361	0.00359
	(A3 * !B1 * Y)	-0.00417	-0.00426	-0.00427
	(A2 * !A3 * B1 * !Y)	0.00408	0.00411	0.00409
	(A2 * !A3 * B1 * !Y)	-0.00227	-0.00228	-0.00227
	(A2 * !A3 * !B1 * Y)	0.00358	0.00363	0.00359
	(A2 * !A3 * !B1 * Y)	-0.00379	-0.00400	-0.00397
	(A1 * !A2 * !A3 * B1 * !Y)	0.00408	0.00412	0.00409
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00226	-0.00228	-0.00227
	(A1 * !A2 * !A3 * !B1 * Y)	0.00359	0.00362	0.00359
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00375	-0.00389	-0.00387
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00331	0.00334	0.00331
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00439	-0.00440	-0.00438

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00098	-0.00098	-0.00102
	(A3 * B1 * !Y)	0.00062	0.00061	0.00058
	(A3 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(A3 * !B1 * Y)	0.00108	0.00108	0.00108
	(A2 * !A3 * B1 * !Y)	-0.00091	-0.00091	-0.00100
	(A2 * !A3 * B1 * !Y)	0.00066	0.00066	0.00059
	(A2 * !A3 * !B1 * Y)	-0.00089	-0.00090	-0.00089
	(A2 * !A3 * !B1 * Y)	0.00102	0.00103	0.00102
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00081	-0.00082	-0.00098
	(A1 * !A2 * !A3 * B1 * !Y)	0.00072	0.00072	0.00061
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00090	-0.00090	-0.00089
	(A1 * !A2 * !A3 * !B1 * Y)	0.00100	0.00100	0.00100
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00078	-0.00084	-0.00083
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00110	0.00111	0.00110
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00183	-0.00185	-0.00197
	(A3 * B1 * !Y)	0.00131	0.00131	0.00121
	(A3 * !B1 * Y)	-0.00176	-0.00177	-0.00177
	(A3 * !B1 * Y)	0.00213	0.00215	0.00215
	(A2 * !A3 * B1 * !Y)	-0.00168	-0.00171	-0.00193
	(A2 * !A3 * B1 * !Y)	0.00139	0.00140	0.00122
	(A2 * !A3 * !B1 * Y)	-0.00176	-0.00178	-0.00177
	(A2 * !A3 * !B1 * Y)	0.00202	0.00204	0.00203
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00146	-0.00149	-0.00187
	(A1 * !A2 * !A3 * B1 * !Y)	0.00153	0.00153	0.00126
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00176	-0.00178	-0.00177
	(A1 * !A2 * !A3 * !B1 * Y)	0.00197	0.00199	0.00198
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00155	-0.00165	-0.00164
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00221	0.00222	0.00221

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	-0.00382	-0.00386	-0.00405
	(A3 * B1 * !Y)	0.00250	0.00251	0.00234
	(A3 * !B1 * Y)	-0.00359	-0.00358	-0.00358
	(A3 * !B1 * Y)	0.00428	0.00426	0.00427
	(A2 * !A3 * B1 * !Y)	-0.00353	-0.00357	-0.00399
	(A2 * !A3 * B1 * !Y)	0.00265	0.00266	0.00235
	(A2 * !A3 * !B1 * Y)	-0.00358	-0.00360	-0.00358
	(A2 * !A3 * !B1 * Y)	0.00396	0.00400	0.00397
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00310	-0.00315	-0.00387
	(A1 * !A2 * !A3 * B1 * !Y)	0.00292	0.00293	0.00243
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00358	-0.00360	-0.00358
	(A1 * !A2 * !A3 * !B1 * Y)	0.00386	0.00389	0.00387
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00312	-0.00334	-0.00331
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00439	0.00442	0.00439

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)**	0.00042	0.00042	0.00037
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00126	-0.00127	-0.00135
sky130_fd_sc_hs__o41ai_2	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00097	0.00097	0.00088
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00240	-0.00243	-0.00258
sky130_fd_sc_hs__o41ai_4	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00142	0.00143	0.00127
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00262	-0.00266	-0.00295

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)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00137	0.00137	0.00136
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00085	-0.00085	-0.00084
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00262	0.00262	0.00260
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00122	-0.00121	-0.00121
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00300	0.00300	0.00299

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00244	0.00253	0.00254	0.00257	0.00236	0.64577
sky130_fd_sc_hs__o41a_2	0.00258	0.00271	0.00278	0.00266	0.00270	1.32225
sky130_fd_sc_hs__o41a_4	0.00465	0.00504	0.00508	0.00475	0.00441	2.43447

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.05482	0.10551
sky130_fd_sc_hs__o41a_2	0.00000	0.04687	0.06943
sky130_fd_sc_hs__o41a_4	0.00000	0.13226	0.21825

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)	0.14450	0.95351	7.91095
	A2->X (RR)	0.14140	0.93763	7.82207
	A3->X (RR)	0.13458	0.91743	7.71034
	A4->X (RR)	0.12174	0.89096	7.59253
	B1->X (RR)	0.13092	0.93364	7.67778
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.14403	0.83359	7.99895
	A2->X (RR)	0.14193	0.82200	7.93159
	A3->X (RR)	0.13690	0.80700	7.85147
	A4->X (RR)	0.12271	0.78259	7.75025
	B1->X (RR)	0.13124	0.82548	7.82133
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.15636	0.76328	8.06206
	A2->X (RR)	0.15388	0.75079	7.98825
	A3->X (RR)	0.14111	0.72906	7.88684
	A4->X (RR)	0.13187	0.70438	7.77487
	B1->X (RR)	0.14243	0.76299	7.89789

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.63378	1.29897	5.91655
	A2->X (FF)	0.60781	1.26385	5.92673
	A3->X (FF)	0.54757	1.20585	5.86861
	A4->X (FF)	0.45802	1.08267	5.39079
	B1->X (FF)	0.12439	0.73672	4.82925
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.78693	1.45987	6.40284
	A2->X (FF)	0.76488	1.43220	6.49204
	A3->X (FF)	0.70908	1.37578	6.49459
	A4->X (FF)	0.60592	1.23847	6.03736
	B1->X (FF)	0.13943	0.75248	5.21618
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.78317	1.41635	6.35863
	A2->X (FF)	0.75459	1.37813	6.39806
	A3->X (FF)	0.67662	1.29860	6.35934
	A4->X (FF)	0.56749	1.15493	5.87374
	B1->X (FF)	0.15141	0.71910	5.12482

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.00847	0.00849	0.00863
	A1	0.00376	0.00379	0.00399
	A2	0.00745	0.00744	0.00760
	A2	0.00325	0.00325	0.00347
	A3	0.00636	0.00635	0.00655
	A3	0.00266	0.00265	0.00291
	A4	0.00535	0.00529	0.00573
	A4	0.00209	0.00204	0.00254
	B1	0.00755	0.00753	0.00848
	B1	0.00399	0.00397	0.00499
sky130_fd_sc_hs__o41a_2	A1	0.01033	0.01054	0.01073
	A1	0.00526	0.00547	0.00575
	A2	0.00940	0.00958	0.00976
	A2	0.00481	0.00500	0.00529
	A3	0.00835	0.00854	0.00873
	A3	0.00420	0.00440	0.00472
	A4	0.00719	0.00735	0.00774
	A4	0.00357	0.00374	0.00427
	B1	0.00928	0.00940	0.01020
	B1	0.00538	0.00550	0.00643

sky130_fd_sc_hs__o41a_4	**A1**	0.01999	0.02033	0.02078
	A1	0.01065	0.01102	0.01160
	A2	0.01840	0.01877	0.01922
	A2	0.00965	0.01003	0.01063
	A3	0.01594	0.01632	0.01684
	A3	0.00824	0.00865	0.00936
	A4	0.01332	0.01365	0.01456
	A4	0.00691	0.00726	0.00841
	B1	0.01802	0.01830	0.02032
	B1	0.01097	0.01127	0.01350

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00273	0.00282	0.00329
	A1	0.00741	0.00751	0.00752
	A2	0.00275	0.00284	0.00325
	A2	0.00688	0.00698	0.00702
	A3	0.00276	0.00284	0.00308
	A3	0.00635	0.00645	0.00665
	A4	0.00273	0.00269	0.00387
	A4	0.00586	0.00595	0.00692
	B1	0.00192	0.00193	0.00413
	B1	0.00558	0.00560	0.00759

sky130_fd_sc_hs__o41a_2	**A1**	0.00412	0.00435	0.00488
	A1	0.00914	0.00939	0.00947
	A2	0.00415	0.00438	0.00625
	A2	0.00864	0.00888	0.00901
	A3	0.00415	0.00435	0.00634
	A3	0.00816	0.00837	0.00863
	A4	0.00416	0.00434	0.00594
	A4	0.00763	0.00782	0.00887
	B1	0.00324	0.00345	0.00557
	B1	0.00730	0.00743	0.00901
sky130_fd_sc_hs__o41a_4	**A1**	0.00807	0.00858	0.01006
	A1	0.01741	0.01794	0.01823
	A2	0.00769	0.00818	0.00943
	A2	0.01635	0.01685	0.01722
	A3	0.00775	0.00821	0.00992
	A3	0.01524	0.01570	0.01632
	A4	0.00806	0.00846	0.01207
	A4	0.01421	0.01468	0.01679
	B1	0.00658	0.00700	0.01173
	B1	0.01389	0.01428	0.01827

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)**	0.00082	0.00082	0.00082
	(A2 * A4 * B1 * X)	-0.00107	-0.00110	-0.00109
	(A2 * A3 * !A4 * B1 * X)	0.00082	0.00082	0.00082
	(A2 * A3 * !A4 * B1 * X)	-0.00107	-0.00110	-0.00109
	(A2 * !B1 * !X)	0.00082	0.00082	0.00082
	(A2 * !B1 * !X)	-0.00107	-0.00110	-0.00109
	(A2 * !A3 * !A4 * B1 * X)	0.00082	0.00082	0.00082
	(A2 * !A3 * !A4 * B1 * X)	-0.00106	-0.00110	-0.00109
	(!A2 * A3 * A4 * B1 * X)	0.00081	0.00082	0.00082
	(!A2 * A3 * A4 * B1 * X)	-0.00100	-0.00106	-0.00105
	(!A2 * A3 * !B1 * !X)	0.00081	0.00082	0.00082
	(!A2 * A3 * !B1 * !X)	-0.00100	-0.00105	-0.00105
	(!A2 * A3 * !A4 * B1 * X)	0.00082	0.00082	0.00082
	(!A2 * A3 * !A4 * B1 * X)	-0.00100	-0.00106	-0.00105
	(!A2 * !A3 * A4 * B1 * X)	0.00082	0.00083	0.00082
	(!A2 * !A3 * A4 * B1 * X)	-0.00098	-0.00104	-0.00103
	(!A2 * !A3 * A4 * !B1 * !X)	0.00082	0.00083	0.00082
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00098	-0.00104	-0.00103
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00076	0.00077	0.00076
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00093	0.00094	0.00093
	(A2 * A4 * B1 * X)	-0.00105	-0.00107	-0.00107
	(A2 * A3 * !A4 * B1 * X)	0.00093	0.00094	0.00093
	(A2 * A3 * !A4 * B1 * X)	-0.00105	-0.00107	-0.00107
	(A2 * !B1 * !X)	0.00093	0.00094	0.00093
	(A2 * !B1 * !X)	-0.00105	-0.00107	-0.00107
	(A2 * !A3 * !A4 * B1 * X)	0.00093	0.00094	0.00093
	(A2 * !A3 * !A4 * B1 * X)	-0.00104	-0.00107	-0.00107
	(!A2 * A3 * A4 * B1 * X)	0.00093	0.00093	0.00093
	(!A2 * A3 * A4 * B1 * X)	-0.00097	-0.00103	-0.00103
	(!A2 * A3 * !B1 * !X)	0.00093	0.00093	0.00093
	(!A2 * A3 * !B1 * !X)	-0.00097	-0.00103	-0.00103
	(!A2 * A3 * !A4 * B1 * X)	0.00093	0.00093	0.00093
	(!A2 * A3 * !A4 * B1 * X)	-0.00097	-0.00103	-0.00103
	(!A2 * !A3 * A4 * B1 * X)	0.00093	0.00094	0.00093
	(!A2 * !A3 * A4 * B1 * X)	-0.00096	-0.00102	-0.00101
	(!A2 * !A3 * A4 * !B1 * !X)	0.00093	0.00094	0.00093
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00096	-0.00102	-0.00101
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00109	-0.00109	-0.00109

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00149	0.00151	0.00150
	(A2 * A4 * B1 * X)	-0.00205	-0.00214	-0.00213
	(A2 * A3 * !A4 * B1 * X)	0.00151	0.00151	0.00150
	(A2 * A3 * !A4 * B1 * X)	-0.00208	-0.00214	-0.00213
	(A2 * !B1 * !X)	0.00149	0.00151	0.00150
	(A2 * !B1 * !X)	-0.00206	-0.00214	-0.00213
	(A2 * !A3 * !A4 * B1 * X)	0.00152	0.00151	0.00150
	(A2 * !A3 * !A4 * B1 * X)	-0.00205	-0.00214	-0.00213
	(!A2 * A3 * A4 * B1 * X)	0.00151	0.00151	0.00150
	(!A2 * A3 * A4 * B1 * X)	-0.00192	-0.00204	-0.00203
	(!A2 * A3 * !B1 * !X)	0.00150	0.00151	0.00150
	(!A2 * A3 * !B1 * !X)	-0.00193	-0.00204	-0.00203
	(!A2 * A3 * !A4 * B1 * X)	0.00151	0.00151	0.00150
	(!A2 * A3 * !A4 * B1 * X)	-0.00192	-0.00204	-0.00203
	(!A2 * !A3 * A4 * B1 * X)	0.00150	0.00151	0.00150
	(!A2 * !A3 * A4 * B1 * X)	-0.00188	-0.00200	-0.00199
	(!A2 * !A3 * A4 * !B1 * !X)	0.00149	0.00151	0.00150
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00189	-0.00200	-0.00199
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00137	0.00139	0.00138
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00218	-0.00220	-0.00219

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)**	-0.00082	-0.00082	-0.00081
	(A2 * A4 * B1 * X)	0.00110	0.00110	0.00109
	(A2 * A3 * !A4 * B1 * X)	-0.00082	-0.00082	-0.00081
	(A2 * A3 * !A4 * B1 * X)	0.00110	0.00110	0.00109
	(A2 * !B1 * !X)	-0.00082	-0.00082	-0.00081
	(A2 * !B1 * !X)	0.00110	0.00110	0.00109
	(A2 * !A3 * !A4 * B1 * X)	-0.00082	-0.00082	-0.00081
	(A2 * !A3 * !A4 * B1 * X)	0.00110	0.00110	0.00109
	(!A2 * A3 * A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A2 * A3 * A4 * B1 * X)	0.00105	0.00106	0.00105
	(!A2 * A3 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(!A2 * A3 * !B1 * !X)	0.00105	0.00105	0.00105
	(!A2 * A3 * !A4 * B1 * X)	-0.00082	-0.00082	-0.00081
	(!A2 * A3 * !A4 * B1 * X)	0.00105	0.00106	0.00105
	(!A2 * !A3 * A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A2 * !A3 * A4 * B1 * X)	0.00104	0.00104	0.00103
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00082	-0.00082	-0.00081
	(!A2 * !A3 * A4 * !B1 * !X)	0.00104	0.00104	0.00103
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00072	-0.00077	-0.00076
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00111	0.00112	0.00111

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00093	-0.00093	-0.00093
	(A2 * A4 * B1 * X)	0.00108	0.00108	0.00107
	(A2 * A3 * !A4 * B1 * X)	-0.00093	-0.00093	-0.00093
	(A2 * A3 * !A4 * B1 * X)	0.00108	0.00108	0.00107
	(A2 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(A2 * !B1 * !X)	0.00107	0.00108	0.00107
	(A2 * !A3 * !A4 * B1 * X)	-0.00093	-0.00093	-0.00093
	(A2 * !A3 * !A4 * B1 * X)	0.00107	0.00108	0.00107
	(!A2 * A3 * A4 * B1 * X)	-0.00093	-0.00093	-0.00093
	(!A2 * A3 * A4 * B1 * X)	0.00103	0.00103	0.00103
	(!A2 * A3 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(!A2 * A3 * !B1 * !X)	0.00103	0.00103	0.00103
	(!A2 * A3 * !A4 * B1 * X)	-0.00093	-0.00093	-0.00093
	(!A2 * A3 * !A4 * B1 * X)	0.00103	0.00103	0.00103
	(!A2 * !A3 * A4 * B1 * X)	-0.00093	-0.00093	-0.00093
	(!A2 * !A3 * A4 * B1 * X)	0.00102	0.00102	0.00101
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(!A2 * !A3 * A4 * !B1 * !X)	0.00102	0.00102	0.00101
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00081	-0.00087	-0.00086
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00109	0.00110	0.00109

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00149	-0.00150	-0.00149
	(A2 * A4 * B1 * X)	0.00214	0.00214	0.00213
	(A2 * A3 * !A4 * B1 * X)	-0.00150	-0.00150	-0.00149
	(A2 * A3 * !A4 * B1 * X)	0.00214	0.00214	0.00213
	(A2 * !B1 * !X)	-0.00149	-0.00150	-0.00149
	(A2 * !B1 * !X)	0.00213	0.00214	0.00213
	(A2 * !A3 * !A4 * B1 * X)	-0.00150	-0.00150	-0.00150
	(A2 * !A3 * !A4 * B1 * X)	0.00213	0.00214	0.00213
	(!A2 * A3 * A4 * B1 * X)	-0.00150	-0.00150	-0.00150
	(!A2 * A3 * A4 * B1 * X)	0.00204	0.00204	0.00203
	(!A2 * A3 * !B1 * !X)	-0.00149	-0.00150	-0.00149
	(!A2 * A3 * !B1 * !X)	0.00202	0.00204	0.00203
	(!A2 * A3 * !A4 * B1 * X)	-0.00150	-0.00150	-0.00150
	(!A2 * A3 * !A4 * B1 * X)	0.00204	0.00204	0.00203
	(!A2 * !A3 * A4 * B1 * X)	-0.00149	-0.00150	-0.00149
	(!A2 * !A3 * A4 * B1 * X)	0.00197	0.00200	0.00199
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00149	-0.00150	-0.00149
	(!A2 * !A3 * A4 * !B1 * !X)	0.00199	0.00200	0.00199
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00130	-0.00139	-0.00138
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00220	0.00221	0.00220

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)**	0.00078	0.00079	0.00079
	(A1 * A3 * A4 * B1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A3 * !B1 * !X)	0.00079	0.00079	0.00079
	(A1 * A3 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(A1 * A3 * !A4 * B1 * X)	0.00079	0.00079	0.00079
	(A1 * A3 * !A4 * B1 * X)	-0.00078	-0.00077	-0.00077
	(A1 * !A3 * A4 * B1 * X)	0.00079	0.00080	0.00079
	(A1 * !A3 * A4 * B1 * X)	-0.00075	-0.00076	-0.00076
	(A1 * !A3 * A4 * !B1 * !X)	0.00079	0.00080	0.00079
	(A1 * !A3 * A4 * !B1 * !X)	-0.00080	-0.00080	-0.00080
	(A1 * !A3 * !A4 * B1 * X)	0.00080	0.00079	0.00079
	(A1 * !A3 * !A4 * B1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * !A3 * !A4 * !B1 * !X)	0.00079	0.00079	0.00079
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00105	-0.00106	-0.00106
	(!A1 * A3 * A4 * B1 * X)	0.00079	0.00079	0.00079
	(!A1 * A3 * A4 * B1 * X)	-0.00104	-0.00107	-0.00107
	(!A1 * A3 * !B1 * !X)	0.00079	0.00079	0.00079
	(!A1 * A3 * !B1 * !X)	-0.00104	-0.00107	-0.00107
	(!A1 * A3 * !A4 * B1 * X)	0.00079	0.00079	0.00079
	(!A1 * A3 * !A4 * B1 * X)	-0.00103	-0.00107	-0.00107
	(!A1 * !A3 * A4 * B1 * X)	0.00079	0.00079	0.00079
	(!A1 * !A3 * A4 * B1 * X)	-0.00095	-0.00102	-0.00101
	(!A1 * !A3 * A4 * !B1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00095	-0.00102	-0.00101
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00073	0.00074	0.00074
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00108	-0.00109	-0.00108

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00089	0.00090	0.00089
	(A1 * A3 * A4 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A3 * !B1 * !X)	0.00091	0.00090	0.00089
	(A1 * A3 * !B1 * !X)	-0.00080	-0.00080	-0.00080
	(A1 * A3 * !A4 * B1 * X)	0.00089	0.00090	0.00089
	(A1 * A3 * !A4 * B1 * X)	-0.00075	-0.00076	-0.00076
	(A1 * !A3 * A4 * B1 * X)	0.00089	0.00091	0.00089
	(A1 * !A3 * A4 * B1 * X)	-0.00074	-0.00075	-0.00075
	(A1 * !A3 * A4 * !B1 * !X)	0.00089	0.00091	0.00089
	(A1 * !A3 * A4 * !B1 * !X)	-0.00079	-0.00080	-0.00079
	(A1 * !A3 * !A4 * B1 * X)	0.00090	0.00090	0.00089
	(A1 * !A3 * !A4 * B1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * !A3 * !A4 * !B1 * !X)	0.00089	0.00090	0.00089
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00104	-0.00106	-0.00106
	(!A1 * A3 * A4 * B1 * X)	0.00090	0.00090	0.00089
	(!A1 * A3 * A4 * B1 * X)	-0.00104	-0.00107	-0.00106
	(!A1 * A3 * !B1 * !X)	0.00090	0.00090	0.00089
	(!A1 * A3 * !B1 * !X)	-0.00104	-0.00107	-0.00106
	(!A1 * A3 * !A4 * B1 * X)	0.00090	0.00090	0.00089
	(!A1 * A3 * !A4 * B1 * X)	-0.00103	-0.00107	-0.00106
	(!A1 * !A3 * A4 * B1 * X)	0.00090	0.00090	0.00089
	(!A1 * !A3 * A4 * B1 * X)	-0.00094	-0.00102	-0.00101
	(!A1 * !A3 * A4 * !B1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00095	-0.00102	-0.00100
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00109	-0.00109	-0.00109

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00190	0.00193	0.00190
	(A1 * A3 * A4 * B1 * X)	-0.00156	-0.00156	-0.00155
	(A1 * A3 * !B1 * !X)	0.00187	0.00191	0.00188
	(A1 * A3 * !B1 * !X)	-0.00160	-0.00160	-0.00160
	(A1 * A3 * !A4 * B1 * X)	0.00189	0.00193	0.00190
	(A1 * A3 * !A4 * B1 * X)	-0.00148	-0.00149	-0.00148
	(A1 * !A3 * A4 * B1 * X)	0.00189	0.00190	0.00189
	(A1 * !A3 * A4 * B1 * X)	-0.00146	-0.00147	-0.00146
	(A1 * !A3 * A4 * !B1 * !X)	0.00188	0.00188	0.00188
	(A1 * !A3 * A4 * !B1 * !X)	-0.00156	-0.00157	-0.00156
	(A1 * !A3 * !A4 * B1 * X)	0.00189	0.00191	0.00189
	(A1 * !A3 * !A4 * B1 * X)	-0.00129	-0.00131	-0.00129
	(A1 * !A3 * !A4 * !B1 * !X)	0.00187	0.00189	0.00188
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00205	-0.00210	-0.00209
	(!A1 * A3 * A4 * B1 * X)	0.00190	0.00190	0.00188
	(!A1 * A3 * A4 * B1 * X)	-0.00200	-0.00209	-0.00208
	(!A1 * A3 * !B1 * !X)	0.00188	0.00189	0.00188
	(!A1 * A3 * !B1 * !X)	-0.00202	-0.00209	-0.00209
	(!A1 * A3 * !A4 * B1 * X)	0.00190	0.00190	0.00188
	(!A1 * A3 * !A4 * B1 * X)	-0.00199	-0.00208	-0.00208
	(!A1 * !A3 * A4 * B1 * X)	0.00189	0.00188	0.00188
	(!A1 * !A3 * A4 * B1 * X)	-0.00185	-0.00198	-0.00197
	(!A1 * !A3 * A4 * !B1 * !X)	0.00187	0.00188	0.00188
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00187	-0.00198	-0.00197
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00176	0.00177	0.00176
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00215	-0.00215	-0.00215

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)**	-0.00078	-0.00079	-0.00078
	(A1 * A3 * A4 * B1 * X)	0.00080	0.00080	0.00080
	(A1 * A3 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(A1 * A3 * !B1 * !X)	0.00081	0.00082	0.00081
	(A1 * A3 * !A4 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A3 * !A4 * B1 * X)	0.00078	0.00077	0.00077
	(A1 * !A3 * A4 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * !A3 * A4 * B1 * X)	0.00075	0.00076	0.00076
	(A1 * !A3 * A4 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(A1 * !A3 * A4 * !B1 * !X)	0.00080	0.00080	0.00080
	(A1 * !A3 * !A4 * B1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * !A3 * !A4 * B1 * X)	0.00068	0.00068	0.00068
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00079	-0.00079	-0.00078
	(A1 * !A3 * !A4 * !B1 * !X)	0.00106	0.00106	0.00106
	(!A1 * A3 * A4 * B1 * X)	-0.00079	-0.00079	-0.00078
	(!A1 * A3 * A4 * B1 * X)	0.00107	0.00107	0.00107
	(!A1 * A3 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * A3 * !B1 * !X)	0.00107	0.00107	0.00107
	(!A1 * A3 * !A4 * B1 * X)	-0.00079	-0.00079	-0.00078
	(!A1 * A3 * !A4 * B1 * X)	0.00107	0.00107	0.00107
	(!A1 * !A3 * A4 * B1 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A3 * A4 * B1 * X)	0.00101	0.00102	0.00101
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A3 * A4 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00069	-0.00074	-0.00074
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00109	0.00109	0.00109

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00089	-0.00089	-0.00089
	(A1 * A3 * A4 * B1 * X)	0.00078	0.00079	0.00078
	(A1 * A3 * !B1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * A3 * !B1 * !X)	0.00080	0.00080	0.00080
	(A1 * A3 * !A4 * B1 * X)	-0.00089	-0.00089	-0.00089
	(A1 * A3 * !A4 * B1 * X)	0.00075	0.00076	0.00076
	(A1 * !A3 * A4 * B1 * X)	-0.00089	-0.00089	-0.00089
	(A1 * !A3 * A4 * B1 * X)	0.00074	0.00075	0.00075
	(A1 * !A3 * A4 * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * !A3 * A4 * !B1 * !X)	0.00079	0.00080	0.00079
	(A1 * !A3 * !A4 * B1 * X)	-0.00089	-0.00089	-0.00089
	(A1 * !A3 * !A4 * B1 * X)	0.00067	0.00067	0.00067
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !A3 * !A4 * !B1 * !X)	0.00107	0.00106	0.00106
	(!A1 * A3 * A4 * B1 * X)	-0.00089	-0.00089	-0.00089
	(!A1 * A3 * A4 * B1 * X)	0.00107	0.00107	0.00106
	(!A1 * A3 * !B1 * !X)	-0.00089	-0.00089	-0.00089
	(!A1 * A3 * !B1 * !X)	0.00107	0.00107	0.00106
	(!A1 * A3 * !A4 * B1 * X)	-0.00089	-0.00089	-0.00089
	(!A1 * A3 * !A4 * B1 * X)	0.00107	0.00107	0.00106
	(!A1 * !A3 * A4 * B1 * X)	-0.00089	-0.00090	-0.00089
	(!A1 * !A3 * A4 * B1 * X)	0.00101	0.00102	0.00101
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * !A3 * A4 * !B1 * !X)	0.00101	0.00102	0.00100
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00078	-0.00083	-0.00083
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00109	0.00110	0.00109

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00189	-0.00189	-0.00189
	(A1 * A3 * A4 * B1 * X)	0.00156	0.00156	0.00155
	(A1 * A3 * !B1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * A3 * !B1 * !X)	0.00160	0.00160	0.00160
	(A1 * A3 * !A4 * B1 * X)	-0.00189	-0.00189	-0.00189
	(A1 * A3 * !A4 * B1 * X)	0.00148	0.00149	0.00148
	(A1 * !A3 * A4 * B1 * X)	-0.00188	-0.00188	-0.00188
	(A1 * !A3 * A4 * B1 * X)	0.00146	0.00147	0.00146
	(A1 * !A3 * A4 * !B1 * !X)	-0.00188	-0.00188	-0.00187
	(A1 * !A3 * A4 * !B1 * !X)	0.00156	0.00157	0.00156
	(A1 * !A3 * !A4 * B1 * X)	-0.00187	-0.00189	-0.00188
	(A1 * !A3 * !A4 * B1 * X)	0.00130	0.00132	0.00131
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00186	-0.00188	-0.00187
	(A1 * !A3 * !A4 * !B1 * !X)	0.00208	0.00210	0.00209
	(!A1 * A3 * A4 * B1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * A3 * A4 * B1 * X)	0.00207	0.00209	0.00208
	(!A1 * A3 * !B1 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * A3 * !B1 * !X)	0.00208	0.00209	0.00209
	(!A1 * A3 * !A4 * B1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * A3 * !A4 * B1 * X)	0.00207	0.00208	0.00208
	(!A1 * !A3 * A4 * B1 * X)	-0.00187	-0.00188	-0.00187
	(!A1 * !A3 * A4 * B1 * X)	0.00196	0.00198	0.00197
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * !A3 * A4 * !B1 * !X)	0.00196	0.00198	0.00197
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00168	-0.00177	-0.00176
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00215	0.00217	0.00215

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)**	0.00080	0.00080	0.00078
	(A2 * A4 * B1 * X)	-0.00072	-0.00073	-0.00072
	(A2 * A4 * !B1 * !X)	0.00078	0.00079	0.00078
	(A2 * A4 * !B1 * !X)	-0.00077	-0.00078	-0.00078
	(A2 * !A4 * B1 * X)	0.00079	0.00079	0.00078
	(A2 * !A4 * B1 * X)	-0.00064	-0.00064	-0.00064
	(A2 * !A4 * !B1 * !X)	0.00079	0.00078	0.00078
	(A2 * !A4 * !B1 * !X)	-0.00101	-0.00104	-0.00103
	(A1 * !A2 * A4 * B1 * X)	0.00082	0.00080	0.00078
	(A1 * !A2 * A4 * B1 * X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * A4 * !B1 * !X)	0.00078	0.00079	0.00078
	(A1 * !A2 * A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !A4 * B1 * X)	0.00080	0.00079	0.00078
	(A1 * !A2 * !A4 * B1 * X)	-0.00064	-0.00064	-0.00063
	(A1 * !A2 * !A4 * !B1 * !X)	0.00078	0.00079	0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00092	-0.00096	-0.00097
	(!A1 * !A2 * A4 * B1 * X)	0.00091	0.00079	0.00078
	(!A1 * !A2 * A4 * B1 * X)	-0.00089	-0.00104	-0.00104
	(!A1 * !A2 * A4 * !B1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00101	-0.00104	-0.00103
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00106	-0.00106	-0.00106

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00095	0.00096	0.00095
	(A2 * A4 * B1 * X)	-0.00074	-0.00074	-0.00073
	(A2 * A4 * !B1 * !X)	0.00092	0.00091	0.00091
	(A2 * A4 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(A2 * !A4 * B1 * X)	0.00095	0.00095	0.00095
	(A2 * !A4 * B1 * X)	-0.00065	-0.00065	-0.00065
	(A2 * !A4 * !B1 * !X)	0.00091	0.00091	0.00091
	(A2 * !A4 * !B1 * !X)	-0.00106	-0.00109	-0.00108
	(A1 * !A2 * A4 * B1 * X)	0.00098	0.00096	0.00094
	(A1 * !A2 * A4 * B1 * X)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * A4 * !B1 * !X)	0.00090	0.00092	0.00091
	(A1 * !A2 * A4 * !B1 * !X)	-0.00082	-0.00083	-0.00082
	(A1 * !A2 * !A4 * B1 * X)	0.00096	0.00095	0.00095
	(A1 * !A2 * !A4 * B1 * X)	-0.00066	-0.00065	-0.00065
	(A1 * !A2 * !A4 * !B1 * !X)	0.00090	0.00091	0.00091
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00097	-0.00102	-0.00102
	(!A1 * !A2 * A4 * B1 * X)	0.00108	0.00095	0.00095
	(!A1 * !A2 * A4 * B1 * X)	-0.00091	-0.00105	-0.00105
	(!A1 * !A2 * A4 * !B1 * !X)	0.00091	0.00091	0.00091
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00107	-0.00109	-0.00108
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00083	0.00084	0.00084
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00189	0.00192	0.00188
	(A2 * A4 * B1 * X)	-0.00146	-0.00146	-0.00146
	(A2 * A4 * !B1 * !X)	0.00184	0.00188	0.00185
	(A2 * A4 * !B1 * !X)	-0.00160	-0.00160	-0.00159
	(A2 * !A4 * B1 * X)	0.00188	0.00190	0.00187
	(A2 * !A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(A2 * !A4 * !B1 * !X)	0.00184	0.00186	0.00185
	(A2 * !A4 * !B1 * !X)	-0.00200	-0.00207	-0.00207
	(A1 * !A2 * A4 * B1 * X)	0.00193	0.00188	0.00187
	(A1 * !A2 * A4 * B1 * X)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * A4 * !B1 * !X)	0.00184	0.00185	0.00185
	(A1 * !A2 * A4 * !B1 * !X)	-0.00156	-0.00157	-0.00156
	(A1 * !A2 * !A4 * B1 * X)	0.00188	0.00190	0.00187
	(A1 * !A2 * !A4 * B1 * X)	-0.00126	-0.00128	-0.00126
	(A1 * !A2 * !A4 * !B1 * !X)	0.00184	0.00186	0.00185
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00186	-0.00195	-0.00194
	(!A1 * !A2 * A4 * B1 * X)	0.00210	0.00188	0.00186
	(!A1 * !A2 * A4 * B1 * X)	-0.00181	-0.00209	-0.00208
	(!A1 * !A2 * A4 * !B1 * !X)	0.00185	0.00186	0.00185
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00205	-0.00209	-0.00209
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00214	-0.00214	-0.00214

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)**	-0.00078	-0.00078	-0.00078
	(A2 * A4 * B1 * X)	0.00072	0.00073	0.00072
	(A2 * A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A2 * A4 * !B1 * !X)	0.00077	0.00078	0.00078
	(A2 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00076
	(A2 * !A4 * B1 * X)	0.00066	0.00066	0.00066
	(A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A2 * !A4 * !B1 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * A4 * B1 * X)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * A4 * B1 * X)	0.00074	0.00075	0.00074
	(A1 * !A2 * A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * A4 * !B1 * !X)	0.00077	0.00077	0.00077
	(A1 * !A2 * !A4 * B1 * X)	-0.00071	-0.00072	-0.00076
	(A1 * !A2 * !A4 * B1 * X)	0.00069	0.00069	0.00065
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	0.00097	0.00096	0.00097
	(!A1 * !A2 * A4 * B1 * X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * A4 * B1 * X)	0.00104	0.00104	0.00104
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * A4 * !B1 * !X)	0.00104	0.00104	0.00103
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00069	-0.00073	-0.00073
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00106	0.00106	0.00106

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00094	-0.00094	-0.00094
	(A2 * A4 * B1 * X)	0.00074	0.00074	0.00073
	(A2 * A4 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A2 * A4 * !B1 * !X)	0.00083	0.00084	0.00083
	(A2 * !A4 * B1 * X)	-0.00093	-0.00094	-0.00093
	(A2 * !A4 * B1 * X)	0.00066	0.00067	0.00067
	(A2 * !A4 * !B1 * !X)	-0.00090	-0.00091	-0.00090
	(A2 * !A4 * !B1 * !X)	0.00109	0.00109	0.00108
	(A1 * !A2 * A4 * B1 * X)	-0.00094	-0.00095	-0.00094
	(A1 * !A2 * A4 * B1 * X)	0.00075	0.00076	0.00075
	(A1 * !A2 * A4 * !B1 * !X)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * A4 * !B1 * !X)	0.00082	0.00083	0.00082
	(A1 * !A2 * !A4 * B1 * X)	-0.00089	-0.00089	-0.00092
	(A1 * !A2 * !A4 * B1 * X)	0.00069	0.00068	0.00066
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !A4 * !B1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A2 * A4 * B1 * X)	-0.00094	-0.00094	-0.00094
	(!A1 * !A2 * A4 * B1 * X)	0.00105	0.00105	0.00105
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00091	-0.00091	-0.00090
	(!A1 * !A2 * A4 * !B1 * !X)	0.00109	0.00109	0.00108
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00079	-0.00084	-0.00084
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00111	0.00112	0.00111

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00187	-0.00187	-0.00187
	(A2 * A4 * B1 * X)	0.00146	0.00146	0.00146
	(A2 * A4 * !B1 * !X)	-0.00184	-0.00185	-0.00184
	(A2 * A4 * !B1 * !X)	0.00160	0.00160	0.00159
	(A2 * !A4 * B1 * X)	-0.00182	-0.00184	-0.00182
	(A2 * !A4 * B1 * X)	0.00131	0.00133	0.00132
	(A2 * !A4 * !B1 * !X)	-0.00184	-0.00184	-0.00184
	(A2 * !A4 * !B1 * !X)	0.00206	0.00207	0.00207
	(A1 * !A2 * A4 * B1 * X)	-0.00186	-0.00187	-0.00186
	(A1 * !A2 * A4 * B1 * X)	0.00149	0.00150	0.00149
	(A1 * !A2 * A4 * !B1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * A4 * !B1 * !X)	0.00156	0.00157	0.00156
	(A1 * !A2 * !A4 * B1 * X)	-0.00170	-0.00173	-0.00182
	(A1 * !A2 * !A4 * B1 * X)	0.00137	0.00138	0.00131
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !A4 * !B1 * !X)	0.00193	0.00195	0.00194
	(!A1 * !A2 * A4 * B1 * X)	-0.00185	-0.00185	-0.00184
	(!A1 * !A2 * A4 * B1 * X)	0.00207	0.00209	0.00208
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !A2 * A4 * !B1 * !X)	0.00208	0.00209	0.00209
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00165	-0.00174	-0.00173
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00215	0.00216	0.00214

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00090	0.00090	0.00090
	(A3 * B1 * X)	-0.00057	-0.00057	-0.00057
	(A3 * !B1 * !X)	0.00079	0.00080	0.00079
	(A3 * !B1 * !X)	-0.00103	-0.00106	-0.00105
	(A2 * !A3 * B1 * X)	0.00090	0.00090	0.00090
	(A2 * !A3 * B1 * X)	-0.00057	-0.00057	-0.00057
	(A2 * !A3 * !B1 * !X)	0.00079	0.00080	0.00079
	(A2 * !A3 * !B1 * !X)	-0.00095	-0.00100	-0.00100
	(A1 * !A2 * !A3 * B1 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * !A3 * B1 * X)	-0.00057	-0.00057	-0.00057
	(A1 * !A2 * !A3 * !B1 * !X)	0.00079	0.00080	0.00079
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00094	-0.00097	-0.00097
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00074	0.00074	0.00074
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00107	-0.00108	-0.00108
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00100	0.00100	0.00100
	(A3 * B1 * X)	-0.00058	-0.00057	-0.00057
	(A3 * !B1 * !X)	0.00091	0.00091	0.00090
	(A3 * !B1 * !X)	-0.00103	-0.00105	-0.00105
	(A2 * !A3 * B1 * X)	0.00100	0.00100	0.00100
	(A2 * !A3 * B1 * X)	-0.00058	-0.00057	-0.00057
	(A2 * !A3 * !B1 * !X)	0.00090	0.00091	0.00090
	(A2 * !A3 * !B1 * !X)	-0.00095	-0.00100	-0.00099
	(A1 * !A2 * !A3 * B1 * X)	0.00100	0.00100	0.00100
	(A1 * !A2 * !A3 * B1 * X)	-0.00058	-0.00057	-0.00057
	(A1 * !A2 * !A3 * !B1 * !X)	0.00091	0.00090	0.00090
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00094	-0.00097	-0.00097
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00107	-0.00107	-0.00107

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00171	0.00170	0.00170
	(A3 * B1 * X)	-0.00117	-0.00116	-0.00115
	(A3 * !B1 * !X)	0.00150	0.00151	0.00150
	(A3 * !B1 * !X)	-0.00205	-0.00211	-0.00210
	(A2 * !A3 * B1 * X)	0.00169	0.00170	0.00170
	(A2 * !A3 * B1 * X)	-0.00115	-0.00116	-0.00115
	(A2 * !A3 * !B1 * !X)	0.00150	0.00151	0.00150
	(A2 * !A3 * !B1 * !X)	-0.00189	-0.00200	-0.00198
	(A1 * !A2 * !A3 * B1 * X)	0.00169	0.00170	0.00170
	(A1 * !A2 * !A3 * B1 * X)	-0.00114	-0.00116	-0.00115
	(A1 * !A2 * !A3 * !B1 * !X)	0.00150	0.00151	0.00150
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00186	-0.00193	-0.00193
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00140	0.00139	0.00139
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00216	-0.00216	-0.00216

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00085	-0.00086	-0.00089
	(A3 * B1 * X)	0.00061	0.00061	0.00058
	(A3 * !B1 * !X)	-0.00079	-0.00079	-0.00079
	(A3 * !B1 * !X)	0.00106	0.00106	0.00105
	(A2 * !A3 * B1 * X)	-0.00078	-0.00079	-0.00088
	(A2 * !A3 * B1 * X)	0.00065	0.00065	0.00059
	(A2 * !A3 * !B1 * !X)	-0.00079	-0.00080	-0.00079
	(A2 * !A3 * !B1 * !X)	0.00100	0.00100	0.00100
	(A1 * !A2 * !A3 * B1 * X)	-0.00069	-0.00069	-0.00085
	(A1 * !A2 * !A3 * B1 * X)	0.00072	0.00071	0.00061
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * !A3 * !B1 * !X)	0.00097	0.00097	0.00097
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00070	-0.00074	-0.00074
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00108	0.00108	0.00108
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00094	-0.00095	-0.00099
	(A3 * B1 * X)	0.00062	0.00062	0.00059
	(A3 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A3 * !B1 * !X)	0.00105	0.00105	0.00105
	(A2 * !A3 * B1 * X)	-0.00087	-0.00088	-0.00098
	(A2 * !A3 * B1 * X)	0.00067	0.00066	0.00059
	(A2 * !A3 * !B1 * !X)	-0.00090	-0.00091	-0.00090
	(A2 * !A3 * !B1 * !X)	0.00100	0.00100	0.00099
	(A1 * !A2 * !A3 * B1 * X)	-0.00079	-0.00080	-0.00095
	(A1 * !A2 * !A3 * B1 * X)	0.00072	0.00072	0.00061
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !A3 * !B1 * !X)	0.00097	0.00097	0.00097
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00079	-0.00084	-0.00083
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00107	0.00108	0.00107

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00158	-0.00159	-0.00168
	(A3 * B1 * X)	0.00125	0.00126	0.00119
	(A3 * !B1 * !X)	-0.00150	-0.00151	-0.00150
	(A3 * !B1 * !X)	0.00211	0.00211	0.00210
	(A2 * !A3 * B1 * X)	-0.00140	-0.00141	-0.00164
	(A2 * !A3 * B1 * X)	0.00137	0.00137	0.00120
	(A2 * !A3 * !B1 * !X)	-0.00150	-0.00151	-0.00150
	(A2 * !A3 * !B1 * !X)	0.00198	0.00200	0.00198
	(A1 * !A2 * !A3 * B1 * X)	-0.00122	-0.00124	-0.00159
	(A1 * !A2 * !A3 * B1 * X)	0.00148	0.00147	0.00123
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * !A3 * !B1 * !X)	0.00193	0.00193	0.00193
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00130	-0.00139	-0.00139
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00216	0.00217	0.00217

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)**	0.00034	0.00034	0.00030
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00104	-0.00105	-0.00111
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00038	0.00038	0.00033
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00119	-0.00120	-0.00127
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00064	0.00064	0.00056
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00197	-0.00198	-0.00211

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)	-0.00028	-0.00029	-0.00028
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00112	0.00113	0.00112
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00212	0.00213	0.00213

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00240	0.00226	0.64745
sky130_fd_sc_hs__or2b_2	0.00250	0.00218	1.17008
sky130_fd_sc_hs__or2b_4	0.00473	0.00271	2.43796

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.06719	0.10613
sky130_fd_sc_hs__or2b_2	0.00000	0.07575	0.12957
sky130_fd_sc_hs__or2b_4	0.00000	0.09004	0.13565

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)	0.09640	0.84772	7.41454
	B_N->X (FR)	0.18888	1.08565	8.67981
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.09319	0.75113	7.48566
	B_N->X (FR)	0.20176	1.00275	8.81601
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.08589	0.63089	7.41139
	B_N->X (FR)	0.21774	0.95634	9.22193

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.21849	0.83416	5.01593
	B_N->X (RF)	0.22263	0.60665	2.76706
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.29685	0.91022	5.24593
	B_N->X (RF)	0.31159	0.67853	2.68248
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.28648	0.86902	5.34569
	B_N->X (RF)	0.29001	0.65320	2.88420

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00456	0.00441	0.00490
	A	0.00239	0.00223	0.00275
	B_N	0.00415	0.00420	0.00607
	B_N	0.00601	0.00605	0.00794
sky130_fd_sc_hs__or2b_2	A	0.00633	0.00637	0.00707
	A	0.00402	0.00406	0.00486
	B_N	0.00588	0.00613	0.00791
	B_N	0.00772	0.00796	0.00983
sky130_fd_sc_hs__or2b_4	A	0.01203	0.01214	0.01370
	A	0.00774	0.00787	0.00963
	B_N	0.01103	0.01152	0.01332
	B_N	0.01308	0.01360	0.01564

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00257	0.00255	0.00301
	A	0.00475	0.00474	0.00509
	B_N	0.00596	0.00591	0.00727
	B_N	0.00411	0.00399	0.00537
sky130_fd_sc_hs__or2b_2	A	0.00399	0.00407	0.00504
	A	0.00631	0.00646	0.00683
	B_N	0.00785	0.00786	0.00900
	B_N	0.00601	0.00592	0.00712
sky130_fd_sc_hs__or2b_4	A	0.00788	0.00844	0.00976
	A	0.01219	0.01273	0.01348
	B_N	0.01289	0.01345	0.01487
	B_N	0.01082	0.01138	0.01272

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00090	0.00081	0.00080
	(!B_N * X)	-0.00094	-0.00104	-0.00105
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00097	0.00087	0.00086
	(!B_N * X)	-0.00100	-0.00110	-0.00111
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00183	0.00168	0.00166
	(!B_N * X)	-0.00183	-0.00201	-0.00203

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00079	-0.00080	-0.00079
	(!B_N * X)	0.00105	0.00106	0.00106
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00086	-0.00086	-0.00085
	(!B_N * X)	0.00111	0.00112	0.00111
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00165	-0.00166	-0.00165
	(!B_N * X)	0.00201	0.00202	0.00203

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00262	0.00243	0.00380
	(A * X)	0.00046	0.00027	0.00165
sky130_fd_sc_hs__or2b_2	(A * X)	0.00277	0.00260	0.00393
	(A * X)	0.00062	0.00043	0.00177
sky130_fd_sc_hs__or2b_4	(A * X)	0.00359	0.00336	0.00446
	(A * X)	0.00105	0.00081	0.00193

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00077	0.00078	0.00269
	(A * X)	0.00293	0.00293	0.00484
sky130_fd_sc_hs__or2b_2	(A * X)	0.00076	0.00077	0.00266
	(A * X)	0.00291	0.00292	0.00481
sky130_fd_sc_hs__or2b_4	(A * X)	0.00199	0.00190	0.00347
	(A * X)	0.00451	0.00442	0.00599

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00219	0.00209	0.65849
sky130_fd_sc_hs__or2_2	0.00271	0.00236	1.18234
sky130_fd_sc_hs__or2_4	0.00429	0.00370	2.42194

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.03698	0.08740
sky130_fd_sc_hs__or2_2	0.00000	0.03280	0.05131
sky130_fd_sc_hs__or2_4	0.00000	0.06263	0.10263

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)	0.09321	0.84415	7.49185
	B->X (RR)	0.08832	0.82282	7.42262
sky130_fd_sc_hs__or2_2	A->X (RR)	0.09441	0.75350	7.52747
	B->X (RR)	0.08846	0.73579	7.44679
sky130_fd_sc_hs__or2_4	A->X (RR)	0.11951	0.72516	7.92122
	B->X (RR)	0.10460	0.68890	7.79035

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.23297	0.85069	4.97465
	B->X (FF)	0.20522	0.78856	4.54480
sky130_fd_sc_hs__or2_2	A->X (FF)	0.29368	0.90656	5.25488
	B->X (FF)	0.26025	0.85043	4.85907
sky130_fd_sc_hs__or2_4	A->X (FF)	0.26616	0.84972	5.29042
	B->X (FF)	0.23258	0.78908	4.85016

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00482	0.00469	0.00526
	A	0.00237	0.00223	0.00285
	B	0.00410	0.00402	0.00514
	B	0.00202	0.00194	0.00308
sky130_fd_sc_hs__or2_2	A	0.00692	0.00688	0.00752
	A	0.00395	0.00392	0.00457
	B	0.00593	0.00599	0.00696
	B	0.00351	0.00359	0.00458
sky130_fd_sc_hs__or2_4	A	0.01235	0.01241	0.01339
	A	0.00756	0.00764	0.00881
	B	0.01009	0.01032	0.01195
	B	0.00648	0.00673	0.00862

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00197	0.00196	0.00268
	A	0.00444	0.00445	0.00493
	B	0.00187	0.00203	0.00383
	B	0.00395	0.00411	0.00576
sky130_fd_sc_hs__or2_2	A	0.00317	0.00323	0.00377
	A	0.00613	0.00629	0.00664
	B	0.00310	0.00338	0.00511
	B	0.00551	0.00578	0.00713
sky130_fd_sc_hs__or2_4	A	0.00687	0.00735	0.00874
	A	0.01170	0.01228	0.01283
	B	0.00687	0.00746	0.01050
	B	0.01046	0.01111	0.01344

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00089	0.00081	0.00079
	(B * X)	-0.00068	-0.00078	-0.00079
sky130_fd_sc_hs__or2_2	(B * X)	0.00108	0.00099	0.00097
	(B * X)	-0.00082	-0.00093	-0.00094
sky130_fd_sc_hs__or2_4	(B * X)	0.00138	0.00119	0.00117
	(B * X)	-0.00169	-0.00191	-0.00192

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00078	-0.00079	-0.00078
	(B * X)	0.00079	0.00080	0.00079
sky130_fd_sc_hs__or2_2	(B * X)	-0.00096	-0.00097	-0.00096
	(B * X)	0.00093	0.00094	0.00094
sky130_fd_sc_hs__or2_4	(B * X)	-0.00117	-0.00117	-0.00116
	(B * X)	0.00193	0.00193	0.00192

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00086	0.00086	0.00085
	(A * X)	-0.00043	-0.00042	-0.00042
sky130_fd_sc_hs__or2_2	(A * X)	0.00092	0.00092	0.00091
	(A * X)	-0.00053	-0.00052	-0.00052
sky130_fd_sc_hs__or2_4	(A * X)	0.00106	0.00107	0.00107
	(A * X)	-0.00104	-0.00105	-0.00104

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00082	-0.00082	-0.00085
	(A * X)	0.00046	0.00045	0.00043
sky130_fd_sc_hs__or2_2	(A * X)	-0.00087	-0.00088	-0.00091
	(A * X)	0.00056	0.00056	0.00053
sky130_fd_sc_hs__or2_4	(A * X)	-0.00096	-0.00097	-0.00105
	(A * X)	0.00114	0.00114	0.00107

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00235	0.00258	0.00218	0.65361
sky130_fd_sc_hs__or3b_2	0.00251	0.00243	0.00217	1.16507
sky130_fd_sc_hs__or3b_4	0.00442	0.00403	0.00253	2.42458

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.05953	0.10825
sky130_fd_sc_hs__or3b_2	0.00000	0.06595	0.13435
sky130_fd_sc_hs__or3b_4	0.00000	0.06820	0.12737

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)	0.10476	0.88418	7.64455
	B->X (RR)	0.10270	0.86918	7.56152
	C_N->X (FR)	0.19319	1.09468	8.77283
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.10003	0.77323	7.54407
	B->X (RR)	0.09769	0.76192	7.48780
	C_N->X (FR)	0.20327	1.00261	8.77169
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.12621	0.74489	7.99721
	B->X (RR)	0.12058	0.72804	7.90711
	C_N->X (FR)	0.23245	0.96581	9.19719

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.37850	1.02194	5.40961
	B->X (FF)	0.35932	1.00613	5.40381
	C_N->X (RF)	0.34024	0.74878	2.89915
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.49199	1.12830	5.64702
	B->X (FF)	0.46278	1.10524	5.68397
	C_N->X (RF)	0.44754	0.85502	2.90424
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.42701	1.02170	5.60018
	B->X (FF)	0.39858	0.99810	5.57739
	C_N->X (RF)	0.37614	0.74976	2.91522

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00550	0.00536	0.00577
	A	0.00281	0.00267	0.00315
	B	0.00481	0.00473	0.00524
	B	0.00237	0.00229	0.00287
	C_N	0.00426	0.00436	0.00620
	C_N	0.00584	0.00594	0.00784
sky130_fd_sc_hs__or3b_2	A	0.00728	0.00728	0.00782
	A	0.00450	0.00450	0.00515
	B	0.00643	0.00655	0.00722
	B	0.00407	0.00419	0.00489
	C_N	0.00586	0.00613	0.00793
	C_N	0.00755	0.00783	0.00968
sky130_fd_sc_hs__or3b_4	A	0.01335	0.01345	0.01424
	A	0.00852	0.00864	0.00957
	B	0.01142	0.01166	0.01278
	B	0.00760	0.00785	0.00918
	C_N	0.01004	0.01064	0.01241
	C_N	0.01195	0.01257	0.01459

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00303	0.00302	0.00317
	A	0.00576	0.00578	0.00589
	B	0.00293	0.00293	0.00330
	B	0.00537	0.00539	0.00572
	C_N	0.00641	0.00629	0.00774
	C_N	0.00484	0.00471	0.00611
sky130_fd_sc_hs__or3b_2	A	0.00429	0.00433	0.00458
	A	0.00709	0.00720	0.00733
	B	0.00416	0.00417	0.00474
	B	0.00653	0.00671	0.00704
	C_N	0.00801	0.00797	0.00921
	C_N	0.00632	0.00629	0.00750
sky130_fd_sc_hs__or3b_4	A	0.00795	0.00834	0.00982
	A	0.01286	0.01343	0.01375
	B	0.00797	0.00857	0.00997
	B	0.01180	0.01239	0.01300
	C_N	0.01264	0.01320	0.01471
	C_N	0.01072	0.01127	0.01268

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)	0.00078	0.00077	0.00076
	(B * C_N * X)	-0.00092	-0.00096	-0.00096
	(B * !C_N * X)	0.00076	0.00077	0.00076
	(B * !C_N * X)	-0.00094	-0.00096	-0.00095
	(!B * !C_N * X)	0.00077	0.00076	0.00076
	(!B * !C_N * X)	-0.00087	-0.00092	-0.00092
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00091	0.00090	0.00089
	(B * C_N * X)	-0.00093	-0.00096	-0.00096
	(B * !C_N * X)	0.00086	0.00086	0.00085
	(B * !C_N * X)	-0.00098	-0.00100	-0.00100
	(!B * !C_N * X)	0.00086	0.00086	0.00085
	(!B * !C_N * X)	-0.00091	-0.00097	-0.00096
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00134	0.00131	0.00130
	(B * C_N * X)	-0.00181	-0.00189	-0.00189
	(B * !C_N * X)	0.00117	0.00117	0.00116
	(B * !C_N * X)	-0.00198	-0.00204	-0.00203
	(!B * !C_N * X)	0.00118	0.00117	0.00116
	(!B * !C_N * X)	-0.00186	-0.00198	-0.00197

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)	-0.00076	-0.00076	-0.00076
	(B * C_N * X)	0.00095	0.00096	0.00096
	(B * !C_N * X)	-0.00076	-0.00076	-0.00076
	(B * !C_N * X)	0.00096	0.00096	0.00095
	(!B * !C_N * X)	-0.00076	-0.00076	-0.00076
	(!B * !C_N * X)	0.00092	0.00092	0.00092
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00089	-0.00089	-0.00089
	(B * C_N * X)	0.00097	0.00097	0.00096
	(B * !C_N * X)	-0.00086	-0.00086	-0.00085
	(B * !C_N * X)	0.00100	0.00100	0.00100
	(!B * !C_N * X)	-0.00085	-0.00085	-0.00085
	(!B * !C_N * X)	0.00097	0.00097	0.00096
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00131	-0.00131	-0.00130
	(B * C_N * X)	0.00190	0.00190	0.00189
	(B * !C_N * X)	-0.00117	-0.00117	-0.00116
	(B * !C_N * X)	0.00203	0.00204	0.00203
	(!B * !C_N * X)	-0.00116	-0.00116	-0.00116
	(!B * !C_N * X)	0.00198	0.00198	0.00197

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)	0.00091	0.00092	0.00091
	(A * C_N * X)	-0.00060	-0.00061	-0.00061
	(A * !C_N * X)	0.00087	0.00087	0.00083
	(A * !C_N * X)	-0.00078	-0.00079	-0.00079
	(!A * !C_N * X)	0.00095	0.00083	0.00081
	(!A * !C_N * X)	-0.00093	-0.00107	-0.00107
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00094	0.00094	0.00094
	(A * C_N * X)	-0.00056	-0.00057	-0.00057
	(A * !C_N * X)	0.00082	0.00083	0.00079
	(A * !C_N * X)	-0.00081	-0.00081	-0.00081
	(!A * !C_N * X)	0.00091	0.00079	0.00078
	(!A * !C_N * X)	-0.00095	-0.00108	-0.00108
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00117	0.00117	0.00117
	(A * C_N * X)	-0.00118	-0.00119	-0.00119
	(A * !C_N * X)	0.00106	0.00106	0.00100
	(A * !C_N * X)	-0.00156	-0.00157	-0.00156
	(!A * !C_N * X)	0.00120	0.00098	0.00096
	(!A * !C_N * X)	-0.00188	-0.00212	-0.00212

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)	-0.00090	-0.00090	-0.00090
	(A * C_N * X)	0.00063	0.00063	0.00063
	(A * !C_N * X)	-0.00080	-0.00081	-0.00081
	(A * !C_N * X)	0.00078	0.00079	0.00079
	(!A * !C_N * X)	-0.00081	-0.00080	-0.00080
	(!A * !C_N * X)	0.00108	0.00107	0.00107
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00092	-0.00092	-0.00092
	(A * C_N * X)	0.00059	0.00059	0.00059
	(A * !C_N * X)	-0.00078	-0.00078	-0.00078
	(A * !C_N * X)	0.00081	0.00081	0.00081
	(!A * !C_N * X)	-0.00078	-0.00078	-0.00077
	(!A * !C_N * X)	0.00108	0.00108	0.00108
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00113	-0.00114	-0.00114
	(A * C_N * X)	0.00123	0.00123	0.00124
	(A * !C_N * X)	-0.00097	-0.00097	-0.00097
	(A * !C_N * X)	0.00156	0.00157	0.00156
	(!A * !C_N * X)	-0.00095	-0.00095	-0.00094
	(!A * !C_N * X)	0.00214	0.00213	0.00213

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00254	0.00237	0.00378
	(B * X)	0.00046	0.00028	0.00169
	(A * !B * X)	0.00260	0.00243	0.00382
	(A * !B * X)	0.00049	0.00031	0.00171
sky130_fd_sc_hs__or3b_2	(B * X)	0.00285	0.00267	0.00401
	(B * X)	0.00068	0.00050	0.00184
	(A * !B * X)	0.00291	0.00273	0.00405
	(A * !B * X)	0.00071	0.00053	0.00185
sky130_fd_sc_hs__or3b_4	(B * X)	0.00363	0.00346	0.00468
	(B * X)	0.00104	0.00084	0.00209
	(A * !B * X)	0.00376	0.00358	0.00477
	(A * !B * X)	0.00110	0.00090	0.00212

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00063	0.00066	0.00259
	(B * X)	0.00273	0.00276	0.00467
	(A * !B * X)	0.00063	0.00067	0.00259
	(A * !B * X)	0.00273	0.00276	0.00468
sky130_fd_sc_hs__or3b_2	(B * X)	0.00067	0.00069	0.00258
	(B * X)	0.00284	0.00285	0.00474
	(A * !B * X)	0.00067	0.00069	0.00258
	(A * !B * X)	0.00284	0.00285	0.00474
sky130_fd_sc_hs__or3b_4	(B * X)	0.00088	0.00081	0.00246
	(B * X)	0.00347	0.00341	0.00506
	(A * !B * X)	0.00088	0.00081	0.00246
	(A * !B * X)	0.00347	0.00341	0.00506

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00244	0.00241	0.00236	0.66820
sky130_fd_sc_hs__or3_2	0.00248	0.00251	0.00258	1.28717
sky130_fd_sc_hs__or3_4	0.00463	0.00410	0.00400	2.46165

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	0.01658	0.04770
sky130_fd_sc_hs__or3_2	0.00000	0.02300	0.05131
sky130_fd_sc_hs__or3_4	0.00000	0.04377	0.10263

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)	0.10478	0.88618	7.70510
	B->X (RR)	0.10226	0.86943	7.61739
	C->X (RR)	0.09653	0.84859	7.52360
sky130_fd_sc_hs__or3_2	A->X (RR)	0.09904	0.76428	7.67550
	B->X (RR)	0.09640	0.75225	7.60662
	C->X (RR)	0.09220	0.73564	7.53772
sky130_fd_sc_hs__or3_4	A->X (RR)	0.12666	0.74903	8.10527
	B->X (RR)	0.12104	0.73222	8.01505
	C->X (RR)	0.11172	0.70521	7.90287

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.38872	1.03671	5.50464
	B->X (FF)	0.36146	1.01478	5.46480
	C->X (FF)	0.30627	0.92894	5.02219
sky130_fd_sc_hs__or3_2	A->X (FF)	0.48088	1.12248	5.82431
	B->X (FF)	0.45088	1.09930	5.84598
	C->X (FF)	0.40181	1.01394	5.42698
sky130_fd_sc_hs__or3_4	A->X (FF)	0.42806	1.02433	5.64119
	B->X (FF)	0.39866	1.00070	5.61863
	C->X (FF)	0.33725	0.90544	5.14238

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00638	0.00621	0.00660
	A	0.00296	0.00279	0.00325
	B	0.00543	0.00536	0.00588
	B	0.00250	0.00243	0.00302
	C	0.00452	0.00441	0.00525
	C	0.00197	0.00186	0.00272
sky130_fd_sc_hs__or3_2	A	0.00796	0.00797	0.00853
	A	0.00452	0.00454	0.00524
	B	0.00696	0.00707	0.00779
	B	0.00398	0.00410	0.00495
	C	0.00613	0.00620	0.00717
	C	0.00350	0.00359	0.00456
sky130_fd_sc_hs__or3_4	A	0.01460	0.01470	0.01547
	A	0.00855	0.00866	0.00954
	B	0.01238	0.01262	0.01374
	B	0.00759	0.00784	0.00910
	C	0.01038	0.01060	0.01219
	C	0.00636	0.00660	0.00839

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00235	0.00236	0.00275
	A	0.00581	0.00583	0.00594
	B	0.00237	0.00241	0.00298
	B	0.00531	0.00535	0.00568
	C	0.00232	0.00242	0.00371
	C	0.00486	0.00496	0.00617
sky130_fd_sc_hs__or3_2	A	0.00375	0.00392	0.00447
	A	0.00723	0.00747	0.00763
	B	0.00376	0.00382	0.00451
	B	0.00675	0.00702	0.00741
	C	0.00371	0.00391	0.00547
	C	0.00632	0.00660	0.00792
sky130_fd_sc_hs__or3_4	A	0.00674	0.00708	0.00845
	A	0.01291	0.01352	0.01382
	B	0.00703	0.00766	0.00896
	B	0.01186	0.01249	0.01309
	C	0.00686	0.00729	0.01049
	C	0.01086	0.01148	0.01374

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00083	0.00083	0.00083
	(B * C * X)	-0.00092	-0.00095	-0.00095
	(B * !C * X)	0.00083	0.00083	0.00083
	(B * !C * X)	-0.00091	-0.00095	-0.00095
	(!B * C * X)	0.00084	0.00082	0.00083
	(!B * C * X)	-0.00085	-0.00091	-0.00091
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00087	0.00087	0.00087
	(B * C * X)	-0.00094	-0.00096	-0.00096
	(B * !C * X)	0.00087	0.00087	0.00087
	(B * !C * X)	-0.00093	-0.00096	-0.00096
	(!B * C * X)	0.00087	0.00087	0.00087
	(!B * C * X)	-0.00087	-0.00092	-0.00092
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00139	0.00138	0.00138
	(B * C * X)	-0.00184	-0.00190	-0.00189
	(B * !C * X)	0.00139	0.00138	0.00138
	(B * !C * X)	-0.00182	-0.00190	-0.00189
	(!B * C * X)	0.00140	0.00138	0.00137
	(!B * C * X)	-0.00171	-0.00183	-0.00182

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00083	-0.00083	-0.00083
	(B * C * X)	0.00095	0.00095	0.00095
	(B * !C * X)	-0.00083	-0.00083	-0.00083
	(B * !C * X)	0.00095	0.00095	0.00095
	(!B * C * X)	-0.00083	-0.00082	-0.00082
	(!B * C * X)	0.00091	0.00091	0.00091
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00087	-0.00087	-0.00087
	(B * C * X)	0.00096	0.00096	0.00096
	(B * !C * X)	-0.00087	-0.00087	-0.00087
	(B * !C * X)	0.00096	0.00097	0.00096
	(!B * C * X)	-0.00086	-0.00087	-0.00086
	(!B * C * X)	0.00092	0.00092	0.00092
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00138	-0.00138	-0.00138
	(B * C * X)	0.00189	0.00190	0.00189
	(B * !C * X)	-0.00138	-0.00138	-0.00138
	(B * !C * X)	0.00189	0.00190	0.00189
	(!B * C * X)	-0.00137	-0.00138	-0.00137
	(!B * C * X)	0.00181	0.00183	0.00182

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00082	0.00082	0.00078
	(A * C * X)	-0.00066	-0.00066	-0.00066
	(A * !C * X)	0.00077	0.00077	0.00076
	(A * !C * X)	-0.00058	-0.00057	-0.00057
	(!A * C * X)	0.00090	0.00078	0.00076
	(!A * C * X)	-0.00079	-0.00093	-0.00093
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00083	0.00083	0.00080
	(A * C * X)	-0.00073	-0.00073	-0.00072
	(A * !C * X)	0.00079	0.00079	0.00078
	(A * !C * X)	-0.00064	-0.00064	-0.00064
	(!A * C * X)	0.00092	0.00080	0.00078
	(!A * C * X)	-0.00086	-0.00100	-0.00100
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00106	0.00106	0.00100
	(A * C * X)	-0.00136	-0.00137	-0.00136
	(A * !C * X)	0.00098	0.00098	0.00097
	(A * !C * X)	-0.00121	-0.00120	-0.00120
	(!A * C * X)	0.00120	0.00098	0.00096
	(!A * C * X)	-0.00168	-0.00194	-0.00194

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00076	-0.00077	-0.00076
	(A * C * X)	0.00066	0.00066	0.00066
	(A * !C * X)	-0.00075	-0.00075	-0.00075
	(A * !C * X)	0.00059	0.00059	0.00059
	(!A * C * X)	-0.00076	-0.00076	-0.00075
	(!A * C * X)	0.00093	0.00093	0.00093
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00078	-0.00078	-0.00078
	(A * C * X)	0.00073	0.00073	0.00072
	(A * !C * X)	-0.00076	-0.00077	-0.00076
	(A * !C * X)	0.00066	0.00066	0.00066
	(!A * C * X)	-0.00078	-0.00077	-0.00077
	(!A * C * X)	0.00100	0.00100	0.00100
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00097	-0.00097	-0.00097
	(A * C * X)	0.00136	0.00137	0.00136
	(A * !C * X)	-0.00094	-0.00094	-0.00093
	(A * !C * X)	0.00124	0.00124	0.00125
	(!A * C * X)	-0.00095	-0.00095	-0.00094
	(!A * C * X)	0.00194	0.00195	0.00194

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00085	0.00086	0.00085
	(B * X)	-0.00053	-0.00053	-0.00053
	(A * !B * X)	0.00086	0.00086	0.00085
	(A * !B * X)	-0.00053	-0.00053	-0.00053
sky130_fd_sc_hs__or3_2	(B * X)	0.00096	0.00096	0.00096
	(B * X)	-0.00055	-0.00054	-0.00054
	(A * !B * X)	0.00096	0.00096	0.00096
	(A * !B * X)	-0.00054	-0.00054	-0.00054
sky130_fd_sc_hs__or3_4	(B * X)	0.00121	0.00122	0.00121
	(B * X)	-0.00107	-0.00107	-0.00107
	(A * !B * X)	0.00121	0.00122	0.00121
	(A * !B * X)	-0.00106	-0.00107	-0.00106

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00082	-0.00082	-0.00085
	(B * X)	0.00057	0.00057	0.00054
	(A * !B * X)	-0.00075	-0.00076	-0.00083
	(A * !B * X)	0.00061	0.00061	0.00055
sky130_fd_sc_hs__or3_2	(B * X)	-0.00091	-0.00092	-0.00095
	(B * X)	0.00058	0.00058	0.00055
	(A * !B * X)	-0.00085	-0.00086	-0.00094
	(A * !B * X)	0.00061	0.00061	0.00055
sky130_fd_sc_hs__or3_4	(B * X)	-0.00111	-0.00112	-0.00120
	(B * X)	0.00116	0.00116	0.00109
	(A * !B * X)	-0.00099	-0.00100	-0.00117
	(A * !B * X)	0.00123	0.00123	0.00110

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00239	0.00236	0.00223	0.00226	0.65685
sky130_fd_sc_hs__or4bb_2	0.00237	0.00251	0.00220	0.00217	1.17675
sky130_fd_sc_hs__or4bb_4	0.00373	0.00381	0.00243	0.00240	2.21748

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	0.09741	0.19416
sky130_fd_sc_hs__or4bb_2	0.00000	0.10259	0.22292
sky130_fd_sc_hs__or4bb_4	0.00000	0.08075	0.17508

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)	0.10693	0.90367	7.78400
	B->X (RR)	0.10637	0.89216	7.70596
	C_N->X (FR)	0.21813	1.13343	8.91643
	D_N->X (FR)	0.19959	1.10335	8.82057
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.10114	0.79075	7.70214
	B->X (RR)	0.10228	0.78482	7.65500
	C_N->X (FR)	0.19845	0.99676	8.80198
	D_N->X (FR)	0.20275	1.00564	8.86968
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.13711	0.79055	8.17629
	B->X (RR)	0.13990	0.78488	8.10391
	C_N->X (FR)	0.26962	1.02158	9.34545
	D_N->X (FR)	0.27568	1.03461	9.40613

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.56141	1.23396	5.76601
	B->X (FF)	0.52674	1.19400	5.74179
	C_N->X (RF)	0.52193	0.98337	3.22387
	D_N->X (RF)	0.42183	0.86584	3.03810
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.68961	1.35879	5.94440
	B->X (FF)	0.66973	1.33173	6.00598
	C_N->X (RF)	0.65428	1.10378	3.17347
	D_N->X (RF)	0.57842	1.01719	3.08767
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.73108	1.37275	5.97242
	B->X (FF)	0.70711	1.33216	5.99537
	C_N->X (RF)	0.69538	1.11432	3.17189
	D_N->X (RF)	0.57037	0.99264	3.07565

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00594	0.00579	0.00608
	A	0.00334	0.00319	0.00354
	B	0.00513	0.00508	0.00553
	B	0.00285	0.00281	0.00332
	C_N	0.00477	0.00487	0.00666
	C_N	0.00658	0.00667	0.00850
	D_N	0.00416	0.00426	0.00609
	D_N	0.00575	0.00585	0.00773
sky130_fd_sc_hs__or4bb_2	A	0.00741	0.00755	0.00818
	A	0.00478	0.00493	0.00569
	B	0.00676	0.00688	0.00752
	B	0.00436	0.00450	0.00527
	C_N	0.00608	0.00646	0.00835
	C_N	0.00782	0.00820	0.01017
	D_N	0.00591	0.00603	0.00777
	D_N	0.00750	0.00763	0.00943
sky130_fd_sc_hs__or4bb_4	A	0.01486	0.01510	0.01598
	A	0.01022	0.01048	0.01143
	B	0.01277	0.01304	0.01393
	B	0.00902	0.00931	0.01029
	C_N	0.01248	0.01310	0.01468
	C_N	0.01409	0.01472	0.01653
	D_N	0.01102	0.01154	0.01302
	D_N	0.01265	0.01318	0.01488

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00374	0.00374	0.00408
	A	0.00638	0.00640	0.00643
	B	0.00360	0.00361	0.00385
	B	0.00589	0.00595	0.00605
	C_N	0.00743	0.00730	0.00866
	C_N	0.00563	0.00551	0.00676
	D_N	0.00660	0.00649	0.00793
	D_N	0.00502	0.00491	0.00629
sky130_fd_sc_hs__or4bb_2	A	0.00494	0.00519	0.00538
	A	0.00760	0.00786	0.00799
	B	0.00478	0.00500	0.00574
	B	0.00717	0.00741	0.00760
	C_N	0.00848	0.00857	0.01002
	C_N	0.00674	0.00684	0.00821
	D_N	0.00811	0.00805	0.00944
	D_N	0.00652	0.00651	0.00779
sky130_fd_sc_hs__or4bb_4	A	0.01052	0.01102	0.01318
	A	0.01526	0.01579	0.01612
	B	0.01059	0.01107	0.01165
	B	0.01437	0.01486	0.01523
	C_N	0.01502	0.01523	0.01679
	C_N	0.01342	0.01370	0.01506
	D_N	0.01448	0.01464	0.01613
	D_N	0.01286	0.01308	0.01432

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)**	0.00080	0.00079	0.00079
	(B * C_N * D_N * X)	-0.00092	-0.00096	-0.00096
	(B * !D_N * X)	0.00079	0.00079	0.00079
	(B * !D_N * X)	-0.00093	-0.00096	-0.00096
	(B * !C_N * D_N * X)	0.00079	0.00079	0.00079
	(B * !C_N * D_N * X)	-0.00093	-0.00096	-0.00096
	(!B * C_N * !D_N * X)	0.00084	0.00082	0.00080
	(!B * C_N * !D_N * X)	-0.00086	-0.00091	-0.00091
	(!B * !C_N * D_N * X)	0.00079	0.00080	0.00079
	(!B * !C_N * D_N * X)	-0.00088	-0.00093	-0.00092
	(!B * !C_N * !D_N * X)	0.00078	0.00079	0.00079
	(!B * !C_N * !D_N * X)	-0.00088	-0.00092	-0.00092
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00085	0.00084	0.00083
	(B * C_N * D_N * X)	-0.00092	-0.00095	-0.00095
	(B * !D_N * X)	0.00085	0.00084	0.00083
	(B * !D_N * X)	-0.00092	-0.00095	-0.00095
	(B * !C_N * D_N * X)	0.00074	0.00075	0.00074
	(B * !C_N * D_N * X)	-0.00102	-0.00104	-0.00104
	(!B * C_N * !D_N * X)	0.00089	0.00087	0.00085
	(!B * C_N * !D_N * X)	-0.00085	-0.00090	-0.00090
	(!B * !C_N * D_N * X)	0.00074	0.00074	0.00074
	(!B * !C_N * D_N * X)	-0.00096	-0.00101	-0.00100
	(!B * !C_N * !D_N * X)	0.00074	0.00074	0.00074
	(!B * !C_N * !D_N * X)	-0.00096	-0.00101	-0.00100

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00105	0.00103	0.00102
	(B * C_N * D_N * X)	-0.00187	-0.00196	-0.00195
	(B * !D_N * X)	0.00104	0.00103	0.00102
	(B * !D_N * X)	-0.00188	-0.00196	-0.00195
	(B * !C_N * D_N * X)	0.00102	0.00103	0.00102
	(B * !C_N * D_N * X)	-0.00190	-0.00196	-0.00195
	(!B * C_N * !D_N * X)	0.00114	0.00109	0.00106
	(!B * C_N * !D_N * X)	-0.00175	-0.00185	-0.00184
	(!B * !C_N * D_N * X)	0.00103	0.00103	0.00102
	(!B * !C_N * D_N * X)	-0.00178	-0.00188	-0.00188
	(!B * !C_N * !D_N * X)	0.00102	0.00103	0.00102
	(!B * !C_N * !D_N * X)	-0.00178	-0.00188	-0.00187

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)**	-0.00078	-0.00078	-0.00078
	(B * C_N * D_N * X)	0.00096	0.00096	0.00096
	(B * !D_N * X)	-0.00078	-0.00078	-0.00078
	(B * !D_N * X)	0.00096	0.00096	0.00096
	(B * !C_N * D_N * X)	-0.00079	-0.00078	-0.00078
	(B * !C_N * D_N * X)	0.00096	0.00096	0.00096
	(!B * C_N * !D_N * X)	-0.00082	-0.00082	-0.00080
	(!B * C_N * !D_N * X)	0.00091	0.00091	0.00091
	(!B * !C_N * D_N * X)	-0.00078	-0.00078	-0.00078
	(!B * !C_N * D_N * X)	0.00092	0.00093	0.00092
	(!B * !C_N * !D_N * X)	-0.00078	-0.00079	-0.00078
	(!B * !C_N * !D_N * X)	0.00092	0.00092	0.00092

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00082	-0.00083	-0.00083
	(B * C_N * D_N * X)	0.00094	0.00096	0.00095
	(B * !D_N * X)	-0.00083	-0.00083	-0.00083
	(B * !D_N * X)	0.00095	0.00096	0.00095
	(B * !C_N * D_N * X)	-0.00074	-0.00074	-0.00074
	(B * !C_N * D_N * X)	0.00104	0.00105	0.00104
	(!B * C_N * !D_N * X)	-0.00086	-0.00087	-0.00085
	(!B * C_N * !D_N * X)	0.00090	0.00090	0.00090
	(!B * !C_N * D_N * X)	-0.00074	-0.00074	-0.00074
	(!B * !C_N * D_N * X)	0.00101	0.00101	0.00100
	(!B * !C_N * !D_N * X)	-0.00074	-0.00074	-0.00074
	(!B * !C_N * !D_N * X)	0.00100	0.00101	0.00100
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00102	-0.00102	-0.00102
	(B * C_N * D_N * X)	0.00195	0.00196	0.00195
	(B * !D_N * X)	-0.00102	-0.00102	-0.00102
	(B * !D_N * X)	0.00196	0.00196	0.00195
	(B * !C_N * D_N * X)	-0.00102	-0.00102	-0.00102
	(B * !C_N * D_N * X)	0.00195	0.00196	0.00195
	(!B * C_N * !D_N * X)	-0.00109	-0.00109	-0.00106
	(!B * C_N * !D_N * X)	0.00185	0.00185	0.00184
	(!B * !C_N * D_N * X)	-0.00102	-0.00102	-0.00102
	(!B * !C_N * D_N * X)	0.00188	0.00188	0.00188
	(!B * !C_N * !D_N * X)	-0.00102	-0.00102	-0.00102
	(!B * !C_N * !D_N * X)	0.00187	0.00188	0.00187

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)**	0.00084	0.00085	0.00085
	(A * C_N * D_N * X)	-0.00063	-0.00064	-0.00063
	(A * C_N * !D_N * X)	0.00093	0.00097	0.00097
	(A * C_N * !D_N * X)	-0.00072	-0.00072	-0.00072
	(A * !C_N * D_N * X)	0.00068	0.00069	0.00068
	(A * !C_N * D_N * X)	-0.00090	-0.00090	-0.00090
	(A * !C_N * !D_N * X)	0.00067	0.00068	0.00068
	(A * !C_N * !D_N * X)	-0.00092	-0.00093	-0.00092
	(!A * C_N * !D_N * X)	0.00095	0.00088	0.00086
	(!A * C_N * !D_N * X)	-0.00090	-0.00096	-0.00095
	(!A * !C_N * D_N * X)	0.00070	0.00068	0.00068
	(!A * !C_N * D_N * X)	-0.00113	-0.00117	-0.00116
	(!A * !C_N * !D_N * X)	0.00068	0.00068	0.00068
	(!A * !C_N * !D_N * X)	-0.00116	-0.00116	-0.00116
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00103	0.00104	0.00103
	(A * C_N * D_N * X)	-0.00058	-0.00058	-0.00057
	(A * C_N * !D_N * X)	0.00112	0.00115	0.00115
	(A * C_N * !D_N * X)	-0.00065	-0.00067	-0.00066
	(A * !C_N * D_N * X)	0.00093	0.00094	0.00092
	(A * !C_N * D_N * X)	-0.00078	-0.00078	-0.00078
	(A * !C_N * !D_N * X)	0.00093	0.00093	0.00092
	(A * !C_N * !D_N * X)	-0.00080	-0.00081	-0.00080
	(!A * C_N * !D_N * X)	0.00113	0.00107	0.00104
	(!A * C_N * !D_N * X)	-0.00083	-0.00089	-0.00089
	(!A * !C_N * D_N * X)	0.00094	0.00092	0.00092
	(!A * !C_N * D_N * X)	-0.00101	-0.00104	-0.00104
	(!A * !C_N * !D_N * X)	0.00092	0.00092	0.00092
	(!A * !C_N * !D_N * X)	-0.00103	-0.00104	-0.00104

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00106	0.00105	0.00105
	(A * C_N * D_N * X)	-0.00125	-0.00123	-0.00122
	(A * C_N * !D_N * X)	0.00120	0.00127	0.00126
	(A * C_N * !D_N * X)	-0.00141	-0.00142	-0.00141
	(A * !C_N * D_N * X)	0.00102	0.00101	0.00100
	(A * !C_N * D_N * X)	-0.00147	-0.00148	-0.00147
	(A * !C_N * !D_N * X)	0.00100	0.00100	0.00100
	(A * !C_N * !D_N * X)	-0.00152	-0.00153	-0.00152
	(!A * C_N * !D_N * X)	0.00122	0.00111	0.00106
	(!A * C_N * !D_N * X)	-0.00176	-0.00186	-0.00186
	(!A * !C_N * D_N * X)	0.00104	0.00100	0.00099
	(!A * !C_N * D_N * X)	-0.00195	-0.00200	-0.00199
	(!A * !C_N * !D_N * X)	0.00100	0.00100	0.00099
	(!A * !C_N * !D_N * X)	-0.00198	-0.00200	-0.00199

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)**	-0.00083	-0.00083	-0.00083
	(A * C_N * D_N * X)	0.00066	0.00066	0.00066
	(A * C_N * !D_N * X)	-0.00091	-0.00091	-0.00091
	(A * C_N * !D_N * X)	0.00072	0.00072	0.00072
	(A * !C_N * D_N * X)	-0.00067	-0.00067	-0.00067
	(A * !C_N * D_N * X)	0.00090	0.00090	0.00090
	(A * !C_N * !D_N * X)	-0.00067	-0.00068	-0.00067
	(A * !C_N * !D_N * X)	0.00092	0.00093	0.00092
	(!A * C_N * !D_N * X)	-0.00089	-0.00088	-0.00086
	(!A * C_N * !D_N * X)	0.00095	0.00096	0.00095
	(!A * !C_N * D_N * X)	-0.00067	-0.00067	-0.00067
	(!A * !C_N * D_N * X)	0.00116	0.00117	0.00116
	(!A * !C_N * !D_N * X)	-0.00067	-0.00068	-0.00067
	(!A * !C_N * !D_N * X)	0.00116	0.00116	0.00116
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00102	-0.00103	-0.00102
	(A * C_N * D_N * X)	0.00059	0.00059	0.00059
	(A * C_N * !D_N * X)	-0.00109	-0.00111	-0.00110
	(A * C_N * !D_N * X)	0.00065	0.00067	0.00066
	(A * !C_N * D_N * X)	-0.00091	-0.00092	-0.00091
	(A * !C_N * D_N * X)	0.00078	0.00078	0.00078
	(A * !C_N * !D_N * X)	-0.00092	-0.00092	-0.00092
	(A * !C_N * !D_N * X)	0.00080	0.00081	0.00080
	(!A * C_N * !D_N * X)	-0.00107	-0.00107	-0.00104
	(!A * C_N * !D_N * X)	0.00088	0.00089	0.00089
	(!A * !C_N * D_N * X)	-0.00091	-0.00092	-0.00091
	(!A * !C_N * D_N * X)	0.00104	0.00105	0.00104
	(!A * !C_N * !D_N * X)	-0.00091	-0.00092	-0.00092
	(!A * !C_N * !D_N * X)	0.00103	0.00104	0.00104

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	-0.00100	-0.00100	-0.00101
	(A * C_N * D_N * X)	0.00128	0.00128	0.00128
	(A * C_N * !D_N * X)	-0.00117	-0.00118	-0.00117
	(A * C_N * !D_N * X)	0.00141	0.00142	0.00141
	(A * !C_N * D_N * X)	-0.00099	-0.00100	-0.00100
	(A * !C_N * D_N * X)	0.00147	0.00148	0.00147
	(A * !C_N * !D_N * X)	-0.00099	-0.00100	-0.00099
	(A * !C_N * !D_N * X)	0.00152	0.00153	0.00152
	(!A * C_N * !D_N * X)	-0.00113	-0.00111	-0.00106
	(!A * C_N * !D_N * X)	0.00185	0.00186	0.00186
	(!A * !C_N * D_N * X)	-0.00099	-0.00099	-0.00099
	(!A * !C_N * D_N * X)	0.00200	0.00200	0.00199
	(!A * !C_N * !D_N * X)	-0.00099	-0.00099	-0.00099
	(!A * !C_N * !D_N * X)	0.00200	0.00200	0.00199

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4bb_1	**(B * X)**	0.00291	0.00274	0.00406
	(B * X)	0.00070	0.00051	0.00185
	(A * !B * X) + (!A * !B * !D_N * X)	0.00298	0.00280	0.00410
	(A * !B * X) + (!A * !B * !D_N * X)	0.00072	0.00053	0.00184
sky130_fd_sc_hs__or4bb_2	**(B * X)**	0.00266	0.00249	0.00388
	(B * X)	0.00052	0.00033	0.00174
	(A * !B * X) + (!A * !B * !D_N * X)	0.00272	0.00254	0.00391
	(A * !B * X) + (!A * !B * !D_N * X)	0.00054	0.00035	0.00173
sky130_fd_sc_hs__or4bb_4	**(B * X)**	0.00325	0.00307	0.00433
	(B * X)	0.00097	0.00079	0.00207
	(A * !B * X) + (!A * !B * !D_N * X)	0.00340	0.00322	0.00443
	(A * !B * X) + (!A * !B * !D_N * X)	0.00104	0.00085	0.00209

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00075	0.00074	0.00262
	(B * X)	0.00296	0.00296	0.00484
	(A * !B * X) + (!A * !B * !D_N * X)	0.00075	0.00074	0.00262
	(A * !B * X) + (!A * !B * !D_N * X)	0.00297	0.00297	0.00485
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00066	0.00067	0.00259
	(B * X)	0.00280	0.00281	0.00473
	(A * !B * X) + (!A * !B * !D_N * X)	0.00066	0.00067	0.00259
	(A * !B * X) + (!A * !B * !D_N * X)	0.00281	0.00282	0.00473
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00121	0.00119	0.00280
	(B * X)	0.00347	0.00344	0.00506
	(A * !B * X) + (!A * !B * !D_N * X)	0.00121	0.00119	0.00281
	(A * !B * X) + (!A * !B * !D_N * X)	0.00348	0.00345	0.00507

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)	0.00257	0.00239	0.00376
	(B * C_N * X)	0.00057	0.00039	0.00176
	(A * !B * C_N * X)	0.00265	0.00247	0.00382
	(A * !B * C_N * X)	0.00062	0.00044	0.00180
	(!C_N * X)	0.00262	0.00245	0.00383
	(!C_N * X)	0.00063	0.00045	0.00183
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00261	0.00243	0.00376
	(B * C_N * X)	0.00062	0.00043	0.00178
	(A * !B * C_N * X)	0.00268	0.00250	0.00381
	(A * !B * C_N * X)	0.00067	0.00048	0.00181
	(!C_N * X)	0.00267	0.00249	0.00384
	(!C_N * X)	0.00069	0.00050	0.00186
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00376	0.00356	0.00469
	(B * C_N * X)	0.00148	0.00128	0.00242
	(A * !B * C_N * X)	0.00395	0.00375	0.00482
	(A * !B * C_N * X)	0.00161	0.00141	0.00251
	(!C_N * X)	0.00395	0.00376	0.00491
	(!C_N * X)	0.00169	0.00150	0.00266

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)	0.00075	0.00078	0.00268
	(B * C_N * X)	0.00274	0.00277	0.00467
	(A * !B * C_N * X)	0.00075	0.00078	0.00268
	(A * !B * C_N * X)	0.00274	0.00277	0.00467
	(!C_N * X)	0.00066	0.00068	0.00259
	(!C_N * X)	0.00265	0.00268	0.00458
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00089	0.00091	0.00280
	(B * C_N * X)	0.00288	0.00288	0.00478
	(A * !B * C_N * X)	0.00089	0.00091	0.00280
	(A * !B * C_N * X)	0.00288	0.00288	0.00478
	(!C_N * X)	0.00080	0.00081	0.00271
	(!C_N * X)	0.00278	0.00279	0.00469
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00146	0.00143	0.00300
	(B * C_N * X)	0.00371	0.00369	0.00525
	(A * !B * C_N * X)	0.00146	0.00143	0.00300
	(A * !B * C_N * X)	0.00371	0.00369	0.00525
	(!C_N * X)	0.00119	0.00116	0.00273
	(!C_N * X)	0.00344	0.00342	0.00498

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00244	0.00233	0.00241	0.00228	0.63878
sky130_fd_sc_hs__or4b_2	0.00251	0.00243	0.00243	0.00217	1.16457
sky130_fd_sc_hs__or4b_4	0.00369	0.00421	0.00424	0.00237	2.45343

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.05445	0.11037
sky130_fd_sc_hs__or4b_2	0.00000	0.05964	0.13913
sky130_fd_sc_hs__or4b_4	0.00000	0.05632	0.13099

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)	0.11177	0.91782	7.79493
	B->X (RR)	0.11110	0.90602	7.72142
	C->X (RR)	0.10761	0.89116	7.63970
	D_N->X (FR)	0.20016	1.10818	8.79011
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.10264	0.79033	7.63670
	B->X (RR)	0.10260	0.78304	7.58270
	C->X (RR)	0.10006	0.77110	7.52360
	D_N->X (FR)	0.21153	1.01671	8.82068
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.13771	0.78070	8.16885
	B->X (RR)	0.13833	0.77317	8.10122
	C->X (RR)	0.12962	0.74875	7.99608
	D_N->X (FR)	0.24610	0.98642	9.27839

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.58977	1.26592	5.78582
	B->X (FF)	0.55456	1.22654	5.77706
	C->X (FF)	0.50601	1.17882	5.73160
	D_N->X (RF)	0.44262	0.89892	3.02178
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.72575	1.39610	6.00486
	B->X (FF)	0.69261	1.35898	6.05695
	C->X (FF)	0.63356	1.30229	6.04976
	D_N->X (RF)	0.59158	1.04196	3.12746
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.70667	1.35203	6.13694
	B->X (FF)	0.68655	1.31984	6.16842
	C->X (FF)	0.60474	1.23471	6.08536
	D_N->X (RF)	0.54033	0.96090	3.18231

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00674	0.00657	0.00686
	A	0.00343	0.00327	0.00363
	B	0.00580	0.00575	0.00617
	B	0.00302	0.00298	0.00346
	C	0.00502	0.00497	0.00543
	C	0.00252	0.00247	0.00300
	D_N	0.00449	0.00457	0.00641
	D_N	0.00595	0.00603	0.00791
sky130_fd_sc_hs__or4b_2	A	0.00840	0.00839	0.00883
	A	0.00505	0.00505	0.00562
	B	0.00747	0.00761	0.00819
	B	0.00464	0.00478	0.00550
	C	0.00665	0.00680	0.00741
	C	0.00409	0.00430	0.00487
	D_N	0.00619	0.00648	0.00825
	D_N	0.00775	0.00805	0.00988
sky130_fd_sc_hs__or4b_4	A	0.01541	0.01570	0.01659
	A	0.00976	0.01006	0.01104
	B	0.01390	0.01419	0.01507
	B	0.00883	0.00912	0.01011
	C	0.01180	0.01210	0.01313
	C	0.00747	0.00776	0.00894
	D_N	0.01069	0.01139	0.01304
	D_N	0.01209	0.01280	0.01469

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00323	0.00320	0.00353
	A	0.00660	0.00657	0.00661
	B	0.00324	0.00325	0.00387
	B	0.00604	0.00608	0.00619
	C	0.00317	0.00314	0.00355
	C	0.00567	0.00569	0.00598
	D_N	0.00657	0.00648	0.00794
	D_N	0.00511	0.00504	0.00643
sky130_fd_sc_hs__or4b_2	A	0.00437	0.00444	0.00453
	A	0.00779	0.00787	0.00791
	B	0.00440	0.00450	0.00476
	B	0.00726	0.00737	0.00750
	C	0.00424	0.00438	0.00487
	C	0.00680	0.00695	0.00726
	D_N	0.00825	0.00817	0.00949
	D_N	0.00670	0.00662	0.00783
sky130_fd_sc_hs__or4b_4	A	0.00939	0.01000	0.01154
	A	0.01521	0.01585	0.01619
	B	0.00928	0.00984	0.01165
	B	0.01447	0.01503	0.01542
	C	0.00899	0.00948	0.01301
	C	0.01334	0.01386	0.01451
	D_N	0.01379	0.01415	0.01606
	D_N	0.01239	0.01282	0.01428

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)**	0.00082	0.00082	0.00082
	(B * C * D_N * X)	-0.00092	-0.00094	-0.00094
	(B * !D_N * X)	0.00082	0.00082	0.00082
	(B * !D_N * X)	-0.00092	-0.00094	-0.00094
	(B * !C * D_N * X)	0.00082	0.00082	0.00082
	(B * !C * D_N * X)	-0.00091	-0.00094	-0.00094
	(!B * C * D_N * X)	0.00082	0.00082	0.00082
	(!B * C * D_N * X)	-0.00085	-0.00091	-0.00090
	(!B * C * !D_N * X)	0.00082	0.00082	0.00082
	(!B * C * !D_N * X)	-0.00085	-0.00091	-0.00090
	(!B * !C * !D_N * X)	0.00082	0.00083	0.00082
	(!B * !C * !D_N * X)	-0.00084	-0.00089	-0.00089
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00090	0.00090	0.00089
	(B * C * D_N * X)	-0.00093	-0.00096	-0.00095
	(B * !D_N * X)	0.00086	0.00087	0.00086
	(B * !D_N * X)	-0.00097	-0.00099	-0.00099
	(B * !C * D_N * X)	0.00090	0.00090	0.00089
	(B * !C * D_N * X)	-0.00092	-0.00096	-0.00096
	(!B * C * D_N * X)	0.00089	0.00090	0.00089
	(!B * C * D_N * X)	-0.00086	-0.00092	-0.00092
	(!B * C * !D_N * X)	0.00086	0.00086	0.00086
	(!B * C * !D_N * X)	-0.00090	-0.00095	-0.00095
	(!B * !C * !D_N * X)	0.00086	0.00087	0.00086
	(!B * !C * !D_N * X)	-0.00089	-0.00094	-0.00094

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00089	0.00089	0.00088
	(B * C * D_N * X)	-0.00189	-0.00194	-0.00193
	(B * !D_N * X)	0.00088	0.00088	0.00088
	(B * !D_N * X)	-0.00190	-0.00195	-0.00194
	(B * !C * D_N * X)	0.00090	0.00089	0.00088
	(B * !C * D_N * X)	-0.00186	-0.00194	-0.00193
	(!B * C * D_N * X)	0.00089	0.00089	0.00088
	(!B * C * D_N * X)	-0.00174	-0.00185	-0.00184
	(!B * C * !D_N * X)	0.00088	0.00088	0.00088
	(!B * C * !D_N * X)	-0.00175	-0.00186	-0.00185
	(!B * !C * !D_N * X)	0.00089	0.00088	0.00088
	(!B * !C * !D_N * X)	-0.00174	-0.00184	-0.00182

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)**	-0.00082	-0.00082	-0.00082
	(B * C * D_N * X)	0.00095	0.00094	0.00094
	(B * !D_N * X)	-0.00082	-0.00082	-0.00082
	(B * !D_N * X)	0.00095	0.00094	0.00094
	(B * !C * D_N * X)	-0.00082	-0.00082	-0.00082
	(B * !C * D_N * X)	0.00095	0.00095	0.00094
	(!B * C * D_N * X)	-0.00082	-0.00082	-0.00082
	(!B * C * D_N * X)	0.00091	0.00091	0.00090
	(!B * C * !D_N * X)	-0.00082	-0.00082	-0.00082
	(!B * C * !D_N * X)	0.00091	0.00091	0.00090
	(!B * !C * !D_N * X)	-0.00082	-0.00082	-0.00082
	(!B * !C * !D_N * X)	0.00089	0.00089	0.00089

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00089	-0.00090	-0.00089
	(B * C * D_N * X)	0.00096	0.00096	0.00095
	(B * !D_N * X)	-0.00086	-0.00086	-0.00086
	(B * !D_N * X)	0.00099	0.00099	0.00099
	(B * !C * D_N * X)	-0.00089	-0.00090	-0.00089
	(B * !C * D_N * X)	0.00096	0.00096	0.00096
	(!B * C * D_N * X)	-0.00089	-0.00089	-0.00089
	(!B * C * D_N * X)	0.00092	0.00092	0.00092
	(!B * C * !D_N * X)	-0.00086	-0.00086	-0.00086
	(!B * C * !D_N * X)	0.00095	0.00095	0.00095
	(!B * !C * !D_N * X)	-0.00086	-0.00086	-0.00086
	(!B * !C * !D_N * X)	0.00094	0.00094	0.00094
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00088	-0.00088	-0.00088
	(B * C * D_N * X)	0.00193	0.00194	0.00193
	(B * !D_N * X)	-0.00088	-0.00088	-0.00088
	(B * !D_N * X)	0.00194	0.00195	0.00194
	(B * !C * D_N * X)	-0.00088	-0.00088	-0.00088
	(B * !C * D_N * X)	0.00193	0.00194	0.00193
	(!B * C * D_N * X)	-0.00088	-0.00089	-0.00088
	(!B * C * D_N * X)	0.00185	0.00185	0.00184
	(!B * C * !D_N * X)	-0.00088	-0.00088	-0.00088
	(!B * C * !D_N * X)	0.00186	0.00186	0.00185
	(!B * !C * !D_N * X)	-0.00087	-0.00088	-0.00087
	(!B * !C * !D_N * X)	0.00181	0.00184	0.00182

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)**	0.00073	0.00073	0.00072
	(A * C * D_N * X)	-0.00065	-0.00066	-0.00065
	(A * C * !D_N * X)	0.00072	0.00072	0.00072
	(A * C * !D_N * X)	-0.00067	-0.00068	-0.00067
	(A * !C * D_N * X)	0.00072	0.00072	0.00071
	(A * !C * D_N * X)	-0.00057	-0.00057	-0.00056
	(A * !C * !D_N * X)	0.00072	0.00073	0.00071
	(A * !C * !D_N * X)	-0.00065	-0.00065	-0.00065
	(!A * C * D_N * X)	0.00074	0.00072	0.00071
	(!A * C * D_N * X)	-0.00087	-0.00092	-0.00092
	(!A * C * !D_N * X)	0.00072	0.00072	0.00071
	(!A * C * !D_N * X)	-0.00090	-0.00092	-0.00091
	(!A * !C * !D_N * X)	0.00072	0.00072	0.00071
	(!A * !C * !D_N * X)	-0.00081	-0.00088	-0.00087
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00081	0.00082	0.00081
	(A * C * D_N * X)	-0.00066	-0.00067	-0.00066
	(A * C * !D_N * X)	0.00077	0.00078	0.00077
	(A * C * !D_N * X)	-0.00071	-0.00072	-0.00071
	(A * !C * D_N * X)	0.00080	0.00080	0.00080
	(A * !C * D_N * X)	-0.00058	-0.00058	-0.00057
	(A * !C * !D_N * X)	0.00077	0.00079	0.00077
	(A * !C * !D_N * X)	-0.00068	-0.00069	-0.00069
	(!A * C * D_N * X)	0.00082	0.00081	0.00080
	(!A * C * D_N * X)	-0.00089	-0.00093	-0.00093
	(!A * C * !D_N * X)	0.00078	0.00078	0.00077
	(!A * C * !D_N * X)	-0.00094	-0.00096	-0.00095
	(!A * !C * !D_N * X)	0.00078	0.00078	0.00077
	(!A * !C * !D_N * X)	-0.00085	-0.00092	-0.00091

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00114	0.00115	0.00114
	(A * C * D_N * X)	-0.00140	-0.00141	-0.00140
	(A * C * !D_N * X)	0.00111	0.00111	0.00111
	(A * C * !D_N * X)	-0.00148	-0.00148	-0.00147
	(A * !C * D_N * X)	0.00112	0.00112	0.00111
	(A * !C * D_N * X)	-0.00124	-0.00123	-0.00123
	(A * !C * !D_N * X)	0.00110	0.00112	0.00110
	(A * !C * !D_N * X)	-0.00141	-0.00141	-0.00140
	(!A * C * D_N * X)	0.00115	0.00112	0.00111
	(!A * C * D_N * X)	-0.00184	-0.00193	-0.00193
	(!A * C * !D_N * X)	0.00110	0.00111	0.00110
	(!A * C * !D_N * X)	-0.00189	-0.00195	-0.00194
	(!A * !C * !D_N * X)	0.00112	0.00111	0.00110
	(!A * !C * !D_N * X)	-0.00175	-0.00188	-0.00186

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)**	-0.00071	-0.00071	-0.00071
	(A * C * D_N * X)	0.00065	0.00066	0.00065
	(A * C * !D_N * X)	-0.00071	-0.00072	-0.00071
	(A * C * !D_N * X)	0.00067	0.00068	0.00067
	(A * !C * D_N * X)	-0.00069	-0.00070	-0.00069
	(A * !C * D_N * X)	0.00059	0.00059	0.00059
	(A * !C * !D_N * X)	-0.00071	-0.00072	-0.00071
	(A * !C * !D_N * X)	0.00065	0.00065	0.00065
	(!A * C * D_N * X)	-0.00071	-0.00071	-0.00071
	(!A * C * D_N * X)	0.00092	0.00092	0.00092
	(!A * C * !D_N * X)	-0.00071	-0.00071	-0.00071
	(!A * C * !D_N * X)	0.00092	0.00092	0.00091
	(!A * !C * !D_N * X)	-0.00071	-0.00071	-0.00071
	(!A * !C * !D_N * X)	0.00087	0.00088	0.00087
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00080	-0.00080	-0.00080
	(A * C * D_N * X)	0.00066	0.00067	0.00066
	(A * C * !D_N * X)	-0.00077	-0.00077	-0.00077
	(A * C * !D_N * X)	0.00071	0.00072	0.00071
	(A * !C * D_N * X)	-0.00079	-0.00079	-0.00079
	(A * !C * D_N * X)	0.00059	0.00059	0.00059
	(A * !C * !D_N * X)	-0.00077	-0.00077	-0.00077
	(A * !C * !D_N * X)	0.00068	0.00069	0.00069
	(!A * C * D_N * X)	-0.00080	-0.00080	-0.00079
	(!A * C * D_N * X)	0.00093	0.00093	0.00093
	(!A * C * !D_N * X)	-0.00077	-0.00077	-0.00077
	(!A * C * !D_N * X)	0.00096	0.00096	0.00095
	(!A * !C * !D_N * X)	-0.00077	-0.00077	-0.00077
	(!A * !C * !D_N * X)	0.00091	0.00092	0.00091

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	-0.00112	-0.00112	-0.00112
	(A * C * D_N * X)	0.00140	0.00141	0.00140
	(A * C * !D_N * X)	-0.00110	-0.00110	-0.00110
	(A * C * !D_N * X)	0.00148	0.00148	0.00147
	(A * !C * D_N * X)	-0.00110	-0.00110	-0.00111
	(A * !C * D_N * X)	0.00124	0.00125	0.00124
	(A * !C * !D_N * X)	-0.00110	-0.00110	-0.00110
	(A * !C * !D_N * X)	0.00141	0.00141	0.00140
	(!A * C * D_N * X)	-0.00111	-0.00111	-0.00111
	(!A * C * D_N * X)	0.00193	0.00193	0.00193
	(!A * C * !D_N * X)	-0.00110	-0.00110	-0.00110
	(!A * C * !D_N * X)	0.00194	0.00195	0.00194
	(!A * !C * !D_N * X)	-0.00109	-0.00110	-0.00109
	(!A * !C * !D_N * X)	0.00186	0.00188	0.00186

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)**	0.00086	0.00086	0.00085
	(B * D_N * X)	-0.00057	-0.00056	-0.00056
	(B * !D_N * X)	0.00081	0.00081	0.00079
	(B * !D_N * X)	-0.00071	-0.00071	-0.00071
	(A * !B * D_N * X)	0.00086	0.00086	0.00085
	(A * !B * D_N * X)	-0.00056	-0.00056	-0.00056
	(A * !B * !D_N * X)	0.00083	0.00080	0.00078
	(A * !B * !D_N * X)	-0.00073	-0.00073	-0.00073
	(!A * !B * !D_N * X)	0.00092	0.00079	0.00078
	(!A * !B * !D_N * X)	-0.00085	-0.00098	-0.00099

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00094	0.00094	0.00094
	(B * D_N * X)	-0.00058	-0.00058	-0.00058
	(B * !D_N * X)	0.00078	0.00079	0.00077
	(B * !D_N * X)	-0.00084	-0.00084	-0.00083
	(A * !B * D_N * X)	0.00094	0.00095	0.00094
	(A * !B * D_N * X)	-0.00057	-0.00058	-0.00058
	(A * !B * !D_N * X)	0.00080	0.00078	0.00077
	(A * !B * !D_N * X)	-0.00085	-0.00086	-0.00085
	(!A * !B * !D_N * X)	0.00090	0.00078	0.00077
	(!A * !B * !D_N * X)	-0.00098	-0.00110	-0.00111
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00138	0.00139	0.00139
	(B * D_N * X)	-0.00118	-0.00119	-0.00119
	(B * !D_N * X)	0.00116	0.00115	0.00112
	(B * !D_N * X)	-0.00165	-0.00165	-0.00164
	(A * !B * D_N * X)	0.00139	0.00140	0.00139
	(A * !B * D_N * X)	-0.00118	-0.00119	-0.00118
	(A * !B * !D_N * X)	0.00119	0.00115	0.00112
	(A * !B * !D_N * X)	-0.00167	-0.00168	-0.00166
	(!A * !B * !D_N * X)	0.00138	0.00114	0.00112
	(!A * !B * !D_N * X)	-0.00194	-0.00217	-0.00218

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)**	-0.00084	-0.00084	-0.00084
	(B * D_N * X)	0.00058	0.00058	0.00058
	(B * !D_N * X)	-0.00078	-0.00078	-0.00078
	(B * !D_N * X)	0.00071	0.00071	0.00071
	(A * !B * D_N * X)	-0.00078	-0.00079	-0.00083
	(A * !B * D_N * X)	0.00060	0.00060	0.00058
	(A * !B * !D_N * X)	-0.00078	-0.00078	-0.00078
	(A * !B * !D_N * X)	0.00073	0.00073	0.00073
	(!A * !B * !D_N * X)	-0.00077	-0.00078	-0.00077
	(!A * !B * !D_N * X)	0.00099	0.00099	0.00100
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00092	-0.00093	-0.00093
	(B * D_N * X)	0.00060	0.00060	0.00060
	(B * !D_N * X)	-0.00076	-0.00077	-0.00076
	(B * !D_N * X)	0.00084	0.00084	0.00083
	(A * !B * D_N * X)	-0.00087	-0.00088	-0.00092
	(A * !B * D_N * X)	0.00061	0.00061	0.00059
	(A * !B * !D_N * X)	-0.00076	-0.00077	-0.00076
	(A * !B * !D_N * X)	0.00085	0.00086	0.00085
	(!A * !B * !D_N * X)	-0.00076	-0.00076	-0.00076
	(!A * !B * !D_N * X)	0.00111	0.00111	0.00111
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00134	-0.00134	-0.00136
	(B * D_N * X)	0.00123	0.00123	0.00123
	(B * !D_N * X)	-0.00112	-0.00113	-0.00112
	(B * !D_N * X)	0.00165	0.00165	0.00164
	(A * !B * D_N * X)	-0.00121	-0.00123	-0.00134
	(A * !B * D_N * X)	0.00129	0.00128	0.00122
	(A * !B * !D_N * X)	-0.00112	-0.00112	-0.00112
	(A * !B * !D_N * X)	0.00167	0.00168	0.00166
	(!A * !B * !D_N * X)	-0.00111	-0.00111	-0.00110
	(!A * !B * !D_N * X)	0.00219	0.00219	0.00219

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00264	0.00245	0.00384
	(C * X)	0.00049	0.00029	0.00168
	(B * !C * X)	0.00269	0.00251	0.00388
	(B * !C * X)	0.00052	0.00032	0.00170
	(A * !B * !C * X)	0.00278	0.00259	0.00393
	(A * !B * !C * X)	0.00057	0.00037	0.00174
sky130_fd_sc_hs__or4b_2	(C * X)	0.00295	0.00277	0.00408
	(C * X)	0.00075	0.00056	0.00187
	(B * !C * X)	0.00302	0.00284	0.00412
	(B * !C * X)	0.00078	0.00059	0.00189
	(A * !B * !C * X)	0.00309	0.00291	0.00417
	(A * !B * !C * X)	0.00082	0.00063	0.00192
sky130_fd_sc_hs__or4b_4	(C * X)	0.00353	0.00335	0.00457
	(C * X)	0.00112	0.00093	0.00216
	(B * !C * X)	0.00370	0.00352	0.00469
	(B * !C * X)	0.00121	0.00102	0.00221
	(A * !B * !C * X)	0.00386	0.00368	0.00480
	(A * !B * !C * X)	0.00131	0.00111	0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00064	0.00064	0.00257
	(C * X)	0.00279	0.00279	0.00472
	(B * !C * X)	0.00064	0.00064	0.00257
	(B * !C * X)	0.00279	0.00279	0.00472
	(A * !B * !C * X)	0.00064	0.00064	0.00257
	(A * !B * !C * X)	0.00279	0.00279	0.00472
sky130_fd_sc_hs__or4b_2	(C * X)	0.00076	0.00076	0.00264
	(C * X)	0.00296	0.00297	0.00484
	(B * !C * X)	0.00076	0.00076	0.00264
	(B * !C * X)	0.00297	0.00297	0.00484
	(A * !B * !C * X)	0.00076	0.00076	0.00264
	(A * !B * !C * X)	0.00297	0.00297	0.00485
sky130_fd_sc_hs__or4b_4	(C * X)	0.00115	0.00112	0.00273
	(C * X)	0.00355	0.00352	0.00513
	(B * !C * X)	0.00115	0.00112	0.00273
	(B * !C * X)	0.00355	0.00353	0.00514
	(A * !B * !C * X)	0.00115	0.00112	0.00273
	(A * !B * !C * X)	0.00356	0.00353	0.00514

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00242	0.00230	0.00235	0.00229	0.63097
sky130_fd_sc_hs__or4_2	0.00252	0.00249	0.00260	0.00258	1.27525
sky130_fd_sc_hs__or4_4	0.00364	0.00424	0.00430	0.00404	2.47990

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.01150	0.04770
sky130_fd_sc_hs__or4_2	0.00000	0.01669	0.05534
sky130_fd_sc_hs__or4_4	0.00000	0.03188	0.10263

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)	0.10760	0.90857	7.71633
	B->X (RR)	0.10779	0.89838	7.64062
	C->X (RR)	0.10445	0.88095	7.55114
	D->X (RR)	0.09755	0.85385	7.45071
sky130_fd_sc_hs__or4_2	A->X (RR)	0.10014	0.77438	7.67675
	B->X (RR)	0.09997	0.76653	7.61391
	C->X (RR)	0.09781	0.75401	7.55414
	D->X (RR)	0.09314	0.73791	7.48529
sky130_fd_sc_hs__or4_4	A->X (RR)	0.12675	0.76329	8.20876
	B->X (RR)	0.13185	0.76193	8.15638
	C->X (RR)	0.12269	0.73535	8.04089
	D->X (RR)	0.11455	0.70991	7.89337

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.56681	1.23539	5.68767
	B->X (FF)	0.53339	1.19659	5.66529
	C->X (FF)	0.47601	1.13916	5.58608
	D->X (FF)	0.38199	1.01337	5.10396
sky130_fd_sc_hs__or4_2	A->X (FF)	0.70042	1.37380	6.11869
	B->X (FF)	0.66651	1.33377	6.17140
	C->X (FF)	0.61766	1.28680	6.17787
	D->X (FF)	0.52998	1.15849	5.71142
sky130_fd_sc_hs__or4_4	A->X (FF)	0.67419	1.30995	6.08078
	B->X (FF)	0.65748	1.27922	6.08947
	C->X (FF)	0.57956	1.19910	6.00500
	D->X (FF)	0.46410	1.04800	5.48343

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00740	0.00724	0.00752
	A	0.00348	0.00331	0.00367
	B	0.00646	0.00640	0.00683
	B	0.00304	0.00301	0.00347
	C	0.00551	0.00545	0.00592
	C	0.00248	0.00242	0.00290
	D	0.00459	0.00449	0.00522
	D	0.00193	0.00185	0.00259
sky130_fd_sc_hs__or4_2	A	0.00901	0.00901	0.00945
	A	0.00489	0.00489	0.00549
	B	0.00803	0.00815	0.00876
	B	0.00438	0.00452	0.00527
	C	0.00717	0.00730	0.00793
	C	0.00393	0.00406	0.00469
	D	0.00627	0.00636	0.00726
	D	0.00339	0.00349	0.00443
sky130_fd_sc_hs__or4_4	A	0.01684	0.01713	0.01801
	A	0.01007	0.01036	0.01131
	B	0.01536	0.01544	0.01608
	B	0.00911	0.00919	0.00992
	C	0.01307	0.01333	0.01434
	C	0.00775	0.00802	0.00915
	D	0.01101	0.01124	0.01281
	D	0.00655	0.00679	0.00854

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00225	0.00221	0.00263
	A	0.00626	0.00623	0.00627
	B	0.00226	0.00227	0.00275
	B	0.00573	0.00576	0.00586
	C	0.00226	0.00220	0.00285
	C	0.00530	0.00534	0.00564
	D	0.00220	0.00227	0.00368
	D	0.00484	0.00495	0.00608
sky130_fd_sc_hs__or4_2	A	0.00370	0.00385	0.00495
	A	0.00790	0.00807	0.00817
	B	0.00373	0.00390	0.00467
	B	0.00742	0.00760	0.00779
	C	0.00368	0.00388	0.00486
	C	0.00694	0.00714	0.00752
	D	0.00365	0.00377	0.00517
	D	0.00652	0.00676	0.00800
sky130_fd_sc_hs__or4_4	A	0.00725	0.00790	0.01019
	A	0.01425	0.01492	0.01527
	B	0.00717	0.00774	0.00960
	B	0.01357	0.01415	0.01453
	C	0.00723	0.00773	0.00955
	C	0.01260	0.01310	0.01374
	D	0.00697	0.00756	0.01061
	D	0.01142	0.01200	0.01422

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00081	0.00081	0.00081
	(B * D * X)	-0.00093	-0.00095	-0.00095
	(B * C * !D * X)	0.00081	0.00081	0.00081
	(B * C * !D * X)	-0.00093	-0.00095	-0.00095
	(B * !C * !D * X)	0.00081	0.00081	0.00081
	(B * !C * !D * X)	-0.00092	-0.00095	-0.00095
	(!B * C * D * X)	0.00081	0.00080	0.00081
	(!B * C * D * X)	-0.00087	-0.00092	-0.00091
	(!B * C * !D * X)	0.00081	0.00080	0.00081
	(!B * C * !D * X)	-0.00087	-0.00092	-0.00091
	(!B * !C * D * X)	0.00081	0.00082	0.00081
	(!B * !C * D * X)	-0.00085	-0.00090	-0.00090
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00088	0.00089	0.00088
	(B * D * X)	-0.00094	-0.00097	-0.00097
	(B * C * !D * X)	0.00088	0.00089	0.00088
	(B * C * !D * X)	-0.00094	-0.00097	-0.00097
	(B * !C * !D * X)	0.00088	0.00089	0.00088
	(B * !C * !D * X)	-0.00093	-0.00097	-0.00097
	(!B * C * D * X)	0.00088	0.00088	0.00088
	(!B * C * D * X)	-0.00088	-0.00093	-0.00093
	(!B * C * !D * X)	0.00088	0.00088	0.00088
	(!B * C * !D * X)	-0.00088	-0.00093	-0.00093
	(!B * !C * D * X)	0.00088	0.00089	0.00088
	(!B * !C * D * X)	-0.00087	-0.00092	-0.00091

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00089	0.00089	0.00088
	(B * D * X)	-0.00187	-0.00192	-0.00191
	(B * C * !D * X)	0.00089	0.00089	0.00088
	(B * C * !D * X)	-0.00187	-0.00192	-0.00191
	(B * !C * !D * X)	0.00089	0.00089	0.00088
	(B * !C * !D * X)	-0.00184	-0.00192	-0.00191
	(!B * C * D * X)	0.00089	0.00089	0.00088
	(!B * C * D * X)	-0.00173	-0.00184	-0.00182
	(!B * C * !D * X)	0.00089	0.00089	0.00088
	(!B * C * !D * X)	-0.00173	-0.00184	-0.00183
	(!B * !C * D * X)	0.00090	0.00089	0.00088
	(!B * !C * D * X)	-0.00171	-0.00181	-0.00179

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00081	-0.00080	-0.00080
	(B * D * X)	0.00096	0.00095	0.00095
	(B * C * !D * X)	-0.00081	-0.00080	-0.00080
	(B * C * !D * X)	0.00096	0.00095	0.00095
	(B * !C * !D * X)	-0.00081	-0.00081	-0.00080
	(B * !C * !D * X)	0.00096	0.00096	0.00095
	(!B * C * D * X)	-0.00081	-0.00080	-0.00080
	(!B * C * D * X)	0.00092	0.00092	0.00091
	(!B * C * !D * X)	-0.00080	-0.00080	-0.00080
	(!B * C * !D * X)	0.00092	0.00092	0.00091
	(!B * !C * D * X)	-0.00080	-0.00081	-0.00080
	(!B * !C * D * X)	0.00090	0.00090	0.00090

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00088	-0.00088	-0.00088
	(B * D * X)	0.00097	0.00097	0.00097
	(B * C * !D * X)	-0.00088	-0.00088	-0.00088
	(B * C * !D * X)	0.00097	0.00097	0.00097
	(B * !C * !D * X)	-0.00088	-0.00088	-0.00088
	(B * !C * !D * X)	0.00097	0.00098	0.00097
	(!B * C * D * X)	-0.00088	-0.00088	-0.00088
	(!B * C * D * X)	0.00093	0.00093	0.00093
	(!B * C * !D * X)	-0.00088	-0.00088	-0.00088
	(!B * C * !D * X)	0.00093	0.00093	0.00093
	(!B * !C * D * X)	-0.00088	-0.00088	-0.00088
	(!B * !C * D * X)	0.00092	0.00092	0.00091
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00088	-0.00088	-0.00088
	(B * D * X)	0.00192	0.00192	0.00191
	(B * C * !D * X)	-0.00088	-0.00088	-0.00088
	(B * C * !D * X)	0.00191	0.00192	0.00191
	(B * !C * !D * X)	-0.00088	-0.00088	-0.00088
	(B * !C * !D * X)	0.00191	0.00192	0.00191
	(!B * C * D * X)	-0.00088	-0.00089	-0.00088
	(!B * C * D * X)	0.00181	0.00184	0.00182
	(!B * C * !D * X)	-0.00088	-0.00089	-0.00088
	(!B * C * !D * X)	0.00181	0.00184	0.00183
	(!B * !C * D * X)	-0.00088	-0.00088	-0.00088
	(!B * !C * D * X)	0.00178	0.00181	0.00179

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)**	0.00071	0.00072	0.00071
	(A * C * D * X)	-0.00071	-0.00071	-0.00071
	(A * C * !D * X)	0.00071	0.00072	0.00071
	(A * C * !D * X)	-0.00069	-0.00069	-0.00068
	(A * !C * D * X)	0.00071	0.00072	0.00071
	(A * !C * D * X)	-0.00066	-0.00067	-0.00067
	(A * !C * !D * X)	0.00071	0.00071	0.00071
	(A * !C * !D * X)	-0.00059	-0.00059	-0.00059
	(!A * C * D * X)	0.00071	0.00072	0.00071
	(!A * C * D * X)	-0.00092	-0.00094	-0.00094
	(!A * C * !D * X)	0.00072	0.00072	0.00071
	(!A * C * !D * X)	-0.00090	-0.00094	-0.00094
	(!A * !C * D * X)	0.00072	0.00072	0.00071
	(!A * !C * D * X)	-0.00083	-0.00090	-0.00089
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00078	0.00079	0.00078
	(A * C * D * X)	-0.00074	-0.00075	-0.00075
	(A * C * !D * X)	0.00078	0.00079	0.00078
	(A * C * !D * X)	-0.00072	-0.00073	-0.00073
	(A * !C * D * X)	0.00078	0.00080	0.00078
	(A * !C * D * X)	-0.00071	-0.00072	-0.00071
	(A * !C * !D * X)	0.00079	0.00079	0.00078
	(A * !C * !D * X)	-0.00064	-0.00064	-0.00064
	(!A * C * D * X)	0.00079	0.00079	0.00078
	(!A * C * D * X)	-0.00097	-0.00099	-0.00099
	(!A * C * !D * X)	0.00080	0.00079	0.00078
	(!A * C * !D * X)	-0.00095	-0.00099	-0.00099
	(!A * !C * D * X)	0.00079	0.00079	0.00078
	(!A * !C * D * X)	-0.00088	-0.00095	-0.00094

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00115	0.00115	0.00115
	(A * C * D * X)	-0.00146	-0.00146	-0.00146
	(A * C * !D * X)	0.00115	0.00115	0.00115
	(A * C * !D * X)	-0.00141	-0.00141	-0.00140
	(A * !C * D * X)	0.00113	0.00116	0.00114
	(A * !C * D * X)	-0.00139	-0.00139	-0.00138
	(A * !C * !D * X)	0.00114	0.00114	0.00114
	(A * !C * !D * X)	-0.00124	-0.00123	-0.00123
	(!A * C * D * X)	0.00114	0.00115	0.00113
	(!A * C * D * X)	-0.00186	-0.00193	-0.00193
	(!A * C * !D * X)	0.00115	0.00115	0.00113
	(!A * C * !D * X)	-0.00184	-0.00193	-0.00193
	(!A * !C * D * X)	0.00116	0.00114	0.00113
	(!A * !C * D * X)	-0.00172	-0.00185	-0.00183

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)**	-0.00071	-0.00071	-0.00071
	(A * C * D * X)	0.00071	0.00071	0.00071
	(A * C * !D * X)	-0.00071	-0.00071	-0.00071
	(A * C * !D * X)	0.00069	0.00069	0.00068
	(A * !C * D * X)	-0.00071	-0.00071	-0.00071
	(A * !C * D * X)	0.00066	0.00067	0.00067
	(A * !C * !D * X)	-0.00070	-0.00070	-0.00070
	(A * !C * !D * X)	0.00061	0.00061	0.00061
	(!A * C * D * X)	-0.00071	-0.00071	-0.00071
	(!A * C * D * X)	0.00094	0.00094	0.00094
	(!A * C * !D * X)	-0.00071	-0.00071	-0.00071
	(!A * C * !D * X)	0.00094	0.00094	0.00094
	(!A * !C * D * X)	-0.00071	-0.00071	-0.00071
	(!A * !C * D * X)	0.00089	0.00090	0.00089
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00078	-0.00078	-0.00078
	(A * C * D * X)	0.00074	0.00075	0.00075
	(A * C * !D * X)	-0.00078	-0.00078	-0.00078
	(A * C * !D * X)	0.00072	0.00073	0.00073
	(A * !C * D * X)	-0.00078	-0.00078	-0.00078
	(A * !C * D * X)	0.00071	0.00072	0.00071
	(A * !C * !D * X)	-0.00076	-0.00077	-0.00076
	(A * !C * !D * X)	0.00066	0.00066	0.00066
	(!A * C * D * X)	-0.00078	-0.00078	-0.00078
	(!A * C * D * X)	0.00099	0.00099	0.00099
	(!A * C * !D * X)	-0.00078	-0.00078	-0.00078
	(!A * C * !D * X)	0.00099	0.00099	0.00099
	(!A * !C * D * X)	-0.00078	-0.00078	-0.00078
	(!A * !C * D * X)	0.00094	0.00095	0.00094

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	-0.00114	-0.00114	-0.00114
	(A * C * D * X)	0.00146	0.00146	0.00146
	(A * C * !D * X)	-0.00114	-0.00114	-0.00114
	(A * C * !D * X)	0.00141	0.00141	0.00140
	(A * !C * D * X)	-0.00113	-0.00114	-0.00113
	(A * !C * D * X)	0.00139	0.00139	0.00138
	(A * !C * !D * X)	-0.00113	-0.00113	-0.00113
	(A * !C * !D * X)	0.00124	0.00125	0.00124
	(!A * C * D * X)	-0.00114	-0.00114	-0.00113
	(!A * C * D * X)	0.00192	0.00193	0.00193
	(!A * C * !D * X)	-0.00114	-0.00114	-0.00113
	(!A * C * !D * X)	0.00193	0.00193	0.00193
	(!A * !C * D * X)	-0.00113	-0.00114	-0.00113
	(!A * !C * D * X)	0.00183	0.00185	0.00183

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00075	0.00075	0.00073
	(B * D * X)	-0.00066	-0.00066	-0.00066
	(B * !D * X)	0.00073	0.00073	0.00073
	(B * !D * X)	-0.00059	-0.00058	-0.00058
	(A * !B * D * X)	0.00077	0.00075	0.00073
	(A * !B * D * X)	-0.00067	-0.00069	-0.00068
	(A * !B * !D * X)	0.00073	0.00073	0.00073
	(A * !B * !D * X)	-0.00058	-0.00058	-0.00058
	(!A * !B * D * X)	0.00087	0.00074	0.00072
	(!A * !B * D * X)	-0.00080	-0.00093	-0.00094

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00087	0.00087	0.00084
	(B * D * X)	-0.00066	-0.00066	-0.00066
	(B * !D * X)	0.00084	0.00084	0.00084
	(B * !D * X)	-0.00059	-0.00059	-0.00059
	(A * !B * D * X)	0.00089	0.00086	0.00084
	(A * !B * D * X)	-0.00068	-0.00069	-0.00068
	(A * !B * !D * X)	0.00085	0.00085	0.00084
	(A * !B * !D * X)	-0.00059	-0.00059	-0.00059
	(!A * !B * D * X)	0.00098	0.00085	0.00084
	(!A * !B * D * X)	-0.00079	-0.00094	-0.00095
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00121	0.00119	0.00117
	(B * D * X)	-0.00138	-0.00139	-0.00138
	(B * !D * X)	0.00116	0.00117	0.00116
	(B * !D * X)	-0.00120	-0.00121	-0.00121
	(A * !B * D * X)	0.00123	0.00119	0.00116
	(A * !B * D * X)	-0.00140	-0.00141	-0.00140
	(A * !B * !D * X)	0.00116	0.00117	0.00116
	(A * !B * !D * X)	-0.00119	-0.00121	-0.00120
	(!A * !B * D * X)	0.00142	0.00117	0.00116
	(!A * !B * D * X)	-0.00168	-0.00193	-0.00194

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00073	-0.00073	-0.00072
	(B * D * X)	0.00066	0.00066	0.00066
	(B * !D * X)	-0.00071	-0.00071	-0.00071
	(B * !D * X)	0.00060	0.00060	0.00060
	(A * !B * D * X)	-0.00072	-0.00073	-0.00072
	(A * !B * D * X)	0.00067	0.00069	0.00068
	(A * !B * !D * X)	-0.00066	-0.00067	-0.00071
	(A * !B * !D * X)	0.00063	0.00063	0.00060
	(!A * !B * D * X)	-0.00072	-0.00072	-0.00071
	(!A * !B * D * X)	0.00093	0.00094	0.00094
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00084	-0.00084	-0.00084
	(B * D * X)	0.00066	0.00066	0.00066
	(B * !D * X)	-0.00083	-0.00083	-0.00082
	(B * !D * X)	0.00060	0.00060	0.00061
	(A * !B * D * X)	-0.00084	-0.00084	-0.00083
	(A * !B * D * X)	0.00069	0.00069	0.00068
	(A * !B * !D * X)	-0.00078	-0.00079	-0.00082
	(A * !B * !D * X)	0.00063	0.00063	0.00060
	(!A * !B * D * X)	-0.00083	-0.00083	-0.00083
	(!A * !B * D * X)	0.00095	0.00094	0.00095
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00116	-0.00117	-0.00117
	(B * D * X)	0.00138	0.00139	0.00138
	(B * !D * X)	-0.00112	-0.00113	-0.00112
	(B * !D * X)	0.00126	0.00126	0.00126
	(A * !B * D * X)	-0.00116	-0.00116	-0.00116
	(A * !B * D * X)	0.00140	0.00141	0.00140
	(A * !B * !D * X)	-0.00101	-0.00102	-0.00112
	(A * !B * !D * X)	0.00132	0.00131	0.00124
	(!A * !B * D * X)	-0.00115	-0.00115	-0.00114
	(!A * !B * D * X)	0.00194	0.00194	0.00194

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00082	0.00081	0.00081
	(C * X)	-0.00055	-0.00055	-0.00055
	(B * !C * X)	0.00082	0.00081	0.00081
	(B * !C * X)	-0.00055	-0.00055	-0.00055
	(A * !B * !C * X)	0.00081	0.00081	0.00081
	(A * !B * !C * X)	-0.00055	-0.00055	-0.00055
sky130_fd_sc_hs__or4_2	(C * X)	0.00095	0.00096	0.00096
	(C * X)	-0.00054	-0.00055	-0.00054
	(B * !C * X)	0.00096	0.00096	0.00096
	(B * !C * X)	-0.00054	-0.00054	-0.00054
	(A * !B * !C * X)	0.00096	0.00096	0.00096
	(A * !B * !C * X)	-0.00054	-0.00054	-0.00054
sky130_fd_sc_hs__or4_4	(C * X)	0.00133	0.00134	0.00132
	(C * X)	-0.00108	-0.00108	-0.00107
	(B * !C * X)	0.00133	0.00134	0.00132
	(B * !C * X)	-0.00107	-0.00108	-0.00106
	(A * !B * !C * X)	0.00133	0.00134	0.00132
	(A * !B * !C * X)	-0.00107	-0.00108	-0.00106

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00077	-0.00077	-0.00081
	(C * X)	0.00058	0.00058	0.00056
	(B * !C * X)	-0.00071	-0.00071	-0.00079
	(B * !C * X)	0.00062	0.00062	0.00056
	(A * !B * !C * X)	-0.00062	-0.00063	-0.00077
	(A * !B * !C * X)	0.00068	0.00068	0.00058
sky130_fd_sc_hs__or4_2	(C * X)	-0.00092	-0.00092	-0.00095
	(C * X)	0.00058	0.00058	0.00055
	(B * !C * X)	-0.00086	-0.00087	-0.00094
	(B * !C * X)	0.00062	0.00061	0.00056
	(A * !B * !C * X)	-0.00078	-0.00079	-0.00092
	(A * !B * !C * X)	0.00067	0.00067	0.00057
sky130_fd_sc_hs__or4_4	(C * X)	-0.00122	-0.00124	-0.00131
	(C * X)	0.00115	0.00116	0.00109
	(B * !C * X)	-0.00106	-0.00108	-0.00127
	(B * !C * X)	0.00126	0.00126	0.00111
	(A * !B * !C * X)	-0.00090	-0.00092	-0.00123
	(A * !B * !C * X)	0.00136	0.00136	0.00114

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00189	0.00168	0.00399	0.00174	0.00526	0.00284	0.63819	0.64054
sky130_fd_sc_hs__sdfbbn_2	0.00190	0.00169	0.00403	0.00161	0.00519	0.00281	1.28673	1.28847

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbn_1	0.00000	0.36332	0.65672
sky130_fd_sc_hs__sdfbbn_2	0.00000	0.36228	0.68110

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)	0.70976	1.66900	9.94074
	SET_B->Q (FR)	0.32223	1.30185	9.80109
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.81054	1.63226	10.06840
	SET_B->Q (FR)	0.38211	1.23668	10.03740

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)	0.69258	1.30144	5.18579
	RESET_B->Q (FF)	0.41701	1.03624	4.94052
	SET_B->Q (RF)	0.23432	0.65792	3.14874
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.74177	1.31844	5.26506
	RESET_B->Q (FF)	0.47444	1.06175	5.05459
	SET_B->Q (RF)	0.29135	0.69946	3.40839

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)	0.63443	1.61788	9.89160
	RESET_B->Q_N (FR)	0.35954	1.36000	9.67354
	SET_B->Q_N (RR)	0.17692	0.98630	7.98390
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.62705	1.49236	9.82603
	RESET_B->Q_N (FR)	0.36130	1.23814	9.63304
	SET_B->Q_N (RR)	0.17870	0.88112	8.05795

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)	0.60340	1.31863	5.36768
	SET_B->Q_N (FF)	0.23121	0.92382	5.55418
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.64940	1.35273	5.41477
	SET_B->Q_N (FF)	0.25133	0.92009	5.70230

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)	-0.01750	0.04901	1.34171
	setup	CLK_N (F)	0.27504	0.17430	-1.26482
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02092	0.04195	1.30600
	setup	CLK_N (F)	0.28009	0.17893	-1.23289

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)	-0.43958	-0.47536	-1.23810
	setup	CLK_N (F)	0.49557	0.52443	1.35819
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.47203	-0.51367	-1.38657
	setup	CLK_N (F)	0.53653	0.56046	1.51118

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)	-0.01750	0.04901	1.34171
	setup	CLK_N (F)	0.27504	0.17430	-1.26482
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02092	0.04195	1.30600
	setup	CLK_N (F)	0.28009	0.17893	-1.23289

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)	-0.43958	-0.47536	-1.23810
	setup	CLK_N (F)	0.49557	0.52443	1.35819
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.47203	-0.51367	-1.38657
	setup	CLK_N (F)	0.53653	0.56046	1.51118

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)	-0.04105	0.03538	1.13501
	setup	CLK_N (F)	0.30187	0.19416	-1.05116
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04557	0.02856	1.10551
	setup	CLK_N (F)	0.30559	0.19568	-1.02331

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)	-0.54583	-0.61713	-1.90489
	setup	CLK_N (F)	0.61264	0.66961	2.05507
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.58344	-0.65082	-2.04293
	setup	CLK_N (F)	0.65516	0.70709	2.18299

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)	-0.04105	0.03538	1.13501
	hold	CLK_N (F)	-0.04263	0.02994	1.10743
	setup	CLK_N (F)	0.30046	0.19096	-1.07819
	setup	CLK_N (F)	0.30187	0.19416	-1.05116
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04557	0.02856	1.10551
	hold	CLK_N (F)	-0.04760	0.02586	1.07787
	setup	CLK_N (F)	0.30541	0.19464	-1.04805
	setup	CLK_N (F)	0.30559	0.19568	-1.02331

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)	-0.54842	-0.61997	-1.95772
	hold	CLK_N (F)	-0.54583	-0.61713	-1.90489
	setup	CLK_N (F)	0.61135	0.66646	2.05507
	setup	CLK_N (F)	0.61264	0.66961	2.01326
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.58466	-0.65322	-2.09210
	hold	CLK_N (F)	-0.58344	-0.65082	-2.04293
	setup	CLK_N (F)	0.65040	0.70595	2.18299
	setup	CLK_N (F)	0.65516	0.70709	2.16549

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)	-0.02433	0.03487	1.23767
	setup	CLK_N (F)	0.59094	0.53649	-0.75764
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03149	0.02841	1.20542
	setup	CLK_N (F)	0.63118	0.57541	-0.69557

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)	-0.12416	-0.11632	0.31722
	setup	CLK_N (F)	0.50222	0.54663	1.73096
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.12837	-0.12010	0.30395
	setup	CLK_N (F)	0.54141	0.58391	1.87145

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)	-0.53218	-0.48608	0.81458
	hold	CLK_N (F)	-0.02433	0.03487	1.23767
	setup	CLK_N (F)	0.59094	0.53649	-0.75764
	setup	CLK_N (F)	0.28441	0.18739	-1.16466
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.56688	-0.52289	0.75365
	hold	CLK_N (F)	-0.03149	0.02841	1.20542
	setup	CLK_N (F)	0.63118	0.57541	-0.69557
	setup	CLK_N (F)	0.29296	0.19288	-1.12999

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)	-0.12416	-0.11632	0.31722
	hold	CLK_N (F)	-0.44402	-0.50034	-1.63446
	setup	CLK_N (F)	0.38049	0.33374	-0.29023
	setup	CLK_N (F)	0.50222	0.54663	1.73096
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.12837	-0.12010	0.30395
	hold	CLK_N (F)	-0.48031	-0.53569	-1.76968
	setup	CLK_N (F)	0.38505	0.34004	-0.27595
	setup	CLK_N (F)	0.54141	0.58391	1.87145

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)	0.20436	0.09073	-1.61833
	removal	CLK_N (F)	0.06398	0.14571	1.72486
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.20153	0.08789	-1.63050
	removal	CLK_N (F)	0.06906	0.15256	1.74468

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)	0.20436	0.09073	-1.61833
	recovery	CLK_N (F)	0.20071	0.09069	-1.61842
	recovery	CLK_N (F)	0.20066	0.09066	-1.61841
	removal	CLK_N (F)	0.06398	0.14571	1.72179
	removal	CLK_N (F)	0.06398	0.14571	1.72486
	removal	CLK_N (F)	0.06398	0.14571	1.72486
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.20104	0.08789	-1.63158
	recovery	CLK_N (F)	0.20109	0.08787	-1.63178
	recovery	CLK_N (F)	0.20153	0.08737	-1.63050
	removal	CLK_N (F)	0.06506	0.15256	1.74384
	removal	CLK_N (F)	0.06906	0.15256	1.74384
	removal	CLK_N (F)	0.06882	0.15136	1.74468

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 ()	0.37488	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.32521	0.83740	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.37798	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.32831	0.83740	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)	-0.06619	-0.18446	-1.46333
	removal	CLK_N (F)	0.09042	0.21285	1.96842
	hold	RESET_B (R)	-0.09191	-0.17075	-0.79114
	setup	RESET_B (R)	0.20231	0.25208	1.09756
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.06045	-0.17808	-1.22377
	removal	CLK_N (F)	0.08883	0.20731	1.92629
	hold	RESET_B (R)	-0.11989	-0.21012	-0.99548
	setup	RESET_B (R)	0.20221	0.26996	1.29083

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)	-0.06619	-0.18646	-1.46333
	recovery	CLK_N (F)	-0.06838	-0.18593	-1.46743
	recovery	CLK_N (F)	-0.06793	-0.18446	-1.46493
	removal	CLK_N (F)	0.09042	0.21282	1.96726
	removal	CLK_N (F)	0.08877	0.21285	1.96842
	removal	CLK_N (F)	0.08841	0.21282	1.96726
	hold	RESET_B (R)	-0.09191	-0.17075	-0.79114
	hold	RESET_B (R)	-0.09407	-0.17431	-0.79288
	setup	RESET_B (R)	0.20231	0.25208	1.09594
	setup	RESET_B (R)	0.14491	0.22224	1.09756
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.06054	-0.17827	-1.24477
	recovery	CLK_N (F)	-0.06055	-0.17824	-1.22377
	recovery	CLK_N (F)	-0.06045	-0.17808	-1.23410
	removal	CLK_N (F)	0.08883	0.20731	1.92527
	removal	CLK_N (F)	0.08883	0.20731	1.92527
	removal	CLK_N (F)	0.08483	0.20731	1.92629
	hold	RESET_B (R)	-0.12595	-0.21642	-1.02326
	hold	RESET_B (R)	-0.11989	-0.21012	-0.99548
	setup	RESET_B (R)	0.20221	0.26996	1.29083
	setup	RESET_B (R)	0.15234	0.26193	1.27648

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 ()	0.26002	0.83740	16.50020
	min_pulse_width	SET_B ()	0.23208	0.83740	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.29727	0.83740	16.50020
	min_pulse_width	SET_B ()	0.27554	0.83740	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 ()	0.34694	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.25381	0.83740	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.35625	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.26933	0.83740	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 ()	0.34383	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.38729	0.83740	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.38108	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.38729	0.83740	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	0.00815	0.00819	0.00882
	CLK_N	0.00945	0.00948	0.01004
	SET_B	0.00851	0.00838	0.00984
	SET_B	0.01092	0.01081	0.01223
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00959	0.00982	0.01045
	CLK_N	0.01083	0.01106	0.01167
	SET_B	0.01001	0.01009	0.01212
	SET_B	0.01236	0.01244	0.01391

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00871	0.00875	0.00926
	CLK_N	0.00983	0.00987	0.01035
	RESET_B	0.01048	0.01055	0.01084
	RESET_B	0.01118	0.01124	0.01142
	SET_B	0.01097	0.01086	0.01112
	SET_B	0.00853	0.00840	0.00866
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01018	0.01044	0.01100
	CLK_N	0.01132	0.01158	0.01207
	RESET_B	0.01221	0.01249	0.01286
	RESET_B	0.01293	0.01321	0.01340
	SET_B	0.01264	0.01277	0.01300
	SET_B	0.01027	0.01035	0.01058

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00872	0.00877	0.00937
	CLK_N	0.00984	0.00989	0.01046
	RESET_B	0.01049	0.01056	0.01095
	RESET_B	0.01119	0.01125	0.01153
	SET_B	0.01098	0.01086	0.01124
	SET_B	0.00854	0.00841	0.00878
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01019	0.01045	0.01109
	CLK_N	0.01133	0.01159	0.01223
	RESET_B	0.01222	0.01251	0.01313
	RESET_B	0.01295	0.01322	0.01357
	SET_B	0.01265	0.01273	0.01318
	SET_B	0.01028	0.01036	0.01075

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00814	0.00817	0.00873
	CLK_N	0.00944	0.00947	0.00994
	SET_B	0.00847	0.00835	0.00967
	SET_B	0.01088	0.01077	0.01205
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00958	0.00980	0.01054
	CLK_N	0.01081	0.01104	0.01153
	SET_B	0.00997	0.01006	0.01172
	SET_B	0.01232	0.01240	0.01367

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)**	0.00071	0.00072	0.00071
	(CLK_N * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00701	0.00684	0.00733
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00547	0.00530	0.00579
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00484	0.00472	0.00521
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00303	0.00290	0.00340
	(CLK_N * !SCD * SCE)	0.00031	0.00031	0.00030
	(CLK_N * !SCD * SCE)	-0.00083	-0.00084	-0.00086
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00414	0.00402	0.00450
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00235	0.00222	0.00270
	(!CLK_N * SCD * SCE)	0.00071	0.00072	0.00071
	(!CLK_N * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK_N * !SCE)	0.00275	0.00261	0.00329
	(!CLK_N * !SCE)	0.00096	0.00081	0.00149
	(!CLK_N * !SCD * SCE)	0.00031	0.00031	0.00030
	(!CLK_N * !SCD * SCE)	-0.00083	-0.00084	-0.00086

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00073	0.00074	0.00073
	(CLK_N * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00709	0.00691	0.00741
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00550	0.00532	0.00581
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00494	0.00481	0.00529
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00310	0.00296	0.00345
	(CLK_N * !SCD * SCE)	0.00033	0.00033	0.00032
	(CLK_N * !SCD * SCE)	-0.00083	-0.00084	-0.00086
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00418	0.00406	0.00452
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00236	0.00223	0.00269
	(!CLK_N * SCD * SCE)	0.00073	0.00074	0.00073
	(!CLK_N * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK_N * !SCE)	0.00272	0.00258	0.00324
	(!CLK_N * !SCE)	0.00089	0.00074	0.00141
	(!CLK_N * !SCD * SCE)	0.00033	0.00033	0.00031
	(!CLK_N * !SCD * SCE)	-0.00083	-0.00084	-0.00086

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)**	-0.00067	-0.00068	-0.00071
	(CLK_N * SCD * SCE)	0.00040	0.00040	0.00038
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00660	0.00643	0.00737
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00815	0.00798	0.00891
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00213	0.00200	0.00290
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00394	0.00382	0.00471
	(CLK_N * !SCD * SCE)	-0.00028	-0.00029	-0.00028
	(CLK_N * !SCD * SCE)	0.00086	0.00086	0.00086
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00275	0.00263	0.00356
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00454	0.00443	0.00536
	(!CLK_N * SCD * SCE)	-0.00067	-0.00068	-0.00070
	(!CLK_N * SCD * SCE)	0.00040	0.00040	0.00038
	(!CLK_N * !SCE)	0.00136	0.00125	0.00229
	(!CLK_N * !SCE)	0.00317	0.00305	0.00408
	(!CLK_N * !SCD * SCE)	-0.00028	-0.00029	-0.00028
	(!CLK_N * !SCD * SCE)	0.00085	0.00086	0.00086

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00069	-0.00071	-0.00073
	(CLK_N * SCD * SCE)	0.00040	0.00040	0.00038
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00715	0.00698	0.00790
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00875	0.00858	0.00949
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00232	0.00219	0.00307
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00417	0.00405	0.00492
	(CLK_N * !SCD * SCE)	-0.00030	-0.00030	-0.00030
	(CLK_N * !SCD * SCE)	0.00086	0.00086	0.00086
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00299	0.00287	0.00379
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00483	0.00470	0.00562
	(!CLK_N * SCD * SCE)	-0.00069	-0.00070	-0.00072
	(!CLK_N * SCD * SCE)	0.00040	0.00040	0.00038
	(!CLK_N * !SCE)	0.00152	0.00140	0.00243
	(!CLK_N * !SCE)	0.00336	0.00323	0.00426
	(!CLK_N * !SCD * SCE)	-0.00030	-0.00031	-0.00030
	(!CLK_N * !SCD * SCE)	0.00086	0.00086	0.00086

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)**	0.00580	0.00571	0.00587
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00346	0.00337	0.00353
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00795	0.00783	0.00798
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00588	0.00576	0.00591
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00510	0.00501	0.00515
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00278	0.00269	0.00284
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00622	0.00614	0.00625
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00381	0.00372	0.00385
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00838	0.00826	0.00836
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00624	0.00612	0.00623
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00553	0.00544	0.00554
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00313	0.00304	0.00316
	(!CLK_N * D * SCE)	0.00372	0.00361	0.00382
	(!CLK_N * D * SCE)	0.00139	0.00129	0.00150
	(!CLK_N * !D * SCE)	0.00414	0.00404	0.00420
	(!CLK_N * !D * SCE)	0.00174	0.00164	0.00182
	!SCE	0.00059	0.00055	0.00053
	!SCE	-0.00065	-0.00071	-0.00072

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00586	0.00578	0.00593
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00354	0.00345	0.00361
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00800	0.00788	0.00801
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00592	0.00580	0.00594
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00511	0.00502	0.00516
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00280	0.00271	0.00286
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00628	0.00620	0.00632
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00388	0.00379	0.00393
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00842	0.00831	0.00840
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00627	0.00616	0.00626
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00553	0.00545	0.00555
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00314	0.00306	0.00317
	(!CLK_N * D * SCE)	0.00365	0.00355	0.00376
	(!CLK_N * D * SCE)	0.00134	0.00124	0.00145
	(!CLK_N * !D * SCE)	0.00407	0.00398	0.00414
	(!CLK_N * !D * SCE)	0.00168	0.00159	0.00176
	!SCE	0.00059	0.00054	0.00053
	!SCE	-0.00066	-0.00071	-0.00072

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)**	0.00294	0.00287	0.00303
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00529	0.00523	0.00537
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00739	0.00731	0.00748
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00947	0.00939	0.00953
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00356	0.00350	0.00369
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00589	0.00583	0.00600
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00270	0.00264	0.00282
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00511	0.00505	0.00522
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00716	0.00708	0.00726
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00930	0.00922	0.00939
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00332	0.00326	0.00348
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00571	0.00565	0.00586
	(!CLK_N * D * SCE)	0.00219	0.00213	0.00235
	(!CLK_N * D * SCE)	0.00452	0.00445	0.00466
	(!CLK_N * !D * SCE)	0.00195	0.00189	0.00214
	(!CLK_N * !D * SCE)	0.00434	0.00428	0.00453
	!SCE	-0.00051	-0.00053	-0.00053
	!SCE	0.00071	0.00072	0.00072

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00313	0.00307	0.00322
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00547	0.00541	0.00555
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00794	0.00786	0.00803
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01003	0.00995	0.01009
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00381	0.00374	0.00393
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00613	0.00607	0.00623
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00289	0.00283	0.00302
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00530	0.00524	0.00541
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00771	0.00763	0.00782
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00986	0.00978	0.00996
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00357	0.00351	0.00372
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00595	0.00589	0.00610
	(!CLK_N * D * SCE)	0.00235	0.00229	0.00251
	(!CLK_N * D * SCE)	0.00467	0.00461	0.00481
	(!CLK_N * !D * SCE)	0.00211	0.00205	0.00230
	(!CLK_N * !D * SCE)	0.00449	0.00443	0.00467
	!SCE	-0.00051	-0.00053	-0.00053
	!SCE	0.00072	0.00073	0.00073

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)	0.00300	0.00280	0.00371
	(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)	-0.00022	-0.00043	0.00047
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01065	0.01052	0.01139
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00807	0.00793	0.00876
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00619	0.00607	0.00693
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00390	0.00375	0.00458
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00682	0.00670	0.00756
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00450	0.00436	0.00520
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00757	0.00732	0.00858
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00355	0.00330	0.00457
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00973	0.00943	0.01069
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00598	0.00569	0.00697
	(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)	0.00297	0.00282	0.00373
	(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)	-0.00007	-0.00021	0.00070
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00687	0.00662	0.00786
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00286	0.00261	0.00387
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00307	0.00287	0.00378
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00016	-0.00037	0.00054
	(!CLK_N * D * !SCD)	0.00557	0.00539	0.00626
	(!CLK_N * D * !SCD)	0.00324	0.00305	0.00389
	(!CLK_N * !D * SCD)	0.00555	0.00529	0.00664
	(!CLK_N * !D * SCD)	0.00154	0.00127	0.00265

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)	0.00305	0.00284	0.00376
	(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)	-0.00022	-0.00043	0.00048
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01123	0.01110	0.01195
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00864	0.00850	0.00932
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00642	0.00630	0.00716
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00409	0.00396	0.00479
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00710	0.00698	0.00785
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00475	0.00462	0.00546
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00769	0.00744	0.00869
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00362	0.00336	0.00464
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00983	0.00953	0.01079
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00602	0.00571	0.00698
	(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)	0.00300	0.00285	0.00376
	(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)	-0.00008	-0.00022	0.00069
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00693	0.00668	0.00792
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00289	0.00263	0.00388
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00312	0.00291	0.00382
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00016	-0.00037	0.00055
	(!CLK_N * D * !SCD)	0.00576	0.00560	0.00646
	(!CLK_N * D * !SCD)	0.00341	0.00323	0.00407
	(!CLK_N * !D * SCD)	0.00554	0.00528	0.00663
	(!CLK_N * !D * SCD)	0.00150	0.00121	0.00259

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(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)	-0.00029	-0.00028	0.00092
	(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)	0.00292	0.00293	0.00414
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00662	0.00659	0.00766
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00921	0.00919	0.01026
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00446	0.00444	0.00554
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00678	0.00677	0.00787
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00376	0.00374	0.00483
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00610	0.00609	0.00718
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00216	0.00198	0.00351
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00617	0.00600	0.00752
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)**	0.00664	0.00643	0.00793
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01037	0.01017	0.01168
	(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	-0.00019	0.00103
	(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)	0.00288	0.00286	0.00406
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00279	0.00261	0.00417
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00677	0.00661	0.00816
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00035	-0.00035	0.00086
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00286	0.00288	0.00408
	(!CLK_N * D * !SCD)	0.00233	0.00226	0.00336
	(!CLK_N * D * !SCD)	0.00467	0.00461	0.00571
	(!CLK_N * !D * SCD)	0.00134	0.00117	0.00279
	(!CLK_N * !D * SCD)	0.00532	0.00517	0.00679

	(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)	-0.00034	-0.00033	0.00087
	(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)	0.00292	0.00293	0.00414
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00664	0.00662	0.00766
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00925	0.00922	0.01027
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00450	0.00448	0.00558
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00685	0.00684	0.00794
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00374	0.00373	0.00481
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00611	0.00610	0.00717
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00232	0.00214	0.00366
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00638	0.00622	0.00773
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)**	0.00715	0.00694	0.00845
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01096	0.01075	0.01226
	(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)	-0.00018	-0.00022	0.00099
	(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)	0.00289	0.00286	0.00407
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00300	0.00282	0.00438
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00704	0.00687	0.00842
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00040	-0.00040	0.00081
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00285	0.00287	0.00407
	(!CLK_N * D * !SCD)	0.00224	0.00217	0.00327
	(!CLK_N * D * !SCD)	0.00461	0.00456	0.00564
	(!CLK_N * !D * SCD)	0.00146	0.00129	0.00290
	(!CLK_N * !D * SCD)	0.00550	0.00534	0.00696

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)	0.00707	0.00688	0.00745
	(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)	0.00549	0.00530	0.00587
	(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)	0.00417	0.00406	0.00470
	(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)	0.00233	0.00222	0.00287
	(!SET_B * Q * !Q_N)	0.00417	0.00405	0.00472
	(!SET_B * Q * !Q_N)	0.00230	0.00217	0.00285

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)**	0.00690	0.00668	0.00726
	(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)	0.00536	0.00514	0.00572
	(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)	0.00397	0.00385	0.00451
	(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)	0.00220	0.00208	0.00273
	(!SET_B * Q * !Q_N)	0.00407	0.00394	0.00463
	(!SET_B * Q * !Q_N)	0.00226	0.00213	0.00282

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)**	0.00619	0.00609	0.00699
	(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)	0.00777	0.00766	0.00857
	(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)	0.00200	0.00194	0.00290
	(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)	0.00383	0.00377	0.00473
	(!SET_B * Q * !Q_N)	0.00146	0.00142	0.00239
	(!SET_B * Q * !Q_N)	0.00334	0.00330	0.00427

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)**	0.00657	0.00646	0.00737
	(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)	0.00811	0.00799	0.00891
	(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)	0.00210	0.00203	0.00300
	(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)	0.00388	0.00380	0.00478
	(!SET_B * Q * !Q_N)	0.00147	0.00142	0.00240
	(!SET_B * Q * !Q_N)	0.00330	0.00325	0.00422

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)**	0.00188	0.00189	0.00188
	(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)	-0.00230	-0.00231	-0.00230
	(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)	0.00649	0.00631	0.00692
	(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)	0.00197	0.00178	0.00241

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)**	0.00194	0.00196	0.00194
	(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)	-0.00221	-0.00223	-0.00222
	(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)	0.00685	0.00667	0.00727
	(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)	0.00238	0.00219	0.00280

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)**	-0.00185	-0.00189	-0.00188
	(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)	0.00231	0.00233	0.00231
	(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)	0.00094	0.00078	0.00233
	(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)	0.00545	0.00531	0.00686

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)**	-0.00192	-0.00195	-0.00194
	(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)	0.00224	0.00225	0.00223
	(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)	0.00085	0.00070	0.00224
	(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)	0.00533	0.00520	0.00673

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)	0.01189	0.01163	0.01285
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00973	0.00948	0.01069
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00740	0.00710	0.00793
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00500	0.00469	0.00552
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01194	0.01169	0.01291
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00979	0.00954	0.01075
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00745	0.00715	0.00797
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00504	0.00473	0.00557
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01276	0.01238	0.01314
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01012	0.00973	0.01049
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00724	0.00691	0.00779
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00483	0.00449	0.00538
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00807	0.00770	0.00853
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00568	0.00529	0.00614
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00905	0.00882	0.00999
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00665	0.00641	0.00758
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00910	0.00885	0.01004
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00669	0.00643	0.00762
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01189	0.01163	0.01285
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00973	0.00948	0.01069
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00740	0.00710	0.00793
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00500	0.00469	0.00552
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01279	0.01241	0.01316
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01013	0.00975	0.01050
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01276	0.01238	0.01312
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01011	0.00973	0.01047
	(!D * !SCE * SET_B * !Q * Q_N)	0.00729	0.00696	0.00784
	(!D * !SCE * SET_B * !Q * Q_N)	0.00488	0.00453	0.00543
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00812	0.00774	0.00858
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00572	0.00534	0.00619
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00724	0.00691	0.00779
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00483	0.00449	0.00538
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00807	0.00770	0.00854
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00568	0.00529	0.00614
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00905	0.00882	0.00999
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00664	0.00640	0.00758

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01203	0.01178	0.01298
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00990	0.00965	0.01084
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00735	0.00705	0.00788
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00498	0.00466	0.00550
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01209	0.01183	0.01302
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00995	0.00970	0.01089
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00739	0.00709	0.00792
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00502	0.00471	0.00554
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01304	0.01266	0.01340
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01045	0.01006	0.01081
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00722	0.00689	0.00777
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00485	0.00451	0.00539
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00800	0.00762	0.00846
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00564	0.00525	0.00610
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00913	0.00888	0.01006
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00676	0.00650	0.00768
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00917	0.00893	0.01010
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00680	0.00654	0.00772
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01203	0.01178	0.01298
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00990	0.00965	0.01084
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00735	0.00705	0.00788
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00498	0.00466	0.00550
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01307	0.01268	0.01342
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01046	0.01007	0.01082
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01304	0.01265	0.01339
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01044	0.01005	0.01079
	(!D * !SCE * SET_B * !Q * Q_N)	0.00726	0.00694	0.00781
	(!D * !SCE * SET_B * !Q * Q_N)	0.00489	0.00455	0.00544
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00804	0.00766	0.00851
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00569	0.00529	0.00615
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00722	0.00690	0.00777
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00485	0.00451	0.00539
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00800	0.00762	0.00847
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00564	0.00525	0.00610
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00913	0.00888	0.01006
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00676	0.00650	0.00768

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)**	0.00577	0.00553	0.00672
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00817	0.00795	0.00913
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00572	0.00548	0.00667
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00812	0.00790	0.00908
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00599	0.00573	0.00694
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00840	0.00814	0.00935
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00787	0.00759	0.00875
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01027	0.00999	0.01115
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00795	0.00768	0.00879
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01035	0.01009	0.01120
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00790	0.00763	0.00874
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01031	0.01005	0.01115
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00577	0.00553	0.00672
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00817	0.00795	0.00913
	(!D * !SCE * SET_B * !Q * Q_N)	0.00594	0.00568	0.00689
	(!D * !SCE * SET_B * !Q * Q_N)	0.00835	0.00809	0.00930
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00782	0.00754	0.00870
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01022	0.00994	0.01110
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00599	0.00573	0.00694
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00840	0.00814	0.00935
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00786	0.00759	0.00875
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01026	0.00999	0.01115
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00795	0.00768	0.00879
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01035	0.01009	0.01120

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00576	0.00552	0.00671
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00814	0.00789	0.00908
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00571	0.00548	0.00666
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00809	0.00785	0.00904
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00595	0.00569	0.00690
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00833	0.00807	0.00928
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00786	0.00759	0.00875
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01023	0.00996	0.01111
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00805	0.00777	0.00888
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01043	0.01015	0.01126
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00801	0.00773	0.00883
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01039	0.01011	0.01121
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00576	0.00552	0.00671
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00814	0.00789	0.00908
	(!D * !SCE * SET_B * !Q * Q_N)	0.00591	0.00565	0.00685
	(!D * !SCE * SET_B * !Q * Q_N)	0.00829	0.00802	0.00923
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00781	0.00754	0.00870
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01019	0.00991	0.01106
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00595	0.00569	0.00690
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00833	0.00807	0.00928
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00785	0.00758	0.00875
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01023	0.00995	0.01112
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00805	0.00778	0.00888
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01043	0.01015	0.01126

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00188	0.00170	0.00389	0.00162	0.00605	0.00279	0.63673	0.60385

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbp_1	0.00000	0.36331	0.65671

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)	0.67741	1.44011	8.09514
	SET_B->Q (FR)	0.29978	1.29104	9.82308

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.50046	0.89097	3.10055
	RESET_B->Q (FF)	0.39960	1.01007	4.82153
	SET_B->Q (RF)	0.23917	0.64862	3.08574

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)	0.44286	1.22022	7.86456
	RESET_B->Q_N (FR)	0.34237	1.34870	9.61713
	SET_B->Q_N (RR)	0.18187	0.98980	7.96955

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)	0.57046	1.06517	3.27326
	SET_B->Q_N (FF)	0.21095	0.88643	5.33182

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)	-0.12726	-0.22493	-1.13337
	setup	CLK (R)	0.22595	0.27400	1.21792

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)	-0.40876	-0.47751	-2.71911
	setup	CLK (R)	0.54146	0.59322	2.90302

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)	-0.12726	-0.22493	-1.13337
	setup	CLK (R)	0.22595	0.27400	1.21792

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)	-0.40876	-0.47751	-2.71911
	setup	CLK (R)	0.54146	0.59322	2.90302

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)	-0.15169	-0.24251	-1.37932
	setup	CLK (R)	0.25566	0.29595	1.46699

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)	-0.52577	-0.62074	-3.31027
	setup	CLK (R)	0.67024	0.74412	3.47967

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)	-0.15169	-0.24251	-1.37932
	hold	CLK (R)	-0.15544	-0.24536	-1.38728
	setup	CLK (R)	0.25531	0.29493	1.45869
	setup	CLK (R)	0.25566	0.29595	1.46699

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)	-0.52577	-0.62397	-3.32116
	hold	CLK (R)	-0.52611	-0.62074	-3.31027
	setup	CLK (R)	0.66259	0.74397	3.47967
	setup	CLK (R)	0.67024	0.74412	3.46908

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)	-0.14208	-0.24446	-0.48840
	setup	CLK (R)	0.64333	0.61326	1.34127

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)	-0.23587	-0.39116	-2.21725
	setup	CLK (R)	0.54927	0.61360	3.16683

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)	-0.50687	-0.49172	-0.48840
	hold	CLK (R)	-0.14208	-0.24446	-1.25877
	setup	CLK (R)	0.64333	0.61326	0.60639
	setup	CLK (R)	0.23884	0.29668	1.34127

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)	-0.23587	-0.39116	-2.21725
	hold	CLK (R)	-0.41354	-0.49640	-2.98261
	setup	CLK (R)	0.33802	0.43942	2.27990
	setup	CLK (R)	0.54927	0.61360	3.16683

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)	0.15203	0.16576	0.39986
	removal	CLK (R)	-0.05605	-0.07698	-0.26956

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)	0.15185	0.16576	0.39986
	recovery	CLK (R)	0.15203	0.16546	0.39944
	recovery	CLK (R)	0.15200	0.16555	0.39934
	removal	CLK (R)	-0.05605	-0.07698	-0.26956
	removal	CLK (R)	-0.05605	-0.07698	-0.26956
	removal	CLK (R)	-0.05605	-0.07698	-0.26956

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 ()	0.32210	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.33452	0.83740	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)	0.01892	0.00000	1.46452
	removal	CLK (R)	0.12485	0.15439	0.35440
	hold	RESET_B (R)	-0.09798	-0.18997	-0.87830
	setup	RESET_B (R)	0.17629	0.25550	1.22158

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)	0.01773	0.00000	1.42933
	recovery	CLK (R)	0.01761	0.00000	1.46452
	recovery	CLK (R)	0.01892	0.00000	1.43669
	removal	CLK (R)	0.12485	0.15439	0.35440
	removal	CLK (R)	0.12485	0.15439	0.35440
	removal	CLK (R)	0.12286	0.15439	0.35040
	hold	RESET_B (R)	-0.09798	-0.18997	-0.87943
	hold	RESET_B (R)	-0.09949	-0.19019	-0.87830
	setup	RESET_B (R)	0.17017	0.24161	1.20398
	setup	RESET_B (R)	0.17629	0.25550	1.22158

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 ()	0.20725	0.83740	16.50020
	min_pulse_width	SET_B ()	0.22898	0.83740	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 ()	0.17310	0.83740	16.50020
	min_pulse_width	CLK ()	0.22898	0.83740	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 ()	0.32831	0.83740	16.50020
	min_pulse_width	CLK ()	0.50525	0.83740	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	0.00949	0.00958	0.01008
	CLK	0.00826	0.00835	0.00883
	SET_B	0.00833	0.00824	0.00967
	SET_B	0.01093	0.01083	0.01224

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00943	0.00937	0.00968
	CLK	0.00808	0.00802	0.00832
	RESET_B	0.00959	0.00963	0.00983
	RESET_B	0.01022	0.01026	0.01039
	SET_B	0.01036	0.01016	0.01041
	SET_B	0.00775	0.00755	0.00777

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00944	0.00938	0.00983
	CLK	0.00809	0.00803	0.00847
	RESET_B	0.00960	0.00964	0.01003
	RESET_B	0.01024	0.01027	0.01056
	SET_B	0.01038	0.01024	0.01056
	SET_B	0.00776	0.00756	0.00793

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00947	0.00955	0.00994
	CLK	0.00824	0.00833	0.00870
	SET_B	0.00829	0.00819	0.00954
	SET_B	0.01089	0.01078	0.01206

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00072	0.00072	0.00072
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00268	0.00252	0.00327
	(CLK * !SCE)	0.00087	0.00071	0.00147
	(CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(CLK * !SCD * SCE)	-0.00083	-0.00084	-0.00085
	(!CLK * SCD * SCE)	0.00071	0.00073	0.00072
	(!CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00700	0.00682	0.00731
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00532	0.00513	0.00563
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00462	0.00449	0.00500
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00265	0.00252	0.00304
	(!CLK * !SCD * SCE)	0.00031	0.00031	0.00030
	(!CLK * !SCD * SCE)	-0.00083	-0.00084	-0.00085
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00401	0.00389	0.00438
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00205	0.00192	0.00242

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00068	-0.00069	-0.00071
	(CLK * SCD * SCE)	0.00040	0.00040	0.00038
	(CLK * !SCE)	0.00072	0.00061	0.00169
	(CLK * !SCE)	0.00252	0.00242	0.00350
	(CLK * !SCD * SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !SCD * SCE)	0.00085	0.00086	0.00085
	(!CLK * SCD * SCE)	-0.00068	-0.00069	-0.00071
	(!CLK * SCD * SCE)	0.00040	0.00039	0.00038
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00526	0.00510	0.00608
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00696	0.00679	0.00776
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00205	0.00192	0.00282
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00402	0.00390	0.00480
	(!CLK * !SCD * SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !SCD * SCE)	0.00086	0.00086	0.00085
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00256	0.00243	0.00338
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00452	0.00439	0.00534

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00365	0.00355	0.00377
	(CLK * D * SCE)	0.00132	0.00121	0.00144
	(CLK * !D * SCE)	0.00407	0.00398	0.00415
	(CLK * !D * SCE)	0.00167	0.00156	0.00175
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00559	0.00550	0.00566
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00310	0.00300	0.00318
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00796	0.00784	0.00796
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00575	0.00562	0.00576
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00498	0.00489	0.00504
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00250	0.00240	0.00256
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00601	0.00593	0.00606
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00345	0.00336	0.00350
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00839	0.00827	0.00837
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00611	0.00598	0.00609
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00540	0.00532	0.00543
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00285	0.00276	0.00289
	!SCE	0.00059	0.00055	0.00054
	!SCE	-0.00066	-0.00071	-0.00072

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00153	0.00147	0.00170
	(CLK * D * SCE)	0.00387	0.00381	0.00402
	(CLK * !D * SCE)	0.00130	0.00123	0.00151
	(CLK * !D * SCE)	0.00370	0.00363	0.00390
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00284	0.00277	0.00294
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00534	0.00528	0.00542
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00604	0.00596	0.00613
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00826	0.00818	0.00833
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00335	0.00329	0.00348
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00584	0.00578	0.00595
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00261	0.00255	0.00273
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00517	0.00512	0.00529
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00581	0.00574	0.00596
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00809	0.00802	0.00822
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00312	0.00306	0.00328
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00567	0.00561	0.00582
	!SCE	-0.00052	-0.00053	-0.00053
	!SCE	0.00072	0.00073	0.00073

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)**	0.00297	0.00277	0.00367
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00019	-0.00042	0.00049
	(CLK * D * !SCD)	0.00484	0.00464	0.00550
	(CLK * D * !SCD)	0.00259	0.00237	0.00321
	(CLK * !D * SCD)	0.00539	0.00511	0.00650
	(CLK * !D * SCD)	0.00143	0.00115	0.00255
	(!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)	0.00309	0.00289	0.00379
	(!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)	-0.00008	-0.00030	0.00061
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00939	0.00927	0.01011
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00701	0.00688	0.00769
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00619	0.00606	0.00691
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00410	0.00396	0.00479
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00671	0.00657	0.00744
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00461	0.00446	0.00529
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00745	0.00720	0.00846
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00333	0.00307	0.00436
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00983	0.00952	0.01077
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00599	0.00569	0.00695
	(!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)	0.00306	0.00291	0.00382
	(!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	-0.00006	0.00084
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00684	0.00659	0.00783
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00273	0.00247	0.00374

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)**	-0.00023	-0.00022	0.00098
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00293	0.00294	0.00414
	(CLK * D * !SCD)	0.00237	0.00230	0.00339
	(CLK * D * !SCD)	0.00464	0.00456	0.00566
	(CLK * !D * SCD)	0.00081	0.00064	0.00229
	(CLK * !D * SCD)	0.00474	0.00459	0.00624
	(!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)	-0.00035	-0.00034	0.00085
	(!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)	0.00281	0.00282	0.00402
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00655	0.00652	0.00755
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00894	0.00892	0.00995
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00417	0.00415	0.00523
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00628	0.00627	0.00734
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00356	0.00354	0.00461
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00568	0.00567	0.00673
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00201	0.00184	0.00337
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00611	0.00595	0.00748
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00523	0.00504	0.00657
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00905	0.00886	0.01040
	(!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)	-0.00021	-0.00025	0.00095
	(!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)	0.00276	0.00272	0.00393
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00253	0.00236	0.00392
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00661	0.00645	0.00802

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)	0.00349	0.00337	0.00407
	(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)	0.00198	0.00185	0.00256
	(!SET_B * Q * !Q_N)	0.00380	0.00367	0.00441
	(!SET_B * Q * !Q_N)	0.00225	0.00211	0.00286
	(!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)	0.00663	0.00638	0.00701
	(!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)	0.00539	0.00515	0.00577

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)	0.00189	0.00182	0.00281
	(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)	0.00339	0.00333	0.00432
	(!SET_B * Q * !Q_N)	0.00103	0.00100	0.00200
	(!SET_B * Q * !Q_N)	0.00260	0.00256	0.00355
	(!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)	0.00505	0.00492	0.00586
	(!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)	0.00629	0.00615	0.00710

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)	0.00198	0.00198	0.00197
	(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)	-0.00277	-0.00277	-0.00276
	(!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)	0.00519	0.00501	0.00572
	(!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)	0.00010	-0.00010	0.00062

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)	-0.00194	-0.00198	-0.00197
	(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)	0.00278	0.00281	0.00277
	(!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)	0.00125	0.00108	0.00268
	(!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)	0.00633	0.00619	0.00778

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)**	0.00851	0.00821	0.00901
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00594	0.00562	0.00643
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00865	0.00834	0.00915
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00608	0.00576	0.00657
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00844	0.00812	0.00896
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00587	0.00553	0.00638
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01075	0.01047	0.01131
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00803	0.00772	0.00857
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01021	0.00984	0.01063
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00779	0.00740	0.00821
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01035	0.00996	0.01076
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00793	0.00753	0.00834
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00851	0.00821	0.00901
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00594	0.00562	0.00643
	(!D * !SCE * SET_B * !Q * Q_N)	0.00857	0.00825	0.00909
	(!D * !SCE * SET_B * !Q * Q_N)	0.00600	0.00567	0.00651
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01089	0.01060	0.01145
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00816	0.00786	0.00872
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00844	0.00812	0.00896
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00587	0.00554	0.00638
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01076	0.01047	0.01130
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00804	0.00773	0.00856
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01022	0.00982	0.01063
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00780	0.00739	0.00821

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)	0.00909	0.00876	0.00984
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01178	0.01146	0.01253
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00465	0.00441	0.00562
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00722	0.00698	0.00819
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00896	0.00864	0.00971
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01166	0.01134	0.01241
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00451	0.00427	0.00548
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00709	0.00684	0.00805
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00980	0.00960	0.01105
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01228	0.01208	0.01354
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00477	0.00453	0.00572
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00735	0.00711	0.00831
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00646	0.00628	0.00767
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00920	0.00902	0.01041
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00588	0.00559	0.00675
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00830	0.00802	0.00919
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00574	0.00546	0.00662
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00816	0.00788	0.00905
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00908	0.00876	0.00983
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01178	0.01146	0.01254
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00465	0.00441	0.00562
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00722	0.00699	0.00819
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.00965	0.00946	0.01090
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01211	0.01193	0.01337
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00981	0.00961	0.01105
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01228	0.01208	0.01353
	(!D * !SCE * SET_B * !Q * Q_N)	0.00464	0.00440	0.00559
	(!D * !SCE * SET_B * !Q * Q_N)	0.00721	0.00697	0.00817
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00633	0.00614	0.00754
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00906	0.00888	0.01028
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00477	0.00453	0.00572
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00735	0.00711	0.00830
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00647	0.00627	0.00768
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00921	0.00901	0.01042
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00588	0.00559	0.00675
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00830	0.00802	0.00919

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00179	0.00184	0.00407	0.00570	0.00293	0.64502	0.65162
sky130_fd_sc_hs__sdfrbp_2	0.00182	0.00187	0.00418	0.00576	0.00287	1.30591	1.28584

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.22646	0.41037
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.23672	0.39592

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)	0.42838	1.17189	7.77032
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.51751	1.14026	8.20419

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.35801	0.75335	2.94436
	RESET_B->Q (FF)	0.51325	1.16700	5.82636
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.41074	0.78109	3.10474
	RESET_B->Q (FF)	0.57131	1.19973	6.00064

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)	0.29933	1.06995	7.65017
	RESET_B->Q_N (FR)	0.45478	1.47816	10.52800
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.30098	0.95896	7.61488
	RESET_B->Q_N (FR)	0.46203	1.37301	10.50540

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)	0.32360	0.82791	3.21569
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.36260	0.84935	3.21075

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)	-0.13885	-0.26022	-1.35928
	setup	CLK (R)	0.30363	0.36437	1.49568
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14233	-0.26911	-1.40535
	setup	CLK (R)	0.28378	0.35761	1.53873

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)	-0.12952	-0.28372	-2.47970
	setup	CLK (R)	0.53437	0.58714	3.00461
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17765	-0.33966	-2.73990
	setup	CLK (R)	0.55619	0.61085	3.05986

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)	-0.14013	-0.26022	-1.35971
	hold	CLK (R)	-0.13885	-0.26022	-1.35928
	setup	CLK (R)	0.30363	0.36418	1.49158
	setup	CLK (R)	0.30363	0.36437	1.49568
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14435	-0.26911	-1.40535
	hold	CLK (R)	-0.14233	-0.27199	-1.40716
	setup	CLK (R)	0.28347	0.35761	1.53833
	setup	CLK (R)	0.28378	0.35761	1.53873

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)	-0.12952	-0.28407	-2.47970
	hold	CLK (R)	-0.13051	-0.28372	-2.48058
	setup	CLK (R)	0.53437	0.58714	3.00461
	setup	CLK (R)	0.53411	0.58435	3.00248
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17765	-0.33966	-2.74246
	hold	CLK (R)	-0.18003	-0.34321	-2.73990
	setup	CLK (R)	0.55539	0.60928	3.05939
	setup	CLK (R)	0.55619	0.61085	3.05986

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)	-0.16733	-0.28514	-1.60174
	setup	CLK (R)	0.33365	0.38408	1.71320
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16975	-0.28974	-1.62567
	setup	CLK (R)	0.31419	0.37963	1.74780

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)	-0.17799	-0.35467	-3.13747
	setup	CLK (R)	0.64692	0.71957	3.54539
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.23027	-0.41284	-3.34058
	setup	CLK (R)	0.66657	0.74276	3.58998

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)	-0.16733	-0.28514	-1.60174
	hold	CLK (R)	-0.17154	-0.29025	-1.60692
	setup	CLK (R)	0.33210	0.38408	1.70445
	setup	CLK (R)	0.33365	0.38303	1.71320
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16975	-0.28974	-1.62567
	hold	CLK (R)	-0.17675	-0.29724	-1.63906
	setup	CLK (R)	0.31120	0.37567	1.73221
	setup	CLK (R)	0.31419	0.37963	1.74780

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)	-0.19249	-0.37204	-3.18800
	hold	CLK (R)	-0.17799	-0.35467	-3.13747
	setup	CLK (R)	0.64187	0.71707	3.54539
	setup	CLK (R)	0.64692	0.71957	3.53967
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.24855	-0.43438	-3.35822
	hold	CLK (R)	-0.23027	-0.41284	-3.34058
	setup	CLK (R)	0.66297	0.73907	3.58815
	setup	CLK (R)	0.66657	0.74276	3.58998

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)	-0.14238	-0.26770	-0.53552
	setup	CLK (R)	0.63160	0.61867	1.54753
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14549	-0.27286	-0.58830
	setup	CLK (R)	0.65210	0.63542	1.58164

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)	-0.15464	-0.32366	-2.47881
	setup	CLK (R)	0.55691	0.62739	3.29656
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.19573	-0.37412	-2.44932
	setup	CLK (R)	0.57240	0.64831	3.34613

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)	-0.18494	-0.27145	-0.53552
	hold	CLK (R)	-0.14238	-0.26770	-1.42233
	setup	CLK (R)	0.63160	0.61867	0.75061
	setup	CLK (R)	0.30079	0.36584	1.54753
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.23850	-0.33842	-0.58830
	hold	CLK (R)	-0.14549	-0.27286	-1.45396
	setup	CLK (R)	0.65210	0.63542	0.73135
	setup	CLK (R)	0.28173	0.35999	1.58164

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)	-0.26528	-0.45294	-2.47881
	hold	CLK (R)	-0.15464	-0.32366	-2.88689
	setup	CLK (R)	0.42954	0.54764	2.54788
	setup	CLK (R)	0.55691	0.62739	3.29656
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.26670	-0.45041	-2.44932
	hold	CLK (R)	-0.19573	-0.37412	-3.08342
	setup	CLK (R)	0.40594	0.53508	2.52325
	setup	CLK (R)	0.57240	0.64831	3.34613

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)	0.35985	0.39305	1.73592
	removal	CLK (R)	-0.25845	-0.32018	-1.55414
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.34170	0.38517	1.75730
	removal	CLK (R)	-0.26838	-0.33167	-1.59363

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)	0.35982	0.39195	1.72805
	recovery	CLK (R)	0.34875	0.38101	1.64771
	recovery	CLK (R)	0.34598	0.36923	1.59867
	recovery	CLK (R)	0.35985	0.39305	1.73592
	removal	CLK (R)	-0.26900	-0.34273	-1.68734
	removal	CLK (R)	-0.26411	-0.33467	-1.60762
	removal	CLK (R)	-0.25845	-0.32018	-1.55414
	removal	CLK (R)	-0.27350	-0.34664	-1.69352
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.33988	0.38249	1.74616
	recovery	CLK (R)	0.32999	0.37286	1.67222
	recovery	CLK (R)	0.32593	0.36161	1.62153
	recovery	CLK (R)	0.34170	0.38517	1.75730
	removal	CLK (R)	-0.27751	-0.35128	-1.71782
	removal	CLK (R)	-0.27236	-0.34273	-1.64281
	removal	CLK (R)	-0.26838	-0.33167	-1.59363
	removal	CLK (R)	-0.28046	-0.35522	-1.72595

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 ()	0.27244	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.22587	0.83740	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.27554	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.24450	0.83740	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 ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.13275	0.83740	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.34383	0.83740	16.50020
	min_pulse_width	CLK ()	0.15758	0.83740	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 ()	0.35004	0.83740	16.50020
	min_pulse_width	CLK ()	0.48042	0.83740	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.32521	0.83740	16.50020
	min_pulse_width	CLK ()	0.48352	0.83740	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	0.00862	0.00858	0.00906
	CLK	0.00729	0.00726	0.00769
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01010	0.01031	0.01083
	CLK	0.00875	0.00897	0.00946

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00880	0.00882	0.00937
	CLK	0.00750	0.00752	0.00806
	RESET_B	0.00741	0.00730	0.00805
	RESET_B	0.01048	0.01036	0.01094
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01021	0.01046	0.01109
	CLK	0.00900	0.00925	0.00983
	RESET_B	0.00889	0.00904	0.00965
	RESET_B	0.01203	0.01216	0.01272

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00881	0.00884	0.00950
	CLK	0.00751	0.00753	0.00820
	RESET_B	0.00743	0.00732	0.00818
	RESET_B	0.01050	0.01039	0.01108
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01022	0.01047	0.01130
	CLK	0.00901	0.00926	0.01005
	RESET_B	0.00891	0.00905	0.01027
	RESET_B	0.01206	0.01219	0.01293

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00860	0.00858	0.00891
	CLK	0.00728	0.00726	0.00757
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01009	0.01030	0.01063
	CLK	0.00874	0.00895	0.00927

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)**	0.00070	0.00071	0.00070
	(CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00312	0.00299	0.00368
	(CLK * RESET_B * SCD * !SCE)	0.00111	0.00097	0.00168
	(CLK * RESET_B * !SCD * !SCE)	0.00312	0.00299	0.00368
	(CLK * RESET_B * !SCD * !SCE)	0.00111	0.00098	0.00168
	(CLK * !SCD * SCE)	0.00039	0.00039	0.00037
	(CLK * !SCD * SCE)	-0.00073	-0.00074	-0.00075
	(CLK * !RESET_B * SCD * SCE)	0.00037	0.00037	0.00036
	(CLK * !RESET_B * SCD * SCE)	-0.00073	-0.00075	-0.00075
	(CLK * !RESET_B * SCD * !SCE)	0.00028	0.00027	0.00023
	(CLK * !RESET_B * SCD * !SCE)	-0.00083	-0.00083	-0.00089
	(CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00027	0.00023
	(CLK * !RESET_B * !SCD * !SCE)	-0.00086	-0.00086	-0.00090
	(!CLK * RESET_B * SCD * SCE)	0.00070	0.00071	0.00070
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00703	0.00691	0.00741
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00491	0.00479	0.00529
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00703	0.00691	0.00741
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00491	0.00479	0.00529
	(!CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(!CLK * !SCD * SCE)	-0.00073	-0.00074	-0.00075
	(!CLK * !RESET_B * SCD * SCE)	0.00036	0.00037	0.00036
	(!CLK * !RESET_B * SCD * SCE)	-0.00073	-0.00075	-0.00075
	(!CLK * !RESET_B * SCD * !SCE)	0.00028	0.00027	0.00023
	(!CLK * !RESET_B * SCD * !SCE)	-0.00083	-0.00083	-0.00089
	(!CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00027	0.00023
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00086	-0.00086	-0.00090

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	0.00072	0.00073	0.00072
	(CLK * RESET_B * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00331	0.00318	0.00385
	(CLK * RESET_B * SCD * !SCE)	0.00126	0.00113	0.00181
	(CLK * RESET_B * !SCD * !SCE)	0.00331	0.00318	0.00385
	(CLK * RESET_B * !SCD * !SCE)	0.00126	0.00113	0.00181
	(CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(CLK * !SCD * SCE)	-0.00074	-0.00075	-0.00076
	(CLK * !RESET_B * SCD * SCE)	0.00037	0.00037	0.00037
	(CLK * !RESET_B * SCD * SCE)	-0.00075	-0.00076	-0.00076
	(CLK * !RESET_B * SCD * !SCE)	0.00027	0.00026	0.00023
	(CLK * !RESET_B * SCD * !SCE)	-0.00085	-0.00085	-0.00091
	(CLK * !RESET_B * !SCD * !SCE)	0.00026	0.00026	0.00023
	(CLK * !RESET_B * !SCD * !SCE)	-0.00088	-0.00088	-0.00092
	(!CLK * RESET_B * SCD * SCE)	0.00072	0.00072	0.00072
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00725	0.00712	0.00760
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00509	0.00496	0.00544
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00725	0.00712	0.00760
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00509	0.00497	0.00544
	(!CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(!CLK * !SCD * SCE)	-0.00074	-0.00075	-0.00076
	(!CLK * !RESET_B * SCD * SCE)	0.00037	0.00037	0.00037
	(!CLK * !RESET_B * SCD * SCE)	-0.00074	-0.00076	-0.00076
	(!CLK * !RESET_B * SCD * !SCE)	0.00027	0.00026	0.00023
	(!CLK * !RESET_B * SCD * !SCE)	-0.00085	-0.00085	-0.00091
	(!CLK * !RESET_B * !SCD * !SCE)	0.00026	0.00026	0.00023
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00088	-0.00088	-0.00092

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)**	-0.00066	-0.00067	-0.00070
	(CLK * RESET_B * SCD * SCE)	0.00039	0.00038	0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00042	0.00032	0.00137
	(CLK * RESET_B * SCD * !SCE)	0.00243	0.00233	0.00338
	(CLK * RESET_B * !SCD * !SCE)	0.00042	0.00032	0.00137
	(CLK * RESET_B * !SCD * !SCE)	0.00243	0.00233	0.00338
	(CLK * !SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK * !SCD * SCE)	0.00075	0.00075	0.00075
	(CLK * !RESET_B * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !RESET_B * SCD * SCE)	0.00075	0.00076	0.00075
	(CLK * !RESET_B * SCD * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !RESET_B * SCD * !SCE)	0.00091	0.00091	0.00091
	(CLK * !RESET_B * !SCD * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !RESET_B * !SCD * !SCE)	0.00091	0.00091	0.00091
	(!CLK * RESET_B * SCD * SCE)	-0.00066	-0.00067	-0.00070
	(!CLK * RESET_B * SCD * SCE)	0.00039	0.00038	0.00037
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00402	0.00391	0.00499
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00613	0.00603	0.00711
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00402	0.00390	0.00500
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00613	0.00602	0.00711
	(!CLK * !SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * !SCD * SCE)	0.00075	0.00075	0.00075
	(!CLK * !RESET_B * SCD * SCE)	-0.00035	-0.00036	-0.00036
	(!CLK * !RESET_B * SCD * SCE)	0.00075	0.00076	0.00075
	(!CLK * !RESET_B * SCD * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !RESET_B * SCD * !SCE)	0.00091	0.00091	0.00091
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !RESET_B * !SCD * !SCE)	0.00091	0.00091	0.00091

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00068	-0.00069	-0.00071
	(CLK * RESET_B * SCD * SCE)	0.00039	0.00038	0.00036
	(CLK * RESET_B * SCD * !SCE)	0.00049	0.00038	0.00142
	(CLK * RESET_B * SCD * !SCE)	0.00254	0.00242	0.00347
	(CLK * RESET_B * !SCD * !SCE)	0.00049	0.00038	0.00142
	(CLK * RESET_B * !SCD * !SCE)	0.00254	0.00242	0.00347
	(CLK * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !SCD * SCE)	0.00076	0.00076	0.00076
	(CLK * !RESET_B * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK * !RESET_B * SCD * SCE)	0.00076	0.00076	0.00076
	(CLK * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !RESET_B * SCD * !SCE)	0.00093	0.00093	0.00093
	(CLK * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !RESET_B * !SCD * !SCE)	0.00093	0.00093	0.00093
	(!CLK * RESET_B * SCD * SCE)	-0.00068	-0.00069	-0.00071
	(!CLK * RESET_B * SCD * SCE)	0.00039	0.00039	0.00036
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00409	0.00397	0.00505
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00624	0.00613	0.00721
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00409	0.00397	0.00505
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00624	0.00613	0.00721
	(!CLK * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !SCD * SCE)	0.00076	0.00076	0.00076
	(!CLK * !RESET_B * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * !RESET_B * SCD * SCE)	0.00076	0.00076	0.00076
	(!CLK * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !RESET_B * SCD * !SCE)	0.00093	0.00093	0.00093
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !RESET_B * !SCD * !SCE)	0.00093	0.00093	0.00093

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00398	0.00386	0.00411
	(CLK * D * RESET_B * SCE)	0.00145	0.00133	0.00158
	(CLK * D * RESET_B * !SCE)	0.00065	0.00059	0.00058
	(CLK * D * RESET_B * !SCE)	-0.00064	-0.00071	-0.00071
	(CLK * D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(CLK * D * !RESET_B * SCE)	-0.00078	-0.00079	-0.00078
	(CLK * D * !RESET_B * !SCE)	0.00024	0.00025	0.00024
	(CLK * D * !RESET_B * !SCE)	-0.00084	-0.00085	-0.00085
	(CLK * !D * RESET_B * SCE)	0.00441	0.00430	0.00449
	(CLK * !D * RESET_B * SCE)	0.00181	0.00170	0.00190
	(CLK * !D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(CLK * !D * !RESET_B * SCE)	-0.00078	-0.00079	-0.00078
	(!D * RESET_B * !SCE)	0.00046	0.00047	0.00046
	(!D * RESET_B * !SCE)	-0.00083	-0.00084	-0.00083
	(!D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!D * !RESET_B * !SCE)	-0.00088	-0.00089	-0.00089
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00789	0.00778	0.00797
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00526	0.00515	0.00533
	(!CLK * D * RESET_B * !SCE)	0.00065	0.00059	0.00058
	(!CLK * D * RESET_B * !SCE)	-0.00064	-0.00071	-0.00071
	(!CLK * D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(!CLK * D * !RESET_B * SCE)	-0.00078	-0.00079	-0.00078
	(!CLK * D * !RESET_B * !SCE)	0.00024	0.00025	0.00024
	(!CLK * D * !RESET_B * !SCE)	-0.00084	-0.00085	-0.00085
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00832	0.00822	0.00835
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00561	0.00551	0.00565
	(!CLK * !D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(!CLK * !D * !RESET_B * SCE)	-0.00078	-0.00079	-0.00078

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCE)**	0.00412	0.00401	0.00425
	(CLK * D * RESET_B * SCE)	0.00155	0.00143	0.00168
	(CLK * D * RESET_B * !SCE)	0.00067	0.00061	0.00060
	(CLK * D * RESET_B * !SCE)	-0.00064	-0.00071	-0.00072
	(CLK * D * !RESET_B * SCE)	0.00035	0.00036	0.00034
	(CLK * D * !RESET_B * SCE)	-0.00079	-0.00079	-0.00078
	(CLK * D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(CLK * D * !RESET_B * !SCE)	-0.00085	-0.00086	-0.00086
	(CLK * !D * RESET_B * SCE)	0.00455	0.00445	0.00463
	(CLK * !D * RESET_B * SCE)	0.00191	0.00180	0.00200
	(CLK * !D * !RESET_B * SCE)	0.00035	0.00036	0.00034
	(CLK * !D * !RESET_B * SCE)	-0.00078	-0.00079	-0.00078
	(!D * RESET_B * !SCE)	0.00047	0.00048	0.00047
	(!D * RESET_B * !SCE)	-0.00084	-0.00084	-0.00084
	(!D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(!D * !RESET_B * !SCE)	-0.00089	-0.00090	-0.00090
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00806	0.00796	0.00812
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00537	0.00527	0.00544
	(!CLK * D * RESET_B * !SCE)	0.00067	0.00061	0.00060
	(!CLK * D * RESET_B * !SCE)	-0.00064	-0.00071	-0.00072
	(!CLK * D * !RESET_B * SCE)	0.00035	0.00036	0.00034
	(!CLK * D * !RESET_B * SCE)	-0.00078	-0.00079	-0.00078
	(!CLK * D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(!CLK * D * !RESET_B * !SCE)	-0.00085	-0.00086	-0.00086
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00848	0.00838	0.00852
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00573	0.00563	0.00577
	(!CLK * !D * !RESET_B * SCE)	0.00035	0.00036	0.00034
	(!CLK * !D * !RESET_B * SCE)	-0.00078	-0.00079	-0.00078

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00119	0.00105	0.00134
	(CLK * D * RESET_B * SCE)	0.00373	0.00359	0.00386
	(CLK * D * RESET_B * !SCE)	-0.00056	-0.00058	-0.00058
	(CLK * D * RESET_B * !SCE)	0.00072	0.00073	0.00072
	(CLK * D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(CLK * D * !RESET_B * SCE)	0.00080	0.00080	0.00079
	(CLK * D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(CLK * D * !RESET_B * !SCE)	0.00085	0.00086	0.00086
	(CLK * !D * RESET_B * SCE)	0.00091	0.00078	0.00111
	(CLK * !D * RESET_B * SCE)	0.00351	0.00338	0.00370
	(CLK * !D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(CLK * !D * !RESET_B * SCE)	0.00080	0.00080	0.00079
	(!D * RESET_B * !SCE)	-0.00043	-0.00046	-0.00046
	(!D * RESET_B * !SCE)	0.00085	0.00084	0.00084
	(!D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!D * !RESET_B * !SCE)	0.00089	0.00091	0.00090
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00476	0.00464	0.00498
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00741	0.00729	0.00761
	(!CLK * D * RESET_B * !SCE)	-0.00056	-0.00058	-0.00058
	(!CLK * D * RESET_B * !SCE)	0.00072	0.00073	0.00072
	(!CLK * D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(!CLK * D * !RESET_B * SCE)	0.00080	0.00080	0.00079
	(!CLK * D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(!CLK * D * !RESET_B * !SCE)	0.00085	0.00086	0.00086
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00449	0.00437	0.00475
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00721	0.00708	0.00745
	(!CLK * !D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(!CLK * !D * !RESET_B * SCE)	0.00080	0.00080	0.00079

	(CLK * D * RESET_B * SCE)	0.00123	0.00110	0.00138
	(CLK * D * RESET_B * SCE)	0.00381	0.00368	0.00395
	(CLK * D * RESET_B * !SCE)	-0.00057	-0.00059	-0.00059
	(CLK * D * RESET_B * !SCE)	0.00072	0.00073	0.00073
	(CLK * D * !RESET_B * SCE)	-0.00032	-0.00032	-0.00032
	(CLK * D * !RESET_B * SCE)	0.00080	0.00080	0.00079
	(CLK * D * !RESET_B * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * D * !RESET_B * !SCE)	0.00086	0.00088	0.00086
	(CLK * !D * RESET_B * SCE)	0.00099	0.00086	0.00119
	(CLK * !D * RESET_B * SCE)	0.00363	0.00349	0.00382
	(CLK * !D * !RESET_B * SCE)	-0.00032	-0.00032	-0.00032
	(CLK * !D * !RESET_B * SCE)	0.00080	0.00080	0.00079
	(!D * RESET_B * !SCE)	-0.00044	-0.00047	-0.00047
	(!D * RESET_B * !SCE)	0.00085	0.00085	0.00084
	(!D * !RESET_B * !SCE)	-0.00029	-0.00029	-0.00029
	(!D * !RESET_B * !SCE)	0.00090	0.00091	0.00091
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00481	0.00468	0.00501
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00751	0.00738	0.00769
	(!CLK * D * RESET_B * !SCE)	-0.00057	-0.00059	-0.00059
	(!CLK * D * RESET_B * !SCE)	0.00072	0.00073	0.00073
	(!CLK * D * !RESET_B * SCE)	-0.00032	-0.00032	-0.00032
	(!CLK * D * !RESET_B * SCE)	0.00080	0.00080	0.00079
	(!CLK * D * !RESET_B * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * D * !RESET_B * !SCE)	0.00086	0.00088	0.00086
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00458	0.00445	0.00484
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00734	0.00720	0.00758
	(!CLK * !D * !RESET_B * SCE)	-0.00032	-0.00032	-0.00032
	(!CLK * !D * !RESET_B * SCE)	0.00080	0.00080	0.00079

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)**	0.00359	0.00331	0.00414
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00012	-0.00017	0.00065
	(CLK * D * RESET_B * !SCD)	0.00507	0.00484	0.00560
	(CLK * D * RESET_B * !SCD)	0.00274	0.00249	0.00323
	(CLK * !D * RESET_B * SCD)	0.00659	0.00628	0.00752
	(CLK * !D * RESET_B * SCD)	0.00211	0.00179	0.00305
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00359	0.00331	0.00414
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00012	-0.00017	0.00065
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00858	0.00839	0.00919
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00636	0.00616	0.00693
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00354	0.00333	0.00417
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00023	-0.00000	0.00084
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01050	0.01019	0.01136
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00591	0.00560	0.00677

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00334	0.00306	0.00391
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00026	-0.00055	0.00031
	(CLK * D * RESET_B * !SCD)	0.00490	0.00467	0.00545
	(CLK * D * RESET_B * !SCD)	0.00247	0.00222	0.00299
	(CLK * !D * RESET_B * SCD)	0.00649	0.00616	0.00744
	(CLK * !D * RESET_B * SCD)	0.00187	0.00154	0.00283
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00334	0.00305	0.00391
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00026	-0.00055	0.00031
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00841	0.00822	0.00905
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00610	0.00589	0.00669
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00331	0.00309	0.00397
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00012	-0.00035	0.00052
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01042	0.01010	0.01129
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00569	0.00537	0.00657

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)**	-0.00016	-0.00025	0.00095
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00333	0.00323	0.00442
	(CLK * D * RESET_B * !SCD)	0.00293	0.00275	0.00385
	(CLK * D * RESET_B * !SCD)	0.00529	0.00511	0.00619
	(CLK * !D * RESET_B * SCD)	0.00073	0.00049	0.00206
	(CLK * !D * RESET_B * SCD)	0.00519	0.00497	0.00653
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00015	-0.00025	0.00095
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00333	0.00322	0.00442
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00683	0.00669	0.00777
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00907	0.00893	0.01000
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00014	-0.00025	0.00092
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00317	0.00307	0.00422
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00431	0.00408	0.00567
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00890	0.00867	0.01026

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00012	-0.00022	0.00099
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00346	0.00337	0.00458
	(CLK * D * RESET_B * !SCD)	0.00316	0.00297	0.00408
	(CLK * D * RESET_B * !SCD)	0.00561	0.00543	0.00652
	(CLK * !D * RESET_B * SCD)	0.00078	0.00055	0.00213
	(CLK * !D * RESET_B * SCD)	0.00540	0.00517	0.00674
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00012	-0.00022	0.00099
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00346	0.00338	0.00458
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00707	0.00693	0.00802
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00941	0.00926	0.01035
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00014	-0.00025	0.00093
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00329	0.00319	0.00436
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00437	0.00414	0.00574
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00911	0.00887	0.01046

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)**	0.00576	0.00560	0.00597
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00014	-0.00031	0.00006
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00554	0.00538	0.00579
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00016	-0.00034	0.00009
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00195	0.00197	0.00195
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00247	-0.00249	-0.00247
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00530	0.00515	0.00558
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00015	-0.00034	0.00011
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00619	0.00605	0.00634
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00021	0.00005	0.00037
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00192	0.00195	0.00193
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00248	-0.00250	-0.00248
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00194	0.00195	0.00195
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00247	-0.00247	-0.00247
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00192	0.00195	0.00193
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00248	-0.00250	-0.00249
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01005	0.00971	0.01001
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00406	0.00371	0.00400
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00983	0.00949	0.00981
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00405	0.00368	0.00401
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00195	0.00197	0.00195
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00247	-0.00248	-0.00247
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00960	0.00925	0.00961
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00404	0.00368	0.00404
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01048	0.01016	0.01039
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00442	0.00408	0.00432
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00193	0.00195	0.00193
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00248	-0.00249	-0.00248
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00195	0.00197	0.00195
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00247	-0.00248	-0.00247
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00193	0.00195	0.00193
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00248	-0.00250	-0.00248

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00582	0.00567	0.00602
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00010	-0.00027	0.00009
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00566	0.00552	0.00591
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00005	-0.00024	0.00018
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00187	0.00187	0.00188
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00253	-0.00252	-0.00253
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00542	0.00526	0.00569
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00005	-0.00022	0.00020
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00625	0.00611	0.00640
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00025	0.00009	0.00040
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00185	0.00187	0.00185
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00254	-0.00255	-0.00254
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00187	0.00188	0.00188
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00253	-0.00253	-0.00253
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00185	0.00188	0.00186
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00254	-0.00256	-0.00255
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01010	0.00977	0.01007
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00410	0.00376	0.00403
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00996	0.00961	0.00995
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00414	0.00380	0.00411
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00187	0.00189	0.00187
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00253	-0.00255	-0.00253
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00973	0.00938	0.00972
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00414	0.00380	0.00414
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01053	0.01023	0.01045
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00446	0.00413	0.00437
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00185	0.00187	0.00185
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00254	-0.00256	-0.00254
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00187	0.00187	0.00187
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00253	-0.00253	-0.00253
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00185	0.00188	0.00186
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00255	-0.00256	-0.00255

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)**	0.00031	0.00016	0.00111
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00622	0.00607	0.00702
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00020	-0.00036	0.00059
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00551	0.00537	0.00631
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00192	-0.00195	-0.00195
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00251	0.00249	0.00248
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00037	-0.00052	0.00047
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00509	0.00496	0.00594
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00003	-0.00012	0.00089
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00600	0.00588	0.00686
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00188	-0.00193	-0.00193
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00253	0.00250	0.00249
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00192	-0.00195	-0.00195
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00251	0.00249	0.00248
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00189	-0.00194	-0.00193
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00253	0.00250	0.00249
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00430	0.00392	0.00474
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01031	0.00995	0.01076
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00379	0.00341	0.00422
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00961	0.00922	0.01002
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00192	-0.00196	-0.00195
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00250	0.00249	0.00248
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00363	0.00324	0.00409
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00919	0.00882	0.00967
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00403	0.00364	0.00453
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01010	0.00973	0.01061
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00189	-0.00194	-0.00193
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00252	0.00249	0.00248
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00192	-0.00196	-0.00195
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00250	0.00249	0.00247
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00190	-0.00194	-0.00193
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00253	0.00250	0.00249

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00042	0.00027	0.00121
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00635	0.00622	0.00714
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00012	-0.00027	0.00067
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00562	0.00548	0.00640
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00185	-0.00187	-0.00188
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00257	0.00255	0.00254
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00028	-0.00044	0.00054
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00520	0.00507	0.00604
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00018	0.00003	0.00103
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00617	0.00604	0.00702
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00181	-0.00187	-0.00185
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00259	0.00256	0.00254
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00185	-0.00188	-0.00188
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00257	0.00255	0.00254
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00182	-0.00187	-0.00186
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00259	0.00256	0.00255
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00443	0.00404	0.00487
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01046	0.01009	0.01090
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00389	0.00350	0.00431
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00973	0.00935	0.01015
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00184	-0.00188	-0.00187
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00257	0.00255	0.00254
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00373	0.00334	0.00419
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00931	0.00893	0.00979
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00419	0.00381	0.00468
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01029	0.00990	0.01079
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00181	-0.00186	-0.00185
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00259	0.00256	0.00255
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00184	-0.00187	-0.00187
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00257	0.00255	0.00254
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00182	-0.00187	-0.00186
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00259	0.00256	0.00255

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)**	0.00827	0.00795	0.00882
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00565	0.00533	0.00619
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00827	0.00795	0.00882
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00565	0.00533	0.00619
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00827	0.00795	0.00882
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00565	0.00533	0.00619
	(D * !SCD * SCE * !Q * Q_N)	0.00852	0.00818	0.00906
	(D * !SCD * SCE * !Q * Q_N)	0.00591	0.00556	0.00644
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00852	0.00819	0.00906
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00591	0.00557	0.00644
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00852	0.00819	0.00906
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00591	0.00556	0.00644
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00852	0.00819	0.00906
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00591	0.00556	0.00644
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00827	0.00795	0.00882
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00565	0.00533	0.00619
	(!D * !SCE * !Q * Q_N)	0.00852	0.00818	0.00906
	(!D * !SCE * !Q * Q_N)	0.00591	0.00556	0.00644
	(!D * !SCD * SCE * !Q * Q_N)	0.00852	0.00819	0.00907
	(!D * !SCD * SCE * !Q * Q_N)	0.00591	0.00556	0.00644
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00852	0.00819	0.00906
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00591	0.00557	0.00644

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00831	0.00797	0.00884
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00575	0.00540	0.00627
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00831	0.00797	0.00883
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00575	0.00540	0.00627
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00831	0.00797	0.00884
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00575	0.00540	0.00627
	(D * !SCD * SCE * !Q * Q_N)	0.00852	0.00817	0.00904
	(D * !SCD * SCE * !Q * Q_N)	0.00595	0.00560	0.00647
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00852	0.00818	0.00904
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00595	0.00561	0.00647
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00852	0.00818	0.00904
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00595	0.00561	0.00647
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00852	0.00818	0.00904
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00595	0.00561	0.00647
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00831	0.00797	0.00883
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00575	0.00540	0.00627
	(!D * !SCE * !Q * Q_N)	0.00852	0.00817	0.00904
	(!D * !SCE * !Q * Q_N)	0.00595	0.00560	0.00647
	(!D * !SCD * SCE * !Q * Q_N)	0.00852	0.00818	0.00904
	(!D * !SCD * SCE * !Q * Q_N)	0.00595	0.00560	0.00647
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00852	0.00818	0.00904
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00595	0.00561	0.00647

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)**	0.00451	0.00429	0.00550
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00714	0.00691	0.00813
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00821	0.00791	0.00907
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01072	0.01041	0.01157
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00451	0.00429	0.00550
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00714	0.00691	0.00813
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00817	0.00788	0.00903
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01069	0.01038	0.01154
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00858	0.00840	0.00987
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01133	0.01115	0.01262
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00451	0.00429	0.00551
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00714	0.00692	0.00813
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00817	0.00788	0.00903
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01069	0.01038	0.01154
	(D * !SCD * SCE * !Q * Q_N)	0.00420	0.00397	0.00520
	(D * !SCD * SCE * !Q * Q_N)	0.00683	0.00660	0.00781
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00420	0.00398	0.00520
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00683	0.00660	0.00782
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00420	0.00398	0.00520
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00683	0.00660	0.00782
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00420	0.00398	0.00520
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00683	0.00660	0.00782
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00451	0.00429	0.00551
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00714	0.00692	0.00813
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00823	0.00794	0.00910
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01074	0.01043	0.01160
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00857	0.00838	0.00985
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01131	0.01111	0.01258
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00859	0.00842	0.00986
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01133	0.01116	0.01261
	(!D * !SCE * !Q * Q_N)	0.00420	0.00397	0.00520
	(!D * !SCE * !Q * Q_N)	0.00683	0.00660	0.00781
	(!D * !SCD * SCE * !Q * Q_N)	0.00420	0.00397	0.00519
	(!D * !SCD * SCE * !Q * Q_N)	0.00683	0.00660	0.00782
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00420	0.00398	0.00520
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00683	0.00660	0.00782

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00449	0.00428	0.00549
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00705	0.00685	0.00806
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00823	0.00794	0.00909
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01068	0.01039	0.01154
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00449	0.00428	0.00549
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00705	0.00685	0.00806
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00819	0.00791	0.00906
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01065	0.01036	0.01152
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00855	0.00839	0.00985
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01124	0.01109	0.01255
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00449	0.00428	0.00549
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00705	0.00685	0.00805
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00819	0.00791	0.00906
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01065	0.01036	0.01151
	(D * !SCD * SCE * !Q * Q_N)	0.00422	0.00400	0.00522
	(D * !SCD * SCE * !Q * Q_N)	0.00679	0.00658	0.00779
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00422	0.00401	0.00523
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00679	0.00658	0.00780
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00422	0.00401	0.00523
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00679	0.00658	0.00779
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00422	0.00401	0.00523
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00679	0.00658	0.00779
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00449	0.00428	0.00549
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00705	0.00685	0.00806
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00825	0.00797	0.00912
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01069	0.01040	0.01157
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00853	0.00836	0.00984
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01120	0.01104	0.01251
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00855	0.00837	0.00984
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01123	0.01106	0.01254
	(!D * !SCE * !Q * Q_N)	0.00422	0.00400	0.00522
	(!D * !SCE * !Q * Q_N)	0.00679	0.00658	0.00779
	(!D * !SCD * SCE * !Q * Q_N)	0.00422	0.00400	0.00522
	(!D * !SCD * SCE * !Q * Q_N)	0.00679	0.00658	0.00779
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00422	0.00401	0.00523
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00679	0.00658	0.00780

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00190	0.00183	0.00401	0.00559	0.00274	0.65234

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.21801	0.39226

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)	0.47125	1.44795	9.79087

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)	0.36147	0.97664	5.02617
	RESET_B->Q (FF)	0.49400	1.14864	5.80863

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)	0.00098	0.05804	1.16869
	setup	CLK_N (F)	0.21030	0.12014	-0.99355

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)	-0.21166	-0.24049	-0.88653
	setup	CLK_N (F)	0.66355	0.66542	1.40748

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)	0.00098	0.05804	1.16837
	hold	CLK_N (F)	0.00096	0.05743	1.16869
	setup	CLK_N (F)	0.21015	0.12014	-0.99394
	setup	CLK_N (F)	0.21030	0.11987	-0.99355

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)	-0.21166	-0.24049	-0.88653
	hold	CLK_N (F)	-0.21406	-0.24212	-0.88712
	setup	CLK_N (F)	0.66283	0.66542	1.40748
	setup	CLK_N (F)	0.66355	0.66535	1.40744

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)	-0.02704	0.03830	0.99103
	setup	CLK_N (F)	0.23920	0.14100	-0.82627

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)	-0.26986	-0.32369	-1.51969
	setup	CLK_N (F)	0.77218	0.79451	2.09480

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)	-0.02704	0.03830	0.99103
	hold	CLK_N (F)	-0.03401	0.03118	0.95737
	setup	CLK_N (F)	0.23920	0.13758	-0.85383
	setup	CLK_N (F)	0.23838	0.14100	-0.82627

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)	-0.29350	-0.34283	-1.61873
	hold	CLK_N (F)	-0.26986	-0.32369	-1.51969
	setup	CLK_N (F)	0.76318	0.78166	2.09480
	setup	CLK_N (F)	0.77218	0.79451	2.03297

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)	-0.00295	0.05083	1.10323
	setup	CLK_N (F)	0.75489	0.67975	-0.64843

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)	-0.12311	-0.12908	0.18575
	setup	CLK_N (F)	0.68877	0.70746	1.85949

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)	-0.28942	-0.24404	0.95011
	hold	CLK_N (F)	-0.00295	0.05083	1.10323
	setup	CLK_N (F)	0.75489	0.67975	-0.64843
	setup	CLK_N (F)	0.21220	0.12308	-0.94247

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)	-0.12311	-0.12908	0.18575
	hold	CLK_N (F)	-0.23842	-0.28049	-1.38151
	setup	CLK_N (F)	0.33493	0.30299	-0.11698
	setup	CLK_N (F)	0.68877	0.70746	1.85949

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)	0.26608	0.14900	-0.86547
	removal	CLK_N (F)	-0.15627	-0.05234	1.04207

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)	0.26235	0.14517	-0.88918
	recovery	CLK_N (F)	0.25810	0.13800	-0.96670
	recovery	CLK_N (F)	0.25103	0.12522	-1.00065
	recovery	CLK_N (F)	0.26608	0.14900	-0.86547
	removal	CLK_N (F)	-0.16864	-0.07284	0.93039
	removal	CLK_N (F)	-0.16390	-0.06335	1.00699
	removal	CLK_N (F)	-0.15627	-0.05234	1.04207
	removal	CLK_N (F)	-0.17426	-0.07591	0.90313

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 ()	0.21656	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.26933	0.83740	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 ()	0.25381	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.44317	0.83740	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 ()	0.28485	0.83740	16.50020
	min_pulse_width	CLK_N ()	0.23829	0.83740	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	0.01369	0.01365	0.01545
	CLK_N	0.01635	0.01631	0.01812

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01281	0.01248	0.01392
	CLK_N	0.01513	0.01490	0.01600
	RESET_B	0.01362	0.01322	0.01488
	RESET_B	0.01945	0.01904	0.02028

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)**	0.00072	0.00073	0.00073
	(CLK_N * RESET_B * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(CLK_N * RESET_B * SCD * !SCE)	0.00745	0.00734	0.00779
	(CLK_N * RESET_B * SCD * !SCE)	0.00538	0.00527	0.00572
	(CLK_N * RESET_B * !SCD * !SCE)	0.00745	0.00734	0.00779
	(CLK_N * RESET_B * !SCD * !SCE)	0.00538	0.00527	0.00572
	(CLK_N * !SCD * SCE)	0.00043	0.00043	0.00042
	(CLK_N * !SCD * SCE)	-0.00076	-0.00077	-0.00078
	(CLK_N * !RESET_B * SCD * SCE)	0.00041	0.00042	0.00041
	(CLK_N * !RESET_B * SCD * SCE)	-0.00077	-0.00079	-0.00078
	(CLK_N * !RESET_B * SCD * !SCE)	0.00023	0.00023	0.00020
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00094	-0.00095	-0.00101
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00023	0.00023	0.00020
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00097	-0.00098	-0.00102
	(!CLK_N * RESET_B * SCD * SCE)	0.00072	0.00073	0.00073
	(!CLK_N * RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK_N * RESET_B * SCD * !SCE)	0.00327	0.00314	0.00380
	(!CLK_N * RESET_B * SCD * !SCE)	0.00118	0.00105	0.00171
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00327	0.00314	0.00380
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00118	0.00105	0.00171
	(!CLK_N * !SCD * SCE)	0.00043	0.00043	0.00042
	(!CLK_N * !SCD * SCE)	-0.00077	-0.00077	-0.00078
	(!CLK_N * !RESET_B * SCD * SCE)	0.00041	0.00042	0.00041
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00077	-0.00079	-0.00078
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00024	0.00023	0.00020
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00095	-0.00095	-0.00101
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00023	0.00023	0.00020
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00098	-0.00098	-0.00102

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)**	-0.00069	-0.00070	-0.00072
	(CLK_N * RESET_B * SCD * SCE)	0.00044	0.00044	0.00042
	(CLK_N * RESET_B * SCD * !SCE)	0.00479	0.00467	0.00572
	(CLK_N * RESET_B * SCD * !SCE)	0.00686	0.00675	0.00779
	(CLK_N * RESET_B * !SCD * !SCE)	0.00479	0.00467	0.00572
	(CLK_N * RESET_B * !SCD * !SCE)	0.00686	0.00675	0.00779
	(CLK_N * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK_N * !SCD * SCE)	0.00078	0.00079	0.00078
	(CLK_N * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK_N * !RESET_B * SCD * SCE)	0.00079	0.00079	0.00078
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00018	-0.00019	-0.00018
	(CLK_N * !RESET_B * SCD * !SCE)	0.00102	0.00103	0.00102
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00019	-0.00019	-0.00018
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00102	0.00103	0.00102
	(!CLK_N * RESET_B * SCD * SCE)	-0.00069	-0.00070	-0.00072
	(!CLK_N * RESET_B * SCD * SCE)	0.00044	0.00044	0.00042
	(!CLK_N * RESET_B * SCD * !SCE)	0.00074	0.00064	0.00167
	(!CLK_N * RESET_B * SCD * !SCE)	0.00284	0.00273	0.00375
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00074	0.00064	0.00167
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00284	0.00273	0.00375
	(!CLK_N * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK_N * !SCD * SCE)	0.00078	0.00078	0.00078
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK_N * !RESET_B * SCD * SCE)	0.00079	0.00079	0.00078
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00018	-0.00019	-0.00018
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00102	0.00103	0.00102
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00019	-0.00019	-0.00018
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00102	0.00103	0.00102

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)**	0.00830	0.00822	0.00839
	(CLK_N * D * RESET_B * SCE)	0.00578	0.00569	0.00586
	(CLK_N * D * RESET_B * !SCE)	0.00062	0.00056	0.00054
	(CLK_N * D * RESET_B * !SCE)	-0.00069	-0.00076	-0.00077
	(CLK_N * D * !RESET_B * SCE)	0.00039	0.00039	0.00038
	(CLK_N * D * !RESET_B * SCE)	-0.00075	-0.00075	-0.00074
	(CLK_N * D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(CLK_N * D * !RESET_B * !SCE)	-0.00086	-0.00086	-0.00086
	(CLK_N * !D * RESET_B * SCE)	0.00872	0.00864	0.00878
	(CLK_N * !D * RESET_B * SCE)	0.00613	0.00604	0.00619
	(CLK_N * !D * !RESET_B * SCE)	0.00039	0.00039	0.00038
	(CLK_N * !D * !RESET_B * SCE)	-0.00075	-0.00075	-0.00074
	(!D * RESET_B * !SCE)	0.00047	0.00048	0.00047
	(!D * RESET_B * !SCE)	-0.00083	-0.00084	-0.00084
	(!D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!D * !RESET_B * !SCE)	-0.00090	-0.00090	-0.00090
	(!CLK_N * D * RESET_B * SCE)	0.00413	0.00403	0.00427
	(!CLK_N * D * RESET_B * SCE)	0.00158	0.00148	0.00173
	(!CLK_N * D * RESET_B * !SCE)	0.00062	0.00056	0.00054
	(!CLK_N * D * RESET_B * !SCE)	-0.00069	-0.00076	-0.00077
	(!CLK_N * D * !RESET_B * SCE)	0.00039	0.00039	0.00038
	(!CLK_N * D * !RESET_B * SCE)	-0.00075	-0.00075	-0.00074
	(!CLK_N * D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(!CLK_N * D * !RESET_B * !SCE)	-0.00086	-0.00086	-0.00086
	(!CLK_N * !D * RESET_B * SCE)	0.00455	0.00445	0.00465
	(!CLK_N * !D * RESET_B * SCE)	0.00193	0.00183	0.00203
	(!CLK_N * !D * !RESET_B * SCE)	0.00039	0.00039	0.00038
	(!CLK_N * !D * !RESET_B * SCE)	-0.00075	-0.00075	-0.00074

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)**	0.00543	0.00532	0.00565
	(CLK_N * D * RESET_B * SCE)	0.00797	0.00786	0.00817
	(CLK_N * D * RESET_B * !SCE)	-0.00052	-0.00054	-0.00054
	(CLK_N * D * RESET_B * !SCE)	0.00077	0.00078	0.00078
	(CLK_N * D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00036
	(CLK_N * D * !RESET_B * SCE)	0.00077	0.00076	0.00075
	(CLK_N * D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(CLK_N * D * !RESET_B * !SCE)	0.00086	0.00088	0.00087
	(CLK_N * !D * RESET_B * SCE)	0.00521	0.00509	0.00546
	(CLK_N * !D * RESET_B * SCE)	0.00781	0.00769	0.00804
	(CLK_N * !D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00036
	(CLK_N * !D * !RESET_B * SCE)	0.00077	0.00076	0.00075
	(!D * RESET_B * !SCE)	-0.00044	-0.00047	-0.00047
	(!D * RESET_B * !SCE)	0.00085	0.00085	0.00084
	(!D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!D * !RESET_B * !SCE)	0.00090	0.00092	0.00091
	(!CLK_N * D * RESET_B * SCE)	0.00140	0.00129	0.00158
	(!CLK_N * D * RESET_B * SCE)	0.00396	0.00385	0.00412
	(!CLK_N * D * RESET_B * !SCE)	-0.00052	-0.00054	-0.00054
	(!CLK_N * D * RESET_B * !SCE)	0.00077	0.00078	0.00078
	(!CLK_N * D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK_N * D * !RESET_B * SCE)	0.00077	0.00076	0.00075
	(!CLK_N * D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(!CLK_N * D * !RESET_B * !SCE)	0.00086	0.00088	0.00087
	(!CLK_N * !D * RESET_B * SCE)	0.00117	0.00106	0.00138
	(!CLK_N * !D * RESET_B * SCE)	0.00379	0.00367	0.00399
	(!CLK_N * !D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK_N * !D * !RESET_B * SCE)	0.00077	0.00076	0.00075

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)	0.00327	0.00301	0.00387
	(CLK_N * D * RESET_B * SCD)	-0.00021	-0.00050	0.00036
	(CLK_N * D * RESET_B * !SCD)	0.00898	0.00882	0.00965
	(CLK_N * D * RESET_B * !SCD)	0.00661	0.00643	0.00723
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00324	0.00303	0.00392
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00011	-0.00033	0.00056
	(CLK_N * !D * RESET_B * SCD)	0.01062	0.01032	0.01149
	(CLK_N * !D * RESET_B * SCD)	0.00612	0.00583	0.00701
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00327	0.00301	0.00387
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00021	-0.00050	0.00036
	(!CLK_N * D * RESET_B * !SCD)	0.00502	0.00482	0.00561
	(!CLK_N * D * RESET_B * !SCD)	0.00266	0.00244	0.00322
	(!CLK_N * !D * RESET_B * SCD)	0.00645	0.00614	0.00740
	(!CLK_N * !D * RESET_B * SCD)	0.00192	0.00161	0.00290

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)	-0.00013	-0.00021	0.00100
	(CLK_N * D * RESET_B * SCD)	0.00337	0.00330	0.00450
	(CLK_N * D * RESET_B * !SCD)	0.00733	0.00722	0.00831
	(CLK_N * D * RESET_B * !SCD)	0.00974	0.00962	0.01071
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00014	-0.00022	0.00095
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00321	0.00313	0.00429
	(CLK_N * !D * RESET_B * SCD)	0.00505	0.00483	0.00640
	(CLK_N * !D * RESET_B * SCD)	0.00954	0.00932	0.01089
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00013	-0.00021	0.00100
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00336	0.00329	0.00450
	(!CLK_N * D * RESET_B * !SCD)	0.00317	0.00302	0.00412
	(!CLK_N * D * RESET_B * !SCD)	0.00556	0.00541	0.00650
	(!CLK_N * !D * RESET_B * SCD)	0.00101	0.00079	0.00235
	(!CLK_N * !D * RESET_B * SCD)	0.00552	0.00530	0.00686

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01071	0.01038	0.01062
	(CLK_N * D * SCD * SCE * !Q)	0.00482	0.00447	0.00471
	(CLK_N * D * SCD * !SCE * !Q)	0.01058	0.01023	0.01051
	(CLK_N * D * SCD * !SCE * !Q)	0.00487	0.00452	0.00480
	(CLK_N * D * !SCD * SCE * !Q)	0.00221	0.00225	0.00223
	(CLK_N * D * !SCD * SCE * !Q)	-0.00221	-0.00223	-0.00221
	(CLK_N * D * !SCD * !SCE * !Q)	0.01032	0.00998	0.01029
	(CLK_N * D * !SCD * !SCE * !Q)	0.00489	0.00452	0.00482
	(CLK_N * !D * SCD * SCE * !Q)	0.01113	0.01081	0.01100
	(CLK_N * !D * SCD * SCE * !Q)	0.00517	0.00483	0.00503
	(CLK_N * !D * SCD * !SCE * !Q)	0.00219	0.00222	0.00220
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00222	-0.00224	-0.00223
	(CLK_N * !D * !SCD * SCE * !Q)	0.00221	0.00225	0.00222
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00221	-0.00223	-0.00221
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00219	0.00223	0.00221
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00222	-0.00225	-0.00223
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00613	0.00599	0.00632
	(!CLK_N * D * SCD * SCE * !Q)	0.00021	0.00003	0.00038
	(!CLK_N * D * SCD * !SCE * !Q)	0.00599	0.00584	0.00622
	(!CLK_N * D * SCD * !SCE * !Q)	0.00026	0.00008	0.00048
	(!CLK_N * D * !SCD * SCE * !Q)	0.00216	0.00219	0.00216
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00227	-0.00229	-0.00227
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00574	0.00560	0.00600
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00027	0.00008	0.00050
	(!CLK_N * !D * SCD * SCE * !Q)	0.00655	0.00641	0.00669
	(!CLK_N * !D * SCD * SCE * !Q)	0.00055	0.00039	0.00069
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00214	0.00216	0.00214
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00228	-0.00230	-0.00229
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00216	0.00219	0.00216
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00227	-0.00229	-0.00228
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00214	0.00217	0.00215
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00229	-0.00231	-0.00229

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00474	0.00434	0.00513
	(CLK_N * D * SCD * SCE * !Q)	0.01064	0.01028	0.01104
	(CLK_N * D * SCD * !SCE * !Q)	0.00420	0.00379	0.00457
	(CLK_N * D * SCD * !SCE * !Q)	0.00990	0.00951	0.01029
	(CLK_N * D * !SCD * SCE * !Q)	-0.00218	-0.00224	-0.00223
	(CLK_N * D * !SCD * SCE * !Q)	0.00223	0.00225	0.00222
	(CLK_N * D * !SCD * !SCE * !Q)	0.00404	0.00364	0.00445
	(CLK_N * D * !SCD * !SCE * !Q)	0.00949	0.00909	0.00993
	(CLK_N * !D * SCD * SCE * !Q)	0.00452	0.00412	0.00495
	(CLK_N * !D * SCD * SCE * !Q)	0.01048	0.01010	0.01094
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00214	-0.00222	-0.00220
	(CLK_N * !D * SCD * !SCE * !Q)	0.00225	0.00226	0.00223
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00218	-0.00224	-0.00222
	(CLK_N * !D * !SCD * SCE * !Q)	0.00223	0.00225	0.00222
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00215	-0.00223	-0.00221
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00226	0.00226	0.00223
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00027	0.00011	0.00105
	(!CLK_N * D * SCD * SCE * !Q)	0.00620	0.00605	0.00699
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00027	-0.00044	0.00050
	(!CLK_N * D * SCD * !SCE * !Q)	0.00546	0.00531	0.00624
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00212	-0.00218	-0.00216
	(!CLK_N * D * !SCD * SCE * !Q)	0.00229	0.00231	0.00228
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00044	-0.00060	0.00037
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00505	0.00491	0.00588
	(!CLK_N * !D * SCD * SCE * !Q)	0.00004	-0.00012	0.00087
	(!CLK_N * !D * SCD * SCE * !Q)	0.00604	0.00590	0.00687
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00208	-0.00216	-0.00214
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00231	0.00232	0.00229
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00212	-0.00218	-0.00216
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00229	0.00231	0.00228
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00209	-0.00217	-0.00215
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00232	0.00233	0.00229

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)**	0.00764	0.00723	0.00809
	(D * RESET_B * SCD * SCE * Q)	0.00515	0.00473	0.00560
	(D * RESET_B * SCD * SCE * !Q)	0.01211	0.01174	0.01269
	(D * RESET_B * SCD * SCE * !Q)	0.00964	0.00927	0.01021
	(D * RESET_B * SCD * !SCE * Q)	0.00764	0.00723	0.00809
	(D * RESET_B * SCD * !SCE * Q)	0.00515	0.00473	0.00560
	(D * RESET_B * SCD * !SCE * !Q)	0.01209	0.01172	0.01266
	(D * RESET_B * SCD * !SCE * !Q)	0.00962	0.00925	0.01020
	(D * RESET_B * !SCD * SCE * Q)	0.01156	0.01105	0.01178
	(D * RESET_B * !SCD * SCE * Q)	0.00906	0.00856	0.00929
	(D * RESET_B * !SCD * !SCE * Q)	0.00764	0.00723	0.00809
	(D * RESET_B * !SCD * !SCE * Q)	0.00515	0.00473	0.00560
	(D * RESET_B * !SCD * !SCE * !Q)	0.01209	0.01172	0.01266
	(D * RESET_B * !SCD * !SCE * !Q)	0.00962	0.00925	0.01020
	(D * !SCD * SCE * !Q)	0.00752	0.00713	0.00797
	(D * !SCD * SCE * !Q)	0.00503	0.00463	0.00548
	(D * !RESET_B * SCD * SCE * !Q)	0.00752	0.00713	0.00797
	(D * !RESET_B * SCD * SCE * !Q)	0.00504	0.00463	0.00548
	(D * !RESET_B * SCD * !SCE * !Q)	0.00752	0.00713	0.00797
	(D * !RESET_B * SCD * !SCE * !Q)	0.00503	0.00463	0.00548
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00752	0.00713	0.00797
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00503	0.00463	0.00548
	(!D * RESET_B * SCD * SCE * Q)	0.00764	0.00723	0.00809
	(!D * RESET_B * SCD * SCE * Q)	0.00515	0.00473	0.00560
	(!D * RESET_B * SCD * SCE * !Q)	0.01215	0.01177	0.01271
	(!D * RESET_B * SCD * SCE * !Q)	0.00966	0.00929	0.01024
	(!D * RESET_B * !SCE * Q)	0.01154	0.01103	0.01177
	(!D * RESET_B * !SCE * Q)	0.00903	0.00852	0.00925
	(!D * RESET_B * !SCD * SCE * Q)	0.01156	0.01105	0.01178
	(!D * RESET_B * !SCD * SCE * Q)	0.00906	0.00856	0.00927
	(!D * !SCE * !Q)	0.00752	0.00713	0.00797
	(!D * !SCE * !Q)	0.00503	0.00463	0.00548
	(!D * !SCD * SCE * !Q)	0.00752	0.00713	0.00797
	(!D * !SCD * SCE * !Q)	0.00503	0.00463	0.00548
	(!D * !RESET_B * SCD * SCE * !Q)	0.00753	0.00713	0.00798
	(!D * !RESET_B * SCD * SCE * !Q)	0.00504	0.00463	0.00548

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)	0.00557	0.00529	0.00648
	(D * RESET_B * SCD * SCE * Q)	0.00806	0.00779	0.00898
	(D * RESET_B * SCD * !SCE * Q)	0.00557	0.00529	0.00648
	(D * RESET_B * SCD * !SCE * Q)	0.00806	0.00779	0.00898
	(D * RESET_B * !SCD * !SCE * Q)	0.00557	0.00529	0.00648
	(D * RESET_B * !SCD * !SCE * Q)	0.00806	0.00779	0.00898
	(D * !SCD * SCE * !Q)	0.00560	0.00532	0.00651
	(D * !SCD * SCE * !Q)	0.00809	0.00781	0.00901
	(D * !RESET_B * SCD * SCE * !Q)	0.00560	0.00532	0.00652
	(D * !RESET_B * SCD * SCE * !Q)	0.00809	0.00782	0.00901
	(D * !RESET_B * SCD * !SCE * !Q)	0.00560	0.00532	0.00651
	(D * !RESET_B * SCD * !SCE * !Q)	0.00809	0.00782	0.00901
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00560	0.00532	0.00652
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00809	0.00782	0.00901
	(!D * RESET_B * SCD * SCE * Q)	0.00557	0.00529	0.00648
	(!D * RESET_B * SCD * SCE * Q)	0.00806	0.00779	0.00898
	(!D * !SCE * !Q)	0.00559	0.00532	0.00651
	(!D * !SCE * !Q)	0.00808	0.00781	0.00901
	(!D * !SCD * SCE * !Q)	0.00560	0.00532	0.00651
	(!D * !SCD * SCE * !Q)	0.00809	0.00781	0.00901
	(!D * !RESET_B * SCD * SCE * !Q)	0.00560	0.00532	0.00652
	(!D * !RESET_B * SCD * SCE * !Q)	0.00809	0.00782	0.00901

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00182	0.00188	0.00402	0.00559	0.00294	0.65494
sky130_fd_sc_hs__sdfrtp_2	0.00176	0.00189	0.00410	0.00569	0.00294	1.30196
sky130_fd_sc_hs__sdfrtp_4	0.00176	0.00186	0.00413	0.00559	0.00293	2.45238

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.21801	0.39226
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.21924	0.38636
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.28638	0.48572

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)	0.34331	1.09908	7.75179
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.36834	1.00038	7.78015
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.42577	0.96968	7.81764

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.34173	0.73709	2.94755
	RESET_B->Q (FF)	0.49215	1.14408	5.82012
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.36005	0.73025	2.98397
	RESET_B->Q (FF)	0.51601	1.14367	5.88946
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.37159	0.71381	2.92826
	RESET_B->Q (FF)	0.52487	1.12617	5.83003

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)	-0.15538	-0.28827	-1.46896
	setup	CLK (R)	0.34514	0.40015	1.66203
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14763	-0.27121	-1.40531
	setup	CLK (R)	0.34873	0.39729	1.60508
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14847	-0.27312	-1.40475
	setup	CLK (R)	0.32987	0.38436	1.56500

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)	-0.11640	-0.26504	-2.31172
	setup	CLK (R)	0.57121	0.62442	3.11423
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11069	-0.26021	-2.30003
	setup	CLK (R)	0.54352	0.59684	3.04288
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12299	-0.27657	-2.39141
	setup	CLK (R)	0.54004	0.59477	3.04150

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)	-0.15538	-0.28827	-1.46896
	hold	CLK (R)	-0.15711	-0.28827	-1.46911
	setup	CLK (R)	0.34514	0.40015	1.65970
	setup	CLK (R)	0.34494	0.40007	1.66203
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15033	-0.27121	-1.40531
	hold	CLK (R)	-0.14763	-0.27521	-1.40624
	setup	CLK (R)	0.34873	0.39718	1.59714
	setup	CLK (R)	0.34807	0.39729	1.60508
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14847	-0.27312	-1.40475
	hold	CLK (R)	-0.14848	-0.27327	-1.40840
	setup	CLK (R)	0.32987	0.38436	1.55614
	setup	CLK (R)	0.32814	0.38362	1.56500

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)	-0.11640	-0.26520	-2.31172
	hold	CLK (R)	-0.11714	-0.26504	-2.31188
	setup	CLK (R)	0.56981	0.62442	3.11423
	setup	CLK (R)	0.57121	0.62442	3.11189
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11069	-0.26023	-2.30003
	hold	CLK (R)	-0.11326	-0.26021	-2.30119
	setup	CLK (R)	0.54352	0.59676	3.04287
	setup	CLK (R)	0.54346	0.59684	3.04288
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12643	-0.27690	-2.39356
	hold	CLK (R)	-0.12299	-0.27657	-2.39141
	setup	CLK (R)	0.53762	0.59469	3.04150
	setup	CLK (R)	0.54004	0.59477	3.03718

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)	-0.18209	-0.30371	-1.68048
	setup	CLK (R)	0.37747	0.41990	1.85388
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.17688	-0.29799	-1.63438
	setup	CLK (R)	0.38178	0.41938	1.80439
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.17648	-0.29574	-1.63836
	setup	CLK (R)	0.35920	0.40553	1.76636

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)	-0.15872	-0.33640	-3.02446
	setup	CLK (R)	0.68117	0.75235	3.63910
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15923	-0.33392	-3.01096
	setup	CLK (R)	0.66361	0.73668	3.58577
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.17430	-0.34839	-3.09143
	setup	CLK (R)	0.65803	0.73157	3.58232

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)	-0.18209	-0.30371	-1.68048
	hold	CLK (R)	-0.19094	-0.31431	-1.69340
	setup	CLK (R)	0.37553	0.41617	1.83997
	setup	CLK (R)	0.37747	0.41990	1.85388
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.17688	-0.29799	-1.63438
	hold	CLK (R)	-0.18349	-0.30196	-1.64825
	setup	CLK (R)	0.37947	0.41904	1.78807
	setup	CLK (R)	0.38178	0.41938	1.80439
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.17648	-0.29574	-1.63836
	hold	CLK (R)	-0.18464	-0.30136	-1.64479
	setup	CLK (R)	0.35816	0.40553	1.76161
	setup	CLK (R)	0.35920	0.40427	1.76636

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)	-0.17207	-0.34813	-3.09394
	hold	CLK (R)	-0.15872	-0.33640	-3.02446
	setup	CLK (R)	0.67443	0.75198	3.63452
	setup	CLK (R)	0.68117	0.75235	3.63910
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.17468	-0.34847	-3.07050
	hold	CLK (R)	-0.15923	-0.33392	-3.01096
	setup	CLK (R)	0.65772	0.73427	3.58012
	setup	CLK (R)	0.66361	0.73668	3.58577
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.18796	-0.36541	-3.14857
	hold	CLK (R)	-0.17430	-0.34839	-3.09143
	setup	CLK (R)	0.65526	0.73049	3.58232
	setup	CLK (R)	0.65803	0.73157	3.57920

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)	-0.15705	-0.24628	-0.48756
	setup	CLK (R)	0.66595	0.64831	1.70733
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15399	-0.23892	-0.44879
	setup	CLK (R)	0.64464	0.62158	1.66276
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15136	-0.25736	-0.47284
	setup	CLK (R)	0.64179	0.61918	1.61525

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)	-0.13472	-0.30362	-2.46333
	setup	CLK (R)	0.58721	0.66221	3.39693
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13010	-0.29900	-2.41924
	setup	CLK (R)	0.56146	0.63738	3.32894
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14397	-0.31481	-2.42189
	setup	CLK (R)	0.55727	0.63144	3.32391

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)	-0.16273	-0.24628	-0.48756
	hold	CLK (R)	-0.15705	-0.28684	-1.51916
	setup	CLK (R)	0.66595	0.64831	0.74106
	setup	CLK (R)	0.34251	0.39852	1.70733
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15967	-0.23892	-0.44879
	hold	CLK (R)	-0.15399	-0.27817	-1.46763
	setup	CLK (R)	0.64464	0.62158	0.70155
	setup	CLK (R)	0.34866	0.40044	1.66276
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.17376	-0.25736	-0.47284
	hold	CLK (R)	-0.15136	-0.28086	-1.47030
	setup	CLK (R)	0.64179	0.61918	0.70257
	setup	CLK (R)	0.32898	0.38760	1.61525

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)	-0.27564	-0.46339	-2.46333
	hold	CLK (R)	-0.13472	-0.30362	-2.78060
	setup	CLK (R)	0.46577	0.57423	2.56927
	setup	CLK (R)	0.58721	0.66221	3.39693
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.26673	-0.44775	-2.41924
	hold	CLK (R)	-0.13010	-0.29900	-2.76773
	setup	CLK (R)	0.46665	0.56623	2.52468
	setup	CLK (R)	0.56146	0.63738	3.32894
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.26470	-0.44721	-2.42189
	hold	CLK (R)	-0.14397	-0.31481	-2.83972
	setup	CLK (R)	0.44351	0.55262	2.49610
	setup	CLK (R)	0.55727	0.63144	3.32391

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)	0.40101	0.42713	1.84608
	removal	CLK (R)	-0.26943	-0.33616	-1.62193
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.40701	0.42611	1.80508
	removal	CLK (R)	-0.26532	-0.32952	-1.57613
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.38494	0.41205	1.78433
	removal	CLK (R)	-0.26429	-0.32709	-1.58128

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)	0.40101	0.42416	1.83514
	recovery	CLK (R)	0.39439	0.41543	1.76524
	recovery	CLK (R)	0.38830	0.40380	1.71810
	recovery	CLK (R)	0.40033	0.42713	1.84608
	removal	CLK (R)	-0.27836	-0.35568	-1.74224
	removal	CLK (R)	-0.27374	-0.34772	-1.66836
	removal	CLK (R)	-0.26943	-0.33616	-1.62193
	removal	CLK (R)	-0.28573	-0.35985	-1.75116
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.40374	0.42551	1.79234
	recovery	CLK (R)	0.39643	0.41492	1.71962
	recovery	CLK (R)	0.39186	0.40356	1.66938
	recovery	CLK (R)	0.40701	0.42611	1.80508
	removal	CLK (R)	-0.27764	-0.35199	-1.70540
	removal	CLK (R)	-0.26915	-0.34105	-1.62754
	removal	CLK (R)	-0.26532	-0.32952	-1.57613
	removal	CLK (R)	-0.28303	-0.35627	-1.71422
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.38494	0.41205	1.78061
	recovery	CLK (R)	0.37666	0.40184	1.70198
	recovery	CLK (R)	0.36910	0.38942	1.65005
	recovery	CLK (R)	0.38313	0.41057	1.78433
	removal	CLK (R)	-0.27827	-0.34958	-1.70855
	removal	CLK (R)	-0.26813	-0.33862	-1.63372
	removal	CLK (R)	-0.26429	-0.32709	-1.58128
	removal	CLK (R)	-0.27937	-0.35430	-1.71661

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 ()	0.26933	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.21035	0.83740	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.27554	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.21346	0.83740	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.27244	0.83740	16.50020
	min_pulse_width	RESET_B ()	0.21346	0.83740	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 ()	0.18241	0.83740	16.50020
	min_pulse_width	CLK ()	0.12654	0.83740	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.20725	0.83740	16.50020
	min_pulse_width	CLK ()	0.12964	0.83740	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.24760	0.83740	16.50020
	min_pulse_width	CLK ()	0.13275	0.83740	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 ()	0.37488	0.83740	16.50020
	min_pulse_width	CLK ()	0.47731	0.83740	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.39660	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.37177	0.83740	16.50020
	min_pulse_width	CLK ()	0.48663	0.83740	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	0.01547	0.01525	0.01601
	CLK	0.01283	0.01261	0.01345
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01742	0.01742	0.01827
	CLK	0.01470	0.01470	0.01569
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02092	0.02122	0.02213
	CLK	0.01826	0.01857	0.01975

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.01604	0.01593	0.01716
	CLK	0.01346	0.01335	0.01452
	RESET_B	0.01323	0.01280	0.01450
	RESET_B	0.01936	0.01889	0.02018
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01763	0.01783	0.01911
	CLK	0.01509	0.01526	0.01644
	RESET_B	0.01509	0.01492	0.01625
	RESET_B	0.02126	0.02105	0.02231
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02174	0.02251	0.02381
	CLK	0.01915	0.01978	0.02102
	RESET_B	0.01922	0.01955	0.02214
	RESET_B	0.02532	0.02561	0.02695

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)**	0.00072	0.00073	0.00072
	(CLK * RESET_B * SCD * SCE)	-0.00037	-0.00038	-0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00365	0.00352	0.00416
	(CLK * RESET_B * SCD * !SCE)	0.00158	0.00145	0.00209
	(CLK * RESET_B * !SCD * !SCE)	0.00365	0.00352	0.00416
	(CLK * RESET_B * !SCD * !SCE)	0.00158	0.00145	0.00209
	(CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(CLK * !SCD * SCE)	-0.00076	-0.00077	-0.00078
	(CLK * !RESET_B * SCD * SCE)	0.00037	0.00038	0.00037
	(CLK * !RESET_B * SCD * SCE)	-0.00077	-0.00079	-0.00078
	(CLK * !RESET_B * SCD * !SCE)	0.00028	0.00028	0.00024
	(CLK * !RESET_B * SCD * !SCE)	-0.00085	-0.00086	-0.00092
	(CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00028	0.00024
	(CLK * !RESET_B * !SCD * !SCE)	-0.00088	-0.00089	-0.00093
	(!CLK * RESET_B * SCD * SCE)	0.00072	0.00073	0.00072
	(!CLK * RESET_B * SCD * SCE)	-0.00037	-0.00038	-0.00037
	(!CLK * RESET_B * SCD * !SCE)	0.00760	0.00748	0.00794
	(!CLK * RESET_B * SCD * !SCE)	0.00542	0.00530	0.00576
	(!CLK * RESET_B * !SCD * !SCE)	0.00760	0.00748	0.00794
	(!CLK * RESET_B * !SCD * !SCE)	0.00542	0.00530	0.00576
	(!CLK * !SCD * SCE)	0.00039	0.00040	0.00038
	(!CLK * !SCD * SCE)	-0.00075	-0.00077	-0.00078
	(!CLK * !RESET_B * SCD * SCE)	0.00037	0.00038	0.00037
	(!CLK * !RESET_B * SCD * SCE)	-0.00077	-0.00079	-0.00078
	(!CLK * !RESET_B * SCD * !SCE)	0.00028	0.00028	0.00024
	(!CLK * !RESET_B * SCD * !SCE)	-0.00085	-0.00086	-0.00092
	(!CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00028	0.00024
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00088	-0.00089	-0.00093

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00069	0.00069	0.00069
	(CLK * RESET_B * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00309	0.00297	0.00366
	(CLK * RESET_B * SCD * !SCE)	0.00112	0.00100	0.00170
	(CLK * RESET_B * !SCD * !SCE)	0.00310	0.00297	0.00367
	(CLK * RESET_B * !SCD * !SCE)	0.00112	0.00100	0.00170
	(CLK * !SCD * SCE)	0.00038	0.00038	0.00037
	(CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00073
	(CLK * !RESET_B * SCD * SCE)	0.00036	0.00036	0.00036
	(CLK * !RESET_B * SCD * SCE)	-0.00072	-0.00074	-0.00074
	(CLK * !RESET_B * SCD * !SCE)	0.00028	0.00027	0.00023
	(CLK * !RESET_B * SCD * !SCE)	-0.00081	-0.00081	-0.00087
	(CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00027	0.00024
	(CLK * !RESET_B * !SCD * !SCE)	-0.00084	-0.00084	-0.00088
	(!CLK * RESET_B * SCD * SCE)	0.00069	0.00069	0.00069
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * RESET_B * SCD * !SCE)	0.00721	0.00709	0.00758
	(!CLK * RESET_B * SCD * !SCE)	0.00513	0.00501	0.00550
	(!CLK * RESET_B * !SCD * !SCE)	0.00721	0.00709	0.00758
	(!CLK * RESET_B * !SCD * !SCE)	0.00513	0.00501	0.00551
	(!CLK * !SCD * SCE)	0.00039	0.00038	0.00037
	(!CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00073
	(!CLK * !RESET_B * SCD * SCE)	0.00036	0.00036	0.00036
	(!CLK * !RESET_B * SCD * SCE)	-0.00072	-0.00074	-0.00074
	(!CLK * !RESET_B * SCD * !SCE)	0.00028	0.00027	0.00023
	(!CLK * !RESET_B * SCD * !SCE)	-0.00081	-0.00081	-0.00087
	(!CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00027	0.00024
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00084	-0.00084	-0.00088

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00069	0.00069	0.00069
	(CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00314	0.00301	0.00370
	(CLK * RESET_B * SCD * !SCE)	0.00114	0.00101	0.00171
	(CLK * RESET_B * !SCD * !SCE)	0.00314	0.00301	0.00370
	(CLK * RESET_B * !SCD * !SCE)	0.00114	0.00101	0.00171
	(CLK * !SCD * SCE)	0.00038	0.00038	0.00037
	(CLK * !SCD * SCE)	-0.00072	-0.00073	-0.00074
	(CLK * !RESET_B * SCD * SCE)	0.00036	0.00036	0.00036
	(CLK * !RESET_B * SCD * SCE)	-0.00073	-0.00074	-0.00074
	(CLK * !RESET_B * SCD * !SCE)	0.00028	0.00028	0.00024
	(CLK * !RESET_B * SCD * !SCE)	-0.00081	-0.00081	-0.00087
	(CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00027	0.00024
	(CLK * !RESET_B * !SCD * !SCE)	-0.00084	-0.00084	-0.00088
	(!CLK * RESET_B * SCD * SCE)	0.00069	0.00069	0.00069
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * RESET_B * SCD * !SCE)	0.00726	0.00714	0.00764
	(!CLK * RESET_B * SCD * !SCE)	0.00515	0.00503	0.00553
	(!CLK * RESET_B * !SCD * !SCE)	0.00726	0.00714	0.00764
	(!CLK * RESET_B * !SCD * !SCE)	0.00515	0.00504	0.00553
	(!CLK * !SCD * SCE)	0.00038	0.00038	0.00037
	(!CLK * !SCD * SCE)	-0.00072	-0.00073	-0.00074
	(!CLK * !RESET_B * SCD * SCE)	0.00036	0.00036	0.00036
	(!CLK * !RESET_B * SCD * SCE)	-0.00073	-0.00074	-0.00074
	(!CLK * !RESET_B * SCD * !SCE)	0.00028	0.00028	0.00024
	(!CLK * !RESET_B * SCD * !SCE)	-0.00081	-0.00081	-0.00087
	(!CLK * !RESET_B * !SCD * !SCE)	0.00027	0.00027	0.00024
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00084	-0.00084	-0.00088

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)**	-0.00068	-0.00069	-0.00072
	(CLK * RESET_B * SCD * SCE)	0.00041	0.00041	0.00039
	(CLK * RESET_B * SCD * !SCE)	0.00047	0.00035	0.00138
	(CLK * RESET_B * SCD * !SCE)	0.00253	0.00242	0.00344
	(CLK * RESET_B * !SCD * !SCE)	0.00047	0.00035	0.00138
	(CLK * RESET_B * !SCD * !SCE)	0.00253	0.00242	0.00344
	(CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(CLK * !SCD * SCE)	0.00078	0.00078	0.00078
	(CLK * !RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !RESET_B * SCD * SCE)	0.00078	0.00079	0.00078
	(CLK * !RESET_B * SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(CLK * !RESET_B * SCD * !SCE)	0.00094	0.00094	0.00094
	(CLK * !RESET_B * !SCD * !SCE)	-0.00023	-0.00023	-0.00023
	(CLK * !RESET_B * !SCD * !SCE)	0.00094	0.00094	0.00094
	(!CLK * RESET_B * SCD * SCE)	-0.00068	-0.00069	-0.00072
	(!CLK * RESET_B * SCD * SCE)	0.00041	0.00041	0.00039
	(!CLK * RESET_B * SCD * !SCE)	0.00410	0.00399	0.00506
	(!CLK * RESET_B * SCD * !SCE)	0.00628	0.00617	0.00724
	(!CLK * RESET_B * !SCD * !SCE)	0.00410	0.00399	0.00506
	(!CLK * RESET_B * !SCD * !SCE)	0.00628	0.00616	0.00724
	(!CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(!CLK * !SCD * SCE)	0.00078	0.00078	0.00078
	(!CLK * !RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !RESET_B * SCD * SCE)	0.00078	0.00079	0.00078
	(!CLK * !RESET_B * SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(!CLK * !RESET_B * SCD * !SCE)	0.00094	0.00094	0.00094
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00023	-0.00023	-0.00023
	(!CLK * !RESET_B * !SCD * !SCE)	0.00094	0.00094	0.00094

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00065	-0.00066	-0.00068
	(CLK * RESET_B * SCD * SCE)	0.00039	0.00038	0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00050	0.00040	0.00145
	(CLK * RESET_B * SCD * !SCE)	0.00247	0.00237	0.00342
	(CLK * RESET_B * !SCD * !SCE)	0.00050	0.00040	0.00145
	(CLK * RESET_B * !SCD * !SCE)	0.00247	0.00237	0.00342
	(CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCD * SCE)	0.00073	0.00074	0.00073
	(CLK * !RESET_B * SCD * SCE)	-0.00036	-0.00036	-0.00035
	(CLK * !RESET_B * SCD * SCE)	0.00074	0.00074	0.00074
	(CLK * !RESET_B * SCD * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !RESET_B * SCD * !SCE)	0.00089	0.00089	0.00089
	(CLK * !RESET_B * !SCD * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !RESET_B * !SCD * !SCE)	0.00089	0.00089	0.00089
	(!CLK * RESET_B * SCD * SCE)	-0.00065	-0.00066	-0.00068
	(!CLK * RESET_B * SCD * SCE)	0.00039	0.00038	0.00037
	(!CLK * RESET_B * SCD * !SCE)	0.00449	0.00438	0.00544
	(!CLK * RESET_B * SCD * !SCE)	0.00656	0.00646	0.00752
	(!CLK * RESET_B * !SCD * !SCE)	0.00449	0.00438	0.00544
	(!CLK * RESET_B * !SCD * !SCE)	0.00657	0.00646	0.00752
	(!CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCD * SCE)	0.00073	0.00074	0.00073
	(!CLK * !RESET_B * SCD * SCE)	-0.00036	-0.00036	-0.00035
	(!CLK * !RESET_B * SCD * SCE)	0.00074	0.00074	0.00074
	(!CLK * !RESET_B * SCD * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !RESET_B * SCD * !SCE)	0.00089	0.00089	0.00089
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !RESET_B * !SCD * !SCE)	0.00089	0.00089	0.00089

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00065	-0.00065	-0.00068
	(CLK * RESET_B * SCD * SCE)	0.00039	0.00038	0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00046	0.00036	0.00141
	(CLK * RESET_B * SCD * !SCE)	0.00246	0.00236	0.00341
	(CLK * RESET_B * !SCD * !SCE)	0.00046	0.00036	0.00141
	(CLK * RESET_B * !SCD * !SCE)	0.00246	0.00236	0.00341
	(CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCD * SCE)	0.00074	0.00074	0.00074
	(CLK * !RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * !RESET_B * SCD * SCE)	0.00075	0.00075	0.00074
	(CLK * !RESET_B * SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(CLK * !RESET_B * SCD * !SCE)	0.00088	0.00089	0.00088
	(CLK * !RESET_B * !SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(CLK * !RESET_B * !SCD * !SCE)	0.00088	0.00089	0.00088
	(!CLK * RESET_B * SCD * SCE)	-0.00065	-0.00065	-0.00068
	(!CLK * RESET_B * SCD * SCE)	0.00039	0.00038	0.00037
	(!CLK * RESET_B * SCD * !SCE)	0.00425	0.00414	0.00522
	(!CLK * RESET_B * SCD * !SCE)	0.00636	0.00625	0.00733
	(!CLK * RESET_B * !SCD * !SCE)	0.00425	0.00414	0.00522
	(!CLK * RESET_B * !SCD * !SCE)	0.00636	0.00625	0.00733
	(!CLK * !SCD * SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !SCD * SCE)	0.00074	0.00075	0.00074
	(!CLK * !RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * !RESET_B * SCD * SCE)	0.00074	0.00075	0.00074
	(!CLK * !RESET_B * SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(!CLK * !RESET_B * SCD * !SCE)	0.00088	0.00088	0.00088
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(!CLK * !RESET_B * !SCD * !SCE)	0.00088	0.00088	0.00088

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)**	0.00444	0.00433	0.00455
	(CLK * D * RESET_B * SCE)	0.00186	0.00174	0.00198
	(CLK * D * RESET_B * !SCE)	0.00067	0.00061	0.00060
	(CLK * D * RESET_B * !SCE)	-0.00065	-0.00072	-0.00073
	(CLK * D * !RESET_B * SCE)	0.00036	0.00037	0.00035
	(CLK * D * !RESET_B * SCE)	-0.00079	-0.00079	-0.00078
	(CLK * D * !RESET_B * !SCE)	0.00026	0.00026	0.00026
	(CLK * D * !RESET_B * !SCE)	-0.00087	-0.00087	-0.00087
	(CLK * !D * RESET_B * SCE)	0.00486	0.00476	0.00494
	(CLK * !D * RESET_B * SCE)	0.00222	0.00211	0.00230
	(CLK * !D * !RESET_B * SCE)	0.00036	0.00037	0.00035
	(CLK * !D * !RESET_B * SCE)	-0.00079	-0.00079	-0.00078
	(!D * RESET_B * !SCE)	0.00048	0.00048	0.00048
	(!D * RESET_B * !SCE)	-0.00085	-0.00085	-0.00085
	(!D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(!D * !RESET_B * !SCE)	-0.00090	-0.00091	-0.00091
	(!CLK * D * RESET_B * SCE)	0.00838	0.00828	0.00846
	(!CLK * D * RESET_B * SCE)	0.00569	0.00559	0.00577
	(!CLK * D * RESET_B * !SCE)	0.00068	0.00061	0.00060
	(!CLK * D * RESET_B * !SCE)	-0.00065	-0.00072	-0.00073
	(!CLK * D * !RESET_B * SCE)	0.00036	0.00037	0.00035
	(!CLK * D * !RESET_B * SCE)	-0.00079	-0.00079	-0.00078
	(!CLK * D * !RESET_B * !SCE)	0.00026	0.00026	0.00026
	(!CLK * D * !RESET_B * !SCE)	-0.00087	-0.00087	-0.00087
	(!CLK * !D * RESET_B * SCE)	0.00881	0.00872	0.00885
	(!CLK * !D * RESET_B * SCE)	0.00605	0.00596	0.00610
	(!CLK * !D * !RESET_B * SCE)	0.00036	0.00037	0.00035
	(!CLK * !D * !RESET_B * SCE)	-0.00079	-0.00079	-0.00078

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00400	0.00388	0.00412
	(CLK * D * RESET_B * SCE)	0.00146	0.00134	0.00158
	(CLK * D * RESET_B * !SCE)	0.00068	0.00062	0.00061
	(CLK * D * RESET_B * !SCE)	-0.00065	-0.00071	-0.00071
	(CLK * D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(CLK * D * !RESET_B * SCE)	-0.00081	-0.00081	-0.00080
	(CLK * D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(CLK * D * !RESET_B * !SCE)	-0.00087	-0.00088	-0.00088
	(CLK * !D * RESET_B * SCE)	0.00443	0.00431	0.00450
	(CLK * !D * RESET_B * SCE)	0.00182	0.00170	0.00190
	(CLK * !D * !RESET_B * SCE)	0.00034	0.00035	0.00033
	(CLK * !D * !RESET_B * SCE)	-0.00081	-0.00081	-0.00080
	(!D * RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!D * RESET_B * !SCE)	-0.00085	-0.00086	-0.00085
	(!D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!D * !RESET_B * !SCE)	-0.00090	-0.00092	-0.00091
	(!CLK * D * RESET_B * SCE)	0.00810	0.00800	0.00816
	(!CLK * D * RESET_B * SCE)	0.00546	0.00535	0.00552
	(!CLK * D * RESET_B * !SCE)	0.00068	0.00062	0.00061
	(!CLK * D * RESET_B * !SCE)	-0.00065	-0.00071	-0.00071
	(!CLK * D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(!CLK * D * !RESET_B * SCE)	-0.00081	-0.00081	-0.00080
	(!CLK * D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(!CLK * D * !RESET_B * !SCE)	-0.00087	-0.00088	-0.00088
	(!CLK * !D * RESET_B * SCE)	0.00853	0.00843	0.00855
	(!CLK * !D * RESET_B * SCE)	0.00582	0.00572	0.00585
	(!CLK * !D * !RESET_B * SCE)	0.00034	0.00035	0.00033
	(!CLK * !D * !RESET_B * SCE)	-0.00081	-0.00081	-0.00080

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00402	0.00389	0.00414
	(CLK * D * RESET_B * SCE)	0.00147	0.00135	0.00160
	(CLK * D * RESET_B * !SCE)	0.00066	0.00060	0.00059
	(CLK * D * RESET_B * !SCE)	-0.00064	-0.00071	-0.00071
	(CLK * D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(CLK * D * !RESET_B * SCE)	-0.00079	-0.00080	-0.00078
	(CLK * D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(CLK * D * !RESET_B * !SCE)	-0.00085	-0.00086	-0.00086
	(CLK * !D * RESET_B * SCE)	0.00444	0.00433	0.00452
	(CLK * !D * RESET_B * SCE)	0.00183	0.00171	0.00191
	(CLK * !D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(CLK * !D * !RESET_B * SCE)	-0.00079	-0.00080	-0.00078
	(!D * RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!D * RESET_B * !SCE)	-0.00083	-0.00084	-0.00084
	(!D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!D * !RESET_B * !SCE)	-0.00088	-0.00090	-0.00089
	(!CLK * D * RESET_B * SCE)	0.00813	0.00803	0.00820
	(!CLK * D * RESET_B * SCE)	0.00548	0.00537	0.00554
	(!CLK * D * RESET_B * !SCE)	0.00066	0.00060	0.00059
	(!CLK * D * RESET_B * !SCE)	-0.00064	-0.00071	-0.00071
	(!CLK * D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(!CLK * D * !RESET_B * SCE)	-0.00079	-0.00079	-0.00078
	(!CLK * D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(!CLK * D * !RESET_B * !SCE)	-0.00085	-0.00086	-0.00086
	(!CLK * !D * RESET_B * SCE)	0.00856	0.00846	0.00859
	(!CLK * !D * RESET_B * SCE)	0.00583	0.00573	0.00588
	(!CLK * !D * !RESET_B * SCE)	0.00034	0.00034	0.00033
	(!CLK * !D * !RESET_B * SCE)	-0.00079	-0.00079	-0.00078

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)	0.00123	0.00109	0.00138
	(CLK * D * RESET_B * SCE)	0.00381	0.00368	0.00394
	(CLK * D * RESET_B * !SCE)	-0.00058	-0.00060	-0.00060
	(CLK * D * RESET_B * !SCE)	0.00073	0.00074	0.00074
	(CLK * D * !RESET_B * SCE)	-0.00033	-0.00033	-0.00033
	(CLK * D * !RESET_B * SCE)	0.00080	0.00081	0.00079
	(CLK * D * !RESET_B * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * D * !RESET_B * !SCE)	0.00087	0.00089	0.00087
	(CLK * !D * RESET_B * SCE)	0.00099	0.00085	0.00117
	(CLK * !D * RESET_B * SCE)	0.00363	0.00349	0.00381
	(CLK * !D * !RESET_B * SCE)	-0.00033	-0.00033	-0.00033
	(CLK * !D * !RESET_B * SCE)	0.00080	0.00081	0.00079
	(!D * RESET_B * !SCE)	-0.00045	-0.00048	-0.00048
	(!D * RESET_B * !SCE)	0.00086	0.00086	0.00085
	(!D * !RESET_B * !SCE)	-0.00029	-0.00029	-0.00029
	(!D * !RESET_B * !SCE)	0.00091	0.00092	0.00092
	(!CLK * D * RESET_B * SCE)	0.00485	0.00472	0.00507
	(!CLK * D * RESET_B * SCE)	0.00755	0.00742	0.00775
	(!CLK * D * RESET_B * !SCE)	-0.00058	-0.00060	-0.00060
	(!CLK * D * RESET_B * !SCE)	0.00074	0.00074	0.00074
	(!CLK * D * !RESET_B * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * D * !RESET_B * SCE)	0.00080	0.00081	0.00079
	(!CLK * D * !RESET_B * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * D * !RESET_B * !SCE)	0.00087	0.00089	0.00087
	(!CLK * !D * RESET_B * SCE)	0.00461	0.00448	0.00486
	(!CLK * !D * RESET_B * SCE)	0.00737	0.00724	0.00761
	(!CLK * !D * !RESET_B * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !D * !RESET_B * SCE)	0.00080	0.00081	0.00079

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00122	0.00108	0.00137
	(CLK * D * RESET_B * SCE)	0.00377	0.00363	0.00389
	(CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00061
	(CLK * D * RESET_B * !SCE)	0.00072	0.00073	0.00072
	(CLK * D * !RESET_B * SCE)	-0.00031	-0.00031	-0.00031
	(CLK * D * !RESET_B * SCE)	0.00082	0.00083	0.00081
	(CLK * D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(CLK * D * !RESET_B * !SCE)	0.00087	0.00088	0.00088
	(CLK * !D * RESET_B * SCE)	0.00097	0.00084	0.00116
	(CLK * !D * RESET_B * SCE)	0.00359	0.00344	0.00376
	(CLK * !D * !RESET_B * SCE)	-0.00031	-0.00031	-0.00031
	(CLK * !D * !RESET_B * SCE)	0.00082	0.00083	0.00081
	(!D * RESET_B * !SCE)	-0.00044	-0.00047	-0.00047
	(!D * RESET_B * !SCE)	0.00087	0.00086	0.00086
	(!D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!D * !RESET_B * !SCE)	0.00092	0.00093	0.00092
	(!CLK * D * RESET_B * SCE)	0.00519	0.00505	0.00539
	(!CLK * D * RESET_B * SCE)	0.00785	0.00771	0.00802
	(!CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00061
	(!CLK * D * RESET_B * !SCE)	0.00072	0.00073	0.00072
	(!CLK * D * !RESET_B * SCE)	-0.00031	-0.00031	-0.00031
	(!CLK * D * !RESET_B * SCE)	0.00082	0.00083	0.00081
	(!CLK * D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(!CLK * D * !RESET_B * !SCE)	0.00087	0.00088	0.00088
	(!CLK * !D * RESET_B * SCE)	0.00495	0.00482	0.00518
	(!CLK * !D * RESET_B * SCE)	0.00767	0.00753	0.00788
	(!CLK * !D * !RESET_B * SCE)	-0.00031	-0.00031	-0.00031
	(!CLK * !D * !RESET_B * SCE)	0.00082	0.00082	0.00081

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00123	0.00110	0.00138
	(CLK * D * RESET_B * SCE)	0.00379	0.00365	0.00392
	(CLK * D * RESET_B * !SCE)	-0.00057	-0.00059	-0.00059
	(CLK * D * RESET_B * !SCE)	0.00072	0.00073	0.00072
	(CLK * D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(CLK * D * !RESET_B * SCE)	0.00081	0.00081	0.00079
	(CLK * D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(CLK * D * !RESET_B * !SCE)	0.00086	0.00086	0.00086
	(CLK * !D * RESET_B * SCE)	0.00095	0.00082	0.00115
	(CLK * !D * RESET_B * SCE)	0.00357	0.00343	0.00375
	(CLK * !D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(CLK * !D * !RESET_B * SCE)	0.00081	0.00081	0.00079
	(!D * RESET_B * !SCE)	-0.00044	-0.00047	-0.00047
	(!D * RESET_B * !SCE)	0.00085	0.00085	0.00084
	(!D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!D * !RESET_B * !SCE)	0.00090	0.00092	0.00091
	(!CLK * D * RESET_B * SCE)	0.00500	0.00487	0.00520
	(!CLK * D * RESET_B * SCE)	0.00767	0.00754	0.00785
	(!CLK * D * RESET_B * !SCE)	-0.00057	-0.00059	-0.00059
	(!CLK * D * RESET_B * !SCE)	0.00072	0.00073	0.00073
	(!CLK * D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(!CLK * D * !RESET_B * SCE)	0.00081	0.00081	0.00079
	(!CLK * D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(!CLK * D * !RESET_B * !SCE)	0.00086	0.00087	0.00086
	(!CLK * !D * RESET_B * SCE)	0.00473	0.00460	0.00497
	(!CLK * !D * RESET_B * SCE)	0.00746	0.00733	0.00769
	(!CLK * !D * !RESET_B * SCE)	-0.00030	-0.00031	-0.00031
	(!CLK * !D * !RESET_B * SCE)	0.00081	0.00081	0.00079

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)	0.00325	0.00299	0.00384
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00021	-0.00049	0.00037
	(CLK * D * RESET_B * !SCD)	0.00483	0.00462	0.00541
	(CLK * D * RESET_B * !SCD)	0.00253	0.00229	0.00307
	(CLK * !D * RESET_B * SCD)	0.00671	0.00640	0.00767
	(CLK * !D * RESET_B * SCD)	0.00223	0.00192	0.00320
	(!CLK * D * RESET_B * SCD)	0.00326	0.00298	0.00384
	(!CLK * D * RESET_B * SCD)	-0.00021	-0.00049	0.00037
	(!CLK * D * RESET_B * !SCD)	0.00839	0.00821	0.00904
	(!CLK * D * RESET_B * !SCD)	0.00620	0.00600	0.00681
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00325	0.00305	0.00393
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00005	-0.00027	0.00062
	(!CLK * !D * RESET_B * SCD)	0.01066	0.01035	0.01154
	(!CLK * !D * RESET_B * SCD)	0.00606	0.00576	0.00696

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00327	0.00301	0.00387
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00023	-0.00051	0.00036
	(CLK * D * RESET_B * !SCD)	0.00478	0.00456	0.00539
	(CLK * D * RESET_B * !SCD)	0.00240	0.00216	0.00296
	(CLK * !D * RESET_B * SCD)	0.00626	0.00596	0.00725
	(CLK * !D * RESET_B * SCD)	0.00177	0.00146	0.00277
	(!CLK * D * RESET_B * SCD)	0.00327	0.00300	0.00387
	(!CLK * D * RESET_B * SCD)	-0.00023	-0.00051	0.00036
	(!CLK * D * RESET_B * !SCD)	0.00869	0.00851	0.00933
	(!CLK * D * RESET_B * !SCD)	0.00642	0.00622	0.00702
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00322	0.00302	0.00391
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00012	-0.00034	0.00055
	(!CLK * !D * RESET_B * SCD)	0.01036	0.01007	0.01126
	(!CLK * !D * RESET_B * SCD)	0.00577	0.00547	0.00668

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00328	0.00302	0.00388
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00023	-0.00051	0.00036
	(CLK * D * RESET_B * !SCD)	0.00479	0.00458	0.00540
	(CLK * D * RESET_B * !SCD)	0.00242	0.00219	0.00299
	(CLK * !D * RESET_B * SCD)	0.00629	0.00600	0.00728
	(CLK * !D * RESET_B * SCD)	0.00178	0.00147	0.00278
	(!CLK * D * RESET_B * SCD)	0.00328	0.00301	0.00388
	(!CLK * D * RESET_B * SCD)	-0.00023	-0.00051	0.00036
	(!CLK * D * RESET_B * !SCD)	0.00849	0.00832	0.00916
	(!CLK * D * RESET_B * !SCD)	0.00624	0.00605	0.00688
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00322	0.00303	0.00390
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00013	-0.00033	0.00055
	(!CLK * !D * RESET_B * SCD)	0.01041	0.01012	0.01131
	(!CLK * !D * RESET_B * SCD)	0.00579	0.00548	0.00670

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)**	-0.00011	-0.00019	0.00102
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00335	0.00327	0.00448
	(CLK * D * RESET_B * !SCD)	0.00348	0.00332	0.00442
	(CLK * D * RESET_B * !SCD)	0.00582	0.00565	0.00674
	(CLK * !D * RESET_B * SCD)	0.00077	0.00055	0.00212
	(CLK * !D * RESET_B * SCD)	0.00525	0.00503	0.00660
	(!CLK * D * RESET_B * SCD)	-0.00010	-0.00019	0.00102
	(!CLK * D * RESET_B * SCD)	0.00336	0.00328	0.00448
	(!CLK * D * RESET_B * !SCD)	0.00742	0.00729	0.00839
	(!CLK * D * RESET_B * !SCD)	0.00965	0.00950	0.01060
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00015	-0.00024	0.00094
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00316	0.00307	0.00423
	(!CLK * !D * RESET_B * SCD)	0.00440	0.00418	0.00577
	(!CLK * !D * RESET_B * SCD)	0.00900	0.00878	0.01037

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00018	-0.00026	0.00096
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00333	0.00325	0.00446
	(CLK * D * RESET_B * !SCD)	0.00289	0.00273	0.00385
	(CLK * D * RESET_B * !SCD)	0.00531	0.00513	0.00625
	(CLK * !D * RESET_B * SCD)	0.00077	0.00055	0.00214
	(CLK * !D * RESET_B * SCD)	0.00525	0.00504	0.00663
	(!CLK * D * RESET_B * SCD)	-0.00018	-0.00025	0.00096
	(!CLK * D * RESET_B * SCD)	0.00333	0.00324	0.00446
	(!CLK * D * RESET_B * !SCD)	0.00698	0.00687	0.00797
	(!CLK * D * RESET_B * !SCD)	0.00930	0.00916	0.01027
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00018	-0.00027	0.00092
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00318	0.00309	0.00425
	(!CLK * !D * RESET_B * SCD)	0.00475	0.00453	0.00611
	(!CLK * !D * RESET_B * SCD)	0.00935	0.00913	0.01071

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00020	-0.00028	0.00094
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00332	0.00324	0.00445
	(CLK * D * RESET_B * !SCD)	0.00291	0.00275	0.00387
	(CLK * D * RESET_B * !SCD)	0.00531	0.00514	0.00624
	(CLK * !D * RESET_B * SCD)	0.00073	0.00051	0.00211
	(CLK * !D * RESET_B * SCD)	0.00525	0.00503	0.00662
	(!CLK * D * RESET_B * SCD)	-0.00019	-0.00027	0.00094
	(!CLK * D * RESET_B * SCD)	0.00331	0.00323	0.00445
	(!CLK * D * RESET_B * !SCD)	0.00701	0.00690	0.00801
	(!CLK * D * RESET_B * !SCD)	0.00930	0.00917	0.01028
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00018	-0.00027	0.00092
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00318	0.00309	0.00426
	(!CLK * !D * RESET_B * SCD)	0.00451	0.00429	0.00589
	(!CLK * !D * RESET_B * SCD)	0.00915	0.00892	0.01051

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)**	0.00614	0.00600	0.00633
	(CLK * D * SCD * SCE * !Q)	0.00028	0.00011	0.00045
	(CLK * D * SCD * !SCE * !Q)	0.00601	0.00586	0.00623
	(CLK * D * SCD * !SCE * !Q)	0.00033	0.00016	0.00055
	(CLK * D * !SCD * SCE * !Q)	0.00189	0.00189	0.00190
	(CLK * D * !SCD * SCE * !Q)	-0.00246	-0.00246	-0.00246
	(CLK * D * !SCD * !SCE * !Q)	0.00577	0.00562	0.00601
	(CLK * D * !SCD * !SCE * !Q)	0.00034	0.00016	0.00057
	(CLK * !D * SCD * SCE * !Q)	0.00657	0.00643	0.00671
	(CLK * !D * SCD * SCE * !Q)	0.00063	0.00048	0.00077
	(CLK * !D * SCD * !SCE * !Q)	0.00187	0.00189	0.00187
	(CLK * !D * SCD * !SCE * !Q)	-0.00248	-0.00249	-0.00248
	(CLK * !D * !SCD * SCE * !Q)	0.00189	0.00189	0.00190
	(CLK * !D * !SCD * SCE * !Q)	-0.00246	-0.00246	-0.00246
	(CLK * !D * !SCD * !SCE * !Q)	0.00188	0.00190	0.00188
	(CLK * !D * !SCD * !SCE * !Q)	-0.00248	-0.00250	-0.00248
	(!CLK * D * SCD * SCE * !Q)	0.01047	0.01014	0.01039
	(!CLK * D * SCD * SCE * !Q)	0.00451	0.00416	0.00442
	(!CLK * D * SCD * !SCE * !Q)	0.01035	0.01000	0.01029
	(!CLK * D * SCD * !SCE * !Q)	0.00457	0.00422	0.00450
	(!CLK * D * !SCD * SCE * !Q)	0.00190	0.00190	0.00191
	(!CLK * D * !SCD * SCE * !Q)	-0.00245	-0.00244	-0.00245
	(!CLK * D * !SCD * !SCE * !Q)	0.01011	0.00975	0.01008
	(!CLK * D * !SCD * !SCE * !Q)	0.00457	0.00422	0.00453
	(!CLK * !D * SCD * SCE * !Q)	0.01090	0.01059	0.01078
	(!CLK * !D * SCD * SCE * !Q)	0.00487	0.00454	0.00474
	(!CLK * !D * SCD * !SCE * !Q)	0.00188	0.00187	0.00189
	(!CLK * !D * SCD * !SCE * !Q)	-0.00246	-0.00246	-0.00247
	(!CLK * !D * !SCD * SCE * !Q)	0.00190	0.00193	0.00191
	(!CLK * !D * !SCD * SCE * !Q)	-0.00245	-0.00247	-0.00245
	(!CLK * !D * !SCD * !SCE * !Q)	0.00189	0.00191	0.00189
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00247	-0.00248	-0.00247

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00570	0.00555	0.00591
	(CLK * D * SCD * SCE * !Q)	-0.00016	-0.00032	0.00005
	(CLK * D * SCD * !SCE * !Q)	0.00547	0.00531	0.00574
	(CLK * D * SCD * !SCE * !Q)	-0.00017	-0.00035	0.00007
	(CLK * D * !SCD * SCE * !Q)	0.00190	0.00192	0.00190
	(CLK * D * !SCD * SCE * !Q)	-0.00248	-0.00249	-0.00248
	(CLK * D * !SCD * !SCE * !Q)	0.00523	0.00508	0.00552
	(CLK * D * !SCD * !SCE * !Q)	-0.00017	-0.00035	0.00010
	(CLK * !D * SCD * SCE * !Q)	0.00613	0.00599	0.00629
	(CLK * !D * SCD * SCE * !Q)	0.00020	0.00005	0.00036
	(CLK * !D * SCD * !SCE * !Q)	0.00187	0.00187	0.00188
	(CLK * !D * SCD * !SCE * !Q)	-0.00249	-0.00248	-0.00249
	(CLK * !D * !SCD * SCE * !Q)	0.00189	0.00190	0.00190
	(CLK * !D * !SCD * SCE * !Q)	-0.00248	-0.00248	-0.00248
	(CLK * !D * !SCD * !SCE * !Q)	0.00188	0.00190	0.00188
	(CLK * !D * !SCD * !SCE * !Q)	-0.00250	-0.00251	-0.00250
	(!CLK * D * SCD * SCE * !Q)	0.01021	0.00988	0.01015
	(!CLK * D * SCD * SCE * !Q)	0.00428	0.00393	0.00420
	(!CLK * D * SCD * !SCE * !Q)	0.01000	0.00964	0.00996
	(!CLK * D * SCD * !SCE * !Q)	0.00425	0.00389	0.00421
	(!CLK * D * !SCD * SCE * !Q)	0.00189	0.00192	0.00190
	(!CLK * D * !SCD * SCE * !Q)	-0.00248	-0.00250	-0.00248
	(!CLK * D * !SCD * !SCE * !Q)	0.00976	0.00939	0.00974
	(!CLK * D * !SCD * !SCE * !Q)	0.00425	0.00390	0.00423
	(!CLK * !D * SCD * SCE * !Q)	0.01064	0.01033	0.01054
	(!CLK * !D * SCD * SCE * !Q)	0.00464	0.00430	0.00452
	(!CLK * !D * SCD * !SCE * !Q)	0.00187	0.00189	0.00187
	(!CLK * !D * SCD * !SCE * !Q)	-0.00249	-0.00251	-0.00250
	(!CLK * !D * !SCD * SCE * !Q)	0.00189	0.00189	0.00189
	(!CLK * !D * !SCD * SCE * !Q)	-0.00248	-0.00248	-0.00248
	(!CLK * !D * !SCD * !SCE * !Q)	0.00187	0.00190	0.00188
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00250	-0.00251	-0.00250

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00572	0.00558	0.00593
	(CLK * D * SCD * SCE * !Q)	-0.00012	-0.00029	0.00008
	(CLK * D * SCD * !SCE * !Q)	0.00550	0.00533	0.00574
	(CLK * D * SCD * !SCE * !Q)	-0.00014	-0.00032	0.00011
	(CLK * D * !SCD * SCE * !Q)	0.00187	0.00189	0.00187
	(CLK * D * !SCD * SCE * !Q)	-0.00246	-0.00248	-0.00246
	(CLK * D * !SCD * !SCE * !Q)	0.00526	0.00510	0.00553
	(CLK * D * !SCD * !SCE * !Q)	-0.00014	-0.00032	0.00013
	(CLK * !D * SCD * SCE * !Q)	0.00615	0.00601	0.00631
	(CLK * !D * SCD * SCE * !Q)	0.00024	0.00008	0.00040
	(CLK * !D * SCD * !SCE * !Q)	0.00185	0.00187	0.00185
	(CLK * !D * SCD * !SCE * !Q)	-0.00247	-0.00249	-0.00248
	(CLK * !D * !SCD * SCE * !Q)	0.00187	0.00189	0.00187
	(CLK * !D * !SCD * SCE * !Q)	-0.00246	-0.00248	-0.00246
	(CLK * !D * !SCD * !SCE * !Q)	0.00185	0.00188	0.00186
	(CLK * !D * !SCD * !SCE * !Q)	-0.00248	-0.00249	-0.00248
	(!CLK * D * SCD * SCE * !Q)	0.01019	0.00986	0.01014
	(!CLK * D * SCD * SCE * !Q)	0.00427	0.00392	0.00420
	(!CLK * D * SCD * !SCE * !Q)	0.00998	0.00963	0.00993
	(!CLK * D * SCD * !SCE * !Q)	0.00424	0.00388	0.00419
	(!CLK * D * !SCD * SCE * !Q)	0.00186	0.00186	0.00186
	(!CLK * D * !SCD * SCE * !Q)	-0.00247	-0.00247	-0.00247
	(!CLK * D * !SCD * !SCE * !Q)	0.00974	0.00939	0.00972
	(!CLK * D * !SCD * !SCE * !Q)	0.00424	0.00388	0.00423
	(!CLK * !D * SCD * SCE * !Q)	0.01062	0.01030	0.01053
	(!CLK * !D * SCD * SCE * !Q)	0.00463	0.00429	0.00452
	(!CLK * !D * SCD * !SCE * !Q)	0.00184	0.00184	0.00184
	(!CLK * !D * SCD * !SCE * !Q)	-0.00248	-0.00249	-0.00248
	(!CLK * !D * !SCD * SCE * !Q)	0.00186	0.00188	0.00186
	(!CLK * !D * !SCD * SCE * !Q)	-0.00247	-0.00249	-0.00247
	(!CLK * !D * !SCD * !SCE * !Q)	0.00184	0.00187	0.00185
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00249	-0.00250	-0.00249

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)**	0.00042	0.00027	0.00120
	(CLK * D * SCD * SCE * !Q)	0.00630	0.00616	0.00708
	(CLK * D * SCD * !SCE * !Q)	-0.00013	-0.00029	0.00064
	(CLK * D * SCD * !SCE * !Q)	0.00555	0.00540	0.00632
	(CLK * D * !SCD * SCE * !Q)	-0.00187	-0.00189	-0.00190
	(CLK * D * !SCD * SCE * !Q)	0.00250	0.00248	0.00247
	(CLK * D * !SCD * !SCE * !Q)	-0.00030	-0.00045	0.00051
	(CLK * D * !SCD * !SCE * !Q)	0.00513	0.00500	0.00596
	(CLK * !D * SCD * SCE * !Q)	0.00018	0.00003	0.00101
	(CLK * !D * SCD * SCE * !Q)	0.00612	0.00598	0.00695
	(CLK * !D * SCD * !SCE * !Q)	-0.00183	-0.00188	-0.00187
	(CLK * !D * SCD * !SCE * !Q)	0.00252	0.00249	0.00248
	(CLK * !D * !SCD * SCE * !Q)	-0.00187	-0.00189	-0.00190
	(CLK * !D * !SCD * SCE * !Q)	0.00250	0.00248	0.00247
	(CLK * !D * !SCD * !SCE * !Q)	-0.00184	-0.00189	-0.00188
	(CLK * !D * !SCD * !SCE * !Q)	0.00253	0.00250	0.00248
	(!CLK * D * SCD * SCE * !Q)	0.00448	0.00407	0.00490
	(!CLK * D * SCD * SCE * !Q)	0.01046	0.01006	0.01089
	(!CLK * D * SCD * !SCE * !Q)	0.00393	0.00354	0.00433
	(!CLK * D * SCD * !SCE * !Q)	0.00971	0.00933	0.01011
	(!CLK * D * !SCD * SCE * !Q)	-0.00188	-0.00190	-0.00191
	(!CLK * D * !SCD * SCE * !Q)	0.00249	0.00247	0.00246
	(!CLK * D * !SCD * !SCE * !Q)	0.00377	0.00338	0.00419
	(!CLK * D * !SCD * !SCE * !Q)	0.00930	0.00893	0.00975
	(!CLK * !D * SCD * SCE * !Q)	0.00424	0.00385	0.00471
	(!CLK * !D * SCD * SCE * !Q)	0.01029	0.00991	0.01076
	(!CLK * !D * SCD * !SCE * !Q)	-0.00184	-0.00187	-0.00189
	(!CLK * !D * SCD * !SCE * !Q)	0.00251	0.00248	0.00247
	(!CLK * !D * !SCD * SCE * !Q)	-0.00188	-0.00191	-0.00191
	(!CLK * !D * !SCD * SCE * !Q)	0.00249	0.00247	0.00246
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00185	-0.00190	-0.00189
	(!CLK * !D * !SCD * !SCE * !Q)	0.00251	0.00248	0.00247

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00036	0.00021	0.00117
	(CLK * D * SCD * SCE * !Q)	0.00622	0.00609	0.00702
	(CLK * D * SCD * !SCE * !Q)	-0.00014	-0.00030	0.00066
	(CLK * D * SCD * !SCE * !Q)	0.00552	0.00539	0.00632
	(CLK * D * !SCD * SCE * !Q)	-0.00187	-0.00191	-0.00190
	(CLK * D * !SCD * SCE * !Q)	0.00252	0.00250	0.00249
	(CLK * D * !SCD * !SCE * !Q)	-0.00031	-0.00045	0.00053
	(CLK * D * !SCD * !SCE * !Q)	0.00510	0.00497	0.00595
	(CLK * !D * SCD * SCE * !Q)	0.00011	-0.00003	0.00098
	(CLK * !D * SCD * SCE * !Q)	0.00604	0.00591	0.00690
	(CLK * !D * SCD * !SCE * !Q)	-0.00183	-0.00187	-0.00188
	(CLK * !D * SCD * !SCE * !Q)	0.00254	0.00250	0.00249
	(CLK * !D * !SCD * SCE * !Q)	-0.00187	-0.00190	-0.00190
	(CLK * !D * !SCD * SCE * !Q)	0.00252	0.00250	0.00249
	(CLK * !D * !SCD * !SCE * !Q)	-0.00184	-0.00189	-0.00188
	(CLK * !D * !SCD * !SCE * !Q)	0.00254	0.00251	0.00250
	(!CLK * D * SCD * SCE * !Q)	0.00477	0.00438	0.00517
	(!CLK * D * SCD * SCE * !Q)	0.01073	0.01035	0.01114
	(!CLK * D * SCD * !SCE * !Q)	0.00428	0.00387	0.00465
	(!CLK * D * SCD * !SCE * !Q)	0.01004	0.00964	0.01041
	(!CLK * D * !SCD * SCE * !Q)	-0.00187	-0.00191	-0.00190
	(!CLK * D * !SCD * SCE * !Q)	0.00252	0.00251	0.00249
	(!CLK * D * !SCD * !SCE * !Q)	0.00412	0.00371	0.00453
	(!CLK * D * !SCD * !SCE * !Q)	0.00963	0.00922	0.01005
	(!CLK * !D * SCD * SCE * !Q)	0.00454	0.00413	0.00498
	(!CLK * !D * SCD * SCE * !Q)	0.01056	0.01015	0.01102
	(!CLK * !D * SCD * !SCE * !Q)	-0.00183	-0.00188	-0.00187
	(!CLK * !D * SCD * !SCE * !Q)	0.00254	0.00251	0.00250
	(!CLK * !D * !SCD * SCE * !Q)	-0.00187	-0.00189	-0.00189
	(!CLK * !D * !SCD * SCE * !Q)	0.00252	0.00251	0.00249
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00184	-0.00189	-0.00188
	(!CLK * !D * !SCD * !SCE * !Q)	0.00255	0.00251	0.00250

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00037	0.00021	0.00117
	(CLK * D * SCD * SCE * !Q)	0.00621	0.00607	0.00701
	(CLK * D * SCD * !SCE * !Q)	-0.00013	-0.00030	0.00066
	(CLK * D * SCD * !SCE * !Q)	0.00551	0.00537	0.00631
	(CLK * D * !SCD * SCE * !Q)	-0.00184	-0.00187	-0.00187
	(CLK * D * !SCD * SCE * !Q)	0.00250	0.00248	0.00247
	(CLK * D * !SCD * !SCE * !Q)	-0.00030	-0.00045	0.00054
	(CLK * D * !SCD * !SCE * !Q)	0.00510	0.00495	0.00594
	(CLK * !D * SCD * SCE * !Q)	0.00009	-0.00006	0.00095
	(CLK * !D * SCD * SCE * !Q)	0.00600	0.00587	0.00686
	(CLK * !D * SCD * !SCE * !Q)	-0.00180	-0.00186	-0.00185
	(CLK * !D * SCD * !SCE * !Q)	0.00252	0.00249	0.00248
	(CLK * !D * !SCD * SCE * !Q)	-0.00184	-0.00187	-0.00187
	(CLK * !D * !SCD * SCE * !Q)	0.00250	0.00248	0.00247
	(CLK * !D * !SCD * !SCE * !Q)	-0.00181	-0.00186	-0.00186
	(CLK * !D * !SCD * !SCE * !Q)	0.00253	0.00249	0.00248
	(!CLK * D * SCD * SCE * !Q)	0.00460	0.00419	0.00502
	(!CLK * D * SCD * SCE * !Q)	0.01055	0.01015	0.01098
	(!CLK * D * SCD * !SCE * !Q)	0.00410	0.00368	0.00450
	(!CLK * D * SCD * !SCE * !Q)	0.00985	0.00944	0.01025
	(!CLK * D * !SCD * SCE * !Q)	-0.00183	-0.00186	-0.00186
	(!CLK * D * !SCD * SCE * !Q)	0.00251	0.00249	0.00248
	(!CLK * D * !SCD * !SCE * !Q)	0.00394	0.00352	0.00438
	(!CLK * D * !SCD * !SCE * !Q)	0.00944	0.00903	0.00988
	(!CLK * !D * SCD * SCE * !Q)	0.00433	0.00393	0.00481
	(!CLK * !D * SCD * SCE * !Q)	0.01034	0.00994	0.01082
	(!CLK * !D * SCD * !SCE * !Q)	-0.00180	-0.00184	-0.00184
	(!CLK * !D * SCD * !SCE * !Q)	0.00253	0.00250	0.00249
	(!CLK * !D * !SCD * SCE * !Q)	-0.00183	-0.00187	-0.00186
	(!CLK * !D * !SCD * SCE * !Q)	0.00251	0.00249	0.00248
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00181	-0.00186	-0.00185
	(!CLK * !D * !SCD * !SCE * !Q)	0.00253	0.00251	0.00249

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)	0.00839	0.00806	0.00894
	(D * RESET_B * SCD * SCE * Q)	0.00578	0.00544	0.00633
	(D * RESET_B * SCD * !SCE * Q)	0.00839	0.00806	0.00894
	(D * RESET_B * SCD * !SCE * Q)	0.00578	0.00544	0.00633
	(D * RESET_B * !SCD * !SCE * Q)	0.00839	0.00806	0.00894
	(D * RESET_B * !SCD * !SCE * Q)	0.00578	0.00544	0.00633
	(D * !SCD * SCE * !Q)	0.00863	0.00830	0.00917
	(D * !SCD * SCE * !Q)	0.00603	0.00569	0.00657
	(D * !RESET_B * SCD * SCE * !Q)	0.00863	0.00830	0.00918
	(D * !RESET_B * SCD * SCE * !Q)	0.00603	0.00569	0.00657
	(D * !RESET_B * SCD * !SCE * !Q)	0.00863	0.00830	0.00918
	(D * !RESET_B * SCD * !SCE * !Q)	0.00603	0.00569	0.00657
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00863	0.00830	0.00918
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00603	0.00569	0.00657
	(!D * RESET_B * SCD * SCE * Q)	0.00839	0.00806	0.00894
	(!D * RESET_B * SCD * SCE * Q)	0.00578	0.00544	0.00633
	(!D * !SCE * !Q)	0.00863	0.00830	0.00917
	(!D * !SCE * !Q)	0.00603	0.00569	0.00657
	(!D * !SCD * SCE * !Q)	0.00864	0.00830	0.00918
	(!D * !SCD * SCE * !Q)	0.00603	0.00569	0.00657
	(!D * !RESET_B * SCD * SCE * !Q)	0.00863	0.00830	0.00918
	(!D * !RESET_B * SCD * SCE * !Q)	0.00603	0.00569	0.00657

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00837	0.00804	0.00891
	(D * RESET_B * SCD * SCE * Q)	0.00575	0.00540	0.00628
	(D * RESET_B * SCD * !SCE * Q)	0.00837	0.00804	0.00891
	(D * RESET_B * SCD * !SCE * Q)	0.00575	0.00540	0.00628
	(D * RESET_B * !SCD * !SCE * Q)	0.00837	0.00804	0.00891
	(D * RESET_B * !SCD * !SCE * Q)	0.00575	0.00540	0.00628
	(D * !SCD * SCE * !Q)	0.00866	0.00830	0.00919
	(D * !SCD * SCE * !Q)	0.00603	0.00567	0.00656
	(D * !RESET_B * SCD * SCE * !Q)	0.00866	0.00831	0.00920
	(D * !RESET_B * SCD * SCE * !Q)	0.00603	0.00568	0.00656
	(D * !RESET_B * SCD * !SCE * !Q)	0.00866	0.00831	0.00920
	(D * !RESET_B * SCD * !SCE * !Q)	0.00603	0.00567	0.00656
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00866	0.00831	0.00920
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00603	0.00567	0.00656
	(!D * RESET_B * SCD * SCE * Q)	0.00837	0.00804	0.00891
	(!D * RESET_B * SCD * SCE * Q)	0.00575	0.00540	0.00628
	(!D * !SCE * !Q)	0.00866	0.00830	0.00919
	(!D * !SCE * !Q)	0.00603	0.00567	0.00656
	(!D * !SCD * SCE * !Q)	0.00866	0.00831	0.00919
	(!D * !SCD * SCE * !Q)	0.00603	0.00567	0.00656
	(!D * !RESET_B * SCD * SCE * !Q)	0.00866	0.00831	0.00920
	(!D * !RESET_B * SCD * SCE * !Q)	0.00603	0.00568	0.00656

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00826	0.00793	0.00881
	(D * RESET_B * SCD * SCE * Q)	0.00563	0.00529	0.00618
	(D * RESET_B * SCD * !SCE * Q)	0.00825	0.00793	0.00881
	(D * RESET_B * SCD * !SCE * Q)	0.00563	0.00529	0.00618
	(D * RESET_B * !SCD * !SCE * Q)	0.00826	0.00793	0.00881
	(D * RESET_B * !SCD * !SCE * Q)	0.00563	0.00529	0.00618
	(D * !SCD * SCE * !Q)	0.00852	0.00818	0.00908
	(D * !SCD * SCE * !Q)	0.00590	0.00554	0.00644
	(D * !RESET_B * SCD * SCE * !Q)	0.00852	0.00818	0.00907
	(D * !RESET_B * SCD * SCE * !Q)	0.00590	0.00555	0.00644
	(D * !RESET_B * SCD * !SCE * !Q)	0.00852	0.00818	0.00907
	(D * !RESET_B * SCD * !SCE * !Q)	0.00590	0.00555	0.00644
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00852	0.00818	0.00907
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00590	0.00555	0.00644
	(!D * RESET_B * SCD * SCE * Q)	0.00826	0.00793	0.00881
	(!D * RESET_B * SCD * SCE * Q)	0.00563	0.00529	0.00618
	(!D * !SCE * !Q)	0.00852	0.00818	0.00907
	(!D * !SCE * !Q)	0.00590	0.00554	0.00644
	(!D * !SCD * SCE * !Q)	0.00852	0.00818	0.00907
	(!D * !SCD * SCE * !Q)	0.00590	0.00554	0.00644
	(!D * !RESET_B * SCD * SCE * !Q)	0.00852	0.00818	0.00907
	(!D * !RESET_B * SCD * SCE * !Q)	0.00590	0.00555	0.00644

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)**	0.00451	0.00429	0.00551
	(D * RESET_B * SCD * SCE * Q)	0.00713	0.00690	0.00811
	(D * RESET_B * SCD * SCE * !Q)	0.00824	0.00794	0.00909
	(D * RESET_B * SCD * SCE * !Q)	0.01074	0.01043	0.01158
	(D * RESET_B * SCD * !SCE * Q)	0.00451	0.00429	0.00551
	(D * RESET_B * SCD * !SCE * Q)	0.00713	0.00690	0.00811
	(D * RESET_B * SCD * !SCE * !Q)	0.00820	0.00791	0.00906
	(D * RESET_B * SCD * !SCE * !Q)	0.01071	0.01040	0.01156
	(D * RESET_B * !SCD * SCE * Q)	0.00862	0.00846	0.00992
	(D * RESET_B * !SCD * SCE * Q)	0.01138	0.01121	0.01267
	(D * RESET_B * !SCD * !SCE * Q)	0.00451	0.00429	0.00551
	(D * RESET_B * !SCD * !SCE * Q)	0.00713	0.00690	0.00811
	(D * RESET_B * !SCD * !SCE * !Q)	0.00820	0.00791	0.00906
	(D * RESET_B * !SCD * !SCE * !Q)	0.01071	0.01040	0.01156
	(D * !SCD * SCE * !Q)	0.00421	0.00398	0.00520
	(D * !SCD * SCE * !Q)	0.00683	0.00659	0.00781
	(D * !RESET_B * SCD * SCE * !Q)	0.00421	0.00399	0.00521
	(D * !RESET_B * SCD * SCE * !Q)	0.00683	0.00660	0.00781
	(D * !RESET_B * SCD * !SCE * !Q)	0.00421	0.00398	0.00520
	(D * !RESET_B * SCD * !SCE * !Q)	0.00683	0.00659	0.00781
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00421	0.00398	0.00520
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00683	0.00659	0.00781
	(!D * RESET_B * SCD * SCE * Q)	0.00451	0.00429	0.00551
	(!D * RESET_B * SCD * SCE * Q)	0.00713	0.00690	0.00811
	(!D * RESET_B * SCD * SCE * !Q)	0.00827	0.00797	0.00912
	(!D * RESET_B * SCD * SCE * !Q)	0.01076	0.01045	0.01161
	(!D * RESET_B * !SCE * Q)	0.00860	0.00844	0.00990
	(!D * RESET_B * !SCE * Q)	0.01134	0.01117	0.01263
	(!D * RESET_B * !SCD * SCE * Q)	0.00862	0.00846	0.00991
	(!D * RESET_B * !SCD * SCE * Q)	0.01136	0.01120	0.01265
	(!D * !SCE * !Q)	0.00420	0.00398	0.00520
	(!D * !SCE * !Q)	0.00682	0.00659	0.00781
	(!D * !SCD * SCE * !Q)	0.00421	0.00398	0.00520
	(!D * !SCD * SCE * !Q)	0.00683	0.00659	0.00781
	(!D * !RESET_B * SCD * SCE * !Q)	0.00421	0.00399	0.00521
	(!D * !RESET_B * SCD * SCE * !Q)	0.00683	0.00660	0.00781

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00452	0.00430	0.00551
	(D * RESET_B * SCD * SCE * Q)	0.00716	0.00693	0.00815
	(D * RESET_B * SCD * SCE * !Q)	0.00844	0.00814	0.00928
	(D * RESET_B * SCD * SCE * !Q)	0.01097	0.01066	0.01181
	(D * RESET_B * SCD * !SCE * Q)	0.00452	0.00430	0.00551
	(D * RESET_B * SCD * !SCE * Q)	0.00716	0.00693	0.00815
	(D * RESET_B * SCD * !SCE * !Q)	0.00840	0.00811	0.00924
	(D * RESET_B * SCD * !SCE * !Q)	0.01093	0.01063	0.01177
	(D * RESET_B * !SCD * SCE * Q)	0.00899	0.00882	0.01028
	(D * RESET_B * !SCD * SCE * Q)	0.01175	0.01158	0.01303
	(D * RESET_B * !SCD * !SCE * Q)	0.00452	0.00430	0.00551
	(D * RESET_B * !SCD * !SCE * Q)	0.00716	0.00693	0.00815
	(D * RESET_B * !SCD * !SCE * !Q)	0.00840	0.00811	0.00924
	(D * RESET_B * !SCD * !SCE * !Q)	0.01093	0.01063	0.01177
	(D * !SCD * SCE * !Q)	0.00422	0.00400	0.00522
	(D * !SCD * SCE * !Q)	0.00686	0.00663	0.00785
	(D * !RESET_B * SCD * SCE * !Q)	0.00422	0.00400	0.00522
	(D * !RESET_B * SCD * SCE * !Q)	0.00686	0.00664	0.00785
	(D * !RESET_B * SCD * !SCE * !Q)	0.00422	0.00400	0.00522
	(D * !RESET_B * SCD * !SCE * !Q)	0.00686	0.00664	0.00785
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00422	0.00400	0.00522
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00686	0.00664	0.00785
	(!D * RESET_B * SCD * SCE * Q)	0.00452	0.00430	0.00551
	(!D * RESET_B * SCD * SCE * Q)	0.00716	0.00693	0.00815
	(!D * RESET_B * SCD * SCE * !Q)	0.00846	0.00818	0.00931
	(!D * RESET_B * SCD * SCE * !Q)	0.01098	0.01069	0.01183
	(!D * RESET_B * !SCE * Q)	0.00897	0.00880	0.01026
	(!D * RESET_B * !SCE * Q)	0.01171	0.01154	0.01300
	(!D * RESET_B * !SCD * SCE * Q)	0.00899	0.00881	0.01027
	(!D * RESET_B * !SCD * SCE * Q)	0.01175	0.01156	0.01302
	(!D * !SCE * !Q)	0.00422	0.00400	0.00522
	(!D * !SCE * !Q)	0.00686	0.00663	0.00785
	(!D * !SCD * SCE * !Q)	0.00422	0.00400	0.00522
	(!D * !SCD * SCE * !Q)	0.00686	0.00663	0.00786
	(!D * !RESET_B * SCD * SCE * !Q)	0.00422	0.00400	0.00522
	(!D * !RESET_B * SCD * SCE * !Q)	0.00686	0.00663	0.00786

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00449	0.00427	0.00549
	(D * RESET_B * SCD * SCE * Q)	0.00713	0.00691	0.00813
	(D * RESET_B * SCD * SCE * !Q)	0.00835	0.00806	0.00921
	(D * RESET_B * SCD * SCE * !Q)	0.01087	0.01056	0.01172
	(D * RESET_B * SCD * !SCE * Q)	0.00449	0.00427	0.00549
	(D * RESET_B * SCD * !SCE * Q)	0.00713	0.00691	0.00813
	(D * RESET_B * SCD * !SCE * !Q)	0.00831	0.00802	0.00917
	(D * RESET_B * SCD * !SCE * !Q)	0.01083	0.01054	0.01169
	(D * RESET_B * !SCD * SCE * Q)	0.00875	0.00859	0.01005
	(D * RESET_B * !SCD * SCE * Q)	0.01152	0.01135	0.01281
	(D * RESET_B * !SCD * !SCE * Q)	0.00449	0.00427	0.00549
	(D * RESET_B * !SCD * !SCE * Q)	0.00713	0.00691	0.00813
	(D * RESET_B * !SCD * !SCE * !Q)	0.00831	0.00802	0.00917
	(D * RESET_B * !SCD * !SCE * !Q)	0.01083	0.01054	0.01169
	(D * !SCD * SCE * !Q)	0.00417	0.00394	0.00517
	(D * !SCD * SCE * !Q)	0.00680	0.00657	0.00780
	(D * !RESET_B * SCD * SCE * !Q)	0.00417	0.00395	0.00517
	(D * !RESET_B * SCD * SCE * !Q)	0.00681	0.00657	0.00780
	(D * !RESET_B * SCD * !SCE * !Q)	0.00417	0.00395	0.00517
	(D * !RESET_B * SCD * !SCE * !Q)	0.00680	0.00657	0.00780
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00417	0.00395	0.00517
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00680	0.00657	0.00780
	(!D * RESET_B * SCD * SCE * Q)	0.00449	0.00427	0.00549
	(!D * RESET_B * SCD * SCE * Q)	0.00713	0.00691	0.00813
	(!D * RESET_B * SCD * SCE * !Q)	0.00837	0.00808	0.00924
	(!D * RESET_B * SCD * SCE * !Q)	0.01089	0.01059	0.01174
	(!D * RESET_B * !SCE * Q)	0.00873	0.00857	0.01003
	(!D * RESET_B * !SCE * Q)	0.01148	0.01131	0.01277
	(!D * RESET_B * !SCD * SCE * Q)	0.00876	0.00858	0.01004
	(!D * RESET_B * !SCD * SCE * Q)	0.01152	0.01134	0.01279
	(!D * !SCE * !Q)	0.00417	0.00394	0.00516
	(!D * !SCE * !Q)	0.00680	0.00656	0.00780
	(!D * !SCD * SCE * !Q)	0.00417	0.00395	0.00517
	(!D * !SCD * SCE * !Q)	0.00680	0.00657	0.00780
	(!D * !RESET_B * SCD * SCE * !Q)	0.00417	0.00395	0.00517
	(!D * !RESET_B * SCD * SCE * !Q)	0.00681	0.00657	0.00780

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00182	0.00201	0.00387	0.00336	0.00283	0.63295	0.59989
sky130_fd_sc_hs__sdfsbp_2	0.00189	0.00194	0.00406	0.00340	0.00286	1.28421	1.28663

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.21510	0.31529
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.22981	0.42319

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)	0.50252	1.24969	7.87054
	SET_B->Q (FR)	0.48223	1.49909	10.93570
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.51972	1.14617	7.97647
	SET_B->Q (FR)	0.65991	1.52975	11.41150

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.38838	0.78268	2.95899
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.44195	0.82641	3.21042

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)	0.33004	1.12321	7.71690
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.33393	1.00510	7.84656

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)	0.39848	0.90019	3.03053
	SET_B->Q_N (FF)	0.37596	1.14851	6.24906
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.37809	0.84959	3.32105
	SET_B->Q_N (FF)	0.47188	1.25842	6.89822

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)	-0.12414	-0.24110	-1.35073
	setup	CLK (R)	0.22234	0.30007	1.40079
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15297	-0.26836	-1.41078
	setup	CLK (R)	0.28111	0.35225	1.49785

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)	-0.13315	-0.27830	-2.31148
	setup	CLK (R)	0.58061	0.62746	3.07880
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15675	-0.30519	-2.34098
	setup	CLK (R)	0.69465	0.72391	3.23617

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)	-0.12414	-0.24110	-1.35073
	setup	CLK (R)	0.22234	0.30007	1.40079
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15297	-0.26836	-1.41078
	setup	CLK (R)	0.28111	0.35225	1.49785

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)	-0.13315	-0.27830	-2.31148
	setup	CLK (R)	0.58061	0.62746	3.07880
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15675	-0.30519	-2.34098
	setup	CLK (R)	0.69465	0.72391	3.23617

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)	-0.14674	-0.25496	-1.54272
	setup	CLK (R)	0.24798	0.31894	1.59562
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17583	-0.27920	-1.57813
	setup	CLK (R)	0.30386	0.36376	1.65431

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)	-0.17294	-0.35089	-3.02354
	setup	CLK (R)	0.68552	0.75004	3.60827
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19641	-0.36949	-3.04092
	setup	CLK (R)	0.80635	0.86142	3.71638

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)	-0.14674	-0.25496	-1.54272
	hold	CLK (R)	-0.14956	-0.25815	-1.55438
	setup	CLK (R)	0.24728	0.31600	1.58292
	setup	CLK (R)	0.24798	0.31894	1.59562
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17583	-0.27920	-1.57813
	hold	CLK (R)	-0.17902	-0.28352	-1.59157
	setup	CLK (R)	0.30304	0.36030	1.64630
	setup	CLK (R)	0.30386	0.36376	1.65431

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)	-0.18627	-0.36646	-3.06186
	hold	CLK (R)	-0.17294	-0.35089	-3.02354
	setup	CLK (R)	0.67877	0.74486	3.59528
	setup	CLK (R)	0.68552	0.75004	3.60827
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.21101	-0.38500	-3.07689
	hold	CLK (R)	-0.19641	-0.36949	-3.04092
	setup	CLK (R)	0.79783	0.85322	3.71315
	setup	CLK (R)	0.80635	0.86142	3.71638

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)	-0.12924	-0.24929	-0.40561
	setup	CLK (R)	0.66298	0.63208	1.46556
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16195	-0.27657	-0.31981
	setup	CLK (R)	0.78310	0.74145	1.56227

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)	-0.15459	-0.32151	-2.40633
	setup	CLK (R)	0.60506	0.66871	3.37175
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17768	-0.34050	-2.35354
	setup	CLK (R)	0.71570	0.76706	3.50165

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)	-0.17253	-0.24929	-0.40561
	hold	CLK (R)	-0.12924	-0.25125	-1.41943
	setup	CLK (R)	0.66298	0.63208	0.71244
	setup	CLK (R)	0.23213	0.31265	1.46556
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19386	-0.27657	-0.31981
	hold	CLK (R)	-0.16195	-0.28164	-1.47991
	setup	CLK (R)	0.78310	0.74145	0.67862
	setup	CLK (R)	0.29068	0.36271	1.56227

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)	-0.23487	-0.41585	-2.40633
	hold	CLK (R)	-0.15459	-0.32151	-2.76077
	setup	CLK (R)	0.33228	0.47330	2.42095
	setup	CLK (R)	0.60506	0.66871	3.37175
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.26127	-0.43499	-2.35354
	hold	CLK (R)	-0.17768	-0.34050	-2.79505
	setup	CLK (R)	0.38897	0.51536	2.38691
	setup	CLK (R)	0.71570	0.76706	3.50165

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)	-0.14915	-0.20671	-0.63941
	removal	CLK (R)	0.18374	0.23256	0.67871
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.20533	-0.27655	-0.89026
	removal	CLK (R)	0.23146	0.29593	1.03480

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)	-0.14916	-0.20672	-0.63941
	recovery	CLK (R)	-0.14915	-0.20671	-0.63942
	recovery	CLK (R)	-0.15075	-0.20690	-0.64057
	removal	CLK (R)	0.18374	0.23256	0.67871
	removal	CLK (R)	0.18374	0.23256	0.67871
	removal	CLK (R)	0.18374	0.23256	0.67871
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.20747	-0.27655	-0.89026
	recovery	CLK (R)	-0.20748	-0.27655	-0.89026
	recovery	CLK (R)	-0.20533	-0.27655	-0.89121
	removal	CLK (R)	0.23146	0.29593	1.03080
	removal	CLK (R)	0.23146	0.29593	1.03480
	removal	CLK (R)	0.23069	0.29593	1.03080

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 ()	0.38191	0.90244	16.50020
	min_pulse_width	SET_B ()	0.38195	0.92887	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.43462	0.92277	16.50020
	min_pulse_width	SET_B ()	0.52872	1.07521	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 ()	0.32521	0.83740	16.50020
	min_pulse_width	CLK ()	0.14827	0.83740	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.32521	0.83740	16.50020
	min_pulse_width	CLK ()	0.17621	0.83740	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 ()	0.31279	0.83740	16.50020
	min_pulse_width	CLK ()	0.58596	0.83740	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.39971	0.83740	16.50020
	min_pulse_width	CLK ()	0.74028	0.84350	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	0.00876	0.00873	0.00918
	CLK	0.00752	0.00750	0.00793
	SET_B	0.00828	0.00831	0.00870
	SET_B	0.00964	0.00966	0.00975
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01225	0.01237	0.01284
	CLK	0.01096	0.01110	0.01151
	SET_B	0.01152	0.01169	0.01255
	SET_B	0.01293	0.01310	0.01315

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00928	0.00927	0.00964
	CLK	0.00797	0.00795	0.00832
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01236	0.01257	0.01302
	CLK	0.01107	0.01128	0.01170

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00931	0.00930	0.00982
	CLK	0.00799	0.00798	0.00851
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01239	0.01260	0.01332
	CLK	0.01110	0.01131	0.01198

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00875	0.00872	0.00902
	CLK	0.00751	0.00749	0.00778
	SET_B	0.00826	0.00829	0.00836
	SET_B	0.00961	0.00964	0.00961
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01222	0.01237	0.01263
	CLK	0.01093	0.01109	0.01130
	SET_B	0.01149	0.01166	0.01190
	SET_B	0.01290	0.01306	0.01293

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00071	0.00071	0.00071
	(CLK * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !SCE)	0.00247	0.00234	0.00314
	(CLK * !SCE)	0.00064	0.00051	0.00131
	(CLK * !SCD * SCE)	0.00040	0.00039	0.00038
	(CLK * !SCD * SCE)	-0.00074	-0.00075	-0.00076
	(!CLK * SCD * SCE)	0.00071	0.00071	0.00071
	(!CLK * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00653	0.00641	0.00685
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00449	0.00437	0.00481
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00520	0.00510	0.00558
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00310	0.00299	0.00347
	(!CLK * !SCD * SCE)	0.00040	0.00040	0.00038
	(!CLK * !SCD * SCE)	-0.00074	-0.00075	-0.00076

sky130_fd_sc_hs__sdfsbp_2	(CLK * SCD * SCE)	0.00076	0.00076	0.00076
	(CLK * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(CLK * !SCE)	0.00258	0.00245	0.00323
	(CLK * !SCE)	0.00071	0.00058	0.00136
	(CLK * !SCD * SCE)	0.00041	0.00041	0.00041
	(CLK * !SCD * SCE)	-0.00074	-0.00076	-0.00077
	(!CLK * SCD * SCE)	0.00076	0.00076	0.00076
	(!CLK * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00731	0.00720	0.00758
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00533	0.00521	0.00559
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00602	0.00592	0.00633
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00396	0.00386	0.00427
	(!CLK * !SCD * SCE)	0.00042	0.00042	0.00041
	(!CLK * !SCD * SCE)	-0.00075	-0.00076	-0.00077

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00067	-0.00068	-0.00070
	(CLK * SCD * SCE)	0.00040	0.00040	0.00038
	(CLK * !SCE)	0.00052	0.00044	0.00154
	(CLK * !SCE)	0.00234	0.00228	0.00337
	(CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(CLK * !SCD * SCE)	0.00076	0.00076	0.00076
	(!CLK * SCD * SCE)	-0.00067	-0.00068	-0.00070
	(!CLK * SCD * SCE)	0.00040	0.00040	0.00038
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00429	0.00421	0.00514
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00633	0.00625	0.00718
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00259	0.00250	0.00338
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00470	0.00461	0.00549
	(!CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(!CLK * !SCD * SCE)	0.00076	0.00076	0.00076

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00072	-0.00073	-0.00075
	(CLK * SCD * SCE)	0.00039	0.00038	0.00037
	(CLK * !SCE)	0.00061	0.00053	0.00161
	(CLK * !SCE)	0.00248	0.00240	0.00348
	(CLK * !SCD * SCE)	-0.00039	-0.00040	-0.00039
	(CLK * !SCD * SCE)	0.00077	0.00077	0.00077
	(!CLK * SCD * SCE)	-0.00071	-0.00073	-0.00075
	(!CLK * SCD * SCE)	0.00038	0.00038	0.00037
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00552	0.00544	0.00632
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00752	0.00743	0.00830
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00373	0.00364	0.00446
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00580	0.00571	0.00652
	(!CLK * !SCD * SCE)	-0.00039	-0.00040	-0.00040
	(!CLK * !SCD * SCE)	0.00077	0.00077	0.00077

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00347	0.00334	0.00361
	(CLK * D * SCE)	0.00095	0.00081	0.00109
	(CLK * !D * SCE)	0.00390	0.00377	0.00399
	(CLK * !D * SCE)	0.00130	0.00118	0.00140
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00744	0.00732	0.00746
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00471	0.00459	0.00472
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00611	0.00601	0.00618
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00331	0.00320	0.00338
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00787	0.00776	0.00784
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00506	0.00495	0.00504
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00654	0.00644	0.00657
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00367	0.00357	0.00370
	!SCE	0.00085	0.00079	0.00077
	!SCE	-0.00064	-0.00071	-0.00072

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00349	0.00337	0.00365
	(CLK * D * SCE)	0.00100	0.00088	0.00116
	(CLK * !D * SCE)	0.00392	0.00381	0.00402
	(CLK * !D * SCE)	0.00136	0.00125	0.00147
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00814	0.00804	0.00817
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00554	0.00544	0.00557
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00685	0.00677	0.00692
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00418	0.00409	0.00425
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00857	0.00848	0.00856
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00590	0.00581	0.00590
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00728	0.00720	0.00732
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00453	0.00445	0.00457
	!SCE	0.00080	0.00074	0.00072
	!SCE	-0.00065	-0.00072	-0.00072

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00111	0.00099	0.00131
	(CLK * D * SCE)	0.00364	0.00353	0.00382
	(CLK * !D * SCE)	0.00087	0.00075	0.00111
	(CLK * !D * SCE)	0.00347	0.00335	0.00370
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00496	0.00484	0.00510
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00770	0.00759	0.00782
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00326	0.00314	0.00337
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00607	0.00596	0.00616
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00472	0.00461	0.00490
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00753	0.00742	0.00770
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00302	0.00291	0.00316
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00589	0.00579	0.00602
	!SCE	-0.00075	-0.00077	-0.00077
	!SCE	0.00072	0.00073	0.00073

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00124	0.00114	0.00145
	(CLK * D * SCE)	0.00374	0.00364	0.00392
	(CLK * !D * SCE)	0.00100	0.00090	0.00125
	(CLK * !D * SCE)	0.00356	0.00346	0.00379
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00621	0.00611	0.00635
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00882	0.00873	0.00894
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00441	0.00432	0.00452
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00710	0.00701	0.00719
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00597	0.00587	0.00614
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00865	0.00856	0.00880
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00417	0.00408	0.00431
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00692	0.00684	0.00705
	!SCE	-0.00070	-0.00072	-0.00072
	!SCE	0.00073	0.00074	0.00073

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)**	0.00306	0.00282	0.00370
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00023	-0.00050	0.00039
	(CLK * D * !SCD)	0.00468	0.00445	0.00528
	(CLK * D * !SCD)	0.00233	0.00207	0.00289
	(CLK * !D * SCD)	0.00540	0.00510	0.00645
	(CLK * !D * SCD)	0.00130	0.00097	0.00235
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00306	0.00282	0.00370
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00023	-0.00050	0.00039
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00834	0.00818	0.00904
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00620	0.00601	0.00685
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00663	0.00649	0.00734
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00456	0.00439	0.00521
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00947	0.00917	0.01032
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00514	0.00486	0.00601
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00814	0.00784	0.00905
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00374	0.00344	0.00467
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00301	0.00284	0.00369
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00009	-0.00029	0.00058

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00321	0.00296	0.00384
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00021	-0.00048	0.00040
	(CLK * D * !SCD)	0.00492	0.00467	0.00552
	(CLK * D * !SCD)	0.00244	0.00218	0.00300
	(CLK * !D * SCD)	0.00561	0.00530	0.00663
	(CLK * !D * SCD)	0.00137	0.00105	0.00241
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00321	0.00296	0.00384
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00021	-0.00048	0.00040
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00970	0.00954	0.01041
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00734	0.00717	0.00801
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00790	0.00775	0.00860
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00562	0.00545	0.00629
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01033	0.01002	0.01116
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00599	0.00567	0.00683
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00904	0.00875	0.00992
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00462	0.00432	0.00550
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00312	0.00293	0.00378
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00012	-0.00031	0.00054

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)**	-0.00013	-0.00020	0.00103
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00316	0.00311	0.00433
	(CLK * D * !SCD)	0.00237	0.00220	0.00333
	(CLK * D * !SCD)	0.00474	0.00458	0.00569
	(CLK * !D * SCD)	0.00076	0.00058	0.00221
	(CLK * !D * SCD)	0.00487	0.00468	0.00632
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00013	-0.00019	0.00103
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00317	0.00311	0.00433
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00641	0.00631	0.00737
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00857	0.00847	0.00955
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00508	0.00498	0.00607
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00717	0.00709	0.00818
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00454	0.00435	0.00586
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00886	0.00868	0.01018
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00284	0.00265	0.00414
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00722	0.00703	0.00853
	(!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	-0.00000	0.00119
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00319	0.00312	0.00431

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00024	-0.00031	0.00091
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00318	0.00312	0.00434
	(CLK * D * !SCD)	0.00231	0.00214	0.00327
	(CLK * D * !SCD)	0.00480	0.00464	0.00576
	(CLK * !D * SCD)	0.00086	0.00065	0.00228
	(CLK * !D * SCD)	0.00509	0.00490	0.00650
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00024	-0.00031	0.00091
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00318	0.00312	0.00434
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00700	0.00690	0.00799
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00938	0.00928	0.01037
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00571	0.00562	0.00672
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00801	0.00793	0.00903
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00578	0.00558	0.00706
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01011	0.00994	0.01141
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00399	0.00378	0.00523
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00840	0.00821	0.00967
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00001	-0.00007	0.00112
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00325	0.00316	0.00436

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)	0.00153	0.00153	0.00153
	(CLK * Q * !Q_N)	-0.00130	-0.00129	-0.00129
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00163	0.00163	0.00163
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00120	-0.00119	-0.00119
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00299	0.00292	0.00317
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00007	-0.00002	0.00024
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00155	0.00156	0.00155
	(CLK * Q * !Q_N)	-0.00134	-0.00135	-0.00134
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00162	0.00163	0.00162
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00128	-0.00128	-0.00127
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00315	0.00309	0.00332
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00015	0.00006	0.00032

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)	-0.00150	-0.00153	-0.00152
	(CLK * Q * !Q_N)	0.00131	0.00132	0.00130
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00160	-0.00163	-0.00162
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00121	0.00122	0.00120
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00000	-0.00007	0.00031
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00292	0.00287	0.00323
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00153	-0.00156	-0.00155
	(CLK * Q * !Q_N)	0.00136	0.00137	0.00135
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00159	-0.00163	-0.00162
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00129	0.00129	0.00128
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00013	-0.00020	0.00017
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00288	0.00282	0.00319

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)	0.00847	0.00811	0.00896
	(D * SCD * SCE * Q * !Q_N)	0.00592	0.00556	0.00641
	(D * !SCE * Q * !Q_N)	0.00847	0.00811	0.00896
	(D * !SCE * Q * !Q_N)	0.00592	0.00556	0.00641
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00844	0.00808	0.00891
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00589	0.00552	0.00636
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01469	0.01445	0.01555
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01187	0.01162	0.01273
	(!D * SCD * SCE * Q * !Q_N)	0.00847	0.00811	0.00896
	(!D * SCD * SCE * Q * !Q_N)	0.00592	0.00556	0.00641
	(!D * !SCE * SET_B * !Q * Q_N)	0.00844	0.00808	0.00891
	(!D * !SCE * SET_B * !Q * Q_N)	0.00589	0.00552	0.00636
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01469	0.01445	0.01558
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01187	0.01162	0.01275
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00844	0.00807	0.00891
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00589	0.00552	0.00636
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01473	0.01447	0.01557
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01191	0.01163	0.01274

sky130_fd_sc_hs__sdfsbp_2	(D * SCD * SCE * Q * !Q_N)	0.01105	0.01064	0.01132
	(D * SCD * SCE * Q * !Q_N)	0.00847	0.00806	0.00875
	(D * !SCE * Q * !Q_N)	0.01105	0.01064	0.01132
	(D * !SCE * Q * !Q_N)	0.00847	0.00806	0.00875
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01095	0.01054	0.01121
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00837	0.00795	0.00862
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02256	0.02236	0.02372
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01980	0.01959	0.02095
	(!D * SCD * SCE * Q * !Q_N)	0.01105	0.01064	0.01132
	(!D * SCD * SCE * Q * !Q_N)	0.00847	0.00806	0.00875
	(!D * !SCE * SET_B * !Q * Q_N)	0.01095	0.01054	0.01121
	(!D * !SCE * SET_B * !Q * Q_N)	0.00837	0.00795	0.00862
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02256	0.02236	0.02372
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01980	0.01959	0.02095
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01095	0.01054	0.01121
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00837	0.00795	0.00863
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02262	0.02238	0.02370
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01986	0.01961	0.02093

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)**	0.00883	0.00856	0.00966
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01118	0.01089	0.01201
	(D * SCD * SCE * Q * !Q_N)	0.00487	0.00468	0.00587
	(D * SCD * SCE * Q * !Q_N)	0.00743	0.00722	0.00843
	(D * !SCE * SET_B * !Q * Q_N)	0.00880	0.00853	0.00964
	(D * !SCE * SET_B * !Q * Q_N)	0.01115	0.01087	0.01198
	(D * !SCE * Q * !Q_N)	0.00487	0.00468	0.00587
	(D * !SCE * Q * !Q_N)	0.00743	0.00722	0.00843
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.00960	0.00944	0.01088
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01238	0.01222	0.01366
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00496	0.00475	0.00595
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00752	0.00730	0.00849
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00785	0.00769	0.00912
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01069	0.01053	0.01195
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.00886	0.00859	0.00969
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01120	0.01091	0.01203
	(!D * SCD * SCE * Q * !Q_N)	0.00487	0.00468	0.00587
	(!D * SCD * SCE * Q * !Q_N)	0.00743	0.00722	0.00843
	(!D * !SCE * SET_B * Q * !Q_N)	0.00959	0.00942	0.01086
	(!D * !SCE * SET_B * Q * !Q_N)	0.01236	0.01219	0.01363
	(!D * !SCE * SET_B * !Q * Q_N)	0.00496	0.00475	0.00595
	(!D * !SCE * SET_B * !Q * Q_N)	0.00752	0.00729	0.00849
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00786	0.00769	0.00912
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01069	0.01053	0.01195
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.00960	0.00944	0.01087
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01238	0.01221	0.01365
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00496	0.00475	0.00595
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00752	0.00730	0.00849
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00787	0.00770	0.00913
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01071	0.01053	0.01196

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01054	0.01023	0.01125
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01301	0.01269	0.01372
	(D * SCD * SCE * Q * !Q_N)	0.00583	0.00561	0.00669
	(D * SCD * SCE * Q * !Q_N)	0.00842	0.00819	0.00927
	(D * !SCE * SET_B * !Q * Q_N)	0.01051	0.01020	0.01122
	(D * !SCE * SET_B * !Q * Q_N)	0.01298	0.01267	0.01369
	(D * !SCE * Q * !Q_N)	0.00583	0.00560	0.00669
	(D * !SCE * Q * !Q_N)	0.00842	0.00818	0.00927
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01206	0.01184	0.01320
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01478	0.01456	0.01592
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00601	0.00576	0.00687
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00860	0.00834	0.00945
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01016	0.00996	0.01135
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01293	0.01273	0.01413
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01057	0.01026	0.01128
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01303	0.01271	0.01373
	(!D * SCD * SCE * Q * !Q_N)	0.00583	0.00561	0.00669
	(!D * SCD * SCE * Q * !Q_N)	0.00842	0.00819	0.00927
	(!D * !SCE * SET_B * Q * !Q_N)	0.01204	0.01182	0.01319
	(!D * !SCE * SET_B * Q * !Q_N)	0.01474	0.01452	0.01589
	(!D * !SCE * SET_B * !Q * Q_N)	0.00601	0.00576	0.00687
	(!D * !SCE * SET_B * !Q * Q_N)	0.00860	0.00834	0.00945
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01017	0.00996	0.01135
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01295	0.01274	0.01413
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01206	0.01186	0.01321
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01477	0.01457	0.01592
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00601	0.00576	0.00687
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00860	0.00834	0.00945
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01018	0.00999	0.01136
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01297	0.01277	0.01414

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00181	0.00201	0.00385	0.00326	0.00282	0.63942
sky130_fd_sc_hs__sdfstp_2	0.00181	0.00197	0.00385	0.00337	0.00282	1.27534
sky130_fd_sc_hs__sdfstp_4	0.00181	0.00202	0.00391	0.00333	0.00281	2.45105

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.20183	0.29718
sky130_fd_sc_hs__sdfstp_2	0.00000	0.20325	0.41596
sky130_fd_sc_hs__sdfstp_4	0.00000	0.30208	0.45102

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)	0.40755	1.16697	7.82987
	SET_B->Q (FR)	0.40968	1.43799	10.74570
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.35102	0.98752	7.71047
	SET_B->Q (FR)	0.47076	1.37000	10.88360
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.40173	0.95059	7.79818
	SET_B->Q (FR)	0.53809	1.34888	11.07390

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.37184	0.76724	2.96606
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.40091	0.77883	3.08839
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.40668	0.76435	3.15299

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)	-0.12530	-0.24266	-1.35095
	setup	CLK (R)	0.22839	0.30317	1.40365
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.15037	-0.26686	-1.42274
	setup	CLK (R)	0.28831	0.35036	1.57942
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15074	-0.26724	-1.43544
	setup	CLK (R)	0.27377	0.34632	1.56730

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)	-0.10830	-0.25152	-2.16520
	setup	CLK (R)	0.56074	0.60763	3.04937
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10713	-0.25056	-2.00970
	setup	CLK (R)	0.64935	0.68831	3.19414
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12166	-0.27027	-2.11854
	setup	CLK (R)	0.65493	0.69366	3.22846

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)	-0.12530	-0.24266	-1.35095
	setup	CLK (R)	0.22839	0.30317	1.40365
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.15037	-0.26686	-1.42274
	setup	CLK (R)	0.28831	0.35036	1.57942
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15074	-0.26724	-1.43544
	setup	CLK (R)	0.27377	0.34632	1.56730

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)	-0.10830	-0.25152	-2.16520
	setup	CLK (R)	0.56074	0.60763	3.04937
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10713	-0.25056	-2.00970
	setup	CLK (R)	0.64935	0.68831	3.19414
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12166	-0.27027	-2.11854
	setup	CLK (R)	0.65493	0.69366	3.22846

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)	-0.14920	-0.25711	-1.54517
	setup	CLK (R)	0.25587	0.32065	1.59852
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.17379	-0.28113	-1.59898
	setup	CLK (R)	0.31494	0.36724	1.73618
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17411	-0.28203	-1.61312
	setup	CLK (R)	0.30452	0.36324	1.71874

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)	-0.14738	-0.32220	-2.88855
	setup	CLK (R)	0.66721	0.73209	3.58039
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.15017	-0.31953	-2.77570
	setup	CLK (R)	0.76155	0.81922	3.69789
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.16227	-0.33353	-2.87250
	setup	CLK (R)	0.76336	0.82071	3.71612

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)	-0.14920	-0.25711	-1.54517
	hold	CLK (R)	-0.15079	-0.26066	-1.55817
	setup	CLK (R)	0.25536	0.31796	1.58725
	setup	CLK (R)	0.25587	0.32065	1.59852
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.17379	-0.28113	-1.59898
	hold	CLK (R)	-0.17612	-0.28297	-1.61393
	setup	CLK (R)	0.31429	0.36724	1.72127
	setup	CLK (R)	0.31494	0.36561	1.73618
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17411	-0.28203	-1.61312
	hold	CLK (R)	-0.17457	-0.28411	-1.62395
	setup	CLK (R)	0.30194	0.35914	1.70430
	setup	CLK (R)	0.30452	0.36324	1.71874

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)	-0.16171	-0.33371	-2.94047
	hold	CLK (R)	-0.14738	-0.32220	-2.88855
	setup	CLK (R)	0.65964	0.72564	3.57144
	setup	CLK (R)	0.66721	0.73209	3.58039
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.15646	-0.33322	-2.86218
	hold	CLK (R)	-0.15017	-0.31953	-2.77570
	setup	CLK (R)	0.74991	0.81233	3.68525
	setup	CLK (R)	0.76155	0.81922	3.69789
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17337	-0.34799	-2.93850
	hold	CLK (R)	-0.16227	-0.33353	-2.87250
	setup	CLK (R)	0.75646	0.81422	3.70959
	setup	CLK (R)	0.76336	0.82071	3.71612

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)	-0.13390	-0.22520	-0.37284
	setup	CLK (R)	0.64525	0.61412	1.47250
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14554	-0.22174	-0.29925
	setup	CLK (R)	0.73926	0.69792	1.64204
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15732	-0.23562	-0.32884
	setup	CLK (R)	0.74120	0.70295	1.62559

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)	-0.13424	-0.29694	-2.41950
	setup	CLK (R)	0.58611	0.64776	3.34103
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13384	-0.29299	-2.41181
	setup	CLK (R)	0.67508	0.73147	3.47341
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14653	-0.30795	-2.41815
	setup	CLK (R)	0.68026	0.73786	3.49518

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)	-0.14636	-0.22520	-0.37284
	hold	CLK (R)	-0.13390	-0.25461	-1.41784
	setup	CLK (R)	0.64525	0.61412	0.69713
	setup	CLK (R)	0.23744	0.31633	1.47250
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14554	-0.22174	-0.29925
	hold	CLK (R)	-0.15859	-0.27933	-1.48606
	setup	CLK (R)	0.73926	0.69792	0.72795
	setup	CLK (R)	0.29635	0.36561	1.64204
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15732	-0.23562	-0.32884
	hold	CLK (R)	-0.15771	-0.28011	-1.50060
	setup	CLK (R)	0.74120	0.70295	0.72611
	setup	CLK (R)	0.28577	0.35789	1.62559

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)	-0.23758	-0.42070	-2.41950
	hold	CLK (R)	-0.13424	-0.29694	-2.63414
	setup	CLK (R)	0.34251	0.47638	2.43267
	setup	CLK (R)	0.58611	0.64776	3.34103
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.26253	-0.43947	-2.41181
	hold	CLK (R)	-0.13384	-0.29299	-2.53768
	setup	CLK (R)	0.40096	0.51800	2.47324
	setup	CLK (R)	0.67508	0.73147	3.47341
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.26170	-0.44096	-2.41815
	hold	CLK (R)	-0.14653	-0.30795	-2.63278
	setup	CLK (R)	0.38822	0.51167	2.46236
	setup	CLK (R)	0.68026	0.73786	3.49518

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)	-0.15680	-0.21695	-0.67493
	removal	CLK (R)	0.18587	0.23691	0.76267
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.21203	-0.27353	-0.76830
	removal	CLK (R)	0.23397	0.29284	1.73309
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.20614	-0.26707	-0.78041
	removal	CLK (R)	0.22568	0.28346	1.17538

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)	-0.15820	-0.21895	-0.67493
	recovery	CLK (R)	-0.15818	-0.21895	-0.67493
	recovery	CLK (R)	-0.15680	-0.21695	-0.67693
	removal	CLK (R)	0.18587	0.23691	0.76267
	removal	CLK (R)	0.18587	0.23691	0.76267
	removal	CLK (R)	0.18587	0.23691	0.75868
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.21318	-0.27353	-0.76830
	recovery	CLK (R)	-0.21318	-0.27353	-0.76830
	recovery	CLK (R)	-0.21203	-0.27353	-0.76830
	removal	CLK (R)	0.23397	0.29284	1.70820
	removal	CLK (R)	0.23397	0.29284	1.70820
	removal	CLK (R)	0.23397	0.29284	1.73309
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.20614	-0.26707	-0.78174
	recovery	CLK (R)	-0.20614	-0.26707	-0.78174
	recovery	CLK (R)	-0.20646	-0.26793	-0.78041
	removal	CLK (R)	0.22568	0.28346	1.17538
	removal	CLK (R)	0.22568	0.28346	1.17538
	removal	CLK (R)	0.22568	0.28346	1.17538

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 ()	0.33954	0.85976	16.50020
	min_pulse_width	SET_B ()	0.30960	0.86586	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.35791	0.84960	16.50020
	min_pulse_width	SET_B ()	0.36288	0.91464	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.36745	0.85773	16.50020
	min_pulse_width	SET_B ()	0.40116	0.95122	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 ()	0.24139	0.83740	16.50020
	min_pulse_width	CLK ()	0.13895	0.83740	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.18862	0.83740	16.50020
	min_pulse_width	CLK ()	0.15758	0.83740	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.21966	0.83740	16.50020
	min_pulse_width	CLK ()	0.15758	0.83740	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 ()	0.31589	0.83740	16.50020
	min_pulse_width	CLK ()	0.57044	0.83740	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.39971	0.83740	16.50020
	min_pulse_width	CLK ()	0.69150	0.83740	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.38729	0.83740	16.50020
	min_pulse_width	CLK ()	0.68219	0.83740	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	0.01569	0.01540	0.01612
	CLK	0.01329	0.01300	0.01378
	SET_B	0.01452	0.01429	0.01439
	SET_B	0.01721	0.01696	0.01706
sky130_fd_sc_hs__sdfstp_2	CLK	0.01941	0.01924	0.01999
	CLK	0.01703	0.01686	0.01775
	SET_B	0.01890	0.01885	0.01875
	SET_B	0.02163	0.02156	0.02146
sky130_fd_sc_hs__sdfstp_4	CLK	0.02296	0.02321	0.02404
	CLK	0.02062	0.02089	0.02199
	SET_B	0.02248	0.02279	0.02284
	SET_B	0.02525	0.02555	0.02574

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.01696	0.01673	0.01762
	CLK	0.01434	0.01412	0.01496
sky130_fd_sc_hs__sdfstp_2	CLK	0.02073	0.02076	0.02159
	CLK	0.01816	0.01819	0.01902
sky130_fd_sc_hs__sdfstp_4	CLK	0.02461	0.02516	0.02648
	CLK	0.02198	0.02252	0.02343

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00070	0.00071	0.00070
	(CLK * SCD * SCE)	-0.00037	-0.00037	-0.00036
	(CLK * !SCE)	0.00250	0.00238	0.00318
	(CLK * !SCE)	0.00068	0.00055	0.00135
	(CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(CLK * !SCD * SCE)	-0.00074	-0.00074	-0.00075
	(!CLK * SCD * SCE)	0.00070	0.00071	0.00070
	(!CLK * SCD * SCE)	-0.00037	-0.00037	-0.00036
	(!CLK * !SCE * SET_B)	0.00633	0.00621	0.00666
	(!CLK * !SCE * SET_B)	0.00434	0.00422	0.00466
	(!CLK * !SCE * !SET_B * Q)	0.00508	0.00498	0.00546
	(!CLK * !SCE * !SET_B * Q)	0.00304	0.00293	0.00341
	(!CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(!CLK * !SCD * SCE)	-0.00074	-0.00075	-0.00075
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00070	0.00071	0.00070
	(CLK * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !SCE)	0.00247	0.00235	0.00315
	(CLK * !SCE)	0.00065	0.00052	0.00133
	(CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(CLK * !SCD * SCE)	-0.00074	-0.00074	-0.00076
	(!CLK * SCD * SCE)	0.00070	0.00071	0.00070
	(!CLK * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !SCE * SET_B)	0.00722	0.00710	0.00750
	(!CLK * !SCE * SET_B)	0.00515	0.00504	0.00543
	(!CLK * !SCE * !SET_B * Q)	0.00589	0.00580	0.00622
	(!CLK * !SCE * !SET_B * Q)	0.00377	0.00367	0.00410
	(!CLK * !SCD * SCE)	0.00039	0.00039	0.00038
	(!CLK * !SCD * SCE)	-0.00074	-0.00075	-0.00075

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00070	0.00071	0.00070
	(CLK * SCD * SCE)	-0.00037	-0.00037	-0.00036
	(CLK * !SCE)	0.00256	0.00244	0.00322
	(CLK * !SCE)	0.00074	0.00061	0.00140
	(CLK * !SCD * SCE)	0.00040	0.00040	0.00038
	(CLK * !SCD * SCE)	-0.00073	-0.00074	-0.00075
	(!CLK * SCD * SCE)	0.00070	0.00070	0.00070
	(!CLK * SCD * SCE)	-0.00037	-0.00037	-0.00036
	(!CLK * !SCE * SET_B)	0.00716	0.00704	0.00744
	(!CLK * !SCE * SET_B)	0.00514	0.00503	0.00543
	(!CLK * !SCE * !SET_B * Q)	0.00585	0.00576	0.00618
	(!CLK * !SCE * !SET_B * Q)	0.00378	0.00368	0.00411
	(!CLK * !SCD * SCE)	0.00040	0.00040	0.00038
	(!CLK * !SCD * SCE)	-0.00073	-0.00074	-0.00075

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00066	-0.00067	-0.00070
	(CLK * SCD * SCE)	0.00040	0.00039	0.00038
	(CLK * !SCE)	0.00045	0.00038	0.00148
	(CLK * !SCE)	0.00226	0.00220	0.00330
	(CLK * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !SCD * SCE)	0.00075	0.00076	0.00075
	(!CLK * SCD * SCE)	-0.00066	-0.00067	-0.00070
	(!CLK * SCD * SCE)	0.00040	0.00039	0.00038
	(!CLK * !SCE * SET_B)	0.00425	0.00417	0.00510
	(!CLK * !SCE * SET_B)	0.00624	0.00616	0.00710
	(!CLK * !SCE * !SET_B * Q)	0.00265	0.00256	0.00345
	(!CLK * !SCE * !SET_B * Q)	0.00470	0.00462	0.00550
	(!CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(!CLK * !SCD * SCE)	0.00075	0.00076	0.00075
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00066	-0.00067	-0.00070
	(CLK * SCD * SCE)	0.00040	0.00039	0.00038
	(CLK * !SCE)	0.00048	0.00041	0.00151
	(CLK * !SCE)	0.00229	0.00223	0.00333
	(CLK * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !SCD * SCE)	0.00075	0.00076	0.00076
	(!CLK * SCD * SCE)	-0.00066	-0.00067	-0.00070
	(!CLK * SCD * SCE)	0.00040	0.00040	0.00038
	(!CLK * !SCE * SET_B)	0.00495	0.00487	0.00576
	(!CLK * !SCE * SET_B)	0.00701	0.00694	0.00783
	(!CLK * !SCE * !SET_B * Q)	0.00328	0.00319	0.00404
	(!CLK * !SCE * !SET_B * Q)	0.00540	0.00533	0.00617
	(!CLK * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !SCD * SCE)	0.00076	0.00076	0.00075

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00066	-0.00067	-0.00070
	(CLK * SCD * SCE)	0.00040	0.00039	0.00038
	(CLK * !SCE)	0.00056	0.00048	0.00157
	(CLK * !SCE)	0.00237	0.00231	0.00339
	(CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(CLK * !SCD * SCE)	0.00075	0.00075	0.00075
	(!CLK * SCD * SCE)	-0.00066	-0.00067	-0.00070
	(!CLK * SCD * SCE)	0.00040	0.00040	0.00038
	(!CLK * !SCE * SET_B)	0.00500	0.00494	0.00583
	(!CLK * !SCE * SET_B)	0.00703	0.00695	0.00784
	(!CLK * !SCE * !SET_B * Q)	0.00337	0.00328	0.00412
	(!CLK * !SCE * !SET_B * Q)	0.00544	0.00536	0.00620
	(!CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(!CLK * !SCD * SCE)	0.00075	0.00075	0.00075

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00349	0.00336	0.00363
	(CLK * D * SCE)	0.00097	0.00083	0.00111
	(CLK * !D * SCE)	0.00392	0.00379	0.00401
	(CLK * !D * SCE)	0.00132	0.00120	0.00142
	(!CLK * D * SCE * SET_B)	0.00724	0.00712	0.00726
	(!CLK * D * SCE * SET_B)	0.00455	0.00443	0.00457
	(!CLK * D * SCE * !SET_B * Q)	0.00599	0.00589	0.00606
	(!CLK * D * SCE * !SET_B * Q)	0.00324	0.00313	0.00331
	(!CLK * !D * SCE * SET_B)	0.00767	0.00756	0.00766
	(!CLK * !D * SCE * SET_B)	0.00490	0.00479	0.00489
	(!CLK * !D * SCE * !SET_B * Q)	0.00642	0.00632	0.00645
	(!CLK * !D * SCE * !SET_B * Q)	0.00360	0.00350	0.00364
	!SCE	0.00084	0.00078	0.00077
	!SCE	-0.00065	-0.00072	-0.00072
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00344	0.00331	0.00359
	(CLK * D * SCE)	0.00094	0.00081	0.00108
	(CLK * !D * SCE)	0.00387	0.00375	0.00396
	(CLK * !D * SCE)	0.00130	0.00117	0.00140
	(!CLK * D * SCE * SET_B)	0.00810	0.00800	0.00812
	(!CLK * D * SCE * SET_B)	0.00536	0.00525	0.00536
	(!CLK * D * SCE * !SET_B * Q)	0.00678	0.00668	0.00683
	(!CLK * D * SCE * !SET_B * Q)	0.00398	0.00388	0.00403
	(!CLK * !D * SCE * SET_B)	0.00853	0.00843	0.00851
	(!CLK * !D * SCE * SET_B)	0.00571	0.00561	0.00570
	(!CLK * !D * SCE * !SET_B * Q)	0.00721	0.00711	0.00723
	(!CLK * !D * SCE * !SET_B * Q)	0.00433	0.00424	0.00435
	!SCE	0.00083	0.00076	0.00075
	!SCE	-0.00065	-0.00072	-0.00072

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00355	0.00342	0.00369
	(CLK * D * SCE)	0.00103	0.00089	0.00117
	(CLK * !D * SCE)	0.00398	0.00386	0.00407
	(CLK * !D * SCE)	0.00139	0.00126	0.00148
	(!CLK * D * SCE * SET_B)	0.00806	0.00795	0.00807
	(!CLK * D * SCE * SET_B)	0.00534	0.00523	0.00535
	(!CLK * D * SCE * !SET_B * Q)	0.00676	0.00666	0.00681
	(!CLK * D * SCE * !SET_B * Q)	0.00398	0.00388	0.00403
	(!CLK * !D * SCE * SET_B)	0.00849	0.00839	0.00847
	(!CLK * !D * SCE * SET_B)	0.00570	0.00559	0.00568
	(!CLK * !D * SCE * !SET_B * Q)	0.00719	0.00709	0.00721
	(!CLK * !D * SCE * !SET_B * Q)	0.00434	0.00424	0.00436
	!SCE	0.00084	0.00078	0.00077
	!SCE	-0.00065	-0.00072	-0.00072

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00106	0.00094	0.00125
	(CLK * D * SCE)	0.00359	0.00347	0.00376
	(CLK * !D * SCE)	0.00081	0.00069	0.00105
	(CLK * !D * SCE)	0.00341	0.00329	0.00364
	(!CLK * D * SCE * SET_B)	0.00492	0.00480	0.00507
	(!CLK * D * SCE * SET_B)	0.00762	0.00751	0.00775
	(!CLK * D * SCE * !SET_B * Q)	0.00333	0.00321	0.00344
	(!CLK * D * SCE * !SET_B * Q)	0.00608	0.00598	0.00618
	(!CLK * !D * SCE * SET_B)	0.00468	0.00457	0.00487
	(!CLK * !D * SCE * SET_B)	0.00745	0.00734	0.00762
	(!CLK * !D * SCE * !SET_B * Q)	0.00309	0.00298	0.00323
	(!CLK * !D * SCE * !SET_B * Q)	0.00591	0.00580	0.00604
	!SCE	-0.00075	-0.00076	-0.00076
	!SCE	0.00073	0.00074	0.00073
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00113	0.00101	0.00132
	(CLK * D * SCE)	0.00363	0.00352	0.00381
	(CLK * !D * SCE)	0.00088	0.00077	0.00112
	(CLK * !D * SCE)	0.00345	0.00334	0.00368
	(!CLK * D * SCE * SET_B)	0.00565	0.00554	0.00578
	(!CLK * D * SCE * SET_B)	0.00840	0.00830	0.00852
	(!CLK * D * SCE * !SET_B * Q)	0.00399	0.00388	0.00408
	(!CLK * D * SCE * !SET_B * Q)	0.00680	0.00670	0.00688
	(!CLK * !D * SCE * SET_B)	0.00541	0.00531	0.00558
	(!CLK * !D * SCE * SET_B)	0.00823	0.00813	0.00839
	(!CLK * !D * SCE * !SET_B * Q)	0.00374	0.00364	0.00387
	(!CLK * !D * SCE * !SET_B * Q)	0.00662	0.00653	0.00674
	!SCE	-0.00073	-0.00075	-0.00075
	!SCE	0.00073	0.00074	0.00073

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00116	0.00104	0.00135
	(CLK * D * SCE)	0.00369	0.00358	0.00387
	(CLK * !D * SCE)	0.00092	0.00080	0.00115
	(CLK * !D * SCE)	0.00351	0.00340	0.00374
	(!CLK * D * SCE * SET_B)	0.00569	0.00557	0.00581
	(!CLK * D * SCE * SET_B)	0.00841	0.00830	0.00852
	(!CLK * D * SCE * !SET_B * Q)	0.00404	0.00393	0.00413
	(!CLK * D * SCE * !SET_B * Q)	0.00683	0.00673	0.00690
	(!CLK * !D * SCE * SET_B)	0.00545	0.00534	0.00561
	(!CLK * !D * SCE * SET_B)	0.00823	0.00813	0.00840
	(!CLK * !D * SCE * !SET_B * Q)	0.00380	0.00369	0.00392
	(!CLK * !D * SCE * !SET_B * Q)	0.00665	0.00655	0.00677
	!SCE	-0.00074	-0.00076	-0.00076
	!SCE	0.00073	0.00074	0.00074

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)**	0.00307	0.00283	0.00371
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00021	-0.00048	0.00040
	(CLK * D * !SCD)	0.00463	0.00439	0.00523
	(CLK * D * !SCD)	0.00229	0.00202	0.00284
	(CLK * !D * SCD)	0.00544	0.00513	0.00648
	(CLK * !D * SCD)	0.00134	0.00102	0.00240
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00307	0.00282	0.00371
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00021	-0.00048	0.00040
	(!CLK * D * !SCD * SET_B)	0.00831	0.00815	0.00901
	(!CLK * D * !SCD * SET_B)	0.00613	0.00596	0.00679
	(!CLK * D * !SCD * !SET_B * Q)	0.00671	0.00657	0.00741
	(!CLK * D * !SCD * !SET_B * Q)	0.00460	0.00443	0.00525
	(!CLK * !D * SCD * SET_B)	0.00926	0.00896	0.01013
	(!CLK * !D * SCD * SET_B)	0.00501	0.00469	0.00588
	(!CLK * !D * SCD * !SET_B * Q)	0.00801	0.00773	0.00894
	(!CLK * !D * SCD * !SET_B * Q)	0.00370	0.00339	0.00463
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00302	0.00285	0.00370
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00007	-0.00026	0.00060

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00307	0.00283	0.00371
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00021	-0.00048	0.00040
	(CLK * D * !SCD)	0.00469	0.00447	0.00531
	(CLK * D * !SCD)	0.00233	0.00208	0.00291
	(CLK * !D * SCD)	0.00541	0.00511	0.00646
	(CLK * !D * SCD)	0.00132	0.00100	0.00237
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00307	0.00282	0.00371
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00021	-0.00048	0.00040
	(!CLK * D * !SCD * SET_B)	0.00902	0.00888	0.00972
	(!CLK * D * !SCD * SET_B)	0.00691	0.00675	0.00757
	(!CLK * D * !SCD * !SET_B * Q)	0.00736	0.00721	0.00807
	(!CLK * D * !SCD * !SET_B * Q)	0.00530	0.00515	0.00597
	(!CLK * !D * SCD * SET_B)	0.01016	0.00984	0.01100
	(!CLK * !D * SCD * SET_B)	0.00580	0.00549	0.00666
	(!CLK * !D * SCD * !SET_B * Q)	0.00883	0.00854	0.00972
	(!CLK * !D * SCD * !SET_B * Q)	0.00442	0.00412	0.00533
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00304	0.00287	0.00371
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00007	-0.00026	0.00060

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00310	0.00286	0.00373
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00021	-0.00049	0.00040
	(CLK * D * !SCD)	0.00477	0.00452	0.00536
	(CLK * D * !SCD)	0.00238	0.00212	0.00294
	(CLK * !D * SCD)	0.00554	0.00522	0.00657
	(CLK * !D * SCD)	0.00139	0.00108	0.00244
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00310	0.00285	0.00373
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00021	-0.00049	0.00040
	(!CLK * D * !SCD * SET_B)	0.00909	0.00894	0.00980
	(!CLK * D * !SCD * SET_B)	0.00691	0.00673	0.00758
	(!CLK * D * !SCD * !SET_B * Q)	0.00745	0.00730	0.00815
	(!CLK * D * !SCD * !SET_B * Q)	0.00532	0.00515	0.00598
	(!CLK * !D * SCD * SET_B)	0.01013	0.00982	0.01097
	(!CLK * !D * SCD * SET_B)	0.00579	0.00548	0.00664
	(!CLK * !D * SCD * !SET_B * Q)	0.00882	0.00853	0.00971
	(!CLK * !D * SCD * !SET_B * Q)	0.00443	0.00413	0.00533
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00306	0.00288	0.00373
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00008	-0.00027	0.00059

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)**	-0.00012	-0.00018	0.00104
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00317	0.00312	0.00433
	(CLK * D * !SCD)	0.00241	0.00225	0.00337
	(CLK * D * !SCD)	0.00478	0.00462	0.00573
	(CLK * !D * SCD)	0.00070	0.00052	0.00215
	(CLK * !D * SCD)	0.00479	0.00460	0.00624
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00012	-0.00018	0.00104
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00317	0.00312	0.00433
	(!CLK * D * !SCD * SET_B)	0.00622	0.00612	0.00719
	(!CLK * D * !SCD * SET_B)	0.00842	0.00832	0.00940
	(!CLK * D * !SCD * !SET_B * Q)	0.00497	0.00488	0.00596
	(!CLK * D * !SCD * !SET_B * Q)	0.00712	0.00703	0.00811
	(!CLK * !D * SCD * SET_B)	0.00450	0.00432	0.00583
	(!CLK * !D * SCD * SET_B)	0.00877	0.00859	0.01009
	(!CLK * !D * SCD * !SET_B * Q)	0.00291	0.00272	0.00421
	(!CLK * !D * SCD * !SET_B * Q)	0.00723	0.00704	0.00854
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00008	0.00001	0.00119
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00318	0.00311	0.00430

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00012	-0.00019	0.00104
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00317	0.00312	0.00433
	(CLK * D * !SCD)	0.00238	0.00221	0.00333
	(CLK * D * !SCD)	0.00476	0.00459	0.00571
	(CLK * !D * SCD)	0.00073	0.00054	0.00218
	(CLK * !D * SCD)	0.00483	0.00464	0.00627
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00012	-0.00018	0.00104
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00317	0.00312	0.00433
	(!CLK * D * !SCD * SET_B)	0.00709	0.00700	0.00808
	(!CLK * D * !SCD * SET_B)	0.00922	0.00913	0.01021
	(!CLK * D * !SCD * !SET_B * Q)	0.00577	0.00567	0.00677
	(!CLK * D * !SCD * !SET_B * Q)	0.00784	0.00774	0.00884
	(!CLK * !D * SCD * SET_B)	0.00519	0.00502	0.00651
	(!CLK * !D * SCD * SET_B)	0.00955	0.00938	0.01087
	(!CLK * !D * SCD * !SET_B * Q)	0.00353	0.00335	0.00481
	(!CLK * !D * SCD * !SET_B * Q)	0.00794	0.00776	0.00923
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00007	-0.00001	0.00118
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00318	0.00312	0.00430

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00015	-0.00021	0.00101
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00318	0.00312	0.00434
	(CLK * D * !SCD)	0.00244	0.00227	0.00340
	(CLK * D * !SCD)	0.00485	0.00469	0.00580
	(CLK * !D * SCD)	0.00078	0.00059	0.00222
	(CLK * !D * SCD)	0.00492	0.00474	0.00635
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00014	-0.00021	0.00101
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00318	0.00313	0.00434
	(!CLK * D * !SCD * SET_B)	0.00701	0.00691	0.00799
	(!CLK * D * !SCD * SET_B)	0.00922	0.00913	0.01020
	(!CLK * D * !SCD * !SET_B * Q)	0.00571	0.00561	0.00671
	(!CLK * D * !SCD * !SET_B * Q)	0.00786	0.00777	0.00886
	(!CLK * !D * SCD * SET_B)	0.00524	0.00505	0.00655
	(!CLK * !D * SCD * SET_B)	0.00956	0.00939	0.01089
	(!CLK * !D * SCD * !SET_B * Q)	0.00359	0.00341	0.00487
	(!CLK * !D * SCD * !SET_B * Q)	0.00799	0.00779	0.00927
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00005	-0.00003	0.00116
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00319	0.00312	0.00431

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00140	0.00142	0.00141
	(CLK * Q)	-0.00130	-0.00131	-0.00130
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00153	0.00155	0.00154
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00118	-0.00118	-0.00118
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00286	0.00279	0.00305
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00005	-0.00003	0.00023
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00157	0.00157	0.00157
	(CLK * Q)	-0.00127	-0.00127	-0.00127
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00172	0.00172	0.00171
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00113	-0.00113	-0.00112
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00301	0.00295	0.00320
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00008	-0.00001	0.00025

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00146	0.00146	0.00145
	(CLK * Q)	-0.00134	-0.00133	-0.00133
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00160	0.00160	0.00160
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00119	-0.00119	-0.00119
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00292	0.00287	0.00311
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00005	-0.00004	0.00022

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00138	-0.00142	-0.00141
	(CLK * Q)	0.00132	0.00134	0.00131
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00151	-0.00154	-0.00153
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00119	0.00120	0.00119
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00003	-0.00009	0.00029
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00278	0.00274	0.00311

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00154	-0.00157	-0.00157
	(CLK * Q)	0.00128	0.00129	0.00128
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00168	-0.00172	-0.00171
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00114	0.00115	0.00113
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00006	-0.00013	0.00025
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00287	0.00282	0.00319
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00142	-0.00146	-0.00145
	(CLK * Q)	0.00135	0.00137	0.00134
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00157	-0.00160	-0.00160
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00120	0.00121	0.00120
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00001	-0.00008	0.00030
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00287	0.00282	0.00319

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)**	0.00852	0.00817	0.00903
	(D * SCD * SCE * Q)	0.00602	0.00566	0.00652
	(D * !SCE * Q)	0.00852	0.00817	0.00903
	(D * !SCE * Q)	0.00602	0.00566	0.00652
	(D * !SCD * SCE * SET_B * !Q)	0.00843	0.00805	0.00891
	(D * !SCD * SCE * SET_B * !Q)	0.00592	0.00554	0.00640
	(D * !SCD * SCE * !SET_B * Q)	0.01469	0.01444	0.01556
	(D * !SCD * SCE * !SET_B * Q)	0.01196	0.01170	0.01283
	(!D * SCD * SCE * Q)	0.00852	0.00817	0.00903
	(!D * SCD * SCE * Q)	0.00602	0.00566	0.00652
	(!D * !SCE * SET_B * !Q)	0.00842	0.00805	0.00891
	(!D * !SCE * SET_B * !Q)	0.00592	0.00554	0.00640
	(!D * !SCE * !SET_B * Q)	0.01468	0.01444	0.01556
	(!D * !SCE * !SET_B * Q)	0.01196	0.01170	0.01282
	(!D * !SCD * SCE * SET_B * !Q)	0.00843	0.00807	0.00890
	(!D * !SCD * SCE * SET_B * !Q)	0.00592	0.00555	0.00640
	(!D * !SCD * SCE * !SET_B * Q)	0.01472	0.01446	0.01559
	(!D * !SCD * SCE * !SET_B * Q)	0.01199	0.01172	0.01285

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.00980	0.00943	0.01018
	(D * SCD * SCE * Q)	0.00732	0.00694	0.00769
	(D * !SCE * Q)	0.00980	0.00943	0.01018
	(D * !SCE * Q)	0.00732	0.00694	0.00769
	(D * !SCD * SCE * SET_B * !Q)	0.00998	0.00960	0.01035
	(D * !SCD * SCE * SET_B * !Q)	0.00749	0.00710	0.00785
	(D * !SCD * SCE * !SET_B * Q)	0.02058	0.02038	0.02175
	(D * !SCD * SCE * !SET_B * Q)	0.01782	0.01761	0.01899
	(!D * SCD * SCE * Q)	0.00980	0.00943	0.01018
	(!D * SCD * SCE * Q)	0.00732	0.00694	0.00769
	(!D * !SCE * SET_B * !Q)	0.00998	0.00960	0.01035
	(!D * !SCE * SET_B * !Q)	0.00749	0.00710	0.00785
	(!D * !SCE * !SET_B * Q)	0.02058	0.02038	0.02176
	(!D * !SCE * !SET_B * Q)	0.01782	0.01761	0.01899
	(!D * !SCD * SCE * SET_B * !Q)	0.00999	0.00960	0.01035
	(!D * !SCD * SCE * SET_B * !Q)	0.00749	0.00711	0.00785
	(!D * !SCD * SCE * !SET_B * Q)	0.02063	0.02040	0.02176
	(!D * !SCD * SCE * !SET_B * Q)	0.01788	0.01763	0.01899

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.00968	0.00931	0.01007
	(D * SCD * SCE * Q)	0.00719	0.00683	0.00758
	(D * !SCE * Q)	0.00968	0.00931	0.01007
	(D * !SCE * Q)	0.00719	0.00683	0.00758
	(D * !SCD * SCE * SET_B * !Q)	0.00990	0.00952	0.01028
	(D * !SCD * SCE * SET_B * !Q)	0.00740	0.00703	0.00778
	(D * !SCD * SCE * !SET_B * Q)	0.02014	0.01995	0.02140
	(D * !SCD * SCE * !SET_B * Q)	0.01742	0.01723	0.01867
	(!D * SCD * SCE * Q)	0.00968	0.00931	0.01007
	(!D * SCD * SCE * Q)	0.00719	0.00683	0.00758
	(!D * !SCE * SET_B * !Q)	0.00990	0.00952	0.01028
	(!D * !SCE * SET_B * !Q)	0.00740	0.00702	0.00778
	(!D * !SCE * !SET_B * Q)	0.02014	0.01996	0.02140
	(!D * !SCE * !SET_B * Q)	0.01742	0.01723	0.01867
	(!D * !SCD * SCE * SET_B * !Q)	0.00990	0.00952	0.01028
	(!D * !SCD * SCE * SET_B * !Q)	0.00740	0.00703	0.00778
	(!D * !SCD * SCE * !SET_B * Q)	0.02020	0.01998	0.02139
	(!D * !SCD * SCE * !SET_B * Q)	0.01748	0.01725	0.01866

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)**	0.00864	0.00837	0.00948
	(D * SCD * SCE * SET_B * !Q)	0.01100	0.01071	0.01183
	(D * SCD * SCE * Q)	0.00485	0.00465	0.00585
	(D * SCD * SCE * Q)	0.00736	0.00716	0.00835
	(D * !SCE * SET_B * !Q)	0.00861	0.00834	0.00945
	(D * !SCE * SET_B * !Q)	0.01097	0.01069	0.01181
	(D * !SCE * Q)	0.00485	0.00465	0.00585
	(D * !SCE * Q)	0.00736	0.00716	0.00835
	(D * !SCD * SCE * SET_B * Q)	0.00966	0.00949	0.01091
	(D * !SCD * SCE * SET_B * Q)	0.01236	0.01219	0.01360
	(D * !SCD * SCE * SET_B * !Q)	0.00501	0.00479	0.00599
	(D * !SCD * SCE * SET_B * !Q)	0.00752	0.00730	0.00850
	(D * !SCD * SCE * !SET_B * Q)	0.00800	0.00786	0.00927
	(D * !SCD * SCE * !SET_B * Q)	0.01074	0.01060	0.01200
	(!D * SCD * SCE * SET_B * !Q)	0.00867	0.00840	0.00951
	(!D * SCD * SCE * SET_B * !Q)	0.01102	0.01073	0.01185
	(!D * SCD * SCE * Q)	0.00485	0.00465	0.00585
	(!D * SCD * SCE * Q)	0.00736	0.00716	0.00835
	(!D * !SCE * SET_B * Q)	0.00964	0.00947	0.01089
	(!D * !SCE * SET_B * Q)	0.01232	0.01215	0.01356
	(!D * !SCE * SET_B * !Q)	0.00501	0.00479	0.00599
	(!D * !SCE * SET_B * !Q)	0.00752	0.00730	0.00850
	(!D * !SCE * !SET_B * Q)	0.00800	0.00784	0.00927
	(!D * !SCE * !SET_B * Q)	0.01075	0.01058	0.01200
	(!D * !SCD * SCE * SET_B * Q)	0.00965	0.00948	0.01090
	(!D * !SCD * SCE * SET_B * Q)	0.01235	0.01217	0.01359
	(!D * !SCD * SCE * SET_B * !Q)	0.00501	0.00479	0.00599
	(!D * !SCD * SCE * SET_B * !Q)	0.00752	0.00730	0.00850
	(!D * !SCD * SCE * !SET_B * Q)	0.00800	0.00784	0.00928
	(!D * !SCD * SCE * !SET_B * Q)	0.01075	0.01059	0.01202

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01014	0.00987	0.01098
	(D * SCD * SCE * SET_B * !Q)	0.01239	0.01211	0.01323
	(D * SCD * SCE * Q)	0.00562	0.00543	0.00658
	(D * SCD * SCE * Q)	0.00811	0.00791	0.00907
	(D * !SCE * SET_B * !Q)	0.01011	0.00985	0.01095
	(D * !SCE * SET_B * !Q)	0.01236	0.01209	0.01320
	(D * !SCE * Q)	0.00562	0.00543	0.00658
	(D * !SCE * Q)	0.00811	0.00791	0.00907
	(D * !SCD * SCE * SET_B * Q)	0.01133	0.01117	0.01260
	(D * !SCD * SCE * SET_B * Q)	0.01406	0.01389	0.01532
	(D * !SCD * SCE * SET_B * !Q)	0.00550	0.00529	0.00645
	(D * !SCD * SCE * SET_B * !Q)	0.00800	0.00778	0.00895
	(D * !SCD * SCE * !SET_B * Q)	0.00956	0.00942	0.01086
	(D * !SCD * SCE * !SET_B * Q)	0.01233	0.01219	0.01363
	(!D * SCD * SCE * SET_B * !Q)	0.01017	0.00990	0.01101
	(!D * SCD * SCE * SET_B * !Q)	0.01240	0.01213	0.01324
	(!D * SCD * SCE * Q)	0.00562	0.00543	0.00658
	(!D * SCD * SCE * Q)	0.00811	0.00791	0.00907
	(!D * !SCE * SET_B * Q)	0.01132	0.01117	0.01258
	(!D * !SCE * SET_B * Q)	0.01403	0.01387	0.01528
	(!D * !SCE * SET_B * !Q)	0.00550	0.00529	0.00645
	(!D * !SCE * SET_B * !Q)	0.00800	0.00778	0.00895
	(!D * !SCE * !SET_B * Q)	0.00958	0.00943	0.01086
	(!D * !SCE * !SET_B * Q)	0.01236	0.01220	0.01363
	(!D * !SCD * SCE * SET_B * Q)	0.01133	0.01119	0.01259
	(!D * !SCD * SCE * SET_B * Q)	0.01405	0.01390	0.01531
	(!D * !SCD * SCE * SET_B * !Q)	0.00550	0.00529	0.00645
	(!D * !SCD * SCE * SET_B * !Q)	0.00800	0.00778	0.00895
	(!D * !SCD * SCE * !SET_B * Q)	0.00958	0.00945	0.01087
	(!D * !SCD * SCE * !SET_B * Q)	0.01236	0.01221	0.01364

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.00988	0.00962	0.01070
	(D * SCD * SCE * SET_B * !Q)	0.01218	0.01191	0.01299
	(D * SCD * SCE * Q)	0.00551	0.00531	0.00648
	(D * SCD * SCE * Q)	0.00800	0.00780	0.00897
	(D * !SCE * SET_B * !Q)	0.00985	0.00959	0.01067
	(D * !SCE * SET_B * !Q)	0.01216	0.01189	0.01298
	(D * !SCE * Q)	0.00551	0.00531	0.00648
	(D * !SCE * Q)	0.00800	0.00780	0.00897
	(D * !SCD * SCE * SET_B * Q)	0.01110	0.01095	0.01236
	(D * !SCD * SCE * SET_B * Q)	0.01379	0.01362	0.01505
	(D * !SCD * SCE * SET_B * !Q)	0.00536	0.00515	0.00631
	(D * !SCD * SCE * SET_B * !Q)	0.00786	0.00764	0.00880
	(D * !SCD * SCE * !SET_B * Q)	0.00936	0.00923	0.01064
	(D * !SCD * SCE * !SET_B * Q)	0.01209	0.01196	0.01338
	(!D * SCD * SCE * SET_B * !Q)	0.00991	0.00965	0.01073
	(!D * SCD * SCE * SET_B * !Q)	0.01220	0.01193	0.01302
	(!D * SCD * SCE * Q)	0.00551	0.00531	0.00648
	(!D * SCD * SCE * Q)	0.00800	0.00780	0.00897
	(!D * !SCE * SET_B * Q)	0.01109	0.01093	0.01235
	(!D * !SCE * SET_B * Q)	0.01376	0.01359	0.01502
	(!D * !SCE * SET_B * !Q)	0.00536	0.00515	0.00631
	(!D * !SCE * SET_B * !Q)	0.00786	0.00764	0.00880
	(!D * !SCE * !SET_B * Q)	0.00936	0.00923	0.01064
	(!D * !SCE * !SET_B * Q)	0.01210	0.01196	0.01338
	(!D * !SCD * SCE * SET_B * Q)	0.01110	0.01096	0.01236
	(!D * !SCD * SCE * SET_B * Q)	0.01378	0.01364	0.01504
	(!D * !SCD * SCE * SET_B * !Q)	0.00536	0.00515	0.00631
	(!D * !SCD * SCE * SET_B * !Q)	0.00786	0.00764	0.00880
	(!D * !SCD * SCE * !SET_B * Q)	0.00937	0.00924	0.01065
	(!D * !SCD * SCE * !SET_B * Q)	0.01211	0.01197	0.01338

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00182	0.00183	0.00391	0.00282	0.65816	0.63418
sky130_fd_sc_hs__sdfxbp_2	0.00180	0.00180	0.00397	0.00282	1.29315	1.28344

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.27353	0.39734
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.27616	0.38086

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)**	0.35363	1.10547	7.73534
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q (RR)**	0.34316	0.97628	7.70281

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	**CLK->Q (RF)**	0.38338	0.80000	3.01099
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q (RF)**	0.41396	0.81367	3.05033

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)**	0.45443	1.20790	7.77513
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q_N (RR)**	0.52381	1.14192	7.85849

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)**	0.41128	0.79525	2.94487
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q_N (RF)**	0.44454	0.80429	3.09158

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)	-0.09358	-0.20198	-1.15588
	setup	CLK (R)	0.23092	0.28123	1.32238
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09525	-0.20136	-1.14574
	setup	CLK (R)	0.23047	0.28523	1.31242

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)	-0.10936	-0.25619	-2.07610
	setup	CLK (R)	0.47310	0.53863	2.89964
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10774	-0.25643	-2.07871
	setup	CLK (R)	0.48159	0.54448	2.91160

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)	-0.09358	-0.20198	-1.15588
	setup	CLK (R)	0.23092	0.28123	1.32238
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09525	-0.20136	-1.14574
	setup	CLK (R)	0.23047	0.28523	1.31242

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)	-0.10936	-0.25619	-2.07610
	setup	CLK (R)	0.47310	0.53863	2.89964
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10774	-0.25643	-2.07871
	setup	CLK (R)	0.48159	0.54448	2.91160

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)	-0.12074	-0.22001	-1.38453
	setup	CLK (R)	0.26145	0.30705	1.53762
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11885	-0.21889	-1.37241
	setup	CLK (R)	0.25849	0.30305	1.51993

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)	-0.15898	-0.33500	-2.80998
	setup	CLK (R)	0.58744	0.67019	3.44742
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.15555	-0.33218	-2.82015
	setup	CLK (R)	0.59297	0.67349	3.45211

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)	-0.12074	-0.22001	-1.38453
	hold	CLK (R)	-0.12403	-0.22179	-1.39461
	setup	CLK (R)	0.26145	0.30438	1.52519
	setup	CLK (R)	0.26025	0.30705	1.53762
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11885	-0.21889	-1.37241
	hold	CLK (R)	-0.12119	-0.22134	-1.38297
	setup	CLK (R)	0.25849	0.29923	1.50902
	setup	CLK (R)	0.25748	0.30305	1.51993

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)	-0.16975	-0.35019	-2.87349
	hold	CLK (R)	-0.15898	-0.33500	-2.80998
	setup	CLK (R)	0.58314	0.66144	3.44499
	setup	CLK (R)	0.58744	0.67019	3.44742
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.16580	-0.34868	-2.85923
	hold	CLK (R)	-0.15555	-0.33218	-2.82015
	setup	CLK (R)	0.58942	0.66868	3.44694
	setup	CLK (R)	0.59297	0.67349	3.45211

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)	-0.10496	-0.21486	-0.36791
	setup	CLK (R)	0.56325	0.54763	1.40937
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10725	-0.21476	-0.37247
	setup	CLK (R)	0.57085	0.56169	1.39177

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)	-0.13826	-0.30670	-2.31861
	setup	CLK (R)	0.50086	0.57953	3.19170
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13831	-0.30920	-2.32719
	setup	CLK (R)	0.51221	0.58983	3.20224

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)	-0.14950	-0.24018	-0.36791
	hold	CLK (R)	-0.10496	-0.21486	-1.23503
	setup	CLK (R)	0.56325	0.54763	0.62425
	setup	CLK (R)	0.24343	0.29905	1.40937
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.14952	-0.24242	-0.37247
	hold	CLK (R)	-0.10725	-0.21476	-1.22531
	setup	CLK (R)	0.57085	0.56169	0.63128
	setup	CLK (R)	0.24424	0.29905	1.39177

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)	-0.20710	-0.38219	-2.31861
	hold	CLK (R)	-0.13826	-0.30670	-2.56090
	setup	CLK (R)	0.34337	0.45541	2.40969
	setup	CLK (R)	0.50086	0.57953	3.19170
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.21062	-0.38488	-2.32719
	hold	CLK (R)	-0.13831	-0.30920	-2.57314
	setup	CLK (R)	0.34687	0.46003	2.41751
	setup	CLK (R)	0.51221	0.58983	3.20224

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 ()	0.17310	0.83740	16.50020
	min_pulse_width	CLK ()	0.12654	0.83740	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.17310	0.83740	16.50020
	min_pulse_width	CLK ()	0.12964	0.83740	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 ()	0.31900	0.83740	16.50020
	min_pulse_width	CLK ()	0.45869	0.83740	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.32210	0.83740	16.50020
	min_pulse_width	CLK ()	0.46800	0.83740	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	0.00866	0.00858	0.00902
	CLK	0.00740	0.00733	0.00776
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01038	0.01056	0.01115
	CLK	0.00912	0.00929	0.00982

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00886	0.00887	0.00942
	CLK	0.00760	0.00761	0.00816
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01051	0.01076	0.01135
	CLK	0.00926	0.00951	0.01006

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00887	0.00889	0.00958
	CLK	0.00761	0.00762	0.00832
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01052	0.01077	0.01156
	CLK	0.00926	0.00951	0.01027

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00865	0.00858	0.00891
	CLK	0.00739	0.00732	0.00765
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01037	0.01054	0.01087
	CLK	0.00911	0.00928	0.00959

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00076	0.00076	0.00076
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00254	0.00241	0.00320
	(CLK * !SCE)	0.00063	0.00049	0.00129
	(CLK * !SCD * SCE)	0.00046	0.00046	0.00044
	(CLK * !SCD * SCE)	-0.00073	-0.00074	-0.00075
	(!CLK * SCD * SCE)	0.00075	0.00076	0.00076
	(!CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00588	0.00575	0.00632
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00397	0.00384	0.00441
	(!CLK * !SCD * SCE)	0.00046	0.00046	0.00044
	(!CLK * !SCD * SCE)	-0.00073	-0.00073	-0.00075
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00077	0.00077	0.00077
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00035
	(CLK * !SCE)	0.00249	0.00236	0.00315
	(CLK * !SCE)	0.00060	0.00046	0.00126
	(CLK * !SCD * SCE)	0.00047	0.00047	0.00046
	(CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00073
	(!CLK * SCD * SCE)	0.00076	0.00077	0.00077
	(!CLK * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00591	0.00578	0.00636
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00402	0.00390	0.00447
	(!CLK * !SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00073

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00072	-0.00072	-0.00075
	(CLK * SCD * SCE)	0.00040	0.00039	0.00038
	(CLK * !SCE)	0.00059	0.00051	0.00160
	(CLK * !SCE)	0.00249	0.00243	0.00351
	(CLK * !SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * !SCD * SCE)	0.00074	0.00075	0.00075
	(!CLK * SCD * SCE)	-0.00072	-0.00073	-0.00075
	(!CLK * SCD * SCE)	0.00040	0.00040	0.00038
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00419	0.00409	0.00517
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00610	0.00600	0.00708
	(!CLK * !SCD * SCE)	-0.00043	-0.00044	-0.00043
	(!CLK * !SCD * SCE)	0.00075	0.00075	0.00075
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00073	-0.00074	-0.00076
	(CLK * SCD * SCE)	0.00039	0.00039	0.00037
	(CLK * !SCE)	0.00066	0.00059	0.00168
	(CLK * !SCE)	0.00254	0.00248	0.00356
	(CLK * !SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !SCD * SCE)	0.00073	0.00073	0.00073
	(!CLK * SCD * SCE)	-0.00073	-0.00074	-0.00076
	(!CLK * SCD * SCE)	0.00039	0.00039	0.00037
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00419	0.00410	0.00518
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00609	0.00599	0.00707
	(!CLK * !SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !SCD * SCE)	0.00073	0.00073	0.00073

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00348	0.00335	0.00362
	(CLK * D * SCE)	0.00107	0.00094	0.00122
	(CLK * !D * SCE)	0.00390	0.00379	0.00400
	(CLK * !D * SCE)	0.00143	0.00131	0.00153
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00681	0.00669	0.00690
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00441	0.00428	0.00449
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00724	0.00713	0.00728
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00476	0.00465	0.00481
	!SCE	0.00068	0.00063	0.00061
	!SCE	-0.00065	-0.00072	-0.00072
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00341	0.00329	0.00356
	(CLK * D * SCE)	0.00104	0.00091	0.00119
	(CLK * !D * SCE)	0.00384	0.00373	0.00394
	(CLK * !D * SCE)	0.00140	0.00128	0.00150
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00682	0.00671	0.00692
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00445	0.00434	0.00455
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00725	0.00715	0.00731
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00481	0.00470	0.00487
	!SCE	0.00066	0.00060	0.00059
	!SCE	-0.00066	-0.00073	-0.00073

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00126	0.00115	0.00145
	(CLK * D * SCE)	0.00367	0.00356	0.00385
	(CLK * !D * SCE)	0.00101	0.00091	0.00125
	(CLK * !D * SCE)	0.00349	0.00339	0.00372
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00484	0.00473	0.00504
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00725	0.00715	0.00743
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00460	0.00449	0.00486
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00708	0.00697	0.00733
	!SCE	-0.00059	-0.00061	-0.00061
	!SCE	0.00073	0.00074	0.00074
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00131	0.00121	0.00152
	(CLK * D * SCE)	0.00370	0.00360	0.00388
	(CLK * !D * SCE)	0.00107	0.00097	0.00132
	(CLK * !D * SCE)	0.00352	0.00342	0.00375
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00483	0.00473	0.00504
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00721	0.00711	0.00740
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00459	0.00449	0.00487
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00704	0.00693	0.00730
	!SCE	-0.00057	-0.00059	-0.00059
	!SCE	0.00074	0.00075	0.00074

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)**	0.00325	0.00300	0.00388
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00020	-0.00046	0.00042
	(CLK * D * !SCD)	0.00482	0.00460	0.00545
	(CLK * D * !SCD)	0.00236	0.00211	0.00294
	(CLK * !D * SCD)	0.00571	0.00539	0.00673
	(CLK * !D * SCD)	0.00142	0.00109	0.00246
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00325	0.00299	0.00387
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00020	-0.00046	0.00042
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00832	0.00817	0.00900
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00586	0.00569	0.00649
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00905	0.00873	0.00999
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00475	0.00444	0.00572
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00313	0.00292	0.00380
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00013	-0.00032	0.00054

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00338	0.00312	0.00399
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00014	-0.00041	0.00046
	(CLK * D * !SCD)	0.00501	0.00478	0.00560
	(CLK * D * !SCD)	0.00245	0.00220	0.00301
	(CLK * !D * SCD)	0.00580	0.00547	0.00680
	(CLK * !D * SCD)	0.00145	0.00112	0.00247
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00338	0.00312	0.00399
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00014	-0.00041	0.00046
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00843	0.00828	0.00909
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00588	0.00571	0.00649
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00922	0.00890	0.01015
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00487	0.00455	0.00581
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00325	0.00304	0.00390
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00008	-0.00029	0.00056

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)**	-0.00024	-0.00031	0.00091
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00319	0.00313	0.00435
	(CLK * D * !SCD)	0.00233	0.00216	0.00330
	(CLK * D * !SCD)	0.00482	0.00465	0.00578
	(CLK * !D * SCD)	0.00081	0.00060	0.00221
	(CLK * !D * SCD)	0.00509	0.00489	0.00650
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00024	-0.00032	0.00090
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00319	0.00313	0.00435
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00564	0.00553	0.00661
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00813	0.00801	0.00910
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00441	0.00419	0.00577
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00869	0.00846	0.01005
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00003	-0.00006	0.00113
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00328	0.00320	0.00439

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00027	-0.00035	0.00086
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00324	0.00317	0.00438
	(CLK * D * !SCD)	0.00226	0.00209	0.00322
	(CLK * D * !SCD)	0.00485	0.00468	0.00579
	(CLK * !D * SCD)	0.00086	0.00064	0.00225
	(CLK * !D * SCD)	0.00520	0.00499	0.00659
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00027	-0.00035	0.00086
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00324	0.00317	0.00438
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00566	0.00554	0.00662
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00825	0.00812	0.00920
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00440	0.00417	0.00575
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00873	0.00851	0.01009
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00002	-0.00008	0.00110
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00335	0.00325	0.00444

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)	0.00797	0.00760	0.00851
	(D * SCD * SCE * Q * !Q_N)	0.00546	0.00507	0.00599
	(D * !SCE * Q * !Q_N)	0.00796	0.00760	0.00851
	(D * !SCE * Q * !Q_N)	0.00545	0.00507	0.00599
	(D * !SCD * SCE * !Q * Q_N)	0.00788	0.00750	0.00842
	(D * !SCD * SCE * !Q * Q_N)	0.00536	0.00497	0.00590
	(!D * SCD * SCE * Q * !Q_N)	0.00797	0.00760	0.00851
	(!D * SCD * SCE * Q * !Q_N)	0.00546	0.00507	0.00599
	(!D * !SCE * !Q * Q_N)	0.00788	0.00750	0.00841
	(!D * !SCE * !Q * Q_N)	0.00536	0.00497	0.00589
	(!D * !SCD * SCE * !Q * Q_N)	0.00788	0.00750	0.00843
	(!D * !SCD * SCE * !Q * Q_N)	0.00536	0.00497	0.00590
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.00815	0.00777	0.00868
	(D * SCD * SCE * Q * !Q_N)	0.00563	0.00524	0.00616
	(D * !SCE * Q * !Q_N)	0.00814	0.00777	0.00866
	(D * !SCE * Q * !Q_N)	0.00562	0.00524	0.00614
	(D * !SCD * SCE * !Q * Q_N)	0.00807	0.00769	0.00857
	(D * !SCD * SCE * !Q * Q_N)	0.00555	0.00516	0.00606
	(!D * SCD * SCE * Q * !Q_N)	0.00815	0.00777	0.00867
	(!D * SCD * SCE * Q * !Q_N)	0.00563	0.00524	0.00615
	(!D * !SCE * !Q * Q_N)	0.00807	0.00769	0.00859
	(!D * !SCE * !Q * Q_N)	0.00555	0.00516	0.00607
	(!D * !SCD * SCE * !Q * Q_N)	0.00807	0.00769	0.00859
	(!D * !SCD * SCE * !Q * Q_N)	0.00555	0.00516	0.00607

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)**	0.00455	0.00430	0.00551
	(D * SCD * SCE * Q * !Q_N)	0.00707	0.00681	0.00803
	(D * SCD * SCE * !Q * Q_N)	0.00778	0.00743	0.00858
	(D * SCD * SCE * !Q * Q_N)	0.01030	0.00994	0.01110
	(D * !SCE * Q * !Q_N)	0.00455	0.00430	0.00551
	(D * !SCE * Q * !Q_N)	0.00707	0.00681	0.00803
	(D * !SCE * !Q * Q_N)	0.00775	0.00740	0.00855
	(D * !SCE * !Q * Q_N)	0.01027	0.00992	0.01108
	(D * !SCD * SCE * Q * !Q_N)	0.00888	0.00865	0.01013
	(D * !SCD * SCE * Q * !Q_N)	0.01142	0.01119	0.01266
	(D * !SCD * SCE * !Q * Q_N)	0.00459	0.00433	0.00554
	(D * !SCD * SCE * !Q * Q_N)	0.00711	0.00685	0.00807
	(!D * SCD * SCE * Q * !Q_N)	0.00455	0.00430	0.00551
	(!D * SCD * SCE * Q * !Q_N)	0.00707	0.00681	0.00803
	(!D * SCD * SCE * !Q * Q_N)	0.00781	0.00746	0.00861
	(!D * SCD * SCE * !Q * Q_N)	0.01031	0.00997	0.01112
	(!D * !SCE * Q * !Q_N)	0.00886	0.00862	0.01010
	(!D * !SCE * Q * !Q_N)	0.01138	0.01114	0.01262
	(!D * !SCE * !Q * Q_N)	0.00458	0.00432	0.00554
	(!D * !SCE * !Q * Q_N)	0.00710	0.00684	0.00806
	(!D * !SCD * SCE * Q * !Q_N)	0.00887	0.00862	0.01012
	(!D * !SCD * SCE * Q * !Q_N)	0.01140	0.01116	0.01265
	(!D * !SCD * SCE * !Q * Q_N)	0.00459	0.00433	0.00554
	(!D * !SCD * SCE * !Q * Q_N)	0.00711	0.00685	0.00807

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00462	0.00438	0.00558
	(D * SCD * SCE * Q * !Q_N)	0.00713	0.00690	0.00809
	(D * SCD * SCE * !Q * Q_N)	0.00792	0.00758	0.00873
	(D * SCD * SCE * !Q * Q_N)	0.01043	0.01009	0.01124
	(D * !SCE * Q * !Q_N)	0.00462	0.00438	0.00558
	(D * !SCE * Q * !Q_N)	0.00713	0.00690	0.00809
	(D * !SCE * !Q * Q_N)	0.00788	0.00755	0.00870
	(D * !SCE * !Q * Q_N)	0.01040	0.01006	0.01122
	(D * !SCD * SCE * Q * !Q_N)	0.00888	0.00865	0.01010
	(D * !SCD * SCE * Q * !Q_N)	0.01141	0.01118	0.01263
	(D * !SCD * SCE * !Q * Q_N)	0.00464	0.00439	0.00560
	(D * !SCD * SCE * !Q * Q_N)	0.00715	0.00691	0.00811
	(!D * SCD * SCE * Q * !Q_N)	0.00462	0.00438	0.00558
	(!D * SCD * SCE * Q * !Q_N)	0.00713	0.00690	0.00809
	(!D * SCD * SCE * !Q * Q_N)	0.00794	0.00761	0.00876
	(!D * SCD * SCE * !Q * Q_N)	0.01045	0.01011	0.01126
	(!D * !SCE * Q * !Q_N)	0.00887	0.00863	0.01007
	(!D * !SCE * Q * !Q_N)	0.01138	0.01115	0.01259
	(!D * !SCE * !Q * Q_N)	0.00463	0.00439	0.00559
	(!D * !SCE * !Q * Q_N)	0.00715	0.00691	0.00811
	(!D * !SCD * SCE * Q * !Q_N)	0.00888	0.00866	0.01009
	(!D * !SCD * SCE * Q * !Q_N)	0.01140	0.01118	0.01262
	(!D * !SCD * SCE * !Q * Q_N)	0.00464	0.00439	0.00560
	(!D * !SCD * SCE * !Q * Q_N)	0.00715	0.00691	0.00811

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00184	0.00192	0.00406	0.00280	0.64549
sky130_fd_sc_hs__sdfxtp_2	0.00187	0.00189	0.00393	0.00282	1.28752
sky130_fd_sc_hs__sdfxtp_4	0.00185	0.00187	0.00405	0.00280	2.44757

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.23824	0.36928
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.23000	0.33319
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.31347	0.46391

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)**	0.32877	1.07781	7.62575
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.33349	0.96640	7.70778
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.39890	0.94120	7.78931

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.36185	0.76217	2.92852
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.38035	0.76291	3.00923
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.37827	0.72796	3.01272

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)	-0.09551	-0.20367	-1.16809
	setup	CLK (R)	0.23006	0.28523	1.33779
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09899	-0.20832	-1.18263
	setup	CLK (R)	0.24423	0.29711	1.35026
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09629	-0.20255	-1.15599
	setup	CLK (R)	0.23150	0.28663	1.31266

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)	-0.11045	-0.26161	-2.08683
	setup	CLK (R)	0.48911	0.55376	2.94288
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11425	-0.26666	-2.16907
	setup	CLK (R)	0.51739	0.57445	2.99460
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11733	-0.26457	-2.18106
	setup	CLK (R)	0.48738	0.54596	2.92031

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)	-0.09551	-0.20367	-1.16809
	setup	CLK (R)	0.23006	0.28523	1.33779
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09899	-0.20832	-1.18263
	setup	CLK (R)	0.24423	0.29711	1.35026
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09629	-0.20255	-1.15599
	setup	CLK (R)	0.23150	0.28663	1.31266

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)	-0.11045	-0.26161	-2.08683
	setup	CLK (R)	0.48911	0.55376	2.94288
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11425	-0.26666	-2.16907
	setup	CLK (R)	0.51739	0.57445	2.99460
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11733	-0.26457	-2.18106
	setup	CLK (R)	0.48738	0.54596	2.92031

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)	-0.11929	-0.22245	-1.40045
	setup	CLK (R)	0.26251	0.30705	1.55531
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12514	-0.22472	-1.40548
	setup	CLK (R)	0.27691	0.31892	1.56476
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11919	-0.21964	-1.38732
	setup	CLK (R)	0.26457	0.30498	1.53239

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)	-0.15906	-0.34274	-2.82821
	setup	CLK (R)	0.60366	0.68406	3.48404
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.16374	-0.34314	-2.85047
	setup	CLK (R)	0.62683	0.70561	3.51803
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.16656	-0.34585	-2.90314
	setup	CLK (R)	0.59973	0.67783	3.46325

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)	-0.11929	-0.22245	-1.40045
	hold	CLK (R)	-0.12372	-0.22437	-1.41232
	setup	CLK (R)	0.26251	0.30477	1.54649
	setup	CLK (R)	0.26165	0.30705	1.55531
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12514	-0.22472	-1.40548
	hold	CLK (R)	-0.12681	-0.22612	-1.41912
	setup	CLK (R)	0.27691	0.31648	1.54979
	setup	CLK (R)	0.27680	0.31892	1.56476
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11919	-0.21964	-1.38732
	hold	CLK (R)	-0.12339	-0.22162	-1.39755
	setup	CLK (R)	0.26162	0.30473	1.52331
	setup	CLK (R)	0.26457	0.30498	1.53239

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)	-0.17392	-0.35397	-2.86076
	hold	CLK (R)	-0.15906	-0.34274	-2.82821
	setup	CLK (R)	0.59850	0.67952	3.47777
	setup	CLK (R)	0.60366	0.68406	3.48404
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.17794	-0.35683	-2.92411
	hold	CLK (R)	-0.16374	-0.34314	-2.85047
	setup	CLK (R)	0.62347	0.70297	3.51363
	setup	CLK (R)	0.62683	0.70561	3.51803
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.18072	-0.35878	-2.97437
	hold	CLK (R)	-0.16656	-0.34585	-2.90314
	setup	CLK (R)	0.59445	0.67513	3.45802
	setup	CLK (R)	0.59973	0.67783	3.46325

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)	-0.10746	-0.21615	-0.39628
	setup	CLK (R)	0.58062	0.56707	1.42686
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10788	-0.21970	-0.36816
	setup	CLK (R)	0.60510	0.58750	1.43787
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10701	-0.21296	-0.41624
	setup	CLK (R)	0.57682	0.56254	1.40198

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)	-0.13945	-0.31124	-2.37144
	setup	CLK (R)	0.51662	0.59742	3.22991
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14139	-0.31383	-2.33674
	setup	CLK (R)	0.54161	0.61752	3.27221
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14604	-0.31533	-2.35449
	setup	CLK (R)	0.51404	0.59395	3.21145

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)	-0.15319	-0.24630	-0.39628
	hold	CLK (R)	-0.10746	-0.21615	-1.25632
	setup	CLK (R)	0.58062	0.56707	0.66302
	setup	CLK (R)	0.24365	0.30496	1.42686
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.15773	-0.24780	-0.36816
	hold	CLK (R)	-0.10788	-0.21970	-1.26167
	setup	CLK (R)	0.60510	0.58750	0.64385
	setup	CLK (R)	0.26148	0.31092	1.43787
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.16290	-0.24630	-0.41624
	hold	CLK (R)	-0.10701	-0.21296	-1.24147
	setup	CLK (R)	0.57682	0.56254	0.65542
	setup	CLK (R)	0.24687	0.30360	1.40198

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)	-0.21421	-0.39104	-2.37144
	hold	CLK (R)	-0.13945	-0.31124	-2.56579
	setup	CLK (R)	0.34669	0.46798	2.46011
	setup	CLK (R)	0.51662	0.59742	3.22991
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.21223	-0.38694	-2.33674
	hold	CLK (R)	-0.14139	-0.31383	-2.59008
	setup	CLK (R)	0.35811	0.46806	2.42829
	setup	CLK (R)	0.54161	0.61752	3.27221
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.21391	-0.38694	-2.35449
	hold	CLK (R)	-0.14604	-0.31533	-2.64350
	setup	CLK (R)	0.35045	0.46332	2.43529
	setup	CLK (R)	0.51404	0.59395	3.21145

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 ()	0.16068	0.83740	16.50020
	min_pulse_width	CLK ()	0.12343	0.83740	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.17310	0.83740	16.50020
	min_pulse_width	CLK ()	0.12964	0.83740	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.21966	0.83740	16.50020
	min_pulse_width	CLK ()	0.12964	0.83740	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 ()	0.31900	0.83740	16.50020
	min_pulse_width	CLK ()	0.46179	0.83740	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.33763	0.83740	16.50020
	min_pulse_width	CLK ()	0.48042	0.83740	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.32210	0.83740	16.50020
	min_pulse_width	CLK ()	0.46800	0.83740	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	0.01340	0.01316	0.01403
	CLK	0.01091	0.01066	0.01160
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01534	0.01527	0.01615
	CLK	0.01282	0.01276	0.01378
sky130_fd_sc_hs__sdfxtp_4	CLK	0.01905	0.01930	0.02032
	CLK	0.01655	0.01681	0.01809

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01404	0.01390	0.01524
	CLK	0.01155	0.01141	0.01270
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01583	0.01596	0.01738
	CLK	0.01331	0.01343	0.01472
sky130_fd_sc_hs__sdfxtp_4	CLK	0.01966	0.02028	0.02188
	CLK	0.01716	0.01773	0.01907

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00078	0.00078	0.00078
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00255	0.00241	0.00320
	(CLK * !SCE)	0.00059	0.00045	0.00124
	(CLK * !SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCD * SCE)	-0.00073	-0.00074	-0.00074
	(!CLK * SCD * SCE)	0.00078	0.00078	0.00078
	(!CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCE)	0.00601	0.00588	0.00645
	(!CLK * !SCE)	0.00405	0.00392	0.00449
	(!CLK * !SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK * !SCD * SCE)	-0.00072	-0.00073	-0.00075
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00080	0.00081	0.00080
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00276	0.00262	0.00338
	(CLK * !SCE)	0.00076	0.00062	0.00138
	(CLK * !SCD * SCE)	0.00049	0.00049	0.00048
	(CLK * !SCD * SCE)	-0.00073	-0.00074	-0.00075
	(!CLK * SCD * SCE)	0.00080	0.00081	0.00080
	(!CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCE)	0.00652	0.00639	0.00694
	(!CLK * !SCE)	0.00452	0.00439	0.00494
	(!CLK * !SCD * SCE)	0.00049	0.00049	0.00048
	(!CLK * !SCD * SCE)	-0.00073	-0.00074	-0.00075

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00079	0.00080	0.00079
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00255	0.00242	0.00321
	(CLK * !SCE)	0.00060	0.00046	0.00126
	(CLK * !SCD * SCE)	0.00049	0.00049	0.00048
	(CLK * !SCD * SCE)	-0.00072	-0.00073	-0.00074
	(!CLK * SCD * SCE)	0.00079	0.00080	0.00079
	(!CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCE)	0.00604	0.00590	0.00648
	(!CLK * !SCE)	0.00408	0.00395	0.00452
	(!CLK * !SCD * SCE)	0.00049	0.00049	0.00048
	(!CLK * !SCD * SCE)	-0.00072	-0.00073	-0.00074

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00074	-0.00075	-0.00077
	(CLK * SCD * SCE)	0.00039	0.00039	0.00037
	(CLK * !SCE)	0.00064	0.00056	0.00165
	(CLK * !SCE)	0.00260	0.00253	0.00361
	(CLK * !SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCD * SCE)	0.00074	0.00075	0.00074
	(!CLK * SCD * SCE)	-0.00074	-0.00075	-0.00077
	(!CLK * SCD * SCE)	0.00039	0.00039	0.00037
	(!CLK * !SCE)	0.00406	0.00397	0.00505
	(!CLK * !SCE)	0.00603	0.00593	0.00701
	(!CLK * !SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !SCD * SCE)	0.00074	0.00075	0.00075

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00077	-0.00077	-0.00080
	(CLK * SCD * SCE)	0.00039	0.00039	0.00037
	(CLK * !SCE)	0.00067	0.00059	0.00167
	(CLK * !SCE)	0.00268	0.00259	0.00366
	(CLK * !SCD * SCE)	-0.00047	-0.00047	-0.00047
	(CLK * !SCD * SCE)	0.00076	0.00075	0.00075
	(!CLK * SCD * SCE)	-0.00076	-0.00078	-0.00080
	(!CLK * SCD * SCE)	0.00039	0.00039	0.00037
	(!CLK * !SCE)	0.00418	0.00407	0.00513
	(!CLK * !SCE)	0.00618	0.00607	0.00713
	(!CLK * !SCD * SCE)	-0.00047	-0.00047	-0.00047
	(!CLK * !SCD * SCE)	0.00076	0.00076	0.00075
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00075	-0.00076	-0.00079
	(CLK * SCD * SCE)	0.00039	0.00039	0.00037
	(CLK * !SCE)	0.00062	0.00054	0.00163
	(CLK * !SCE)	0.00256	0.00250	0.00358
	(CLK * !SCD * SCE)	-0.00047	-0.00047	-0.00047
	(CLK * !SCD * SCE)	0.00074	0.00074	0.00074
	(!CLK * SCD * SCE)	-0.00075	-0.00077	-0.00079
	(!CLK * SCD * SCE)	0.00039	0.00039	0.00037
	(!CLK * !SCE)	0.00431	0.00421	0.00528
	(!CLK * !SCE)	0.00627	0.00617	0.00723
	(!CLK * !SCD * SCE)	-0.00046	-0.00047	-0.00047
	(!CLK * !SCD * SCE)	0.00074	0.00074	0.00074

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00354	0.00342	0.00368
	(CLK * D * SCE)	0.00106	0.00092	0.00119
	(CLK * !D * SCE)	0.00397	0.00385	0.00406
	(CLK * !D * SCE)	0.00141	0.00129	0.00150
	(!CLK * D * SCE)	0.00700	0.00688	0.00708
	(!CLK * D * SCE)	0.00451	0.00438	0.00459
	(!CLK * !D * SCE)	0.00742	0.00731	0.00746
	(!CLK * !D * SCE)	0.00486	0.00475	0.00490
	!SCE	0.00070	0.00064	0.00063
	!SCE	-0.00070	-0.00076	-0.00077
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00365	0.00353	0.00379
	(CLK * D * SCE)	0.00118	0.00105	0.00131
	(CLK * !D * SCE)	0.00408	0.00396	0.00416
	(CLK * !D * SCE)	0.00154	0.00142	0.00163
	(!CLK * D * SCE)	0.00740	0.00728	0.00748
	(!CLK * D * SCE)	0.00493	0.00481	0.00501
	(!CLK * !D * SCE)	0.00783	0.00772	0.00788
	(!CLK * !D * SCE)	0.00529	0.00517	0.00534
	!SCE	0.00071	0.00065	0.00063
	!SCE	-0.00065	-0.00072	-0.00073
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00352	0.00340	0.00366
	(CLK * D * SCE)	0.00108	0.00095	0.00122
	(CLK * !D * SCE)	0.00395	0.00383	0.00404
	(CLK * !D * SCE)	0.00144	0.00131	0.00153
	(!CLK * D * SCE)	0.00699	0.00687	0.00708
	(!CLK * D * SCE)	0.00456	0.00443	0.00463
	(!CLK * !D * SCE)	0.00742	0.00731	0.00747
	(!CLK * !D * SCE)	0.00491	0.00480	0.00496
	!SCE	0.00068	0.00062	0.00061
	!SCE	-0.00067	-0.00074	-0.00075

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00127	0.00115	0.00145
	(CLK * D * SCE)	0.00377	0.00365	0.00393
	(CLK * !D * SCE)	0.00102	0.00091	0.00125
	(CLK * !D * SCE)	0.00359	0.00347	0.00380
	(!CLK * D * SCE)	0.00467	0.00456	0.00486
	(!CLK * D * SCE)	0.00717	0.00706	0.00734
	(!CLK * !D * SCE)	0.00443	0.00432	0.00469
	(!CLK * !D * SCE)	0.00700	0.00688	0.00724
	!SCE	-0.00061	-0.00062	-0.00062
	!SCE	0.00077	0.00078	0.00078
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00136	0.00124	0.00154
	(CLK * D * SCE)	0.00384	0.00373	0.00401
	(CLK * !D * SCE)	0.00111	0.00100	0.00134
	(CLK * !D * SCE)	0.00366	0.00354	0.00388
	(!CLK * D * SCE)	0.00484	0.00472	0.00503
	(!CLK * D * SCE)	0.00732	0.00720	0.00748
	(!CLK * !D * SCE)	0.00460	0.00449	0.00484
	(!CLK * !D * SCE)	0.00715	0.00704	0.00737
	!SCE	-0.00061	-0.00063	-0.00063
	!SCE	0.00073	0.00074	0.00074

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00126	0.00115	0.00145
	(CLK * D * SCE)	0.00371	0.00360	0.00388
	(CLK * !D * SCE)	0.00101	0.00091	0.00125
	(CLK * !D * SCE)	0.00353	0.00342	0.00375
	(!CLK * D * SCE)	0.00494	0.00483	0.00512
	(!CLK * D * SCE)	0.00739	0.00727	0.00755
	(!CLK * !D * SCE)	0.00470	0.00459	0.00495
	(!CLK * !D * SCE)	0.00721	0.00710	0.00744
	!SCE	-0.00059	-0.00061	-0.00061
	!SCE	0.00075	0.00076	0.00076

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)**	0.00344	0.00317	0.00403
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00019	-0.00048	0.00038
	(CLK * D * !SCD)	0.00506	0.00482	0.00564
	(CLK * D * !SCD)	0.00245	0.00218	0.00298
	(CLK * !D * SCD)	0.00591	0.00557	0.00688
	(CLK * !D * SCD)	0.00139	0.00105	0.00239
	(!CLK * D * SCD)	0.00344	0.00315	0.00403
	(!CLK * D * SCD)	-0.00019	-0.00047	0.00038
	(!CLK * D * !SCD)	0.00838	0.00821	0.00903
	(!CLK * D * !SCD)	0.00576	0.00558	0.00636
	(!CLK * !D * SCD)	0.00936	0.00902	0.01027
	(!CLK * !D * SCD)	0.00484	0.00451	0.00577
	(!CLK * !D * !SCD)	0.00331	0.00310	0.00395
	(!CLK * !D * !SCD)	-0.00014	-0.00035	0.00050

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00330	0.00304	0.00392
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00020	-0.00047	0.00041
	(CLK * D * !SCD)	0.00499	0.00478	0.00561
	(CLK * D * !SCD)	0.00253	0.00228	0.00310
	(CLK * !D * SCD)	0.00594	0.00562	0.00694
	(CLK * !D * SCD)	0.00155	0.00122	0.00257
	(!CLK * D * SCD)	0.00330	0.00304	0.00392
	(!CLK * D * SCD)	-0.00020	-0.00047	0.00041
	(!CLK * D * !SCD)	0.00839	0.00825	0.00907
	(!CLK * D * !SCD)	0.00592	0.00576	0.00655
	(!CLK * !D * SCD)	0.00969	0.00937	0.01062
	(!CLK * !D * SCD)	0.00530	0.00498	0.00625
	(!CLK * !D * !SCD)	0.00320	0.00299	0.00386
	(!CLK * !D * !SCD)	-0.00011	-0.00030	0.00055
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00343	0.00316	0.00402
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00019	-0.00048	0.00039
	(CLK * D * !SCD)	0.00503	0.00479	0.00560
	(CLK * D * !SCD)	0.00241	0.00213	0.00293
	(CLK * !D * SCD)	0.00591	0.00557	0.00689
	(CLK * !D * SCD)	0.00143	0.00108	0.00242
	(!CLK * D * SCD)	0.00343	0.00316	0.00402
	(!CLK * D * SCD)	-0.00019	-0.00048	0.00039
	(!CLK * D * !SCD)	0.00861	0.00845	0.00927
	(!CLK * D * !SCD)	0.00599	0.00580	0.00660
	(!CLK * !D * SCD)	0.00939	0.00905	0.01029
	(!CLK * !D * SCD)	0.00491	0.00457	0.00581
	(!CLK * !D * !SCD)	0.00330	0.00309	0.00393
	(!CLK * !D * !SCD)	-0.00013	-0.00035	0.00049

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)	-0.00025	-0.00034	0.00087
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00337	0.00329	0.00450
	(CLK * D * !SCD)	0.00234	0.00216	0.00328
	(CLK * D * !SCD)	0.00499	0.00481	0.00592
	(CLK * !D * SCD)	0.00084	0.00062	0.00221
	(CLK * !D * SCD)	0.00535	0.00513	0.00672
	(!CLK * D * SCD)	-0.00025	-0.00034	0.00087
	(!CLK * D * SCD)	0.00337	0.00329	0.00450
	(!CLK * D * !SCD)	0.00577	0.00565	0.00672
	(!CLK * D * !SCD)	0.00842	0.00829	0.00936
	(!CLK * !D * SCD)	0.00427	0.00403	0.00561
	(!CLK * !D * SCD)	0.00877	0.00853	0.01011
	(!CLK * !D * !SCD)	0.00003	-0.00008	0.00110
	(!CLK * !D * !SCD)	0.00347	0.00337	0.00455

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00024	-0.00032	0.00089
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00324	0.00318	0.00439
	(CLK * D * !SCD)	0.00252	0.00236	0.00348
	(CLK * D * !SCD)	0.00503	0.00486	0.00597
	(CLK * !D * SCD)	0.00088	0.00067	0.00227
	(CLK * !D * SCD)	0.00526	0.00505	0.00665
	(!CLK * D * SCD)	-0.00024	-0.00032	0.00089
	(!CLK * D * SCD)	0.00324	0.00317	0.00439
	(!CLK * D * !SCD)	0.00625	0.00615	0.00723
	(!CLK * D * !SCD)	0.00876	0.00864	0.00972
	(!CLK * !D * SCD)	0.00439	0.00416	0.00573
	(!CLK * !D * SCD)	0.00876	0.00855	0.01011
	(!CLK * !D * !SCD)	0.00001	-0.00009	0.00110
	(!CLK * !D * !SCD)	0.00332	0.00323	0.00441
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00024	-0.00033	0.00088
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00338	0.00330	0.00450
	(CLK * D * !SCD)	0.00236	0.00218	0.00330
	(CLK * D * !SCD)	0.00502	0.00484	0.00595
	(CLK * !D * SCD)	0.00084	0.00061	0.00221
	(CLK * !D * SCD)	0.00532	0.00510	0.00670
	(!CLK * D * SCD)	-0.00024	-0.00033	0.00088
	(!CLK * D * SCD)	0.00338	0.00330	0.00450
	(!CLK * D * !SCD)	0.00581	0.00569	0.00677
	(!CLK * D * !SCD)	0.00847	0.00834	0.00942
	(!CLK * !D * SCD)	0.00454	0.00430	0.00587
	(!CLK * !D * SCD)	0.00902	0.00877	0.01035
	(!CLK * !D * !SCD)	0.00004	-0.00006	0.00111
	(!CLK * !D * !SCD)	0.00348	0.00337	0.00456

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)	0.00789	0.00752	0.00843
	(D * SCD * SCE * Q)	0.00539	0.00501	0.00593
	(D * !SCE * Q)	0.00788	0.00752	0.00843
	(D * !SCE * Q)	0.00539	0.00501	0.00593
	(D * !SCD * SCE * !Q)	0.00787	0.00750	0.00843
	(D * !SCD * SCE * !Q)	0.00538	0.00500	0.00593
	(!D * SCD * SCE * Q)	0.00789	0.00752	0.00843
	(!D * SCD * SCE * Q)	0.00539	0.00501	0.00593
	(!D * !SCE * !Q)	0.00787	0.00750	0.00842
	(!D * !SCE * !Q)	0.00538	0.00500	0.00592
	(!D * !SCD * SCE * !Q)	0.00788	0.00750	0.00843
	(!D * !SCD * SCE * !Q)	0.00538	0.00500	0.00593
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.00803	0.00766	0.00854
	(D * SCD * SCE * Q)	0.00552	0.00514	0.00602
	(D * !SCE * Q)	0.00803	0.00766	0.00854
	(D * !SCE * Q)	0.00551	0.00513	0.00602
	(D * !SCD * SCE * !Q)	0.00810	0.00772	0.00861
	(D * !SCD * SCE * !Q)	0.00559	0.00520	0.00609
	(!D * SCD * SCE * Q)	0.00803	0.00766	0.00854
	(!D * SCD * SCE * Q)	0.00552	0.00514	0.00602
	(!D * !SCE * !Q)	0.00810	0.00772	0.00861
	(!D * !SCE * !Q)	0.00559	0.00520	0.00609
	(!D * !SCD * SCE * !Q)	0.00810	0.00773	0.00861
	(!D * !SCD * SCE * !Q)	0.00559	0.00520	0.00609

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00798	0.00761	0.00851
	(D * SCD * SCE * Q)	0.00548	0.00510	0.00601
	(D * !SCE * Q)	0.00797	0.00761	0.00851
	(D * !SCE * Q)	0.00547	0.00509	0.00601
	(D * !SCD * SCE * !Q)	0.00793	0.00756	0.00847
	(D * !SCD * SCE * !Q)	0.00543	0.00504	0.00597
	(!D * SCD * SCE * Q)	0.00798	0.00761	0.00852
	(!D * SCD * SCE * Q)	0.00548	0.00510	0.00602
	(!D * !SCE * !Q)	0.00793	0.00756	0.00847
	(!D * !SCE * !Q)	0.00543	0.00504	0.00597
	(!D * !SCD * SCE * !Q)	0.00794	0.00756	0.00847
	(!D * !SCD * SCE * !Q)	0.00543	0.00505	0.00597

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)**	0.00463	0.00438	0.00559
	(D * SCD * SCE * Q)	0.00712	0.00687	0.00809
	(D * SCD * SCE * !Q)	0.00790	0.00755	0.00871
	(D * SCD * SCE * !Q)	0.01039	0.01003	0.01120
	(D * !SCE * Q)	0.00463	0.00438	0.00559
	(D * !SCE * Q)	0.00712	0.00687	0.00809
	(D * !SCE * !Q)	0.00786	0.00751	0.00868
	(D * !SCE * !Q)	0.01036	0.01000	0.01117
	(D * !SCD * SCE * Q)	0.00876	0.00851	0.01000
	(D * !SCD * SCE * Q)	0.01127	0.01103	0.01251
	(D * !SCD * SCE * !Q)	0.00458	0.00432	0.00554
	(D * !SCD * SCE * !Q)	0.00707	0.00682	0.00804
	(!D * SCD * SCE * Q)	0.00463	0.00438	0.00559
	(!D * SCD * SCE * Q)	0.00712	0.00687	0.00809
	(!D * SCD * SCE * !Q)	0.00792	0.00757	0.00874
	(!D * SCD * SCE * !Q)	0.01040	0.01005	0.01122
	(!D * !SCE * Q)	0.00875	0.00850	0.00997
	(!D * !SCE * Q)	0.01124	0.01100	0.01246
	(!D * !SCE * !Q)	0.00458	0.00432	0.00554
	(!D * !SCE * !Q)	0.00707	0.00681	0.00803
	(!D * !SCD * SCE * Q)	0.00876	0.00851	0.00999
	(!D * !SCD * SCE * Q)	0.01126	0.01101	0.01250
	(!D * !SCD * SCE * !Q)	0.00458	0.00432	0.00554
	(!D * !SCD * SCE * !Q)	0.00707	0.00682	0.00804

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00483	0.00457	0.00577
	(D * SCD * SCE * Q)	0.00734	0.00710	0.00828
	(D * SCD * SCE * !Q)	0.00837	0.00801	0.00915
	(D * SCD * SCE * !Q)	0.01088	0.01051	0.01167
	(D * !SCE * Q)	0.00483	0.00457	0.00577
	(D * !SCE * Q)	0.00734	0.00710	0.00828
	(D * !SCE * !Q)	0.00834	0.00798	0.00913
	(D * !SCE * !Q)	0.01085	0.01049	0.01165
	(D * !SCD * SCE * Q)	0.00903	0.00878	0.01023
	(D * !SCD * SCE * Q)	0.01156	0.01132	0.01277
	(D * !SCD * SCE * !Q)	0.00470	0.00444	0.00564
	(D * !SCD * SCE * !Q)	0.00722	0.00696	0.00815
	(!D * SCD * SCE * Q)	0.00483	0.00458	0.00577
	(!D * SCD * SCE * Q)	0.00734	0.00710	0.00828
	(!D * SCD * SCE * !Q)	0.00840	0.00803	0.00918
	(!D * SCD * SCE * !Q)	0.01090	0.01053	0.01169
	(!D * !SCE * Q)	0.00901	0.00877	0.01021
	(!D * !SCE * Q)	0.01152	0.01129	0.01274
	(!D * !SCE * !Q)	0.00470	0.00444	0.00563
	(!D * !SCE * !Q)	0.00721	0.00696	0.00816
	(!D * !SCD * SCE * Q)	0.00902	0.00877	0.01023
	(!D * !SCD * SCE * Q)	0.01155	0.01131	0.01276
	(!D * !SCD * SCE * !Q)	0.00470	0.00444	0.00564
	(!D * !SCD * SCE * !Q)	0.00722	0.00696	0.00816

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00460	0.00435	0.00556
	(D * SCD * SCE * Q)	0.00710	0.00686	0.00806
	(D * SCD * SCE * !Q)	0.00793	0.00758	0.00873
	(D * SCD * SCE * !Q)	0.01043	0.01007	0.01123
	(D * !SCE * Q)	0.00460	0.00435	0.00556
	(D * !SCE * Q)	0.00710	0.00686	0.00806
	(D * !SCE * !Q)	0.00790	0.00755	0.00870
	(D * !SCE * !Q)	0.01040	0.01004	0.01121
	(D * !SCD * SCE * Q)	0.00901	0.00879	0.01025
	(D * !SCD * SCE * Q)	0.01153	0.01132	0.01278
	(D * !SCD * SCE * !Q)	0.00458	0.00432	0.00554
	(D * !SCD * SCE * !Q)	0.00708	0.00682	0.00805
	(!D * SCD * SCE * Q)	0.00460	0.00435	0.00556
	(!D * SCD * SCE * Q)	0.00710	0.00686	0.00806
	(!D * SCD * SCE * !Q)	0.00796	0.00761	0.00876
	(!D * SCD * SCE * !Q)	0.01045	0.01009	0.01125
	(!D * !SCE * Q)	0.00900	0.00876	0.01023
	(!D * !SCE * Q)	0.01150	0.01126	0.01273
	(!D * !SCE * !Q)	0.00458	0.00432	0.00554
	(!D * !SCE * !Q)	0.00708	0.00682	0.00804
	(!D * !SCD * SCE * Q)	0.00901	0.00876	0.01025
	(!D * !SCD * SCE * Q)	0.01153	0.01127	0.01276
	(!D * !SCD * SCE * !Q)	0.00458	0.00432	0.00554
	(!D * !SCD * SCE * !Q)	0.00708	0.00682	0.00804

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00226	0.00207	0.00444	0.63289
sky130_fd_sc_hs__sdlclkp_2	0.00226	0.00205	0.00470	1.27251
sky130_fd_sc_hs__sdlclkp_4	0.00214	0.00194	0.00479	2.44904

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.22867	0.35526
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.21488	0.31590
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.22412	0.35212

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)**	0.11569	0.85398	7.38979
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (RR)**	0.11884	0.75793	7.60400
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (RR)**	0.15399	0.74313	7.94252

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (FF)**	0.14637	0.72084	4.36930
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (FF)**	0.17183	0.76501	4.90039
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (FF)**	0.22970	0.84171	5.50145

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)	-0.06897	-0.16770	-1.05735
	setup	CLK (R)	0.23191	0.28905	2.16493
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06837	-0.16770	-1.05245
	setup	CLK (R)	0.22327	0.26684	1.90093
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07025	-0.17036	-1.06953
	setup	CLK (R)	0.22419	0.25555	1.57315

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)	-0.29158	-0.39133	-2.53625
	setup	CLK (R)	0.37413	0.47682	2.78800
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.28655	-0.38488	-2.52381
	setup	CLK (R)	0.35767	0.45380	2.73835
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.30090	-0.39691	-2.55501
	setup	CLK (R)	0.36423	0.44604	2.77051

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)	-0.06897	-0.16770	-1.05735
	setup	CLK (R)	0.23191	0.28905	2.16493
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06837	-0.16770	-1.05245
	setup	CLK (R)	0.22327	0.26684	1.90093
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07025	-0.17036	-1.06953
	setup	CLK (R)	0.22419	0.25555	1.57315

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)	-0.29158	-0.39133	-2.53625
	setup	CLK (R)	0.37413	0.47682	2.78800
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.28655	-0.38488	-2.52381
	setup	CLK (R)	0.35767	0.45380	2.73835
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.30090	-0.39691	-2.55501
	setup	CLK (R)	0.36423	0.44604	2.77051

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)	-0.07026	-0.17835	-1.10777
	setup	CLK (R)	0.23691	0.29927	2.21746
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.07236	-0.17569	-1.10952
	setup	CLK (R)	0.22892	0.27580	1.96611
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07103	-0.18101	-1.11995
	setup	CLK (R)	0.22442	0.26355	1.63206

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)	-0.30977	-0.43231	-3.00961
	setup	CLK (R)	0.39054	0.51869	3.25098
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.30466	-0.42576	-3.00022
	setup	CLK (R)	0.37726	0.49769	3.09757
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.31904	-0.43888	-3.02106
	setup	CLK (R)	0.38389	0.48864	3.11288

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)	-0.07026	-0.17835	-1.10777
	setup	CLK (R)	0.23691	0.29927	2.21746
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.07236	-0.17569	-1.10952
	setup	CLK (R)	0.22892	0.27580	1.96611
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07103	-0.18101	-1.11995
	setup	CLK (R)	0.22442	0.26355	1.63206

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)	-0.30977	-0.43231	-3.00961
	setup	CLK (R)	0.39054	0.51869	3.25098
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.30466	-0.42576	-3.00022
	setup	CLK (R)	0.37726	0.49769	3.09757
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.31904	-0.43888	-3.02106
	setup	CLK (R)	0.38389	0.48864	3.11288

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 ()	0.08308	0.83740	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.09239	0.83740	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.12654	0.83740	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 ()**	0.35004	0.83740	16.50020
	min_pulse_width	**CLK ()**	0.35004	0.83740	16.50020
sky130_fd_sc_hs__sdlclkp_2	**min_pulse_width**	**CLK ()**	0.33763	0.83740	16.50020
	min_pulse_width	**CLK ()**	0.34383	0.83740	16.50020
sky130_fd_sc_hs__sdlclkp_4	**min_pulse_width**	**CLK ()**	0.34073	0.83740	16.50020
	min_pulse_width	**CLK ()**	0.34383	0.83740	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	0.00990	0.00965	0.01232
	CLK	0.00594	0.00567	0.00839
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01182	0.01172	0.01396
	CLK	0.00762	0.00753	0.00988
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01528	0.01549	0.01767
	CLK	0.01099	0.01120	0.01353

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01154	0.01156	0.01585
	CLK	0.01524	0.01525	0.01943
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01281	0.01300	0.01718
	CLK	0.01672	0.01691	0.02073
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01656	0.01712	0.02135
	CLK	0.02058	0.02117	0.02471

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00085	0.00085	0.00085
	(CLK * SCE)	-0.00046	-0.00046	-0.00045
	(CLK * !SCE)	0.00276	0.00256	0.00387
	(CLK * !SCE)	0.00068	0.00048	0.00180
	(!CLK * SCE * !GCLK)	0.00083	0.00083	0.00083
	(!CLK * SCE * !GCLK)	-0.00048	-0.00048	-0.00048
	(!CLK * !SCE * !GCLK)	0.00697	0.00674	0.00753
	(!CLK * !SCE * !GCLK)	0.00513	0.00490	0.00568
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00085	0.00085	0.00085
	(CLK * SCE)	-0.00046	-0.00046	-0.00045
	(CLK * !SCE)	0.00273	0.00253	0.00384
	(CLK * !SCE)	0.00066	0.00046	0.00178
	(!CLK * SCE * !GCLK)	0.00082	0.00083	0.00083
	(!CLK * SCE * !GCLK)	-0.00048	-0.00048	-0.00048
	(!CLK * !SCE * !GCLK)	0.00686	0.00663	0.00742
	(!CLK * !SCE * !GCLK)	0.00505	0.00481	0.00561
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00081	0.00082	0.00081
	(CLK * SCE)	-0.00043	-0.00044	-0.00044
	(CLK * !SCE)	0.00265	0.00246	0.00376
	(CLK * !SCE)	0.00067	0.00048	0.00179
	(!CLK * SCE * !GCLK)	0.00080	0.00080	0.00080
	(!CLK * SCE * !GCLK)	-0.00046	-0.00045	-0.00045
	(!CLK * !SCE * !GCLK)	0.00689	0.00667	0.00745
	(!CLK * !SCE * !GCLK)	0.00516	0.00493	0.00572

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00081	-0.00082	-0.00084
	(CLK * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCE)	0.00054	0.00052	0.00227
	(CLK * !SCE)	0.00261	0.00260	0.00434
	(!CLK * SCE * !GCLK)	-0.00079	-0.00080	-0.00082
	(!CLK * SCE * !GCLK)	0.00051	0.00051	0.00049
	(!CLK * !SCE * !GCLK)	0.00591	0.00583	0.00744
	(!CLK * !SCE * !GCLK)	0.00775	0.00767	0.00928
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00081	-0.00081	-0.00084
	(CLK * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCE)	0.00056	0.00054	0.00229
	(CLK * !SCE)	0.00262	0.00260	0.00436
	(!CLK * SCE * !GCLK)	-0.00079	-0.00079	-0.00082
	(!CLK * SCE * !GCLK)	0.00051	0.00051	0.00049
	(!CLK * !SCE * !GCLK)	0.00594	0.00586	0.00747
	(!CLK * !SCE * !GCLK)	0.00775	0.00768	0.00929
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00078	-0.00078	-0.00080
	(CLK * SCE)	0.00048	0.00047	0.00045
	(CLK * !SCE)	0.00072	0.00071	0.00245
	(CLK * !SCE)	0.00269	0.00269	0.00442
	(!CLK * SCE * !GCLK)	-0.00076	-0.00076	-0.00079
	(!CLK * SCE * !GCLK)	0.00049	0.00049	0.00047
	(!CLK * !SCE * !GCLK)	0.00613	0.00605	0.00765
	(!CLK * !SCE * !GCLK)	0.00786	0.00778	0.00939

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00082	0.00073	0.00071
	(CLK * GATE)	-0.00075	-0.00085	-0.00086
	(CLK * !GATE)	0.00344	0.00330	0.00390
	(CLK * !GATE)	0.00104	0.00089	0.00151
	(!CLK * GATE * !GCLK)	0.00081	0.00072	0.00071
	(!CLK * GATE * !GCLK)	-0.00075	-0.00085	-0.00086
	(!CLK * !GATE * !GCLK)	0.00766	0.00749	0.00789
	(!CLK * !GATE * !GCLK)	0.00549	0.00532	0.00573
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00081	0.00072	0.00071
	(CLK * GATE)	-0.00075	-0.00085	-0.00086
	(CLK * !GATE)	0.00341	0.00327	0.00388
	(CLK * !GATE)	0.00102	0.00088	0.00150
	(!CLK * GATE * !GCLK)	0.00081	0.00072	0.00070
	(!CLK * GATE * !GCLK)	-0.00075	-0.00085	-0.00086
	(!CLK * !GATE * !GCLK)	0.00755	0.00738	0.00779
	(!CLK * !GATE * !GCLK)	0.00541	0.00524	0.00567
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00077	0.00069	0.00067
	(CLK * GATE)	-0.00073	-0.00083	-0.00084
	(CLK * !GATE)	0.00334	0.00320	0.00381
	(CLK * !GATE)	0.00105	0.00090	0.00152
	(!CLK * GATE * !GCLK)	0.00077	0.00068	0.00067
	(!CLK * GATE * !GCLK)	-0.00073	-0.00083	-0.00084
	(!CLK * !GATE * !GCLK)	0.00758	0.00742	0.00782
	(!CLK * !GATE * !GCLK)	0.00552	0.00536	0.00578

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00070	-0.00070	-0.00070
	(CLK * GATE)	0.00086	0.00087	0.00087
	(CLK * !GATE)	0.00056	0.00046	0.00104
	(CLK * !GATE)	0.00296	0.00286	0.00344
	(!CLK * GATE * !GCLK)	-0.00070	-0.00070	-0.00070
	(!CLK * GATE * !GCLK)	0.00086	0.00087	0.00087
	(!CLK * !GATE * !GCLK)	0.00590	0.00576	0.00625
	(!CLK * !GATE * !GCLK)	0.00806	0.00793	0.00842
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00069	-0.00070	-0.00069
	(CLK * GATE)	0.00086	0.00087	0.00087
	(CLK * !GATE)	0.00058	0.00048	0.00106
	(CLK * !GATE)	0.00297	0.00287	0.00345
	(!CLK * GATE * !GCLK)	-0.00069	-0.00070	-0.00069
	(!CLK * GATE * !GCLK)	0.00086	0.00087	0.00087
	(!CLK * !GATE * !GCLK)	0.00593	0.00580	0.00628
	(!CLK * !GATE * !GCLK)	0.00806	0.00793	0.00842
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00066	-0.00066	-0.00066
	(CLK * GATE)	0.00084	0.00085	0.00085
	(CLK * !GATE)	0.00075	0.00065	0.00123
	(CLK * !GATE)	0.00303	0.00294	0.00352
	(!CLK * GATE * !GCLK)	-0.00066	-0.00066	-0.00066
	(!CLK * GATE * !GCLK)	0.00084	0.00085	0.00085
	(!CLK * !GATE * !GCLK)	0.00612	0.00599	0.00647
	(!CLK * !GATE * !GCLK)	0.00818	0.00805	0.00853

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00616	0.00590	0.00741
	(!GATE * !SCE * !GCLK)	0.00241	0.00211	0.00365
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00624	0.00598	0.00750
	(!GATE * !SCE * !GCLK)	0.00227	0.00198	0.00351
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00633	0.00606	0.00757
	(!GATE * !SCE * !GCLK)	0.00228	0.00198	0.00352

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.00696	0.00671	0.00888
	(GATE * SCE * !GCLK)	0.01105	0.01079	0.01294
	(GATE * !SCE * !GCLK)	0.00694	0.00670	0.00886
	(GATE * !SCE * !GCLK)	0.01103	0.01077	0.01294
	(!GATE * SCE * !GCLK)	0.00698	0.00674	0.00890
	(!GATE * SCE * !GCLK)	0.01106	0.01080	0.01297
	(!GATE * !SCE * !GCLK)	0.00275	0.00260	0.00476
	(!GATE * !SCE * !GCLK)	0.00653	0.00638	0.00854
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.00674	0.00649	0.00867
	(GATE * SCE * !GCLK)	0.01107	0.01080	0.01298
	(GATE * !SCE * !GCLK)	0.00672	0.00648	0.00866
	(GATE * !SCE * !GCLK)	0.01105	0.01079	0.01297
	(!GATE * SCE * !GCLK)	0.00676	0.00652	0.00870
	(!GATE * SCE * !GCLK)	0.01108	0.01081	0.01299
	(!GATE * !SCE * !GCLK)	0.00260	0.00245	0.00462
	(!GATE * !SCE * !GCLK)	0.00659	0.00645	0.00861
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.00700	0.00674	0.00889
	(GATE * SCE * !GCLK)	0.01140	0.01113	0.01328
	(GATE * !SCE * !GCLK)	0.00698	0.00673	0.00888
	(GATE * !SCE * !GCLK)	0.01138	0.01111	0.01327
	(!GATE * SCE * !GCLK)	0.00702	0.00677	0.00893
	(!GATE * SCE * !GCLK)	0.01141	0.01113	0.01330
	(!GATE * !SCE * !GCLK)	0.00275	0.00260	0.00474
	(!GATE * !SCE * !GCLK)	0.00682	0.00666	0.00882

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00192	0.00366	0.00168	0.00370	0.00267	0.64633	0.64863
sky130_fd_sc_hs__sedfxbp_2	0.00201	0.00371	0.00171	0.00377	0.00267	1.17535	1.21040

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxbp_1	0.00000	0.31509	0.57142
sky130_fd_sc_hs__sedfxbp_2	0.00000	0.32324	0.56717

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)**	0.31820	1.08522	7.65690
sky130_fd_sc_hs__sedfxbp_2	**CLK->Q (RR)**	0.32576	0.99260	7.71335

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	**CLK->Q (RF)**	0.32247	0.80163	3.09689
sky130_fd_sc_hs__sedfxbp_2	**CLK->Q (RF)**	0.37905	0.83834	2.97979

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)**	0.47574	1.21414	7.83186
sky130_fd_sc_hs__sedfxbp_2	**CLK->Q_N (RR)**	0.57903	1.19062	7.93869

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)**	0.45751	0.88641	3.11640
sky130_fd_sc_hs__sedfxbp_2	**CLK->Q_N (RF)**	0.50548	0.89750	3.07335

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)	-0.24698	-0.36910	-1.81770
	setup	CLK (R)	0.31502	0.40986	1.88300
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.24833	-0.37144	-1.82310
	setup	CLK (R)	0.31671	0.41167	1.88409

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)	-0.80123	-0.89209	-3.77844
	setup	CLK (R)	0.98427	1.03980	3.94106
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.79553	-0.88859	-3.77786
	setup	CLK (R)	0.97613	1.03273	3.92010

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)	-0.24698	-0.36910	-1.81770
	setup	CLK (R)	0.31502	0.40986	1.88300
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.24833	-0.37144	-1.82310
	setup	CLK (R)	0.31671	0.41167	1.88409

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)	-0.80123	-0.89209	-3.77844
	setup	CLK (R)	0.98427	1.03980	3.94106
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.79553	-0.88859	-3.77786
	setup	CLK (R)	0.97613	1.03273	3.92010

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)	-0.06122	-0.07856	-0.34117
	setup	CLK (R)	1.03847	1.03092	1.86484
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.06550	-0.07856	-0.33911
	setup	CLK (R)	1.02940	1.02227	1.86427

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)	-0.36309	-0.53806	-2.55945
	setup	CLK (R)	0.85580	0.95208	4.01777
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.36366	-0.53864	-2.55544
	setup	CLK (R)	0.85116	0.95033	4.01456

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)	-0.06122	-0.07856	-0.34117
	hold	CLK (R)	-0.27829	-0.34308	-0.73806
	setup	CLK (R)	0.31655	0.39174	1.86484
	setup	CLK (R)	1.03847	1.03092	1.25904
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.06550	-0.07856	-0.33911
	hold	CLK (R)	-0.27821	-0.34344	-0.73346
	setup	CLK (R)	0.31917	0.39174	1.86427
	setup	CLK (R)	1.02940	1.02227	1.21957

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)	-0.80099	-0.91717	-3.98509
	hold	CLK (R)	-0.36309	-0.53806	-2.55945
	setup	CLK (R)	0.85580	0.95208	4.01777
	setup	CLK (R)	0.39485	0.56157	2.57853
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.79312	-0.91545	-3.98762
	hold	CLK (R)	-0.36366	-0.53864	-2.55544
	setup	CLK (R)	0.85116	0.95033	4.01456
	setup	CLK (R)	0.39609	0.55915	2.57472

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)	-0.14189	-0.24232	-1.43458
	setup	CLK (R)	0.18811	0.27321	1.50483
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14358	-0.24459	-1.44407
	setup	CLK (R)	0.19156	0.27595	1.50831

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)	-0.49673	-0.60951	-3.38516
	setup	CLK (R)	0.65601	0.73469	3.59579
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.49339	-0.60836	-3.39031
	setup	CLK (R)	0.64953	0.72858	3.56916

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)	-0.14189	-0.24232	-1.43458
	setup	CLK (R)	0.18811	0.27321	1.50483
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14358	-0.24459	-1.44407
	setup	CLK (R)	0.19156	0.27595	1.50831

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)	-0.49673	-0.60951	-3.38516
	setup	CLK (R)	0.65601	0.73469	3.59579
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.49339	-0.60836	-3.39031
	setup	CLK (R)	0.64953	0.72858	3.56916

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)	0.00308	0.02891	0.35958
	setup	CLK (R)	0.67247	0.65535	1.33187
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00248	0.02795	0.35883
	setup	CLK (R)	0.67050	0.65360	1.33111

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)	-0.25972	-0.44039	-2.51189
	setup	CLK (R)	0.71107	0.77019	3.29560
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.26642	-0.45061	-2.55270
	setup	CLK (R)	0.70539	0.76426	3.28040

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)	-0.51258	-0.52652	-0.63656
	hold	CLK (R)	0.00308	0.02891	0.35958
	hold	CLK (R)	-0.12250	-0.23296	-1.26101
	hold	CLK (R)	-0.19348	-0.25012	-0.43227
	setup	CLK (R)	0.67247	0.65535	0.86528
	setup	CLK (R)	0.17083	0.26571	1.33084
	setup	CLK (R)	0.17081	0.26551	1.33187
	setup	CLK (R)	0.67186	0.65476	0.86846
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.51429	-0.53108	-0.66423
	hold	CLK (R)	0.00248	0.02795	0.35883
	hold	CLK (R)	-0.12217	-0.23284	-1.26387
	hold	CLK (R)	-0.19734	-0.25514	-0.46242
	setup	CLK (R)	0.66952	0.65360	0.85072
	setup	CLK (R)	0.17018	0.26627	1.33101
	setup	CLK (R)	0.17012	0.26610	1.33111
	setup	CLK (R)	0.67050	0.65345	0.85038

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)	-0.26859	-0.45011	-2.53302
	hold	CLK (R)	-0.51853	-0.60589	-3.04158
	hold	CLK (R)	-0.51280	-0.60640	-3.05830
	hold	CLK (R)	-0.25972	-0.44039	-2.51189
	setup	CLK (R)	0.33609	0.49099	2.58842
	setup	CLK (R)	0.57032	0.64361	3.08100
	setup	CLK (R)	0.71107	0.77019	3.29560
	setup	CLK (R)	0.29427	0.46463	2.53665
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27511	-0.46015	-2.57034
	hold	CLK (R)	-0.51589	-0.60763	-3.04873
	hold	CLK (R)	-0.50890	-0.60242	-3.06936
	hold	CLK (R)	-0.26642	-0.45061	-2.55270
	setup	CLK (R)	0.34258	0.49643	2.62799
	setup	CLK (R)	0.56747	0.64503	3.08627
	setup	CLK (R)	0.70539	0.76426	3.28040
	setup	CLK (R)	0.29903	0.46952	2.57154

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 ()	0.13895	0.83740	16.50020
	min_pulse_width	CLK ()	0.13895	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.13895	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.13895	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.13895	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.15448	0.83740	16.50020
	min_pulse_width	CLK ()	0.15448	0.83740	16.50020
	min_pulse_width	CLK ()	0.35625	0.83740	16.50020
	min_pulse_width	CLK ()	0.15448	0.83740	16.50020
	min_pulse_width	CLK ()	0.35625	0.83740	16.50020
	min_pulse_width	CLK ()	0.15448	0.83740	16.50020
	min_pulse_width	CLK ()	0.35315	0.83740	16.50020
	min_pulse_width	CLK ()	0.35315	0.83740	16.50020
	min_pulse_width	CLK ()	0.15448	0.83740	16.50020
	min_pulse_width	CLK ()	0.35625	0.83740	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 ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.28175	0.83740	16.50020
	min_pulse_width	CLK ()	0.50525	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.50525	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.57354	0.83740	16.50020
	min_pulse_width	CLK ()	0.50525	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.50525	0.83740	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.28175	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.55802	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	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	0.01066	0.01063	0.01116
	CLK	0.00917	0.00914	0.00965
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01213	0.01226	0.01286
	CLK	0.01065	0.01078	0.01138

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00966	0.00956	0.00986
	CLK	0.00875	0.00864	0.00892
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01112	0.01124	0.01151
	CLK	0.01019	0.01031	0.01058

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00968	0.00958	0.01001
	CLK	0.00876	0.00866	0.00906
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01113	0.01126	0.01174
	CLK	0.01021	0.01034	0.01080

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01063	0.01059	0.01100
	CLK	0.00914	0.00911	0.00950
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01210	0.01221	0.01261
	CLK	0.01062	0.01075	0.01112

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00294	0.00278	0.00352
	(DE * SCE)	0.00112	0.00096	0.00171
	(CLK * DE * !SCE)	0.00603	0.00590	0.00637
	(CLK * DE * !SCE)	0.00368	0.00355	0.00403
	(CLK * !DE * !SCE)	0.00067	0.00067	0.00067
	(CLK * !DE * !SCE)	-0.00050	-0.00050	-0.00050
	(!DE * SCE)	0.00067	0.00067	0.00067
	(!DE * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK * DE * !SCE * Q * !Q_N)	0.01036	0.01025	0.01062
	(!CLK * DE * !SCE * Q * !Q_N)	0.00801	0.00791	0.00827
	(!CLK * DE * !SCE * !Q * Q_N)	0.01013	0.01003	0.01035
	(!CLK * DE * !SCE * !Q * Q_N)	0.00776	0.00766	0.00798
	(!CLK * !DE * !SCE)	0.00067	0.00067	0.00067
	(!CLK * !DE * !SCE)	-0.00050	-0.00050	-0.00050
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00298	0.00281	0.00357
	(DE * SCE)	0.00109	0.00093	0.00168
	(CLK * DE * !SCE)	0.00614	0.00600	0.00647
	(CLK * DE * !SCE)	0.00370	0.00357	0.00404
	(CLK * !DE * !SCE)	0.00070	0.00070	0.00070
	(CLK * !DE * !SCE)	-0.00052	-0.00052	-0.00052
	(!DE * SCE)	0.00070	0.00070	0.00070
	(!DE * SCE)	-0.00052	-0.00052	-0.00052
	(!CLK * DE * !SCE * Q * !Q_N)	0.01042	0.01031	0.01068
	(!CLK * DE * !SCE * Q * !Q_N)	0.00798	0.00787	0.00824
	(!CLK * DE * !SCE * !Q * Q_N)	0.01016	0.01006	0.01038
	(!CLK * DE * !SCE * !Q * Q_N)	0.00771	0.00760	0.00792
	(!CLK * !DE * !SCE)	0.00070	0.00070	0.00070
	(!CLK * !DE * !SCE)	-0.00052	-0.00052	-0.00052

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00109	0.00098	0.00207
	(DE * SCE)	0.00292	0.00282	0.00391
	(CLK * DE * !SCE)	0.00200	0.00187	0.00280
	(CLK * DE * !SCE)	0.00436	0.00424	0.00517
	(CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00021
	(CLK * !DE * !SCE)	0.00101	0.00101	0.00101
	(!DE * SCE)	-0.00022	-0.00022	-0.00021
	(!DE * SCE)	0.00101	0.00101	0.00101
	(!CLK * DE * !SCE * Q * !Q_N)	0.00589	0.00579	0.00682
	(!CLK * DE * !SCE * Q * !Q_N)	0.00824	0.00813	0.00917
	(!CLK * DE * !SCE * !Q * Q_N)	0.00631	0.00620	0.00731
	(!CLK * DE * !SCE * !Q * Q_N)	0.00868	0.00857	0.00968
	(!CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !DE * !SCE)	0.00101	0.00101	0.00100
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00095	0.00084	0.00193
	(DE * SCE)	0.00285	0.00274	0.00384
	(CLK * DE * !SCE)	0.00191	0.00178	0.00270
	(CLK * DE * !SCE)	0.00437	0.00424	0.00517
	(CLK * !DE * !SCE)	-0.00023	-0.00022	-0.00022
	(CLK * !DE * !SCE)	0.00106	0.00106	0.00105
	(!DE * SCE)	-0.00022	-0.00022	-0.00022
	(!DE * SCE)	0.00106	0.00106	0.00105
	(!CLK * DE * !SCE * Q * !Q_N)	0.00578	0.00567	0.00671
	(!CLK * DE * !SCE * Q * !Q_N)	0.00822	0.00810	0.00914
	(!CLK * DE * !SCE * !Q * Q_N)	0.00620	0.00609	0.00719
	(!CLK * DE * !SCE * !Q * Q_N)	0.00867	0.00855	0.00966
	(!CLK * !DE * !SCE)	-0.00023	-0.00023	-0.00022
	(!CLK * !DE * !SCE)	0.00106	0.00106	0.00105

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00544	0.00514	0.00632
	SCE	0.00150	0.00117	0.00235
	(CLK * !SCE)	0.00842	0.00814	0.00921
	(CLK * !SCE)	0.00394	0.00364	0.00472
	(!CLK * D * !SCE * Q * !Q_N)	0.00333	0.00308	0.00394
	(!CLK * D * !SCE * Q * !Q_N)	0.00006	-0.00022	0.00065
	(!CLK * D * !SCE * !Q * Q_N)	0.01275	0.01248	0.01352
	(!CLK * D * !SCE * !Q * Q_N)	0.00827	0.00798	0.00902
	(!CLK * !D * !SCE * Q * !Q_N)	0.00986	0.00965	0.01047
	(!CLK * !D * !SCE * Q * !Q_N)	0.00779	0.00757	0.00838
	(!CLK * !D * !SCE * !Q * Q_N)	0.00330	0.00309	0.00397
	(!CLK * !D * !SCE * !Q * Q_N)	0.00005	-0.00015	0.00071
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00546	0.00516	0.00634
	SCE	0.00143	0.00111	0.00231
	(CLK * !SCE)	0.00851	0.00823	0.00931
	(CLK * !SCE)	0.00393	0.00364	0.00473
	(!CLK * D * !SCE * Q * !Q_N)	0.00331	0.00307	0.00393
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00029	0.00060
	(!CLK * D * !SCE * !Q * Q_N)	0.01276	0.01248	0.01353
	(!CLK * D * !SCE * !Q * Q_N)	0.00818	0.00789	0.00894
	(!CLK * !D * !SCE * Q * !Q_N)	0.00976	0.00955	0.01037
	(!CLK * !D * !SCE * Q * !Q_N)	0.00768	0.00745	0.00827
	(!CLK * !D * !SCE * !Q * Q_N)	0.00331	0.00310	0.00398
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00000	-0.00020	0.00067

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00300	0.00282	0.00390
	SCE	0.00559	0.00544	0.00653
	(CLK * !SCE)	0.00607	0.00593	0.00701
	(CLK * !SCE)	0.00813	0.00800	0.00909
	(!CLK * D * !SCE * Q * !Q_N)	-0.00000	-0.00012	0.00104
	(!CLK * D * !SCE * Q * !Q_N)	0.00327	0.00317	0.00433
	(!CLK * D * !SCE * !Q * Q_N)	0.00678	0.00661	0.00813
	(!CLK * D * !SCE * !Q * Q_N)	0.01128	0.01111	0.01262
	(!CLK * !D * !SCE * Q * !Q_N)	0.01041	0.01026	0.01134
	(!CLK * !D * !SCE * Q * !Q_N)	0.01247	0.01234	0.01343
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00008	-0.00019	0.00098
	(!CLK * !D * !SCE * !Q * Q_N)	0.00317	0.00306	0.00424
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00298	0.00280	0.00389
	SCE	0.00560	0.00546	0.00654
	(CLK * !SCE)	0.00612	0.00598	0.00705
	(CLK * !SCE)	0.00819	0.00807	0.00916
	(!CLK * D * !SCE * Q * !Q_N)	-0.00003	-0.00014	0.00102
	(!CLK * D * !SCE * Q * !Q_N)	0.00331	0.00320	0.00436
	(!CLK * D * !SCE * !Q * Q_N)	0.00667	0.00651	0.00804
	(!CLK * D * !SCE * !Q * Q_N)	0.01126	0.01110	0.01262
	(!CLK * !D * !SCE * Q * !Q_N)	0.01040	0.01026	0.01133
	(!CLK * !D * !SCE * Q * !Q_N)	0.01248	0.01235	0.01344
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00012	-0.00024	0.00094
	(!CLK * !D * !SCE * !Q * Q_N)	0.00317	0.00308	0.00426

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00333	0.00324	0.00349
	(CLK * SCE)	0.00143	0.00134	0.00160
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00768	0.00759	0.00777
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00579	0.00569	0.00588
	!SCE	0.00061	0.00055	0.00053
	!SCE	-0.00066	-0.00073	-0.00073
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00340	0.00331	0.00356
	(CLK * SCE)	0.00147	0.00137	0.00163
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00766	0.00757	0.00776
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00573	0.00563	0.00583
	!SCE	0.00061	0.00054	0.00053
	!SCE	-0.00069	-0.00076	-0.00076

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00171	0.00164	0.00196
	(CLK * SCE)	0.00361	0.00353	0.00384
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00601	0.00594	0.00625
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00791	0.00783	0.00814
	!SCE	-0.00051	-0.00053	-0.00053
	!SCE	0.00074	0.00075	0.00075
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00169	0.00162	0.00194
	(CLK * SCE)	0.00363	0.00356	0.00386
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00597	0.00590	0.00622
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00791	0.00784	0.00814
	!SCE	-0.00051	-0.00052	-0.00052
	!SCE	0.00077	0.00078	0.00078

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00529	0.00505	0.00598
	(CLK * D)	0.00288	0.00264	0.00355
	(CLK * !D)	0.00527	0.00501	0.00665
	(CLK * !D)	0.00182	0.00154	0.00319
	(!CLK * D * SCD * Q * !Q_N)	0.00296	0.00283	0.00369
	(!CLK * D * SCD * Q * !Q_N)	0.00004	-0.00011	0.00076
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00285	0.00272	0.00357
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00007	-0.00022	0.00065
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00952	0.00937	0.01019
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00711	0.00696	0.00776
	(!CLK * D * !SCD * Q * !Q_N)	0.00953	0.00937	0.01021
	(!CLK * D * !SCD * Q * !Q_N)	0.00712	0.00696	0.00779
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00941	0.00916	0.01058
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00596	0.00569	0.00712
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00322	0.00308	0.00396
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00028	0.00012	0.00100
	(!CLK * !D * SCD * !Q * Q_N)	0.00940	0.00916	0.01058
	(!CLK * !D * SCD * !Q * Q_N)	0.00596	0.00570	0.00712
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00963	0.00938	0.01078
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00618	0.00592	0.00732
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00333	0.00319	0.00407
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00040	0.00023	0.00111
	(!CLK * !D * !SCD * !Q * Q_N)	0.00322	0.00308	0.00396
	(!CLK * !D * !SCD * !Q * Q_N)	0.00029	0.00012	0.00100
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00296	0.00283	0.00368
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00004	-0.00011	0.00076
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00954	0.00937	0.01021
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00713	0.00696	0.00778

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00540	0.00514	0.00604
	(CLK * D)	0.00292	0.00266	0.00354
	(CLK * !D)	0.00533	0.00506	0.00669
	(CLK * !D)	0.00177	0.00148	0.00312
	(!CLK * D * SCD * Q * !Q_N)	0.00302	0.00288	0.00372
	(!CLK * D * SCD * Q * !Q_N)	0.00001	-0.00015	0.00071
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00292	0.00278	0.00362
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00009	-0.00025	0.00061
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00961	0.00944	0.01024
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00713	0.00696	0.00774
	(!CLK * D * !SCD * Q * !Q_N)	0.00958	0.00940	0.01022
	(!CLK * D * !SCD * Q * !Q_N)	0.00710	0.00693	0.00773
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00939	0.00912	0.01055
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00583	0.00556	0.00698
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00332	0.00316	0.00404
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00029	0.00012	0.00100
	(!CLK * !D * SCD * !Q * Q_N)	0.00939	0.00913	0.01055
	(!CLK * !D * SCD * !Q * Q_N)	0.00583	0.00556	0.00698
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00964	0.00936	0.01077
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00608	0.00581	0.00721
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00342	0.00326	0.00414
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00039	0.00023	0.00110
	(!CLK * !D * !SCD * !Q * Q_N)	0.00332	0.00316	0.00404
	(!CLK * !D * !SCD * !Q * Q_N)	0.00029	0.00013	0.00100
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00302	0.00288	0.00372
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00001	-0.00015	0.00071
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00958	0.00940	0.01022
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00711	0.00692	0.00772

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00320	0.00344	0.00576
	(CLK * D)	0.00561	0.00586	0.00817
	(CLK * !D)	0.00319	0.00343	0.00576
	(CLK * !D)	0.00561	0.00585	0.00817
	(!CLK * D * SCD * Q * !Q_N)	0.00006	0.00002	0.00122
	(!CLK * D * SCD * Q * !Q_N)	0.00298	0.00294	0.00415
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00017	0.00013	0.00133
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00309	0.00306	0.00426
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00749	0.00769	0.00999
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00991	0.01011	0.01241
	(!CLK * D * !SCD * Q * !Q_N)	0.00749	0.00769	0.00997
	(!CLK * D * !SCD * Q * !Q_N)	0.00990	0.01010	0.01238
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00515	0.00497	0.00727
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00859	0.00842	0.01073
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00014	-0.00020	0.00098
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00280	0.00275	0.00393
	(!CLK * !D * SCD * !Q * Q_N)	0.00515	0.00497	0.00727
	(!CLK * !D * SCD * !Q * Q_N)	0.00860	0.00843	0.01072
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00493	0.00476	0.00708
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00838	0.00821	0.01054
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00025	-0.00031	0.00087
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00269	0.00264	0.00382
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00014	-0.00020	0.00098
	(!CLK * !D * !SCD * !Q * Q_N)	0.00280	0.00275	0.00393
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00006	0.00002	0.00122
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00298	0.00294	0.00414
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00749	0.00769	0.00997
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00991	0.01011	0.01239

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00334	0.00356	0.00589
	(CLK * D)	0.00582	0.00605	0.00837
	(CLK * !D)	0.00333	0.00356	0.00589
	(CLK * !D)	0.00581	0.00604	0.00837
	(!CLK * D * SCD * Q * !Q_N)	0.00012	0.00007	0.00126
	(!CLK * D * SCD * Q * !Q_N)	0.00313	0.00308	0.00428
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00022	0.00017	0.00136
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00323	0.00318	0.00438
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00753	0.00773	0.01003
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01001	0.01022	0.01251
	(!CLK * D * !SCD * Q * !Q_N)	0.00757	0.00777	0.01005
	(!CLK * D * !SCD * Q * !Q_N)	0.01006	0.01025	0.01253
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00516	0.00496	0.00726
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00871	0.00853	0.01082
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00012	-0.00019	0.00098
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00290	0.00284	0.00402
	(!CLK * !D * SCD * !Q * Q_N)	0.00516	0.00496	0.00726
	(!CLK * !D * SCD * !Q * Q_N)	0.00872	0.00853	0.01082
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00493	0.00473	0.00705
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00847	0.00830	0.01061
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00022	-0.00029	0.00088
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00280	0.00274	0.00392
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00012	-0.00019	0.00098
	(!CLK * !D * !SCD * !Q * Q_N)	0.00290	0.00284	0.00402
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00012	0.00007	0.00126
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00313	0.00308	0.00427
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00758	0.00777	0.01005
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01006	0.01026	0.01253

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)	0.00863	0.00827	0.00911
	(SCD * SCE * Q * !Q_N)	0.00621	0.00585	0.00669
	(D * !SCE * Q * !Q_N)	0.00863	0.00826	0.00911
	(D * !SCE * Q * !Q_N)	0.00621	0.00584	0.00669
	(D * !DE * !SCE * !Q * Q_N)	0.00859	0.00819	0.00909
	(D * !DE * !SCE * !Q * Q_N)	0.00618	0.00577	0.00667
	(!SCD * SCE * !Q * Q_N)	0.00860	0.00820	0.00910
	(!SCD * SCE * !Q * Q_N)	0.00618	0.00578	0.00668
	(!D * !SCE * !Q * Q_N)	0.00859	0.00819	0.00910
	(!D * !SCE * !Q * Q_N)	0.00618	0.00577	0.00668
	(!D * !DE * !SCE * Q * !Q_N)	0.00863	0.00826	0.00911
	(!D * !DE * !SCE * Q * !Q_N)	0.00621	0.00584	0.00669
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.00858	0.00822	0.00906
	(SCD * SCE * Q * !Q_N)	0.00617	0.00581	0.00665
	(D * !SCE * Q * !Q_N)	0.00857	0.00821	0.00905
	(D * !SCE * Q * !Q_N)	0.00616	0.00579	0.00664
	(D * !DE * !SCE * !Q * Q_N)	0.00861	0.00822	0.00911
	(D * !DE * !SCE * !Q * Q_N)	0.00620	0.00580	0.00669
	(!SCD * SCE * !Q * Q_N)	0.00863	0.00823	0.00912
	(!SCD * SCE * !Q * Q_N)	0.00622	0.00581	0.00670
	(!D * !SCE * !Q * Q_N)	0.00861	0.00822	0.00911
	(!D * !SCE * !Q * Q_N)	0.00620	0.00580	0.00669
	(!D * !DE * !SCE * Q * !Q_N)	0.00857	0.00821	0.00905
	(!D * !DE * !SCE * Q * !Q_N)	0.00616	0.00579	0.00664

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)	0.00475	0.00449	0.00569
	(SCD * SCE * Q * !Q_N)	0.00717	0.00691	0.00810
	(SCD * SCE * !Q * Q_N)	0.00911	0.00878	0.00988
	(SCD * SCE * !Q * Q_N)	0.01152	0.01119	0.01230
	(D * DE * !SCE * !Q * Q_N)	0.00908	0.00875	0.00985
	(D * DE * !SCE * !Q * Q_N)	0.01149	0.01117	0.01226
	(D * !SCE * Q * !Q_N)	0.00475	0.00449	0.00569
	(D * !SCE * Q * !Q_N)	0.00717	0.00691	0.00811
	(D * !DE * !SCE * !Q * Q_N)	0.00473	0.00448	0.00566
	(D * !DE * !SCE * !Q * Q_N)	0.00715	0.00691	0.00807
	(!SCD * SCE * Q * !Q_N)	0.00980	0.00959	0.01112
	(!SCD * SCE * Q * !Q_N)	0.01223	0.01202	0.01355
	(!SCD * SCE * !Q * Q_N)	0.00473	0.00448	0.00566
	(!SCD * SCE * !Q * Q_N)	0.00715	0.00691	0.00808
	(!D * DE * !SCE * Q * !Q_N)	0.00981	0.00961	0.01112
	(!D * DE * !SCE * Q * !Q_N)	0.01223	0.01202	0.01355
	(!D * !SCE * !Q * Q_N)	0.00473	0.00448	0.00566
	(!D * !SCE * !Q * Q_N)	0.00715	0.00691	0.00807
	(!D * !DE * !SCE * Q * !Q_N)	0.00475	0.00449	0.00569
	(!D * !DE * !SCE * Q * !Q_N)	0.00717	0.00691	0.00811

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00483	0.00458	0.00577
	(SCD * SCE * Q * !Q_N)	0.00724	0.00699	0.00819
	(SCD * SCE * !Q * Q_N)	0.00903	0.00871	0.00980
	(SCD * SCE * !Q * Q_N)	0.01144	0.01112	0.01222
	(D * DE * !SCE * !Q * Q_N)	0.00900	0.00869	0.00978
	(D * DE * !SCE * !Q * Q_N)	0.01142	0.01110	0.01220
	(D * !SCE * Q * !Q_N)	0.00483	0.00459	0.00578
	(D * !SCE * Q * !Q_N)	0.00725	0.00701	0.00819
	(D * !DE * !SCE * !Q * Q_N)	0.00474	0.00451	0.00568
	(D * !DE * !SCE * !Q * Q_N)	0.00716	0.00693	0.00809
	(!SCD * SCE * Q * !Q_N)	0.00984	0.00963	0.01118
	(!SCD * SCE * Q * !Q_N)	0.01227	0.01206	0.01361
	(!SCD * SCE * !Q * Q_N)	0.00474	0.00450	0.00567
	(!SCD * SCE * !Q * Q_N)	0.00715	0.00692	0.00809
	(!D * DE * !SCE * Q * !Q_N)	0.00986	0.00965	0.01118
	(!D * DE * !SCE * Q * !Q_N)	0.01227	0.01207	0.01360
	(!D * !SCE * !Q * Q_N)	0.00474	0.00451	0.00568
	(!D * !SCE * !Q * Q_N)	0.00716	0.00693	0.00809
	(!D * !DE * !SCE * Q * !Q_N)	0.00483	0.00459	0.00578
	(!D * !DE * !SCE * Q * !Q_N)	0.00725	0.00701	0.00819

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00193	0.00373	0.00172	0.00365	0.00265	0.65588
sky130_fd_sc_hs__sedfxtp_2	0.00203	0.00376	0.00175	0.00370	0.00268	1.29092
sky130_fd_sc_hs__sedfxtp_4	0.00203	0.00374	0.00175	0.00368	0.00277	2.48763

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxtp_1	0.00000	0.32410	0.61136
sky130_fd_sc_hs__sedfxtp_2	0.00000	0.33496	0.62947
sky130_fd_sc_hs__sedfxtp_4	0.00000	0.35668	0.66569

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)**	0.31127	1.07962	7.74073
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.31877	0.97437	7.74151
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.35625	0.93092	7.81766

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.30207	0.76275	3.02569
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.35847	0.81543	3.13844
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.48469	0.95080	3.39211

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)	-0.24609	-0.37011	-1.81916
	setup	CLK (R)	0.31414	0.41033	1.88563
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.25002	-0.37225	-1.82618
	setup	CLK (R)	0.31640	0.41212	1.88592
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.24977	-0.37390	-1.83917
	setup	CLK (R)	0.31719	0.41147	1.89669

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)	-0.79727	-0.89126	-3.78153
	setup	CLK (R)	0.97951	1.03891	3.95973
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.79417	-0.89094	-3.77716
	setup	CLK (R)	0.97944	1.03527	3.93872
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.79922	-0.89498	-3.80057
	setup	CLK (R)	0.96791	1.02939	3.91655

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)	-0.05926	-0.07720	-0.34350
	setup	CLK (R)	1.03649	1.02855	1.87110
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.06188	-0.07720	-0.33951
	setup	CLK (R)	1.03087	1.02335	1.87325
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.06170	-0.07720	-0.35157
	setup	CLK (R)	1.02329	1.01635	1.88001

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)	-0.36357	-0.54139	-2.56742
	setup	CLK (R)	0.85755	0.95389	4.02331
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.36510	-0.54403	-2.56661
	setup	CLK (R)	0.85660	0.95478	4.01926
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.36791	-0.54243	-2.56922
	setup	CLK (R)	0.86086	0.95801	4.03939

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)	-0.05926	-0.07720	-0.34350
	hold	CLK (R)	-0.27491	-0.35082	-0.74712
	setup	CLK (R)	0.31565	0.39358	1.87110
	setup	CLK (R)	1.03649	1.02855	1.28485
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.06188	-0.07720	-0.33951
	hold	CLK (R)	-0.27580	-0.33836	-0.73498
	setup	CLK (R)	0.31611	0.39281	1.87325
	setup	CLK (R)	1.03087	1.02335	1.23817
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.06170	-0.07720	-0.35157
	hold	CLK (R)	-0.27658	-0.34380	-0.74703
	setup	CLK (R)	0.31510	0.39412	1.88001
	setup	CLK (R)	1.02329	1.01635	1.17859

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)	-0.80262	-0.91876	-3.99285
	hold	CLK (R)	-0.36357	-0.54139	-2.56742
	setup	CLK (R)	0.85755	0.95389	4.02331
	setup	CLK (R)	0.39879	0.56334	2.59360
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.79937	-0.91557	-3.98775
	hold	CLK (R)	-0.36510	-0.54403	-2.56661
	setup	CLK (R)	0.85660	0.95478	4.01926
	setup	CLK (R)	0.40166	0.56518	2.58841
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.80584	-0.92361	-4.00981
	hold	CLK (R)	-0.36791	-0.54243	-2.56922
	setup	CLK (R)	0.86086	0.95801	4.03939
	setup	CLK (R)	0.39691	0.56406	2.58872

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)	-0.14042	-0.24444	-1.44882
	setup	CLK (R)	0.18813	0.27715	1.51546
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14209	-0.24401	-1.44652
	setup	CLK (R)	0.19062	0.27496	1.50899
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.14461	-0.24637	-1.46833
	setup	CLK (R)	0.18627	0.27433	1.52717

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)	-0.50068	-0.61133	-3.40106
	setup	CLK (R)	0.65657	0.73882	3.61449
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.49304	-0.60658	-3.38671
	setup	CLK (R)	0.65065	0.72929	3.57821
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.50181	-0.61645	-3.41986
	setup	CLK (R)	0.64609	0.72883	3.56642

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)	0.00410	0.03172	0.36072
	setup	CLK (R)	0.68212	0.66381	1.33685
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00441	0.03261	0.36912
	setup	CLK (R)	0.67327	0.65376	1.33389
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00547	0.03075	0.34891
	setup	CLK (R)	0.66871	0.64887	1.35338

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)	-0.26404	-0.44772	-2.55168
	setup	CLK (R)	0.71279	0.77177	3.31665
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.26570	-0.44819	-2.55065
	setup	CLK (R)	0.70496	0.76365	3.28383
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.26651	-0.45225	-2.55980
	setup	CLK (R)	0.69845	0.76062	3.26869

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)	-0.52291	-0.53419	-0.66519
	hold	CLK (R)	0.00410	0.03172	0.36072
	hold	CLK (R)	-0.12220	-0.23323	-1.26778
	hold	CLK (R)	-0.19849	-0.26061	-0.46236
	setup	CLK (R)	0.67790	0.66375	0.92572
	setup	CLK (R)	0.16823	0.26494	1.33563
	setup	CLK (R)	0.16836	0.26477	1.33685
	setup	CLK (R)	0.68212	0.66381	0.92326
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.51508	-0.52904	-0.65314
	hold	CLK (R)	0.00441	0.03261	0.36912
	hold	CLK (R)	-0.12233	-0.23199	-1.26711
	hold	CLK (R)	-0.19659	-0.25264	-0.44924
	setup	CLK (R)	0.67310	0.65376	0.86822
	setup	CLK (R)	0.16911	0.26580	1.33319
	setup	CLK (R)	0.16910	0.26580	1.33389
	setup	CLK (R)	0.67327	0.65371	0.86853
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.52222	-0.53778	-0.67459
	hold	CLK (R)	0.00547	0.03075	0.34891
	hold	CLK (R)	-0.12387	-0.23564	-1.28981
	hold	CLK (R)	-0.19974	-0.25683	-0.46910
	setup	CLK (R)	0.66491	0.64877	0.83186
	setup	CLK (R)	0.16923	0.26644	1.35321
	setup	CLK (R)	0.16915	0.26630	1.35338
	setup	CLK (R)	0.66871	0.64887	0.83103

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)	-0.26857	-0.45691	-2.57184
	hold	CLK (R)	-0.51994	-0.60941	-3.05597
	hold	CLK (R)	-0.51148	-0.60858	-3.07324
	hold	CLK (R)	-0.26404	-0.44772	-2.55168
	setup	CLK (R)	0.33931	0.49568	2.63734
	setup	CLK (R)	0.57238	0.64590	3.09978
	setup	CLK (R)	0.71279	0.77177	3.31665
	setup	CLK (R)	0.29746	0.46814	2.57825
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.27201	-0.45700	-2.56960
	hold	CLK (R)	-0.51287	-0.60747	-3.03949
	hold	CLK (R)	-0.50811	-0.60058	-3.05930
	hold	CLK (R)	-0.26570	-0.44819	-2.55065
	setup	CLK (R)	0.34118	0.49524	2.62965
	setup	CLK (R)	0.56839	0.64270	3.08250
	setup	CLK (R)	0.70496	0.76365	3.28383
	setup	CLK (R)	0.29735	0.46841	2.57370
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.27566	-0.45988	-2.57846
	hold	CLK (R)	-0.51922	-0.61694	-3.07689
	hold	CLK (R)	-0.51541	-0.61112	-3.09236
	hold	CLK (R)	-0.26651	-0.45225	-2.55980
	setup	CLK (R)	0.33785	0.49549	2.63307
	setup	CLK (R)	0.57411	0.64799	3.11086
	setup	CLK (R)	0.69845	0.76062	3.26869
	setup	CLK (R)	0.29847	0.46879	2.57623

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** ()	0.13585	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.13585	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.24450	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.13895	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.24450	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.13585	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.24139	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.24139	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.13895	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.24450	0.83740	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK** ()	0.14827	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.14827	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.33452	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.15137	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.33452	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.14827	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.33142	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.33142	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.15137	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.33452	0.83740	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.17621	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.17621	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.49594	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.17621	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.49904	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.17621	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.49284	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.49284	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.17621	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.49904	0.83740	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 ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.28175	0.83740	16.50020
	min_pulse_width	CLK ()	0.49904	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.49904	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.56423	0.83740	16.50020
	min_pulse_width	CLK ()	0.49904	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.49904	0.83740	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.28175	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.55802	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	16.50020
	min_pulse_width	CLK ()	0.26002	0.83740	16.50020
	min_pulse_width	CLK ()	0.49284	0.83740	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.25381	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.27554	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.47421	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.25381	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.47421	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.25381	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.53940	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.47421	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.25381	0.83740	16.50020
	min_pulse_width	**CLK** ()	0.47421	0.83740	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	0.01851	0.01836	0.01934
	CLK	0.01562	0.01547	0.01652
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02025	0.02030	0.02136
	CLK	0.01733	0.01738	0.01859
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02350	0.02389	0.02520
	CLK	0.02050	0.02089	0.02250

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.01672	0.01647	0.01728
	CLK	0.01484	0.01459	0.01535
sky130_fd_sc_hs__sedfxtp_2	CLK	0.01837	0.01838	0.01927
	CLK	0.01650	0.01651	0.01732
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02105	0.02134	0.02289
	CLK	0.01909	0.01945	0.02051

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00290	0.00274	0.00350
	(DE * SCE)	0.00108	0.00092	0.00168
	(CLK * DE * !SCE)	0.00602	0.00589	0.00637
	(CLK * DE * !SCE)	0.00365	0.00353	0.00401
	(CLK * !DE * !SCE)	0.00067	0.00067	0.00067
	(CLK * !DE * !SCE)	-0.00051	-0.00051	-0.00050
	(!DE * SCE)	0.00067	0.00068	0.00067
	(!DE * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK * DE * !SCE * Q)	0.01038	0.01027	0.01064
	(!CLK * DE * !SCE * Q)	0.00801	0.00791	0.00827
	(!CLK * DE * !SCE * !Q)	0.01012	0.01002	0.01035
	(!CLK * DE * !SCE * !Q)	0.00774	0.00763	0.00796
	(!CLK * !DE * !SCE)	0.00067	0.00067	0.00067
	(!CLK * !DE * !SCE)	-0.00051	-0.00051	-0.00050
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00300	0.00282	0.00358
	(DE * SCE)	0.00109	0.00091	0.00167
	(CLK * DE * !SCE)	0.00611	0.00598	0.00645
	(CLK * DE * !SCE)	0.00366	0.00352	0.00399
	(CLK * !DE * !SCE)	0.00070	0.00070	0.00070
	(CLK * !DE * !SCE)	-0.00053	-0.00053	-0.00053
	(!DE * SCE)	0.00071	0.00071	0.00070
	(!DE * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * DE * !SCE * Q)	0.01045	0.01034	0.01070
	(!CLK * DE * !SCE * Q)	0.00799	0.00788	0.00824
	(!CLK * DE * !SCE * !Q)	0.01023	0.01013	0.01044
	(!CLK * DE * !SCE * !Q)	0.00775	0.00764	0.00796
	(!CLK * !DE * !SCE)	0.00070	0.00070	0.00070
	(!CLK * !DE * !SCE)	-0.00053	-0.00053	-0.00053

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00301	0.00284	0.00359
	(DE * SCE)	0.00109	0.00092	0.00168
	(CLK * DE * !SCE)	0.00616	0.00602	0.00649
	(CLK * DE * !SCE)	0.00370	0.00356	0.00403
	(CLK * !DE * !SCE)	0.00070	0.00071	0.00071
	(CLK * !DE * !SCE)	-0.00053	-0.00053	-0.00053
	(!DE * SCE)	0.00071	0.00071	0.00071
	(!DE * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * DE * !SCE * Q)	0.01038	0.01027	0.01063
	(!CLK * DE * !SCE * Q)	0.00792	0.00781	0.00817
	(!CLK * DE * !SCE * !Q)	0.01012	0.01003	0.01035
	(!CLK * DE * !SCE * !Q)	0.00764	0.00754	0.00786
	(!CLK * !DE * !SCE)	0.00070	0.00071	0.00071
	(!CLK * !DE * !SCE)	-0.00053	-0.00053	-0.00053

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00102	0.00092	0.00201
	(DE * SCE)	0.00286	0.00276	0.00386
	(CLK * DE * !SCE)	0.00195	0.00182	0.00275
	(CLK * DE * !SCE)	0.00433	0.00421	0.00514
	(CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !DE * !SCE)	0.00101	0.00101	0.00101
	(!DE * SCE)	-0.00022	-0.00022	-0.00022
	(!DE * SCE)	0.00101	0.00102	0.00101
	(!CLK * DE * !SCE * Q)	0.00578	0.00568	0.00672
	(!CLK * DE * !SCE * Q)	0.00815	0.00804	0.00908
	(!CLK * DE * !SCE * !Q)	0.00620	0.00610	0.00720
	(!CLK * DE * !SCE * !Q)	0.00860	0.00849	0.00959
	(!CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !DE * !SCE)	0.00101	0.00101	0.00101
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00099	0.00088	0.00197
	(DE * SCE)	0.00292	0.00281	0.00390
	(CLK * DE * !SCE)	0.00190	0.00177	0.00269
	(CLK * DE * !SCE)	0.00438	0.00425	0.00518
	(CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !DE * !SCE)	0.00107	0.00107	0.00107
	(!DE * SCE)	-0.00022	-0.00022	-0.00022
	(!DE * SCE)	0.00108	0.00107	0.00107
	(!CLK * DE * !SCE * Q)	0.00575	0.00563	0.00667
	(!CLK * DE * !SCE * Q)	0.00821	0.00809	0.00913
	(!CLK * DE * !SCE * !Q)	0.00614	0.00602	0.00712
	(!CLK * DE * !SCE * !Q)	0.00862	0.00850	0.00961
	(!CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !DE * !SCE)	0.00107	0.00107	0.00107

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00095	0.00084	0.00193
	(DE * SCE)	0.00288	0.00277	0.00387
	(CLK * DE * !SCE)	0.00202	0.00189	0.00281
	(CLK * DE * !SCE)	0.00450	0.00437	0.00529
	(CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * !DE * !SCE)	0.00108	0.00107	0.00107
	(!DE * SCE)	-0.00022	-0.00022	-0.00022
	(!DE * SCE)	0.00108	0.00108	0.00107
	(!CLK * DE * !SCE * Q)	0.00580	0.00568	0.00672
	(!CLK * DE * !SCE * Q)	0.00826	0.00814	0.00918
	(!CLK * DE * !SCE * !Q)	0.00622	0.00611	0.00721
	(!CLK * DE * !SCE * !Q)	0.00871	0.00859	0.00970
	(!CLK * !DE * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * !DE * !SCE)	0.00108	0.00107	0.00107

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00544	0.00514	0.00632
	SCE	0.00144	0.00111	0.00230
	(CLK * !SCE)	0.00845	0.00817	0.00925
	(CLK * !SCE)	0.00390	0.00360	0.00468
	(!CLK * D * !SCE * Q)	0.00336	0.00310	0.00396
	(!CLK * D * !SCE * Q)	0.00003	-0.00026	0.00062
	(!CLK * D * !SCE * !Q)	0.01278	0.01250	0.01355
	(!CLK * D * !SCE * !Q)	0.00823	0.00794	0.00898
	(!CLK * !D * !SCE * Q)	0.00978	0.00956	0.01038
	(!CLK * !D * !SCE * Q)	0.00766	0.00743	0.00826
	(!CLK * !D * !SCE * !Q)	0.00332	0.00313	0.00399
	(!CLK * !D * !SCE * !Q)	0.00003	-0.00019	0.00068

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00553	0.00522	0.00639
	SCE	0.00144	0.00111	0.00229
	(CLK * !SCE)	0.00857	0.00829	0.00935
	(CLK * !SCE)	0.00393	0.00362	0.00471
	(!CLK * D * !SCE * Q)	0.00338	0.00312	0.00398
	(!CLK * D * !SCE * Q)	-0.00000	-0.00029	0.00059
	(!CLK * D * !SCE * !Q)	0.01287	0.01259	0.01362
	(!CLK * D * !SCE * !Q)	0.00823	0.00794	0.00898
	(!CLK * !D * !SCE * Q)	0.00978	0.00956	0.01039
	(!CLK * !D * !SCE * Q)	0.00765	0.00742	0.00824
	(!CLK * !D * !SCE * !Q)	0.00334	0.00315	0.00401
	(!CLK * !D * !SCE * !Q)	-0.00000	-0.00022	0.00065
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00551	0.00521	0.00638
	SCE	0.00144	0.00111	0.00230
	(CLK * !SCE)	0.00858	0.00830	0.00936
	(CLK * !SCE)	0.00396	0.00366	0.00474
	(!CLK * D * !SCE * Q)	0.00337	0.00311	0.00397
	(!CLK * D * !SCE * Q)	0.00000	-0.00028	0.00060
	(!CLK * D * !SCE * !Q)	0.01275	0.01247	0.01352
	(!CLK * D * !SCE * !Q)	0.00813	0.00784	0.00889
	(!CLK * !D * !SCE * Q)	0.00983	0.00960	0.01044
	(!CLK * !D * !SCE * Q)	0.00771	0.00748	0.00831
	(!CLK * !D * !SCE * !Q)	0.00334	0.00314	0.00400
	(!CLK * !D * !SCE * !Q)	0.00000	-0.00021	0.00066

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00293	0.00275	0.00384
	SCE	0.00558	0.00542	0.00653
	(CLK * !SCE)	0.00604	0.00589	0.00696
	(CLK * !SCE)	0.00814	0.00802	0.00911
	(!CLK * D * !SCE * Q)	-0.00002	-0.00014	0.00102
	(!CLK * D * !SCE * Q)	0.00331	0.00320	0.00437
	(!CLK * D * !SCE * !Q)	0.00668	0.00651	0.00803
	(!CLK * D * !SCE * !Q)	0.01125	0.01108	0.01258
	(!CLK * !D * !SCE * Q)	0.01039	0.01024	0.01132
	(!CLK * !D * !SCE * Q)	0.01250	0.01236	0.01346
	(!CLK * !D * !SCE * !Q)	-0.00009	-0.00021	0.00096
	(!CLK * !D * !SCE * !Q)	0.00321	0.00311	0.00428
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00296	0.00278	0.00387
	SCE	0.00563	0.00547	0.00656
	(CLK * !SCE)	0.00606	0.00592	0.00700
	(CLK * !SCE)	0.00818	0.00806	0.00915
	(!CLK * D * !SCE * Q)	-0.00003	-0.00016	0.00101
	(!CLK * D * !SCE * Q)	0.00335	0.00324	0.00440
	(!CLK * D * !SCE * !Q)	0.00664	0.00647	0.00800
	(!CLK * D * !SCE * !Q)	0.01129	0.01112	0.01262
	(!CLK * !D * !SCE * Q)	0.01039	0.01024	0.01132
	(!CLK * !D * !SCE * Q)	0.01251	0.01238	0.01347
	(!CLK * !D * !SCE * !Q)	-0.00011	-0.00023	0.00095
	(!CLK * !D * !SCE * !Q)	0.00324	0.00314	0.00431

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00297	0.00279	0.00387
	SCE	0.00562	0.00546	0.00656
	(CLK * !SCE)	0.00610	0.00596	0.00703
	(CLK * !SCE)	0.00821	0.00809	0.00918
	(!CLK * D * !SCE * Q)	-0.00003	-0.00016	0.00101
	(!CLK * D * !SCE * Q)	0.00333	0.00322	0.00439
	(!CLK * D * !SCE * !Q)	0.00673	0.00656	0.00810
	(!CLK * D * !SCE * !Q)	0.01136	0.01119	0.01272
	(!CLK * !D * !SCE * Q)	0.01032	0.01018	0.01125
	(!CLK * !D * !SCE * Q)	0.01243	0.01230	0.01339
	(!CLK * !D * !SCE * !Q)	-0.00011	-0.00023	0.00095
	(!CLK * !D * !SCE * !Q)	0.00322	0.00312	0.00430

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00333	0.00324	0.00350
	(CLK * SCE)	0.00139	0.00130	0.00156
	(!CLK * SCE)	0.00768	0.00759	0.00778
	(!CLK * SCE)	0.00574	0.00564	0.00584
	!SCE	0.00060	0.00054	0.00052
	!SCE	-0.00071	-0.00078	-0.00078
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00340	0.00332	0.00357
	(CLK * SCE)	0.00144	0.00135	0.00160
	(!CLK * SCE)	0.00772	0.00763	0.00783
	(!CLK * SCE)	0.00576	0.00566	0.00587
	!SCE	0.00062	0.00055	0.00054
	!SCE	-0.00071	-0.00078	-0.00079
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00341	0.00332	0.00357
	(CLK * SCE)	0.00145	0.00136	0.00161
	(!CLK * SCE)	0.00760	0.00751	0.00769
	(!CLK * SCE)	0.00564	0.00555	0.00574
	!SCE	0.00061	0.00055	0.00053
	!SCE	-0.00071	-0.00078	-0.00078

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00172	0.00166	0.00198
	(CLK * SCE)	0.00367	0.00360	0.00391
	(!CLK * SCE)	0.00597	0.00590	0.00622
	(!CLK * SCE)	0.00792	0.00785	0.00816
	!SCE	-0.00050	-0.00052	-0.00052
	!SCE	0.00079	0.00080	0.00079
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00167	0.00160	0.00192
	(CLK * SCE)	0.00364	0.00358	0.00388
	(!CLK * SCE)	0.00589	0.00582	0.00614
	(!CLK * SCE)	0.00787	0.00779	0.00810
	!SCE	-0.00052	-0.00053	-0.00053
	!SCE	0.00080	0.00080	0.00080
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00186	0.00179	0.00210
	(CLK * SCE)	0.00382	0.00376	0.00405
	(!CLK * SCE)	0.00605	0.00598	0.00630
	(!CLK * SCE)	0.00802	0.00794	0.00825
	!SCE	-0.00051	-0.00053	-0.00053
	!SCE	0.00080	0.00080	0.00080

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00534	0.00509	0.00598
	(CLK * D)	0.00297	0.00271	0.00359
	(CLK * !D)	0.00516	0.00491	0.00655
	(CLK * !D)	0.00172	0.00144	0.00310
	(!CLK * D * SCD * Q)	0.00288	0.00275	0.00360
	(!CLK * D * SCD * Q)	-0.00003	-0.00016	0.00070
	(!CLK * D * DE * SCD * !Q)	0.00279	0.00266	0.00352
	(!CLK * D * DE * SCD * !Q)	-0.00011	-0.00025	0.00061
	(!CLK * D * DE * !SCD * !Q)	0.00952	0.00935	0.01016
	(!CLK * D * DE * !SCD * !Q)	0.00715	0.00698	0.00777
	(!CLK * D * !SCD * Q)	0.00948	0.00931	0.01014
	(!CLK * D * !SCD * Q)	0.00711	0.00694	0.00774
	(!CLK * D * !DE * SCD * !Q)	0.00932	0.00907	0.01050
	(!CLK * D * !DE * SCD * !Q)	0.00587	0.00562	0.00705
	(!CLK * D * !DE * !SCD * !Q)	0.00321	0.00307	0.00395
	(!CLK * D * !DE * !SCD * !Q)	0.00029	0.00014	0.00102
	(!CLK * !D * SCD * !Q)	0.00932	0.00907	0.01050
	(!CLK * !D * SCD * !Q)	0.00587	0.00562	0.00705
	(!CLK * !D * DE * SCD * Q)	0.00955	0.00930	0.01070
	(!CLK * !D * DE * SCD * Q)	0.00610	0.00584	0.00725
	(!CLK * !D * DE * !SCD * Q)	0.00330	0.00316	0.00404
	(!CLK * !D * DE * !SCD * Q)	0.00038	0.00023	0.00111
	(!CLK * !D * !SCD * !Q)	0.00321	0.00307	0.00395
	(!CLK * !D * !SCD * !Q)	0.00029	0.00014	0.00102
	(!CLK * !D * !DE * SCD * Q)	0.00288	0.00275	0.00360
	(!CLK * !D * !DE * SCD * Q)	-0.00003	-0.00016	0.00070
	(!CLK * !D * !DE * !SCD * Q)	0.00949	0.00931	0.01013
	(!CLK * !D * !DE * !SCD * Q)	0.00712	0.00694	0.00774

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00534	0.00509	0.00598
	(CLK * D)	0.00292	0.00266	0.00355
	(CLK * !D)	0.00521	0.00495	0.00659
	(CLK * !D)	0.00171	0.00143	0.00308
	(!CLK * D * SCD * Q)	0.00292	0.00279	0.00364
	(!CLK * D * SCD * Q)	-0.00003	-0.00018	0.00068
	(!CLK * D * DE * SCD * !Q)	0.00284	0.00270	0.00356
	(!CLK * D * DE * SCD * !Q)	-0.00011	-0.00026	0.00060
	(!CLK * D * DE * !SCD * !Q)	0.00949	0.00933	0.01013
	(!CLK * D * DE * !SCD * !Q)	0.00708	0.00691	0.00769
	(!CLK * D * !SCD * Q)	0.00948	0.00931	0.01013
	(!CLK * D * !SCD * Q)	0.00707	0.00689	0.00769
	(!CLK * D * !DE * SCD * !Q)	0.00938	0.00913	0.01055
	(!CLK * D * !DE * SCD * !Q)	0.00588	0.00562	0.00704
	(!CLK * D * !DE * !SCD * !Q)	0.00325	0.00310	0.00398
	(!CLK * D * !DE * !SCD * !Q)	0.00028	0.00012	0.00100
	(!CLK * !D * SCD * !Q)	0.00938	0.00913	0.01055
	(!CLK * !D * SCD * !Q)	0.00588	0.00562	0.00704
	(!CLK * !D * DE * SCD * Q)	0.00957	0.00931	0.01072
	(!CLK * !D * DE * SCD * Q)	0.00607	0.00581	0.00721
	(!CLK * !D * DE * !SCD * Q)	0.00333	0.00319	0.00406
	(!CLK * !D * DE * !SCD * Q)	0.00037	0.00020	0.00108
	(!CLK * !D * !SCD * !Q)	0.00325	0.00310	0.00398
	(!CLK * !D * !SCD * !Q)	0.00028	0.00012	0.00100
	(!CLK * !D * !DE * SCD * Q)	0.00292	0.00279	0.00364
	(!CLK * !D * !DE * SCD * Q)	-0.00003	-0.00018	0.00068
	(!CLK * !D * !DE * !SCD * Q)	0.00948	0.00931	0.01012
	(!CLK * !D * !DE * !SCD * Q)	0.00707	0.00689	0.00769

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00549	0.00525	0.00614
	(CLK * D)	0.00309	0.00285	0.00373
	(CLK * !D)	0.00550	0.00524	0.00613
	(CLK * !D)	0.00310	0.00284	0.00372
	(!CLK * D * SCD * Q)	0.00290	0.00277	0.00362
	(!CLK * D * SCD * Q)	-0.00003	-0.00017	0.00069
	(!CLK * D * DE * SCD * !Q)	0.00281	0.00269	0.00354
	(!CLK * D * DE * SCD * !Q)	-0.00011	-0.00025	0.00061
	(!CLK * D * DE * !SCD * !Q)	0.00962	0.00946	0.01026
	(!CLK * D * DE * !SCD * !Q)	0.00722	0.00706	0.00784
	(!CLK * D * !SCD * Q)	0.00958	0.00941	0.01023
	(!CLK * D * !SCD * Q)	0.00719	0.00701	0.00782
	(!CLK * D * !DE * SCD * !Q)	0.00926	0.00901	0.01043
	(!CLK * D * !DE * SCD * !Q)	0.00579	0.00553	0.00695
	(!CLK * D * !DE * !SCD * !Q)	0.00323	0.00309	0.00397
	(!CLK * D * !DE * !SCD * !Q)	0.00029	0.00013	0.00101
	(!CLK * !D * SCD * !Q)	0.00926	0.00901	0.01043
	(!CLK * !D * SCD * !Q)	0.00579	0.00553	0.00695
	(!CLK * !D * DE * SCD * Q)	0.00948	0.00922	0.01063
	(!CLK * !D * DE * SCD * Q)	0.00601	0.00575	0.00715
	(!CLK * !D * DE * !SCD * Q)	0.00331	0.00317	0.00405
	(!CLK * !D * DE * !SCD * Q)	0.00037	0.00021	0.00109
	(!CLK * !D * !SCD * !Q)	0.00323	0.00309	0.00397
	(!CLK * !D * !SCD * !Q)	0.00029	0.00013	0.00101
	(!CLK * !D * !DE * SCD * Q)	0.00290	0.00277	0.00362
	(!CLK * !D * !DE * SCD * Q)	-0.00003	-0.00017	0.00069
	(!CLK * !D * !DE * !SCD * Q)	0.00958	0.00941	0.01023
	(!CLK * !D * !DE * !SCD * Q)	0.00719	0.00701	0.00781

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00333	0.00358	0.00590
	(CLK * D)	0.00571	0.00595	0.00828
	(CLK * !D)	0.00335	0.00360	0.00592
	(CLK * !D)	0.00573	0.00598	0.00830
	(!CLK * D * SCD * Q)	0.00019	0.00014	0.00134
	(!CLK * D * SCD * Q)	0.00308	0.00305	0.00425
	(!CLK * D * DE * SCD * !Q)	0.00028	0.00023	0.00143
	(!CLK * D * DE * SCD * !Q)	0.00317	0.00314	0.00434
	(!CLK * D * DE * !SCD * !Q)	0.00762	0.00783	0.01012
	(!CLK * D * DE * !SCD * !Q)	0.01000	0.01020	0.01251
	(!CLK * D * !SCD * Q)	0.00766	0.00787	0.01015
	(!CLK * D * !SCD * Q)	0.01004	0.01024	0.01254
	(!CLK * D * !DE * SCD * !Q)	0.00515	0.00497	0.00728
	(!CLK * D * !DE * SCD * !Q)	0.00859	0.00842	0.01073
	(!CLK * D * !DE * !SCD * !Q)	-0.00009	-0.00015	0.00103
	(!CLK * D * !DE * !SCD * !Q)	0.00283	0.00278	0.00396
	(!CLK * !D * SCD * !Q)	0.00516	0.00497	0.00728
	(!CLK * !D * SCD * !Q)	0.00860	0.00842	0.01073
	(!CLK * !D * DE * SCD * Q)	0.00494	0.00476	0.00708
	(!CLK * !D * DE * SCD * Q)	0.00838	0.00820	0.01053
	(!CLK * !D * DE * !SCD * Q)	-0.00018	-0.00024	0.00094
	(!CLK * !D * DE * !SCD * Q)	0.00274	0.00269	0.00387
	(!CLK * !D * !SCD * !Q)	-0.00009	-0.00015	0.00103
	(!CLK * !D * !SCD * !Q)	0.00283	0.00278	0.00396
	(!CLK * !D * !DE * SCD * Q)	0.00019	0.00014	0.00134
	(!CLK * !D * !DE * SCD * Q)	0.00308	0.00305	0.00425
	(!CLK * !D * !DE * !SCD * Q)	0.00767	0.00787	0.01015
	(!CLK * !D * !DE * !SCD * Q)	0.01005	0.01025	0.01253

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00335	0.00358	0.00591
	(CLK * D)	0.00576	0.00601	0.00833
	(CLK * !D)	0.00333	0.00357	0.00590
	(CLK * !D)	0.00575	0.00600	0.00832
	(!CLK * D * SCD * Q)	0.00017	0.00012	0.00132
	(!CLK * D * SCD * Q)	0.00311	0.00307	0.00427
	(!CLK * D * DE * SCD * !Q)	0.00025	0.00021	0.00140
	(!CLK * D * DE * SCD * !Q)	0.00319	0.00315	0.00435
	(!CLK * D * DE * !SCD * !Q)	0.00760	0.00780	0.01010
	(!CLK * D * DE * !SCD * !Q)	0.01002	0.01022	0.01253
	(!CLK * D * !SCD * Q)	0.00762	0.00782	0.01011
	(!CLK * D * !SCD * Q)	0.01004	0.01024	0.01254
	(!CLK * D * !DE * SCD * !Q)	0.00509	0.00490	0.00721
	(!CLK * D * !DE * SCD * !Q)	0.00859	0.00841	0.01071
	(!CLK * D * !DE * !SCD * !Q)	-0.00011	-0.00017	0.00101
	(!CLK * D * !DE * !SCD * !Q)	0.00286	0.00280	0.00399
	(!CLK * !D * SCD * !Q)	0.00510	0.00491	0.00720
	(!CLK * !D * SCD * !Q)	0.00859	0.00841	0.01071
	(!CLK * !D * DE * SCD * Q)	0.00491	0.00473	0.00705
	(!CLK * !D * DE * SCD * Q)	0.00841	0.00823	0.01055
	(!CLK * !D * DE * !SCD * Q)	-0.00019	-0.00025	0.00093
	(!CLK * !D * DE * !SCD * Q)	0.00278	0.00272	0.00391
	(!CLK * !D * !SCD * !Q)	-0.00011	-0.00017	0.00101
	(!CLK * !D * !SCD * !Q)	0.00286	0.00280	0.00399
	(!CLK * !D * !DE * SCD * Q)	0.00017	0.00012	0.00132
	(!CLK * !D * !DE * SCD * Q)	0.00311	0.00307	0.00427
	(!CLK * !D * !DE * !SCD * Q)	0.00762	0.00783	0.01010
	(!CLK * !D * !DE * !SCD * Q)	0.01004	0.01025	0.01253

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00337	0.00362	0.00594
	(CLK * D)	0.00577	0.00603	0.00834
	(CLK * !D)	0.00337	0.00361	0.00594
	(CLK * !D)	0.00577	0.00602	0.00834
	(!CLK * D * SCD * Q)	0.00018	0.00014	0.00134
	(!CLK * D * SCD * Q)	0.00310	0.00306	0.00426
	(!CLK * D * DE * SCD * !Q)	0.00027	0.00023	0.00142
	(!CLK * D * DE * SCD * !Q)	0.00319	0.00315	0.00435
	(!CLK * D * DE * !SCD * !Q)	0.00750	0.00771	0.01002
	(!CLK * D * DE * !SCD * !Q)	0.00990	0.01011	0.01242
	(!CLK * D * !SCD * Q)	0.00755	0.00775	0.01004
	(!CLK * D * !SCD * Q)	0.00995	0.01016	0.01244
	(!CLK * D * !DE * SCD * !Q)	0.00525	0.00506	0.00736
	(!CLK * D * !DE * SCD * !Q)	0.00871	0.00853	0.01084
	(!CLK * D * !DE * !SCD * !Q)	-0.00009	-0.00015	0.00103
	(!CLK * D * !DE * !SCD * !Q)	0.00285	0.00279	0.00398
	(!CLK * !D * SCD * !Q)	0.00525	0.00506	0.00736
	(!CLK * !D * SCD * !Q)	0.00872	0.00854	0.01084
	(!CLK * !D * DE * SCD * Q)	0.00504	0.00486	0.00718
	(!CLK * !D * DE * SCD * Q)	0.00851	0.00833	0.01066
	(!CLK * !D * DE * !SCD * Q)	-0.00018	-0.00024	0.00094
	(!CLK * !D * DE * !SCD * Q)	0.00276	0.00271	0.00390
	(!CLK * !D * !SCD * !Q)	-0.00009	-0.00015	0.00103
	(!CLK * !D * !SCD * !Q)	0.00285	0.00280	0.00398
	(!CLK * !D * !DE * SCD * Q)	0.00018	0.00014	0.00134
	(!CLK * !D * !DE * SCD * Q)	0.00310	0.00306	0.00426
	(!CLK * !D * !DE * !SCD * Q)	0.00755	0.00776	0.01003
	(!CLK * !D * !DE * !SCD * Q)	0.00995	0.01016	0.01244

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.00841	0.00805	0.00891
	(SCD * SCE * Q)	0.00602	0.00566	0.00652
	(D * !SCE * Q)	0.00840	0.00804	0.00892
	(D * !SCE * Q)	0.00601	0.00564	0.00652
	(D * !DE * !SCE * !Q)	0.00853	0.00813	0.00904
	(D * !DE * !SCE * !Q)	0.00614	0.00573	0.00665
	(!SCD * SCE * !Q)	0.00854	0.00814	0.00905
	(!SCD * SCE * !Q)	0.00615	0.00575	0.00665
	(!D * !SCE * !Q)	0.00853	0.00813	0.00904
	(!D * !SCE * !Q)	0.00614	0.00573	0.00665
	(!D * !DE * !SCE * Q)	0.00840	0.00804	0.00892
	(!D * !DE * !SCE * Q)	0.00601	0.00564	0.00652
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.00852	0.00816	0.00901
	(SCD * SCE * Q)	0.00611	0.00576	0.00660
	(D * !SCE * Q)	0.00851	0.00815	0.00902
	(D * !SCE * Q)	0.00611	0.00575	0.00661
	(D * !DE * !SCE * !Q)	0.00863	0.00824	0.00913
	(D * !DE * !SCE * !Q)	0.00622	0.00583	0.00672
	(!SCD * SCE * !Q)	0.00864	0.00825	0.00914
	(!SCD * SCE * !Q)	0.00623	0.00584	0.00674
	(!D * !SCE * !Q)	0.00863	0.00824	0.00914
	(!D * !SCE * !Q)	0.00622	0.00583	0.00673
	(!D * !DE * !SCE * Q)	0.00851	0.00815	0.00902
	(!D * !DE * !SCE * Q)	0.00610	0.00575	0.00661

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00851	0.00814	0.00901
	(SCD * SCE * Q)	0.00603	0.00565	0.00651
	(D * !SCE * Q)	0.00851	0.00813	0.00900
	(D * !SCE * Q)	0.00602	0.00564	0.00651
	(D * !DE * !SCE * !Q)	0.00855	0.00815	0.00904
	(D * !DE * !SCE * !Q)	0.00606	0.00565	0.00655
	(!SCD * SCE * !Q)	0.00856	0.00816	0.00905
	(!SCD * SCE * !Q)	0.00608	0.00566	0.00656
	(!D * !SCE * !Q)	0.00855	0.00815	0.00904
	(!D * !SCE * !Q)	0.00606	0.00565	0.00655
	(!D * !DE * !SCE * Q)	0.00850	0.00813	0.00900
	(!D * !DE * !SCE * Q)	0.00602	0.00564	0.00651

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00479	0.00454	0.00575
	(SCD * SCE * Q)	0.00718	0.00694	0.00814
	(SCD * SCE * !Q)	0.00900	0.00868	0.00976
	(SCD * SCE * !Q)	0.01139	0.01106	0.01216
	(D * DE * !SCE * !Q)	0.00897	0.00865	0.00975
	(D * DE * !SCE * !Q)	0.01136	0.01104	0.01214
	(D * !SCE * Q)	0.00480	0.00455	0.00575
	(D * !SCE * Q)	0.00719	0.00695	0.00815
	(D * !DE * !SCE * !Q)	0.00463	0.00439	0.00557
	(D * !DE * !SCE * !Q)	0.00702	0.00679	0.00796
	(!SCD * SCE * Q)	0.00977	0.00956	0.01110
	(!SCD * SCE * Q)	0.01217	0.01196	0.01350
	(!SCD * SCE * !Q)	0.00462	0.00439	0.00556
	(!SCD * SCE * !Q)	0.00701	0.00679	0.00795
	(!D * DE * !SCE * Q)	0.00978	0.00957	0.01110
	(!D * DE * !SCE * Q)	0.01218	0.01197	0.01349
	(!D * !SCE * !Q)	0.00463	0.00439	0.00557
	(!D * !SCE * !Q)	0.00702	0.00679	0.00796
	(!D * !DE * !SCE * Q)	0.00480	0.00455	0.00575
	(!D * !DE * !SCE * Q)	0.00719	0.00695	0.00815

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00484	0.00458	0.00578
	(SCD * SCE * Q)	0.00724	0.00699	0.00819
	(SCD * SCE * !Q)	0.00900	0.00867	0.00978
	(SCD * SCE * !Q)	0.01141	0.01107	0.01219
	(D * DE * !SCE * !Q)	0.00897	0.00865	0.00975
	(D * DE * !SCE * !Q)	0.01138	0.01105	0.01216
	(D * !SCE * Q)	0.00484	0.00458	0.00578
	(D * !SCE * Q)	0.00724	0.00699	0.00819
	(D * !DE * !SCE * !Q)	0.00467	0.00442	0.00559
	(D * !DE * !SCE * !Q)	0.00707	0.00683	0.00801
	(!SCD * SCE * Q)	0.00982	0.00960	0.01113
	(!SCD * SCE * Q)	0.01223	0.01202	0.01355
	(!SCD * SCE * !Q)	0.00466	0.00442	0.00559
	(!SCD * SCE * !Q)	0.00707	0.00683	0.00801
	(!D * DE * !SCE * Q)	0.00983	0.00962	0.01113
	(!D * DE * !SCE * Q)	0.01223	0.01203	0.01354
	(!D * !SCE * !Q)	0.00467	0.00442	0.00559
	(!D * !SCE * !Q)	0.00707	0.00683	0.00801
	(!D * !DE * !SCE * Q)	0.00484	0.00458	0.00578
	(!D * !DE * !SCE * Q)	0.00724	0.00699	0.00819

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00469	0.00443	0.00564
	(SCD * SCE * Q)	0.00719	0.00693	0.00813
	(SCD * SCE * !Q)	0.00884	0.00851	0.00959
	(SCD * SCE * !Q)	0.01133	0.01099	0.01209
	(D * DE * !SCE * !Q)	0.00882	0.00849	0.00959
	(D * DE * !SCE * !Q)	0.01131	0.01098	0.01208
	(D * !SCE * Q)	0.00470	0.00444	0.00564
	(D * !SCE * Q)	0.00720	0.00693	0.00814
	(D * !DE * !SCE * !Q)	0.00461	0.00436	0.00554
	(D * !DE * !SCE * !Q)	0.00710	0.00686	0.00802
	(!SCD * SCE * Q)	0.00961	0.00940	0.01092
	(!SCD * SCE * Q)	0.01212	0.01190	0.01343
	(!SCD * SCE * !Q)	0.00461	0.00436	0.00553
	(!SCD * SCE * !Q)	0.00709	0.00685	0.00802
	(!D * DE * !SCE * Q)	0.00963	0.00941	0.01093
	(!D * DE * !SCE * Q)	0.01213	0.01190	0.01342
	(!D * !SCE * !Q)	0.00461	0.00436	0.00554
	(!D * !SCE * !Q)	0.00710	0.00686	0.00803
	(!D * !DE * !SCE * Q)	0.00470	0.00444	0.00564
	(!D * !DE * !SCE * Q)	0.00719	0.00693	0.00814

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00476	0.00494	0.30094
sky130_fd_sc_hs__xnor2_2	0.00793	0.00791	0.59152
sky130_fd_sc_hs__xnor2_4	0.01410	0.01445	1.02804

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor2_1	0.00000	0.06233	0.17119
sky130_fd_sc_hs__xnor2_2	0.00000	0.06008	0.09540
sky130_fd_sc_hs__xnor2_4	0.00000	0.14277	0.34960

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	0.11837	0.66014	3.82074
	A->Y (FR)	!B	0.17493	1.36928	12.11790
	B->Y (RR)	A	0.11132	0.64250	3.67838
	B->Y (FR)	!A	0.15127	1.31735	11.91310
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.13003	0.62345	4.05871
	A->Y (FR)	!B	0.17223	1.20073	12.17310
	B->Y (RR)	A	0.12519	0.61506	3.92157
	B->Y (FR)	!A	0.14331	1.14335	11.96270
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.15336	0.77976	6.86654
	A->Y (FR)	!B	0.17077	1.08017	12.11910
	B->Y (RR)	A	0.14603	0.76045	6.70190
	B->Y (FR)	!A	0.13996	1.02788	11.99040

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	0.15372	0.72298	3.91878
	A->Y (RF)	!B	0.05484	0.53886	4.92665
	B->Y (FF)	A	0.14716	0.71106	3.95446
	B->Y (RF)	!A	0.04469	0.52113	4.86998
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.18829	0.78471	4.60889
	A->Y (RF)	!B	0.05294	0.48183	4.89860
	B->Y (FF)	A	0.17123	0.73835	4.33862
	B->Y (RF)	!A	0.04712	0.47359	4.92556
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.17248	0.71937	4.38246
	A->Y (RF)	!B	0.05391	0.43164	4.75435
	B->Y (FF)	A	0.15744	0.67415	4.09254
	B->Y (RF)	!A	0.04779	0.42108	4.79399

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	0.00582	0.00580	0.00693
	A	B	0.00113	0.00109	0.00227
	A	!B	-0.00044	-0.00056	-0.00057
	A	!B	0.00416	0.00406	0.00408
	B	A	0.00540	0.00523	0.00687
	B	A	0.00154	0.00139	0.00303
	B	!A	0.00012	0.00007	0.00027
	B	!A	0.00393	0.00387	0.00407
sky130_fd_sc_hs__xnor2_2	A	B	0.00921	0.00920	0.00987
	A	B	0.00241	0.00237	0.00309
	A	!B	0.00007	-0.00015	-0.00015
	A	!B	0.00814	0.00794	0.00802
	B	A	0.00886	0.00866	0.00961
	B	A	0.00317	0.00300	0.00406
	B	!A	0.00045	0.00030	0.00070
	B	!A	0.00734	0.00720	0.00756
sky130_fd_sc_hs__xnor2_4	A	B	0.01485	0.01486	0.01681
	A	B	0.00266	0.00264	0.00456
	A	!B	-0.00042	-0.00088	-0.00079
	A	!B	0.01501	0.01461	0.01476
	B	A	0.01442	0.01400	0.01669
	B	A	0.00439	0.00401	0.00675
	B	!A	0.00021	-0.00010	0.00073
	B	!A	0.01337	0.01303	0.01390

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	0.00153	0.00162	0.00360
	A	B	0.00621	0.00630	0.00825
	A	!B	0.00531	0.00526	0.00538
	A	!B	0.00063	0.00055	0.00057
	B	A	0.00234	0.00193	0.00397
	B	A	0.00611	0.00570	0.00771
	B	!A	0.00370	0.00366	0.00385
	B	!A	-0.00008	-0.00011	-0.00010
sky130_fd_sc_hs__xnor2_2	A	B	0.00309	0.00312	0.00478
	A	B	0.00993	0.00996	0.01147
	A	!B	0.01008	0.00987	0.00993
	A	!B	0.00188	0.00167	0.00171
	B	A	0.00474	0.00398	0.00530
	B	A	0.01024	0.00947	0.01077
	B	!A	0.00732	0.00725	0.00750
	B	!A	0.00043	0.00035	0.00044
sky130_fd_sc_hs__xnor2_4	A	B	0.00508	0.00504	0.00884
	A	B	0.01730	0.01725	0.02101
	A	!B	0.01851	0.01809	0.01839
	A	!B	0.00289	0.00241	0.00258
	B	A	0.00705	0.00612	0.00956
	B	A	0.01677	0.01577	0.01917
	B	!A	0.01356	0.01337	0.01401
	B	!A	0.00047	0.00029	0.00060

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage 1.35, 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	0.00251	0.00677	0.00406	0.63339
sky130_fd_sc_hs__xnor3_2	0.00255	0.00679	0.00410	1.27711
sky130_fd_sc_hs__xnor3_4	0.00254	0.00677	0.00402	2.52240

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor3_1	0.00000	0.38266	0.43858
sky130_fd_sc_hs__xnor3_2	0.00000	0.39352	0.45670
sky130_fd_sc_hs__xnor3_4	0.00000	0.41525	0.49292

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)	0.45188	1.45165	9.89980
	B->X (-R)	0.32091	1.27380	9.32296
	C->X (-R)	0.24398	1.18591	8.92863
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.47869	1.37009	9.99567
	B->X (-R)	0.33879	1.18323	9.40789
	C->X (-R)	0.25718	1.09273	9.01912
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.54257	1.37053	10.11500
	B->X (-R)	0.40966	1.19009	9.54731
	C->X (-R)	0.31908	1.09251	9.16429

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.53854	1.28074	6.26948
	B->X (-F)	0.49092	1.21299	5.98064
	C->X (-F)	0.27540	0.92309	4.89615
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.59393	1.32517	6.40288
	B->X (-F)	0.54729	1.25947	6.22370
	C->X (-F)	0.36326	1.01413	5.31466
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.69483	1.44486	6.81020
	B->X (-F)	0.67331	1.40808	6.72826
	C->X (-F)	0.54085	1.20285	5.95971

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01423	0.01409	0.01478
	A	0.01401	0.01400	0.01533
	B	0.01328	0.01354	0.01714
	B	0.01298	0.01327	0.01815
	C	0.00651	0.00626	0.00845
	C	0.00675	0.00732	0.01047
sky130_fd_sc_hs__xnor3_2	A	0.01560	0.01566	0.01638
	A	0.01532	0.01551	0.01699
	B	0.01467	0.01507	0.01869
	B	0.01428	0.01468	0.01971
	C	0.00803	0.00799	0.01005
	C	0.00807	0.00882	0.01204
sky130_fd_sc_hs__xnor3_4	A	0.01918	0.01945	0.02028
	A	0.01866	0.01909	0.02087
	B	0.01796	0.01863	0.02235
	B	0.01759	0.01812	0.02348
	C	0.01137	0.01163	0.01367
	C	0.01135	0.01233	0.01601

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01321	0.01307	0.01400
	A	0.01419	0.01419	0.01532
	B	0.01209	0.01232	0.01590
	B	0.01339	0.01363	0.01808
	C	0.00685	0.00736	0.01033
	C	0.00591	0.00596	0.00879
sky130_fd_sc_hs__xnor3_2	A	0.01452	0.01463	0.01572
	A	0.01547	0.01566	0.01686
	B	0.01342	0.01376	0.01728
	B	0.01467	0.01508	0.01953
	C	0.00816	0.00888	0.01195
	C	0.00736	0.00753	0.01034
sky130_fd_sc_hs__xnor3_4	A	0.01826	0.01851	0.02019
	A	0.01884	0.01907	0.02047
	B	0.01685	0.01727	0.02118
	B	0.01758	0.01831	0.02308
	C	0.01140	0.01229	0.01560
	C	0.01085	0.01115	0.01399

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00485	0.00505	0.28484
sky130_fd_sc_hs__xor2_2	0.00744	0.00739	0.54233
sky130_fd_sc_hs__xor2_4	0.01506	0.01486	0.97928

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	0.02909	0.05071
sky130_fd_sc_hs__xor2_2	0.00000	0.04070	0.05372
sky130_fd_sc_hs__xor2_4	0.00000	0.08023	0.10744

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	0.15443	1.12056	7.64082
	A->X (FR)	B	0.19745	1.41785	12.20680
	B->X (RR)	!A	0.18911	1.15213	7.85158
	B->X (FR)	A	0.15701	1.34816	11.92950
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.12485	0.94566	7.79531
	A->X (FR)	B	0.17353	1.22026	12.15700
	B->X (RR)	!A	0.15052	0.93435	7.71134
	B->X (FR)	A	0.13699	1.17958	12.12680
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.11793	0.79378	7.68433
	A->X (FR)	B	0.17367	1.07228	11.83730
	B->X (RR)	!A	0.13499	0.76631	7.39286
	B->X (FR)	A	0.13803	1.04507	11.94920

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	0.23178	0.78365	3.89963
	A->X (RF)	B	0.04864	0.51779	4.69716
	B->X (FF)	!A	0.21514	0.73502	3.48832
	B->X (RF)	A	0.04018	0.53770	4.98574
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.30088	0.92036	5.05926
	A->X (RF)	B	0.04545	0.47036	4.75696
	B->X (FF)	!A	0.26798	0.86456	4.64897
	B->X (RF)	A	0.03992	0.52226	5.44481
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.29602	0.87631	4.94996
	A->X (RF)	B	0.04650	0.42217	4.63210
	B->X (FF)	!A	0.25524	0.80663	4.50637
	B->X (RF)	A	0.04094	0.45795	5.18433

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	0.00017	0.00011	0.00011
	A	B	0.00499	0.00493	0.00496
	A	!B	0.00679	0.00666	0.00726
	A	!B	0.00194	0.00182	0.00242
	B	A	0.00016	0.00009	0.00008
	B	A	0.00399	0.00390	0.00392
	B	!A	0.00614	0.00550	0.00639
	B	!A	0.00230	0.00171	0.00255
sky130_fd_sc_hs__xor2_2	A	B	0.00074	0.00062	0.00063
	A	B	0.00860	0.00847	0.00854
	A	!B	0.00907	0.00893	0.00967
	A	!B	0.00238	0.00221	0.00297
	B	A	0.00006	-0.00006	-0.00003
	B	A	0.00650	0.00627	0.00644
	B	!A	0.00891	0.00802	0.00902
	B	!A	0.00367	0.00278	0.00377
sky130_fd_sc_hs__xor2_4	A	B	0.00098	0.00061	0.00070
	A	B	0.01763	0.01731	0.01741
	A	!B	0.01813	0.01755	0.01896
	A	!B	0.00505	0.00448	0.00587
	B	A	0.00032	0.00002	0.00016
	B	A	0.01381	0.01357	0.01375
	B	!A	0.01611	0.01466	0.01664
	B	!A	0.00617	0.00473	0.00668

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	0.00485	0.00467	0.00470
	A	B	0.00005	-0.00015	-0.00017
	A	!B	0.00125	0.00126	0.00164
	A	!B	0.00604	0.00606	0.00648
	B	A	0.00418	0.00408	0.00421
	B	A	0.00035	0.00025	0.00028
	B	!A	0.00195	0.00187	0.00324
	B	!A	0.00592	0.00584	0.00721
sky130_fd_sc_hs__xor2_2	A	B	0.00826	0.00794	0.00798
	A	B	0.00037	0.00006	0.00006
	A	!B	0.00117	0.00113	0.00178
	A	!B	0.00771	0.00781	0.00829
	B	A	0.00705	0.00681	0.00692
	B	A	0.00066	0.00040	0.00050
	B	!A	0.00204	0.00200	0.00350
	B	!A	0.00763	0.00757	0.00905
sky130_fd_sc_hs__xor2_4	A	B	0.01700	0.01634	0.01639
	A	B	0.00039	-0.00035	-0.00025
	A	!B	0.00250	0.00258	0.00342
	A	!B	0.01530	0.01547	0.01630
	B	A	0.01449	0.01393	0.01458
	B	A	0.00093	0.00034	0.00064
	B	!A	0.00459	0.00448	0.00751
	B	!A	0.01514	0.01500	0.01801

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.35v_25C.ccs
Cell Library: Process , Voltage
1.35, 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	0.00250	0.00694	0.00405	0.64714
sky130_fd_sc_hs__xor3_2	0.00251	0.00703	0.00405	1.27564
sky130_fd_sc_hs__xor3_4	0.00249	0.00711	0.00401	2.51229

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	0.38266	0.43859
sky130_fd_sc_hs__xor3_2	0.00000	0.39352	0.45670
sky130_fd_sc_hs__xor3_4	0.00000	0.41525	0.49292

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)	0.43763	1.43305	9.90465
	B->X (-R)	0.30771	1.25501	9.29042
	C->X (-R)	0.24212	1.19086	9.01003
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.45577	1.34121	9.91305
	B->X (-R)	0.32913	1.17000	9.31370
	C->X (-R)	0.25829	1.10328	9.06217
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.51597	1.33505	10.12060
	B->X (-R)	0.39490	1.17249	9.51051
	C->X (-R)	0.30740	1.08856	9.25736

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.54290	1.27735	6.20011
	B->X (-F)	0.49124	1.20403	5.92568
	C->X (-F)	0.24990	0.88258	4.75047
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.59212	1.32432	6.40411
	B->X (-F)	0.54805	1.26049	6.24193
	C->X (-F)	0.34956	1.00193	5.28573
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.71220	1.46336	6.84052
	B->X (-F)	0.68623	1.41942	6.75555
	C->X (-F)	0.52910	1.20414	6.00389

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01509	0.01493	0.01558
	A	0.01395	0.01392	0.01523
	B	0.01420	0.01445	0.01795
	B	0.01285	0.01330	0.01821
	C	0.00661	0.00639	0.00856
	C	0.00667	0.00726	0.01042
sky130_fd_sc_hs__xor3_2	A	0.01661	0.01663	0.01732
	A	0.01535	0.01553	0.01695
	B	0.01574	0.01618	0.01969
	B	0.01420	0.01483	0.01987
	C	0.00813	0.00816	0.01015
	C	0.00828	0.00903	0.01234
sky130_fd_sc_hs__xor3_4	A	0.02002	0.02032	0.02112
	A	0.01885	0.01932	0.02104
	B	0.01921	0.01990	0.02349
	B	0.01748	0.01832	0.02356
	C	0.01131	0.01156	0.01357
	C	0.01141	0.01242	0.01612

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01419	0.01405	0.01491
	A	0.01421	0.01420	0.01532
	B	0.01315	0.01338	0.01680
	B	0.01327	0.01373	0.01833
	C	0.00729	0.00785	0.01082
	C	0.00587	0.00589	0.00876
sky130_fd_sc_hs__xor3_2	A	0.01553	0.01562	0.01657
	A	0.01549	0.01561	0.01684
	B	0.01449	0.01486	0.01842
	B	0.01451	0.01514	0.01977
	C	0.00871	0.00951	0.01255
	C	0.00728	0.00747	0.01028
sky130_fd_sc_hs__xor3_4	A	0.01924	0.01948	0.02056
	A	0.01928	0.01948	0.02085
	B	0.01825	0.01866	0.02275
	B	0.01814	0.01887	0.02360
	C	0.01192	0.01279	0.01636
	C	0.01088	0.01118	0.01403