sky130_fd_sc_hs_ss_1.60v_100C.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_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00290	0.00279	0.00290	0.00303	0.00302	0.17538
sky130_fd_sc_hs__a2111oi_2	0.00551	0.00533	0.00451	0.00453	0.00454	0.32264
sky130_fd_sc_hs__a2111oi_4	0.01094	0.01069	0.00884	0.00870	0.00889	0.61358

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111oi_1	0.00000	0.02380	0.14747
sky130_fd_sc_hs__a2111oi_2	0.00000	0.03649	0.18645
sky130_fd_sc_hs__a2111oi_4	0.00000	0.06930	0.36867

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)	0.35250	1.52135	9.68682
	A2->Y (FR)	0.41380	1.60420	9.85989
	B1->Y (FR)	0.38422	1.56191	10.24600
	C1->Y (FR)	0.33063	1.52669	10.63530
	D1->Y (FR)	0.24701	1.43850	10.59510
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.31920	1.30255	9.56733
	A2->Y (FR)	0.39501	1.38729	9.70130
	B1->Y (FR)	0.35062	1.33809	10.03640
	C1->Y (FR)	0.29357	1.30268	10.50340
	D1->Y (FR)	0.17908	1.18651	10.42680
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.30200	1.12215	9.46303
	A2->Y (FR)	0.38205	1.21390	9.66054
	B1->Y (FR)	0.33897	1.17136	10.04900
	C1->Y (FR)	0.27593	1.12981	10.52010
	D1->Y (FR)	0.16486	1.01685	10.48750

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.05447	0.51709	3.93922
	A2->Y (RF)	0.06034	0.47777	3.55797
	B1->Y (RF)	0.03790	0.41478	3.22492
	C1->Y (RF)	0.03842	0.40406	3.20228
	D1->Y (RF)	0.03346	0.38879	3.17700
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.04598	0.47312	3.94766
	A2->Y (RF)	0.05501	0.43584	3.54741
	B1->Y (RF)	0.05581	0.51919	4.50197
	C1->Y (RF)	0.05395	0.50090	4.46402
	D1->Y (RF)	0.04067	0.47245	4.42379
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.04573	0.43798	4.00799
	A2->Y (RF)	0.05390	0.39151	3.47703
	B1->Y (RF)	0.04948	0.45835	4.34642
	C1->Y (RF)	0.04880	0.43770	4.31002
	D1->Y (RF)	0.03643	0.41121	4.31809

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00062	0.00041	0.00123
	A1	0.00800	0.00782	0.00862
	A2	0.00102	0.00088	0.00170
	A2	0.00930	0.00918	0.00995
	B1	0.00115	0.00097	0.00208
	B1	0.00826	0.00808	0.00919
	C1	0.00114	0.00095	0.00236
	C1	0.00737	0.00718	0.00860
	D1	0.00043	0.00051	0.00326
	D1	0.00646	0.00643	0.00907
sky130_fd_sc_hs__a2111oi_2	A1	0.00048	0.00014	0.00171
	A1	0.01446	0.01415	0.01572
	A2	0.00192	0.00160	0.00316
	A2	0.01759	0.01730	0.01885
	B1	0.00269	0.00250	0.00361
	B1	0.01516	0.01497	0.01607
	C1	0.00278	0.00259	0.00407
	C1	0.01327	0.01308	0.01456
	D1	0.00269	0.00276	0.00597
	D1	0.01125	0.01134	0.01455

sky130_fd_sc_hs__a2111oi_4	**A1**	0.00013	-0.00056	0.00278
	A1	0.02821	0.02757	0.03091
	A2	0.00273	0.00213	0.00535
	A2	0.03426	0.03359	0.03688
	B1	0.00446	0.00406	0.00638
	B1	0.02936	0.02902	0.03128
	C1	0.00451	0.00416	0.00723
	C1	0.02547	0.02514	0.02818
	D1	0.00428	0.00451	0.01089
	D1	0.02141	0.02139	0.02802

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01054	0.01036	0.01177
	A1	0.00335	0.00315	0.00458
	A2	0.01146	0.01124	0.01232
	A2	0.00333	0.00309	0.00422
	B1	0.00895	0.00884	0.01044
	B1	0.00185	0.00170	0.00342
	C1	0.00714	0.00716	0.00876
	C1	0.00091	0.00086	0.00256
	D1	0.00535	0.00551	0.00711
	D1	-0.00006	0.00005	0.00171

sky130_fd_sc_hs__a2111oi_2	**A1**	0.01985	0.01937	0.02217
	A1	0.00626	0.00577	0.00865
	A2	0.02159	0.02111	0.02323
	A2	0.00621	0.00570	0.00791
	B1	0.01580	0.01551	0.01754
	B1	0.00334	0.00298	0.00514
	C1	0.01201	0.01192	0.01409
	C1	0.00151	0.00127	0.00342
	D1	0.00749	0.00773	0.01001
	D1	-0.00120	-0.00101	0.00117
sky130_fd_sc_hs__a2111oi_4	**A1**	0.03881	0.03785	0.04349
	A1	0.01153	0.01056	0.01633
	A2	0.04237	0.04141	0.04586
	A2	0.01147	0.01046	0.01502
	B1	0.03096	0.03036	0.03454
	B1	0.00611	0.00534	0.00974
	C1	0.02338	0.02308	0.02754
	C1	0.00239	0.00186	0.00638
	D1	0.01485	0.01533	0.01999
	D1	-0.00246	-0.00213	0.00240

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)**	0.00129	0.00128	0.00128
	(A2 * B1 * D1 * !Y)	-0.00168	-0.00175	-0.00174
	(A2 * B1 * C1 * !D1 * !Y)	0.00129	0.00128	0.00128
	(A2 * B1 * C1 * !D1 * !Y)	-0.00168	-0.00175	-0.00174
	(A2 * B1 * !C1 * !D1 * !Y)	0.00129	0.00128	0.00128
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00167	-0.00175	-0.00174
	(A2 * !B1 * C1 * D1 * !Y)	0.00127	0.00129	0.00128
	(A2 * !B1 * C1 * D1 * !Y)	-0.00156	-0.00169	-0.00168
	(A2 * !B1 * C1 * !D1 * !Y)	0.00127	0.00129	0.00128
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00156	-0.00169	-0.00168
	(A2 * !B1 * !C1 * D1 * !Y)	0.00129	0.00129	0.00128
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00155	-0.00166	-0.00165
	(!A2 * B1 * D1 * !Y)	0.00121	0.00123	0.00121
	(!A2 * B1 * D1 * !Y)	-0.00179	-0.00180	-0.00179
	(!A2 * B1 * C1 * !D1 * !Y)	0.00121	0.00123	0.00121
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00179	-0.00180	-0.00179
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00121	0.00121	0.00121
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00179	-0.00179	-0.00179
	(!A2 * !B1 * C1 * D1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00178	-0.00179	-0.00179
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00121	0.00121	0.00121
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00179	-0.00179	-0.00179
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00179	-0.00180	-0.00179
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00047	0.00047	0.00045
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00201	-0.00202	-0.00205

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00254	0.00256	0.00255
	(A2 * B1 * D1 * !Y)	-0.00333	-0.00351	-0.00347
	(A2 * B1 * C1 * !D1 * !Y)	0.00254	0.00256	0.00255
	(A2 * B1 * C1 * !D1 * !Y)	-0.00333	-0.00351	-0.00347
	(A2 * B1 * !C1 * !D1 * !Y)	0.00255	0.00256	0.00255
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00329	-0.00350	-0.00347
	(A2 * !B1 * C1 * D1 * !Y)	0.00254	0.00256	0.00255
	(A2 * !B1 * C1 * D1 * !Y)	-0.00310	-0.00331	-0.00333
	(A2 * !B1 * C1 * !D1 * !Y)	0.00254	0.00256	0.00255
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00310	-0.00332	-0.00333
	(A2 * !B1 * !C1 * D1 * !Y)	0.00255	0.00255	0.00255
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00306	-0.00331	-0.00328
	(!A2 * B1 * D1 * !Y)	0.00241	0.00245	0.00243
	(!A2 * B1 * D1 * !Y)	-0.00356	-0.00359	-0.00357
	(!A2 * B1 * C1 * !D1 * !Y)	0.00241	0.00245	0.00243
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00356	-0.00359	-0.00357
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00242	0.00243	0.00242
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00357	-0.00358	-0.00357
	(!A2 * !B1 * C1 * D1 * !Y)	0.00242	0.00244	0.00243
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00356	-0.00358	-0.00357
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00242	0.00243	0.00242
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00358	-0.00358	-0.00357
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00242	0.00244	0.00242
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00358	-0.00359	-0.00357
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00096	0.00096	0.00090
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00396	-0.00401	-0.00409

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00510	0.00514	0.00512
	(A2 * B1 * D1 * !Y)	-0.00666	-0.00694	-0.00695
	(A2 * B1 * C1 * !D1 * !Y)	0.00510	0.00514	0.00512
	(A2 * B1 * C1 * !D1 * !Y)	-0.00666	-0.00696	-0.00695
	(A2 * B1 * !C1 * !D1 * !Y)	0.00511	0.00514	0.00512
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00659	-0.00697	-0.00695
	(A2 * !B1 * C1 * D1 * !Y)	0.00511	0.00515	0.00512
	(A2 * !B1 * C1 * D1 * !Y)	-0.00625	-0.00669	-0.00669
	(A2 * !B1 * C1 * !D1 * !Y)	0.00512	0.00515	0.00512
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00625	-0.00669	-0.00669
	(A2 * !B1 * !C1 * D1 * !Y)	0.00514	0.00519	0.00513
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00616	-0.00663	-0.00657
	(!A2 * B1 * D1 * !Y)	0.00485	0.00486	0.00486
	(!A2 * B1 * D1 * !Y)	-0.00713	-0.00715	-0.00716
	(!A2 * B1 * C1 * !D1 * !Y)	0.00484	0.00485	0.00486
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00714	-0.00715	-0.00716
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00482	0.00483	0.00485
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00713	-0.00714	-0.00715
	(!A2 * !B1 * C1 * D1 * !Y)	0.00484	0.00487	0.00486
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00714	-0.00716	-0.00716
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00484	0.00486	0.00485
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00716	-0.00718	-0.00715
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00483	0.00488	0.00485
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00714	-0.00719	-0.00715
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00183	0.00185	0.00174
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00801	-0.00810	-0.00826

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)**	-0.00127	-0.00128	-0.00128
	(A2 * B1 * D1 * !Y)	0.00173	0.00175	0.00174
	(A2 * B1 * C1 * !D1 * !Y)	-0.00127	-0.00128	-0.00128
	(A2 * B1 * C1 * !D1 * !Y)	0.00173	0.00175	0.00174
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00127	-0.00128	-0.00128
	(A2 * B1 * !C1 * !D1 * !Y)	0.00173	0.00175	0.00174
	(A2 * !B1 * C1 * D1 * !Y)	-0.00127	-0.00128	-0.00128
	(A2 * !B1 * C1 * D1 * !Y)	0.00167	0.00169	0.00168
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00127	-0.00128	-0.00128
	(A2 * !B1 * C1 * !D1 * !Y)	0.00167	0.00169	0.00168
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00127	-0.00128	-0.00127
	(A2 * !B1 * !C1 * D1 * !Y)	0.00164	0.00166	0.00165
	(!A2 * B1 * D1 * !Y)	-0.00119	-0.00123	-0.00121
	(!A2 * B1 * D1 * !Y)	0.00179	0.00182	0.00179
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00119	-0.00123	-0.00121
	(!A2 * B1 * C1 * !D1 * !Y)	0.00179	0.00182	0.00179
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00119	-0.00121	-0.00121
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00180	0.00182	0.00179
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00118	-0.00122	-0.00121
	(!A2 * !B1 * C1 * D1 * !Y)	0.00178	0.00182	0.00179
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00119	-0.00121	-0.00121
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00180	0.00182	0.00179
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00119	-0.00122	-0.00121
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00180	0.00182	0.00179
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00043	-0.00043	-0.00043
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00205	0.00206	0.00205

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00254	-0.00256	-0.00255
	(A2 * B1 * D1 * !Y)	0.00345	0.00351	0.00347
	(A2 * B1 * C1 * !D1 * !Y)	-0.00254	-0.00256	-0.00255
	(A2 * B1 * C1 * !D1 * !Y)	0.00348	0.00351	0.00347
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00254	-0.00256	-0.00255
	(A2 * B1 * !C1 * !D1 * !Y)	0.00346	0.00350	0.00347
	(A2 * !B1 * C1 * D1 * !Y)	-0.00254	-0.00254	-0.00255
	(A2 * !B1 * C1 * D1 * !Y)	0.00332	0.00331	0.00333
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00254	-0.00254	-0.00255
	(A2 * !B1 * C1 * !D1 * !Y)	0.00332	0.00332	0.00333
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00254	-0.00255	-0.00255
	(A2 * !B1 * !C1 * D1 * !Y)	0.00327	0.00331	0.00328
	(!A2 * B1 * D1 * !Y)	-0.00234	-0.00245	-0.00243
	(!A2 * B1 * D1 * !Y)	0.00356	0.00362	0.00358
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00236	-0.00245	-0.00243
	(!A2 * B1 * C1 * !D1 * !Y)	0.00359	0.00359	0.00358
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00235	-0.00243	-0.00242
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00359	0.00359	0.00358
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00236	-0.00244	-0.00243
	(!A2 * !B1 * C1 * D1 * !Y)	0.00359	0.00359	0.00358
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00235	-0.00243	-0.00242
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00359	0.00359	0.00358
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00235	-0.00244	-0.00242
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00359	0.00359	0.00358
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00087	-0.00087	-0.00086
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00410	0.00412	0.00410

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00510	-0.00511	-0.00511
	(A2 * B1 * D1 * !Y)	0.00694	0.00694	0.00695
	(A2 * B1 * C1 * !D1 * !Y)	-0.00510	-0.00512	-0.00511
	(A2 * B1 * C1 * !D1 * !Y)	0.00693	0.00696	0.00695
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00511	-0.00512	-0.00511
	(A2 * B1 * !C1 * !D1 * !Y)	0.00693	0.00697	0.00695
	(A2 * !B1 * C1 * D1 * !Y)	-0.00511	-0.00511	-0.00511
	(A2 * !B1 * C1 * D1 * !Y)	0.00668	0.00669	0.00669
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00511	-0.00511	-0.00511
	(A2 * !B1 * C1 * !D1 * !Y)	0.00668	0.00669	0.00669
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00511	-0.00515	-0.00512
	(A2 * !B1 * !C1 * D1 * !Y)	0.00657	0.00663	0.00657
	(!A2 * B1 * D1 * !Y)	-0.00470	-0.00486	-0.00486
	(!A2 * B1 * D1 * !Y)	0.00713	0.00718	0.00717
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00473	-0.00485	-0.00486
	(!A2 * B1 * C1 * !D1 * !Y)	0.00720	0.00722	0.00717
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00472	-0.00483	-0.00485
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00720	0.00722	0.00717
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00472	-0.00487	-0.00486
	(!A2 * !B1 * C1 * D1 * !Y)	0.00719	0.00720	0.00717
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00472	-0.00486	-0.00485
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00719	0.00720	0.00717
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00472	-0.00488	-0.00485
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00719	0.00720	0.00718
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00169	-0.00168	-0.00167
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00831	0.00831	0.00828

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)**	0.00135	0.00135	0.00135
	(A1 * B1 * D1 * !Y)	-0.00168	-0.00176	-0.00175
	(A1 * B1 * C1 * !D1 * !Y)	0.00136	0.00135	0.00135
	(A1 * B1 * C1 * !D1 * !Y)	-0.00168	-0.00176	-0.00175
	(A1 * B1 * !C1 * !D1 * !Y)	0.00136	0.00135	0.00135
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00167	-0.00176	-0.00175
	(A1 * !B1 * C1 * D1 * !Y)	0.00136	0.00137	0.00135
	(A1 * !B1 * C1 * D1 * !Y)	-0.00158	-0.00170	-0.00169
	(A1 * !B1 * C1 * !D1 * !Y)	0.00136	0.00137	0.00135
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00158	-0.00170	-0.00169
	(A1 * !B1 * !C1 * D1 * !Y)	0.00136	0.00137	0.00135
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00155	-0.00166	-0.00165
	(!A1 * B1 * !Y)	0.00129	0.00129	0.00129
	(!A1 * B1 * !Y)	-0.00180	-0.00180	-0.00180
	(!A1 * !B1 * C1 * !Y)	0.00128	0.00129	0.00129
	(!A1 * !B1 * C1 * !Y)	-0.00180	-0.00180	-0.00180
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00128	0.00130	0.00129
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00180	-0.00181	-0.00180
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00130	0.00130	0.00129
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00180	-0.00180	-0.00179

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00256	0.00258	0.00257
	(A1 * B1 * D1 * !Y)	-0.00333	-0.00349	-0.00347
	(A1 * B1 * C1 * !D1 * !Y)	0.00256	0.00258	0.00257
	(A1 * B1 * C1 * !D1 * !Y)	-0.00333	-0.00350	-0.00346
	(A1 * B1 * !C1 * !D1 * !Y)	0.00257	0.00258	0.00257
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00329	-0.00349	-0.00346
	(A1 * !B1 * C1 * D1 * !Y)	0.00256	0.00258	0.00257
	(A1 * !B1 * C1 * D1 * !Y)	-0.00311	-0.00336	-0.00333
	(A1 * !B1 * C1 * !D1 * !Y)	0.00257	0.00258	0.00257
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00311	-0.00336	-0.00333
	(A1 * !B1 * !C1 * D1 * !Y)	0.00258	0.00260	0.00257
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00307	-0.00330	-0.00328
	(!A1 * B1 * !Y)	0.00244	0.00247	0.00244
	(!A1 * B1 * !Y)	-0.00355	-0.00358	-0.00356
	(!A1 * !B1 * C1 * !Y)	0.00244	0.00245	0.00244
	(!A1 * !B1 * C1 * !Y)	-0.00355	-0.00357	-0.00356
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00244	0.00247	0.00244
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00355	-0.00357	-0.00355
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00245	0.00246	0.00245
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00356	-0.00356	-0.00355

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00515	0.00518	0.00515
	(A1 * B1 * D1 * !Y)	-0.00668	-0.00700	-0.00694
	(A1 * B1 * C1 * !D1 * !Y)	0.00515	0.00518	0.00515
	(A1 * B1 * C1 * !D1 * !Y)	-0.00667	-0.00700	-0.00694
	(A1 * B1 * !C1 * !D1 * !Y)	0.00516	0.00518	0.00515
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00660	-0.00699	-0.00694
	(A1 * !B1 * C1 * D1 * !Y)	0.00516	0.00518	0.00515
	(A1 * !B1 * C1 * D1 * !Y)	-0.00627	-0.00674	-0.00668
	(A1 * !B1 * C1 * !D1 * !Y)	0.00516	0.00518	0.00515
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00626	-0.00674	-0.00668
	(A1 * !B1 * !C1 * D1 * !Y)	0.00519	0.00522	0.00516
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00617	-0.00661	-0.00657
	(!A1 * B1 * !Y)	0.00489	0.00490	0.00488
	(!A1 * B1 * !Y)	-0.00714	-0.00716	-0.00715
	(!A1 * !B1 * C1 * !Y)	0.00488	0.00490	0.00487
	(!A1 * !B1 * C1 * !Y)	-0.00714	-0.00717	-0.00715
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00488	0.00492	0.00487
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00714	-0.00718	-0.00714
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00486	0.00494	0.00489
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00710	-0.00717	-0.00712

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)**	-0.00135	-0.00135	-0.00135
	(A1 * B1 * D1 * !Y)	0.00174	0.00176	0.00175
	(A1 * B1 * C1 * !D1 * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * C1 * !D1 * !Y)	0.00174	0.00176	0.00175
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * !C1 * !D1 * !Y)	0.00174	0.00176	0.00175
	(A1 * !B1 * C1 * D1 * !Y)	-0.00134	-0.00136	-0.00135
	(A1 * !B1 * C1 * D1 * !Y)	0.00167	0.00170	0.00169
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00135	-0.00136	-0.00135
	(A1 * !B1 * C1 * !D1 * !Y)	0.00169	0.00170	0.00169
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00134	-0.00135	-0.00135
	(A1 * !B1 * !C1 * D1 * !Y)	0.00164	0.00166	0.00165
	(!A1 * B1 * !Y)	-0.00126	-0.00129	-0.00129
	(!A1 * B1 * !Y)	0.00180	0.00182	0.00180
	(!A1 * !B1 * C1 * !Y)	-0.00126	-0.00129	-0.00129
	(!A1 * !B1 * C1 * !Y)	0.00180	0.00182	0.00180
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00126	-0.00130	-0.00129
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00180	0.00182	0.00180
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00121	-0.00129	-0.00129
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00186	0.00183	0.00181

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00255	-0.00257	-0.00256
	(A1 * B1 * D1 * !Y)	0.00344	0.00349	0.00347
	(A1 * B1 * C1 * !D1 * !Y)	-0.00256	-0.00257	-0.00256
	(A1 * B1 * C1 * !D1 * !Y)	0.00347	0.00350	0.00346
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00257	-0.00257	-0.00256
	(A1 * B1 * !C1 * !D1 * !Y)	0.00347	0.00349	0.00346
	(A1 * !B1 * C1 * D1 * !Y)	-0.00255	-0.00258	-0.00256
	(A1 * !B1 * C1 * D1 * !Y)	0.00332	0.00336	0.00333
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00255	-0.00257	-0.00256
	(A1 * !B1 * C1 * !D1 * !Y)	0.00331	0.00336	0.00333
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00256	-0.00257	-0.00256
	(A1 * !B1 * !C1 * D1 * !Y)	0.00327	0.00330	0.00328
	(!A1 * B1 * !Y)	-0.00237	-0.00247	-0.00244
	(!A1 * B1 * !Y)	0.00355	0.00360	0.00356
	(!A1 * !B1 * C1 * !Y)	-0.00237	-0.00245	-0.00244
	(!A1 * !B1 * C1 * !Y)	0.00355	0.00360	0.00356
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00237	-0.00247	-0.00244
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00355	0.00360	0.00356
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00227	-0.00246	-0.00245
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00367	0.00361	0.00357

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00514	-0.00517	-0.00514
	(A1 * B1 * D1 * !Y)	0.00693	0.00700	0.00694
	(A1 * B1 * C1 * !D1 * !Y)	-0.00514	-0.00517	-0.00514
	(A1 * B1 * C1 * !D1 * !Y)	0.00693	0.00700	0.00694
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00514	-0.00517	-0.00514
	(A1 * B1 * !C1 * !D1 * !Y)	0.00692	0.00699	0.00694
	(A1 * !B1 * C1 * D1 * !Y)	-0.00514	-0.00517	-0.00514
	(A1 * !B1 * C1 * D1 * !Y)	0.00668	0.00674	0.00668
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00514	-0.00517	-0.00514
	(A1 * !B1 * C1 * !D1 * !Y)	0.00667	0.00674	0.00668
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00515	-0.00517	-0.00515
	(A1 * !B1 * !C1 * D1 * !Y)	0.00657	0.00661	0.00657
	(!A1 * B1 * !Y)	-0.00476	-0.00490	-0.00488
	(!A1 * B1 * !Y)	0.00714	0.00724	0.00716
	(!A1 * !B1 * C1 * !Y)	-0.00475	-0.00490	-0.00487
	(!A1 * !B1 * C1 * !Y)	0.00714	0.00724	0.00716
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00475	-0.00492	-0.00487
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00714	0.00724	0.00716
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00452	-0.00492	-0.00489
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00741	0.00727	0.00716

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)**	0.00135	0.00134	0.00134
	(A1 * A2 * C1 * D1 * !Y)	-0.00126	-0.00128	-0.00127
	(A1 * A2 * C1 * !D1 * !Y)	0.00149	0.00144	0.00136
	(A1 * A2 * C1 * !D1 * !Y)	-0.00126	-0.00127	-0.00125
	(A1 * A2 * !C1 * D1 * !Y)	0.00134	0.00137	0.00134
	(A1 * A2 * !C1 * D1 * !Y)	-0.00119	-0.00120	-0.00120
	(A1 * A2 * !C1 * !D1 * !Y)	0.00132	0.00133	0.00132
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00095	-0.00095	-0.00095
	(A1 * !A2 * C1 * D1 * !Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * C1 * D1 * !Y)	-0.00168	-0.00173	-0.00172
	(A1 * !A2 * C1 * !D1 * !Y)	0.00144	0.00133	0.00132
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00155	-0.00173	-0.00172
	(A1 * !A2 * !C1 * D1 * !Y)	0.00136	0.00133	0.00132
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00147	-0.00164	-0.00163
	(!A1 * C1 * D1 * !Y)	0.00133	0.00133	0.00132
	(!A1 * C1 * D1 * !Y)	-0.00169	-0.00173	-0.00172
	(!A1 * C1 * !D1 * !Y)	0.00143	0.00133	0.00132
	(!A1 * C1 * !D1 * !Y)	-0.00156	-0.00173	-0.00172
	(!A1 * !C1 * D1 * !Y)	0.00136	0.00133	0.00132
	(!A1 * !C1 * D1 * !Y)	-0.00148	-0.00163	-0.00163

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00150	0.00151	0.00150
	(A1 * A2 * C1 * D1 * !Y)	-0.00251	-0.00250	-0.00250
	(A1 * A2 * C1 * !D1 * !Y)	0.00180	0.00169	0.00155
	(A1 * A2 * C1 * !D1 * !Y)	-0.00247	-0.00247	-0.00247
	(A1 * A2 * !C1 * D1 * !Y)	0.00154	0.00161	0.00153
	(A1 * A2 * !C1 * D1 * !Y)	-0.00243	-0.00245	-0.00243
	(A1 * A2 * !C1 * !D1 * !Y)	0.00150	0.00151	0.00150
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00190	-0.00191	-0.00189
	(A1 * !A2 * C1 * D1 * !Y)	0.00152	0.00151	0.00150
	(A1 * !A2 * C1 * D1 * !Y)	-0.00337	-0.00345	-0.00343
	(A1 * !A2 * C1 * !D1 * !Y)	0.00165	0.00151	0.00150
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00321	-0.00345	-0.00344
	(A1 * !A2 * !C1 * D1 * !Y)	0.00157	0.00151	0.00150
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00300	-0.00328	-0.00326
	(!A1 * C1 * D1 * !Y)	0.00150	0.00151	0.00150
	(!A1 * C1 * D1 * !Y)	-0.00333	-0.00345	-0.00343
	(!A1 * C1 * !D1 * !Y)	0.00162	0.00151	0.00150
	(!A1 * C1 * !D1 * !Y)	-0.00317	-0.00345	-0.00344
	(!A1 * !C1 * D1 * !Y)	0.00157	0.00151	0.00150
	(!A1 * !C1 * D1 * !Y)	-0.00301	-0.00328	-0.00326

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00294	0.00292	0.00289
	(A1 * A2 * C1 * D1 * !Y)	-0.00509	-0.00514	-0.00510
	(A1 * A2 * C1 * !D1 * !Y)	0.00347	0.00330	0.00301
	(A1 * A2 * C1 * !D1 * !Y)	-0.00500	-0.00506	-0.00503
	(A1 * A2 * !C1 * D1 * !Y)	0.00295	0.00312	0.00296
	(A1 * A2 * !C1 * D1 * !Y)	-0.00491	-0.00492	-0.00488
	(A1 * A2 * !C1 * !D1 * !Y)	0.00288	0.00290	0.00288
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00391	-0.00395	-0.00392
	(A1 * !A2 * C1 * D1 * !Y)	0.00291	0.00291	0.00288
	(A1 * !A2 * C1 * D1 * !Y)	-0.00685	-0.00709	-0.00703
	(A1 * !A2 * C1 * !D1 * !Y)	0.00330	0.00291	0.00288
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00646	-0.00709	-0.00705
	(A1 * !A2 * !C1 * D1 * !Y)	0.00305	0.00291	0.00288
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00607	-0.00668	-0.00665
	(!A1 * C1 * D1 * !Y)	0.00291	0.00291	0.00288
	(!A1 * C1 * D1 * !Y)	-0.00686	-0.00709	-0.00704
	(!A1 * C1 * !D1 * !Y)	0.00325	0.00291	0.00288
	(!A1 * C1 * !D1 * !Y)	-0.00645	-0.00709	-0.00705
	(!A1 * !C1 * D1 * !Y)	0.00305	0.00291	0.00288
	(!A1 * !C1 * D1 * !Y)	-0.00610	-0.00669	-0.00666

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)**	-0.00133	-0.00134	-0.00133
	(A1 * A2 * C1 * D1 * !Y)	0.00126	0.00128	0.00127
	(A1 * A2 * C1 * !D1 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * A2 * C1 * !D1 * !Y)	0.00126	0.00127	0.00125
	(A1 * A2 * !C1 * D1 * !Y)	-0.00132	-0.00133	-0.00133
	(A1 * A2 * !C1 * D1 * !Y)	0.00119	0.00120	0.00120
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00122	-0.00123	-0.00125
	(A1 * A2 * !C1 * !D1 * !Y)	0.00104	0.00104	0.00102
	(A1 * !A2 * C1 * D1 * !Y)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * C1 * D1 * !Y)	0.00173	0.00173	0.00172
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00131	-0.00132	-0.00132
	(A1 * !A2 * C1 * !D1 * !Y)	0.00171	0.00173	0.00172
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * !C1 * D1 * !Y)	0.00163	0.00164	0.00163
	(!A1 * C1 * D1 * !Y)	-0.00131	-0.00132	-0.00132
	(!A1 * C1 * D1 * !Y)	0.00171	0.00173	0.00172
	(!A1 * C1 * !D1 * !Y)	-0.00131	-0.00132	-0.00132
	(!A1 * C1 * !D1 * !Y)	0.00172	0.00173	0.00172
	(!A1 * !C1 * D1 * !Y)	-0.00132	-0.00131	-0.00131
	(!A1 * !C1 * D1 * !Y)	0.00164	0.00163	0.00163

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00150	-0.00149	-0.00150
	(A1 * A2 * C1 * D1 * !Y)	0.00251	0.00250	0.00250
	(A1 * A2 * C1 * !D1 * !Y)	-0.00150	-0.00150	-0.00150
	(A1 * A2 * C1 * !D1 * !Y)	0.00247	0.00247	0.00247
	(A1 * A2 * !C1 * D1 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * A2 * !C1 * D1 * !Y)	0.00243	0.00245	0.00243
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00132	-0.00133	-0.00133
	(A1 * A2 * !C1 * !D1 * !Y)	0.00210	0.00210	0.00207
	(A1 * !A2 * C1 * D1 * !Y)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * C1 * D1 * !Y)	0.00341	0.00345	0.00343
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00150	-0.00150	-0.00149
	(A1 * !A2 * C1 * !D1 * !Y)	0.00344	0.00345	0.00344
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00150	-0.00150	-0.00149
	(A1 * !A2 * !C1 * D1 * !Y)	0.00327	0.00328	0.00326
	(!A1 * C1 * D1 * !Y)	-0.00149	-0.00150	-0.00149
	(!A1 * C1 * D1 * !Y)	0.00342	0.00345	0.00343
	(!A1 * C1 * !D1 * !Y)	-0.00149	-0.00150	-0.00149
	(!A1 * C1 * !D1 * !Y)	0.00341	0.00345	0.00344
	(!A1 * !C1 * D1 * !Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !C1 * D1 * !Y)	0.00325	0.00328	0.00326

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00287	-0.00289	-0.00288
	(A1 * A2 * C1 * D1 * !Y)	0.00509	0.00514	0.00510
	(A1 * A2 * C1 * !D1 * !Y)	-0.00286	-0.00289	-0.00288
	(A1 * A2 * C1 * !D1 * !Y)	0.00500	0.00506	0.00503
	(A1 * A2 * !C1 * D1 * !Y)	-0.00292	-0.00292	-0.00291
	(A1 * A2 * !C1 * D1 * !Y)	0.00491	0.00492	0.00488
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00254	-0.00256	-0.00256
	(A1 * A2 * !C1 * !D1 * !Y)	0.00422	0.00425	0.00422
	(A1 * !A2 * C1 * D1 * !Y)	-0.00288	-0.00289	-0.00287
	(A1 * !A2 * C1 * D1 * !Y)	0.00704	0.00709	0.00703
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00289	-0.00289	-0.00287
	(A1 * !A2 * C1 * !D1 * !Y)	0.00708	0.00709	0.00705
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00288	-0.00289	-0.00287
	(A1 * !A2 * !C1 * D1 * !Y)	0.00665	0.00668	0.00665
	(!A1 * C1 * D1 * !Y)	-0.00289	-0.00289	-0.00287
	(!A1 * C1 * D1 * !Y)	0.00708	0.00709	0.00704
	(!A1 * C1 * !D1 * !Y)	-0.00286	-0.00289	-0.00287
	(!A1 * C1 * !D1 * !Y)	0.00701	0.00709	0.00705
	(!A1 * !C1 * D1 * !Y)	-0.00288	-0.00289	-0.00287
	(!A1 * !C1 * D1 * !Y)	0.00667	0.00669	0.00666

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)**	0.00153	0.00153	0.00144
	(A1 * B1 * D1 * !Y)	-0.00113	-0.00114	-0.00113
	(A1 * B1 * !D1 * !Y)	0.00141	0.00140	0.00139
	(A1 * B1 * !D1 * !Y)	-0.00091	-0.00090	-0.00091
	(A1 * A2 * !B1 * D1 * !Y)	0.00166	0.00149	0.00140
	(A1 * A2 * !B1 * D1 * !Y)	-0.00109	-0.00119	-0.00118
	(A1 * A2 * !B1 * !D1 * !Y)	0.00141	0.00141	0.00139
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00089	-0.00089	-0.00090
	(A1 * !A2 * !B1 * D1 * !Y)	0.00171	0.00141	0.00138
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00135	-0.00168	-0.00168
	(!A1 * B1 * D1 * !Y)	0.00153	0.00153	0.00144
	(!A1 * B1 * D1 * !Y)	-0.00113	-0.00114	-0.00113
	(!A1 * B1 * !D1 * !Y)	0.00141	0.00141	0.00139
	(!A1 * B1 * !D1 * !Y)	-0.00091	-0.00090	-0.00091
	(!A1 * !B1 * D1 * !Y)	0.00171	0.00141	0.00138
	(!A1 * !B1 * D1 * !Y)	-0.00135	-0.00168	-0.00168

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00171	0.00175	0.00157
	(A1 * B1 * D1 * !Y)	-0.00244	-0.00246	-0.00244
	(A1 * B1 * !D1 * !Y)	0.00145	0.00144	0.00143
	(A1 * B1 * !D1 * !Y)	-0.00196	-0.00195	-0.00195
	(A1 * A2 * !B1 * D1 * !Y)	0.00194	0.00161	0.00146
	(A1 * A2 * !B1 * D1 * !Y)	-0.00235	-0.00251	-0.00251
	(A1 * A2 * !B1 * !D1 * !Y)	0.00145	0.00146	0.00143
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00193	-0.00194	-0.00193
	(A1 * !A2 * !B1 * D1 * !Y)	0.00208	0.00145	0.00142
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00288	-0.00353	-0.00354
	(!A1 * B1 * D1 * !Y)	0.00170	0.00175	0.00156
	(!A1 * B1 * D1 * !Y)	-0.00245	-0.00247	-0.00245
	(!A1 * B1 * !D1 * !Y)	0.00145	0.00145	0.00143
	(!A1 * B1 * !D1 * !Y)	-0.00196	-0.00195	-0.00196
	(!A1 * !B1 * D1 * !Y)	0.00208	0.00145	0.00142
	(!A1 * !B1 * D1 * !Y)	-0.00288	-0.00353	-0.00354

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00338	0.00341	0.00304
	(A1 * B1 * D1 * !Y)	-0.00476	-0.00480	-0.00478
	(A1 * B1 * !D1 * !Y)	0.00285	0.00285	0.00278
	(A1 * B1 * !D1 * !Y)	-0.00383	-0.00382	-0.00383
	(A1 * A2 * !B1 * D1 * !Y)	0.00387	0.00315	0.00283
	(A1 * A2 * !B1 * D1 * !Y)	-0.00442	-0.00494	-0.00486
	(A1 * A2 * !B1 * !D1 * !Y)	0.00288	0.00288	0.00279
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00375	-0.00376	-0.00379
	(A1 * !A2 * !B1 * D1 * !Y)	0.00421	0.00283	0.00275
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00552	-0.00697	-0.00696
	(!A1 * B1 * D1 * !Y)	0.00337	0.00341	0.00304
	(!A1 * B1 * D1 * !Y)	-0.00478	-0.00482	-0.00479
	(!A1 * B1 * !D1 * !Y)	0.00285	0.00287	0.00279
	(!A1 * B1 * !D1 * !Y)	-0.00378	-0.00382	-0.00384
	(!A1 * !B1 * D1 * !Y)	0.00421	0.00283	0.00275
	(!A1 * !B1 * D1 * !Y)	-0.00552	-0.00697	-0.00696

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)**	-0.00138	-0.00139	-0.00139
	(A1 * B1 * D1 * !Y)	0.00113	0.00114	0.00113
	(A1 * B1 * !D1 * !Y)	-0.00138	-0.00138	-0.00137
	(A1 * B1 * !D1 * !Y)	0.00094	0.00094	0.00094
	(A1 * A2 * !B1 * D1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * !B1 * D1 * !Y)	0.00118	0.00119	0.00118
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00125	-0.00126	-0.00137
	(A1 * A2 * !B1 * !D1 * !Y)	0.00101	0.00100	0.00092
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00137	-0.00138	-0.00137
	(A1 * !A2 * !B1 * D1 * !Y)	0.00167	0.00168	0.00168
	(!A1 * B1 * D1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A1 * B1 * D1 * !Y)	0.00113	0.00114	0.00113
	(!A1 * B1 * !D1 * !Y)	-0.00138	-0.00138	-0.00137
	(!A1 * B1 * !D1 * !Y)	0.00094	0.00094	0.00094
	(!A1 * !B1 * D1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A1 * !B1 * D1 * !Y)	0.00167	0.00168	0.00168

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00145	-0.00146	-0.00145
	(A1 * B1 * D1 * !Y)	0.00244	0.00246	0.00244
	(A1 * B1 * !D1 * !Y)	-0.00140	-0.00140	-0.00137
	(A1 * B1 * !D1 * !Y)	0.00199	0.00199	0.00202
	(A1 * A2 * !B1 * D1 * !Y)	-0.00143	-0.00144	-0.00144
	(A1 * A2 * !B1 * D1 * !Y)	0.00250	0.00251	0.00251
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00119	-0.00121	-0.00137
	(A1 * A2 * !B1 * !D1 * !Y)	0.00211	0.00210	0.00200
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00142	-0.00141	-0.00140
	(A1 * !A2 * !B1 * D1 * !Y)	0.00353	0.00353	0.00354
	(!A1 * B1 * D1 * !Y)	-0.00145	-0.00146	-0.00145
	(!A1 * B1 * D1 * !Y)	0.00245	0.00247	0.00245
	(!A1 * B1 * !D1 * !Y)	-0.00140	-0.00140	-0.00137
	(!A1 * B1 * !D1 * !Y)	0.00200	0.00200	0.00202
	(!A1 * !B1 * D1 * !Y)	-0.00141	-0.00142	-0.00140
	(!A1 * !B1 * D1 * !Y)	0.00351	0.00353	0.00354

sky130_fd_sc_hs__a2111oi_4	(A1 * B1 * D1 * !Y)	-0.00280	-0.00282	-0.00281
	(A1 * B1 * D1 * !Y)	0.00476	0.00480	0.00478
	(A1 * B1 * !D1 * !Y)	-0.00273	-0.00273	-0.00268
	(A1 * B1 * !D1 * !Y)	0.00394	0.00395	0.00396
	(A1 * A2 * !B1 * D1 * !Y)	-0.00279	-0.00281	-0.00278
	(A1 * A2 * !B1 * D1 * !Y)	0.00488	0.00494	0.00486
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00241	-0.00244	-0.00267
	(A1 * A2 * !B1 * !D1 * !Y)	0.00407	0.00406	0.00390
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00274	-0.00274	-0.00270
	(A1 * !A2 * !B1 * D1 * !Y)	0.00696	0.00697	0.00696
	(!A1 * B1 * D1 * !Y)	-0.00280	-0.00282	-0.00281
	(!A1 * B1 * D1 * !Y)	0.00478	0.00482	0.00479
	(!A1 * B1 * !D1 * !Y)	-0.00273	-0.00273	-0.00268
	(!A1 * B1 * !D1 * !Y)	0.00395	0.00396	0.00397
	(!A1 * !B1 * D1 * !Y)	-0.00274	-0.00274	-0.00271
	(!A1 * !B1 * D1 * !Y)	0.00696	0.00698	0.00696

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	(A1 * C1 * !Y)	0.00155	0.00156	0.00155
	(A1 * C1 * !Y)	-0.00083	-0.00084	-0.00083
	(A1 * B1 * !C1 * !Y)	0.00156	0.00156	0.00155
	(A1 * B1 * !C1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * !B1 * !C1 * !Y)	0.00155	0.00156	0.00155
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * C1 * !Y)	0.00155	0.00156	0.00155
	(!A1 * C1 * !Y)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * !C1 * !Y)	0.00155	0.00156	0.00155
	(!A1 * B1 * !C1 * !Y)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00177	0.00178	0.00177
	(A1 * C1 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * !C1 * !Y)	0.00177	0.00178	0.00177
	(A1 * B1 * !C1 * !Y)	-0.00169	-0.00169	-0.00168
	(A1 * A2 * !B1 * !C1 * !Y)	0.00177	0.00178	0.00177
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00168	-0.00169	-0.00168
	(!A1 * C1 * !Y)	0.00177	0.00178	0.00177
	(!A1 * C1 * !Y)	-0.00170	-0.00170	-0.00169
	(!A1 * B1 * !C1 * !Y)	0.00177	0.00178	0.00177
	(!A1 * B1 * !C1 * !Y)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00352	0.00352	0.00351
	(A1 * C1 * !Y)	-0.00334	-0.00334	-0.00332
	(A1 * B1 * !C1 * !Y)	0.00354	0.00352	0.00351
	(A1 * B1 * !C1 * !Y)	-0.00335	-0.00332	-0.00331
	(A1 * A2 * !B1 * !C1 * !Y)	0.00351	0.00353	0.00351
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00332	-0.00333	-0.00331
	(!A1 * C1 * !Y)	0.00352	0.00352	0.00351
	(!A1 * C1 * !Y)	-0.00334	-0.00334	-0.00333
	(!A1 * B1 * !C1 * !Y)	0.00353	0.00353	0.00351
	(!A1 * B1 * !C1 * !Y)	-0.00335	-0.00333	-0.00331

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00151	-0.00152	-0.00155
	(A1 * C1 * !Y)	0.00088	0.00088	0.00085
	(A1 * B1 * !C1 * !Y)	-0.00142	-0.00143	-0.00154
	(A1 * B1 * !C1 * !Y)	0.00093	0.00092	0.00085
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00121	-0.00122	-0.00148
	(A1 * A2 * !B1 * !C1 * !Y)	0.00107	0.00106	0.00088
	(!A1 * C1 * !Y)	-0.00151	-0.00152	-0.00155
	(!A1 * C1 * !Y)	0.00088	0.00088	0.00085
	(!A1 * B1 * !C1 * !Y)	-0.00142	-0.00143	-0.00154
	(!A1 * B1 * !C1 * !Y)	0.00093	0.00092	0.00085
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00162	-0.00163	-0.00176
	(A1 * C1 * !Y)	0.00185	0.00184	0.00173
	(A1 * B1 * !C1 * !Y)	-0.00143	-0.00144	-0.00172
	(A1 * B1 * !C1 * !Y)	0.00193	0.00192	0.00172
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00103	-0.00105	-0.00162
	(A1 * A2 * !B1 * !C1 * !Y)	0.00219	0.00218	0.00180
	(!A1 * C1 * !Y)	-0.00161	-0.00163	-0.00176
	(!A1 * C1 * !Y)	0.00183	0.00184	0.00173
	(!A1 * B1 * !C1 * !Y)	-0.00142	-0.00144	-0.00172
	(!A1 * B1 * !C1 * !Y)	0.00192	0.00192	0.00173
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00325	-0.00327	-0.00350
	(A1 * C1 * !Y)	0.00359	0.00357	0.00339
	(A1 * B1 * !C1 * !Y)	-0.00286	-0.00287	-0.00341
	(A1 * B1 * !C1 * !Y)	0.00380	0.00377	0.00340
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00210	-0.00213	-0.00322
	(A1 * A2 * !B1 * !C1 * !Y)	0.00426	0.00423	0.00353
	(!A1 * C1 * !Y)	-0.00326	-0.00327	-0.00350
	(!A1 * C1 * !Y)	0.00359	0.00357	0.00340
	(!A1 * B1 * !C1 * !Y)	-0.00286	-0.00288	-0.00342
	(!A1 * B1 * !C1 * !Y)	0.00380	0.00378	0.00341

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00264	0.00276	0.00265	0.00269	0.00266	0.75620
sky130_fd_sc_hs__a2111o_2	0.00295	0.00306	0.00289	0.00298	0.00311	1.46588
sky130_fd_sc_hs__a2111o_4	0.00498	0.00490	0.00509	0.00511	0.00505	2.86832

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111o_1	0.00000	0.07111	0.18594
sky130_fd_sc_hs__a2111o_2	0.00000	0.09620	0.20732
sky130_fd_sc_hs__a2111o_4	0.00000	0.21058	0.41909

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)	0.14631	0.91699	7.65077
	A2->X (RR)	0.15313	0.90363	7.65943
	B1->X (RR)	0.10976	0.84313	7.43999
	C1->X (RR)	0.10656	0.82395	7.35034
	D1->X (RR)	0.09777	0.79685	7.27701
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.14971	0.82403	7.66083
	A2->X (RR)	0.15616	0.80455	7.64274
	B1->X (RR)	0.10765	0.74183	7.43587
	C1->X (RR)	0.10364	0.72328	7.34732
	D1->X (RR)	0.09681	0.70135	7.27735
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.15827	0.76053	7.86663
	A2->X (RR)	0.16706	0.74489	7.85858
	B1->X (RR)	0.10669	0.66259	7.60348
	C1->X (RR)	0.10388	0.64665	7.51851
	D1->X (RR)	0.09451	0.61914	7.43293

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.49817	1.08227	4.84289
	A2->X (FF)	0.54390	1.13971	4.94574
	B1->X (FF)	0.50621	1.08965	5.10229
	C1->X (FF)	0.45694	1.05824	5.20271
	D1->X (FF)	0.38020	0.99800	5.07343
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.60461	1.18735	5.17508
	A2->X (FF)	0.64766	1.24432	5.28816
	B1->X (FF)	0.61048	1.19210	5.46440
	C1->X (FF)	0.55569	1.15398	5.60192
	D1->X (FF)	0.47930	1.09068	5.50261
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.61753	1.15052	5.19916
	A2->X (FF)	0.69450	1.24243	5.34163
	B1->X (FF)	0.66281	1.20007	5.55792
	C1->X (FF)	0.60759	1.16606	5.73655
	D1->X (FF)	0.49230	1.06267	5.58940

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01261	0.01265	0.01822
	A1	0.00596	0.00601	0.01172
	A2	0.01326	0.01323	0.01760
	A2	0.00596	0.00594	0.01044
	B1	0.01096	0.01105	0.01687
	B1	0.00461	0.00470	0.01086
	C1	0.00937	0.00950	0.01529
	C1	0.00382	0.00392	0.01006
	D1	0.00772	0.00786	0.01511
	D1	0.00294	0.00307	0.01081
sky130_fd_sc_hs__a2111o_2	A1	0.01603	0.01623	0.02172
	A1	0.00859	0.00880	0.01458
	A2	0.01693	0.01712	0.02139
	A2	0.00863	0.00882	0.01339
	B1	0.01419	0.01452	0.02018
	B1	0.00705	0.00739	0.01313
	C1	0.01228	0.01266	0.01831
	C1	0.00597	0.00636	0.01215
	D1	0.01064	0.01101	0.01779
	D1	0.00511	0.00546	0.01275

sky130_fd_sc_hs__a2111o_4	**A1**	0.02999	0.03040	0.04127
	A1	0.01701	0.01745	0.02878
	A2	0.03162	0.03207	0.04035
	A2	0.01700	0.01746	0.02621
	B1	0.02715	0.02787	0.03906
	B1	0.01419	0.01493	0.02687
	C1	0.02371	0.02450	0.03545
	C1	0.01252	0.01337	0.02433
	D1	0.01947	0.02033	0.03378
	D1	0.01002	0.01093	0.02449

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00370	0.00367	0.00800
	A1	0.01044	0.01046	0.01434
	A2	0.00422	0.00421	0.00820
	A2	0.01159	0.01164	0.01524
	B1	0.00414	0.00412	0.00890
	B1	0.01048	0.01052	0.01497
	C1	0.00415	0.00415	0.00901
	C1	0.00967	0.00971	0.01451
	D1	0.00373	0.00421	0.01194
	D1	0.00895	0.00934	0.01626

sky130_fd_sc_hs__a2111o_2	**A1**	0.00660	0.00630	0.00994
	A1	0.01419	0.01397	0.01741
	A2	0.00702	0.00680	0.01098
	A2	0.01541	0.01526	0.01853
	B1	0.00710	0.00675	0.01131
	B1	0.01424	0.01402	0.01826
	C1	0.00708	0.00672	0.01224
	C1	0.01335	0.01317	0.01782
	D1	0.00699	0.00685	0.01475
	D1	0.01247	0.01252	0.01924
sky130_fd_sc_hs__a2111o_4	**A1**	0.01270	0.01188	0.02151
	A1	0.02592	0.02538	0.03243
	A2	0.01399	0.01328	0.02116
	A2	0.02875	0.02812	0.03474
	B1	0.01400	0.01312	0.02438
	B1	0.02687	0.02618	0.03426
	C1	0.01415	0.01336	0.02400
	C1	0.02525	0.02448	0.03330
	D1	0.01403	0.01345	0.03002
	D1	0.02334	0.02315	0.03647

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)**	0.00131	0.00131	0.00130
	(A2 * B1 * D1 * X)	-0.00151	-0.00157	-0.00156
	(A2 * B1 * C1 * !D1 * X)	0.00131	0.00131	0.00130
	(A2 * B1 * C1 * !D1 * X)	-0.00151	-0.00157	-0.00156
	(A2 * B1 * !C1 * !D1 * X)	0.00131	0.00131	0.00130
	(A2 * B1 * !C1 * !D1 * X)	-0.00149	-0.00157	-0.00156
	(A2 * !B1 * C1 * D1 * X)	0.00131	0.00131	0.00130
	(A2 * !B1 * C1 * D1 * X)	-0.00141	-0.00151	-0.00151
	(A2 * !B1 * C1 * !D1 * X)	0.00131	0.00131	0.00130
	(A2 * !B1 * C1 * !D1 * X)	-0.00141	-0.00151	-0.00151
	(A2 * !B1 * !C1 * D1 * X)	0.00131	0.00131	0.00130
	(A2 * !B1 * !C1 * D1 * X)	-0.00139	-0.00149	-0.00148
	(!A2 * B1 * D1 * X)	0.00125	0.00126	0.00125
	(!A2 * B1 * D1 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * B1 * C1 * !D1 * X)	0.00125	0.00126	0.00125
	(!A2 * B1 * C1 * !D1 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * B1 * !C1 * !D1 * X)	0.00125	0.00126	0.00125
	(!A2 * B1 * !C1 * !D1 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * !B1 * C1 * D1 * X)	0.00125	0.00126	0.00124
	(!A2 * !B1 * C1 * D1 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * !B1 * C1 * !D1 * X)	0.00125	0.00125	0.00124
	(!A2 * !B1 * C1 * !D1 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * !B1 * !C1 * D1 * X)	0.00125	0.00125	0.00124
	(!A2 * !B1 * !C1 * D1 * X)	-0.00160	-0.00160	-0.00160
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00057	0.00058	0.00056
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00182	-0.00183	-0.00185

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00135	0.00135	0.00135
	(A2 * B1 * D1 * X)	-0.00170	-0.00178	-0.00176
	(A2 * B1 * C1 * !D1 * X)	0.00135	0.00135	0.00135
	(A2 * B1 * C1 * !D1 * X)	-0.00170	-0.00178	-0.00176
	(A2 * B1 * !C1 * !D1 * X)	0.00135	0.00135	0.00135
	(A2 * B1 * !C1 * !D1 * X)	-0.00169	-0.00178	-0.00176
	(A2 * !B1 * C1 * D1 * X)	0.00134	0.00134	0.00135
	(A2 * !B1 * C1 * D1 * X)	-0.00159	-0.00172	-0.00170
	(A2 * !B1 * C1 * !D1 * X)	0.00134	0.00134	0.00135
	(A2 * !B1 * C1 * !D1 * X)	-0.00159	-0.00172	-0.00170
	(A2 * !B1 * !C1 * D1 * X)	0.00135	0.00136	0.00135
	(A2 * !B1 * !C1 * D1 * X)	-0.00158	-0.00168	-0.00167
	(!A2 * B1 * D1 * X)	0.00128	0.00128	0.00128
	(!A2 * B1 * D1 * X)	-0.00181	-0.00182	-0.00181
	(!A2 * B1 * C1 * !D1 * X)	0.00128	0.00128	0.00128
	(!A2 * B1 * C1 * !D1 * X)	-0.00181	-0.00182	-0.00181
	(!A2 * B1 * !C1 * !D1 * X)	0.00128	0.00128	0.00128
	(!A2 * B1 * !C1 * !D1 * X)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * C1 * D1 * X)	0.00127	0.00129	0.00128
	(!A2 * !B1 * C1 * D1 * X)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * C1 * !D1 * X)	0.00128	0.00129	0.00128
	(!A2 * !B1 * C1 * !D1 * X)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * !C1 * D1 * X)	0.00128	0.00129	0.00128
	(!A2 * !B1 * !C1 * D1 * X)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00206	-0.00207	-0.00209

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00221	0.00223	0.00222
	(A2 * B1 * D1 * X)	-0.00303	-0.00320	-0.00317
	(A2 * B1 * C1 * !D1 * X)	0.00223	0.00223	0.00222
	(A2 * B1 * C1 * !D1 * X)	-0.00306	-0.00319	-0.00317
	(A2 * B1 * !C1 * !D1 * X)	0.00223	0.00223	0.00222
	(A2 * B1 * !C1 * !D1 * X)	-0.00301	-0.00319	-0.00317
	(A2 * !B1 * C1 * D1 * X)	0.00222	0.00223	0.00222
	(A2 * !B1 * C1 * D1 * X)	-0.00284	-0.00307	-0.00305
	(A2 * !B1 * C1 * !D1 * X)	0.00222	0.00223	0.00222
	(A2 * !B1 * C1 * !D1 * X)	-0.00284	-0.00307	-0.00304
	(A2 * !B1 * !C1 * D1 * X)	0.00225	0.00225	0.00223
	(A2 * !B1 * !C1 * D1 * X)	-0.00281	-0.00301	-0.00300
	(!A2 * B1 * D1 * X)	0.00212	0.00214	0.00212
	(!A2 * B1 * D1 * X)	-0.00325	-0.00327	-0.00325
	(!A2 * B1 * C1 * !D1 * X)	0.00212	0.00211	0.00212
	(!A2 * B1 * C1 * !D1 * X)	-0.00326	-0.00325	-0.00325
	(!A2 * B1 * !C1 * !D1 * X)	0.00211	0.00213	0.00212
	(!A2 * B1 * !C1 * !D1 * X)	-0.00325	-0.00327	-0.00325
	(!A2 * !B1 * C1 * D1 * X)	0.00212	0.00214	0.00212
	(!A2 * !B1 * C1 * D1 * X)	-0.00325	-0.00327	-0.00325
	(!A2 * !B1 * C1 * !D1 * X)	0.00211	0.00212	0.00212
	(!A2 * !B1 * C1 * !D1 * X)	-0.00326	-0.00326	-0.00325
	(!A2 * !B1 * !C1 * D1 * X)	0.00211	0.00213	0.00212
	(!A2 * !B1 * !C1 * D1 * X)	-0.00326	-0.00327	-0.00325
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00086	0.00086	0.00080
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00363	-0.00365	-0.00372

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)**	-0.00131	-0.00131	-0.00130
	(A2 * B1 * D1 * X)	0.00156	0.00157	0.00156
	(A2 * B1 * C1 * !D1 * X)	-0.00131	-0.00131	-0.00130
	(A2 * B1 * C1 * !D1 * X)	0.00156	0.00157	0.00156
	(A2 * B1 * !C1 * !D1 * X)	-0.00131	-0.00131	-0.00130
	(A2 * B1 * !C1 * !D1 * X)	0.00156	0.00157	0.00156
	(A2 * !B1 * C1 * D1 * X)	-0.00130	-0.00130	-0.00130
	(A2 * !B1 * C1 * D1 * X)	0.00150	0.00151	0.00151
	(A2 * !B1 * C1 * !D1 * X)	-0.00130	-0.00130	-0.00130
	(A2 * !B1 * C1 * !D1 * X)	0.00150	0.00151	0.00151
	(A2 * !B1 * !C1 * D1 * X)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * !C1 * D1 * X)	0.00147	0.00149	0.00148
	(!A2 * B1 * D1 * X)	-0.00123	-0.00126	-0.00125
	(!A2 * B1 * D1 * X)	0.00160	0.00162	0.00161
	(!A2 * B1 * C1 * !D1 * X)	-0.00123	-0.00126	-0.00125
	(!A2 * B1 * C1 * !D1 * X)	0.00160	0.00162	0.00161
	(!A2 * B1 * !C1 * !D1 * X)	-0.00123	-0.00125	-0.00125
	(!A2 * B1 * !C1 * !D1 * X)	0.00160	0.00161	0.00161
	(!A2 * !B1 * C1 * D1 * X)	-0.00123	-0.00126	-0.00124
	(!A2 * !B1 * C1 * D1 * X)	0.00160	0.00162	0.00161
	(!A2 * !B1 * C1 * !D1 * X)	-0.00123	-0.00125	-0.00124
	(!A2 * !B1 * C1 * !D1 * X)	0.00160	0.00161	0.00161
	(!A2 * !B1 * !C1 * D1 * X)	-0.00123	-0.00125	-0.00124
	(!A2 * !B1 * !C1 * D1 * X)	0.00160	0.00160	0.00161
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00054	-0.00055	-0.00054
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00185	0.00187	0.00186

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00134	-0.00135	-0.00134
	(A2 * B1 * D1 * X)	0.00176	0.00178	0.00176
	(A2 * B1 * C1 * !D1 * X)	-0.00134	-0.00135	-0.00134
	(A2 * B1 * C1 * !D1 * X)	0.00176	0.00178	0.00176
	(A2 * B1 * !C1 * !D1 * X)	-0.00134	-0.00135	-0.00134
	(A2 * B1 * !C1 * !D1 * X)	0.00176	0.00178	0.00176
	(A2 * !B1 * C1 * D1 * X)	-0.00134	-0.00134	-0.00134
	(A2 * !B1 * C1 * D1 * X)	0.00170	0.00172	0.00170
	(A2 * !B1 * C1 * !D1 * X)	-0.00134	-0.00134	-0.00134
	(A2 * !B1 * C1 * !D1 * X)	0.00170	0.00172	0.00170
	(A2 * !B1 * !C1 * D1 * X)	-0.00134	-0.00134	-0.00134
	(A2 * !B1 * !C1 * D1 * X)	0.00166	0.00168	0.00167
	(!A2 * B1 * D1 * X)	-0.00125	-0.00128	-0.00128
	(!A2 * B1 * D1 * X)	0.00181	0.00183	0.00182
	(!A2 * B1 * C1 * !D1 * X)	-0.00125	-0.00128	-0.00128
	(!A2 * B1 * C1 * !D1 * X)	0.00181	0.00182	0.00182
	(!A2 * B1 * !C1 * !D1 * X)	-0.00125	-0.00128	-0.00128
	(!A2 * B1 * !C1 * !D1 * X)	0.00181	0.00184	0.00182
	(!A2 * !B1 * C1 * D1 * X)	-0.00125	-0.00129	-0.00128
	(!A2 * !B1 * C1 * D1 * X)	0.00181	0.00183	0.00182
	(!A2 * !B1 * C1 * !D1 * X)	-0.00125	-0.00129	-0.00128
	(!A2 * !B1 * C1 * !D1 * X)	0.00181	0.00184	0.00182
	(!A2 * !B1 * !C1 * D1 * X)	-0.00125	-0.00129	-0.00128
	(!A2 * !B1 * !C1 * D1 * X)	0.00181	0.00184	0.00182
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00209	0.00211	0.00210

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00221	-0.00223	-0.00222
	(A2 * B1 * D1 * X)	0.00315	0.00320	0.00317
	(A2 * B1 * C1 * !D1 * X)	-0.00221	-0.00223	-0.00222
	(A2 * B1 * C1 * !D1 * X)	0.00314	0.00319	0.00317
	(A2 * B1 * !C1 * !D1 * X)	-0.00222	-0.00223	-0.00222
	(A2 * B1 * !C1 * !D1 * X)	0.00318	0.00319	0.00317
	(A2 * !B1 * C1 * D1 * X)	-0.00221	-0.00223	-0.00222
	(A2 * !B1 * C1 * D1 * X)	0.00304	0.00307	0.00305
	(A2 * !B1 * C1 * !D1 * X)	-0.00221	-0.00223	-0.00222
	(A2 * !B1 * C1 * !D1 * X)	0.00304	0.00307	0.00304
	(A2 * !B1 * !C1 * D1 * X)	-0.00221	-0.00222	-0.00221
	(A2 * !B1 * !C1 * D1 * X)	0.00299	0.00301	0.00300
	(!A2 * B1 * D1 * X)	-0.00205	-0.00214	-0.00212
	(!A2 * B1 * D1 * X)	0.00325	0.00330	0.00327
	(!A2 * B1 * C1 * !D1 * X)	-0.00205	-0.00211	-0.00212
	(!A2 * B1 * C1 * !D1 * X)	0.00326	0.00330	0.00327
	(!A2 * B1 * !C1 * !D1 * X)	-0.00204	-0.00213	-0.00212
	(!A2 * B1 * !C1 * !D1 * X)	0.00325	0.00330	0.00327
	(!A2 * !B1 * C1 * D1 * X)	-0.00204	-0.00214	-0.00212
	(!A2 * !B1 * C1 * D1 * X)	0.00325	0.00330	0.00327
	(!A2 * !B1 * C1 * !D1 * X)	-0.00205	-0.00212	-0.00212
	(!A2 * !B1 * C1 * !D1 * X)	0.00328	0.00330	0.00327
	(!A2 * !B1 * !C1 * D1 * X)	-0.00205	-0.00213	-0.00212
	(!A2 * !B1 * !C1 * D1 * X)	0.00328	0.00330	0.00327
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00374	0.00375	0.00374

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)**	0.00118	0.00119	0.00119
	(A1 * B1 * D1 * X)	-0.00155	-0.00163	-0.00162
	(A1 * B1 * C1 * !D1 * X)	0.00119	0.00119	0.00119
	(A1 * B1 * C1 * !D1 * X)	-0.00156	-0.00163	-0.00162
	(A1 * B1 * !C1 * !D1 * X)	0.00119	0.00119	0.00119
	(A1 * B1 * !C1 * !D1 * X)	-0.00154	-0.00162	-0.00162
	(A1 * !B1 * C1 * D1 * X)	0.00119	0.00120	0.00119
	(A1 * !B1 * C1 * D1 * X)	-0.00145	-0.00157	-0.00156
	(A1 * !B1 * C1 * !D1 * X)	0.00119	0.00120	0.00119
	(A1 * !B1 * C1 * !D1 * X)	-0.00146	-0.00157	-0.00156
	(A1 * !B1 * !C1 * D1 * X)	0.00120	0.00120	0.00119
	(A1 * !B1 * !C1 * D1 * X)	-0.00142	-0.00154	-0.00153
	(!A1 * B1 * X)	0.00113	0.00113	0.00113
	(!A1 * B1 * X)	-0.00166	-0.00166	-0.00166
	(!A1 * !B1 * C1 * X)	0.00113	0.00113	0.00113
	(!A1 * !B1 * C1 * X)	-0.00166	-0.00166	-0.00166
	(!A1 * !B1 * !C1 * D1 * X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !C1 * D1 * X)	-0.00166	-0.00167	-0.00166
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00099	0.00100	0.00100
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00179	-0.00181	-0.00180

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00135	0.00136	0.00135
	(A1 * B1 * D1 * X)	-0.00169	-0.00178	-0.00177
	(A1 * B1 * C1 * !D1 * X)	0.00135	0.00136	0.00135
	(A1 * B1 * C1 * !D1 * X)	-0.00169	-0.00178	-0.00177
	(A1 * B1 * !C1 * !D1 * X)	0.00135	0.00136	0.00135
	(A1 * B1 * !C1 * !D1 * X)	-0.00168	-0.00178	-0.00177
	(A1 * !B1 * C1 * D1 * X)	0.00135	0.00137	0.00135
	(A1 * !B1 * C1 * D1 * X)	-0.00159	-0.00172	-0.00170
	(A1 * !B1 * C1 * !D1 * X)	0.00135	0.00137	0.00135
	(A1 * !B1 * C1 * !D1 * X)	-0.00159	-0.00172	-0.00170
	(A1 * !B1 * !C1 * D1 * X)	0.00135	0.00137	0.00135
	(A1 * !B1 * !C1 * D1 * X)	-0.00156	-0.00168	-0.00167
	(!A1 * B1 * X)	0.00128	0.00129	0.00129
	(!A1 * B1 * X)	-0.00181	-0.00182	-0.00182
	(!A1 * !B1 * C1 * X)	0.00128	0.00129	0.00128
	(!A1 * !B1 * C1 * X)	-0.00182	-0.00182	-0.00182
	(!A1 * !B1 * !C1 * D1 * X)	0.00128	0.00130	0.00129
	(!A1 * !B1 * !C1 * D1 * X)	-0.00181	-0.00183	-0.00182
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00119	0.00121	0.00120
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00191	-0.00192	-0.00191

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00228	0.00229	0.00228
	(A1 * B1 * D1 * X)	-0.00306	-0.00321	-0.00319
	(A1 * B1 * C1 * !D1 * X)	0.00228	0.00229	0.00228
	(A1 * B1 * C1 * !D1 * X)	-0.00306	-0.00321	-0.00319
	(A1 * B1 * !C1 * !D1 * X)	0.00228	0.00229	0.00228
	(A1 * B1 * !C1 * !D1 * X)	-0.00301	-0.00320	-0.00319
	(A1 * !B1 * C1 * D1 * X)	0.00228	0.00230	0.00228
	(A1 * !B1 * C1 * D1 * X)	-0.00286	-0.00309	-0.00306
	(A1 * !B1 * C1 * !D1 * X)	0.00229	0.00230	0.00228
	(A1 * !B1 * C1 * !D1 * X)	-0.00286	-0.00309	-0.00306
	(A1 * !B1 * !C1 * D1 * X)	0.00230	0.00231	0.00228
	(A1 * !B1 * !C1 * D1 * X)	-0.00282	-0.00304	-0.00302
	(!A1 * B1 * X)	0.00217	0.00217	0.00217
	(!A1 * B1 * X)	-0.00327	-0.00328	-0.00327
	(!A1 * !B1 * C1 * X)	0.00217	0.00219	0.00217
	(!A1 * !B1 * C1 * X)	-0.00327	-0.00329	-0.00327
	(!A1 * !B1 * !C1 * D1 * X)	0.00217	0.00219	0.00217
	(!A1 * !B1 * !C1 * D1 * X)	-0.00328	-0.00329	-0.00327
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00217	0.00218	0.00217
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00328	-0.00328	-0.00327

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)**	-0.00118	-0.00119	-0.00119
	(A1 * B1 * D1 * X)	0.00161	0.00163	0.00162
	(A1 * B1 * C1 * !D1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * B1 * C1 * !D1 * X)	0.00161	0.00163	0.00162
	(A1 * B1 * !C1 * !D1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * B1 * !C1 * !D1 * X)	0.00161	0.00162	0.00162
	(A1 * !B1 * C1 * D1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * !B1 * C1 * D1 * X)	0.00156	0.00157	0.00156
	(A1 * !B1 * C1 * !D1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * !B1 * C1 * !D1 * X)	0.00156	0.00157	0.00156
	(A1 * !B1 * !C1 * D1 * X)	-0.00118	-0.00119	-0.00118
	(A1 * !B1 * !C1 * D1 * X)	0.00152	0.00154	0.00153
	(!A1 * B1 * X)	-0.00111	-0.00113	-0.00113
	(!A1 * B1 * X)	0.00166	0.00167	0.00167
	(!A1 * !B1 * C1 * X)	-0.00111	-0.00113	-0.00113
	(!A1 * !B1 * C1 * X)	0.00166	0.00168	0.00167
	(!A1 * !B1 * !C1 * D1 * X)	-0.00111	-0.00114	-0.00113
	(!A1 * !B1 * !C1 * D1 * X)	0.00166	0.00167	0.00167
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00092	-0.00099	-0.00100
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00187	0.00184	0.00181

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00135	-0.00135	-0.00135
	(A1 * B1 * D1 * X)	0.00176	0.00178	0.00177
	(A1 * B1 * C1 * !D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * C1 * !D1 * X)	0.00176	0.00178	0.00177
	(A1 * B1 * !C1 * !D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * !C1 * !D1 * X)	0.00176	0.00178	0.00177
	(A1 * !B1 * C1 * D1 * X)	-0.00134	-0.00136	-0.00135
	(A1 * !B1 * C1 * D1 * X)	0.00169	0.00172	0.00170
	(A1 * !B1 * C1 * !D1 * X)	-0.00134	-0.00136	-0.00135
	(A1 * !B1 * C1 * !D1 * X)	0.00169	0.00172	0.00170
	(A1 * !B1 * !C1 * D1 * X)	-0.00134	-0.00135	-0.00135
	(A1 * !B1 * !C1 * D1 * X)	0.00167	0.00168	0.00167
	(!A1 * B1 * X)	-0.00126	-0.00129	-0.00129
	(!A1 * B1 * X)	0.00182	0.00183	0.00183
	(!A1 * !B1 * C1 * X)	-0.00126	-0.00129	-0.00128
	(!A1 * !B1 * C1 * X)	0.00182	0.00185	0.00183
	(!A1 * !B1 * !C1 * D1 * X)	-0.00126	-0.00130	-0.00129
	(!A1 * !B1 * !C1 * D1 * X)	0.00182	0.00185	0.00183
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00111	-0.00119	-0.00120
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00199	0.00195	0.00192

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00228	-0.00229	-0.00228
	(A1 * B1 * D1 * X)	0.00318	0.00321	0.00319
	(A1 * B1 * C1 * !D1 * X)	-0.00228	-0.00229	-0.00228
	(A1 * B1 * C1 * !D1 * X)	0.00318	0.00321	0.00319
	(A1 * B1 * !C1 * !D1 * X)	-0.00228	-0.00228	-0.00228
	(A1 * B1 * !C1 * !D1 * X)	0.00319	0.00320	0.00319
	(A1 * !B1 * C1 * D1 * X)	-0.00227	-0.00229	-0.00228
	(A1 * !B1 * C1 * D1 * X)	0.00305	0.00309	0.00306
	(A1 * !B1 * C1 * !D1 * X)	-0.00227	-0.00229	-0.00228
	(A1 * !B1 * C1 * !D1 * X)	0.00305	0.00309	0.00306
	(A1 * !B1 * !C1 * D1 * X)	-0.00227	-0.00228	-0.00227
	(A1 * !B1 * !C1 * D1 * X)	0.00301	0.00304	0.00302
	(!A1 * B1 * X)	-0.00211	-0.00217	-0.00217
	(!A1 * B1 * X)	0.00327	0.00332	0.00328
	(!A1 * !B1 * C1 * X)	-0.00211	-0.00219	-0.00217
	(!A1 * !B1 * C1 * X)	0.00327	0.00332	0.00328
	(!A1 * !B1 * !C1 * D1 * X)	-0.00211	-0.00219	-0.00217
	(!A1 * !B1 * !C1 * D1 * X)	0.00328	0.00332	0.00329
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00201	-0.00218	-0.00217
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00340	0.00333	0.00329

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)**	0.00125	0.00124	0.00122
	(A1 * A2 * C1 * D1 * X)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * C1 * !D1 * X)	0.00137	0.00134	0.00124
	(A1 * A2 * C1 * !D1 * X)	-0.00111	-0.00112	-0.00111
	(A1 * A2 * !C1 * D1 * X)	0.00125	0.00128	0.00123
	(A1 * A2 * !C1 * D1 * X)	-0.00107	-0.00108	-0.00107
	(A1 * A2 * !C1 * !D1 * X)	0.00121	0.00121	0.00121
	(A1 * A2 * !C1 * !D1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * C1 * D1 * X)	0.00121	0.00123	0.00121
	(A1 * !A2 * C1 * D1 * X)	-0.00149	-0.00154	-0.00153
	(A1 * !A2 * C1 * !D1 * X)	0.00137	0.00123	0.00121
	(A1 * !A2 * C1 * !D1 * X)	-0.00134	-0.00154	-0.00154
	(A1 * !A2 * !C1 * D1 * X)	0.00131	0.00122	0.00121
	(A1 * !A2 * !C1 * D1 * X)	-0.00129	-0.00146	-0.00146
	(!A1 * C1 * D1 * X)	0.00121	0.00123	0.00121
	(!A1 * C1 * D1 * X)	-0.00149	-0.00154	-0.00153
	(!A1 * C1 * !D1 * X)	0.00138	0.00123	0.00121
	(!A1 * C1 * !D1 * X)	-0.00134	-0.00154	-0.00154
	(!A1 * !C1 * D1 * X)	0.00131	0.00123	0.00121
	(!A1 * !C1 * D1 * X)	-0.00128	-0.00146	-0.00146

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00132	0.00131	0.00131
	(A1 * A2 * C1 * D1 * X)	-0.00126	-0.00128	-0.00127
	(A1 * A2 * C1 * !D1 * X)	0.00146	0.00141	0.00133
	(A1 * A2 * C1 * !D1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * !C1 * D1 * X)	0.00132	0.00135	0.00131
	(A1 * A2 * !C1 * D1 * X)	-0.00121	-0.00120	-0.00120
	(A1 * A2 * !C1 * !D1 * X)	0.00132	0.00131	0.00131
	(A1 * A2 * !C1 * !D1 * X)	-0.00097	-0.00095	-0.00095
	(A1 * !A2 * C1 * D1 * X)	0.00132	0.00132	0.00131
	(A1 * !A2 * C1 * D1 * X)	-0.00169	-0.00173	-0.00172
	(A1 * !A2 * C1 * !D1 * X)	0.00142	0.00132	0.00131
	(A1 * !A2 * C1 * !D1 * X)	-0.00156	-0.00173	-0.00172
	(A1 * !A2 * !C1 * D1 * X)	0.00135	0.00131	0.00130
	(A1 * !A2 * !C1 * D1 * X)	-0.00147	-0.00163	-0.00163
	(!A1 * C1 * D1 * X)	0.00131	0.00132	0.00131
	(!A1 * C1 * D1 * X)	-0.00168	-0.00173	-0.00172
	(!A1 * C1 * !D1 * X)	0.00142	0.00132	0.00131
	(!A1 * C1 * !D1 * X)	-0.00155	-0.00173	-0.00172
	(!A1 * !C1 * D1 * X)	0.00135	0.00131	0.00130
	(!A1 * !C1 * D1 * X)	-0.00147	-0.00164	-0.00163

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00242	0.00240	0.00238
	(A1 * A2 * C1 * D1 * X)	-0.00231	-0.00233	-0.00231
	(A1 * A2 * C1 * !D1 * X)	0.00269	0.00258	0.00244
	(A1 * A2 * C1 * !D1 * X)	-0.00228	-0.00230	-0.00228
	(A1 * A2 * !C1 * D1 * X)	0.00242	0.00252	0.00242
	(A1 * A2 * !C1 * D1 * X)	-0.00223	-0.00226	-0.00224
	(A1 * A2 * !C1 * !D1 * X)	0.00238	0.00240	0.00238
	(A1 * A2 * !C1 * !D1 * X)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * C1 * D1 * X)	0.00239	0.00240	0.00238
	(A1 * !A2 * C1 * D1 * X)	-0.00307	-0.00317	-0.00314
	(A1 * !A2 * C1 * !D1 * X)	0.00262	0.00240	0.00238
	(A1 * !A2 * C1 * !D1 * X)	-0.00287	-0.00318	-0.00316
	(A1 * !A2 * !C1 * D1 * X)	0.00252	0.00240	0.00238
	(A1 * !A2 * !C1 * D1 * X)	-0.00271	-0.00301	-0.00300
	(!A1 * C1 * D1 * X)	0.00240	0.00240	0.00238
	(!A1 * C1 * D1 * X)	-0.00308	-0.00317	-0.00314
	(!A1 * C1 * !D1 * X)	0.00260	0.00240	0.00238
	(!A1 * C1 * !D1 * X)	-0.00287	-0.00318	-0.00316
	(!A1 * !C1 * D1 * X)	0.00252	0.00240	0.00238
	(!A1 * !C1 * D1 * X)	-0.00272	-0.00302	-0.00300

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)**	-0.00121	-0.00122	-0.00121
	(A1 * A2 * C1 * D1 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * C1 * !D1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * C1 * !D1 * X)	0.00111	0.00112	0.00111
	(A1 * A2 * !C1 * D1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * !C1 * D1 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * !C1 * !D1 * X)	-0.00113	-0.00114	-0.00115
	(A1 * A2 * !C1 * !D1 * X)	0.00094	0.00095	0.00092
	(A1 * !A2 * C1 * D1 * X)	-0.00121	-0.00121	-0.00121
	(A1 * !A2 * C1 * D1 * X)	0.00153	0.00154	0.00153
	(A1 * !A2 * C1 * !D1 * X)	-0.00121	-0.00121	-0.00121
	(A1 * !A2 * C1 * !D1 * X)	0.00154	0.00154	0.00154
	(A1 * !A2 * !C1 * D1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * !A2 * !C1 * D1 * X)	0.00146	0.00146	0.00146
	(!A1 * C1 * D1 * X)	-0.00121	-0.00121	-0.00121
	(!A1 * C1 * D1 * X)	0.00153	0.00154	0.00153
	(!A1 * C1 * !D1 * X)	-0.00121	-0.00121	-0.00121
	(!A1 * C1 * !D1 * X)	0.00154	0.00154	0.00154
	(!A1 * !C1 * D1 * X)	-0.00121	-0.00121	-0.00120
	(!A1 * !C1 * D1 * X)	0.00146	0.00146	0.00146

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00130	-0.00131	-0.00130
	(A1 * A2 * C1 * D1 * X)	0.00126	0.00128	0.00127
	(A1 * A2 * C1 * !D1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * A2 * C1 * !D1 * X)	0.00125	0.00126	0.00125
	(A1 * A2 * !C1 * D1 * X)	-0.00130	-0.00130	-0.00130
	(A1 * A2 * !C1 * D1 * X)	0.00121	0.00120	0.00120
	(A1 * A2 * !C1 * !D1 * X)	-0.00120	-0.00121	-0.00123
	(A1 * A2 * !C1 * !D1 * X)	0.00105	0.00104	0.00102
	(A1 * !A2 * C1 * D1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * C1 * D1 * X)	0.00172	0.00173	0.00172
	(A1 * !A2 * C1 * !D1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * C1 * !D1 * X)	0.00171	0.00173	0.00172
	(A1 * !A2 * !C1 * D1 * X)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !C1 * D1 * X)	0.00163	0.00163	0.00163
	(!A1 * C1 * D1 * X)	-0.00130	-0.00131	-0.00130
	(!A1 * C1 * D1 * X)	0.00172	0.00173	0.00172
	(!A1 * C1 * !D1 * X)	-0.00130	-0.00131	-0.00130
	(!A1 * C1 * !D1 * X)	0.00172	0.00173	0.00172
	(!A1 * !C1 * D1 * X)	-0.00130	-0.00130	-0.00130
	(!A1 * !C1 * D1 * X)	0.00163	0.00164	0.00163

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00237	-0.00239	-0.00237
	(A1 * A2 * C1 * D1 * X)	0.00231	0.00233	0.00231
	(A1 * A2 * C1 * !D1 * X)	-0.00237	-0.00239	-0.00237
	(A1 * A2 * C1 * !D1 * X)	0.00228	0.00230	0.00228
	(A1 * A2 * !C1 * D1 * X)	-0.00238	-0.00239	-0.00238
	(A1 * A2 * !C1 * D1 * X)	0.00223	0.00226	0.00224
	(A1 * A2 * !C1 * !D1 * X)	-0.00220	-0.00222	-0.00221
	(A1 * A2 * !C1 * !D1 * X)	0.00197	0.00197	0.00195
	(A1 * !A2 * C1 * D1 * X)	-0.00238	-0.00238	-0.00237
	(A1 * !A2 * C1 * D1 * X)	0.00316	0.00317	0.00314
	(A1 * !A2 * C1 * !D1 * X)	-0.00236	-0.00238	-0.00237
	(A1 * !A2 * C1 * !D1 * X)	0.00314	0.00318	0.00316
	(A1 * !A2 * !C1 * D1 * X)	-0.00237	-0.00238	-0.00236
	(A1 * !A2 * !C1 * D1 * X)	0.00300	0.00301	0.00300
	(!A1 * C1 * D1 * X)	-0.00236	-0.00239	-0.00237
	(!A1 * C1 * D1 * X)	0.00312	0.00317	0.00314
	(!A1 * C1 * !D1 * X)	-0.00236	-0.00238	-0.00237
	(!A1 * C1 * !D1 * X)	0.00314	0.00318	0.00316
	(!A1 * !C1 * D1 * X)	-0.00237	-0.00238	-0.00236
	(!A1 * !C1 * D1 * X)	0.00301	0.00302	0.00300

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)**	0.00134	0.00134	0.00126
	(A1 * B1 * D1 * X)	-0.00102	-0.00103	-0.00102
	(A1 * B1 * !D1 * X)	0.00123	0.00124	0.00122
	(A1 * B1 * !D1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * !B1 * D1 * X)	0.00147	0.00130	0.00124
	(A1 * A2 * !B1 * D1 * X)	-0.00096	-0.00107	-0.00107
	(A1 * A2 * !B1 * !D1 * X)	0.00124	0.00125	0.00122
	(A1 * A2 * !B1 * !D1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * !B1 * D1 * X)	0.00155	0.00124	0.00122
	(A1 * !A2 * !B1 * D1 * X)	-0.00119	-0.00151	-0.00153
	(!A1 * B1 * D1 * X)	0.00134	0.00135	0.00126
	(!A1 * B1 * D1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * B1 * !D1 * X)	0.00124	0.00124	0.00122
	(!A1 * B1 * !D1 * X)	-0.00083	-0.00084	-0.00084
	(!A1 * !B1 * D1 * X)	0.00155	0.00124	0.00122
	(!A1 * !B1 * D1 * X)	-0.00119	-0.00151	-0.00153

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00143	0.00143	0.00134
	(A1 * B1 * D1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * B1 * !D1 * X)	0.00131	0.00131	0.00129
	(A1 * B1 * !D1 * X)	-0.00099	-0.00099	-0.00099
	(A1 * A2 * !B1 * D1 * X)	0.00157	0.00140	0.00131
	(A1 * A2 * !B1 * D1 * X)	-0.00116	-0.00125	-0.00125
	(A1 * A2 * !B1 * !D1 * X)	0.00131	0.00132	0.00130
	(A1 * A2 * !B1 * !D1 * X)	-0.00097	-0.00097	-0.00098
	(A1 * !A2 * !B1 * D1 * X)	0.00162	0.00132	0.00129
	(A1 * !A2 * !B1 * D1 * X)	-0.00145	-0.00178	-0.00178
	(!A1 * B1 * D1 * X)	0.00143	0.00143	0.00134
	(!A1 * B1 * D1 * X)	-0.00123	-0.00123	-0.00123
	(!A1 * B1 * !D1 * X)	0.00132	0.00131	0.00130
	(!A1 * B1 * !D1 * X)	-0.00100	-0.00099	-0.00100
	(!A1 * !B1 * D1 * X)	0.00162	0.00132	0.00129
	(!A1 * !B1 * D1 * X)	-0.00145	-0.00178	-0.00178

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00258	0.00264	0.00246
	(A1 * B1 * D1 * X)	-0.00225	-0.00227	-0.00225
	(A1 * B1 * !D1 * X)	0.00235	0.00234	0.00233
	(A1 * B1 * !D1 * X)	-0.00184	-0.00182	-0.00183
	(A1 * A2 * !B1 * D1 * X)	0.00279	0.00252	0.00236
	(A1 * A2 * !B1 * D1 * X)	-0.00209	-0.00234	-0.00231
	(A1 * A2 * !B1 * !D1 * X)	0.00235	0.00236	0.00233
	(A1 * A2 * !B1 * !D1 * X)	-0.00179	-0.00181	-0.00181
	(A1 * !A2 * !B1 * D1 * X)	0.00302	0.00237	0.00232
	(A1 * !A2 * !B1 * D1 * X)	-0.00257	-0.00324	-0.00326
	(!A1 * B1 * D1 * X)	0.00258	0.00264	0.00246
	(!A1 * B1 * D1 * X)	-0.00226	-0.00228	-0.00226
	(!A1 * B1 * !D1 * X)	0.00234	0.00236	0.00233
	(!A1 * B1 * !D1 * X)	-0.00181	-0.00182	-0.00183
	(!A1 * !B1 * D1 * X)	0.00302	0.00237	0.00232
	(!A1 * !B1 * D1 * X)	-0.00257	-0.00324	-0.00326

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)**	-0.00122	-0.00122	-0.00121
	(A1 * B1 * D1 * X)	0.00102	0.00103	0.00102
	(A1 * B1 * !D1 * X)	-0.00121	-0.00122	-0.00120
	(A1 * B1 * !D1 * X)	0.00086	0.00086	0.00087
	(A1 * A2 * !B1 * D1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * !B1 * D1 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * !B1 * !D1 * X)	-0.00111	-0.00112	-0.00120
	(A1 * A2 * !B1 * !D1 * X)	0.00093	0.00092	0.00086
	(A1 * !A2 * !B1 * D1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * !A2 * !B1 * D1 * X)	0.00153	0.00153	0.00153
	(!A1 * B1 * D1 * X)	-0.00122	-0.00122	-0.00121
	(!A1 * B1 * D1 * X)	0.00103	0.00104	0.00103
	(!A1 * B1 * !D1 * X)	-0.00121	-0.00121	-0.00120
	(!A1 * B1 * !D1 * X)	0.00086	0.00087	0.00087
	(!A1 * !B1 * D1 * X)	-0.00121	-0.00121	-0.00120
	(!A1 * !B1 * D1 * X)	0.00152	0.00153	0.00153

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00128	-0.00129	-0.00129
	(A1 * B1 * D1 * X)	0.00121	0.00122	0.00121
	(A1 * B1 * !D1 * X)	-0.00128	-0.00128	-0.00127
	(A1 * B1 * !D1 * X)	0.00102	0.00102	0.00102
	(A1 * A2 * !B1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !B1 * D1 * X)	0.00124	0.00125	0.00125
	(A1 * A2 * !B1 * !D1 * X)	-0.00115	-0.00116	-0.00128
	(A1 * A2 * !B1 * !D1 * X)	0.00108	0.00108	0.00100
	(A1 * !A2 * !B1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !B1 * D1 * X)	0.00177	0.00178	0.00178
	(!A1 * B1 * D1 * X)	-0.00129	-0.00129	-0.00129
	(!A1 * B1 * D1 * X)	0.00123	0.00123	0.00123
	(!A1 * B1 * !D1 * X)	-0.00128	-0.00128	-0.00127
	(!A1 * B1 * !D1 * X)	0.00103	0.00103	0.00103
	(!A1 * !B1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * !B1 * D1 * X)	0.00177	0.00178	0.00178

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00233	-0.00235	-0.00234
	(A1 * B1 * D1 * X)	0.00225	0.00227	0.00225
	(A1 * B1 * !D1 * X)	-0.00229	-0.00229	-0.00226
	(A1 * B1 * !D1 * X)	0.00187	0.00187	0.00189
	(A1 * A2 * !B1 * D1 * X)	-0.00231	-0.00234	-0.00232
	(A1 * A2 * !B1 * D1 * X)	0.00230	0.00234	0.00231
	(A1 * A2 * !B1 * !D1 * X)	-0.00211	-0.00213	-0.00226
	(A1 * A2 * !B1 * !D1 * X)	0.00197	0.00196	0.00188
	(A1 * !A2 * !B1 * D1 * X)	-0.00230	-0.00231	-0.00228
	(A1 * !A2 * !B1 * D1 * X)	0.00325	0.00326	0.00326
	(!A1 * B1 * D1 * X)	-0.00233	-0.00235	-0.00234
	(!A1 * B1 * D1 * X)	0.00226	0.00228	0.00226
	(!A1 * B1 * !D1 * X)	-0.00229	-0.00229	-0.00226
	(!A1 * B1 * !D1 * X)	0.00187	0.00187	0.00190
	(!A1 * !B1 * D1 * X)	-0.00230	-0.00231	-0.00228
	(!A1 * !B1 * D1 * X)	0.00325	0.00326	0.00326

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00132	0.00132	0.00132
	(A1 * C1 * X)	-0.00080	-0.00079	-0.00079
	(A1 * B1 * !C1 * X)	0.00132	0.00132	0.00132
	(A1 * B1 * !C1 * X)	-0.00079	-0.00079	-0.00078
	(A1 * A2 * !B1 * !C1 * X)	0.00131	0.00132	0.00132
	(A1 * A2 * !B1 * !C1 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * C1 * X)	0.00132	0.00132	0.00132
	(!A1 * C1 * X)	-0.00080	-0.00079	-0.00079
	(!A1 * B1 * !C1 * X)	0.00131	0.00132	0.00132
	(!A1 * B1 * !C1 * X)	-0.00078	-0.00079	-0.00078

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00160	0.00160	0.00160
	(A1 * C1 * X)	-0.00086	-0.00086	-0.00085
	(A1 * B1 * !C1 * X)	0.00160	0.00160	0.00160
	(A1 * B1 * !C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * !B1 * !C1 * X)	0.00159	0.00160	0.00160
	(A1 * A2 * !B1 * !C1 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * C1 * X)	0.00159	0.00160	0.00160
	(!A1 * C1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * B1 * !C1 * X)	0.00159	0.00160	0.00160
	(!A1 * B1 * !C1 * X)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00256	0.00257	0.00257
	(A1 * C1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * B1 * !C1 * X)	0.00256	0.00257	0.00257
	(A1 * B1 * !C1 * X)	-0.00159	-0.00160	-0.00159
	(A1 * A2 * !B1 * !C1 * X)	0.00256	0.00258	0.00257
	(A1 * A2 * !B1 * !C1 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * C1 * X)	0.00256	0.00257	0.00257
	(!A1 * C1 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !C1 * X)	0.00257	0.00257	0.00257
	(!A1 * B1 * !C1 * X)	-0.00160	-0.00160	-0.00159

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00128	-0.00128	-0.00131
	(A1 * C1 * X)	0.00083	0.00083	0.00080
	(A1 * B1 * !C1 * X)	-0.00120	-0.00121	-0.00130
	(A1 * B1 * !C1 * X)	0.00086	0.00086	0.00080
	(A1 * A2 * !B1 * !C1 * X)	-0.00102	-0.00103	-0.00125
	(A1 * A2 * !B1 * !C1 * X)	0.00099	0.00098	0.00083
	(!A1 * C1 * X)	-0.00128	-0.00128	-0.00131
	(!A1 * C1 * X)	0.00083	0.00083	0.00080
	(!A1 * B1 * !C1 * X)	-0.00120	-0.00121	-0.00130
	(!A1 * B1 * !C1 * X)	0.00086	0.00086	0.00080
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00155	-0.00155	-0.00159
	(A1 * C1 * X)	0.00090	0.00090	0.00087
	(A1 * B1 * !C1 * X)	-0.00146	-0.00146	-0.00158
	(A1 * B1 * !C1 * X)	0.00095	0.00094	0.00087
	(A1 * A2 * !B1 * !C1 * X)	-0.00125	-0.00126	-0.00152
	(A1 * A2 * !B1 * !C1 * X)	0.00108	0.00108	0.00090
	(!A1 * C1 * X)	-0.00155	-0.00155	-0.00159
	(!A1 * C1 * X)	0.00090	0.00090	0.00087
	(!A1 * B1 * !C1 * X)	-0.00146	-0.00146	-0.00158
	(!A1 * B1 * !C1 * X)	0.00095	0.00094	0.00087
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00241	-0.00242	-0.00255
	(A1 * C1 * X)	0.00176	0.00175	0.00164
	(A1 * B1 * !C1 * X)	-0.00223	-0.00225	-0.00251
	(A1 * B1 * !C1 * X)	0.00183	0.00182	0.00163
	(A1 * A2 * !B1 * !C1 * X)	-0.00186	-0.00188	-0.00241
	(A1 * A2 * !B1 * !C1 * X)	0.00207	0.00206	0.00170
	(!A1 * C1 * X)	-0.00241	-0.00242	-0.00255
	(!A1 * C1 * X)	0.00176	0.00175	0.00164
	(!A1 * B1 * !C1 * X)	-0.00223	-0.00224	-0.00251
	(!A1 * B1 * !C1 * X)	0.00184	0.00183	0.00163

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00294	0.00279	0.00293	0.00299	0.23656
sky130_fd_sc_hs__a211oi_2	0.00540	0.00564	0.00458	0.00438	0.44927
sky130_fd_sc_hs__a211oi_4	0.01087	0.01087	0.00875	0.00890	0.83314

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211oi_1	0.00000	0.03283	0.11271
sky130_fd_sc_hs__a211oi_2	0.00000	0.04992	0.14996
sky130_fd_sc_hs__a211oi_4	0.00000	0.09747	0.29791

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)	0.22941	1.31227	9.98986
	A2->Y (FR)	0.27094	1.37536	10.15970
	B1->Y (FR)	0.24055	1.35611	10.69120
	C1->Y (FR)	0.18520	1.30124	10.76070
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.19986	1.11654	9.99023
	A2->Y (FR)	0.25572	1.17386	10.04020
	B1->Y (FR)	0.21873	1.16159	10.60720
	C1->Y (FR)	0.14257	1.08752	10.65580
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.19024	0.95854	9.77489
	A2->Y (FR)	0.24915	1.02852	9.96312
	B1->Y (FR)	0.20674	1.00915	10.55910
	C1->Y (FR)	0.13517	0.94580	10.65840

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.05332	0.54342	4.58706
	A2->Y (RF)	0.05851	0.50281	4.13842
	B1->Y (RF)	0.03640	0.43172	3.74143
	C1->Y (RF)	0.03168	0.41624	3.72842
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.04598	0.49471	4.68217
	A2->Y (RF)	0.05598	0.46230	4.21619
	B1->Y (RF)	0.05297	0.53597	5.26761
	C1->Y (RF)	0.03779	0.50395	5.16604
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.04518	0.45418	4.69590
	A2->Y (RF)	0.05348	0.40785	4.07465
	B1->Y (RF)	0.05067	0.48572	5.23830
	C1->Y (RF)	0.03653	0.45370	5.19971

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00057	0.00039	0.00132
	A1	0.00675	0.00654	0.00749
	A2	0.00094	0.00082	0.00174
	A2	0.00794	0.00782	0.00874
	B1	0.00047	0.00034	0.00175
	B1	0.00694	0.00672	0.00806
	C1	0.00031	0.00033	0.00300
	C1	0.00598	0.00593	0.00847
sky130_fd_sc_hs__a211oi_2	A1	0.00014	-0.00014	0.00175
	A1	0.01199	0.01174	0.01363
	A2	0.00172	0.00138	0.00323
	A2	0.01543	0.01513	0.01693
	B1	0.00253	0.00233	0.00366
	B1	0.01285	0.01266	0.01399
	C1	0.00239	0.00252	0.00539
	C1	0.01071	0.01081	0.01372
sky130_fd_sc_hs__a211oi_4	A1	-0.00019	-0.00076	0.00310
	A1	0.02337	0.02283	0.02680
	A2	0.00238	0.00181	0.00556
	A2	0.02961	0.02899	0.03277
	B1	0.00420	0.00383	0.00662
	B1	0.02448	0.02398	0.02694
	C1	0.00103	0.00131	0.00768
	C1	0.02045	0.02072	0.02648

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00835	0.00823	0.00950
	A1	0.00230	0.00213	0.00346
	A2	0.00920	0.00901	0.01013
	A2	0.00227	0.00207	0.00314
	B1	0.00672	0.00667	0.00816
	B1	0.00075	0.00071	0.00225
	C1	0.00493	0.00506	0.00652
	C1	-0.00023	-0.00016	0.00137
sky130_fd_sc_hs__a211oi_2	A1	0.01558	0.01533	0.01790
	A1	0.00396	0.00370	0.00634
	A2	0.01754	0.01711	0.01919
	A2	0.00395	0.00348	0.00559
	B1	0.01199	0.01182	0.01358
	B1	0.00160	0.00136	0.00321
	C1	0.00726	0.00746	0.00947
	C1	-0.00114	-0.00103	0.00095
sky130_fd_sc_hs__a211oi_4	A1	0.03085	0.03006	0.03570
	A1	0.00778	0.00700	0.01240
	A2	0.03465	0.03379	0.03847
	A2	0.00773	0.00680	0.01116
	B1	0.02275	0.02223	0.02641
	B1	0.00230	0.00184	0.00568
	C1	0.01393	0.01432	0.01827
	C1	-0.00269	-0.00252	0.00157

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)**	0.00129	0.00129	0.00128
	(A2 * B1 * C1 * !Y)	-0.00168	-0.00175	-0.00174
	(A2 * B1 * !C1 * !Y)	0.00130	0.00129	0.00128
	(A2 * B1 * !C1 * !Y)	-0.00166	-0.00175	-0.00174
	(A2 * !B1 * C1 * !Y)	0.00130	0.00130	0.00128
	(A2 * !B1 * C1 * !Y)	-0.00155	-0.00169	-0.00168
	(!A2 * B1 * C1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * B1 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(!A2 * B1 * !C1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * B1 * !C1 * !Y)	-0.00178	-0.00179	-0.00178
	(!A2 * !B1 * C1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * !B1 * C1 * !Y)	-0.00179	-0.00179	-0.00178
	(!A2 * !B1 * !C1 * Y)	0.00044	0.00044	0.00042
	(!A2 * !B1 * !C1 * Y)	-0.00202	-0.00203	-0.00206
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00262	0.00263	0.00262
	(A2 * B1 * C1 * !Y)	-0.00329	-0.00344	-0.00342
	(A2 * B1 * !C1 * !Y)	0.00263	0.00263	0.00262
	(A2 * B1 * !C1 * !Y)	-0.00326	-0.00342	-0.00342
	(A2 * !B1 * C1 * !Y)	0.00265	0.00263	0.00262
	(A2 * !B1 * C1 * !Y)	-0.00310	-0.00334	-0.00331
	(!A2 * B1 * C1 * !Y)	0.00249	0.00250	0.00250
	(!A2 * B1 * C1 * !Y)	-0.00351	-0.00352	-0.00352
	(!A2 * B1 * !C1 * !Y)	0.00248	0.00251	0.00249
	(!A2 * B1 * !C1 * !Y)	-0.00351	-0.00353	-0.00352
	(!A2 * !B1 * C1 * !Y)	0.00248	0.00250	0.00249
	(!A2 * !B1 * C1 * !Y)	-0.00351	-0.00352	-0.00352
	(!A2 * !B1 * !C1 * Y)	0.00104	0.00105	0.00098
	(!A2 * !B1 * !C1 * Y)	-0.00390	-0.00394	-0.00402

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00511	0.00511	0.00510
	(A2 * B1 * C1 * !Y)	-0.00670	-0.00690	-0.00694
	(A2 * B1 * !C1 * !Y)	0.00512	0.00511	0.00510
	(A2 * B1 * !C1 * !Y)	-0.00659	-0.00694	-0.00693
	(A2 * !B1 * C1 * !Y)	0.00516	0.00512	0.00510
	(A2 * !B1 * C1 * !Y)	-0.00622	-0.00667	-0.00669
	(!A2 * B1 * C1 * !Y)	0.00481	0.00482	0.00483
	(!A2 * B1 * C1 * !Y)	-0.00713	-0.00714	-0.00714
	(!A2 * B1 * !C1 * !Y)	0.00481	0.00480	0.00482
	(!A2 * B1 * !C1 * !Y)	-0.00715	-0.00712	-0.00714
	(!A2 * !B1 * C1 * !Y)	0.00481	0.00483	0.00482
	(!A2 * !B1 * C1 * !Y)	-0.00715	-0.00716	-0.00714
	(!A2 * !B1 * !C1 * Y)	0.00182	0.00184	0.00172
	(!A2 * !B1 * !C1 * Y)	-0.00799	-0.00809	-0.00823

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)**	-0.00128	-0.00129	-0.00128
	(A2 * B1 * C1 * !Y)	0.00173	0.00175	0.00174
	(A2 * B1 * !C1 * !Y)	-0.00128	-0.00129	-0.00128
	(A2 * B1 * !C1 * !Y)	0.00173	0.00175	0.00174
	(A2 * !B1 * C1 * !Y)	-0.00128	-0.00129	-0.00128
	(A2 * !B1 * C1 * !Y)	0.00167	0.00169	0.00168
	(!A2 * B1 * C1 * !Y)	-0.00119	-0.00122	-0.00121
	(!A2 * B1 * C1 * !Y)	0.00178	0.00181	0.00179
	(!A2 * B1 * !C1 * !Y)	-0.00119	-0.00122	-0.00121
	(!A2 * B1 * !C1 * !Y)	0.00178	0.00181	0.00179
	(!A2 * !B1 * C1 * !Y)	-0.00120	-0.00122	-0.00121
	(!A2 * !B1 * C1 * !Y)	0.00180	0.00181	0.00179
	(!A2 * !B1 * !C1 * Y)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * !C1 * Y)	0.00206	0.00207	0.00206
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00261	-0.00263	-0.00262
	(A2 * B1 * C1 * !Y)	0.00340	0.00344	0.00342
	(A2 * B1 * !C1 * !Y)	-0.00261	-0.00262	-0.00262
	(A2 * B1 * !C1 * !Y)	0.00341	0.00342	0.00342
	(A2 * !B1 * C1 * !Y)	-0.00262	-0.00263	-0.00262
	(A2 * !B1 * C1 * !Y)	0.00330	0.00334	0.00331
	(!A2 * B1 * C1 * !Y)	-0.00241	-0.00250	-0.00250
	(!A2 * B1 * C1 * !Y)	0.00351	0.00353	0.00353
	(!A2 * B1 * !C1 * !Y)	-0.00242	-0.00251	-0.00249
	(!A2 * B1 * !C1 * !Y)	0.00353	0.00353	0.00353
	(!A2 * !B1 * C1 * !Y)	-0.00242	-0.00250	-0.00249
	(!A2 * !B1 * C1 * !Y)	0.00353	0.00353	0.00353
	(!A2 * !B1 * !C1 * Y)	-0.00096	-0.00095	-0.00095
	(!A2 * !B1 * !C1 * Y)	0.00405	0.00406	0.00404

sky130_fd_sc_hs__a211oi_4	(A2 * B1 * C1 * !Y)	-0.00508	-0.00507	-0.00509
	(A2 * B1 * C1 * !Y)	0.00692	0.00690	0.00694
	(A2 * B1 * !C1 * !Y)	-0.00508	-0.00509	-0.00509
	(A2 * B1 * !C1 * !Y)	0.00692	0.00694	0.00693
	(A2 * !B1 * C1 * !Y)	-0.00508	-0.00508	-0.00508
	(A2 * !B1 * C1 * !Y)	0.00668	0.00667	0.00669
	(!A2 * B1 * C1 * !Y)	-0.00470	-0.00482	-0.00483
	(!A2 * B1 * C1 * !Y)	0.00718	0.00718	0.00716
	(!A2 * B1 * !C1 * !Y)	-0.00469	-0.00480	-0.00482
	(!A2 * B1 * !C1 * !Y)	0.00718	0.00721	0.00716
	(!A2 * !B1 * C1 * !Y)	-0.00468	-0.00483	-0.00482
	(!A2 * !B1 * C1 * !Y)	0.00717	0.00719	0.00716
	(!A2 * !B1 * !C1 * Y)	-0.00166	-0.00167	-0.00166
	(!A2 * !B1 * !C1 * Y)	0.00824	0.00830	0.00826

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)	0.00130	0.00130	0.00130
	(A1 * B1 * C1 * !Y)	-0.00168	-0.00176	-0.00175
	(A1 * B1 * !C1 * !Y)	0.00130	0.00130	0.00130
	(A1 * B1 * !C1 * !Y)	-0.00166	-0.00176	-0.00175
	(A1 * !B1 * C1 * !Y)	0.00132	0.00132	0.00130
	(A1 * !B1 * C1 * !Y)	-0.00157	-0.00170	-0.00169
	(!A1 * B1 * !Y)	0.00123	0.00123	0.00123
	(!A1 * B1 * !Y)	-0.00179	-0.00180	-0.00180
	(!A1 * !B1 * C1 * !Y)	0.00123	0.00124	0.00123
	(!A1 * !B1 * C1 * !Y)	-0.00179	-0.00180	-0.00180
	(!A1 * !B1 * !C1 * Y)	0.00123	0.00125	0.00124
	(!A1 * !B1 * !C1 * Y)	-0.00179	-0.00180	-0.00179

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00269	0.00270	0.00268
	(A1 * B1 * C1 * !Y)	-0.00340	-0.00355	-0.00352
	(A1 * B1 * !C1 * !Y)	0.00271	0.00270	0.00268
	(A1 * B1 * !C1 * !Y)	-0.00336	-0.00355	-0.00352
	(A1 * !B1 * C1 * !Y)	0.00273	0.00269	0.00269
	(A1 * !B1 * C1 * !Y)	-0.00317	-0.00343	-0.00340
	(!A1 * B1 * !Y)	0.00256	0.00259	0.00256
	(!A1 * B1 * !Y)	-0.00362	-0.00365	-0.00363
	(!A1 * !B1 * C1 * !Y)	0.00256	0.00259	0.00256
	(!A1 * !B1 * C1 * !Y)	-0.00362	-0.00365	-0.00363
	(!A1 * !B1 * !C1 * Y)	0.00236	0.00239	0.00237
	(!A1 * !B1 * !C1 * Y)	-0.00382	-0.00384	-0.00382
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00524	0.00526	0.00523
	(A1 * B1 * C1 * !Y)	-0.00673	-0.00706	-0.00700
	(A1 * B1 * !C1 * !Y)	0.00527	0.00526	0.00523
	(A1 * B1 * !C1 * !Y)	-0.00664	-0.00705	-0.00700
	(A1 * !B1 * C1 * !Y)	0.00532	0.00527	0.00523
	(A1 * !B1 * C1 * !Y)	-0.00629	-0.00681	-0.00675
	(!A1 * B1 * !Y)	0.00490	0.00495	0.00494
	(!A1 * B1 * !Y)	-0.00718	-0.00722	-0.00721
	(!A1 * !B1 * C1 * !Y)	0.00490	0.00497	0.00494
	(!A1 * !B1 * C1 * !Y)	-0.00718	-0.00724	-0.00721
	(!A1 * !B1 * !C1 * Y)	0.00493	0.00497	0.00496
	(!A1 * !B1 * !C1 * Y)	-0.00718	-0.00721	-0.00719

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)**	-0.00129	-0.00130	-0.00130
	(A1 * B1 * C1 * !Y)	0.00174	0.00176	0.00175
	(A1 * B1 * !C1 * !Y)	-0.00129	-0.00130	-0.00130
	(A1 * B1 * !C1 * !Y)	0.00174	0.00176	0.00175
	(A1 * !B1 * C1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * !B1 * C1 * !Y)	0.00168	0.00170	0.00169
	(!A1 * B1 * !Y)	-0.00121	-0.00123	-0.00123
	(!A1 * B1 * !Y)	0.00180	0.00181	0.00180
	(!A1 * !B1 * C1 * !Y)	-0.00121	-0.00124	-0.00123
	(!A1 * !B1 * C1 * !Y)	0.00180	0.00181	0.00180
	(!A1 * !B1 * !C1 * Y)	-0.00115	-0.00124	-0.00124
	(!A1 * !B1 * !C1 * Y)	0.00186	0.00184	0.00180
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00268	-0.00270	-0.00268
	(A1 * B1 * C1 * !Y)	0.00352	0.00356	0.00352
	(A1 * B1 * !C1 * !Y)	-0.00268	-0.00269	-0.00268
	(A1 * B1 * !C1 * !Y)	0.00351	0.00355	0.00352
	(A1 * !B1 * C1 * !Y)	-0.00268	-0.00269	-0.00268
	(A1 * !B1 * C1 * !Y)	0.00340	0.00343	0.00340
	(!A1 * B1 * !Y)	-0.00250	-0.00259	-0.00256
	(!A1 * B1 * !Y)	0.00363	0.00368	0.00364
	(!A1 * !B1 * C1 * !Y)	-0.00249	-0.00259	-0.00256
	(!A1 * !B1 * C1 * !Y)	0.00362	0.00367	0.00364
	(!A1 * !B1 * !C1 * Y)	-0.00221	-0.00238	-0.00237
	(!A1 * !B1 * !C1 * Y)	0.00392	0.00388	0.00384

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00522	-0.00525	-0.00522
	(A1 * B1 * C1 * !Y)	0.00698	0.00706	0.00700
	(A1 * B1 * !C1 * !Y)	-0.00521	-0.00525	-0.00522
	(A1 * B1 * !C1 * !Y)	0.00698	0.00705	0.00700
	(A1 * !B1 * C1 * !Y)	-0.00522	-0.00525	-0.00522
	(A1 * !B1 * C1 * !Y)	0.00674	0.00681	0.00675
	(!A1 * B1 * !Y)	-0.00483	-0.00495	-0.00494
	(!A1 * B1 * !Y)	0.00721	0.00731	0.00723
	(!A1 * !B1 * C1 * !Y)	-0.00483	-0.00497	-0.00494
	(!A1 * !B1 * C1 * !Y)	0.00721	0.00731	0.00723
	(!A1 * !B1 * !C1 * Y)	-0.00458	-0.00497	-0.00496
	(!A1 * !B1 * !C1 * Y)	0.00750	0.00734	0.00723

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)	0.00156	0.00151	0.00142
	(A1 * A2 * C1 * !Y)	-0.00122	-0.00125	-0.00124
	(A1 * A2 * !C1 * !Y)	0.00137	0.00138	0.00136
	(A1 * A2 * !C1 * !Y)	-0.00093	-0.00093	-0.00094
	(A1 * !A2 * C1 * !Y)	0.00166	0.00138	0.00136
	(A1 * !A2 * C1 * !Y)	-0.00141	-0.00172	-0.00172
	(!A1 * C1 * !Y)	0.00166	0.00138	0.00136
	(!A1 * C1 * !Y)	-0.00143	-0.00172	-0.00172
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00196	0.00191	0.00173
	(A1 * A2 * C1 * !Y)	-0.00242	-0.00245	-0.00244
	(A1 * A2 * !C1 * !Y)	0.00162	0.00161	0.00159
	(A1 * A2 * !C1 * !Y)	-0.00185	-0.00184	-0.00185
	(A1 * !A2 * C1 * !Y)	0.00219	0.00160	0.00157
	(A1 * !A2 * C1 * !Y)	-0.00278	-0.00342	-0.00340
	(!A1 * C1 * !Y)	0.00220	0.00160	0.00157
	(!A1 * C1 * !Y)	-0.00278	-0.00342	-0.00340
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00364	0.00349	0.00312
	(A1 * A2 * C1 * !Y)	-0.00497	-0.00501	-0.00498
	(A1 * A2 * !C1 * !Y)	0.00291	0.00292	0.00286
	(A1 * A2 * !C1 * !Y)	-0.00380	-0.00382	-0.00385
	(A1 * !A2 * C1 * !Y)	0.00415	0.00290	0.00284
	(A1 * !A2 * C1 * !Y)	-0.00566	-0.00703	-0.00701
	(!A1 * C1 * !Y)	0.00413	0.00290	0.00284
	(!A1 * C1 * !Y)	-0.00568	-0.00704	-0.00701

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)	-0.00135	-0.00136	-0.00136
	(A1 * A2 * C1 * !Y)	0.00124	0.00125	0.00124
	(A1 * A2 * !C1 * !Y)	-0.00132	-0.00133	-0.00134
	(A1 * A2 * !C1 * !Y)	0.00100	0.00099	0.00098
	(A1 * !A2 * C1 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * !A2 * C1 * !Y)	0.00171	0.00173	0.00172
	(!A1 * C1 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1 * C1 * !Y)	0.00171	0.00173	0.00172
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00161	-0.00162	-0.00161
	(A1 * A2 * C1 * !Y)	0.00242	0.00245	0.00244
	(A1 * A2 * !C1 * !Y)	-0.00153	-0.00153	-0.00153
	(A1 * A2 * !C1 * !Y)	0.00193	0.00192	0.00193
	(A1 * !A2 * C1 * !Y)	-0.00157	-0.00158	-0.00156
	(A1 * !A2 * C1 * !Y)	0.00339	0.00342	0.00340
	(!A1 * C1 * !Y)	-0.00157	-0.00158	-0.00156
	(!A1 * C1 * !Y)	0.00338	0.00342	0.00340
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00287	-0.00288	-0.00287
	(A1 * A2 * C1 * !Y)	0.00497	0.00501	0.00498
	(A1 * A2 * !C1 * !Y)	-0.00274	-0.00274	-0.00275
	(A1 * A2 * !C1 * !Y)	0.00401	0.00399	0.00400
	(A1 * !A2 * C1 * !Y)	-0.00282	-0.00283	-0.00280
	(A1 * !A2 * C1 * !Y)	0.00700	0.00705	0.00701
	(!A1 * C1 * !Y)	-0.00281	-0.00283	-0.00280
	(!A1 * C1 * !Y)	0.00699	0.00705	0.00701

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00161	0.00162	0.00161
	(A1 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * !B1 * !Y)	0.00161	0.00162	0.00161
	(A1 * A2 * !B1 * !Y)	-0.00082	-0.00083	-0.00083
	(!A1 * B1 * !Y)	0.00161	0.00162	0.00161
	(!A1 * B1 * !Y)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00171	0.00172	0.00171
	(A1 * B1 * !Y)	-0.00170	-0.00170	-0.00170
	(A1 * A2 * !B1 * !Y)	0.00171	0.00172	0.00171
	(A1 * A2 * !B1 * !Y)	-0.00169	-0.00170	-0.00169
	(!A1 * B1 * !Y)	0.00171	0.00172	0.00171
	(!A1 * B1 * !Y)	-0.00170	-0.00171	-0.00170
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00346	0.00347	0.00346
	(A1 * B1 * !Y)	-0.00342	-0.00342	-0.00341
	(A1 * A2 * !B1 * !Y)	0.00345	0.00348	0.00346
	(A1 * A2 * !B1 * !Y)	-0.00340	-0.00341	-0.00339
	(!A1 * B1 * !Y)	0.00345	0.00348	0.00346
	(!A1 * B1 * !Y)	-0.00342	-0.00344	-0.00342

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00156	-0.00156	-0.00161
	(A1 * B1 * !Y)	0.00088	0.00088	0.00085
	(A1 * A2 * !B1 * !Y)	-0.00141	-0.00142	-0.00158
	(A1 * A2 * !B1 * !Y)	0.00098	0.00097	0.00086
	(!A1 * B1 * !Y)	-0.00155	-0.00157	-0.00161
	(!A1 * B1 * !Y)	0.00087	0.00088	0.00085
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00156	-0.00156	-0.00170
	(A1 * B1 * !Y)	0.00185	0.00185	0.00174
	(A1 * A2 * !B1 * !Y)	-0.00129	-0.00130	-0.00164
	(A1 * A2 * !B1 * !Y)	0.00200	0.00199	0.00175
	(!A1 * B1 * !Y)	-0.00156	-0.00157	-0.00170
	(!A1 * B1 * !Y)	0.00186	0.00185	0.00174
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00319	-0.00320	-0.00344
	(A1 * B1 * !Y)	0.00369	0.00367	0.00348
	(A1 * A2 * !B1 * !Y)	-0.00260	-0.00263	-0.00332
	(A1 * A2 * !B1 * !Y)	0.00398	0.00399	0.00352
	(!A1 * B1 * !Y)	-0.00317	-0.00321	-0.00344
	(!A1 * B1 * !Y)	0.00367	0.00369	0.00349

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00270	0.00255	0.00274	0.00271	0.75558
sky130_fd_sc_hs__a211o_2	0.00295	0.00294	0.00291	0.00282	1.46604
sky130_fd_sc_hs__a211o_4	0.00503	0.00515	0.00543	0.00495	2.85163

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211o_1	0.00000	0.08474	0.14646
sky130_fd_sc_hs__a211o_2	0.00000	0.11800	0.16959
sky130_fd_sc_hs__a211o_4	0.00000	0.23345	0.34321

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)	0.13751	0.88130	7.51762
	A2->X (RR)	0.14311	0.86892	7.53105
	B1->X (RR)	0.10380	0.81270	7.32267
	C1->X (RR)	0.09644	0.78606	7.25679
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.13784	0.78501	7.52915
	A2->X (RR)	0.14406	0.76738	7.52172
	B1->X (RR)	0.10096	0.71432	7.33510
	C1->X (RR)	0.09434	0.69379	7.27416
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.14162	0.71138	7.63540
	A2->X (RR)	0.14869	0.69756	7.63249
	B1->X (RR)	0.09829	0.62688	7.40431
	C1->X (RR)	0.09408	0.61066	7.35748

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.33577	0.88457	4.60636
	A2->X (FF)	0.38191	0.94131	4.72685
	B1->X (FF)	0.34714	0.91316	4.88471
	C1->X (FF)	0.29484	0.87496	4.78240
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.43696	0.98538	4.97753
	A2->X (FF)	0.49482	1.05304	5.10993
	B1->X (FF)	0.46112	1.03592	5.33247
	C1->X (FF)	0.40494	0.99396	5.25585
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.40200	0.89674	4.82667
	A2->X (FF)	0.43373	0.94066	4.93548
	B1->X (FF)	0.40623	0.92354	5.12411
	C1->X (FF)	0.34544	0.87694	5.02286

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01080	0.01076	0.01674
	A1	0.00529	0.00538	0.01126
	A2	0.01151	0.01140	0.01613
	A2	0.00528	0.00518	0.00992
	B1	0.00937	0.00948	0.01586
	B1	0.00393	0.00404	0.01091
	C1	0.00778	0.00791	0.01591
	C1	0.00312	0.00327	0.01193
sky130_fd_sc_hs__a211o_2	A1	0.01340	0.01355	0.01951
	A1	0.00741	0.00757	0.01357
	A2	0.01434	0.01443	0.01915
	A2	0.00739	0.00749	0.01225
	B1	0.01210	0.01246	0.01875
	B1	0.00614	0.00651	0.01294
	C1	0.01046	0.01086	0.01859
	C1	0.00526	0.00566	0.01415
sky130_fd_sc_hs__a211o_4	A1	0.02503	0.02553	0.03779
	A1	0.01416	0.01469	0.02749
	A2	0.02687	0.02738	0.03709
	A2	0.01420	0.01471	0.02496
	B1	0.02218	0.02276	0.03518
	B1	0.01145	0.01218	0.02466
	C1	0.01825	0.01908	0.03467
	C1	0.00950	0.01035	0.02618

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00347	0.00351	0.00845
	A1	0.00906	0.00912	0.01370
	A2	0.00387	0.00396	0.00887
	A2	0.01013	0.01025	0.01459
	B1	0.00315	0.00332	0.00964
	B1	0.00906	0.00916	0.01450
	C1	0.00309	0.00367	0.01252
	C1	0.00821	0.00869	0.01640
sky130_fd_sc_hs__a211o_2	A1	0.00582	0.00584	0.01056
	A1	0.01186	0.01188	0.01654
	A2	0.00620	0.00550	0.01087
	A2	0.01314	0.01319	0.01771
	B1	0.00628	0.00622	0.01192
	B1	0.01219	0.01219	0.01752
	C1	0.00622	0.00652	0.01460
	C1	0.01136	0.01174	0.01941
sky130_fd_sc_hs__a211o_4	A1	0.01095	0.01118	0.02072
	A1	0.02196	0.02218	0.03151
	A2	0.01132	0.01163	0.02072
	A2	0.02403	0.02433	0.03322
	B1	0.01184	0.01176	0.02228
	B1	0.02247	0.02252	0.03283
	C1	0.01190	0.01264	0.02884
	C1	0.02053	0.02133	0.03643

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)**	0.00113	0.00113	0.00112
	(A2 * B1 * C1 * X)	-0.00156	-0.00161	-0.00160
	(A2 * B1 * !C1 * X)	0.00118	0.00113	0.00113
	(A2 * B1 * !C1 * X)	-0.00150	-0.00161	-0.00161
	(A2 * !B1 * C1 * X)	0.00118	0.00114	0.00112
	(A2 * !B1 * C1 * X)	-0.00142	-0.00156	-0.00155
	(!A2 * B1 * C1 * X)	0.00107	0.00107	0.00107
	(!A2 * B1 * C1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * B1 * !C1 * X)	0.00107	0.00107	0.00107
	(!A2 * B1 * !C1 * X)	-0.00166	-0.00166	-0.00165
	(!A2 * !B1 * C1 * X)	0.00107	0.00107	0.00107
	(!A2 * !B1 * C1 * X)	-0.00166	-0.00166	-0.00165
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00037	0.00035
	(!A2 * !B1 * !C1 * !X)	-0.00192	-0.00192	-0.00195
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00139	0.00139	0.00139
	(A2 * B1 * C1 * X)	-0.00148	-0.00155	-0.00154
	(A2 * B1 * !C1 * X)	0.00141	0.00139	0.00139
	(A2 * B1 * !C1 * X)	-0.00144	-0.00155	-0.00154
	(A2 * !B1 * C1 * X)	0.00143	0.00138	0.00139
	(A2 * !B1 * C1 * X)	-0.00136	-0.00150	-0.00149
	(!A2 * B1 * C1 * X)	0.00131	0.00132	0.00131
	(!A2 * B1 * C1 * X)	-0.00158	-0.00159	-0.00158
	(!A2 * B1 * !C1 * X)	0.00131	0.00132	0.00131
	(!A2 * B1 * !C1 * X)	-0.00158	-0.00159	-0.00158
	(!A2 * !B1 * C1 * X)	0.00131	0.00132	0.00131
	(!A2 * !B1 * C1 * X)	-0.00159	-0.00159	-0.00158
	(!A2 * !B1 * !C1 * !X)	0.00045	0.00045	0.00043
	(!A2 * !B1 * !C1 * !X)	-0.00191	-0.00192	-0.00195

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00220	0.00221	0.00220
	(A2 * B1 * C1 * X)	-0.00307	-0.00322	-0.00319
	(A2 * B1 * !C1 * X)	0.00224	0.00220	0.00220
	(A2 * B1 * !C1 * X)	-0.00300	-0.00321	-0.00319
	(A2 * !B1 * C1 * X)	0.00227	0.00220	0.00219
	(A2 * !B1 * C1 * X)	-0.00285	-0.00312	-0.00309
	(!A2 * B1 * C1 * X)	0.00208	0.00208	0.00208
	(!A2 * B1 * C1 * X)	-0.00329	-0.00329	-0.00329
	(!A2 * B1 * !C1 * X)	0.00207	0.00208	0.00208
	(!A2 * B1 * !C1 * X)	-0.00328	-0.00330	-0.00329
	(!A2 * !B1 * C1 * X)	0.00207	0.00208	0.00208
	(!A2 * !B1 * C1 * X)	-0.00328	-0.00329	-0.00329
	(!A2 * !B1 * !C1 * !X)	0.00074	0.00074	0.00070
	(!A2 * !B1 * !C1 * !X)	-0.00374	-0.00375	-0.00381

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)**	-0.00112	-0.00113	-0.00112
	(A2 * B1 * C1 * X)	0.00160	0.00161	0.00160
	(A2 * B1 * !C1 * X)	-0.00112	-0.00113	-0.00112
	(A2 * B1 * !C1 * X)	0.00160	0.00161	0.00161
	(A2 * !B1 * C1 * X)	-0.00111	-0.00112	-0.00112
	(A2 * !B1 * C1 * X)	0.00154	0.00156	0.00155
	(!A2 * B1 * C1 * X)	-0.00104	-0.00107	-0.00107
	(!A2 * B1 * C1 * X)	0.00165	0.00168	0.00166
	(!A2 * B1 * !C1 * X)	-0.00105	-0.00107	-0.00107
	(!A2 * B1 * !C1 * X)	0.00167	0.00169	0.00166
	(!A2 * !B1 * C1 * X)	-0.00105	-0.00107	-0.00107
	(!A2 * !B1 * C1 * X)	0.00167	0.00169	0.00166
	(!A2 * !B1 * !C1 * !X)	-0.00034	-0.00034	-0.00033
	(!A2 * !B1 * !C1 * !X)	0.00195	0.00196	0.00195
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00139	-0.00139	-0.00139
	(A2 * B1 * C1 * X)	0.00154	0.00155	0.00154
	(A2 * B1 * !C1 * X)	-0.00139	-0.00139	-0.00139
	(A2 * B1 * !C1 * X)	0.00154	0.00155	0.00154
	(A2 * !B1 * C1 * X)	-0.00138	-0.00138	-0.00138
	(A2 * !B1 * C1 * X)	0.00150	0.00150	0.00149
	(!A2 * B1 * C1 * X)	-0.00129	-0.00132	-0.00131
	(!A2 * B1 * C1 * X)	0.00158	0.00161	0.00159
	(!A2 * B1 * !C1 * X)	-0.00129	-0.00132	-0.00131
	(!A2 * B1 * !C1 * X)	0.00158	0.00161	0.00159
	(!A2 * !B1 * C1 * X)	-0.00130	-0.00132	-0.00131
	(!A2 * !B1 * C1 * X)	0.00160	0.00161	0.00159
	(!A2 * !B1 * !C1 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * !C1 * !X)	0.00195	0.00196	0.00195

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00219	-0.00221	-0.00220
	(A2 * B1 * C1 * X)	0.00318	0.00322	0.00319
	(A2 * B1 * !C1 * X)	-0.00219	-0.00220	-0.00220
	(A2 * B1 * !C1 * X)	0.00318	0.00322	0.00319
	(A2 * !B1 * C1 * X)	-0.00218	-0.00220	-0.00218
	(A2 * !B1 * C1 * X)	0.00308	0.00312	0.00309
	(!A2 * B1 * C1 * X)	-0.00203	-0.00208	-0.00208
	(!A2 * B1 * C1 * X)	0.00329	0.00333	0.00330
	(!A2 * B1 * !C1 * X)	-0.00203	-0.00208	-0.00208
	(!A2 * B1 * !C1 * X)	0.00329	0.00334	0.00330
	(!A2 * !B1 * C1 * X)	-0.00203	-0.00208	-0.00208
	(!A2 * !B1 * C1 * X)	0.00329	0.00334	0.00330
	(!A2 * !B1 * !C1 * !X)	-0.00067	-0.00067	-0.00067
	(!A2 * !B1 * !C1 * !X)	0.00382	0.00383	0.00382

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)**	0.00116	0.00115	0.00115
	(A1 * B1 * C1 * X)	-0.00154	-0.00160	-0.00159
	(A1 * B1 * !C1 * X)	0.00118	0.00115	0.00115
	(A1 * B1 * !C1 * X)	-0.00148	-0.00160	-0.00159
	(A1 * !B1 * C1 * X)	0.00119	0.00116	0.00115
	(A1 * !B1 * C1 * X)	-0.00141	-0.00155	-0.00154
	(!A1 * B1 * X)	0.00110	0.00111	0.00110
	(!A1 * B1 * X)	-0.00163	-0.00165	-0.00163
	(!A1 * !B1 * C1 * X)	0.00110	0.00111	0.00110
	(!A1 * !B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * !B1 * !C1 * !X)	0.00100	0.00100	0.00099
	(!A1 * !B1 * !C1 * !X)	-0.00174	-0.00174	-0.00174

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00150	0.00149	0.00149
	(A1 * B1 * C1 * X)	-0.00149	-0.00156	-0.00155
	(A1 * B1 * !C1 * X)	0.00152	0.00149	0.00149
	(A1 * B1 * !C1 * X)	-0.00146	-0.00156	-0.00155
	(A1 * !B1 * C1 * X)	0.00153	0.00148	0.00148
	(A1 * !B1 * C1 * X)	-0.00138	-0.00151	-0.00150
	(!A1 * B1 * X)	0.00141	0.00142	0.00141
	(!A1 * B1 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * !B1 * C1 * X)	0.00142	0.00142	0.00141
	(!A1 * !B1 * C1 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * !B1 * !C1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00265	0.00266	0.00264
	(A1 * B1 * C1 * X)	-0.00298	-0.00311	-0.00310
	(A1 * B1 * !C1 * X)	0.00267	0.00266	0.00264
	(A1 * B1 * !C1 * X)	-0.00293	-0.00311	-0.00310
	(A1 * !B1 * C1 * X)	0.00270	0.00266	0.00263
	(A1 * !B1 * C1 * X)	-0.00277	-0.00301	-0.00301
	(!A1 * B1 * X)	0.00252	0.00254	0.00252
	(!A1 * B1 * X)	-0.00318	-0.00320	-0.00319
	(!A1 * !B1 * C1 * X)	0.00252	0.00254	0.00252
	(!A1 * !B1 * C1 * X)	-0.00318	-0.00320	-0.00319
	(!A1 * !B1 * !C1 * !X)	0.00248	0.00250	0.00248
	(!A1 * !B1 * !C1 * !X)	-0.00323	-0.00325	-0.00323

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)**	-0.00115	-0.00115	-0.00115
	(A1 * B1 * C1 * X)	0.00158	0.00160	0.00159
	(A1 * B1 * !C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * B1 * !C1 * X)	0.00158	0.00160	0.00159
	(A1 * !B1 * C1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(!A1 * B1 * X)	-0.00107	-0.00111	-0.00110
	(!A1 * B1 * X)	0.00163	0.00166	0.00164
	(!A1 * !B1 * C1 * X)	-0.00107	-0.00111	-0.00110
	(!A1 * !B1 * C1 * X)	0.00163	0.00166	0.00164
	(!A1 * !B1 * !C1 * !X)	-0.00092	-0.00100	-0.00099
	(!A1 * !B1 * !C1 * !X)	0.00179	0.00178	0.00175
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00149	-0.00149	-0.00149
	(A1 * B1 * C1 * X)	0.00155	0.00156	0.00155
	(A1 * B1 * !C1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * B1 * !C1 * X)	0.00155	0.00156	0.00155
	(A1 * !B1 * C1 * X)	-0.00148	-0.00148	-0.00148
	(A1 * !B1 * C1 * X)	0.00150	0.00151	0.00150
	(!A1 * B1 * X)	-0.00139	-0.00142	-0.00141
	(!A1 * B1 * X)	0.00159	0.00162	0.00160
	(!A1 * !B1 * C1 * X)	-0.00139	-0.00142	-0.00141
	(!A1 * !B1 * C1 * X)	0.00160	0.00162	0.00160
	(!A1 * !B1 * !C1 * !X)	-0.00112	-0.00121	-0.00121
	(!A1 * !B1 * !C1 * !X)	0.00187	0.00184	0.00181

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00263	-0.00264	-0.00264
	(A1 * B1 * C1 * X)	0.00309	0.00311	0.00310
	(A1 * B1 * !C1 * X)	-0.00263	-0.00264	-0.00263
	(A1 * B1 * !C1 * X)	0.00309	0.00311	0.00310
	(A1 * !B1 * C1 * X)	-0.00262	-0.00263	-0.00262
	(A1 * !B1 * C1 * X)	0.00300	0.00301	0.00301
	(!A1 * B1 * X)	-0.00247	-0.00254	-0.00252
	(!A1 * B1 * X)	0.00318	0.00320	0.00320
	(!A1 * !B1 * C1 * X)	-0.00248	-0.00254	-0.00252
	(!A1 * !B1 * C1 * X)	0.00320	0.00320	0.00320
	(!A1 * !B1 * !C1 * !X)	-0.00234	-0.00247	-0.00248
	(!A1 * !B1 * !C1 * !X)	0.00336	0.00326	0.00325

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)	0.00155	0.00151	0.00142
	(A1 * A2 * C1 * X)	-0.00106	-0.00111	-0.00111
	(A1 * A2 * !C1 * X)	0.00137	0.00137	0.00134
	(A1 * A2 * !C1 * X)	-0.00084	-0.00084	-0.00085
	(A1 * !A2 * C1 * X)	0.00164	0.00137	0.00134
	(A1 * !A2 * C1 * X)	-0.00123	-0.00154	-0.00155
	(!A1 * C1 * X)	0.00164	0.00137	0.00134
	(!A1 * C1 * X)	-0.00124	-0.00154	-0.00155
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00163	0.00157	0.00149
	(A1 * A2 * C1 * X)	-0.00108	-0.00112	-0.00111
	(A1 * A2 * !C1 * X)	0.00143	0.00143	0.00141
	(A1 * A2 * !C1 * X)	-0.00085	-0.00084	-0.00085
	(A1 * !A2 * C1 * X)	0.00171	0.00143	0.00140
	(A1 * !A2 * C1 * X)	-0.00124	-0.00153	-0.00155
	(!A1 * C1 * X)	0.00170	0.00143	0.00140
	(!A1 * C1 * X)	-0.00125	-0.00153	-0.00155
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00289	0.00278	0.00261
	(A1 * A2 * C1 * X)	-0.00226	-0.00233	-0.00231
	(A1 * A2 * !C1 * X)	0.00249	0.00250	0.00247
	(A1 * A2 * !C1 * X)	-0.00177	-0.00178	-0.00180
	(A1 * !A2 * C1 * X)	0.00308	0.00251	0.00245
	(A1 * !A2 * C1 * X)	-0.00258	-0.00318	-0.00321
	(!A1 * C1 * X)	0.00310	0.00251	0.00245
	(!A1 * C1 * X)	-0.00258	-0.00318	-0.00321

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)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * C1 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * !C1 * X)	-0.00130	-0.00131	-0.00132
	(A1 * A2 * !C1 * X)	0.00091	0.00091	0.00088
	(A1 * !A2 * C1 * X)	-0.00132	-0.00133	-0.00132
	(A1 * !A2 * C1 * X)	0.00154	0.00156	0.00155
	(!A1 * C1 * X)	-0.00132	-0.00133	-0.00132
	(!A1 * C1 * X)	0.00154	0.00156	0.00155
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00141	-0.00142	-0.00142
	(A1 * A2 * C1 * X)	0.00111	0.00112	0.00111
	(A1 * A2 * !C1 * X)	-0.00137	-0.00138	-0.00139
	(A1 * A2 * !C1 * X)	0.00090	0.00090	0.00088
	(A1 * !A2 * C1 * X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * C1 * X)	0.00154	0.00155	0.00155
	(!A1 * C1 * X)	-0.00138	-0.00139	-0.00138
	(!A1 * C1 * X)	0.00154	0.00155	0.00155
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00246	-0.00248	-0.00246
	(A1 * A2 * C1 * X)	0.00231	0.00233	0.00231
	(A1 * A2 * !C1 * X)	-0.00240	-0.00241	-0.00242
	(A1 * A2 * !C1 * X)	0.00189	0.00188	0.00187
	(A1 * !A2 * C1 * X)	-0.00242	-0.00243	-0.00241
	(A1 * !A2 * C1 * X)	0.00319	0.00321	0.00321
	(!A1 * C1 * X)	-0.00242	-0.00243	-0.00241
	(!A1 * C1 * X)	0.00318	0.00321	0.00321

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00148	0.00148	0.00147
	(A1 * B1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !B1 * X)	0.00147	0.00148	0.00147
	(A1 * A2 * !B1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * B1 * X)	0.00148	0.00148	0.00147
	(!A1 * B1 * X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00150	0.00150	0.00150
	(A1 * B1 * X)	-0.00082	-0.00081	-0.00081
	(A1 * A2 * !B1 * X)	0.00150	0.00150	0.00150
	(A1 * A2 * !B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * B1 * X)	0.00150	0.00150	0.00150
	(!A1 * B1 * X)	-0.00082	-0.00081	-0.00081
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00240	0.00241	0.00241
	(A1 * B1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * A2 * !B1 * X)	0.00241	0.00242	0.00241
	(A1 * A2 * !B1 * X)	-0.00156	-0.00156	-0.00155
	(!A1 * B1 * X)	0.00240	0.00241	0.00241
	(!A1 * B1 * X)	-0.00157	-0.00158	-0.00158

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00143	-0.00144	-0.00147
	(A1 * B1 * X)	0.00082	0.00082	0.00079
	(A1 * A2 * !B1 * X)	-0.00128	-0.00129	-0.00144
	(A1 * A2 * !B1 * X)	0.00091	0.00092	0.00081
	(!A1 * B1 * X)	-0.00142	-0.00144	-0.00147
	(!A1 * B1 * X)	0.00082	0.00083	0.00079
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00145	-0.00146	-0.00149
	(A1 * B1 * X)	0.00085	0.00085	0.00082
	(A1 * A2 * !B1 * X)	-0.00132	-0.00132	-0.00147
	(A1 * A2 * !B1 * X)	0.00094	0.00094	0.00083
	(!A1 * B1 * X)	-0.00145	-0.00145	-0.00149
	(!A1 * B1 * X)	0.00086	0.00085	0.00082
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00229	-0.00230	-0.00239
	(A1 * B1 * X)	0.00168	0.00167	0.00160
	(A1 * A2 * !B1 * X)	-0.00202	-0.00203	-0.00234
	(A1 * A2 * !B1 * X)	0.00184	0.00184	0.00161
	(!A1 * B1 * X)	-0.00229	-0.00230	-0.00239
	(!A1 * B1 * X)	0.00169	0.00169	0.00161

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00289	0.00280	0.00261	0.36322
sky130_fd_sc_hs__a21boi_2	0.00549	0.00532	0.00260	0.69348
sky130_fd_sc_hs__a21boi_4	0.01089	0.01082	0.00385	1.28644

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21boi_1	0.00000	0.12446	0.22278
sky130_fd_sc_hs__a21boi_2	0.00000	0.13693	0.22377
sky130_fd_sc_hs__a21boi_4	0.00000	0.32316	0.58952

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)	0.12438	1.12913	10.58810
	A2->Y (FR)	0.15386	1.18121	10.80820
	B1_N->Y (RR)	0.15776	1.02060	7.68475
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.11226	0.96871	10.58940
	A2->Y (FR)	0.14369	0.99954	10.59170
	B1_N->Y (RR)	0.14756	0.86071	7.48756
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.11214	0.83993	10.45340
	A2->Y (FR)	0.14258	0.86278	10.33960
	B1_N->Y (RR)	0.13407	0.77417	7.81686

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.04828	0.59295	5.74987
	A2->Y (RF)	0.05379	0.54984	5.18954
	B1_N->Y (FF)	0.11396	0.52124	2.55598
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.04405	0.53619	5.88143
	A2->Y (RF)	0.05222	0.49807	5.29212
	B1_N->Y (FF)	0.12388	0.54596	2.77881
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.04489	0.48348	5.90872
	A2->Y (RF)	0.05285	0.43608	5.15749
	B1_N->Y (FF)	0.13129	0.52522	2.58843

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00102	0.00091	0.00187
	A1	0.00473	0.00462	0.00561
	A2	0.00155	0.00145	0.00239
	A2	0.00604	0.00595	0.00692
	B1_N	0.00708	0.00711	0.01629
	B1_N	0.00477	0.00479	0.01402
sky130_fd_sc_hs__a21boi_2	A1	0.00212	0.00195	0.00385
	A1	0.00930	0.00915	0.01110
	A2	0.00368	0.00345	0.00534
	A2	0.01250	0.01227	0.01421
	B1_N	0.01082	0.01093	0.02095
	B1_N	0.00969	0.00980	0.01982
sky130_fd_sc_hs__a21boi_4	A1	0.00431	0.00393	0.00798
	A1	0.01891	0.01853	0.02267
	A2	0.00688	0.00636	0.01029
	A2	0.02476	0.02403	0.02828
	B1_N	0.01894	0.01907	0.03463
	B1_N	0.01857	0.01870	0.03443

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00504	0.00494	0.00643
	A1	0.00137	0.00128	0.00239
	A2	0.00589	0.00576	0.00689
	A2	0.00137	0.00121	0.00213
	B1_N	0.00398	0.00466	0.01372
	B1_N	0.00617	0.00684	0.01591
sky130_fd_sc_hs__a21boi_2	A1	0.00912	0.00896	0.01173
	A1	0.00201	0.00180	0.00401
	A2	0.01084	0.01056	0.01236
	A2	0.00200	0.00163	0.00346
	B1_N	0.00735	0.00821	0.01803
	B1_N	0.00822	0.00902	0.01887
sky130_fd_sc_hs__a21boi_4	A1	0.01783	0.01746	0.02251
	A1	0.00342	0.00301	0.00753
	A2	0.02153	0.02077	0.02513
	A2	0.00351	0.00271	0.00661
	B1_N	0.01487	0.01635	0.03287
	B1_N	0.01480	0.01622	0.03275

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)	0.00148	0.00132	0.00132
	(A2 * !B1_N * !Y)	-0.00164	-0.00182	-0.00182
	(!A2 * B1_N * Y)	0.00055	0.00056	0.00053
	(!A2 * B1_N * Y)	-0.00202	-0.00203	-0.00205
	(!A2 * !B1_N * !Y)	0.00125	0.00125	0.00125
	(!A2 * !B1_N * !Y)	-0.00184	-0.00184	-0.00184
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00292	0.00261	0.00260
	(A2 * !B1_N * !Y)	-0.00312	-0.00352	-0.00352
	(!A2 * B1_N * Y)	0.00101	0.00100	0.00094
	(!A2 * B1_N * Y)	-0.00401	-0.00400	-0.00410
	(!A2 * !B1_N * !Y)	0.00247	0.00250	0.00248
	(!A2 * !B1_N * !Y)	-0.00356	-0.00359	-0.00357
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00584	0.00515	0.00512
	(A2 * !B1_N * !Y)	-0.00623	-0.00709	-0.00709
	(!A2 * B1_N * Y)	0.00186	0.00189	0.00177
	(!A2 * B1_N * Y)	-0.00805	-0.00814	-0.00827
	(!A2 * !B1_N * !Y)	0.00485	0.00487	0.00487
	(!A2 * !B1_N * !Y)	-0.00718	-0.00719	-0.00718

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)	-0.00131	-0.00132	-0.00131
	(A2 * !B1_N * !Y)	0.00181	0.00183	0.00182
	(!A2 * B1_N * Y)	-0.00051	-0.00052	-0.00051
	(!A2 * B1_N * Y)	0.00206	0.00208	0.00206
	(!A2 * !B1_N * !Y)	-0.00122	-0.00125	-0.00125
	(!A2 * !B1_N * !Y)	0.00184	0.00188	0.00185
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00258	-0.00260	-0.00259
	(A2 * !B1_N * !Y)	0.00350	0.00354	0.00352
	(!A2 * B1_N * Y)	-0.00092	-0.00091	-0.00090
	(!A2 * B1_N * Y)	0.00413	0.00415	0.00412
	(!A2 * !B1_N * !Y)	-0.00239	-0.00250	-0.00248
	(!A2 * !B1_N * !Y)	0.00356	0.00359	0.00358
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00510	-0.00511	-0.00508
	(A2 * !B1_N * !Y)	0.00710	0.00714	0.00709
	(!A2 * B1_N * Y)	-0.00170	-0.00172	-0.00170
	(!A2 * B1_N * Y)	0.00828	0.00836	0.00829
	(!A2 * !B1_N * !Y)	-0.00474	-0.00487	-0.00487
	(!A2 * !B1_N * !Y)	0.00723	0.00723	0.00720

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)	0.00155	0.00138	0.00137
	(A1 * !B1_N * !Y)	-0.00155	-0.00176	-0.00176
	(!A1 * B1_N * Y)	0.00131	0.00132	0.00131
	(!A1 * B1_N * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !B1_N * !Y)	0.00131	0.00131	0.00131
	(!A1 * !B1_N * !Y)	-0.00179	-0.00179	-0.00178
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00288	0.00257	0.00255
	(A1 * !B1_N * !Y)	-0.00313	-0.00352	-0.00351
	(!A1 * B1_N * Y)	0.00243	0.00246	0.00244
	(!A1 * B1_N * Y)	-0.00355	-0.00357	-0.00355
	(!A1 * !B1_N * !Y)	0.00243	0.00245	0.00243
	(!A1 * !B1_N * !Y)	-0.00356	-0.00358	-0.00356
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00594	0.00521	0.00517
	(A1 * !B1_N * !Y)	-0.00618	-0.00706	-0.00706
	(!A1 * B1_N * Y)	0.00472	0.00472	0.00471
	(!A1 * B1_N * Y)	-0.00739	-0.00739	-0.00737
	(!A1 * !B1_N * !Y)	0.00494	0.00494	0.00492
	(!A1 * !B1_N * !Y)	-0.00715	-0.00717	-0.00715

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)	-0.00137	-0.00137	-0.00137
	(A1 * !B1_N * !Y)	0.00175	0.00177	0.00176
	(!A1 * B1_N * Y)	-0.00122	-0.00130	-0.00131
	(!A1 * B1_N * Y)	0.00185	0.00182	0.00180
	(!A1 * !B1_N * !Y)	-0.00128	-0.00131	-0.00131
	(!A1 * !B1_N * !Y)	0.00179	0.00181	0.00179
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00255	-0.00256	-0.00254
	(A1 * !B1_N * !Y)	0.00352	0.00353	0.00351
	(!A1 * B1_N * Y)	-0.00226	-0.00245	-0.00244
	(!A1 * B1_N * Y)	0.00367	0.00362	0.00357
	(!A1 * !B1_N * !Y)	-0.00236	-0.00245	-0.00243
	(!A1 * !B1_N * !Y)	0.00356	0.00361	0.00357
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00514	-0.00517	-0.00514
	(A1 * !B1_N * !Y)	0.00704	0.00711	0.00706
	(!A1 * B1_N * Y)	-0.00437	-0.00472	-0.00471
	(!A1 * B1_N * Y)	0.00761	0.00750	0.00741
	(!A1 * !B1_N * !Y)	-0.00481	-0.00494	-0.00492
	(!A1 * !B1_N * !Y)	0.00715	0.00725	0.00717

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)	0.00421	0.00419	0.01325
	(A1 * A2 * !Y)	0.00075	0.00072	0.00979
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00505	0.00503	0.01481
	(A1 * A2 * !Y)	0.00161	0.00157	0.01137
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00783	0.00767	0.02279
	(A1 * A2 * !Y)	0.00271	0.00254	0.01769

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)	0.00093	0.00146	0.01102
	(A1 * A2 * !Y)	0.00438	0.00490	0.01447
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00254	0.00294	0.01334
	(A1 * A2 * !Y)	0.00595	0.00635	0.01675
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00538	0.00601	0.02298
	(A1 * A2 * !Y)	0.01041	0.01107	0.02803

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00266	0.00256	0.00222	0.70400
sky130_fd_sc_hs__a21bo_2	0.00284	0.00269	0.00232	1.34375
sky130_fd_sc_hs__a21bo_4	0.00493	0.00522	0.00271	2.57222

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21bo_1	0.00000	0.18262	0.25790
sky130_fd_sc_hs__a21bo_2	0.00000	0.21381	0.29328
sky130_fd_sc_hs__a21bo_4	0.00000	0.31661	0.36077

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)	0.13254	0.86923	7.46263
	A2->X (RR)	0.13747	0.86233	7.48273
	B1_N->X (FR)	0.18507	0.96191	7.96670
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.12792	0.75711	7.34377
	A2->X (RR)	0.13348	0.74511	7.34260
	B1_N->X (FR)	0.19194	0.85872	7.87329
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.13162	0.68312	7.46139
	A2->X (RR)	0.14002	0.67691	7.47378
	B1_N->X (FR)	0.21449	0.82950	8.15509

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.21294	0.73350	4.31795
	A2->X (FF)	0.24066	0.77513	4.42284
	B1_N->X (RF)	0.24454	0.63702	3.25555
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.26994	0.78283	4.48994
	A2->X (FF)	0.30581	0.83327	4.61532
	B1_N->X (RF)	0.32016	0.69955	3.27025
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.25517	0.72216	4.38944
	A2->X (FF)	0.27978	0.76050	4.49860
	B1_N->X (RF)	0.28974	0.64305	3.24832

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00788	0.00799	0.01484
	A1	0.00438	0.00450	0.01137
	A2	0.00866	0.00876	0.01430
	A2	0.00440	0.00450	0.01006
	B1_N	0.00720	0.00784	0.01731
	B1_N	0.00895	0.00960	0.01929
sky130_fd_sc_hs__a21bo_2	A1	0.01032	0.01065	0.01758
	A1	0.00666	0.00700	0.01407
	A2	0.01106	0.01140	0.01698
	A2	0.00664	0.00697	0.01269
	B1_N	0.01000	0.01075	0.02012
	B1_N	0.01180	0.01255	0.02226
sky130_fd_sc_hs__a21bo_4	A1	0.01905	0.01972	0.03329
	A1	0.01269	0.01397	0.02706
	A2	0.02108	0.02168	0.03251
	A2	0.01271	0.01330	0.02424
	B1_N	0.01774	0.01880	0.02959
	B1_N	0.01902	0.02013	0.03130

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00423	0.00431	0.01024
	A1	0.00775	0.00782	0.01374
	A2	0.00436	0.00456	0.01034
	A2	0.00859	0.00880	0.01433
	B1_N	0.00928	0.00955	0.01827
	B1_N	0.00747	0.00766	0.01634
sky130_fd_sc_hs__a21bo_2	A1	0.00609	0.00639	0.01242
	A1	0.00977	0.01008	0.01600
	A2	0.00667	0.00703	0.01309
	A2	0.01107	0.01142	0.01708
	B1_N	0.01219	0.01251	0.02150
	B1_N	0.01032	0.01057	0.01914
sky130_fd_sc_hs__a21bo_4	A1	0.01204	0.01287	0.02531
	A1	0.01843	0.01918	0.03059
	A2	0.01245	0.01319	0.02460
	A2	0.02076	0.02149	0.03236
	B1_N	0.02053	0.02164	0.03174
	B1_N	0.01901	0.01980	0.02976

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)	0.00136	0.00114	0.00113
	(A2 * !B1_N * X)	-0.00147	-0.00170	-0.00171
	(!A2 * B1_N * !X)	0.00045	0.00045	0.00044
	(!A2 * B1_N * !X)	-0.00190	-0.00191	-0.00193
	(!A2 * !B1_N * X)	0.00107	0.00106	0.00107
	(!A2 * !B1_N * X)	-0.00173	-0.00173	-0.00173
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00156	0.00136	0.00135
	(A2 * !B1_N * X)	-0.00146	-0.00167	-0.00168
	(!A2 * B1_N * !X)	0.00057	0.00057	0.00055
	(!A2 * B1_N * !X)	-0.00189	-0.00189	-0.00192
	(!A2 * !B1_N * X)	0.00128	0.00129	0.00128
	(!A2 * !B1_N * X)	-0.00169	-0.00170	-0.00170
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00253	0.00217	0.00214
	(A2 * !B1_N * X)	-0.00276	-0.00320	-0.00322
	(!A2 * B1_N * !X)	0.00073	0.00075	0.00070
	(!A2 * B1_N * !X)	-0.00364	-0.00368	-0.00374
	(!A2 * !B1_N * X)	0.00202	0.00202	0.00203
	(!A2 * !B1_N * X)	-0.00325	-0.00326	-0.00326

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)	-0.00112	-0.00112	-0.00112
	(A2 * !B1_N * X)	0.00170	0.00172	0.00171
	(!A2 * B1_N * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * B1_N * !X)	0.00194	0.00195	0.00194
	(!A2 * !B1_N * X)	-0.00105	-0.00106	-0.00107
	(!A2 * !B1_N * X)	0.00173	0.00176	0.00174
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00134	-0.00134	-0.00134
	(A2 * !B1_N * X)	0.00167	0.00168	0.00168
	(!A2 * B1_N * !X)	-0.00053	-0.00053	-0.00053
	(!A2 * B1_N * !X)	0.00193	0.00194	0.00193
	(!A2 * !B1_N * X)	-0.00125	-0.00129	-0.00128
	(!A2 * !B1_N * X)	0.00169	0.00173	0.00170
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00213	-0.00214	-0.00212
	(A2 * !B1_N * X)	0.00321	0.00323	0.00322
	(!A2 * B1_N * !X)	-0.00067	-0.00067	-0.00067
	(!A2 * B1_N * !X)	0.00375	0.00377	0.00375
	(!A2 * !B1_N * X)	-0.00196	-0.00202	-0.00203
	(!A2 * !B1_N * X)	0.00326	0.00331	0.00327

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)	0.00150	0.00133	0.00131
	(A1 * !B1_N * X)	-0.00137	-0.00158	-0.00158
	(!A1 * B1_N * !X)	0.00126	0.00127	0.00126
	(!A1 * B1_N * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * !B1_N * X)	0.00125	0.00127	0.00125
	(!A1 * !B1_N * X)	-0.00160	-0.00161	-0.00160
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00153	0.00133	0.00131
	(A1 * !B1_N * X)	-0.00140	-0.00163	-0.00164
	(!A1 * B1_N * !X)	0.00126	0.00126	0.00125
	(!A1 * B1_N * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !B1_N * X)	0.00125	0.00125	0.00125
	(!A1 * !B1_N * X)	-0.00166	-0.00167	-0.00166
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00300	0.00268	0.00265
	(A1 * !B1_N * X)	-0.00280	-0.00319	-0.00320
	(!A1 * B1_N * !X)	0.00253	0.00256	0.00253
	(!A1 * B1_N * !X)	-0.00323	-0.00325	-0.00322
	(!A1 * !B1_N * X)	0.00252	0.00253	0.00252
	(!A1 * !B1_N * X)	-0.00323	-0.00325	-0.00323

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)	-0.00131	-0.00131	-0.00130
	(A1 * !B1_N * X)	0.00158	0.00159	0.00158
	(!A1 * B1_N * !X)	-0.00118	-0.00126	-0.00126
	(!A1 * B1_N * !X)	0.00167	0.00163	0.00161
	(!A1 * !B1_N * X)	-0.00123	-0.00127	-0.00125
	(!A1 * !B1_N * X)	0.00160	0.00163	0.00161
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1_N * X)	0.00163	0.00165	0.00164
	(!A1 * B1_N * !X)	-0.00117	-0.00125	-0.00125
	(!A1 * B1_N * !X)	0.00172	0.00169	0.00167
	(!A1 * !B1_N * X)	-0.00122	-0.00125	-0.00125
	(!A1 * !B1_N * X)	0.00166	0.00168	0.00167
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00263	-0.00264	-0.00263
	(A1 * !B1_N * X)	0.00318	0.00321	0.00320
	(!A1 * B1_N * !X)	-0.00237	-0.00252	-0.00253
	(!A1 * B1_N * !X)	0.00337	0.00326	0.00324
	(!A1 * !B1_N * X)	-0.00246	-0.00253	-0.00252
	(!A1 * !B1_N * X)	0.00323	0.00325	0.00325

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)	0.00352	0.00357	0.01266
	(A1 * A2 * X)	0.00057	0.00061	0.00973
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00396	0.00395	0.01288
	(A1 * A2 * X)	0.00089	0.00086	0.00980
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00538	0.00539	0.01511
	(A1 * A2 * X)	0.00180	0.00179	0.01152

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)	0.00110	0.00160	0.01121
	(A1 * A2 * X)	0.00403	0.00453	0.01413
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00133	0.00185	0.01130
	(A1 * A2 * X)	0.00439	0.00493	0.01437
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00206	0.00249	0.01273
	(A1 * A2 * X)	0.00561	0.00607	0.01630

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00298	0.00280	0.00292	0.35482
sky130_fd_sc_hs__a21oi_2	0.00544	0.00564	0.00442	0.64171
sky130_fd_sc_hs__a21oi_4	0.01107	0.01079	0.00873	1.24639

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21oi_1	0.00000	0.04077	0.07436
sky130_fd_sc_hs__a21oi_2	0.00000	0.06586	0.11209
sky130_fd_sc_hs__a21oi_4	0.00000	0.13017	0.22418

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)	0.12413	1.12073	10.43110
	A2->Y (FR)	0.15080	1.16892	10.64240
	B1->Y (FR)	0.11663	1.15057	10.96030
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.11426	0.98501	10.56290
	A2->Y (FR)	0.15022	1.01158	10.46100
	B1->Y (FR)	0.06381	0.95174	10.82070
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.10675	0.84348	10.44730
	A2->Y (FR)	0.13753	0.86506	10.31230
	B1->Y (FR)	0.05872	0.81761	10.74930

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.04880	0.58896	5.67211
	A2->Y (RF)	0.05329	0.54559	5.12396
	B1->Y (RF)	0.02819	0.45654	4.55227
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.04430	0.52771	5.68351
	A2->Y (RF)	0.05424	0.49125	5.09419
	B1->Y (RF)	0.03453	0.55013	6.18296
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.04341	0.47802	5.81025
	A2->Y (RF)	0.05095	0.43040	5.05451
	B1->Y (RF)	0.03453	0.50292	6.39071

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00007	-0.00019	0.00077
	A1	0.00491	0.00480	0.00579
	A2	0.00029	0.00020	0.00116
	A2	0.00609	0.00601	0.00699
	B1	-0.00032	-0.00021	0.00212
	B1	0.00501	0.00504	0.00719
sky130_fd_sc_hs__a21oi_2	A1	-0.00030	-0.00049	0.00149
	A1	0.00905	0.00889	0.01092
	A2	0.00110	0.00083	0.00280
	A2	0.01242	0.01216	0.01419
	B1	0.00018	0.00040	0.00311
	B1	0.00985	0.00963	0.01251
sky130_fd_sc_hs__a21oi_4	A1	-0.00124	-0.00160	0.00261
	A1	0.01792	0.01757	0.02187
	A2	0.00155	0.00107	0.00519
	A2	0.02416	0.02371	0.02790
	B1	0.00008	0.00049	0.00590
	B1	0.01900	0.01912	0.02416

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00622	0.00613	0.00790
	A1	0.00129	0.00118	0.00231
	A2	0.00708	0.00695	0.00802
	A2	0.00129	0.00114	0.00207
	B1	0.00456	0.00469	0.00604
	B1	-0.00028	-0.00019	0.00111
sky130_fd_sc_hs__a21oi_2	A1	0.01124	0.01107	0.01370
	A1	0.00200	0.00177	0.00406
	A2	0.01342	0.01306	0.01522
	A2	0.00203	0.00163	0.00352
	B1	0.00688	0.00716	0.00917
	B1	-0.00152	-0.00143	0.00031
sky130_fd_sc_hs__a21oi_4	A1	0.02242	0.02205	0.02780
	A1	0.00354	0.00302	0.00757
	A2	0.02607	0.02531	0.02961
	A2	0.00343	0.00263	0.00653
	B1	0.01340	0.01368	0.01796
	B1	-0.00276	-0.00262	0.00090

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00152	0.00134	0.00134
	(A2 * B1 * !Y)	-0.00153	-0.00174	-0.00174
	(!A2 * B1 * !Y)	0.00127	0.00127	0.00127
	(!A2 * B1 * !Y)	-0.00178	-0.00178	-0.00178
	(!A2 * !B1 * Y)	0.00045	0.00045	0.00043
	(!A2 * !B1 * Y)	-0.00207	-0.00208	-0.00210
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00301	0.00268	0.00266
	(A2 * B1 * !Y)	-0.00297	-0.00340	-0.00340
	(!A2 * B1 * !Y)	0.00247	0.00247	0.00248
	(!A2 * B1 * !Y)	-0.00350	-0.00350	-0.00351
	(!A2 * !B1 * Y)	0.00097	0.00097	0.00091
	(!A2 * !B1 * Y)	-0.00391	-0.00392	-0.00404
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00609	0.00540	0.00535
	(A2 * B1 * !Y)	-0.00590	-0.00682	-0.00679
	(!A2 * B1 * !Y)	0.00507	0.00507	0.00507
	(!A2 * B1 * !Y)	-0.00699	-0.00698	-0.00697
	(!A2 * !B1 * Y)	0.00183	0.00183	0.00172
	(!A2 * !B1 * Y)	-0.00809	-0.00813	-0.00831

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00133	-0.00134	-0.00133
	(A2 * B1 * !Y)	0.00173	0.00175	0.00174
	(!A2 * B1 * !Y)	-0.00125	-0.00127	-0.00127
	(!A2 * B1 * !Y)	0.00178	0.00181	0.00179
	(!A2 * !B1 * Y)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * Y)	0.00210	0.00212	0.00210
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00266	-0.00265	-0.00265
	(A2 * B1 * !Y)	0.00341	0.00340	0.00340
	(!A2 * B1 * !Y)	-0.00238	-0.00247	-0.00248
	(!A2 * B1 * !Y)	0.00353	0.00353	0.00351
	(!A2 * !B1 * Y)	-0.00089	-0.00089	-0.00088
	(!A2 * !B1 * Y)	0.00406	0.00408	0.00405
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00532	-0.00536	-0.00534
	(A2 * B1 * !Y)	0.00674	0.00682	0.00679
	(!A2 * B1 * !Y)	-0.00494	-0.00507	-0.00507
	(!A2 * B1 * !Y)	0.00700	0.00701	0.00699
	(!A2 * !B1 * Y)	-0.00168	-0.00169	-0.00166
	(!A2 * !B1 * Y)	0.00836	0.00845	0.00834

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00152	0.00135	0.00134
	(A1 * B1 * !Y)	-0.00152	-0.00174	-0.00174
	(!A1 * B1 * !Y)	0.00127	0.00128	0.00127
	(!A1 * B1 * !Y)	-0.00178	-0.00178	-0.00178
	(!A1 * !B1 * Y)	0.00128	0.00128	0.00128
	(!A1 * !B1 * Y)	-0.00177	-0.00178	-0.00178
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00313	0.00277	0.00275
	(A1 * B1 * !Y)	-0.00298	-0.00343	-0.00341
	(!A1 * B1 * !Y)	0.00257	0.00260	0.00258
	(!A1 * B1 * !Y)	-0.00351	-0.00353	-0.00352
	(!A1 * !B1 * Y)	0.00248	0.00250	0.00248
	(!A1 * !B1 * Y)	-0.00362	-0.00364	-0.00361
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00600	0.00526	0.00522
	(A1 * B1 * !Y)	-0.00606	-0.00701	-0.00697
	(!A1 * B1 * !Y)	0.00494	0.00493	0.00492
	(!A1 * B1 * !Y)	-0.00716	-0.00717	-0.00716
	(!A1 * !B1 * Y)	0.00486	0.00492	0.00490
	(!A1 * !B1 * Y)	-0.00716	-0.00720	-0.00718

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * B1 * !Y)	0.00173	0.00174	0.00174
	(!A1 * B1 * !Y)	-0.00125	-0.00128	-0.00127
	(!A1 * B1 * !Y)	0.00178	0.00179	0.00179
	(!A1 * !B1 * Y)	-0.00120	-0.00128	-0.00128
	(!A1 * !B1 * Y)	0.00185	0.00181	0.00179
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00274	-0.00276	-0.00274
	(A1 * B1 * !Y)	0.00338	0.00344	0.00341
	(!A1 * B1 * !Y)	-0.00249	-0.00260	-0.00258
	(!A1 * B1 * !Y)	0.00352	0.00356	0.00352
	(!A1 * !B1 * Y)	-0.00229	-0.00250	-0.00248
	(!A1 * !B1 * Y)	0.00374	0.00367	0.00362
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00520	-0.00523	-0.00520
	(A1 * B1 * !Y)	0.00695	0.00702	0.00697
	(!A1 * B1 * !Y)	-0.00480	-0.00493	-0.00492
	(!A1 * B1 * !Y)	0.00716	0.00726	0.00718
	(!A1 * !B1 * Y)	-0.00453	-0.00492	-0.00490
	(!A1 * !B1 * Y)	0.00747	0.00732	0.00722

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00157	0.00159	0.00158
	(A1 * A2 * !Y)	-0.00084	-0.00085	-0.00084
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00175	0.00177	0.00176
	(A1 * A2 * !Y)	-0.00173	-0.00175	-0.00174
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00340	0.00342	0.00340
	(A1 * A2 * !Y)	-0.00336	-0.00338	-0.00336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00148	-0.00148	-0.00157
	(A1 * A2 * !Y)	0.00094	0.00094	0.00087
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00154	-0.00157	-0.00174
	(A1 * A2 * !Y)	0.00192	0.00193	0.00178
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00299	-0.00303	-0.00337
	(A1 * A2 * !Y)	0.00370	0.00371	0.00345

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00249	0.00255	0.00256	0.75724
sky130_fd_sc_hs__a21o_2	0.00278	0.00268	0.00282	1.47732
sky130_fd_sc_hs__a21o_4	0.00504	0.00481	0.00514	2.85917

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21o_1	0.00000	0.09867	0.11466
sky130_fd_sc_hs__a21o_2	0.00000	0.13000	0.15004
sky130_fd_sc_hs__a21o_4	0.00000	0.25916	0.29607

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)	0.12615	0.84230	7.42752
	A2->X (RR)	0.13273	0.84003	7.45416
	B1->X (RR)	0.08934	0.76865	7.26515
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.12486	0.74347	7.40072
	A2->X (RR)	0.13060	0.73176	7.40240
	B1->X (RR)	0.08619	0.66808	7.22733
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.13892	0.69046	7.61112
	A2->X (RR)	0.14697	0.68212	7.61377
	B1->X (RR)	0.08916	0.60007	7.40092

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.20234	0.72980	4.49037
	A2->X (FF)	0.23388	0.77611	4.60425
	B1->X (FF)	0.19946	0.74740	4.52694
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.25440	0.77393	4.64674
	A2->X (FF)	0.28988	0.82132	4.77434
	B1->X (FF)	0.25789	0.80646	4.75401
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.25521	0.73773	4.70878
	A2->X (FF)	0.29040	0.78525	4.83713
	B1->X (FF)	0.25397	0.76349	4.80278

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00864	0.00875	0.01560
	A1	0.00439	0.00452	0.01141
	A2	0.00959	0.00966	0.01517
	A2	0.00440	0.00446	0.01000
	B1	0.00706	0.00712	0.01593
	B1	0.00292	0.00304	0.01272
sky130_fd_sc_hs__a21o_2	A1	0.01134	0.01167	0.01866
	A1	0.00670	0.00705	0.01413
	A2	0.01224	0.01257	0.01819
	A2	0.00670	0.00703	0.01274
	B1	0.00989	0.01020	0.01900
	B1	0.00527	0.00562	0.01537
sky130_fd_sc_hs__a21o_4	A1	0.02163	0.02217	0.03555
	A1	0.01277	0.01335	0.02727
	A2	0.02309	0.02364	0.03422
	A2	0.01276	0.01332	0.02444
	B1	0.01829	0.01894	0.03601
	B1	0.00966	0.01044	0.02922

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00306	0.00318	0.00916
	A1	0.00734	0.00744	0.01342
	A2	0.00320	0.00340	0.00912
	A2	0.00838	0.00858	0.01413
	B1	0.00293	0.00358	0.01266
	B1	0.00749	0.00800	0.01623
sky130_fd_sc_hs__a21o_2	A1	0.00501	0.00537	0.01203
	A1	0.00968	0.01003	0.01602
	A2	0.00541	0.00580	0.01165
	A2	0.01094	0.01135	0.01705
	B1	0.00547	0.00611	0.01546
	B1	0.01001	0.01064	0.01944
sky130_fd_sc_hs__a21o_4	A1	0.01017	0.01082	0.02237
	A1	0.01908	0.01971	0.03103
	A2	0.01137	0.01193	0.02331
	A2	0.02165	0.02240	0.03310
	B1	0.00976	0.01158	0.03090
	B1	0.01980	0.02121	0.03769

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00127	0.00107	0.00106
	(A2 * B1 * X)	-0.00136	-0.00158	-0.00159
	(!A2 * B1 * X)	0.00101	0.00102	0.00101
	(!A2 * B1 * X)	-0.00163	-0.00164	-0.00162
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00038
	(!A2 * !B1 * !X)	-0.00180	-0.00181	-0.00183
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00149	0.00129	0.00128
	(A2 * B1 * X)	-0.00138	-0.00160	-0.00160
	(!A2 * B1 * X)	0.00122	0.00123	0.00121
	(!A2 * B1 * X)	-0.00164	-0.00166	-0.00165
	(!A2 * !B1 * !X)	0.00049	0.00048	0.00046
	(!A2 * !B1 * !X)	-0.00185	-0.00186	-0.00189
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00269	0.00231	0.00229
	(A2 * B1 * X)	-0.00268	-0.00317	-0.00317
	(!A2 * B1 * X)	0.00218	0.00219	0.00218
	(!A2 * B1 * X)	-0.00325	-0.00326	-0.00325
	(!A2 * !B1 * !X)	0.00087	0.00087	0.00081
	(!A2 * !B1 * !X)	-0.00369	-0.00371	-0.00378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * X)	0.00158	0.00159	0.00159
	(!A2 * B1 * X)	-0.00099	-0.00102	-0.00101
	(!A2 * B1 * X)	0.00164	0.00166	0.00163
	(!A2 * !B1 * !X)	-0.00037	-0.00037	-0.00036
	(!A2 * !B1 * !X)	0.00184	0.00184	0.00183
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00127	-0.00128	-0.00127
	(A2 * B1 * X)	0.00159	0.00161	0.00160
	(!A2 * B1 * X)	-0.00118	-0.00123	-0.00121
	(!A2 * B1 * X)	0.00164	0.00168	0.00165
	(!A2 * !B1 * !X)	-0.00045	-0.00045	-0.00044
	(!A2 * !B1 * !X)	0.00189	0.00190	0.00190
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00228	-0.00228	-0.00227
	(A2 * B1 * X)	0.00318	0.00319	0.00317
	(!A2 * B1 * X)	-0.00211	-0.00219	-0.00218
	(!A2 * B1 * X)	0.00325	0.00330	0.00326
	(!A2 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(!A2 * !B1 * !X)	0.00379	0.00381	0.00380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00152	0.00135	0.00133
	(A1 * B1 * X)	-0.00135	-0.00157	-0.00157
	(!A1 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * B1 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * !B1 * !X)	0.00128	0.00129	0.00128
	(!A1 * !B1 * !X)	-0.00159	-0.00160	-0.00160
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00155	0.00136	0.00135
	(A1 * B1 * X)	-0.00137	-0.00160	-0.00160
	(!A1 * B1 * X)	0.00129	0.00130	0.00129
	(!A1 * B1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A1 * !B1 * !X)	-0.00164	-0.00164	-0.00164
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00265	0.00227	0.00225
	(A1 * B1 * X)	-0.00270	-0.00317	-0.00317
	(!A1 * B1 * X)	0.00214	0.00216	0.00214
	(!A1 * B1 * X)	-0.00324	-0.00326	-0.00324
	(!A1 * !B1 * !X)	0.00213	0.00216	0.00214
	(!A1 * !B1 * !X)	-0.00323	-0.00326	-0.00324

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00133	-0.00134	-0.00133
	(A1 * B1 * X)	0.00156	0.00158	0.00157
	(!A1 * B1 * X)	-0.00126	-0.00129	-0.00128
	(!A1 * B1 * X)	0.00160	0.00162	0.00161
	(!A1 * !B1 * !X)	-0.00121	-0.00129	-0.00128
	(!A1 * !B1 * !X)	0.00166	0.00163	0.00161
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00134	-0.00135	-0.00134
	(A1 * B1 * X)	0.00159	0.00161	0.00160
	(!A1 * B1 * X)	-0.00126	-0.00130	-0.00129
	(!A1 * B1 * X)	0.00164	0.00166	0.00165
	(!A1 * !B1 * !X)	-0.00121	-0.00129	-0.00129
	(!A1 * !B1 * !X)	0.00170	0.00167	0.00165
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00224	-0.00224	-0.00223
	(A1 * B1 * X)	0.00317	0.00318	0.00317
	(!A1 * B1 * X)	-0.00207	-0.00216	-0.00214
	(!A1 * B1 * X)	0.00324	0.00329	0.00325
	(!A1 * !B1 * !X)	-0.00198	-0.00215	-0.00214
	(!A1 * !B1 * !X)	0.00335	0.00330	0.00326

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00128	0.00129	0.00129
	(A1 * A2 * X)	-0.00080	-0.00080	-0.00080
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00154	0.00154	0.00154
	(A1 * A2 * X)	-0.00079	-0.00079	-0.00079
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00265	0.00268	0.00266
	(A1 * A2 * X)	-0.00163	-0.00164	-0.00163

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00118	-0.00119	-0.00127
	(A1 * A2 * X)	0.00089	0.00089	0.00082
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00143	-0.00144	-0.00153
	(A1 * A2 * X)	0.00089	0.00089	0.00081
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00244	-0.00245	-0.00264
	(A1 * A2 * X)	0.00184	0.00183	0.00168

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00287	0.00282	0.00293	0.00301	0.00302	0.22544
sky130_fd_sc_hs__a221oi_2	0.00608	0.00549	0.00598	0.00545	0.00558	0.40573
sky130_fd_sc_hs__a221oi_4	0.01122	0.01113	0.01113	0.01081	0.01105	0.73693

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221oi_1	0.00000	0.04463	0.11566
sky130_fd_sc_hs__a221oi_2	0.00000	0.08343	0.22440
sky130_fd_sc_hs__a221oi_4	0.00000	0.16695	0.44538

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)	0.32913	1.43458	10.02000
	A2->Y (FR)	0.36785	1.48105	10.07990
	B1->Y (FR)	0.28434	1.39283	10.49170
	B2->Y (FR)	0.32779	1.44706	10.59480
	C1->Y (FR)	0.24522	1.36275	10.69730
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.29619	1.20480	9.63553
	A2->Y (FR)	0.36716	1.31004	10.04750
	B1->Y (FR)	0.26743	1.20198	10.36490
	B2->Y (FR)	0.32110	1.27513	10.57660
	C1->Y (FR)	0.22898	1.19493	10.73670
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.31781	1.10224	9.69904
	A2->Y (FR)	0.37840	1.17453	9.85979
	B1->Y (FR)	0.26594	1.05483	10.18650
	B2->Y (FR)	0.32998	1.13874	10.44610
	C1->Y (FR)	0.23815	1.06454	10.71780

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.05826	0.55817	4.50700
	A2->Y (RF)	0.06354	0.51453	4.06599
	B1->Y (RF)	0.05918	0.53735	4.51094
	B2->Y (RF)	0.06583	0.50029	4.08078
	C1->Y (RF)	0.03396	0.41797	3.64628
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.05025	0.49377	4.38614
	A2->Y (RF)	0.05879	0.46330	3.99491
	B1->Y (RF)	0.05138	0.46951	4.33916
	B2->Y (RF)	0.05837	0.43871	3.95261
	C1->Y (RF)	0.02982	0.36071	3.54205
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.05131	0.46160	4.41940
	A2->Y (RF)	0.05938	0.41398	3.83250
	B1->Y (RF)	0.05534	0.43625	4.39151
	B2->Y (RF)	0.06293	0.39363	3.80587
	C1->Y (RF)	0.02747	0.31188	3.36347

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00181	0.00159	0.00235
	A1	0.00906	0.00886	0.00961
	A2	0.00208	0.00195	0.00271
	A2	0.01026	0.01013	0.01088
	B1	0.00128	0.00109	0.00230
	B1	0.00787	0.00765	0.00876
	B2	0.00219	0.00203	0.00312
	B2	0.00915	0.00899	0.01007
	C1	0.00107	0.00109	0.00394
	C1	0.00811	0.00803	0.01057
sky130_fd_sc_hs__a221oi_2	A1	0.00219	0.00174	0.00347
	A1	0.01704	0.01661	0.01832
	A2	0.00354	0.00321	0.00486
	A2	0.01967	0.01930	0.02098
	B1	0.00097	0.00062	0.00318
	B1	0.01479	0.01436	0.01666
	B2	0.00355	0.00322	0.00549
	B2	0.01717	0.01684	0.01912
	C1	0.00061	0.00092	0.00660
	C1	0.01513	0.01515	0.02011

sky130_fd_sc_hs__a221oi_4	**A1**	0.00409	0.00311	0.00665
	A1	0.03358	0.03265	0.03613
	A2	0.00623	0.00552	0.00903
	A2	0.03911	0.03845	0.04185
	B1	0.00101	0.00030	0.00552
	B1	0.02867	0.02773	0.03242
	B2	0.00617	0.00552	0.01010
	B2	0.03439	0.03377	0.03829
	C1	0.00024	0.00121	0.01236
	C1	0.02937	0.02940	0.03949

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01076	0.01059	0.01193
	A1	0.00377	0.00358	0.00490
	A2	0.01170	0.01155	0.01255
	A2	0.00374	0.00351	0.00456
	B1	0.00749	0.00751	0.00882
	B1	0.00143	0.00134	0.00275
	B2	0.00842	0.00830	0.00940
	B2	0.00141	0.00124	0.00239
	C1	0.00577	0.00591	0.00739
	C1	-0.00031	-0.00020	0.00137

sky130_fd_sc_hs__a221oi_2	**A1**	0.02021	0.01985	0.02268
	A1	0.00584	0.00547	0.00824
	A2	0.02175	0.02132	0.02344
	A2	0.00603	0.00554	0.00767
	B1	0.01431	0.01410	0.01703
	B1	0.00201	0.00172	0.00473
	B2	0.01589	0.01563	0.01790
	B2	0.00213	0.00178	0.00416
	C1	0.01065	0.01101	0.01407
	C1	-0.00128	-0.00107	0.00232
sky130_fd_sc_hs__a221oi_4	**A1**	0.04049	0.03967	0.04527
	A1	0.01226	0.01136	0.01691
	A2	0.04406	0.04298	0.04739
	A2	0.01216	0.01110	0.01555
	B1	0.02865	0.02824	0.03391
	B1	0.00389	0.00326	0.00940
	B2	0.03235	0.03173	0.03642
	B2	0.00392	0.00314	0.00812
	C1	0.02209	0.02247	0.02905
	C1	-0.00178	-0.00174	0.00556

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)**	0.00127	0.00128	0.00127
	(A2 * B1 * B2 * C1 * !Y)	-0.00165	-0.00174	-0.00172
	(A2 * B1 * B2 * !C1 * !Y)	0.00128	0.00128	0.00127
	(A2 * B1 * B2 * !C1 * !Y)	-0.00164	-0.00173	-0.00172
	(A2 * B1 * !B2 * C1 * !Y)	0.00128	0.00129	0.00127
	(A2 * B1 * !B2 * C1 * !Y)	-0.00158	-0.00168	-0.00166
	(A2 * !B1 * C1 * !Y)	0.00128	0.00129	0.00127
	(A2 * !B1 * C1 * !Y)	-0.00157	-0.00168	-0.00166
	(!A2 * B1 * B2 * C1 * !Y)	0.00120	0.00120	0.00120
	(!A2 * B1 * B2 * C1 * !Y)	-0.00177	-0.00177	-0.00177
	(!A2 * B1 * B2 * !C1 * !Y)	0.00120	0.00120	0.00120
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00177	-0.00177	-0.00177
	(!A2 * B1 * !B2 * C1 * !Y)	0.00120	0.00120	0.00120
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00177	-0.00177	-0.00177
	(!A2 * B1 * !B2 * !C1 * Y)	0.00045	0.00045	0.00043
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00198	-0.00199	-0.00202
	(!A2 * !B1 * C1 * !Y)	0.00120	0.00120	0.00120
	(!A2 * !B1 * C1 * !Y)	-0.00177	-0.00177	-0.00177
	(!A2 * !B1 * !C1 * Y)	0.00045	0.00045	0.00043
	(!A2 * !B1 * !C1 * Y)	-0.00198	-0.00199	-0.00202

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00269	0.00271	0.00270
	(A2 * B1 * B2 * C1 * !Y)	-0.00344	-0.00363	-0.00360
	(A2 * B1 * B2 * !C1 * !Y)	0.00270	0.00270	0.00270
	(A2 * B1 * B2 * !C1 * !Y)	-0.00341	-0.00363	-0.00360
	(A2 * B1 * !B2 * C1 * !Y)	0.00271	0.00270	0.00270
	(A2 * B1 * !B2 * C1 * !Y)	-0.00328	-0.00353	-0.00349
	(A2 * !B1 * C1 * !Y)	0.00271	0.00270	0.00270
	(A2 * !B1 * C1 * !Y)	-0.00328	-0.00353	-0.00349
	(!A2 * B1 * B2 * C1 * !Y)	0.00258	0.00260	0.00259
	(!A2 * B1 * B2 * C1 * !Y)	-0.00372	-0.00374	-0.00373
	(!A2 * B1 * B2 * !C1 * !Y)	0.00258	0.00259	0.00259
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00374	-0.00374	-0.00373
	(!A2 * B1 * !B2 * C1 * !Y)	0.00258	0.00257	0.00259
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00372	-0.00372	-0.00373
	(!A2 * B1 * !B2 * !C1 * Y)	0.00102	0.00103	0.00096
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00425	-0.00429	-0.00437
	(!A2 * !B1 * C1 * !Y)	0.00258	0.00260	0.00259
	(!A2 * !B1 * C1 * !Y)	-0.00372	-0.00374	-0.00373
	(!A2 * !B1 * !C1 * Y)	0.00102	0.00103	0.00096
	(!A2 * !B1 * !C1 * Y)	-0.00425	-0.00429	-0.00437

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00520	0.00522	0.00520
	(A2 * B1 * B2 * C1 * !Y)	-0.00665	-0.00701	-0.00697
	(A2 * B1 * B2 * !C1 * !Y)	0.00524	0.00523	0.00520
	(A2 * B1 * B2 * !C1 * !Y)	-0.00650	-0.00700	-0.00695
	(A2 * B1 * !B2 * C1 * !Y)	0.00524	0.00523	0.00520
	(A2 * B1 * !B2 * C1 * !Y)	-0.00625	-0.00678	-0.00671
	(A2 * !B1 * C1 * !Y)	0.00524	0.00523	0.00520
	(A2 * !B1 * C1 * !Y)	-0.00624	-0.00677	-0.00671
	(!A2 * B1 * B2 * C1 * !Y)	0.00494	0.00498	0.00495
	(!A2 * B1 * B2 * C1 * !Y)	-0.00716	-0.00719	-0.00716
	(!A2 * B1 * B2 * !C1 * !Y)	0.00494	0.00495	0.00494
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00716	-0.00716	-0.00714
	(!A2 * B1 * !B2 * C1 * !Y)	0.00493	0.00496	0.00495
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00721	-0.00724	-0.00722
	(!A2 * B1 * !B2 * !C1 * Y)	0.00184	0.00185	0.00174
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00821	-0.00829	-0.00843
	(!A2 * !B1 * C1 * !Y)	0.00494	0.00497	0.00495
	(!A2 * !B1 * C1 * !Y)	-0.00722	-0.00724	-0.00722
	(!A2 * !B1 * !C1 * Y)	0.00184	0.00186	0.00174
	(!A2 * !B1 * !C1 * Y)	-0.00821	-0.00829	-0.00843

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)**	-0.00126	-0.00128	-0.00127
	(A2 * B1 * B2 * C1 * !Y)	0.00171	0.00175	0.00172
	(A2 * B1 * B2 * !C1 * !Y)	-0.00126	-0.00127	-0.00127
	(A2 * B1 * B2 * !C1 * !Y)	0.00171	0.00173	0.00172
	(A2 * B1 * !B2 * C1 * !Y)	-0.00126	-0.00127	-0.00127
	(A2 * B1 * !B2 * C1 * !Y)	0.00165	0.00168	0.00166
	(A2 * !B1 * C1 * !Y)	-0.00126	-0.00127	-0.00127
	(A2 * !B1 * C1 * !Y)	0.00165	0.00168	0.00166
	(!A2 * B1 * B2 * C1 * !Y)	-0.00118	-0.00120	-0.00120
	(!A2 * B1 * B2 * C1 * !Y)	0.00177	0.00179	0.00177
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00118	-0.00120	-0.00120
	(!A2 * B1 * B2 * !C1 * !Y)	0.00178	0.00178	0.00177
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00119	-0.00120	-0.00120
	(!A2 * B1 * !B2 * C1 * !Y)	0.00178	0.00179	0.00177
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00042	-0.00042	-0.00042
	(!A2 * B1 * !B2 * !C1 * Y)	0.00203	0.00203	0.00202
	(!A2 * !B1 * C1 * !Y)	-0.00118	-0.00120	-0.00120
	(!A2 * !B1 * C1 * !Y)	0.00178	0.00179	0.00177
	(!A2 * !B1 * !C1 * Y)	-0.00043	-0.00042	-0.00042
	(!A2 * !B1 * !C1 * Y)	0.00204	0.00203	0.00202

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00269	-0.00270	-0.00269
	(A2 * B1 * B2 * C1 * !Y)	0.00362	0.00363	0.00360
	(A2 * B1 * B2 * !C1 * !Y)	-0.00269	-0.00270	-0.00269
	(A2 * B1 * B2 * !C1 * !Y)	0.00359	0.00363	0.00360
	(A2 * B1 * !B2 * C1 * !Y)	-0.00269	-0.00270	-0.00269
	(A2 * B1 * !B2 * C1 * !Y)	0.00349	0.00353	0.00349
	(A2 * !B1 * C1 * !Y)	-0.00269	-0.00270	-0.00269
	(A2 * !B1 * C1 * !Y)	0.00349	0.00353	0.00349
	(!A2 * B1 * B2 * C1 * !Y)	-0.00251	-0.00260	-0.00259
	(!A2 * B1 * B2 * C1 * !Y)	0.00373	0.00378	0.00374
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00252	-0.00259	-0.00259
	(!A2 * B1 * B2 * !C1 * !Y)	0.00376	0.00376	0.00374
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00252	-0.00257	-0.00259
	(!A2 * B1 * !B2 * C1 * !Y)	0.00376	0.00374	0.00374
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * B1 * !B2 * !C1 * Y)	0.00438	0.00440	0.00438
	(!A2 * !B1 * C1 * !Y)	-0.00252	-0.00260	-0.00259
	(!A2 * !B1 * C1 * !Y)	0.00376	0.00375	0.00374
	(!A2 * !B1 * !C1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * !B1 * !C1 * Y)	0.00438	0.00440	0.00438

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00517	-0.00521	-0.00520
	(A2 * B1 * B2 * C1 * !Y)	0.00691	0.00701	0.00697
	(A2 * B1 * B2 * !C1 * !Y)	-0.00519	-0.00522	-0.00519
	(A2 * B1 * B2 * !C1 * !Y)	0.00693	0.00700	0.00695
	(A2 * B1 * !B2 * C1 * !Y)	-0.00518	-0.00522	-0.00519
	(A2 * B1 * !B2 * C1 * !Y)	0.00670	0.00678	0.00671
	(A2 * !B1 * C1 * !Y)	-0.00518	-0.00522	-0.00519
	(A2 * !B1 * C1 * !Y)	0.00670	0.00677	0.00671
	(!A2 * B1 * B2 * C1 * !Y)	-0.00484	-0.00498	-0.00495
	(!A2 * B1 * B2 * C1 * !Y)	0.00721	0.00727	0.00718
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00483	-0.00495	-0.00494
	(!A2 * B1 * B2 * !C1 * !Y)	0.00719	0.00718	0.00717
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00483	-0.00496	-0.00495
	(!A2 * B1 * !B2 * C1 * !Y)	0.00727	0.00728	0.00724
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00168	-0.00168	-0.00167
	(!A2 * B1 * !B2 * !C1 * Y)	0.00844	0.00848	0.00845
	(!A2 * !B1 * C1 * !Y)	-0.00482	-0.00497	-0.00495
	(!A2 * !B1 * C1 * !Y)	0.00726	0.00727	0.00724
	(!A2 * !B1 * !C1 * Y)	-0.00168	-0.00169	-0.00167
	(!A2 * !B1 * !C1 * Y)	0.00844	0.00849	0.00845

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)**	0.00136	0.00137	0.00135
	(A1 * B1 * B2 * C1 * !Y)	-0.00168	-0.00177	-0.00175
	(A1 * B1 * B2 * !C1 * !Y)	0.00135	0.00137	0.00135
	(A1 * B1 * B2 * !C1 * !Y)	-0.00165	-0.00175	-0.00175
	(A1 * B1 * !B2 * C1 * !Y)	0.00136	0.00137	0.00135
	(A1 * B1 * !B2 * C1 * !Y)	-0.00159	-0.00170	-0.00169
	(A1 * !B1 * C1 * !Y)	0.00136	0.00137	0.00135
	(A1 * !B1 * C1 * !Y)	-0.00159	-0.00170	-0.00169
	(!A1 * B1 * B2 * !Y)	0.00128	0.00129	0.00128
	(!A1 * B1 * B2 * !Y)	-0.00180	-0.00181	-0.00180
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00128	0.00129	0.00128
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00180	-0.00180	-0.00180
	(!A1 * B1 * !B2 * !C1 * Y)	0.00129	0.00130	0.00129
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !B1 * !C1 * Y)	0.00129	0.00130	0.00129
	(!A1 * !B1 * !C1 * Y)	-0.00179	-0.00180	-0.00179

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00258	0.00258	0.00257
	(A1 * B1 * B2 * C1 * !Y)	-0.00321	-0.00339	-0.00337
	(A1 * B1 * B2 * !C1 * !Y)	0.00259	0.00258	0.00257
	(A1 * B1 * B2 * !C1 * !Y)	-0.00319	-0.00339	-0.00337
	(A1 * B1 * !B2 * C1 * !Y)	0.00260	0.00258	0.00257
	(A1 * B1 * !B2 * C1 * !Y)	-0.00307	-0.00329	-0.00326
	(A1 * !B1 * C1 * !Y)	0.00260	0.00258	0.00257
	(A1 * !B1 * C1 * !Y)	-0.00307	-0.00329	-0.00326
	(!A1 * B1 * B2 * !Y)	0.00246	0.00247	0.00246
	(!A1 * B1 * B2 * !Y)	-0.00349	-0.00349	-0.00349
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00246	0.00248	0.00246
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00348	-0.00349	-0.00349
	(!A1 * B1 * !B2 * !C1 * Y)	0.00235	0.00237	0.00235
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00360	-0.00362	-0.00359
	(!A1 * !B1 * !C1 * Y)	0.00234	0.00237	0.00235
	(!A1 * !B1 * !C1 * Y)	-0.00359	-0.00362	-0.00359

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00527	0.00529	0.00526
	(A1 * B1 * B2 * C1 * !Y)	-0.00670	-0.00705	-0.00700
	(A1 * B1 * B2 * !C1 * !Y)	0.00532	0.00529	0.00526
	(A1 * B1 * B2 * !C1 * !Y)	-0.00654	-0.00702	-0.00697
	(A1 * B1 * !B2 * C1 * !Y)	0.00532	0.00529	0.00526
	(A1 * B1 * !B2 * C1 * !Y)	-0.00630	-0.00680	-0.00675
	(A1 * !B1 * C1 * !Y)	0.00532	0.00529	0.00526
	(A1 * !B1 * C1 * !Y)	-0.00630	-0.00680	-0.00674
	(!A1 * B1 * B2 * !Y)	0.00502	0.00506	0.00501
	(!A1 * B1 * B2 * !Y)	-0.00719	-0.00723	-0.00719
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00502	0.00505	0.00501
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00726	-0.00730	-0.00727
	(!A1 * B1 * !B2 * !C1 * Y)	0.00471	0.00475	0.00470
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00759	-0.00761	-0.00757
	(!A1 * !B1 * !C1 * Y)	0.00471	0.00475	0.00470
	(!A1 * !B1 * !C1 * Y)	-0.00759	-0.00762	-0.00757

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)**	-0.00135	-0.00136	-0.00135
	(A1 * B1 * B2 * C1 * !Y)	0.00175	0.00177	0.00175
	(A1 * B1 * B2 * !C1 * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * B2 * !C1 * !Y)	0.00175	0.00175	0.00175
	(A1 * B1 * !B2 * C1 * !Y)	-0.00135	-0.00136	-0.00135
	(A1 * B1 * !B2 * C1 * !Y)	0.00169	0.00170	0.00169
	(A1 * !B1 * C1 * !Y)	-0.00135	-0.00136	-0.00135
	(A1 * !B1 * C1 * !Y)	0.00169	0.00170	0.00169
	(!A1 * B1 * B2 * !Y)	-0.00126	-0.00129	-0.00128
	(!A1 * B1 * B2 * !Y)	0.00180	0.00181	0.00181
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00126	-0.00129	-0.00128
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00180	0.00183	0.00181
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00121	-0.00129	-0.00129
	(!A1 * B1 * !B2 * !C1 * Y)	0.00186	0.00183	0.00180
	(!A1 * !B1 * !C1 * Y)	-0.00121	-0.00129	-0.00129
	(!A1 * !B1 * !C1 * Y)	0.00186	0.00183	0.00180

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00257	-0.00257	-0.00256
	(A1 * B1 * B2 * C1 * !Y)	0.00338	0.00339	0.00337
	(A1 * B1 * B2 * !C1 * !Y)	-0.00257	-0.00257	-0.00256
	(A1 * B1 * B2 * !C1 * !Y)	0.00337	0.00339	0.00337
	(A1 * B1 * !B2 * C1 * !Y)	-0.00256	-0.00258	-0.00256
	(A1 * B1 * !B2 * C1 * !Y)	0.00326	0.00329	0.00326
	(A1 * !B1 * C1 * !Y)	-0.00256	-0.00258	-0.00256
	(A1 * !B1 * C1 * !Y)	0.00325	0.00329	0.00326
	(!A1 * B1 * B2 * !Y)	-0.00239	-0.00247	-0.00246
	(!A1 * B1 * B2 * !Y)	0.00349	0.00353	0.00350
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00239	-0.00248	-0.00246
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00348	0.00353	0.00350
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00219	-0.00236	-0.00235
	(!A1 * B1 * !B2 * !C1 * Y)	0.00370	0.00365	0.00361
	(!A1 * !B1 * !C1 * Y)	-0.00219	-0.00236	-0.00235
	(!A1 * !B1 * !C1 * Y)	0.00370	0.00365	0.00361

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00525	-0.00527	-0.00525
	(A1 * B1 * B2 * C1 * !Y)	0.00700	0.00705	0.00700
	(A1 * B1 * B2 * !C1 * !Y)	-0.00526	-0.00527	-0.00525
	(A1 * B1 * B2 * !C1 * !Y)	0.00699	0.00702	0.00697
	(A1 * B1 * !B2 * C1 * !Y)	-0.00524	-0.00527	-0.00524
	(A1 * B1 * !B2 * C1 * !Y)	0.00674	0.00680	0.00675
	(A1 * !B1 * C1 * !Y)	-0.00524	-0.00527	-0.00524
	(A1 * !B1 * C1 * !Y)	0.00673	0.00680	0.00674
	(!A1 * B1 * B2 * !Y)	-0.00489	-0.00506	-0.00501
	(!A1 * B1 * B2 * !Y)	0.00719	0.00728	0.00721
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00489	-0.00505	-0.00501
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00726	0.00736	0.00729
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00437	-0.00474	-0.00470
	(!A1 * B1 * !B2 * !C1 * Y)	0.00781	0.00770	0.00760
	(!A1 * !B1 * !C1 * Y)	-0.00437	-0.00474	-0.00470
	(!A1 * !B1 * !C1 * Y)	0.00781	0.00770	0.00760

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)**	0.00145	0.00142	0.00134
	(A1 * A2 * B2 * C1 * !Y)	-0.00131	-0.00133	-0.00132
	(A1 * A2 * B2 * !C1 * !Y)	0.00130	0.00131	0.00130
	(A1 * A2 * B2 * !C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * !B2 * C1 * !Y)	0.00128	0.00130	0.00125
	(A1 * A2 * !B2 * C1 * !Y)	-0.00124	-0.00124	-0.00123
	(A1 * A2 * !B2 * !C1 * !Y)	0.00123	0.00124	0.00123
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * B2 * C1 * !Y)	0.00149	0.00131	0.00130
	(A1 * !A2 * B2 * C1 * !Y)	-0.00151	-0.00174	-0.00173
	(A1 * !A2 * !B2 * C1 * !Y)	0.00123	0.00124	0.00123
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B2 * !C1 * Y)	0.00044	0.00044	0.00043
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00202	-0.00202	-0.00206
	(!A1 * B2 * C1 * !Y)	0.00149	0.00131	0.00130
	(!A1 * B2 * C1 * !Y)	-0.00151	-0.00174	-0.00173
	(!A1 * !B2 * C1 * !Y)	0.00123	0.00124	0.00123
	(!A1 * !B2 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(!A1 * !B2 * !C1 * Y)	0.00044	0.00044	0.00043
	(!A1 * !B2 * !C1 * Y)	-0.00202	-0.00202	-0.00206

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00295	0.00293	0.00274
	(A1 * A2 * B2 * C1 * !Y)	-0.00264	-0.00266	-0.00265
	(A1 * A2 * B2 * !C1 * !Y)	0.00265	0.00265	0.00263
	(A1 * A2 * B2 * !C1 * !Y)	-0.00201	-0.00200	-0.00201
	(A1 * A2 * !B2 * C1 * !Y)	0.00265	0.00265	0.00254
	(A1 * A2 * !B2 * C1 * !Y)	-0.00247	-0.00247	-0.00245
	(A1 * A2 * !B2 * !C1 * !Y)	0.00251	0.00252	0.00250
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00198	-0.00199	-0.00200
	(A1 * !A2 * B2 * C1 * !Y)	0.00311	0.00265	0.00262
	(A1 * !A2 * B2 * C1 * !Y)	-0.00308	-0.00360	-0.00358
	(A1 * !A2 * !B2 * C1 * !Y)	0.00249	0.00252	0.00249
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00366	-0.00370	-0.00368
	(A1 * !A2 * !B2 * !C1 * Y)	0.00092	0.00091	0.00087
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00421	-0.00422	-0.00429
	(!A1 * B2 * C1 * !Y)	0.00310	0.00266	0.00262
	(!A1 * B2 * C1 * !Y)	-0.00308	-0.00358	-0.00358
	(!A1 * !B2 * C1 * !Y)	0.00249	0.00252	0.00249
	(!A1 * !B2 * C1 * !Y)	-0.00369	-0.00367	-0.00368
	(!A1 * !B2 * !C1 * Y)	0.00092	0.00091	0.00087
	(!A1 * !B2 * !C1 * Y)	-0.00422	-0.00421	-0.00429

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00594	0.00579	0.00538
	(A1 * A2 * B2 * C1 * !Y)	-0.00503	-0.00507	-0.00503
	(A1 * A2 * B2 * !C1 * !Y)	0.00528	0.00527	0.00519
	(A1 * A2 * B2 * !C1 * !Y)	-0.00381	-0.00378	-0.00380
	(A1 * A2 * !B2 * C1 * !Y)	0.00515	0.00519	0.00497
	(A1 * A2 * !B2 * C1 * !Y)	-0.00471	-0.00470	-0.00468
	(A1 * A2 * !B2 * !C1 * !Y)	0.00497	0.00498	0.00491
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00378	-0.00379	-0.00379
	(A1 * !A2 * B2 * C1 * !Y)	0.00625	0.00524	0.00517
	(A1 * !A2 * B2 * C1 * !Y)	-0.00576	-0.00689	-0.00688
	(A1 * !A2 * !B2 * C1 * !Y)	0.00489	0.00492	0.00490
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00716	-0.00719	-0.00717
	(A1 * !A2 * !B2 * !C1 * Y)	0.00184	0.00182	0.00172
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00815	-0.00814	-0.00833
	(!A1 * B2 * C1 * !Y)	0.00623	0.00524	0.00517
	(!A1 * B2 * C1 * !Y)	-0.00578	-0.00689	-0.00688
	(!A1 * !B2 * C1 * !Y)	0.00490	0.00492	0.00489
	(!A1 * !B2 * C1 * !Y)	-0.00719	-0.00719	-0.00717
	(!A1 * !B2 * !C1 * Y)	0.00185	0.00183	0.00173
	(!A1 * !B2 * !C1 * Y)	-0.00815	-0.00814	-0.00833

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)**	-0.00130	-0.00131	-0.00131
	(A1 * A2 * B2 * C1 * !Y)	0.00131	0.00133	0.00132
	(A1 * A2 * B2 * !C1 * !Y)	-0.00122	-0.00123	-0.00125
	(A1 * A2 * B2 * !C1 * !Y)	0.00105	0.00105	0.00103
	(A1 * A2 * !B2 * C1 * !Y)	-0.00122	-0.00125	-0.00125
	(A1 * A2 * !B2 * C1 * !Y)	0.00124	0.00124	0.00123
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00122	-0.00124	-0.00123
	(A1 * A2 * !B2 * !C1 * !Y)	0.00097	0.00097	0.00097
	(A1 * !A2 * B2 * C1 * !Y)	-0.00130	-0.00130	-0.00129
	(A1 * !A2 * B2 * C1 * !Y)	0.00174	0.00174	0.00173
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00121	-0.00124	-0.00123
	(A1 * !A2 * !B2 * C1 * !Y)	0.00179	0.00180	0.00178
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00041	-0.00042	-0.00041
	(A1 * !A2 * !B2 * !C1 * Y)	0.00206	0.00207	0.00207
	(!A1 * B2 * C1 * !Y)	-0.00130	-0.00130	-0.00129
	(!A1 * B2 * C1 * !Y)	0.00174	0.00174	0.00173
	(!A1 * !B2 * C1 * !Y)	-0.00121	-0.00124	-0.00123
	(!A1 * !B2 * C1 * !Y)	0.00179	0.00180	0.00178
	(!A1 * !B2 * !C1 * Y)	-0.00041	-0.00042	-0.00041
	(!A1 * !B2 * !C1 * Y)	0.00206	0.00207	0.00207

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00264	-0.00265	-0.00264
	(A1 * A2 * B2 * C1 * !Y)	0.00264	0.00266	0.00265
	(A1 * A2 * B2 * !C1 * !Y)	-0.00252	-0.00255	-0.00254
	(A1 * A2 * B2 * !C1 * !Y)	0.00209	0.00211	0.00210
	(A1 * A2 * !B2 * C1 * !Y)	-0.00246	-0.00255	-0.00254
	(A1 * A2 * !B2 * C1 * !Y)	0.00247	0.00247	0.00245
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00245	-0.00252	-0.00250
	(A1 * A2 * !B2 * !C1 * !Y)	0.00201	0.00200	0.00200
	(A1 * !A2 * B2 * C1 * !Y)	-0.00263	-0.00263	-0.00261
	(A1 * !A2 * B2 * C1 * !Y)	0.00360	0.00360	0.00358
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00242	-0.00252	-0.00249
	(A1 * !A2 * !B2 * C1 * !Y)	0.00366	0.00372	0.00369
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * !B2 * !C1 * Y)	0.00429	0.00431	0.00430
	(!A1 * B2 * C1 * !Y)	-0.00261	-0.00261	-0.00261
	(!A1 * B2 * C1 * !Y)	0.00356	0.00358	0.00358
	(!A1 * !B2 * C1 * !Y)	-0.00244	-0.00251	-0.00249
	(!A1 * !B2 * C1 * !Y)	0.00370	0.00367	0.00369
	(!A1 * !B2 * !C1 * Y)	-0.00084	-0.00085	-0.00084
	(!A1 * !B2 * !C1 * Y)	0.00429	0.00431	0.00430

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00518	-0.00522	-0.00519
	(A1 * A2 * B2 * C1 * !Y)	0.00503	0.00507	0.00503
	(A1 * A2 * B2 * !C1 * !Y)	-0.00505	-0.00509	-0.00504
	(A1 * A2 * B2 * !C1 * !Y)	0.00404	0.00407	0.00399
	(A1 * A2 * !B2 * C1 * !Y)	-0.00480	-0.00498	-0.00497
	(A1 * A2 * !B2 * C1 * !Y)	0.00471	0.00470	0.00468
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00478	-0.00496	-0.00491
	(A1 * A2 * !B2 * !C1 * !Y)	0.00382	0.00381	0.00380
	(A1 * !A2 * B2 * C1 * !Y)	-0.00515	-0.00515	-0.00512
	(A1 * !A2 * B2 * C1 * !Y)	0.00688	0.00689	0.00688
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00477	-0.00492	-0.00490
	(A1 * !A2 * !B2 * C1 * !Y)	0.00720	0.00719	0.00718
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00167	-0.00167	-0.00165
	(A1 * !A2 * !B2 * !C1 * Y)	0.00837	0.00837	0.00834
	(!A1 * B2 * C1 * !Y)	-0.00513	-0.00515	-0.00512
	(!A1 * B2 * C1 * !Y)	0.00684	0.00689	0.00688
	(!A1 * !B2 * C1 * !Y)	-0.00476	-0.00492	-0.00489
	(!A1 * !B2 * C1 * !Y)	0.00719	0.00719	0.00718
	(!A1 * !B2 * !C1 * Y)	-0.00168	-0.00167	-0.00166
	(!A1 * !B2 * !C1 * Y)	0.00837	0.00837	0.00834

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)**	0.00151	0.00148	0.00139
	(A1 * A2 * B1 * C1 * !Y)	-0.00137	-0.00137	-0.00136
	(A1 * A2 * B1 * !C1 * !Y)	0.00135	0.00135	0.00134
	(A1 * A2 * B1 * !C1 * !Y)	-0.00100	-0.00101	-0.00101
	(A1 * A2 * !B1 * C1 * !Y)	0.00132	0.00134	0.00129
	(A1 * A2 * !B1 * C1 * !Y)	-0.00126	-0.00127	-0.00126
	(A1 * A2 * !B1 * !C1 * !Y)	0.00128	0.00130	0.00127
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00100	-0.00101	-0.00100
	(A1 * !A2 * B1 * C1 * !Y)	0.00155	0.00135	0.00134
	(A1 * !A2 * B1 * C1 * !Y)	-0.00154	-0.00179	-0.00178
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00126	0.00128	0.00127
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00182	-0.00184	-0.00183
	(A1 * !A2 * !B1 * !C1 * Y)	0.00118	0.00119	0.00118
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00191	-0.00192	-0.00192
	(!A1 * B1 * C1 * !Y)	0.00155	0.00135	0.00134
	(!A1 * B1 * C1 * !Y)	-0.00154	-0.00179	-0.00178
	(!A1 * !B1 * !C1 * Y)	0.00117	0.00119	0.00118
	(!A1 * !B1 * !C1 * Y)	-0.00191	-0.00192	-0.00192

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00284	0.00282	0.00265
	(A1 * A2 * B1 * C1 * !Y)	-0.00250	-0.00252	-0.00250
	(A1 * A2 * B1 * !C1 * !Y)	0.00257	0.00258	0.00256
	(A1 * A2 * B1 * !C1 * !Y)	-0.00185	-0.00185	-0.00185
	(A1 * A2 * !B1 * C1 * !Y)	0.00254	0.00254	0.00246
	(A1 * A2 * !B1 * C1 * !Y)	-0.00231	-0.00234	-0.00232
	(A1 * A2 * !B1 * !C1 * !Y)	0.00244	0.00245	0.00243
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * B1 * C1 * !Y)	0.00298	0.00258	0.00255
	(A1 * !A2 * B1 * C1 * !Y)	-0.00292	-0.00337	-0.00337
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00243	0.00245	0.00242
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00346	-0.00349	-0.00347
	(A1 * !A2 * !B1 * !C1 * Y)	0.00233	0.00236	0.00235
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00353	-0.00355	-0.00354
	(!A1 * B1 * C1 * !Y)	0.00298	0.00258	0.00255
	(!A1 * B1 * C1 * !Y)	-0.00292	-0.00337	-0.00338
	(!A1 * !B1 * !C1 * Y)	0.00233	0.00235	0.00235
	(!A1 * !B1 * !C1 * Y)	-0.00353	-0.00355	-0.00354

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00591	0.00579	0.00539
	(A1 * A2 * B1 * C1 * !Y)	-0.00503	-0.00507	-0.00503
	(A1 * A2 * B1 * !C1 * !Y)	0.00529	0.00528	0.00520
	(A1 * A2 * B1 * !C1 * !Y)	-0.00381	-0.00379	-0.00381
	(A1 * A2 * !B1 * C1 * !Y)	0.00517	0.00515	0.00495
	(A1 * A2 * !B1 * C1 * !Y)	-0.00468	-0.00473	-0.00469
	(A1 * A2 * !B1 * !C1 * !Y)	0.00497	0.00499	0.00491
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00378	-0.00379	-0.00379
	(A1 * !A2 * B1 * C1 * !Y)	0.00623	0.00526	0.00518
	(A1 * !A2 * B1 * C1 * !Y)	-0.00568	-0.00686	-0.00688
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00491	0.00494	0.00489
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00715	-0.00720	-0.00716
	(A1 * !A2 * !B1 * !C1 * Y)	0.00491	0.00492	0.00491
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00716	-0.00716	-0.00714
	(!A1 * B1 * C1 * !Y)	0.00622	0.00526	0.00518
	(!A1 * B1 * C1 * !Y)	-0.00570	-0.00685	-0.00688
	(!A1 * !B1 * !C1 * Y)	0.00492	0.00493	0.00491
	(!A1 * !B1 * !C1 * Y)	-0.00716	-0.00716	-0.00714

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)**	-0.00135	-0.00135	-0.00135
	(A1 * A2 * B1 * C1 * !Y)	0.00137	0.00137	0.00136
	(A1 * A2 * B1 * !C1 * !Y)	-0.00128	-0.00128	-0.00130
	(A1 * A2 * B1 * !C1 * !Y)	0.00108	0.00108	0.00106
	(A1 * A2 * !B1 * C1 * !Y)	-0.00126	-0.00129	-0.00129
	(A1 * A2 * !B1 * C1 * !Y)	0.00126	0.00127	0.00126
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00126	-0.00128	-0.00127
	(A1 * A2 * !B1 * !C1 * !Y)	0.00101	0.00101	0.00100
	(A1 * !A2 * B1 * C1 * !Y)	-0.00134	-0.00134	-0.00133
	(A1 * !A2 * B1 * C1 * !Y)	0.00178	0.00179	0.00178
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00125	-0.00128	-0.00127
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00183	0.00185	0.00183
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00110	-0.00118	-0.00118
	(A1 * !A2 * !B1 * !C1 * Y)	0.00200	0.00195	0.00193
	(!A1 * B1 * C1 * !Y)	-0.00134	-0.00134	-0.00133
	(!A1 * B1 * C1 * !Y)	0.00178	0.00179	0.00178
	(!A1 * !B1 * !C1 * Y)	-0.00110	-0.00118	-0.00118
	(!A1 * !B1 * !C1 * Y)	0.00200	0.00195	0.00193

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00256	-0.00258	-0.00257
	(A1 * A2 * B1 * C1 * !Y)	0.00250	0.00252	0.00250
	(A1 * A2 * B1 * !C1 * !Y)	-0.00242	-0.00245	-0.00247
	(A1 * A2 * B1 * !C1 * !Y)	0.00195	0.00197	0.00195
	(A1 * A2 * !B1 * C1 * !Y)	-0.00238	-0.00247	-0.00246
	(A1 * A2 * !B1 * C1 * !Y)	0.00231	0.00234	0.00232
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00237	-0.00245	-0.00243
	(A1 * A2 * !B1 * !C1 * !Y)	0.00184	0.00186	0.00184
	(A1 * !A2 * B1 * C1 * !Y)	-0.00255	-0.00255	-0.00254
	(A1 * !A2 * B1 * C1 * !Y)	0.00338	0.00337	0.00337
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00236	-0.00245	-0.00242
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00346	0.00350	0.00347
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00217	-0.00235	-0.00235
	(A1 * !A2 * !B1 * !C1 * Y)	0.00368	0.00360	0.00356
	(!A1 * B1 * C1 * !Y)	-0.00255	-0.00255	-0.00254
	(!A1 * B1 * C1 * !Y)	0.00338	0.00337	0.00338
	(!A1 * !B1 * !C1 * Y)	-0.00217	-0.00235	-0.00235
	(!A1 * !B1 * !C1 * Y)	0.00368	0.00360	0.00356

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00520	-0.00522	-0.00520
	(A1 * A2 * B1 * C1 * !Y)	0.00503	0.00507	0.00503
	(A1 * A2 * B1 * !C1 * !Y)	-0.00504	-0.00508	-0.00505
	(A1 * A2 * B1 * !C1 * !Y)	0.00404	0.00406	0.00399
	(A1 * A2 * !B1 * C1 * !Y)	-0.00480	-0.00499	-0.00495
	(A1 * A2 * !B1 * C1 * !Y)	0.00468	0.00473	0.00469
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00479	-0.00498	-0.00491
	(A1 * A2 * !B1 * !C1 * !Y)	0.00380	0.00383	0.00380
	(A1 * !A2 * B1 * C1 * !Y)	-0.00516	-0.00515	-0.00513
	(A1 * !A2 * B1 * C1 * !Y)	0.00687	0.00686	0.00688
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00477	-0.00494	-0.00489
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00715	0.00723	0.00718
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00453	-0.00492	-0.00491
	(A1 * !A2 * !B1 * !C1 * Y)	0.00743	0.00725	0.00718
	(!A1 * B1 * C1 * !Y)	-0.00516	-0.00515	-0.00513
	(!A1 * B1 * C1 * !Y)	0.00688	0.00685	0.00688
	(!A1 * !B1 * !C1 * Y)	-0.00453	-0.00493	-0.00491
	(!A1 * !B1 * !C1 * Y)	0.00743	0.00725	0.00718

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)	0.00157	0.00157	0.00157
	(A1 * B1 * B2 * !Y)	-0.00092	-0.00092	-0.00091
	(A1 * A2 * B1 * !B2 * !Y)	0.00156	0.00157	0.00157
	(A1 * A2 * B1 * !B2 * !Y)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * !B1 * !Y)	0.00156	0.00157	0.00157
	(A1 * A2 * !B1 * !Y)	-0.00091	-0.00092	-0.00091
	(!A1 * B1 * B2 * !Y)	0.00156	0.00158	0.00157
	(!A1 * B1 * B2 * !Y)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00293	0.00294	0.00294
	(A1 * B1 * B2 * !Y)	-0.00168	-0.00169	-0.00169
	(A1 * A2 * B1 * !B2 * !Y)	0.00293	0.00295	0.00294
	(A1 * A2 * B1 * !B2 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * A2 * !B1 * !Y)	0.00293	0.00295	0.00294
	(A1 * A2 * !B1 * !Y)	-0.00168	-0.00169	-0.00168
	(!A1 * B1 * B2 * !Y)	0.00293	0.00295	0.00294
	(!A1 * B1 * B2 * !Y)	-0.00168	-0.00170	-0.00169
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00584	0.00583	0.00581
	(A1 * B1 * B2 * !Y)	-0.00342	-0.00339	-0.00338
	(A1 * A2 * B1 * !B2 * !Y)	0.00579	0.00584	0.00581
	(A1 * A2 * B1 * !B2 * !Y)	-0.00337	-0.00339	-0.00337
	(A1 * A2 * !B1 * !Y)	0.00583	0.00585	0.00581
	(A1 * A2 * !B1 * !Y)	-0.00341	-0.00340	-0.00337
	(!A1 * B1 * B2 * !Y)	0.00581	0.00585	0.00581
	(!A1 * B1 * B2 * !Y)	-0.00340	-0.00342	-0.00339

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)	-0.00145	-0.00146	-0.00155
	(A1 * B1 * B2 * !Y)	0.00102	0.00102	0.00094
	(A1 * A2 * B1 * !B2 * !Y)	-0.00125	-0.00126	-0.00151
	(A1 * A2 * B1 * !B2 * !Y)	0.00115	0.00115	0.00096
	(A1 * A2 * !B1 * !Y)	-0.00125	-0.00126	-0.00151
	(A1 * A2 * !B1 * !Y)	0.00116	0.00115	0.00096
	(!A1 * B1 * B2 * !Y)	-0.00145	-0.00146	-0.00155
	(!A1 * B1 * B2 * !Y)	0.00103	0.00102	0.00094
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00271	-0.00274	-0.00292
	(A1 * B1 * B2 * !Y)	0.00187	0.00188	0.00174
	(A1 * A2 * B1 * !B2 * !Y)	-0.00237	-0.00241	-0.00284
	(A1 * A2 * B1 * !B2 * !Y)	0.00208	0.00208	0.00176
	(A1 * A2 * !B1 * !Y)	-0.00237	-0.00241	-0.00284
	(A1 * A2 * !B1 * !Y)	0.00208	0.00208	0.00176
	(!A1 * B1 * B2 * !Y)	-0.00271	-0.00274	-0.00292
	(!A1 * B1 * B2 * !Y)	0.00189	0.00189	0.00174
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00540	-0.00545	-0.00577
	(A1 * B1 * B2 * !Y)	0.00367	0.00368	0.00346
	(A1 * A2 * B1 * !B2 * !Y)	-0.00471	-0.00477	-0.00562
	(A1 * A2 * B1 * !B2 * !Y)	0.00415	0.00416	0.00357
	(A1 * A2 * !B1 * !Y)	-0.00472	-0.00477	-0.00562
	(A1 * A2 * !B1 * !Y)	0.00416	0.00415	0.00357
	(!A1 * B1 * B2 * !Y)	-0.00541	-0.00545	-0.00577
	(!A1 * B1 * B2 * !Y)	0.00370	0.00370	0.00347

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00268	0.00278	0.00266	0.00267	0.00264	0.76399
sky130_fd_sc_hs__a221o_2	0.00281	0.00288	0.00289	0.00290	0.00280	1.46937
sky130_fd_sc_hs__a221o_4	0.00497	0.00496	0.00511	0.00521	0.00507	2.45140

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.09976	0.14703
sky130_fd_sc_hs__a221o_2	0.00000	0.13271	0.17203
sky130_fd_sc_hs__a221o_4	0.00000	0.26259	0.34275

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)	0.15157	0.91879	7.70337
	A2->X (RR)	0.15806	0.90206	7.68968
	B1->X (RR)	0.14417	0.88724	7.55884
	B2->X (RR)	0.15047	0.87723	7.56314
	C1->X (RR)	0.10137	0.80686	7.36968
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.15513	0.82918	7.70452
	A2->X (RR)	0.16199	0.80658	7.67623
	B1->X (RR)	0.14916	0.80475	7.58845
	B2->X (RR)	0.15536	0.78517	7.57230
	C1->X (RR)	0.10230	0.71981	7.38880
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.17585	0.79357	7.61447
	A2->X (RR)	0.18471	0.75836	7.52547
	B1->X (RR)	0.16587	0.75761	7.44174
	B2->X (RR)	0.17563	0.72961	7.38938
	C1->X (RR)	0.10177	0.63801	7.16036

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.41698	0.98735	4.79834
	A2->X (FF)	0.45597	1.03274	4.89433
	B1->X (FF)	0.38443	0.96071	4.94042
	B2->X (FF)	0.41733	1.00760	5.05987
	C1->X (FF)	0.33432	0.93333	4.93950
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.53096	1.10158	5.22655
	A2->X (FF)	0.57370	1.15330	5.33140
	B1->X (FF)	0.50880	1.09072	5.44802
	B2->X (FF)	0.53811	1.13255	5.56661
	C1->X (FF)	0.45605	1.05825	5.47056
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.52268	1.02397	4.71013
	A2->X (FF)	0.57385	1.08781	4.84291
	B1->X (FF)	0.49369	1.01060	4.97362
	B2->X (FF)	0.53754	1.06819	5.10597
	C1->X (FF)	0.44006	0.98084	4.99717

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01281	0.01284	0.01853
	A1	0.00623	0.00625	0.01208
	A2	0.01369	0.01355	0.01769
	A2	0.00626	0.00612	0.01040
	B1	0.01008	0.01015	0.01571
	B1	0.00443	0.00450	0.01063
	B2	0.01088	0.01085	0.01525
	B2	0.00451	0.00448	0.00936
	C1	0.00856	0.00870	0.01583
	C1	0.00298	0.00322	0.01169
sky130_fd_sc_hs__a221o_2	A1	0.01536	0.01545	0.02117
	A1	0.00861	0.00868	0.01465
	A2	0.01633	0.01637	0.02047
	A2	0.00862	0.00865	0.01301
	B1	0.01307	0.01340	0.01899
	B1	0.00681	0.00712	0.01327
	B2	0.01398	0.01423	0.01867
	B2	0.00693	0.00720	0.01211
	C1	0.01153	0.01195	0.01892
	C1	0.00540	0.00582	0.01424

sky130_fd_sc_hs__a221o_4	**A1**	0.03016	0.03044	0.04168
	A1	0.01726	0.01754	0.02943
	A2	0.03173	0.03204	0.04012
	A2	0.01729	0.01776	0.02618
	B1	0.02521	0.02570	0.03634
	B1	0.01426	0.01492	0.02561
	B2	0.02702	0.02757	0.03581
	B2	0.01434	0.01492	0.02358
	C1	0.02119	0.02200	0.03525
	C1	0.01063	0.01146	0.02497

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00412	0.00415	0.00865
	A1	0.01084	0.01086	0.01487
	A2	0.00436	0.00427	0.00803
	A2	0.01188	0.01179	0.01550
	B1	0.00367	0.00368	0.00946
	B1	0.00971	0.00966	0.01439
	B2	0.00398	0.00404	0.00962
	B2	0.01069	0.01070	0.01521
	C1	0.00337	0.00389	0.01314
	C1	0.00970	0.01006	0.01737

sky130_fd_sc_hs__a221o_2	**A1**	0.00719	0.00700	0.01254
	A1	0.01438	0.01433	0.01839
	A2	0.00755	0.00723	0.01199
	A2	0.01563	0.01547	0.01929
	B1	0.00716	0.00696	0.01287
	B1	0.01337	0.01316	0.01792
	B2	0.00755	0.00723	0.01326
	B2	0.01449	0.01436	0.01896
	C1	0.00753	0.00716	0.01625
	C1	0.01356	0.01389	0.02116
sky130_fd_sc_hs__a221o_4	**A1**	0.01305	0.01296	0.02135
	A1	0.02603	0.02593	0.03346
	A2	0.01433	0.01387	0.02200
	A2	0.02872	0.02839	0.03535
	B1	0.01328	0.01266	0.02338
	B1	0.02415	0.02373	0.03236
	B2	0.01410	0.01358	0.02316
	B2	0.02659	0.02626	0.03470
	C1	0.01452	0.01458	0.03016
	C1	0.02482	0.02502	0.03876

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)**	0.00114	0.00113	0.00114
	(A2 * B1 * B2 * C1 * X)	-0.00155	-0.00162	-0.00161
	(A2 * B1 * B2 * !C1 * X)	0.00116	0.00113	0.00114
	(A2 * B1 * B2 * !C1 * X)	-0.00152	-0.00160	-0.00161
	(A2 * B1 * !B2 * C1 * X)	0.00116	0.00115	0.00114
	(A2 * B1 * !B2 * C1 * X)	-0.00147	-0.00157	-0.00156
	(A2 * !B1 * C1 * X)	0.00116	0.00115	0.00114
	(A2 * !B1 * C1 * X)	-0.00147	-0.00157	-0.00156
	(!A2 * B1 * B2 * C1 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * B2 * C1 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * B2 * !C1 * X)	0.00108	0.00108	0.00108
	(!A2 * B1 * B2 * !C1 * X)	-0.00167	-0.00167	-0.00166
	(!A2 * B1 * !B2 * C1 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * !B2 * C1 * X)	-0.00167	-0.00167	-0.00166
	(!A2 * B1 * !B2 * !C1 * !X)	0.00041	0.00040	0.00039
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00189	-0.00189	-0.00192
	(!A2 * !B1 * C1 * X)	0.00108	0.00109	0.00108
	(!A2 * !B1 * C1 * X)	-0.00167	-0.00167	-0.00166
	(!A2 * !B1 * !C1 * !X)	0.00041	0.00040	0.00039
	(!A2 * !B1 * !C1 * !X)	-0.00189	-0.00189	-0.00192

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00131	0.00130	0.00131
	(A2 * B1 * B2 * C1 * X)	-0.00153	-0.00160	-0.00160
	(A2 * B1 * B2 * !C1 * X)	0.00133	0.00130	0.00131
	(A2 * B1 * B2 * !C1 * X)	-0.00151	-0.00159	-0.00160
	(A2 * B1 * !B2 * C1 * X)	0.00133	0.00132	0.00131
	(A2 * B1 * !B2 * C1 * X)	-0.00145	-0.00156	-0.00155
	(A2 * !B1 * C1 * X)	0.00133	0.00132	0.00131
	(A2 * !B1 * C1 * X)	-0.00145	-0.00156	-0.00155
	(!A2 * B1 * B2 * C1 * X)	0.00123	0.00124	0.00123
	(!A2 * B1 * B2 * C1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * B1 * B2 * !C1 * X)	0.00123	0.00124	0.00123
	(!A2 * B1 * B2 * !C1 * X)	-0.00166	-0.00166	-0.00165
	(!A2 * B1 * !B2 * C1 * X)	0.00123	0.00124	0.00123
	(!A2 * B1 * !B2 * C1 * X)	-0.00166	-0.00166	-0.00165
	(!A2 * B1 * !B2 * !C1 * !X)	0.00045	0.00045	0.00044
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00190	-0.00190	-0.00193
	(!A2 * !B1 * C1 * X)	0.00123	0.00124	0.00124
	(!A2 * !B1 * C1 * X)	-0.00166	-0.00166	-0.00165
	(!A2 * !B1 * !C1 * !X)	0.00045	0.00045	0.00044
	(!A2 * !B1 * !C1 * !X)	-0.00190	-0.00190	-0.00193

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00257	0.00256	0.00254
	(A2 * B1 * B2 * C1 * X)	-0.00301	-0.00314	-0.00313
	(A2 * B1 * B2 * !C1 * X)	0.00257	0.00256	0.00254
	(A2 * B1 * B2 * !C1 * X)	-0.00300	-0.00315	-0.00313
	(A2 * B1 * !B2 * C1 * X)	0.00258	0.00255	0.00254
	(A2 * B1 * !B2 * C1 * X)	-0.00291	-0.00306	-0.00306
	(A2 * !B1 * C1 * X)	0.00258	0.00255	0.00254
	(A2 * !B1 * C1 * X)	-0.00291	-0.00305	-0.00306
	(!A2 * B1 * B2 * C1 * X)	0.00239	0.00242	0.00240
	(!A2 * B1 * B2 * C1 * X)	-0.00324	-0.00325	-0.00324
	(!A2 * B1 * B2 * !C1 * X)	0.00239	0.00240	0.00240
	(!A2 * B1 * B2 * !C1 * X)	-0.00323	-0.00325	-0.00324
	(!A2 * B1 * !B2 * C1 * X)	0.00240	0.00241	0.00240
	(!A2 * B1 * !B2 * C1 * X)	-0.00324	-0.00325	-0.00324
	(!A2 * B1 * !B2 * !C1 * !X)	0.00124	0.00124	0.00118
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00352	-0.00355	-0.00362
	(!A2 * !B1 * C1 * X)	0.00240	0.00241	0.00240
	(!A2 * !B1 * C1 * X)	-0.00324	-0.00325	-0.00324
	(!A2 * !B1 * !C1 * !X)	0.00124	0.00124	0.00118
	(!A2 * !B1 * !C1 * !X)	-0.00352	-0.00355	-0.00362

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)**	-0.00113	-0.00113	-0.00113
	(A2 * B1 * B2 * C1 * X)	0.00161	0.00162	0.00161
	(A2 * B1 * B2 * !C1 * X)	-0.00113	-0.00113	-0.00113
	(A2 * B1 * B2 * !C1 * X)	0.00161	0.00160	0.00161
	(A2 * B1 * !B2 * C1 * X)	-0.00113	-0.00114	-0.00113
	(A2 * B1 * !B2 * C1 * X)	0.00156	0.00157	0.00156
	(A2 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(A2 * !B1 * C1 * X)	0.00156	0.00157	0.00156
	(!A2 * B1 * B2 * C1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * B2 * C1 * X)	0.00166	0.00169	0.00167
	(!A2 * B1 * B2 * !C1 * X)	-0.00106	-0.00108	-0.00108
	(!A2 * B1 * B2 * !C1 * X)	0.00168	0.00169	0.00167
	(!A2 * B1 * !B2 * C1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * !B2 * C1 * X)	0.00168	0.00169	0.00167
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * B1 * !B2 * !C1 * !X)	0.00192	0.00193	0.00192
	(!A2 * !B1 * C1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * !B1 * C1 * X)	0.00168	0.00169	0.00167
	(!A2 * !B1 * !C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !C1 * !X)	0.00192	0.00193	0.00192

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00130	-0.00130	-0.00130
	(A2 * B1 * B2 * C1 * X)	0.00160	0.00160	0.00160
	(A2 * B1 * B2 * !C1 * X)	-0.00130	-0.00130	-0.00130
	(A2 * B1 * B2 * !C1 * X)	0.00159	0.00159	0.00160
	(A2 * B1 * !B2 * C1 * X)	-0.00130	-0.00131	-0.00130
	(A2 * B1 * !B2 * C1 * X)	0.00154	0.00156	0.00155
	(A2 * !B1 * C1 * X)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * C1 * X)	0.00154	0.00156	0.00155
	(!A2 * B1 * B2 * C1 * X)	-0.00121	-0.00124	-0.00123
	(!A2 * B1 * B2 * C1 * X)	0.00165	0.00168	0.00166
	(!A2 * B1 * B2 * !C1 * X)	-0.00122	-0.00124	-0.00123
	(!A2 * B1 * B2 * !C1 * X)	0.00167	0.00168	0.00166
	(!A2 * B1 * !B2 * C1 * X)	-0.00122	-0.00124	-0.00123
	(!A2 * B1 * !B2 * C1 * X)	0.00167	0.00168	0.00166
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * B1 * !B2 * !C1 * !X)	0.00194	0.00195	0.00194
	(!A2 * !B1 * C1 * X)	-0.00122	-0.00124	-0.00124
	(!A2 * !B1 * C1 * X)	0.00167	0.00168	0.00166
	(!A2 * !B1 * !C1 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * !C1 * !X)	0.00194	0.00195	0.00194

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00253	-0.00255	-0.00254
	(A2 * B1 * B2 * C1 * X)	0.00311	0.00314	0.00313
	(A2 * B1 * B2 * !C1 * X)	-0.00253	-0.00255	-0.00254
	(A2 * B1 * B2 * !C1 * X)	0.00311	0.00315	0.00313
	(A2 * B1 * !B2 * C1 * X)	-0.00253	-0.00253	-0.00253
	(A2 * B1 * !B2 * C1 * X)	0.00304	0.00306	0.00306
	(A2 * !B1 * C1 * X)	-0.00252	-0.00253	-0.00253
	(A2 * !B1 * C1 * X)	0.00304	0.00305	0.00306
	(!A2 * B1 * B2 * C1 * X)	-0.00234	-0.00242	-0.00240
	(!A2 * B1 * B2 * C1 * X)	0.00326	0.00325	0.00325
	(!A2 * B1 * B2 * !C1 * X)	-0.00233	-0.00240	-0.00240
	(!A2 * B1 * B2 * !C1 * X)	0.00325	0.00327	0.00325
	(!A2 * B1 * !B2 * C1 * X)	-0.00233	-0.00241	-0.00240
	(!A2 * B1 * !B2 * C1 * X)	0.00325	0.00326	0.00325
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00114	-0.00116	-0.00114
	(!A2 * B1 * !B2 * !C1 * !X)	0.00362	0.00368	0.00363
	(!A2 * !B1 * C1 * X)	-0.00233	-0.00241	-0.00240
	(!A2 * !B1 * C1 * X)	0.00325	0.00326	0.00325
	(!A2 * !B1 * !C1 * !X)	-0.00114	-0.00116	-0.00114
	(!A2 * !B1 * !C1 * !X)	0.00362	0.00368	0.00363

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)**	0.00131	0.00131	0.00132
	(A1 * B1 * B2 * C1 * X)	-0.00149	-0.00157	-0.00156
	(A1 * B1 * B2 * !C1 * X)	0.00133	0.00131	0.00132
	(A1 * B1 * B2 * !C1 * X)	-0.00147	-0.00157	-0.00156
	(A1 * B1 * !B2 * C1 * X)	0.00134	0.00134	0.00132
	(A1 * B1 * !B2 * C1 * X)	-0.00142	-0.00153	-0.00152
	(A1 * !B1 * C1 * X)	0.00134	0.00134	0.00132
	(A1 * !B1 * C1 * X)	-0.00142	-0.00153	-0.00152
	(!A1 * B1 * B2 * X)	0.00126	0.00127	0.00126
	(!A1 * B1 * B2 * X)	-0.00161	-0.00162	-0.00162
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00126	0.00127	0.00126
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * B1 * !B2 * !C1 * !X)	0.00107	0.00107	0.00107
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00180	-0.00181	-0.00181
	(!A1 * !B1 * !C1 * !X)	0.00107	0.00107	0.00107
	(!A1 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00181

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00146	0.00146	0.00146
	(A1 * B1 * B2 * C1 * X)	-0.00148	-0.00156	-0.00155
	(A1 * B1 * B2 * !C1 * X)	0.00147	0.00145	0.00146
	(A1 * B1 * B2 * !C1 * X)	-0.00146	-0.00156	-0.00155
	(A1 * B1 * !B2 * C1 * X)	0.00147	0.00148	0.00146
	(A1 * B1 * !B2 * C1 * X)	-0.00141	-0.00152	-0.00151
	(A1 * !B1 * C1 * X)	0.00147	0.00148	0.00146
	(A1 * !B1 * C1 * X)	-0.00141	-0.00152	-0.00151
	(!A1 * B1 * B2 * X)	0.00138	0.00140	0.00139
	(!A1 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00138	0.00140	0.00139
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !B2 * !C1 * !X)	0.00120	0.00121	0.00120
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A1 * !B1 * !C1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !B1 * !C1 * !X)	-0.00178	-0.00180	-0.00179

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00253	0.00253	0.00251
	(A1 * B1 * B2 * C1 * X)	-0.00296	-0.00312	-0.00311
	(A1 * B1 * B2 * !C1 * X)	0.00253	0.00253	0.00251
	(A1 * B1 * B2 * !C1 * X)	-0.00295	-0.00312	-0.00311
	(A1 * B1 * !B2 * C1 * X)	0.00253	0.00252	0.00250
	(A1 * B1 * !B2 * C1 * X)	-0.00286	-0.00303	-0.00303
	(A1 * !B1 * C1 * X)	0.00253	0.00252	0.00250
	(A1 * !B1 * C1 * X)	-0.00286	-0.00303	-0.00303
	(!A1 * B1 * B2 * X)	0.00237	0.00239	0.00238
	(!A1 * B1 * B2 * X)	-0.00321	-0.00323	-0.00322
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00237	0.00238	0.00238
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00321	-0.00323	-0.00322
	(!A1 * B1 * !B2 * !C1 * !X)	0.00232	0.00233	0.00232
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00328	-0.00329	-0.00328
	(!A1 * !B1 * !C1 * !X)	0.00232	0.00233	0.00232
	(!A1 * !B1 * !C1 * !X)	-0.00328	-0.00329	-0.00328

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)**	-0.00131	-0.00131	-0.00132
	(A1 * B1 * B2 * C1 * X)	0.00156	0.00157	0.00156
	(A1 * B1 * B2 * !C1 * X)	-0.00131	-0.00131	-0.00132
	(A1 * B1 * B2 * !C1 * X)	0.00156	0.00158	0.00156
	(A1 * B1 * !B2 * C1 * X)	-0.00131	-0.00132	-0.00131
	(A1 * B1 * !B2 * C1 * X)	0.00151	0.00153	0.00152
	(A1 * !B1 * C1 * X)	-0.00131	-0.00132	-0.00131
	(A1 * !B1 * C1 * X)	0.00151	0.00153	0.00152
	(!A1 * B1 * B2 * X)	-0.00124	-0.00127	-0.00126
	(!A1 * B1 * B2 * X)	0.00162	0.00164	0.00162
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00124	-0.00127	-0.00126
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00161	0.00164	0.00162
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00099	-0.00107	-0.00107
	(!A1 * B1 * !B2 * !C1 * !X)	0.00187	0.00185	0.00182
	(!A1 * !B1 * !C1 * !X)	-0.00099	-0.00107	-0.00107
	(!A1 * !B1 * !C1 * !X)	0.00187	0.00185	0.00182

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00145	-0.00146	-0.00145
	(A1 * B1 * B2 * C1 * X)	0.00155	0.00156	0.00155
	(A1 * B1 * B2 * !C1 * X)	-0.00145	-0.00145	-0.00145
	(A1 * B1 * B2 * !C1 * X)	0.00155	0.00156	0.00155
	(A1 * B1 * !B2 * C1 * X)	-0.00145	-0.00146	-0.00145
	(A1 * B1 * !B2 * C1 * X)	0.00150	0.00152	0.00151
	(A1 * !B1 * C1 * X)	-0.00145	-0.00146	-0.00145
	(A1 * !B1 * C1 * X)	0.00150	0.00152	0.00151
	(!A1 * B1 * B2 * X)	-0.00136	-0.00140	-0.00139
	(!A1 * B1 * B2 * X)	0.00160	0.00162	0.00161
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00136	-0.00140	-0.00139
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00160	0.00162	0.00161
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00111	-0.00120	-0.00120
	(!A1 * B1 * !B2 * !C1 * !X)	0.00186	0.00183	0.00180
	(!A1 * !B1 * !C1 * !X)	-0.00111	-0.00120	-0.00120
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00183	0.00180

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00250	-0.00252	-0.00251
	(A1 * B1 * B2 * C1 * X)	0.00309	0.00312	0.00311
	(A1 * B1 * B2 * !C1 * X)	-0.00250	-0.00252	-0.00251
	(A1 * B1 * B2 * !C1 * X)	0.00309	0.00312	0.00311
	(A1 * B1 * !B2 * C1 * X)	-0.00249	-0.00250	-0.00250
	(A1 * B1 * !B2 * C1 * X)	0.00302	0.00303	0.00303
	(A1 * !B1 * C1 * X)	-0.00249	-0.00250	-0.00250
	(A1 * !B1 * C1 * X)	0.00302	0.00303	0.00303
	(!A1 * B1 * B2 * X)	-0.00232	-0.00239	-0.00238
	(!A1 * B1 * B2 * X)	0.00323	0.00327	0.00323
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00231	-0.00238	-0.00238
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00323	0.00327	0.00323
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00218	-0.00233	-0.00232
	(!A1 * B1 * !B2 * !C1 * !X)	0.00338	0.00334	0.00330
	(!A1 * !B1 * !C1 * !X)	-0.00218	-0.00233	-0.00232
	(!A1 * !B1 * !C1 * !X)	0.00338	0.00334	0.00330

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)**	0.00128	0.00129	0.00120
	(A1 * A2 * B2 * C1 * X)	-0.00121	-0.00120	-0.00120
	(A1 * A2 * B2 * !C1 * X)	0.00115	0.00116	0.00115
	(A1 * A2 * B2 * !C1 * X)	-0.00091	-0.00092	-0.00092
	(A1 * A2 * !B2 * C1 * X)	0.00116	0.00118	0.00111
	(A1 * A2 * !B2 * C1 * X)	-0.00112	-0.00112	-0.00111
	(A1 * A2 * !B2 * !C1 * X)	0.00109	0.00110	0.00109
	(A1 * A2 * !B2 * !C1 * X)	-0.00090	-0.00091	-0.00091
	(A1 * !A2 * B2 * C1 * X)	0.00137	0.00116	0.00114
	(A1 * !A2 * B2 * C1 * X)	-0.00136	-0.00162	-0.00161
	(A1 * !A2 * !B2 * C1 * X)	0.00108	0.00109	0.00108
	(A1 * !A2 * !B2 * C1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !B2 * !C1 * !X)	0.00038	0.00039	0.00037
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00189	-0.00190	-0.00192
	(!A1 * B2 * C1 * X)	0.00137	0.00116	0.00114
	(!A1 * B2 * C1 * X)	-0.00136	-0.00162	-0.00161
	(!A1 * !B2 * C1 * X)	0.00108	0.00109	0.00108
	(!A1 * !B2 * C1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * !B2 * !C1 * !X)	0.00038	0.00039	0.00037
	(!A1 * !B2 * !C1 * !X)	-0.00189	-0.00190	-0.00192

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00154	0.00154	0.00146
	(A1 * A2 * B2 * C1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * B2 * !C1 * X)	0.00140	0.00140	0.00139
	(A1 * A2 * B2 * !C1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * !B2 * C1 * X)	0.00139	0.00140	0.00135
	(A1 * A2 * !B2 * C1 * X)	-0.00114	-0.00113	-0.00113
	(A1 * A2 * !B2 * !C1 * X)	0.00133	0.00134	0.00132
	(A1 * A2 * !B2 * !C1 * X)	-0.00092	-0.00093	-0.00093
	(A1 * !A2 * B2 * C1 * X)	0.00162	0.00140	0.00139
	(A1 * !A2 * B2 * C1 * X)	-0.00137	-0.00163	-0.00163
	(A1 * !A2 * !B2 * C1 * X)	0.00131	0.00133	0.00131
	(A1 * !A2 * !B2 * C1 * X)	-0.00166	-0.00168	-0.00167
	(A1 * !A2 * !B2 * !C1 * !X)	0.00046	0.00046	0.00044
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00198	-0.00199	-0.00202
	(!A1 * B2 * C1 * X)	0.00162	0.00140	0.00139
	(!A1 * B2 * C1 * X)	-0.00137	-0.00163	-0.00163
	(!A1 * !B2 * C1 * X)	0.00131	0.00133	0.00132
	(!A1 * !B2 * C1 * X)	-0.00166	-0.00168	-0.00167
	(!A1 * !B2 * !C1 * !X)	0.00046	0.00046	0.00044
	(!A1 * !B2 * !C1 * !X)	-0.00198	-0.00199	-0.00202

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00274	0.00272	0.00256
	(A1 * A2 * B2 * C1 * X)	-0.00245	-0.00250	-0.00248
	(A1 * A2 * B2 * !C1 * X)	0.00247	0.00248	0.00246
	(A1 * A2 * B2 * !C1 * X)	-0.00187	-0.00187	-0.00187
	(A1 * A2 * !B2 * C1 * X)	0.00246	0.00248	0.00239
	(A1 * A2 * !B2 * C1 * X)	-0.00232	-0.00233	-0.00230
	(A1 * A2 * !B2 * !C1 * X)	0.00236	0.00237	0.00235
	(A1 * A2 * !B2 * !C1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * B2 * C1 * X)	0.00293	0.00247	0.00244
	(A1 * !A2 * B2 * C1 * X)	-0.00274	-0.00326	-0.00325
	(A1 * !A2 * !B2 * C1 * X)	0.00234	0.00234	0.00234
	(A1 * !A2 * !B2 * C1 * X)	-0.00332	-0.00332	-0.00331
	(A1 * !A2 * !B2 * !C1 * !X)	0.00098	0.00100	0.00093
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00376	-0.00380	-0.00387
	(!A1 * B2 * C1 * X)	0.00293	0.00247	0.00244
	(!A1 * B2 * C1 * X)	-0.00273	-0.00326	-0.00325
	(!A1 * !B2 * C1 * X)	0.00234	0.00235	0.00234
	(!A1 * !B2 * C1 * X)	-0.00333	-0.00332	-0.00331
	(!A1 * !B2 * !C1 * !X)	0.00099	0.00100	0.00093
	(!A1 * !B2 * !C1 * !X)	-0.00376	-0.00380	-0.00387

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)**	-0.00115	-0.00115	-0.00115
	(A1 * A2 * B2 * C1 * X)	0.00121	0.00120	0.00120
	(A1 * A2 * B2 * !C1 * X)	-0.00108	-0.00109	-0.00110
	(A1 * A2 * B2 * !C1 * X)	0.00097	0.00097	0.00096
	(A1 * A2 * !B2 * C1 * X)	-0.00108	-0.00111	-0.00111
	(A1 * A2 * !B2 * C1 * X)	0.00112	0.00112	0.00111
	(A1 * A2 * !B2 * !C1 * X)	-0.00107	-0.00110	-0.00109
	(A1 * A2 * !B2 * !C1 * X)	0.00092	0.00092	0.00091
	(A1 * !A2 * B2 * C1 * X)	-0.00114	-0.00114	-0.00113
	(A1 * !A2 * B2 * C1 * X)	0.00162	0.00162	0.00161
	(A1 * !A2 * !B2 * C1 * X)	-0.00107	-0.00109	-0.00108
	(A1 * !A2 * !B2 * C1 * X)	0.00166	0.00167	0.00165
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(A1 * !A2 * !B2 * !C1 * !X)	0.00192	0.00193	0.00193
	(!A1 * B2 * C1 * X)	-0.00114	-0.00114	-0.00113
	(!A1 * B2 * C1 * X)	0.00162	0.00162	0.00161
	(!A1 * !B2 * C1 * X)	-0.00107	-0.00109	-0.00108
	(!A1 * !B2 * C1 * X)	0.00166	0.00167	0.00165
	(!A1 * !B2 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !B2 * !C1 * !X)	0.00192	0.00193	0.00193

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00140	-0.00140	-0.00140
	(A1 * A2 * B2 * C1 * X)	0.00121	0.00122	0.00121
	(A1 * A2 * B2 * !C1 * X)	-0.00134	-0.00134	-0.00135
	(A1 * A2 * B2 * !C1 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * !B2 * C1 * X)	-0.00132	-0.00134	-0.00135
	(A1 * A2 * !B2 * C1 * X)	0.00114	0.00113	0.00113
	(A1 * A2 * !B2 * !C1 * X)	-0.00131	-0.00134	-0.00132
	(A1 * A2 * !B2 * !C1 * X)	0.00094	0.00094	0.00093
	(A1 * !A2 * B2 * C1 * X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * B2 * C1 * X)	0.00164	0.00164	0.00163
	(A1 * !A2 * !B2 * C1 * X)	-0.00129	-0.00133	-0.00131
	(A1 * !A2 * !B2 * C1 * X)	0.00166	0.00169	0.00167
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00043	-0.00043	-0.00043
	(A1 * !A2 * !B2 * !C1 * !X)	0.00202	0.00203	0.00202
	(!A1 * B2 * C1 * X)	-0.00138	-0.00138	-0.00138
	(!A1 * B2 * C1 * X)	0.00164	0.00164	0.00163
	(!A1 * !B2 * C1 * X)	-0.00129	-0.00133	-0.00132
	(!A1 * !B2 * C1 * X)	0.00166	0.00169	0.00167
	(!A1 * !B2 * !C1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !B2 * !C1 * !X)	0.00202	0.00203	0.00202

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00247	-0.00248	-0.00247
	(A1 * A2 * B2 * C1 * X)	0.00248	0.00250	0.00248
	(A1 * A2 * B2 * !C1 * X)	-0.00235	-0.00237	-0.00236
	(A1 * A2 * B2 * !C1 * X)	0.00197	0.00198	0.00198
	(A1 * A2 * !B2 * C1 * X)	-0.00230	-0.00240	-0.00239
	(A1 * A2 * !B2 * C1 * X)	0.00232	0.00233	0.00230
	(A1 * A2 * !B2 * !C1 * X)	-0.00228	-0.00236	-0.00235
	(A1 * A2 * !B2 * !C1 * X)	0.00189	0.00188	0.00188
	(A1 * !A2 * B2 * C1 * X)	-0.00242	-0.00242	-0.00240
	(A1 * !A2 * B2 * C1 * X)	0.00325	0.00326	0.00325
	(A1 * !A2 * !B2 * C1 * X)	-0.00227	-0.00234	-0.00234
	(A1 * !A2 * !B2 * C1 * X)	0.00333	0.00335	0.00332
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00090	-0.00090	-0.00089
	(A1 * !A2 * !B2 * !C1 * !X)	0.00389	0.00389	0.00389
	(!A1 * B2 * C1 * X)	-0.00242	-0.00242	-0.00240
	(!A1 * B2 * C1 * X)	0.00325	0.00326	0.00325
	(!A1 * !B2 * C1 * X)	-0.00227	-0.00235	-0.00234
	(!A1 * !B2 * C1 * X)	0.00333	0.00335	0.00332
	(!A1 * !B2 * !C1 * !X)	-0.00090	-0.00090	-0.00089
	(!A1 * !B2 * !C1 * !X)	0.00389	0.00389	0.00389

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)**	0.00133	0.00133	0.00124
	(A1 * A2 * B1 * C1 * X)	-0.00117	-0.00118	-0.00118
	(A1 * A2 * B1 * !C1 * X)	0.00120	0.00120	0.00119
	(A1 * A2 * B1 * !C1 * X)	-0.00089	-0.00089	-0.00089
	(A1 * A2 * !B1 * C1 * X)	0.00119	0.00121	0.00115
	(A1 * A2 * !B1 * C1 * X)	-0.00110	-0.00110	-0.00109
	(A1 * A2 * !B1 * !C1 * X)	0.00114	0.00116	0.00113
	(A1 * A2 * !B1 * !C1 * X)	-0.00088	-0.00090	-0.00089
	(A1 * !A2 * B1 * C1 * X)	0.00143	0.00120	0.00118
	(A1 * !A2 * B1 * C1 * X)	-0.00131	-0.00158	-0.00158
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	0.00102	0.00102	0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * B1 * C1 * X)	0.00143	0.00120	0.00118
	(!A1 * B1 * C1 * X)	-0.00131	-0.00158	-0.00158
	(!A1 * !B1 * !C1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !B1 * !C1 * !X)	-0.00173	-0.00174	-0.00173

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00158	0.00157	0.00149
	(A1 * A2 * B1 * C1 * X)	-0.00113	-0.00114	-0.00114
	(A1 * A2 * B1 * !C1 * X)	0.00144	0.00144	0.00143
	(A1 * A2 * B1 * !C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * !B1 * C1 * X)	0.00142	0.00145	0.00138
	(A1 * A2 * !B1 * C1 * X)	-0.00106	-0.00106	-0.00105
	(A1 * A2 * !B1 * !C1 * X)	0.00137	0.00139	0.00136
	(A1 * A2 * !B1 * !C1 * X)	-0.00084	-0.00086	-0.00085
	(A1 * !A2 * B1 * C1 * X)	0.00167	0.00144	0.00142
	(A1 * !A2 * B1 * C1 * X)	-0.00127	-0.00154	-0.00153
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00135	0.00137	0.00135
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00156	-0.00158	-0.00157
	(A1 * !A2 * !B1 * !C1 * !X)	0.00118	0.00118	0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00173	-0.00174	-0.00174
	(!A1 * B1 * C1 * X)	0.00167	0.00144	0.00142
	(!A1 * B1 * C1 * X)	-0.00127	-0.00154	-0.00153
	(!A1 * !B1 * !C1 * !X)	0.00118	0.00118	0.00119
	(!A1 * !B1 * !C1 * !X)	-0.00173	-0.00174	-0.00174

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00300	0.00297	0.00282
	(A1 * A2 * B1 * C1 * X)	-0.00238	-0.00240	-0.00239
	(A1 * A2 * B1 * !C1 * X)	0.00273	0.00277	0.00272
	(A1 * A2 * B1 * !C1 * X)	-0.00177	-0.00180	-0.00178
	(A1 * A2 * !B1 * C1 * X)	0.00272	0.00277	0.00265
	(A1 * A2 * !B1 * C1 * X)	-0.00221	-0.00222	-0.00222
	(A1 * A2 * !B1 * !C1 * X)	0.00262	0.00265	0.00262
	(A1 * A2 * !B1 * !C1 * X)	-0.00176	-0.00178	-0.00177
	(A1 * !A2 * B1 * C1 * X)	0.00315	0.00272	0.00270
	(A1 * !A2 * B1 * C1 * X)	-0.00263	-0.00315	-0.00316
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00259	0.00262	0.00260
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00320	-0.00323	-0.00321
	(A1 * !A2 * !B1 * !C1 * !X)	0.00251	0.00253	0.00253
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00327	-0.00329	-0.00328
	(!A1 * B1 * C1 * X)	0.00315	0.00272	0.00270
	(!A1 * B1 * C1 * X)	-0.00263	-0.00315	-0.00316
	(!A1 * !B1 * !C1 * !X)	0.00251	0.00254	0.00253
	(!A1 * !B1 * !C1 * !X)	-0.00327	-0.00329	-0.00328

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)**	-0.00119	-0.00119	-0.00119
	(A1 * A2 * B1 * C1 * X)	0.00119	0.00118	0.00118
	(A1 * A2 * B1 * !C1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * B1 * !C1 * X)	0.00094	0.00094	0.00094
	(A1 * A2 * !B1 * C1 * X)	-0.00112	-0.00115	-0.00115
	(A1 * A2 * !B1 * C1 * X)	0.00110	0.00110	0.00109
	(A1 * A2 * !B1 * !C1 * X)	-0.00111	-0.00114	-0.00113
	(A1 * A2 * !B1 * !C1 * X)	0.00090	0.00090	0.00089
	(A1 * !A2 * B1 * C1 * X)	-0.00118	-0.00118	-0.00117
	(A1 * !A2 * B1 * C1 * X)	0.00158	0.00159	0.00158
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00110	-0.00113	-0.00112
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00162	0.00164	0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00094	-0.00102	-0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	0.00180	0.00176	0.00174
	(!A1 * B1 * C1 * X)	-0.00118	-0.00118	-0.00117
	(!A1 * B1 * C1 * X)	0.00158	0.00159	0.00158
	(!A1 * !B1 * !C1 * !X)	-0.00094	-0.00102	-0.00102
	(!A1 * !B1 * !C1 * !X)	0.00180	0.00176	0.00174

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00144	-0.00144	-0.00144
	(A1 * A2 * B1 * C1 * X)	0.00114	0.00114	0.00114
	(A1 * A2 * B1 * !C1 * X)	-0.00137	-0.00138	-0.00138
	(A1 * A2 * B1 * !C1 * X)	0.00091	0.00090	0.00090
	(A1 * A2 * !B1 * C1 * X)	-0.00135	-0.00138	-0.00138
	(A1 * A2 * !B1 * C1 * X)	0.00106	0.00106	0.00105
	(A1 * A2 * !B1 * !C1 * X)	-0.00134	-0.00137	-0.00136
	(A1 * A2 * !B1 * !C1 * X)	0.00085	0.00086	0.00085
	(A1 * !A2 * B1 * C1 * X)	-0.00142	-0.00142	-0.00141
	(A1 * !A2 * B1 * C1 * X)	0.00153	0.00154	0.00153
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00133	-0.00137	-0.00135
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00157	0.00158	0.00157
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00110	-0.00118	-0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	0.00181	0.00177	0.00175
	(!A1 * B1 * C1 * X)	-0.00142	-0.00142	-0.00141
	(!A1 * B1 * C1 * X)	0.00153	0.00154	0.00153
	(!A1 * !B1 * !C1 * !X)	-0.00110	-0.00118	-0.00119
	(!A1 * !B1 * !C1 * !X)	0.00181	0.00177	0.00175

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00273	-0.00274	-0.00273
	(A1 * A2 * B1 * C1 * X)	0.00238	0.00240	0.00239
	(A1 * A2 * B1 * !C1 * X)	-0.00260	-0.00261	-0.00262
	(A1 * A2 * B1 * !C1 * X)	0.00189	0.00189	0.00189
	(A1 * A2 * !B1 * C1 * X)	-0.00258	-0.00264	-0.00265
	(A1 * A2 * !B1 * C1 * X)	0.00221	0.00222	0.00222
	(A1 * A2 * !B1 * !C1 * X)	-0.00256	-0.00263	-0.00262
	(A1 * A2 * !B1 * !C1 * X)	0.00178	0.00179	0.00178
	(A1 * !A2 * B1 * C1 * X)	-0.00267	-0.00269	-0.00267
	(A1 * !A2 * B1 * C1 * X)	0.00313	0.00316	0.00316
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00254	-0.00261	-0.00260
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00322	0.00323	0.00323
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00239	-0.00253	-0.00253
	(A1 * !A2 * !B1 * !C1 * !X)	0.00338	0.00331	0.00329
	(!A1 * B1 * C1 * X)	-0.00267	-0.00269	-0.00267
	(!A1 * B1 * C1 * X)	0.00313	0.00316	0.00316
	(!A1 * !B1 * !C1 * !X)	-0.00239	-0.00253	-0.00253
	(!A1 * !B1 * !C1 * !X)	0.00338	0.00331	0.00329

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)	0.00145	0.00145	0.00145
	(A1 * B1 * B2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * A2 * B1 * !B2 * X)	0.00145	0.00146	0.00145
	(A1 * A2 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * A2 * !B1 * X)	0.00145	0.00146	0.00145
	(A1 * A2 * !B1 * X)	-0.00079	-0.00079	-0.00078
	(!A1 * B1 * B2 * X)	0.00145	0.00146	0.00145
	(!A1 * B1 * B2 * X)	-0.00079	-0.00079	-0.00079
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00154	0.00153	0.00153
	(A1 * B1 * B2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * A2 * B1 * !B2 * X)	0.00152	0.00153	0.00153
	(A1 * A2 * B1 * !B2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * !B1 * X)	0.00152	0.00153	0.00153
	(A1 * A2 * !B1 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * B1 * B2 * X)	0.00152	0.00154	0.00153
	(!A1 * B1 * B2 * X)	-0.00078	-0.00079	-0.00079
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00256	0.00257	0.00257
	(A1 * B1 * B2 * X)	-0.00166	-0.00167	-0.00166
	(A1 * A2 * B1 * !B2 * X)	0.00256	0.00258	0.00257
	(A1 * A2 * B1 * !B2 * X)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * !B1 * X)	0.00256	0.00258	0.00257
	(A1 * A2 * !B1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * B1 * B2 * X)	0.00256	0.00257	0.00256
	(!A1 * B1 * B2 * X)	-0.00168	-0.00169	-0.00168

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)	-0.00134	-0.00135	-0.00144
	(A1 * B1 * B2 * X)	0.00089	0.00088	0.00081
	(A1 * A2 * B1 * !B2 * X)	-0.00118	-0.00120	-0.00140
	(A1 * A2 * B1 * !B2 * X)	0.00098	0.00098	0.00082
	(A1 * A2 * !B1 * X)	-0.00117	-0.00120	-0.00140
	(A1 * A2 * !B1 * X)	0.00097	0.00098	0.00082
	(!A1 * B1 * B2 * X)	-0.00133	-0.00135	-0.00144
	(!A1 * B1 * B2 * X)	0.00088	0.00089	0.00081
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00142	-0.00143	-0.00152
	(A1 * B1 * B2 * X)	0.00088	0.00088	0.00081
	(A1 * A2 * B1 * !B2 * X)	-0.00127	-0.00128	-0.00148
	(A1 * A2 * B1 * !B2 * X)	0.00098	0.00097	0.00082
	(A1 * A2 * !B1 * X)	-0.00127	-0.00128	-0.00148
	(A1 * A2 * !B1 * X)	0.00098	0.00097	0.00082
	(!A1 * B1 * B2 * X)	-0.00142	-0.00143	-0.00152
	(!A1 * B1 * B2 * X)	0.00089	0.00088	0.00081
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00233	-0.00234	-0.00254
	(A1 * B1 * B2 * X)	0.00189	0.00188	0.00171
	(A1 * A2 * B1 * !B2 * X)	-0.00199	-0.00201	-0.00247
	(A1 * A2 * B1 * !B2 * X)	0.00210	0.00209	0.00175
	(A1 * A2 * !B1 * X)	-0.00199	-0.00201	-0.00247
	(A1 * A2 * !B1 * X)	0.00210	0.00209	0.00175
	(!A1 * B1 * B2 * X)	-0.00232	-0.00234	-0.00253
	(!A1 * B1 * B2 * X)	0.00191	0.00191	0.00174

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00272	0.00256	0.00266	0.00268	0.00269	0.00278	0.20670
sky130_fd_sc_hs__a222oi_2	0.00545	0.00484	0.00539	0.00496	0.00491	0.00554	0.37795

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.08037	0.15290
sky130_fd_sc_hs__a222oi_2	0.00000	0.15607	0.30159

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)	0.39270	1.51401	9.95300
	A2->Y (FR)	0.42841	1.55748	10.01400
	B1->Y (FR)	0.34732	1.47071	10.42450
	B2->Y (FR)	0.38909	1.52115	10.51750
	C1->Y (FR)	0.25911	1.38803	10.53980
	C2->Y (FR)	0.29847	1.42614	10.58150
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.37272	1.30221	9.73645
	A2->Y (FR)	0.41953	1.36279	9.88375
	B1->Y (FR)	0.32529	1.25200	10.14640
	B2->Y (FR)	0.38000	1.34014	10.50110
	C1->Y (FR)	0.23291	1.19564	10.51810
	C2->Y (FR)	0.28499	1.24642	10.56520

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.08776	0.60683	4.67324
	A2->Y (RF)	0.09324	0.56535	4.25260
	B1->Y (RF)	0.07776	0.57468	4.60121
	B2->Y (RF)	0.08424	0.53672	4.18361
	C1->Y (RF)	0.05525	0.54019	4.55411
	C2->Y (RF)	0.06118	0.50273	4.14066
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.08199	0.54637	4.57769
	A2->Y (RF)	0.08791	0.51259	4.19307
	B1->Y (RF)	0.07401	0.51582	4.53621
	B2->Y (RF)	0.08086	0.48717	4.16241
	C1->Y (RF)	0.04577	0.46336	4.37008
	C2->Y (RF)	0.05372	0.43393	3.99046

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00191	0.00171	0.00245
	A1	0.00952	0.00934	0.01005
	A2	0.00217	0.00206	0.00281
	A2	0.01050	0.01041	0.01113
	B1	0.00147	0.00128	0.00246
	B1	0.00837	0.00817	0.00925
	B2	0.00224	0.00210	0.00319
	B2	0.00946	0.00932	0.01040
	C1	0.00089	0.00088	0.00363
	C1	0.00737	0.00734	0.00970
	C2	0.00126	0.00127	0.00403
	C2	0.00846	0.00840	0.01087
sky130_fd_sc_hs__a222oi_2	A1	0.00311	0.00270	0.00438
	A1	0.01830	0.01787	0.01954
	A2	0.00399	0.00371	0.00540
	A2	0.02019	0.01993	0.02157
	B1	0.00211	0.00173	0.00426
	B1	0.01616	0.01574	0.01804
	B2	0.00396	0.00367	0.00592
	B2	0.01804	0.01775	0.01997
	C1	0.00090	0.00119	0.00655
	C1	0.01361	0.01365	0.01841
	C2	0.00170	0.00176	0.00731
	C2	0.01624	0.01630	0.02102

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.01235	0.01225	0.01354
	A1	0.00495	0.00482	0.00617
	A2	0.01308	0.01293	0.01398
	A2	0.00493	0.00475	0.00580
	B1	0.00916	0.00914	0.01047
	B1	0.00275	0.00268	0.00412
	B2	0.00998	0.00994	0.01102
	B2	0.00276	0.00261	0.00374
	C1	0.00627	0.00640	0.00769
	C1	0.00067	0.00075	0.00216
	C2	0.00705	0.00709	0.00821
	C2	0.00066	0.00059	0.00178
sky130_fd_sc_hs__a222oi_2	A1	0.02324	0.02292	0.02584
	A1	0.00846	0.00815	0.01102
	A2	0.02438	0.02403	0.02625
	A2	0.00848	0.00813	0.01034
	B1	0.01744	0.01741	0.02017
	B1	0.00449	0.00435	0.00734
	B2	0.01888	0.01867	0.02093
	B2	0.00476	0.00445	0.00679
	C1	0.01132	0.01149	0.01445
	C1	0.00055	0.00066	0.00371
	C2	0.01324	0.01322	0.01565
	C2	0.00050	0.00032	0.00285

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)**	0.00114	0.00114	0.00113
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00154	-0.00161	-0.00160
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00114	0.00114	0.00113
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00152	-0.00162	-0.00160
	(A2 * B1 * B2 * !C1 * !Y)	0.00114	0.00114	0.00113
	(A2 * B1 * B2 * !C1 * !Y)	-0.00152	-0.00162	-0.00160
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00116	0.00114	0.00113
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00146	-0.00157	-0.00156
	(A2 * !B1 * C1 * C2 * !Y)	0.00116	0.00114	0.00113
	(A2 * !B1 * C1 * C2 * !Y)	-0.00146	-0.00157	-0.00156
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00106	0.00108	0.00107
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00106	0.00108	0.00107
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00166	-0.00166	-0.00166
	(!A2 * B1 * B2 * !C1 * !Y)	0.00106	0.00108	0.00107
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00107	0.00108	0.00107
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00166	-0.00166	-0.00166
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00043	0.00043	0.00041
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00185	-0.00186	-0.00188
	(!A2 * B1 * !B2 * !C1 * Y)	0.00043	0.00043	0.00041
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00185	-0.00186	-0.00188
	(!A2 * !B1 * C1 * C2 * !Y)	0.00106	0.00108	0.00107
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00165	-0.00167	-0.00166
	(!A2 * !B1 * C1 * !C2 * Y)	0.00043	0.00043	0.00041
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00185	-0.00186	-0.00188
	(!A2 * !B1 * !C1 * Y)	0.00043	0.00043	0.00041
	(!A2 * !B1 * !C1 * Y)	-0.00185	-0.00186	-0.00188

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00235	0.00233	0.00233
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00311	-0.00325	-0.00324
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00237	0.00233	0.00233
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00306	-0.00326	-0.00324
	(A2 * B1 * B2 * !C1 * !Y)	0.00237	0.00234	0.00233
	(A2 * B1 * B2 * !C1 * !Y)	-0.00306	-0.00325	-0.00324
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00239	0.00237	0.00233
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00290	-0.00317	-0.00315
	(A2 * !B1 * C1 * C2 * !Y)	0.00240	0.00237	0.00233
	(A2 * !B1 * C1 * C2 * !Y)	-0.00290	-0.00317	-0.00314
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00222	0.00223	0.00222
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00335	-0.00337	-0.00336
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00221	0.00223	0.00222
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00335	-0.00337	-0.00336
	(!A2 * B1 * B2 * !C1 * !Y)	0.00221	0.00222	0.00222
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00335	-0.00335	-0.00336
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00222	0.00223	0.00222
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00336	-0.00337	-0.00336
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00085	0.00085	0.00080
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00386	-0.00388	-0.00393
	(!A2 * B1 * !B2 * !C1 * Y)	0.00085	0.00085	0.00080
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00386	-0.00388	-0.00393
	(!A2 * !B1 * C1 * C2 * !Y)	0.00222	0.00223	0.00222
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00336	-0.00337	-0.00336
	(!A2 * !B1 * C1 * !C2 * Y)	0.00085	0.00085	0.00080
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00386	-0.00388	-0.00393
	(!A2 * !B1 * !C1 * Y)	0.00085	0.00085	0.00080
	(!A2 * !B1 * !C1 * Y)	-0.00386	-0.00388	-0.00393

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)	-0.00113	-0.00113	-0.00113
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00161	0.00161	0.00160
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00113	-0.00114	-0.00113
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00160	0.00163	0.00160
	(A2 * B1 * B2 * !C1 * !Y)	-0.00113	-0.00114	-0.00113
	(A2 * B1 * B2 * !C1 * !Y)	0.00160	0.00163	0.00160
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00112	-0.00113	-0.00112
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00156	0.00157	0.00156
	(A2 * !B1 * C1 * C2 * !Y)	-0.00112	-0.00113	-0.00112
	(A2 * !B1 * C1 * C2 * !Y)	0.00156	0.00157	0.00156
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00105	-0.00108	-0.00107
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00167	0.00168	0.00166
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00105	-0.00107	-0.00107
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00167	0.00166	0.00166
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00105	-0.00108	-0.00107
	(!A2 * B1 * B2 * !C1 * !Y)	0.00167	0.00169	0.00166
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00105	-0.00108	-0.00107
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00167	0.00166	0.00166
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00040	-0.00040	-0.00040
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00189	0.00189	0.00188
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00040	-0.00040	-0.00040
	(!A2 * B1 * !B2 * !C1 * Y)	0.00189	0.00189	0.00188
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00105	-0.00108	-0.00107
	(!A2 * !B1 * C1 * C2 * !Y)	0.00167	0.00169	0.00166
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * C1 * !C2 * Y)	0.00190	0.00189	0.00188
	(!A2 * !B1 * !C1 * Y)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !C1 * Y)	0.00190	0.00189	0.00188

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00233	-0.00233	-0.00233
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00323	0.00325	0.00324
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00233	-0.00233	-0.00233
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00323	0.00326	0.00324
	(A2 * B1 * B2 * !C1 * !Y)	-0.00233	-0.00233	-0.00233
	(A2 * B1 * B2 * !C1 * !Y)	0.00323	0.00325	0.00324
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00232	-0.00233	-0.00232
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00313	0.00317	0.00315
	(A2 * !B1 * C1 * C2 * !Y)	-0.00232	-0.00233	-0.00232
	(A2 * !B1 * C1 * C2 * !Y)	0.00313	0.00317	0.00314
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00216	-0.00223	-0.00222
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00335	0.00340	0.00337
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00218	-0.00223	-0.00222
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00338	0.00337	0.00337
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00217	-0.00222	-0.00222
	(!A2 * B1 * B2 * !C1 * !Y)	0.00338	0.00338	0.00337
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00217	-0.00223	-0.00222
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00338	0.00338	0.00337
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00394	0.00395	0.00394
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * !B2 * !C1 * Y)	0.00394	0.00395	0.00394
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00217	-0.00223	-0.00222
	(!A2 * !B1 * C1 * C2 * !Y)	0.00338	0.00338	0.00337
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00078	-0.00078	-0.00078
	(!A2 * !B1 * C1 * !C2 * Y)	0.00393	0.00395	0.00394
	(!A2 * !B1 * !C1 * Y)	-0.00078	-0.00078	-0.00078
	(!A2 * !B1 * !C1 * Y)	0.00393	0.00395	0.00394

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)	0.00118	0.00117	0.00117
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00152	-0.00160	-0.00160
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00118	0.00117	0.00117
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00151	-0.00160	-0.00160
	(A1 * B1 * B2 * !C1 * !Y)	0.00118	0.00117	0.00117
	(A1 * B1 * B2 * !C1 * !Y)	-0.00151	-0.00160	-0.00160
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00120	0.00119	0.00117
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00145	-0.00156	-0.00156
	(A1 * !B1 * C1 * C2 * !Y)	0.00120	0.00119	0.00117
	(A1 * !B1 * C1 * C2 * !Y)	-0.00145	-0.00156	-0.00156
	(!A1 * B1 * B2 * !Y)	0.00111	0.00111	0.00111
	(!A1 * B1 * B2 * !Y)	-0.00165	-0.00166	-0.00165
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00111	0.00111	0.00111
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00165	-0.00165	-0.00165
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00111	0.00112	0.00112
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00165	-0.00166	-0.00165
	(!A1 * B1 * !B2 * !C1 * Y)	0.00111	0.00112	0.00112
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00165	-0.00166	-0.00165
	(!A1 * !B1 * C1 * !C2 * Y)	0.00111	0.00112	0.00112
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00165	-0.00166	-0.00165
	(!A1 * !B1 * !C1 * Y)	0.00111	0.00112	0.00112
	(!A1 * !B1 * !C1 * Y)	-0.00165	-0.00166	-0.00165

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00219	0.00220	0.00219
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00289	-0.00305	-0.00304
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00221	0.00220	0.00219
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00287	-0.00306	-0.00304
	(A1 * B1 * B2 * !C1 * !Y)	0.00221	0.00220	0.00219
	(A1 * B1 * B2 * !C1 * !Y)	-0.00287	-0.00306	-0.00304
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00224	0.00222	0.00219
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00276	-0.00298	-0.00296
	(A1 * !B1 * C1 * C2 * !Y)	0.00224	0.00222	0.00219
	(A1 * !B1 * C1 * C2 * !Y)	-0.00276	-0.00298	-0.00296
	(!A1 * B1 * B2 * !Y)	0.00209	0.00209	0.00208
	(!A1 * B1 * B2 * !Y)	-0.00313	-0.00313	-0.00313
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00209	0.00209	0.00209
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00313	-0.00313	-0.00313
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00202	0.00201	0.00202
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00321	-0.00319	-0.00320
	(!A1 * B1 * !B2 * !C1 * Y)	0.00202	0.00201	0.00202
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00321	-0.00319	-0.00320
	(!A1 * !B1 * C1 * !C2 * Y)	0.00202	0.00202	0.00202
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00321	-0.00320	-0.00320
	(!A1 * !B1 * !C1 * Y)	0.00202	0.00202	0.00202
	(!A1 * !B1 * !C1 * Y)	-0.00321	-0.00320	-0.00320

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)**	-0.00117	-0.00117	-0.00117
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00160	0.00160	0.00160
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00160	0.00160	0.00160
	(A1 * B1 * B2 * !C1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * B1 * B2 * !C1 * !Y)	0.00160	0.00160	0.00160
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00156	0.00156	0.00156
	(A1 * !B1 * C1 * C2 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * !B1 * C1 * C2 * !Y)	0.00156	0.00156	0.00156
	(!A1 * B1 * B2 * !Y)	-0.00109	-0.00111	-0.00111
	(!A1 * B1 * B2 * !Y)	0.00165	0.00167	0.00166
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00109	-0.00111	-0.00111
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00165	0.00167	0.00166
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00104	-0.00111	-0.00112
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00171	0.00168	0.00166
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00104	-0.00111	-0.00112
	(!A1 * B1 * !B2 * !C1 * Y)	0.00171	0.00168	0.00166
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00104	-0.00111	-0.00112
	(!A1 * !B1 * C1 * !C2 * Y)	0.00171	0.00168	0.00166
	(!A1 * !B1 * !C1 * Y)	-0.00104	-0.00111	-0.00112
	(!A1 * !B1 * !C1 * Y)	0.00171	0.00168	0.00166

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00218	-0.00219	-0.00219
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00303	0.00305	0.00304
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00218	-0.00220	-0.00219
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00303	0.00306	0.00304
	(A1 * B1 * B2 * !C1 * !Y)	-0.00218	-0.00220	-0.00219
	(A1 * B1 * B2 * !C1 * !Y)	0.00303	0.00306	0.00304
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00218	-0.00219	-0.00218
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00295	0.00298	0.00296
	(A1 * !B1 * C1 * C2 * !Y)	-0.00218	-0.00219	-0.00218
	(A1 * !B1 * C1 * C2 * !Y)	0.00294	0.00298	0.00296
	(!A1 * B1 * B2 * !Y)	-0.00203	-0.00209	-0.00208
	(!A1 * B1 * B2 * !Y)	0.00313	0.00315	0.00314
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00203	-0.00209	-0.00209
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00313	0.00315	0.00315
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00186	-0.00201	-0.00202
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00332	0.00326	0.00321
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00186	-0.00201	-0.00202
	(!A1 * B1 * !B2 * !C1 * Y)	0.00332	0.00326	0.00321
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00186	-0.00202	-0.00202
	(!A1 * !B1 * C1 * !C2 * Y)	0.00332	0.00326	0.00321
	(!A1 * !B1 * !C1 * Y)	-0.00186	-0.00202	-0.00202
	(!A1 * !B1 * !C1 * Y)	0.00332	0.00326	0.00321

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)**	0.00123	0.00122	0.00116
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00121	-0.00121	-0.00121
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00113	0.00113	0.00113
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * B2 * !C1 * !Y)	0.00113	0.00113	0.00113
	(A1 * A2 * B2 * !C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00111	0.00112	0.00108
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00113	-0.00114	-0.00113
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00107	0.00107	0.00107
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * !B2 * !C1 * !Y)	0.00107	0.00108	0.00107
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00136	0.00113	0.00112
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00131	-0.00159	-0.00159
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00105	0.00107	0.00106
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00040	0.00040	0.00038
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00184	-0.00185	-0.00187
	(A1 * !A2 * !B2 * !C1 * Y)	0.00040	0.00040	0.00038
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00184	-0.00185	-0.00187
	(!A1 * B2 * C1 * C2 * !Y)	0.00136	0.00113	0.00112
	(!A1 * B2 * C1 * C2 * !Y)	-0.00132	-0.00159	-0.00159
	(!A1 * !B2 * C1 * C2 * !Y)	0.00105	0.00107	0.00106
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00162	-0.00162	-0.00162
	(!A1 * !B2 * C1 * !C2 * Y)	0.00040	0.00040	0.00038
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00184	-0.00185	-0.00187
	(!A1 * !B2 * !C1 * Y)	0.00040	0.00040	0.00038
	(!A1 * !B2 * !C1 * Y)	-0.00184	-0.00185	-0.00187

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00256	0.00256	0.00242
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00243	-0.00244	-0.00243
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00234	0.00235	0.00234
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00187	-0.00187	-0.00187
	(A1 * A2 * B2 * !C1 * !Y)	0.00235	0.00235	0.00234
	(A1 * A2 * B2 * !C1 * !Y)	-0.00187	-0.00187	-0.00187
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00233	0.00235	0.00226
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00228	-0.00229	-0.00226
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00223	0.00227	0.00223
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00185	-0.00187	-0.00186
	(A1 * A2 * !B2 * !C1 * !Y)	0.00223	0.00227	0.00223
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00184	-0.00187	-0.00186
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00287	0.00236	0.00232
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00269	-0.00326	-0.00327
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00220	0.00222	0.00221
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00334	-0.00335	-0.00334
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00081	0.00081	0.00078
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00386	-0.00386	-0.00393
	(A1 * !A2 * !B2 * !C1 * Y)	0.00081	0.00081	0.00078
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00386	-0.00386	-0.00393
	(!A1 * B2 * C1 * C2 * !Y)	0.00286	0.00236	0.00232
	(!A1 * B2 * C1 * C2 * !Y)	-0.00270	-0.00326	-0.00327
	(!A1 * !B2 * C1 * C2 * !Y)	0.00221	0.00222	0.00221
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00336	-0.00335	-0.00334
	(!A1 * !B2 * C1 * !C2 * Y)	0.00081	0.00081	0.00078
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00386	-0.00386	-0.00393
	(!A1 * !B2 * !C1 * Y)	0.00081	0.00081	0.00078
	(!A1 * !B2 * !C1 * Y)	-0.00386	-0.00386	-0.00393

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)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00121	0.00121	0.00121
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00102	-0.00103	-0.00107
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00100	0.00100	0.00096
	(A1 * A2 * B2 * !C1 * !Y)	-0.00103	-0.00103	-0.00107
	(A1 * A2 * B2 * !C1 * !Y)	0.00100	0.00100	0.00096
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00106	-0.00110	-0.00108
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00113	0.00114	0.00113
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00105	-0.00107	-0.00107
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00091	0.00090	0.00090
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00105	-0.00108	-0.00107
	(A1 * A2 * !B2 * !C1 * !Y)	0.00091	0.00091	0.00090
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00111	-0.00111	-0.00110
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00158	0.00159	0.00159
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00104	-0.00107	-0.00106
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00164	0.00163	0.00163
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00038	-0.00037	-0.00037
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00189	0.00188	0.00187
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00038	-0.00037	-0.00037
	(A1 * !A2 * !B2 * !C1 * Y)	0.00189	0.00188	0.00187
	(!A1 * B2 * C1 * C2 * !Y)	-0.00111	-0.00111	-0.00110
	(!A1 * B2 * C1 * C2 * !Y)	0.00159	0.00159	0.00159
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00104	-0.00107	-0.00106
	(!A1 * !B2 * C1 * C2 * !Y)	0.00164	0.00162	0.00163
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00037	-0.00037	-0.00037
	(!A1 * !B2 * C1 * !C2 * Y)	0.00186	0.00188	0.00187
	(!A1 * !B2 * !C1 * Y)	-0.00038	-0.00037	-0.00037
	(!A1 * !B2 * !C1 * Y)	0.00189	0.00188	0.00187

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00235	-0.00236	-0.00235
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00243	0.00244	0.00243
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00219	-0.00220	-0.00223
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00202	0.00202	0.00198
	(A1 * A2 * B2 * !C1 * !Y)	-0.00218	-0.00220	-0.00223
	(A1 * A2 * B2 * !C1 * !Y)	0.00200	0.00202	0.00198
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00220	-0.00228	-0.00226
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00228	0.00229	0.00226
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00218	-0.00225	-0.00223
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00188	0.00187	0.00186
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00218	-0.00225	-0.00223
	(A1 * A2 * !B2 * !C1 * !Y)	0.00188	0.00187	0.00186
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00231	-0.00231	-0.00229
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00327	0.00327	0.00327
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00217	-0.00222	-0.00221
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00337	0.00336	0.00335
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00394	0.00395	0.00394
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !B2 * !C1 * Y)	0.00394	0.00395	0.00394
	(!A1 * B2 * C1 * C2 * !Y)	-0.00229	-0.00231	-0.00229
	(!A1 * B2 * C1 * C2 * !Y)	0.00323	0.00327	0.00327
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00216	-0.00222	-0.00221
	(!A1 * !B2 * C1 * C2 * !Y)	0.00337	0.00336	0.00335
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00075	-0.00076	-0.00075
	(!A1 * !B2 * C1 * !C2 * Y)	0.00394	0.00395	0.00394
	(!A1 * !B2 * !C1 * Y)	-0.00075	-0.00076	-0.00075
	(!A1 * !B2 * !C1 * Y)	0.00394	0.00395	0.00394

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)	0.00134	0.00133	0.00126
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00122	-0.00121	-0.00121
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00123	0.00124	0.00123
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * B1 * !C1 * !Y)	0.00123	0.00124	0.00123
	(A1 * A2 * B1 * !C1 * !Y)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00122	0.00122	0.00118
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00112	-0.00114	-0.00113
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00118	0.00119	0.00117
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * !B1 * !C1 * !Y)	0.00118	0.00119	0.00117
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00148	0.00124	0.00122
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00131	-0.00159	-0.00159
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00116	0.00117	0.00116
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00163	-0.00164	-0.00163
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00104	0.00104	0.00103
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00176	-0.00177	-0.00176
	(A1 * !A2 * !B1 * !C1 * Y)	0.00104	0.00104	0.00103
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00176	-0.00177	-0.00176
	(!A1 * B1 * C1 * C2 * !Y)	0.00148	0.00124	0.00122
	(!A1 * B1 * C1 * C2 * !Y)	-0.00131	-0.00159	-0.00159
	(!A1 * !B1 * C1 * !C2 * Y)	0.00104	0.00104	0.00103
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00177	-0.00177	-0.00176
	(!A1 * !B1 * !C1 * Y)	0.00104	0.00104	0.00103
	(!A1 * !B1 * !C1 * Y)	-0.00177	-0.00177	-0.00176

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	0.00249	0.00248	0.00235
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00227	-0.00229	-0.00227
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00228	0.00229	0.00228
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00170	-0.00170	-0.00170
	(A1 * A2 * B1 * !C1 * !Y)	0.00228	0.00229	0.00228
	(A1 * A2 * B1 * !C1 * !Y)	-0.00169	-0.00170	-0.00170
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00223	0.00225	0.00219
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00212	-0.00212	-0.00212
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00218	0.00219	0.00217
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00169	-0.00170	-0.00170
	(A1 * A2 * !B1 * !C1 * !Y)	0.00218	0.00219	0.00217
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00169	-0.00170	-0.00170
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00284	0.00231	0.00226
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00245	-0.00305	-0.00306
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00214	0.00218	0.00216
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00312	-0.00315	-0.00313
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00205	0.00206	0.00206
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00322	-0.00323	-0.00323
	(A1 * !A2 * !B1 * !C1 * Y)	0.00205	0.00206	0.00206
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00322	-0.00323	-0.00323
	(!A1 * B1 * C1 * C2 * !Y)	0.00284	0.00231	0.00226
	(!A1 * B1 * C1 * C2 * !Y)	-0.00245	-0.00305	-0.00306
	(!A1 * !B1 * C1 * !C2 * Y)	0.00205	0.00206	0.00206
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00322	-0.00323	-0.00323
	(!A1 * !B1 * !C1 * Y)	0.00205	0.00206	0.00206
	(!A1 * !B1 * !C1 * Y)	-0.00322	-0.00323	-0.00323

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)	-0.00124	-0.00124	-0.00124
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00122	0.00121	0.00121
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00113	-0.00114	-0.00117
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00100	0.00099	0.00097
	(A1 * A2 * B1 * !C1 * !Y)	-0.00113	-0.00114	-0.00117
	(A1 * A2 * B1 * !C1 * !Y)	0.00100	0.00099	0.00097
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00116	-0.00120	-0.00118
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00112	0.00114	0.00113
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00115	-0.00119	-0.00117
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00090	0.00091	0.00090
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00115	-0.00119	-0.00117
	(A1 * A2 * !B1 * !C1 * !Y)	0.00090	0.00091	0.00090
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00121	-0.00121	-0.00120
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00160	0.00159	0.00159
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00115	-0.00117	-0.00116
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00164	0.00165	0.00164
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00095	-0.00103	-0.00103
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00182	0.00180	0.00177
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00095	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !C1 * Y)	0.00182	0.00180	0.00177
	(!A1 * B1 * C1 * C2 * !Y)	-0.00121	-0.00121	-0.00120
	(!A1 * B1 * C1 * C2 * !Y)	0.00160	0.00159	0.00159
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00095	-0.00103	-0.00103
	(!A1 * !B1 * C1 * !C2 * Y)	0.00182	0.00180	0.00177
	(!A1 * !B1 * !C1 * Y)	-0.00095	-0.00103	-0.00103
	(!A1 * !B1 * !C1 * Y)	0.00182	0.00180	0.00177

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	-0.00229	-0.00230	-0.00229
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00227	0.00229	0.00227
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00212	-0.00213	-0.00217
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00185	0.00184	0.00181
	(A1 * A2 * B1 * !C1 * !Y)	-0.00212	-0.00213	-0.00217
	(A1 * A2 * B1 * !C1 * !Y)	0.00185	0.00184	0.00181
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00214	-0.00220	-0.00219
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00212	0.00212	0.00212
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00213	-0.00218	-0.00217
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00171	0.00171	0.00170
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00213	-0.00218	-0.00217
	(A1 * A2 * !B1 * !C1 * !Y)	0.00171	0.00171	0.00170
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00225	-0.00225	-0.00223
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00305	0.00306	0.00306
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00210	-0.00218	-0.00216
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00313	0.00317	0.00314
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00190	-0.00206	-0.00206
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00335	0.00328	0.00324
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00190	-0.00206	-0.00206
	(A1 * !A2 * !B1 * !C1 * Y)	0.00335	0.00328	0.00324
	(!A1 * B1 * C1 * C2 * !Y)	-0.00225	-0.00225	-0.00223
	(!A1 * B1 * C1 * C2 * !Y)	0.00305	0.00306	0.00306
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00190	-0.00206	-0.00206
	(!A1 * !B1 * C1 * !C2 * Y)	0.00335	0.00328	0.00324
	(!A1 * !B1 * !C1 * Y)	-0.00190	-0.00206	-0.00206
	(!A1 * !B1 * !C1 * Y)	0.00335	0.00328	0.00324

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)	0.00135	0.00136	0.00136
	(A1 * B1 * B2 * C2 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * B2 * !C2 * !Y)	0.00130	0.00131	0.00130
	(A1 * B1 * B2 * !C2 * !Y)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00136	0.00136	0.00136
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00080	-0.00080	-0.00079
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00130	0.00132	0.00130
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * !B1 * C2 * !Y)	0.00136	0.00136	0.00136
	(A1 * A2 * !B1 * C2 * !Y)	-0.00080	-0.00080	-0.00079
	(A1 * A2 * !B1 * !C2 * !Y)	0.00130	0.00131	0.00130
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00044	0.00045	0.00043
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00188	-0.00189	-0.00191
	(A1 * !A2 * !B1 * !C2 * Y)	0.00044	0.00045	0.00043
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00188	-0.00189	-0.00191
	(!A1 * B1 * B2 * C2 * !Y)	0.00136	0.00136	0.00136
	(!A1 * B1 * B2 * C2 * !Y)	-0.00080	-0.00080	-0.00080
	(!A1 * B1 * B2 * !C2 * !Y)	0.00130	0.00131	0.00130
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00079	-0.00080	-0.00079
	(!A1 * B1 * !B2 * !C2 * Y)	0.00044	0.00045	0.00043
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00188	-0.00189	-0.00191
	(!A1 * !B1 * !C2 * Y)	0.00044	0.00044	0.00043
	(!A1 * !B1 * !C2 * Y)	-0.00188	-0.00187	-0.00191

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00239	0.00240	0.00240
	(A1 * B1 * B2 * C2 * !Y)	-0.00156	-0.00156	-0.00155
	(A1 * B1 * B2 * !C2 * !Y)	0.00228	0.00228	0.00228
	(A1 * B1 * B2 * !C2 * !Y)	-0.00154	-0.00155	-0.00155
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00239	0.00240	0.00240
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00156	-0.00156	-0.00155
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00227	0.00228	0.00228
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00154	-0.00154	-0.00155
	(A1 * A2 * !B1 * C2 * !Y)	0.00240	0.00241	0.00240
	(A1 * A2 * !B1 * C2 * !Y)	-0.00157	-0.00156	-0.00155
	(A1 * A2 * !B1 * !C2 * !Y)	0.00228	0.00229	0.00228
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00154	-0.00155	-0.00155
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00080	0.00079	0.00076
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00353	-0.00352	-0.00359
	(A1 * !A2 * !B1 * !C2 * Y)	0.00080	0.00079	0.00076
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00353	-0.00352	-0.00359
	(!A1 * B1 * B2 * C2 * !Y)	0.00240	0.00241	0.00240
	(!A1 * B1 * B2 * C2 * !Y)	-0.00158	-0.00157	-0.00156
	(!A1 * B1 * B2 * !C2 * !Y)	0.00228	0.00229	0.00228
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00155	-0.00156	-0.00155
	(!A1 * B1 * !B2 * !C2 * Y)	0.00080	0.00079	0.00076
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00353	-0.00352	-0.00359
	(!A1 * !B1 * !C2 * Y)	0.00080	0.00079	0.00076
	(!A1 * !B1 * !C2 * Y)	-0.00353	-0.00352	-0.00359

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)**	-0.00124	-0.00124	-0.00134
	(A1 * B1 * B2 * C2 * !Y)	0.00091	0.00090	0.00082
	(A1 * B1 * B2 * !C2 * !Y)	-0.00129	-0.00131	-0.00130
	(A1 * B1 * B2 * !C2 * !Y)	0.00080	0.00080	0.00079
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00103	-0.00104	-0.00130
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00105	0.00104	0.00085
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00129	-0.00131	-0.00130
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00080	0.00080	0.00079
	(A1 * A2 * !B1 * C2 * !Y)	-0.00103	-0.00104	-0.00130
	(A1 * A2 * !B1 * C2 * !Y)	0.00105	0.00104	0.00085
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00129	-0.00131	-0.00130
	(A1 * A2 * !B1 * !C2 * !Y)	0.00080	0.00080	0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00042	-0.00042	-0.00041
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00191	0.00192	0.00191
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00042	-0.00042	-0.00041
	(A1 * !A2 * !B1 * !C2 * Y)	0.00191	0.00192	0.00191
	(!A1 * B1 * B2 * C2 * !Y)	-0.00124	-0.00125	-0.00134
	(!A1 * B1 * B2 * C2 * !Y)	0.00091	0.00091	0.00082
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00128	-0.00131	-0.00130
	(!A1 * B1 * B2 * !C2 * !Y)	0.00080	0.00080	0.00080
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00042	-0.00042	-0.00041
	(!A1 * B1 * !B2 * !C2 * Y)	0.00191	0.00192	0.00191
	(!A1 * !B1 * !C2 * Y)	-0.00042	-0.00042	-0.00041
	(!A1 * !B1 * !C2 * Y)	0.00191	0.00192	0.00191

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00215	-0.00217	-0.00237
	(A1 * B1 * B2 * C2 * !Y)	0.00175	0.00176	0.00160
	(A1 * B1 * B2 * !C2 * !Y)	-0.00222	-0.00228	-0.00228
	(A1 * B1 * B2 * !C2 * !Y)	0.00154	0.00156	0.00155
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00180	-0.00184	-0.00229
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00198	0.00198	0.00165
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00224	-0.00228	-0.00228
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00156	0.00156	0.00155
	(A1 * A2 * !B1 * C2 * !Y)	-0.00180	-0.00184	-0.00229
	(A1 * A2 * !B1 * C2 * !Y)	0.00198	0.00198	0.00165
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00224	-0.00229	-0.00228
	(A1 * A2 * !B1 * !C2 * !Y)	0.00156	0.00155	0.00155
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00074	-0.00073	-0.00073
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00360	0.00360	0.00359
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00074	-0.00073	-0.00073
	(A1 * !A2 * !B1 * !C2 * Y)	0.00360	0.00360	0.00359
	(!A1 * B1 * B2 * C2 * !Y)	-0.00215	-0.00218	-0.00237
	(!A1 * B1 * B2 * C2 * !Y)	0.00176	0.00177	0.00161
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00224	-0.00229	-0.00228
	(!A1 * B1 * B2 * !C2 * !Y)	0.00156	0.00156	0.00155
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00074	-0.00073	-0.00073
	(!A1 * B1 * !B2 * !C2 * Y)	0.00360	0.00360	0.00359
	(!A1 * !B1 * !C2 * Y)	-0.00074	-0.00073	-0.00073
	(!A1 * !B1 * !C2 * Y)	0.00360	0.00360	0.00359

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)**	0.00141	0.00142	0.00141
	(A1 * B1 * B2 * C1 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * B1 * B2 * !C1 * !Y)	0.00136	0.00137	0.00135
	(A1 * B1 * B2 * !C1 * !Y)	-0.00080	-0.00081	-0.00081
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00142	0.00142	0.00141
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00136	0.00137	0.00136
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00080	-0.00081	-0.00081
	(A1 * A2 * !B1 * C1 * !Y)	0.00141	0.00142	0.00141
	(A1 * A2 * !B1 * C1 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * !C1 * !Y)	0.00136	0.00137	0.00136
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00080	-0.00081	-0.00081
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00106	0.00106	0.00105
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00180	-0.00180	-0.00180
	(A1 * !A2 * !B1 * !C1 * Y)	0.00106	0.00106	0.00105
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00180	-0.00180	-0.00180
	(!A1 * B1 * B2 * C1 * !Y)	0.00141	0.00142	0.00141
	(!A1 * B1 * B2 * C1 * !Y)	-0.00081	-0.00082	-0.00081
	(!A1 * B1 * B2 * !C1 * !Y)	0.00136	0.00137	0.00136
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00080	-0.00081	-0.00081
	(!A1 * B1 * !B2 * !C1 * Y)	0.00106	0.00106	0.00105
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00180	-0.00180	-0.00180
	(!A1 * !B1 * !C1 * Y)	0.00106	0.00106	0.00105
	(!A1 * !B1 * !C1 * Y)	-0.00180	-0.00180	-0.00180

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00283	0.00284	0.00283
	(A1 * B1 * B2 * C1 * !Y)	-0.00161	-0.00162	-0.00161
	(A1 * B1 * B2 * !C1 * !Y)	0.00273	0.00273	0.00272
	(A1 * B1 * B2 * !C1 * !Y)	-0.00161	-0.00161	-0.00161
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00284	0.00285	0.00283
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00162	-0.00162	-0.00161
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00274	0.00274	0.00273
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00161	-0.00161	-0.00160
	(A1 * A2 * !B1 * C1 * !Y)	0.00284	0.00285	0.00283
	(A1 * A2 * !B1 * C1 * !Y)	-0.00162	-0.00162	-0.00161
	(A1 * A2 * !B1 * !C1 * !Y)	0.00274	0.00274	0.00272
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00161	-0.00160	-0.00160
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00211	0.00210	0.00210
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00360	-0.00360	-0.00360
	(A1 * !A2 * !B1 * !C1 * Y)	0.00211	0.00213	0.00210
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00360	-0.00363	-0.00360
	(!A1 * B1 * B2 * C1 * !Y)	0.00284	0.00285	0.00283
	(!A1 * B1 * B2 * C1 * !Y)	-0.00163	-0.00163	-0.00161
	(!A1 * B1 * B2 * !C1 * !Y)	0.00274	0.00274	0.00272
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00161	-0.00161	-0.00161
	(!A1 * B1 * !B2 * !C1 * Y)	0.00211	0.00211	0.00210
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00360	-0.00361	-0.00360
	(!A1 * !B1 * !C1 * Y)	0.00211	0.00213	0.00210
	(!A1 * !B1 * !C1 * Y)	-0.00360	-0.00363	-0.00360

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)**	-0.00129	-0.00130	-0.00140
	(A1 * B1 * B2 * C1 * !Y)	0.00092	0.00092	0.00084
	(A1 * B1 * B2 * !C1 * !Y)	-0.00133	-0.00137	-0.00135
	(A1 * B1 * B2 * !C1 * !Y)	0.00080	0.00082	0.00081
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00108	-0.00109	-0.00135
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00106	0.00105	0.00086
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00133	-0.00137	-0.00136
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00080	0.00082	0.00081
	(A1 * A2 * !B1 * C1 * !Y)	-0.00108	-0.00109	-0.00135
	(A1 * A2 * !B1 * C1 * !Y)	0.00106	0.00105	0.00086
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00133	-0.00137	-0.00136
	(A1 * A2 * !B1 * !C1 * !Y)	0.00080	0.00082	0.00081
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00097	-0.00106	-0.00105
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00185	0.00183	0.00180
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00097	-0.00106	-0.00105
	(A1 * !A2 * !B1 * !C1 * Y)	0.00185	0.00183	0.00180
	(!A1 * B1 * B2 * C1 * !Y)	-0.00129	-0.00130	-0.00140
	(!A1 * B1 * B2 * C1 * !Y)	0.00092	0.00092	0.00084
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00133	-0.00137	-0.00136
	(!A1 * B1 * B2 * !C1 * !Y)	0.00080	0.00082	0.00081
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00097	-0.00106	-0.00105
	(!A1 * B1 * !B2 * !C1 * Y)	0.00185	0.00183	0.00180
	(!A1 * !B1 * !C1 * Y)	-0.00097	-0.00106	-0.00105
	(!A1 * !B1 * !C1 * Y)	0.00185	0.00183	0.00180

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00260	-0.00260	-0.00280
	(A1 * B1 * B2 * C1 * !Y)	0.00182	0.00181	0.00166
	(A1 * B1 * B2 * !C1 * !Y)	-0.00269	-0.00273	-0.00272
	(A1 * B1 * B2 * !C1 * !Y)	0.00162	0.00161	0.00161
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00225	-0.00227	-0.00273
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00205	0.00203	0.00170
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00269	-0.00274	-0.00273
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00162	0.00161	0.00161
	(A1 * A2 * !B1 * C1 * !Y)	-0.00225	-0.00227	-0.00273
	(A1 * A2 * !B1 * C1 * !Y)	0.00205	0.00203	0.00170
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00269	-0.00274	-0.00272
	(A1 * A2 * !B1 * !C1 * !Y)	0.00162	0.00161	0.00161
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00197	-0.00210	-0.00210
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00373	0.00364	0.00361
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00197	-0.00210	-0.00210
	(A1 * !A2 * !B1 * !C1 * Y)	0.00373	0.00364	0.00361
	(!A1 * B1 * B2 * C1 * !Y)	-0.00259	-0.00261	-0.00280
	(!A1 * B1 * B2 * C1 * !Y)	0.00183	0.00182	0.00166
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00269	-0.00274	-0.00272
	(!A1 * B1 * B2 * !C1 * !Y)	0.00162	0.00162	0.00161
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00197	-0.00210	-0.00210
	(!A1 * B1 * !B2 * !C1 * Y)	0.00373	0.00364	0.00361
	(!A1 * !B1 * !C1 * Y)	-0.00197	-0.00211	-0.00210
	(!A1 * !B1 * !C1 * Y)	0.00373	0.00364	0.00361

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00262	0.00267	0.00271	0.00261	0.00269	0.00276	0.75550
sky130_fd_sc_hs__a222o_2	0.00266	0.00252	0.00265	0.00260	0.00267	0.00281	1.34997

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.11451	0.18757
sky130_fd_sc_hs__a222o_2	0.00000	0.14655	0.22647

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)	0.17941	0.96999	7.83693
	A2->X (RR)	0.18615	0.94883	7.81687
	B1->X (RR)	0.16232	0.93455	7.69410
	B2->X (RR)	0.17123	0.91753	7.68550
	C1->X (RR)	0.14204	0.88510	7.54553
	C2->X (RR)	0.14785	0.87139	7.53683
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.20143	0.91775	7.90103
	A2->X (RR)	0.21025	0.89042	7.85266
	B1->X (RR)	0.18029	0.87761	7.76478
	B2->X (RR)	0.18594	0.85398	7.74050
	C1->X (RR)	0.15528	0.83629	7.65444
	C2->X (RR)	0.16211	0.81644	7.62116

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.51351	1.11943	5.12442
	A2->X (FF)	0.55099	1.16263	5.21725
	B1->X (FF)	0.47948	1.09232	5.31036
	B2->X (FF)	0.50680	1.13439	5.41740
	C1->X (FF)	0.36793	0.99369	5.15040
	C2->X (FF)	0.39918	1.03193	5.25136
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.60526	1.18685	5.15179
	A2->X (FF)	0.62844	1.22344	5.24684
	B1->X (FF)	0.57381	1.16883	5.41256
	B2->X (FF)	0.58722	1.18766	5.45542
	C1->X (FF)	0.46402	1.06272	5.26347
	C2->X (FF)	0.50661	1.11529	5.38870

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01516	0.01509	0.02029
	A1	0.00757	0.00751	0.01284
	A2	0.01598	0.01571	0.01948
	A2	0.00759	0.00732	0.01123
	B1	0.01237	0.01245	0.01777
	B1	0.00563	0.00569	0.01166
	B2	0.01305	0.01307	0.01726
	B2	0.00572	0.00573	0.01047
	C1	0.00882	0.00898	0.01565
	C1	0.00304	0.00317	0.01108
	C2	0.00955	0.00958	0.01522
	C2	0.00309	0.00310	0.00985
sky130_fd_sc_hs__a222o_2	A1	0.01694	0.01716	0.02217
	A1	0.01028	0.01053	0.01571
	A2	0.01844	0.01873	0.02289
	A2	0.01022	0.01052	0.01494
	B1	0.01429	0.01463	0.02032
	B1	0.00766	0.00801	0.01398
	B2	0.01499	0.01530	0.01992
	B2	0.00805	0.00838	0.01325
	C1	0.01167	0.01194	0.01862
	C1	0.00600	0.00627	0.01324
	C2	0.01247	0.01259	0.01823
	C2	0.00598	0.00611	0.01203

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00505	0.00504	0.00839
	A1	0.01279	0.01277	0.01604
	A2	0.00534	0.00513	0.00860
	A2	0.01383	0.01371	0.01677
	B1	0.00501	0.00455	0.00928
	B1	0.01173	0.01161	0.01577
	B2	0.00535	0.00533	0.01074
	B2	0.01263	0.01260	0.01662
	C1	0.00401	0.00442	0.01299
	C1	0.01063	0.01080	0.01775
	C2	0.00437	0.00478	0.01335
	C2	0.01162	0.01183	0.01873
sky130_fd_sc_hs__a222o_2	A1	0.00726	0.00666	0.01001
	A1	0.01477	0.01429	0.01746
	A2	0.00816	0.00797	0.01150
	A2	0.01644	0.01627	0.01974
	B1	0.00778	0.00757	0.01234
	B1	0.01434	0.01417	0.01846
	B2	0.00813	0.00803	0.01274
	B2	0.01536	0.01527	0.01954
	C1	0.00702	0.00725	0.01509
	C1	0.01321	0.01326	0.02016
	C2	0.00812	0.00796	0.01535
	C2	0.01443	0.01442	0.02130

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)**	0.00114	0.00113	0.00113
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00153	-0.00159	-0.00159
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00115	0.00113	0.00114
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00151	-0.00159	-0.00159
	(A2 * B1 * B2 * !C1 * X)	0.00115	0.00113	0.00114
	(A2 * B1 * B2 * !C1 * X)	-0.00151	-0.00160	-0.00159
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00116	0.00115	0.00114
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00146	-0.00156	-0.00155
	(A2 * !B1 * C1 * C2 * X)	0.00116	0.00115	0.00114
	(A2 * !B1 * C1 * C2 * X)	-0.00146	-0.00156	-0.00155
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * B2 * !C1 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * B2 * !C1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00108	0.00108	0.00108
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00164	-0.00164	-0.00164
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00042	0.00042	0.00040
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00185	-0.00186	-0.00188
	(!A2 * B1 * !B2 * !C1 * !X)	0.00042	0.00042	0.00040
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00185	-0.00186	-0.00188
	(!A2 * !B1 * C1 * C2 * X)	0.00108	0.00108	0.00108
	(!A2 * !B1 * C1 * C2 * X)	-0.00164	-0.00164	-0.00164
	(!A2 * !B1 * C1 * !C2 * !X)	0.00042	0.00042	0.00040
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00185	-0.00186	-0.00188
	(!A2 * !B1 * !C1 * !X)	0.00042	0.00042	0.00040
	(!A2 * !B1 * !C1 * !X)	-0.00185	-0.00186	-0.00188

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00122	0.00123	0.00122
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00153	-0.00159	-0.00158
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00124	0.00123	0.00122
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00150	-0.00158	-0.00158
	(A2 * B1 * B2 * !C1 * X)	0.00124	0.00123	0.00122
	(A2 * B1 * B2 * !C1 * X)	-0.00150	-0.00158	-0.00158
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00125	0.00123	0.00122
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00143	-0.00154	-0.00153
	(A2 * !B1 * C1 * C2 * X)	0.00125	0.00123	0.00122
	(A2 * !B1 * C1 * C2 * X)	-0.00143	-0.00154	-0.00153
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00117	0.00117	0.00117
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00117	0.00117	0.00117
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * B1 * B2 * !C1 * X)	0.00117	0.00117	0.00117
	(!A2 * B1 * B2 * !C1 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00116	0.00117	0.00117
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00049	0.00049	0.00044
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00187	-0.00188	-0.00194
	(!A2 * B1 * !B2 * !C1 * !X)	0.00049	0.00049	0.00044
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00187	-0.00188	-0.00194
	(!A2 * !B1 * C1 * C2 * X)	0.00116	0.00117	0.00117
	(!A2 * !B1 * C1 * C2 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * C1 * !C2 * !X)	0.00049	0.00049	0.00044
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00187	-0.00188	-0.00194
	(!A2 * !B1 * !C1 * !X)	0.00049	0.00049	0.00044
	(!A2 * !B1 * !C1 * !X)	-0.00187	-0.00188	-0.00194

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)	-0.00113	-0.00113	-0.00113
	(A2 * B1 * B2 * C1 * C2 * X)	0.00158	0.00159	0.00159
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00113	-0.00113	-0.00113
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00158	0.00159	0.00159
	(A2 * B1 * B2 * !C1 * X)	-0.00113	-0.00113	-0.00113
	(A2 * B1 * B2 * !C1 * X)	0.00158	0.00160	0.00159
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00113	-0.00114	-0.00113
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00155	0.00156	0.00155
	(A2 * !B1 * C1 * C2 * X)	-0.00113	-0.00114	-0.00113
	(A2 * !B1 * C1 * C2 * X)	0.00155	0.00156	0.00155
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00165	0.00167	0.00164
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00165	0.00167	0.00164
	(!A2 * B1 * B2 * !C1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * B2 * !C1 * X)	0.00165	0.00167	0.00164
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00106	-0.00108	-0.00108
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00165	0.00167	0.00164
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00038	-0.00039	-0.00039
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00188	0.00190	0.00189
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * B1 * !B2 * !C1 * !X)	0.00188	0.00190	0.00189
	(!A2 * !B1 * C1 * C2 * X)	-0.00106	-0.00108	-0.00108
	(!A2 * !B1 * C1 * C2 * X)	0.00165	0.00167	0.00164
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * C1 * !C2 * !X)	0.00188	0.00190	0.00189
	(!A2 * !B1 * !C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !C1 * !X)	0.00188	0.00190	0.00189

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00121	-0.00122	-0.00122
	(A2 * B1 * B2 * C1 * C2 * X)	0.00157	0.00159	0.00158
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00121	-0.00122	-0.00122
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00157	0.00158	0.00158
	(A2 * B1 * B2 * !C1 * X)	-0.00121	-0.00122	-0.00122
	(A2 * B1 * B2 * !C1 * X)	0.00157	0.00158	0.00158
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00121	-0.00122	-0.00121
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00152	0.00154	0.00153
	(A2 * !B1 * C1 * C2 * X)	-0.00122	-0.00122	-0.00121
	(A2 * !B1 * C1 * C2 * X)	0.00154	0.00154	0.00153
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00113	-0.00117	-0.00117
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00162	0.00164	0.00162
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00113	-0.00117	-0.00117
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00161	0.00163	0.00162
	(!A2 * B1 * B2 * !C1 * X)	-0.00113	-0.00117	-0.00117
	(!A2 * B1 * B2 * !C1 * X)	0.00161	0.00163	0.00162
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00112	-0.00117	-0.00117
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00163	0.00165	0.00163
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00196	0.00196	0.00195
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * B1 * !B2 * !C1 * !X)	0.00196	0.00196	0.00195
	(!A2 * !B1 * C1 * C2 * X)	-0.00112	-0.00117	-0.00117
	(!A2 * !B1 * C1 * C2 * X)	0.00163	0.00165	0.00163
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * !B1 * C1 * !C2 * !X)	0.00197	0.00196	0.00195
	(!A2 * !B1 * !C1 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * !B1 * !C1 * !X)	0.00197	0.00196	0.00195

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)	0.00127	0.00126	0.00127
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00147	-0.00155	-0.00154
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00127	0.00129	0.00127
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00146	-0.00155	-0.00154
	(A1 * B1 * B2 * !C1 * X)	0.00127	0.00129	0.00127
	(A1 * B1 * B2 * !C1 * X)	-0.00146	-0.00155	-0.00154
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00129	0.00129	0.00127
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00141	-0.00151	-0.00150
	(A1 * !B1 * C1 * C2 * X)	0.00129	0.00129	0.00127
	(A1 * !B1 * C1 * C2 * X)	-0.00141	-0.00151	-0.00150
	(!A1 * B1 * B2 * X)	0.00121	0.00122	0.00121
	(!A1 * B1 * B2 * X)	-0.00158	-0.00159	-0.00159
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00121	0.00123	0.00122
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00158	-0.00159	-0.00158
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00103	0.00104	0.00104
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00176	-0.00177	-0.00176
	(!A1 * B1 * !B2 * !C1 * !X)	0.00103	0.00104	0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00176	-0.00177	-0.00176
	(!A1 * !B1 * C1 * !C2 * !X)	0.00103	0.00104	0.00104
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00176	-0.00177	-0.00176
	(!A1 * !B1 * !C1 * !X)	0.00103	0.00104	0.00104
	(!A1 * !B1 * !C1 * !X)	-0.00176	-0.00177	-0.00176

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00120	0.00120	0.00119
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00153	-0.00160	-0.00158
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00120	0.00120	0.00119
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00151	-0.00159	-0.00158
	(A1 * B1 * B2 * !C1 * X)	0.00120	0.00120	0.00119
	(A1 * B1 * B2 * !C1 * X)	-0.00151	-0.00159	-0.00158
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00122	0.00121	0.00119
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00144	-0.00154	-0.00153
	(A1 * !B1 * C1 * C2 * X)	0.00121	0.00121	0.00119
	(A1 * !B1 * C1 * C2 * X)	-0.00143	-0.00154	-0.00153
	(!A1 * B1 * B2 * X)	0.00113	0.00114	0.00113
	(!A1 * B1 * B2 * X)	-0.00161	-0.00162	-0.00162
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00113	0.00114	0.00113
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00112	0.00114	0.00113
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00162	-0.00163	-0.00162
	(!A1 * B1 * !B2 * !C1 * !X)	0.00112	0.00114	0.00113
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * C1 * !C2 * !X)	0.00112	0.00114	0.00113
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * !C1 * !X)	0.00112	0.00114	0.00113
	(!A1 * !B1 * !C1 * !X)	-0.00162	-0.00163	-0.00162

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

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

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00126	-0.00126	-0.00127
	(A1 * B1 * B2 * C1 * C2 * X)	0.00153	0.00155	0.00154
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00126	-0.00127	-0.00127
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00153	0.00155	0.00154
	(A1 * B1 * B2 * !C1 * X)	-0.00126	-0.00127	-0.00127
	(A1 * B1 * B2 * !C1 * X)	0.00153	0.00155	0.00154
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00126	-0.00127	-0.00126
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00149	0.00151	0.00150
	(A1 * !B1 * C1 * C2 * X)	-0.00126	-0.00127	-0.00126
	(A1 * !B1 * C1 * C2 * X)	0.00149	0.00151	0.00150
	(!A1 * B1 * B2 * X)	-0.00120	-0.00122	-0.00121
	(!A1 * B1 * B2 * X)	0.00159	0.00161	0.00159
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00119	-0.00122	-0.00122
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00158	0.00161	0.00159
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00183	0.00180	0.00178
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	0.00183	0.00180	0.00178
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * !B1 * C1 * !C2 * !X)	0.00183	0.00180	0.00178
	(!A1 * !B1 * !C1 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * !B1 * !C1 * !X)	0.00183	0.00180	0.00178

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00118	-0.00119	-0.00119
	(A1 * B1 * B2 * C1 * C2 * X)	0.00158	0.00160	0.00158
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00118	-0.00119	-0.00119
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00158	0.00159	0.00158
	(A1 * B1 * B2 * !C1 * X)	-0.00118	-0.00119	-0.00119
	(A1 * B1 * B2 * !C1 * X)	0.00158	0.00159	0.00158
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00118	-0.00119	-0.00119
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00152	0.00154	0.00153
	(A1 * !B1 * C1 * C2 * X)	-0.00118	-0.00119	-0.00119
	(A1 * !B1 * C1 * C2 * X)	0.00153	0.00154	0.00153
	(!A1 * B1 * B2 * X)	-0.00110	-0.00114	-0.00113
	(!A1 * B1 * B2 * X)	0.00163	0.00164	0.00162
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00110	-0.00114	-0.00113
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00163	0.00164	0.00162
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00106	-0.00113	-0.00113
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00168	0.00165	0.00163
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00106	-0.00113	-0.00113
	(!A1 * B1 * !B2 * !C1 * !X)	0.00168	0.00165	0.00163
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00106	-0.00113	-0.00113
	(!A1 * !B1 * C1 * !C2 * !X)	0.00168	0.00165	0.00163
	(!A1 * !B1 * !C1 * !X)	-0.00106	-0.00113	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00168	0.00165	0.00163

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)**	0.00125	0.00127	0.00121
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00126	-0.00126	-0.00126
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00118	0.00119	0.00118
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00095	-0.00095	-0.00095
	(A1 * A2 * B2 * !C1 * X)	0.00118	0.00119	0.00118
	(A1 * A2 * B2 * !C1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00117	0.00117	0.00113
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00118	-0.00119	-0.00117
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00094	-0.00095	-0.00095
	(A1 * A2 * !B2 * !C1 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * !B2 * !C1 * X)	-0.00094	-0.00095	-0.00095
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00139	0.00119	0.00118
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00141	-0.00164	-0.00164
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00112	0.00112	0.00112
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00169	-0.00169	-0.00168
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00043	0.00043	0.00041
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00192	-0.00193	-0.00195
	(A1 * !A2 * !B2 * !C1 * !X)	0.00043	0.00043	0.00041
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00192	-0.00193	-0.00195
	(!A1 * B2 * C1 * C2 * X)	0.00139	0.00119	0.00118
	(!A1 * B2 * C1 * C2 * X)	-0.00141	-0.00164	-0.00164
	(!A1 * !B2 * C1 * C2 * X)	0.00112	0.00113	0.00112
	(!A1 * !B2 * C1 * C2 * X)	-0.00169	-0.00169	-0.00168
	(!A1 * !B2 * C1 * !C2 * !X)	0.00043	0.00043	0.00041
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00192	-0.00193	-0.00195
	(!A1 * !B2 * !C1 * !X)	0.00043	0.00043	0.00041
	(!A1 * !B2 * !C1 * !X)	-0.00192	-0.00193	-0.00195

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00125	0.00124	0.00118
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00118	-0.00118	-0.00117
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00115	0.00115	0.00114
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * B2 * !C1 * X)	0.00115	0.00115	0.00114
	(A1 * A2 * B2 * !C1 * X)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00112	0.00112	0.00110
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00110	-0.00110	-0.00109
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00109	0.00109	0.00108
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * !B2 * !C1 * X)	0.00109	0.00109	0.00108
	(A1 * A2 * !B2 * !C1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00141	0.00116	0.00114
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00124	-0.00155	-0.00155
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00107	0.00108	0.00107
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00159	-0.00161	-0.00160
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00042	0.00041	0.00040
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00181	-0.00181	-0.00183
	(A1 * !A2 * !B2 * !C1 * !X)	0.00042	0.00041	0.00040
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00181	-0.00181	-0.00183
	(!A1 * B2 * C1 * C2 * X)	0.00140	0.00115	0.00114
	(!A1 * B2 * C1 * C2 * X)	-0.00125	-0.00155	-0.00155
	(!A1 * !B2 * C1 * C2 * X)	0.00107	0.00108	0.00107
	(!A1 * !B2 * C1 * C2 * X)	-0.00159	-0.00161	-0.00160
	(!A1 * !B2 * C1 * !C2 * !X)	0.00042	0.00042	0.00040
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00181	-0.00181	-0.00183
	(!A1 * !B2 * !C1 * !X)	0.00042	0.00042	0.00040
	(!A1 * !B2 * !C1 * !X)	-0.00181	-0.00181	-0.00183

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)	-0.00119	-0.00119	-0.00119
	(A1 * A2 * B2 * C1 * C2 * X)	0.00126	0.00126	0.00126
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00109	-0.00110	-0.00110
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00103	0.00103	0.00102
	(A1 * A2 * B2 * !C1 * X)	-0.00109	-0.00109	-0.00110
	(A1 * A2 * B2 * !C1 * X)	0.00103	0.00103	0.00102
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00112	-0.00115	-0.00113
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00118	0.00119	0.00117
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00111	-0.00113	-0.00112
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * !B2 * !C1 * X)	-0.00111	-0.00113	-0.00112
	(A1 * A2 * !B2 * !C1 * X)	0.00095	0.00096	0.00095
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00117	-0.00117	-0.00116
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00164	0.00164	0.00164
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00110	-0.00112	-0.00112
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00169	0.00171	0.00169
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00040	-0.00040	-0.00040
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00195	0.00196	0.00196
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(A1 * !A2 * !B2 * !C1 * !X)	0.00195	0.00196	0.00196
	(!A1 * B2 * C1 * C2 * X)	-0.00117	-0.00117	-0.00116
	(!A1 * B2 * C1 * C2 * X)	0.00164	0.00164	0.00164
	(!A1 * !B2 * C1 * C2 * X)	-0.00110	-0.00113	-0.00112
	(!A1 * !B2 * C1 * C2 * X)	0.00169	0.00171	0.00169
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !B2 * C1 * !C2 * !X)	0.00195	0.00196	0.00196
	(!A1 * !B2 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !B2 * !C1 * !X)	0.00195	0.00196	0.00196

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00115	-0.00115	-0.00115
	(A1 * A2 * B2 * C1 * C2 * X)	0.00118	0.00118	0.00117
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00106	-0.00107	-0.00109
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00097	0.00096	0.00094
	(A1 * A2 * B2 * !C1 * X)	-0.00106	-0.00107	-0.00109
	(A1 * A2 * B2 * !C1 * X)	0.00097	0.00096	0.00094
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00108	-0.00111	-0.00110
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00110	0.00110	0.00109
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00107	-0.00109	-0.00108
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * !B2 * !C1 * X)	-0.00107	-0.00109	-0.00108
	(A1 * A2 * !B2 * !C1 * X)	0.00088	0.00088	0.00088
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00113	-0.00113	-0.00112
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00155	0.00155	0.00155
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00106	-0.00108	-0.00107
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00161	0.00162	0.00160
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00038	-0.00039	-0.00038
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00183	0.00184	0.00184
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(A1 * !A2 * !B2 * !C1 * !X)	0.00183	0.00184	0.00184
	(!A1 * B2 * C1 * C2 * X)	-0.00113	-0.00113	-0.00112
	(!A1 * B2 * C1 * C2 * X)	0.00155	0.00155	0.00155
	(!A1 * !B2 * C1 * C2 * X)	-0.00106	-0.00108	-0.00107
	(!A1 * !B2 * C1 * C2 * X)	0.00161	0.00162	0.00160
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00040	-0.00039	-0.00039
	(!A1 * !B2 * C1 * !C2 * !X)	0.00185	0.00184	0.00184
	(!A1 * !B2 * !C1 * !X)	-0.00040	-0.00039	-0.00039
	(!A1 * !B2 * !C1 * !X)	0.00185	0.00184	0.00184

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)	0.00121	0.00122	0.00116
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00122	-0.00121	-0.00120
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00114	0.00114	0.00114
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00089	-0.00090	-0.00090
	(A1 * A2 * B1 * !C1 * X)	0.00114	0.00114	0.00114
	(A1 * A2 * B1 * !C1 * X)	-0.00089	-0.00090	-0.00090
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00111	0.00112	0.00109
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00113	-0.00114	-0.00112
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00109	0.00109	0.00108
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !B1 * !C1 * X)	0.00109	0.00109	0.00108
	(A1 * A2 * !B1 * !C1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00134	0.00115	0.00113
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00133	-0.00156	-0.00157
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00107	0.00109	0.00108
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00165	-0.00167	-0.00166
	(A1 * !A2 * !B1 * !C1 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00165	-0.00167	-0.00166
	(!A1 * B1 * C1 * C2 * X)	0.00134	0.00115	0.00113
	(!A1 * B1 * C1 * C2 * X)	-0.00132	-0.00156	-0.00157
	(!A1 * !B1 * C1 * !C2 * !X)	0.00103	0.00104	0.00103
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00165	-0.00167	-0.00166
	(!A1 * !B1 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !B1 * !C1 * !X)	-0.00165	-0.00167	-0.00166

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	0.00125	0.00126	0.00119
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00118	-0.00118	-0.00117
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00116	0.00116	0.00116
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * B1 * !C1 * X)	0.00116	0.00116	0.00116
	(A1 * A2 * B1 * !C1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00114	0.00115	0.00111
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00110	-0.00110	-0.00109
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00110	0.00112	0.00110
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !B1 * !C1 * X)	0.00110	0.00112	0.00110
	(A1 * A2 * !B1 * !C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00140	0.00117	0.00115
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00126	-0.00155	-0.00155
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00160	-0.00160	-0.00160
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00106	0.00108	0.00107
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00159	-0.00160	-0.00159
	(A1 * !A2 * !B1 * !C1 * !X)	0.00106	0.00108	0.00107
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * B1 * C1 * C2 * X)	0.00142	0.00117	0.00115
	(!A1 * B1 * C1 * C2 * X)	-0.00125	-0.00155	-0.00155
	(!A1 * !B1 * C1 * !C2 * !X)	0.00109	0.00110	0.00110
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * !B1 * !C1 * !X)	0.00109	0.00110	0.00110
	(!A1 * !B1 * !C1 * !X)	-0.00159	-0.00159	-0.00159

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)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * B1 * C1 * C2 * X)	0.00122	0.00121	0.00120
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00104	-0.00105	-0.00106
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00097	0.00097	0.00097
	(A1 * A2 * B1 * !C1 * X)	-0.00104	-0.00105	-0.00106
	(A1 * A2 * B1 * !C1 * X)	0.00097	0.00097	0.00097
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00107	-0.00110	-0.00109
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00113	0.00114	0.00112
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00107	-0.00109	-0.00108
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00090	0.00090	0.00089
	(A1 * A2 * !B1 * !C1 * X)	-0.00107	-0.00109	-0.00108
	(A1 * A2 * !B1 * !C1 * X)	0.00090	0.00090	0.00089
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00113	-0.00112	-0.00112
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00157	0.00156	0.00157
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00106	-0.00109	-0.00108
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00162	0.00164	0.00162
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00096	-0.00103	-0.00103
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00173	0.00169	0.00167
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00096	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !C1 * !X)	0.00173	0.00169	0.00167
	(!A1 * B1 * C1 * C2 * X)	-0.00113	-0.00112	-0.00112
	(!A1 * B1 * C1 * C2 * X)	0.00157	0.00156	0.00157
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00096	-0.00103	-0.00103
	(!A1 * !B1 * C1 * !C2 * !X)	0.00173	0.00169	0.00167
	(!A1 * !B1 * !C1 * !X)	-0.00096	-0.00103	-0.00103
	(!A1 * !B1 * !C1 * !X)	0.00173	0.00169	0.00167

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00117	-0.00117	-0.00117
	(A1 * A2 * B1 * C1 * C2 * X)	0.00118	0.00118	0.00117
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00107	-0.00108	-0.00110
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00097	0.00097	0.00094
	(A1 * A2 * B1 * !C1 * X)	-0.00107	-0.00108	-0.00110
	(A1 * A2 * B1 * !C1 * X)	0.00097	0.00097	0.00094
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00109	-0.00112	-0.00111
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00110	0.00110	0.00109
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00108	-0.00111	-0.00110
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * !B1 * !C1 * X)	-0.00108	-0.00111	-0.00110
	(A1 * A2 * !B1 * !C1 * X)	0.00088	0.00088	0.00088
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00155	0.00155	0.00155
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00107	-0.00110	-0.00109
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00160	0.00162	0.00160
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00099	-0.00106	-0.00107
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00167	0.00162	0.00160
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00099	-0.00106	-0.00107
	(A1 * !A2 * !B1 * !C1 * !X)	0.00167	0.00162	0.00160
	(!A1 * B1 * C1 * C2 * X)	-0.00114	-0.00114	-0.00113
	(!A1 * B1 * C1 * C2 * X)	0.00154	0.00155	0.00155
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00102	-0.00109	-0.00110
	(!A1 * !B1 * C1 * !C2 * !X)	0.00166	0.00162	0.00160
	(!A1 * !B1 * !C1 * !X)	-0.00102	-0.00109	-0.00110
	(!A1 * !B1 * !C1 * !X)	0.00165	0.00162	0.00160

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)	0.00137	0.00138	0.00138
	(A1 * B1 * B2 * C2 * X)	-0.00084	-0.00084	-0.00084
	(A1 * B1 * B2 * !C2 * X)	0.00132	0.00133	0.00132
	(A1 * B1 * B2 * !C2 * X)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00138	0.00138	0.00138
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00132	0.00132	0.00132
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00083	-0.00084	-0.00084
	(A1 * A2 * !B1 * C2 * X)	0.00138	0.00138	0.00138
	(A1 * A2 * !B1 * C2 * X)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * !B1 * !C2 * X)	0.00132	0.00132	0.00132
	(A1 * A2 * !B1 * !C2 * X)	-0.00083	-0.00083	-0.00084
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00046	0.00046	0.00044
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00195	-0.00195	-0.00197
	(A1 * !A2 * !B1 * !C2 * !X)	0.00046	0.00046	0.00044
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00195	-0.00195	-0.00197
	(!A1 * B1 * B2 * C2 * X)	0.00138	0.00138	0.00138
	(!A1 * B1 * B2 * C2 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * B1 * B2 * !C2 * X)	0.00132	0.00132	0.00132
	(!A1 * B1 * B2 * !C2 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * B1 * !B2 * !C2 * !X)	0.00046	0.00046	0.00044
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00195	-0.00195	-0.00197
	(!A1 * !B1 * !C2 * !X)	0.00046	0.00046	0.00044
	(!A1 * !B1 * !C2 * !X)	-0.00195	-0.00195	-0.00197

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00134	0.00134	0.00134
	(A1 * B1 * B2 * C2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * B1 * B2 * !C2 * X)	0.00128	0.00129	0.00128
	(A1 * B1 * B2 * !C2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00134	0.00135	0.00134
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00128	0.00128	0.00128
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00078	-0.00078	-0.00079
	(A1 * A2 * !B1 * C2 * X)	0.00134	0.00135	0.00134
	(A1 * A2 * !B1 * C2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B1 * !C2 * X)	0.00128	0.00128	0.00128
	(A1 * A2 * !B1 * !C2 * X)	-0.00078	-0.00079	-0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00045	0.00045	0.00043
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00186	-0.00187	-0.00189
	(A1 * !A2 * !B1 * !C2 * !X)	0.00045	0.00045	0.00043
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00186	-0.00187	-0.00189
	(!A1 * B1 * B2 * C2 * X)	0.00134	0.00135	0.00134
	(!A1 * B1 * B2 * C2 * X)	-0.00079	-0.00079	-0.00079
	(!A1 * B1 * B2 * !C2 * X)	0.00128	0.00129	0.00128
	(!A1 * B1 * B2 * !C2 * X)	-0.00078	-0.00079	-0.00079
	(!A1 * B1 * !B2 * !C2 * !X)	0.00045	0.00045	0.00043
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00186	-0.00186	-0.00189
	(!A1 * !B1 * !C2 * !X)	0.00045	0.00045	0.00043
	(!A1 * !B1 * !C2 * !X)	-0.00186	-0.00187	-0.00189

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)**	-0.00121	-0.00122	-0.00136
	(A1 * B1 * B2 * C2 * X)	0.00099	0.00098	0.00087
	(A1 * B1 * B2 * !C2 * X)	-0.00131	-0.00133	-0.00132
	(A1 * B1 * B2 * !C2 * X)	0.00084	0.00085	0.00084
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00104	-0.00105	-0.00132
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00110	0.00109	0.00089
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00131	-0.00132	-0.00132
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00084	0.00084	0.00084
	(A1 * A2 * !B1 * C2 * X)	-0.00104	-0.00105	-0.00132
	(A1 * A2 * !B1 * C2 * X)	0.00110	0.00109	0.00089
	(A1 * A2 * !B1 * !C2 * X)	-0.00130	-0.00132	-0.00132
	(A1 * A2 * !B1 * !C2 * X)	0.00084	0.00084	0.00084
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00042	-0.00043	-0.00042
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00197	0.00198	0.00198
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00042	-0.00043	-0.00043
	(A1 * !A2 * !B1 * !C2 * !X)	0.00197	0.00198	0.00198
	(!A1 * B1 * B2 * C2 * X)	-0.00121	-0.00122	-0.00136
	(!A1 * B1 * B2 * C2 * X)	0.00099	0.00099	0.00088
	(!A1 * B1 * B2 * !C2 * X)	-0.00131	-0.00132	-0.00132
	(!A1 * B1 * B2 * !C2 * X)	0.00085	0.00084	0.00084
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * B1 * !B2 * !C2 * !X)	0.00197	0.00198	0.00198
	(!A1 * !B1 * !C2 * !X)	-0.00042	-0.00043	-0.00043
	(!A1 * !B1 * !C2 * !X)	0.00197	0.00198	0.00198

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00122	-0.00122	-0.00133
	(A1 * B1 * B2 * C2 * X)	0.00090	0.00089	0.00081
	(A1 * B1 * B2 * !C2 * X)	-0.00127	-0.00129	-0.00128
	(A1 * B1 * B2 * !C2 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00103	-0.00105	-0.00129
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00103	0.00103	0.00084
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00127	-0.00128	-0.00128
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * !B1 * C2 * X)	-0.00103	-0.00105	-0.00129
	(A1 * A2 * !B1 * C2 * X)	0.00103	0.00103	0.00084
	(A1 * A2 * !B1 * !C2 * X)	-0.00127	-0.00128	-0.00128
	(A1 * A2 * !B1 * !C2 * X)	0.00079	0.00080	0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00189	0.00190	0.00189
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * !B1 * !C2 * !X)	0.00189	0.00190	0.00189
	(!A1 * B1 * B2 * C2 * X)	-0.00122	-0.00123	-0.00133
	(!A1 * B1 * B2 * C2 * X)	0.00090	0.00090	0.00082
	(!A1 * B1 * B2 * !C2 * X)	-0.00127	-0.00129	-0.00128
	(!A1 * B1 * B2 * !C2 * X)	0.00080	0.00080	0.00079
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * B1 * !B2 * !C2 * !X)	0.00189	0.00190	0.00189
	(!A1 * !B1 * !C2 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !B1 * !C2 * !X)	0.00189	0.00190	0.00189

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)**	0.00138	0.00138	0.00138
	(A1 * B1 * B2 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * B1 * B2 * !C1 * X)	0.00132	0.00133	0.00132
	(A1 * B1 * B2 * !C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00138	0.00138	0.00138
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00081	-0.00081	-0.00080
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00132	0.00133	0.00132
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !B1 * C1 * X)	0.00138	0.00138	0.00138
	(A1 * A2 * !B1 * C1 * X)	-0.00081	-0.00081	-0.00080
	(A1 * A2 * !B1 * !C1 * X)	0.00132	0.00133	0.00132
	(A1 * A2 * !B1 * !C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00105	0.00105	0.00105
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00175	-0.00176	-0.00176
	(A1 * !A2 * !B1 * !C1 * !X)	0.00105	0.00105	0.00105
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00175	-0.00176	-0.00176
	(!A1 * B1 * B2 * C1 * X)	0.00138	0.00138	0.00138
	(!A1 * B1 * B2 * C1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * B2 * !C1 * X)	0.00132	0.00133	0.00132
	(!A1 * B1 * B2 * !C1 * X)	-0.00081	-0.00081	-0.00080
	(!A1 * B1 * !B2 * !C1 * !X)	0.00105	0.00105	0.00105
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00175	-0.00176	-0.00176
	(!A1 * !B1 * !C1 * !X)	0.00105	0.00105	0.00105
	(!A1 * !B1 * !C1 * !X)	-0.00175	-0.00176	-0.00176

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00142	0.00142	0.00142
	(A1 * B1 * B2 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * B1 * B2 * !C1 * X)	0.00136	0.00137	0.00136
	(A1 * B1 * B2 * !C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00142	0.00143	0.00142
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00137	0.00138	0.00136
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !B1 * C1 * X)	0.00142	0.00143	0.00142
	(A1 * A2 * !B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * !C1 * X)	0.00137	0.00138	0.00136
	(A1 * A2 * !B1 * !C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00103	0.00104	0.00104
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * !A2 * !B1 * !C1 * !X)	0.00103	0.00104	0.00104
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00182	-0.00183	-0.00182
	(!A1 * B1 * B2 * C1 * X)	0.00142	0.00143	0.00142
	(!A1 * B1 * B2 * C1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * B2 * !C1 * X)	0.00137	0.00138	0.00137
	(!A1 * B1 * B2 * !C1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	0.00103	0.00104	0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00182	-0.00183	-0.00182
	(!A1 * !B1 * !C1 * !X)	0.00103	0.00104	0.00104
	(!A1 * !B1 * !C1 * !X)	-0.00182	-0.00183	-0.00182

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)**	-0.00121	-0.00122	-0.00136
	(A1 * B1 * B2 * C1 * X)	0.00096	0.00095	0.00084
	(A1 * B1 * B2 * !C1 * X)	-0.00131	-0.00133	-0.00132
	(A1 * B1 * B2 * !C1 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00104	-0.00105	-0.00132
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00107	0.00106	0.00086
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00131	-0.00133	-0.00132
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * !B1 * C1 * X)	-0.00104	-0.00105	-0.00132
	(A1 * A2 * !B1 * C1 * X)	0.00107	0.00106	0.00086
	(A1 * A2 * !B1 * !C1 * X)	-0.00131	-0.00133	-0.00132
	(A1 * A2 * !B1 * !C1 * X)	0.00081	0.00081	0.00080
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00099	-0.00105	-0.00105
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00183	0.00179	0.00177
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00099	-0.00105	-0.00105
	(A1 * !A2 * !B1 * !C1 * !X)	0.00183	0.00179	0.00177
	(!A1 * B1 * B2 * C1 * X)	-0.00121	-0.00122	-0.00136
	(!A1 * B1 * B2 * C1 * X)	0.00096	0.00095	0.00084
	(!A1 * B1 * B2 * !C1 * X)	-0.00131	-0.00133	-0.00132
	(!A1 * B1 * B2 * !C1 * X)	0.00081	0.00081	0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00099	-0.00105	-0.00105
	(!A1 * B1 * !B2 * !C1 * !X)	0.00183	0.00179	0.00177
	(!A1 * !B1 * !C1 * !X)	-0.00099	-0.00105	-0.00105
	(!A1 * !B1 * !C1 * !X)	0.00183	0.00179	0.00177

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00130	-0.00130	-0.00141
	(A1 * B1 * B2 * C1 * X)	0.00092	0.00091	0.00083
	(A1 * B1 * B2 * !C1 * X)	-0.00135	-0.00137	-0.00136
	(A1 * B1 * B2 * !C1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00111	-0.00112	-0.00136
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00105	0.00104	0.00086
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00135	-0.00138	-0.00136
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * !B1 * C1 * X)	-0.00111	-0.00112	-0.00136
	(A1 * A2 * !B1 * C1 * X)	0.00105	0.00104	0.00086
	(A1 * A2 * !B1 * !C1 * X)	-0.00135	-0.00138	-0.00136
	(A1 * A2 * !B1 * !C1 * X)	0.00081	0.00081	0.00081
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00104	-0.00104
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00190	0.00186	0.00183
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00096	-0.00104	-0.00104
	(A1 * !A2 * !B1 * !C1 * !X)	0.00190	0.00186	0.00183
	(!A1 * B1 * B2 * C1 * X)	-0.00130	-0.00130	-0.00141
	(!A1 * B1 * B2 * C1 * X)	0.00092	0.00092	0.00083
	(!A1 * B1 * B2 * !C1 * X)	-0.00135	-0.00138	-0.00137
	(!A1 * B1 * B2 * !C1 * X)	0.00081	0.00082	0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00104	-0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	0.00190	0.00186	0.00183
	(!A1 * !B1 * !C1 * !X)	-0.00096	-0.00104	-0.00104
	(!A1 * !B1 * !C1 * !X)	0.00190	0.00186	0.00183

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00286	0.00283	0.00296	0.00298	0.34667
sky130_fd_sc_hs__a22oi_2	0.00623	0.00549	0.00597	0.00546	0.63585
sky130_fd_sc_hs__a22oi_4	0.01098	0.01082	0.01111	0.01093	1.19944

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22oi_1	0.00000	0.04849	0.07436
sky130_fd_sc_hs__a22oi_2	0.00000	0.09787	0.15192
sky130_fd_sc_hs__a22oi_4	0.00000	0.19101	0.29494

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)	0.16828	1.18064	10.51440
	A2->Y (FR)	0.19701	1.21534	10.57320
	B1->Y (FR)	0.12251	1.13868	10.77140
	B2->Y (FR)	0.15074	1.18030	10.88790
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.17505	1.02128	10.26730
	A2->Y (FR)	0.20597	1.06733	10.44580
	B1->Y (FR)	0.12409	0.98467	10.63470
	B2->Y (FR)	0.15861	1.04062	10.85290
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.15929	0.87907	10.08470
	A2->Y (FR)	0.19689	0.92756	10.26980
	B1->Y (FR)	0.11298	0.85515	10.50430
	B2->Y (FR)	0.15165	0.90886	10.74860

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.06222	0.60593	5.64035
	A2->Y (RF)	0.06873	0.56195	5.08631
	B1->Y (RF)	0.04109	0.57467	5.64436
	B2->Y (RF)	0.04749	0.53432	5.10976
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.06385	0.54142	5.53982
	A2->Y (RF)	0.06973	0.50616	5.04323
	B1->Y (RF)	0.04050	0.50076	5.49999
	B2->Y (RF)	0.04841	0.46986	5.00290
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.06246	0.49983	5.70292
	A2->Y (RF)	0.07017	0.45190	4.98075
	B1->Y (RF)	0.03773	0.45334	5.68211
	B2->Y (RF)	0.04591	0.40889	4.93585

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00052	0.00035	0.00124
	A1	0.00653	0.00637	0.00727
	A2	0.00099	0.00088	0.00175
	A2	0.00793	0.00783	0.00871
	B1	-0.00010	-0.00005	0.00212
	B1	0.00546	0.00553	0.00744
	B2	0.00025	0.00026	0.00241
	B2	0.00671	0.00668	0.00871
sky130_fd_sc_hs__a22oi_2	A1	0.00185	0.00144	0.00337
	A1	0.01454	0.01404	0.01605
	A2	0.00291	0.00262	0.00455
	A2	0.01675	0.01645	0.01842
	B1	0.00016	0.00049	0.00488
	B1	0.01145	0.01132	0.01567
	B2	0.00165	0.00189	0.00620
	B2	0.01419	0.01431	0.01837
sky130_fd_sc_hs__a22oi_4	A1	0.00216	0.00141	0.00546
	A1	0.02623	0.02541	0.02942
	A2	0.00450	0.00394	0.00785
	A2	0.03204	0.03152	0.03542
	B1	-0.00133	-0.00062	0.00798
	B1	0.02107	0.02100	0.02928
	B2	0.00148	0.00220	0.01033
	B2	0.02697	0.02741	0.03508

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00832	0.00824	0.00972
	A1	0.00246	0.00237	0.00351
	A2	0.00926	0.00909	0.01024
	A2	0.00242	0.00225	0.00318
	B1	0.00470	0.00480	0.00650
	B1	-0.00020	-0.00014	0.00105
	B2	0.00572	0.00570	0.00667
	B2	-0.00016	-0.00023	0.00077
sky130_fd_sc_hs__a22oi_2	A1	0.01668	0.01646	0.01878
	A1	0.00438	0.00406	0.00651
	A2	0.01800	0.01765	0.02005
	A2	0.00444	0.00408	0.00604
	B1	0.00987	0.01004	0.01251
	B1	-0.00024	-0.00016	0.00243
	B2	0.01147	0.01139	0.01385
	B2	-0.00012	-0.00031	0.00184
sky130_fd_sc_hs__a22oi_4	A1	0.03166	0.03118	0.03686
	A1	0.00834	0.00778	0.01266
	A2	0.03535	0.03458	0.03872
	A2	0.00827	0.00749	0.01153
	B1	0.01856	0.01894	0.02487
	B1	-0.00093	-0.00100	0.00433
	B2	0.02248	0.02223	0.02645
	B2	-0.00069	-0.00111	0.00329

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)	0.00140	0.00129	0.00127
	(A2 * B1 * B2 * !Y)	-0.00155	-0.00173	-0.00172
	(!A2 * B1 * B2 * !Y)	0.00120	0.00121	0.00121
	(!A2 * B1 * B2 * !Y)	-0.00176	-0.00177	-0.00177
	(!A2 * B1 * !B2 * Y)	0.00048	0.00048	0.00046
	(!A2 * B1 * !B2 * Y)	-0.00197	-0.00198	-0.00201
	(!A2 * !B1 * Y)	0.00048	0.00048	0.00046
	(!A2 * !B1 * Y)	-0.00197	-0.00198	-0.00201
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00318	0.00280	0.00277
	(A2 * B1 * B2 * !Y)	-0.00312	-0.00366	-0.00364
	(!A2 * B1 * B2 * !Y)	0.00263	0.00264	0.00264
	(!A2 * B1 * B2 * !Y)	-0.00376	-0.00377	-0.00376
	(!A2 * B1 * !B2 * Y)	0.00096	0.00096	0.00091
	(!A2 * B1 * !B2 * Y)	-0.00440	-0.00440	-0.00447
	(!A2 * !B1 * Y)	0.00096	0.00096	0.00091
	(!A2 * !B1 * Y)	-0.00440	-0.00440	-0.00447
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00584	0.00519	0.00515
	(A2 * B1 * B2 * !Y)	-0.00603	-0.00698	-0.00694
	(!A2 * B1 * B2 * !Y)	0.00486	0.00486	0.00486
	(!A2 * B1 * B2 * !Y)	-0.00717	-0.00717	-0.00716
	(!A2 * B1 * !B2 * Y)	0.00183	0.00184	0.00173
	(!A2 * B1 * !B2 * Y)	-0.00805	-0.00810	-0.00827
	(!A2 * !B1 * Y)	0.00184	0.00184	0.00174
	(!A2 * !B1 * Y)	-0.00805	-0.00810	-0.00827

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)	-0.00126	-0.00127	-0.00126
	(A2 * B1 * B2 * !Y)	0.00171	0.00173	0.00172
	(!A2 * B1 * B2 * !Y)	-0.00118	-0.00121	-0.00121
	(!A2 * B1 * B2 * !Y)	0.00178	0.00178	0.00177
	(!A2 * B1 * !B2 * Y)	-0.00045	-0.00045	-0.00044
	(!A2 * B1 * !B2 * Y)	0.00203	0.00203	0.00202
	(!A2 * !B1 * Y)	-0.00045	-0.00045	-0.00044
	(!A2 * !B1 * Y)	0.00203	0.00203	0.00202
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00276	-0.00277	-0.00276
	(A2 * B1 * B2 * !Y)	0.00362	0.00366	0.00364
	(!A2 * B1 * B2 * !Y)	-0.00259	-0.00264	-0.00264
	(!A2 * B1 * B2 * !Y)	0.00378	0.00379	0.00377
	(!A2 * B1 * !B2 * Y)	-0.00089	-0.00089	-0.00088
	(!A2 * B1 * !B2 * Y)	0.00448	0.00451	0.00448
	(!A2 * !B1 * Y)	-0.00089	-0.00089	-0.00088
	(!A2 * !B1 * Y)	0.00448	0.00451	0.00448
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00512	-0.00515	-0.00511
	(A2 * B1 * B2 * !Y)	0.00692	0.00699	0.00694
	(!A2 * B1 * B2 * !Y)	-0.00473	-0.00486	-0.00486
	(!A2 * B1 * B2 * !Y)	0.00720	0.00720	0.00718
	(!A2 * B1 * !B2 * Y)	-0.00169	-0.00169	-0.00167
	(!A2 * B1 * !B2 * Y)	0.00833	0.00836	0.00830
	(!A2 * !B1 * Y)	-0.00169	-0.00169	-0.00167
	(!A2 * !B1 * Y)	0.00833	0.00836	0.00830

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)	0.00149	0.00136	0.00134
	(A1 * B1 * B2 * !Y)	-0.00159	-0.00178	-0.00178
	(!A1 * B1 * B2 * !Y)	0.00128	0.00129	0.00128
	(!A1 * B1 * B2 * !Y)	-0.00183	-0.00183	-0.00183
	(!A1 * B1 * !B2 * Y)	0.00129	0.00130	0.00129
	(!A1 * B1 * !B2 * Y)	-0.00183	-0.00184	-0.00183
	(!A1 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A1 * !B1 * Y)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00283	0.00257	0.00255
	(A1 * B1 * B2 * !Y)	-0.00300	-0.00340	-0.00339
	(!A1 * B1 * B2 * !Y)	0.00240	0.00244	0.00242
	(!A1 * B1 * B2 * !Y)	-0.00348	-0.00351	-0.00349
	(!A1 * B1 * !B2 * Y)	0.00233	0.00235	0.00234
	(!A1 * B1 * !B2 * Y)	-0.00356	-0.00359	-0.00357
	(!A1 * !B1 * Y)	0.00233	0.00235	0.00234
	(!A1 * !B1 * Y)	-0.00356	-0.00358	-0.00357
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00590	0.00521	0.00518
	(A1 * B1 * B2 * !Y)	-0.00606	-0.00697	-0.00697
	(!A1 * B1 * B2 * !Y)	0.00486	0.00489	0.00488
	(!A1 * B1 * B2 * !Y)	-0.00715	-0.00719	-0.00718
	(!A1 * B1 * !B2 * Y)	0.00487	0.00489	0.00490
	(!A1 * B1 * !B2 * Y)	-0.00715	-0.00716	-0.00716
	(!A1 * !B1 * Y)	0.00488	0.00491	0.00490
	(!A1 * !B1 * Y)	-0.00715	-0.00717	-0.00716

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)	-0.00133	-0.00134	-0.00134
	(A1 * B1 * B2 * !Y)	0.00177	0.00178	0.00178
	(!A1 * B1 * B2 * !Y)	-0.00126	-0.00129	-0.00128
	(!A1 * B1 * B2 * !Y)	0.00183	0.00185	0.00184
	(!A1 * B1 * !B2 * Y)	-0.00121	-0.00129	-0.00129
	(!A1 * B1 * !B2 * Y)	0.00188	0.00186	0.00184
	(!A1 * !B1 * Y)	-0.00121	-0.00129	-0.00129
	(!A1 * !B1 * Y)	0.00188	0.00186	0.00184
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00254	-0.00254	-0.00253
	(A1 * B1 * B2 * !Y)	0.00340	0.00340	0.00339
	(!A1 * B1 * B2 * !Y)	-0.00236	-0.00244	-0.00242
	(!A1 * B1 * B2 * !Y)	0.00349	0.00354	0.00351
	(!A1 * B1 * !B2 * Y)	-0.00216	-0.00235	-0.00234
	(!A1 * B1 * !B2 * Y)	0.00371	0.00364	0.00359
	(!A1 * !B1 * Y)	-0.00216	-0.00235	-0.00234
	(!A1 * !B1 * Y)	0.00371	0.00364	0.00359
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00515	-0.00516	-0.00515
	(A1 * B1 * B2 * !Y)	0.00694	0.00697	0.00697
	(!A1 * B1 * B2 * !Y)	-0.00477	-0.00489	-0.00488
	(!A1 * B1 * B2 * !Y)	0.00718	0.00728	0.00720
	(!A1 * B1 * !B2 * Y)	-0.00452	-0.00489	-0.00490
	(!A1 * B1 * !B2 * Y)	0.00746	0.00730	0.00720
	(!A1 * !B1 * Y)	-0.00452	-0.00491	-0.00490
	(!A1 * !B1 * Y)	0.00746	0.00730	0.00720

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)	0.00147	0.00148	0.00147
	(A1 * A2 * B2 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * !B2 * !Y)	0.00139	0.00141	0.00140
	(A1 * A2 * !B2 * !Y)	-0.00085	-0.00086	-0.00086
	(A1 * !A2 * !B2 * Y)	0.00044	0.00044	0.00042
	(A1 * !A2 * !B2 * Y)	-0.00206	-0.00206	-0.00209
	(!A1 * !B2 * Y)	0.00044	0.00044	0.00042
	(!A1 * !B2 * Y)	-0.00206	-0.00206	-0.00209
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00315	0.00316	0.00314
	(A1 * A2 * B2 * !Y)	-0.00169	-0.00168	-0.00167
	(A1 * A2 * !B2 * !Y)	0.00298	0.00301	0.00299
	(A1 * A2 * !B2 * !Y)	-0.00166	-0.00167	-0.00167
	(A1 * !A2 * !B2 * Y)	0.00103	0.00103	0.00098
	(A1 * !A2 * !B2 * Y)	-0.00409	-0.00410	-0.00418
	(!A1 * !B2 * Y)	0.00103	0.00103	0.00098
	(!A1 * !B2 * Y)	-0.00409	-0.00410	-0.00418
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00585	0.00587	0.00583
	(A1 * A2 * B2 * !Y)	-0.00341	-0.00340	-0.00337
	(A1 * A2 * !B2 * !Y)	0.00553	0.00557	0.00555
	(A1 * A2 * !B2 * !Y)	-0.00336	-0.00337	-0.00336
	(A1 * !A2 * !B2 * Y)	0.00184	0.00183	0.00172
	(A1 * !A2 * !B2 * Y)	-0.00812	-0.00813	-0.00830
	(!A1 * !B2 * Y)	0.00184	0.00183	0.00172
	(!A1 * !B2 * Y)	-0.00812	-0.00813	-0.00830

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)	-0.00131	-0.00132	-0.00145
	(A1 * A2 * B2 * !Y)	0.00100	0.00100	0.00089
	(A1 * A2 * !B2 * !Y)	-0.00138	-0.00141	-0.00140
	(A1 * A2 * !B2 * !Y)	0.00086	0.00086	0.00086
	(A1 * !A2 * !B2 * Y)	-0.00042	-0.00042	-0.00041
	(A1 * !A2 * !B2 * Y)	0.00210	0.00212	0.00210
	(!A1 * !B2 * Y)	-0.00042	-0.00042	-0.00041
	(!A1 * !B2 * Y)	0.00210	0.00212	0.00210
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00285	-0.00289	-0.00311
	(A1 * A2 * B2 * !Y)	0.00190	0.00191	0.00173
	(A1 * A2 * !B2 * !Y)	-0.00294	-0.00301	-0.00299
	(A1 * A2 * !B2 * !Y)	0.00167	0.00167	0.00167
	(A1 * !A2 * !B2 * Y)	-0.00096	-0.00097	-0.00095
	(A1 * !A2 * !B2 * Y)	0.00420	0.00424	0.00419
	(!A1 * !B2 * Y)	-0.00096	-0.00097	-0.00095
	(!A1 * !B2 * Y)	0.00420	0.00424	0.00419
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00529	-0.00535	-0.00578
	(A1 * A2 * B2 * !Y)	0.00383	0.00384	0.00348
	(A1 * A2 * !B2 * !Y)	-0.00542	-0.00557	-0.00555
	(A1 * A2 * !B2 * !Y)	0.00338	0.00337	0.00336
	(A1 * !A2 * !B2 * Y)	-0.00168	-0.00168	-0.00165
	(A1 * !A2 * !B2 * Y)	0.00834	0.00841	0.00832
	(!A1 * !B2 * Y)	-0.00168	-0.00169	-0.00166
	(!A1 * !B2 * Y)	0.00834	0.00841	0.00832

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)	0.00160	0.00161	0.00160
	(A1 * A2 * B1 * !Y)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * !B1 * !Y)	0.00153	0.00156	0.00153
	(A1 * A2 * !B1 * !Y)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * !B1 * Y)	0.00128	0.00129	0.00129
	(A1 * !A2 * !B1 * Y)	-0.00187	-0.00188	-0.00188
	(!A1 * !B1 * Y)	0.00128	0.00129	0.00129
	(!A1 * !B1 * Y)	-0.00187	-0.00188	-0.00188
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00278	0.00280	0.00278
	(A1 * A2 * B1 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * A2 * !B1 * !Y)	0.00265	0.00266	0.00265
	(A1 * A2 * !B1 * !Y)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * !B1 * Y)	0.00233	0.00234	0.00233
	(A1 * !A2 * !B1 * Y)	-0.00355	-0.00355	-0.00354
	(!A1 * !B1 * Y)	0.00233	0.00234	0.00233
	(!A1 * !B1 * Y)	-0.00355	-0.00355	-0.00354
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00585	0.00587	0.00583
	(A1 * A2 * B1 * !Y)	-0.00341	-0.00340	-0.00338
	(A1 * A2 * !B1 * !Y)	0.00555	0.00558	0.00554
	(A1 * A2 * !B1 * !Y)	-0.00338	-0.00339	-0.00337
	(A1 * !A2 * !B1 * Y)	0.00490	0.00491	0.00489
	(A1 * !A2 * !B1 * Y)	-0.00715	-0.00715	-0.00713
	(!A1 * !B1 * Y)	0.00490	0.00490	0.00489
	(!A1 * !B1 * Y)	-0.00715	-0.00714	-0.00713

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)	-0.00144	-0.00145	-0.00158
	(A1 * A2 * B1 * !Y)	0.00101	0.00100	0.00090
	(A1 * A2 * !B1 * !Y)	-0.00152	-0.00154	-0.00153
	(A1 * A2 * !B1 * !Y)	0.00087	0.00087	0.00086
	(A1 * !A2 * !B1 * Y)	-0.00121	-0.00129	-0.00129
	(A1 * !A2 * !B1 * Y)	0.00196	0.00191	0.00189
	(!A1 * !B1 * Y)	-0.00121	-0.00129	-0.00129
	(!A1 * !B1 * Y)	0.00196	0.00191	0.00189
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00249	-0.00252	-0.00275
	(A1 * A2 * B1 * !Y)	0.00191	0.00192	0.00174
	(A1 * A2 * !B1 * !Y)	-0.00258	-0.00266	-0.00265
	(A1 * A2 * !B1 * !Y)	0.00167	0.00169	0.00167
	(A1 * !A2 * !B1 * Y)	-0.00216	-0.00234	-0.00233
	(A1 * !A2 * !B1 * Y)	0.00367	0.00359	0.00356
	(!A1 * !B1 * Y)	-0.00216	-0.00234	-0.00233
	(!A1 * !B1 * Y)	0.00367	0.00359	0.00356
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00528	-0.00533	-0.00577
	(A1 * A2 * B1 * !Y)	0.00382	0.00383	0.00349
	(A1 * A2 * !B1 * !Y)	-0.00544	-0.00558	-0.00554
	(A1 * A2 * !B1 * !Y)	0.00338	0.00339	0.00337
	(A1 * !A2 * !B1 * Y)	-0.00452	-0.00491	-0.00489
	(A1 * !A2 * !B1 * Y)	0.00740	0.00723	0.00716
	(!A1 * !B1 * Y)	-0.00452	-0.00490	-0.00489
	(!A1 * !B1 * Y)	0.00740	0.00724	0.00716

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00276	0.00255	0.00270	0.00277	0.74726
sky130_fd_sc_hs__a22o_2	0.00289	0.00267	0.00285	0.00278	1.45713
sky130_fd_sc_hs__a22o_4	0.00492	0.00517	0.00494	0.00540	2.94785

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22o_1	0.00000	0.10666	0.18705
sky130_fd_sc_hs__a22o_2	0.00000	0.13690	0.22250
sky130_fd_sc_hs__a22o_4	0.00000	0.27323	0.44467

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)	0.14761	0.89836	7.61663
	A2->X (RR)	0.15855	0.88792	7.62025
	B1->X (RR)	0.12602	0.84570	7.51867
	B2->X (RR)	0.13251	0.84007	7.52210
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.14753	0.80182	7.60633
	A2->X (RR)	0.15641	0.78219	7.57823
	B1->X (RR)	0.12638	0.75560	7.50705
	B2->X (RR)	0.13224	0.74205	7.49265
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.14620	0.71564	7.72669
	A2->X (RR)	0.15778	0.70105	7.71467
	B1->X (RR)	0.12635	0.66815	7.59557
	B2->X (RR)	0.13351	0.65816	7.59535

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.24865	0.79013	4.57781
	A2->X (FF)	0.27259	0.83293	4.70970
	B1->X (FF)	0.21766	0.77222	4.54894
	B2->X (FF)	0.23616	0.80149	4.61885
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.30985	0.84127	4.80475
	A2->X (FF)	0.34037	0.88881	4.95598
	B1->X (FF)	0.28286	0.83695	4.82626
	B2->X (FF)	0.30130	0.86332	4.90410
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.29814	0.80057	4.94524
	A2->X (FF)	0.31871	0.83255	5.03642
	B1->X (FF)	0.26554	0.78870	4.92870
	B2->X (FF)	0.27805	0.80419	4.97668

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01052	0.01056	0.01658
	A1	0.00510	0.00515	0.01129
	A2	0.01143	0.01148	0.01669
	A2	0.00510	0.00516	0.01049
	B1	0.00767	0.00783	0.01633
	B1	0.00309	0.00330	0.01193
	B2	0.00847	0.00852	0.01591
	B2	0.00306	0.00312	0.01055
sky130_fd_sc_hs__a22o_2	A1	0.01277	0.01307	0.01929
	A1	0.00695	0.00726	0.01376
	A2	0.01368	0.01400	0.01928
	A2	0.00734	0.00765	0.01290
	B1	0.01020	0.01059	0.01900
	B1	0.00534	0.00574	0.01420
	B2	0.01104	0.01140	0.01868
	B2	0.00533	0.00569	0.01305
sky130_fd_sc_hs__a22o_4	A1	0.02479	0.02542	0.03871
	A1	0.01417	0.01485	0.02864
	A2	0.02670	0.02722	0.03791
	A2	0.01421	0.01474	0.02596
	B1	0.01938	0.02001	0.03582
	B1	0.01097	0.01165	0.02861
	B2	0.02102	0.02141	0.03514
	B2	0.01078	0.01126	0.02584

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00334	0.00323	0.00899
	A1	0.00881	0.00871	0.01413
	A2	0.00392	0.00409	0.00986
	A2	0.01022	0.01039	0.01561
	B1	0.00292	0.00349	0.01271
	B1	0.00823	0.00866	0.01706
	B2	0.00406	0.00461	0.01286
	B2	0.00931	0.00986	0.01802
sky130_fd_sc_hs__a22o_2	A1	0.00567	0.00573	0.01223
	A1	0.01147	0.01152	0.01699
	A2	0.00660	0.00695	0.01281
	A2	0.01328	0.01360	0.01897
	B1	0.00624	0.00657	0.01588
	B1	0.01098	0.01154	0.02008
	B2	0.00664	0.00716	0.01666
	B2	0.01221	0.01278	0.02133
sky130_fd_sc_hs__a22o_4	A1	0.01106	0.01166	0.02258
	A1	0.02166	0.02225	0.03295
	A2	0.01136	0.01207	0.02314
	A2	0.02374	0.02446	0.03474
	B1	0.00981	0.01182	0.02949
	B1	0.01935	0.02029	0.03619
	B2	0.01060	0.01239	0.03069
	B2	0.02182	0.02279	0.03897

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)	0.00152	0.00135	0.00133
	(A2 * B1 * B2 * X)	-0.00132	-0.00155	-0.00154
	(!A2 * B1 * B2 * X)	0.00126	0.00127	0.00127
	(!A2 * B1 * B2 * X)	-0.00157	-0.00158	-0.00157
	(!A2 * B1 * !B2 * !X)	0.00048	0.00048	0.00044
	(!A2 * B1 * !B2 * !X)	-0.00193	-0.00194	-0.00199
	(!A2 * !B1 * !X)	0.00048	0.00048	0.00044
	(!A2 * !B1 * !X)	-0.00193	-0.00194	-0.00199
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00167	0.00150	0.00147
	(A2 * B1 * B2 * X)	-0.00130	-0.00153	-0.00153
	(!A2 * B1 * B2 * X)	0.00140	0.00141	0.00141
	(!A2 * B1 * B2 * X)	-0.00155	-0.00156	-0.00156
	(!A2 * B1 * !B2 * !X)	0.00053	0.00053	0.00048
	(!A2 * B1 * !B2 * !X)	-0.00193	-0.00194	-0.00200
	(!A2 * !B1 * !X)	0.00053	0.00053	0.00048
	(!A2 * !B1 * !X)	-0.00193	-0.00194	-0.00200
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00257	0.00217	0.00215
	(A2 * B1 * B2 * X)	-0.00269	-0.00316	-0.00318
	(!A2 * B1 * B2 * X)	0.00203	0.00203	0.00203
	(!A2 * B1 * B2 * X)	-0.00327	-0.00328	-0.00326
	(!A2 * B1 * !B2 * !X)	0.00074	0.00074	0.00070
	(!A2 * B1 * !B2 * !X)	-0.00367	-0.00369	-0.00374
	(!A2 * !B1 * !X)	0.00074	0.00074	0.00070
	(!A2 * !B1 * !X)	-0.00367	-0.00369	-0.00374

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)	-0.00132	-0.00132	-0.00132
	(A2 * B1 * B2 * X)	0.00153	0.00155	0.00154
	(!A2 * B1 * B2 * X)	-0.00122	-0.00127	-0.00127
	(!A2 * B1 * B2 * X)	0.00158	0.00161	0.00158
	(!A2 * B1 * !B2 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * B1 * !B2 * !X)	0.00200	0.00201	0.00200
	(!A2 * !B1 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * !B1 * !X)	0.00201	0.00201	0.00200
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00146	-0.00147	-0.00146
	(A2 * B1 * B2 * X)	0.00152	0.00153	0.00153
	(!A2 * B1 * B2 * X)	-0.00136	-0.00141	-0.00141
	(!A2 * B1 * B2 * X)	0.00156	0.00158	0.00157
	(!A2 * B1 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * B1 * !B2 * !X)	0.00201	0.00202	0.00201
	(!A2 * !B1 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * !X)	0.00203	0.00202	0.00201
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00213	-0.00215	-0.00212
	(A2 * B1 * B2 * X)	0.00316	0.00322	0.00318
	(!A2 * B1 * B2 * X)	-0.00197	-0.00203	-0.00203
	(!A2 * B1 * B2 * X)	0.00327	0.00329	0.00328
	(!A2 * B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(!A2 * B1 * !B2 * !X)	0.00374	0.00376	0.00375
	(!A2 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(!A2 * !B1 * !X)	0.00374	0.00376	0.00375

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)	0.00150	0.00132	0.00131
	(A1 * B1 * B2 * X)	-0.00131	-0.00154	-0.00154
	(!A1 * B1 * B2 * X)	0.00124	0.00125	0.00125
	(!A1 * B1 * B2 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * B1 * !B2 * !X)	0.00124	0.00125	0.00124
	(!A1 * B1 * !B2 * !X)	-0.00158	-0.00158	-0.00158
	(!A1 * !B1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !B1 * !X)	-0.00158	-0.00158	-0.00158
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00155	0.00138	0.00136
	(A1 * B1 * B2 * X)	-0.00137	-0.00160	-0.00159
	(!A1 * B1 * B2 * X)	0.00128	0.00130	0.00129
	(!A1 * B1 * B2 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * B1 * !B2 * !X)	0.00128	0.00129	0.00129
	(!A1 * B1 * !B2 * !X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * !X)	0.00128	0.00129	0.00129
	(!A1 * !B1 * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00300	0.00266	0.00262
	(A1 * B1 * B2 * X)	-0.00266	-0.00312	-0.00312
	(!A1 * B1 * B2 * X)	0.00250	0.00252	0.00250
	(!A1 * B1 * B2 * X)	-0.00320	-0.00322	-0.00320
	(!A1 * B1 * !B2 * !X)	0.00246	0.00249	0.00246
	(!A1 * B1 * !B2 * !X)	-0.00325	-0.00327	-0.00325
	(!A1 * !B1 * !X)	0.00246	0.00248	0.00246
	(!A1 * !B1 * !X)	-0.00325	-0.00327	-0.00325

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)	-0.00130	-0.00130	-0.00129
	(A1 * B1 * B2 * X)	0.00154	0.00155	0.00154
	(!A1 * B1 * B2 * X)	-0.00120	-0.00125	-0.00125
	(!A1 * B1 * B2 * X)	0.00158	0.00160	0.00158
	(!A1 * B1 * !B2 * !X)	-0.00117	-0.00125	-0.00124
	(!A1 * B1 * !B2 * !X)	0.00161	0.00160	0.00158
	(!A1 * !B1 * !X)	-0.00117	-0.00125	-0.00124
	(!A1 * !B1 * !X)	0.00161	0.00160	0.00158
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00134	-0.00135	-0.00134
	(A1 * B1 * B2 * X)	0.00158	0.00160	0.00159
	(!A1 * B1 * B2 * X)	-0.00125	-0.00130	-0.00129
	(!A1 * B1 * B2 * X)	0.00164	0.00165	0.00163
	(!A1 * B1 * !B2 * !X)	-0.00122	-0.00129	-0.00129
	(!A1 * B1 * !B2 * !X)	0.00168	0.00165	0.00163
	(!A1 * !B1 * !X)	-0.00122	-0.00129	-0.00129
	(!A1 * !B1 * !X)	0.00168	0.00165	0.00163
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00260	-0.00261	-0.00259
	(A1 * B1 * B2 * X)	0.00310	0.00313	0.00312
	(!A1 * B1 * B2 * X)	-0.00246	-0.00252	-0.00250
	(!A1 * B1 * B2 * X)	0.00322	0.00322	0.00322
	(!A1 * B1 * !B2 * !X)	-0.00232	-0.00246	-0.00246
	(!A1 * B1 * !B2 * !X)	0.00338	0.00328	0.00327
	(!A1 * !B1 * !X)	-0.00232	-0.00246	-0.00246
	(!A1 * !B1 * !X)	0.00338	0.00328	0.00327

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)	0.00128	0.00129	0.00128
	(A1 * A2 * B2 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !B2 * X)	0.00122	0.00123	0.00122
	(A1 * A2 * !B2 * X)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * !B2 * !X)	0.00041	0.00041	0.00039
	(A1 * !A2 * !B2 * !X)	-0.00181	-0.00181	-0.00184
	(!A1 * !B2 * !X)	0.00042	0.00042	0.00041
	(!A1 * !B2 * !X)	-0.00181	-0.00181	-0.00184
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00144	0.00145	0.00145
	(A1 * A2 * B2 * X)	-0.00077	-0.00078	-0.00077
	(A1 * A2 * !B2 * X)	0.00137	0.00138	0.00138
	(A1 * A2 * !B2 * X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !B2 * !X)	0.00045	0.00045	0.00043
	(A1 * !A2 * !B2 * !X)	-0.00184	-0.00185	-0.00188
	(!A1 * !B2 * !X)	0.00045	0.00046	0.00044
	(!A1 * !B2 * !X)	-0.00184	-0.00185	-0.00188
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00238	0.00239	0.00238
	(A1 * A2 * B2 * X)	-0.00154	-0.00154	-0.00153
	(A1 * A2 * !B2 * X)	0.00226	0.00228	0.00227
	(A1 * A2 * !B2 * X)	-0.00152	-0.00153	-0.00153
	(A1 * !A2 * !B2 * !X)	0.00077	0.00076	0.00072
	(A1 * !A2 * !B2 * !X)	-0.00352	-0.00351	-0.00359
	(!A1 * !B2 * !X)	0.00077	0.00076	0.00072
	(!A1 * !B2 * !X)	-0.00352	-0.00351	-0.00359

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)	-0.00116	-0.00117	-0.00127
	(A1 * A2 * B2 * X)	0.00089	0.00089	0.00081
	(A1 * A2 * !B2 * X)	-0.00121	-0.00123	-0.00122
	(A1 * A2 * !B2 * X)	0.00078	0.00078	0.00078
	(A1 * !A2 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(A1 * !A2 * !B2 * !X)	0.00184	0.00185	0.00184
	(!A1 * !B2 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !B2 * !X)	0.00184	0.00185	0.00184
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00132	-0.00133	-0.00143
	(A1 * A2 * B2 * X)	0.00088	0.00088	0.00080
	(A1 * A2 * !B2 * X)	-0.00136	-0.00138	-0.00138
	(A1 * A2 * !B2 * X)	0.00078	0.00077	0.00077
	(A1 * !A2 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(A1 * !A2 * !B2 * !X)	0.00188	0.00189	0.00188
	(!A1 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !B2 * !X)	0.00188	0.00189	0.00188
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00212	-0.00214	-0.00235
	(A1 * A2 * B2 * X)	0.00176	0.00175	0.00158
	(A1 * A2 * !B2 * X)	-0.00223	-0.00228	-0.00227
	(A1 * A2 * !B2 * X)	0.00154	0.00153	0.00153
	(A1 * !A2 * !B2 * !X)	-0.00069	-0.00070	-0.00070
	(A1 * !A2 * !B2 * !X)	0.00359	0.00360	0.00360
	(!A1 * !B2 * !X)	-0.00069	-0.00070	-0.00070
	(!A1 * !B2 * !X)	0.00359	0.00360	0.00360

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)	0.00134	0.00135	0.00134
	(A1 * A2 * B1 * X)	-0.00085	-0.00085	-0.00084
	(A1 * A2 * !B1 * X)	0.00129	0.00131	0.00128
	(A1 * A2 * !B1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * !B1 * !X)	0.00110	0.00110	0.00110
	(A1 * !A2 * !B1 * !X)	-0.00166	-0.00166	-0.00165
	(!A1 * !B1 * !X)	0.00117	0.00117	0.00117
	(!A1 * !B1 * !X)	-0.00165	-0.00165	-0.00165
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00142	0.00142	0.00142
	(A1 * A2 * B1 * X)	-0.00081	-0.00081	-0.00080
	(A1 * A2 * !B1 * X)	0.00136	0.00137	0.00135
	(A1 * A2 * !B1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !X)	0.00123	0.00123	0.00123
	(A1 * !A2 * !B1 * !X)	-0.00160	-0.00160	-0.00159
	(!A1 * !B1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !B1 * !X)	-0.00159	-0.00160	-0.00159
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00259	0.00261	0.00260
	(A1 * A2 * B1 * X)	-0.00168	-0.00168	-0.00167
	(A1 * A2 * !B1 * X)	0.00252	0.00252	0.00250
	(A1 * A2 * !B1 * X)	-0.00166	-0.00166	-0.00166
	(A1 * !A2 * !B1 * !X)	0.00199	0.00202	0.00199
	(A1 * !A2 * !B1 * !X)	-0.00358	-0.00359	-0.00357
	(!A1 * !B1 * !X)	0.00199	0.00202	0.00199
	(!A1 * !B1 * !X)	-0.00358	-0.00359	-0.00357

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)	-0.00122	-0.00123	-0.00133
	(A1 * A2 * B1 * X)	0.00095	0.00095	0.00087
	(A1 * A2 * !B1 * X)	-0.00127	-0.00130	-0.00128
	(A1 * A2 * !B1 * X)	0.00085	0.00085	0.00084
	(A1 * !A2 * !B1 * !X)	-0.00102	-0.00109	-0.00110
	(A1 * !A2 * !B1 * !X)	0.00173	0.00169	0.00166
	(!A1 * !B1 * !X)	-0.00109	-0.00116	-0.00117
	(!A1 * !B1 * !X)	0.00172	0.00168	0.00166
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00129	-0.00130	-0.00140
	(A1 * A2 * B1 * X)	0.00092	0.00091	0.00083
	(A1 * A2 * !B1 * X)	-0.00133	-0.00136	-0.00135
	(A1 * A2 * !B1 * X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * !X)	-0.00114	-0.00123	-0.00123
	(A1 * !A2 * !B1 * !X)	0.00167	0.00162	0.00160
	(!A1 * !B1 * !X)	-0.00117	-0.00126	-0.00126
	(!A1 * !B1 * !X)	0.00166	0.00162	0.00160
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00234	-0.00234	-0.00256
	(A1 * A2 * B1 * X)	0.00191	0.00189	0.00173
	(A1 * A2 * !B1 * X)	-0.00245	-0.00250	-0.00250
	(A1 * A2 * !B1 * X)	0.00168	0.00168	0.00167
	(A1 * !A2 * !B1 * !X)	-0.00186	-0.00200	-0.00199
	(A1 * !A2 * !B1 * !X)	0.00370	0.00362	0.00358
	(!A1 * !B1 * !X)	-0.00186	-0.00200	-0.00199
	(!A1 * !B1 * !X)	0.00370	0.00362	0.00358

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00239	0.00259	0.00280	0.00298	0.34623
sky130_fd_sc_hs__a2bb2oi_2	0.00262	0.00272	0.00545	0.00550	0.68198
sky130_fd_sc_hs__a2bb2oi_4	0.00419	0.00441	0.01083	0.01105	1.30514

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.08708	0.15004
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.14481	0.22377
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.26687	0.44354

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)	0.17600	1.08612	7.77459
	A2_N->Y (RR)	0.16747	1.04939	7.67558
	B1->Y (FR)	0.15905	1.19696	10.77610
	B2->Y (FR)	0.12714	1.13225	10.46530
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.16002	0.90033	7.55666
	A2_N->Y (RR)	0.15362	0.87686	7.48347
	B1->Y (FR)	0.14626	1.00613	10.61520
	B2->Y (FR)	0.11057	0.96242	10.47660
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.19292	0.87030	8.09797
	A2_N->Y (RR)	0.17557	0.82573	7.97035
	B1->Y (FR)	0.14401	0.88133	10.62160
	B2->Y (FR)	0.10735	0.83361	10.39390

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)	0.18968	0.61447	2.80550
	A2_N->Y (FF)	0.17143	0.60052	2.71277
	B1->Y (RF)	0.05348	0.54186	5.05623
	B2->Y (RF)	0.04822	0.58484	5.60656
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.24299	0.68445	3.18435
	A2_N->Y (FF)	0.22526	0.68192	3.12749
	B1->Y (RF)	0.05330	0.49866	5.26823
	B2->Y (RF)	0.04429	0.53590	5.85418
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.23856	0.65088	2.96950
	A2_N->Y (FF)	0.20880	0.62674	2.90018
	B1->Y (RF)	0.05202	0.43801	5.20189
	B2->Y (RF)	0.04424	0.48397	5.94194

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	0.00862	0.00864	0.01477
	A1_N	0.00560	0.00561	0.01178
	A2_N	0.00712	0.00710	0.01494
	A2_N	0.00483	0.00481	0.01269
	B1	0.00164	0.00154	0.00251
	B1	0.00612	0.00603	0.00701
	B2	0.00106	0.00095	0.00192
	B2	0.00484	0.00473	0.00573
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01286	0.01297	0.02010
	A1_N	0.01067	0.01078	0.01791
	A2_N	0.01114	0.01114	0.01976
	A2_N	0.00984	0.00983	0.01846
	B1	0.00369	0.00343	0.00534
	B1	0.01261	0.01227	0.01430
	B2	0.00212	0.00195	0.00389
	B2	0.00930	0.00915	0.01114
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02347	0.02345	0.03376
	A1_N	0.02064	0.02062	0.03096
	A2_N	0.01997	0.02002	0.03363
	A2_N	0.01856	0.01860	0.03229
	B1	0.00683	0.00636	0.01029
	B1	0.02489	0.02437	0.02843
	B2	0.00413	0.00375	0.00781
	B2	0.01871	0.01836	0.02249

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00435	0.00462	0.01019
	A1_N	0.00734	0.00755	0.01319
	A2_N	0.00435	0.00502	0.01275
	A2_N	0.00651	0.00713	0.01489
	B1	0.00573	0.00562	0.00678
	B1	0.00125	0.00108	0.00202
	B2	0.00497	0.00489	0.00631
	B2	0.00125	0.00114	0.00228
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00725	0.00780	0.01405
	A1_N	0.00921	0.00968	0.01593
	A2_N	0.00745	0.00827	0.01675
	A2_N	0.00852	0.00923	0.01774
	B1	0.01095	0.01065	0.01254
	B1	0.00196	0.00158	0.00341
	B2	0.00908	0.00895	0.01121
	B2	0.00199	0.00176	0.00400
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01511	0.01631	0.02502
	A1_N	0.01755	0.01860	0.02733
	A2_N	0.01478	0.01621	0.03061
	A2_N	0.01571	0.01698	0.03145
	B1	0.02159	0.02085	0.02546
	B1	0.00348	0.00272	0.00650
	B2	0.01792	0.01749	0.02286
	B2	0.00347	0.00303	0.00750

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)	0.00125	0.00102	0.00100
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00137	-0.00159	-0.00162
	(!A2_N * B1 * B2 * !Y)	0.00557	0.00549	0.01130
	(!A2_N * B1 * B2 * !Y)	0.00141	0.00132	0.00716
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00160	0.00137	0.00135
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00132	-0.00155	-0.00157
	(!A2_N * B1 * B2 * !Y)	0.00705	0.00699	0.01363
	(!A2_N * B1 * B2 * !Y)	0.00250	0.00245	0.00912
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00196	0.00147	0.00143
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00263	-0.00317	-0.00320
	(!A2_N * B1 * B2 * !Y)	0.01243	0.01206	0.02174
	(!A2_N * B1 * B2 * !Y)	0.00487	0.00449	0.01424

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)	-0.00099	-0.00099	-0.00099
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00161	0.00162	0.00162
	(!A2_N * B1 * B2 * !Y)	0.00149	0.00141	0.00718
	(!A2_N * B1 * B2 * !Y)	0.00562	0.00554	0.01132
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00134	-0.00135	-0.00134
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00157	0.00158	0.00157
	(!A2_N * B1 * B2 * !Y)	0.00252	0.00241	0.00876
	(!A2_N * B1 * B2 * !Y)	0.00701	0.00693	0.01326
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00142	-0.00143	-0.00141
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00318	0.00321	0.00320
	(!A2_N * B1 * B2 * !Y)	0.00564	0.00543	0.01499
	(!A2_N * B1 * B2 * !Y)	0.01312	0.01294	0.02249

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)	0.00120	0.00120	0.00120
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00081	-0.00080	-0.00080
	(!A1_N * B1 * B2 * !Y)	0.00409	0.00403	0.01174
	(!A1_N * B1 * B2 * !Y)	0.00067	0.00059	0.00833
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00138	0.00137	0.00137
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00081	-0.00080	-0.00080
	(!A1_N * B1 * B2 * !Y)	0.00542	0.00530	0.01377
	(!A1_N * B1 * B2 * !Y)	0.00175	0.00162	0.01011
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00199	0.00199	0.00198
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00164	-0.00163	-0.00162
	(!A1_N * B1 * B2 * !Y)	0.00881	0.00849	0.02144
	(!A1_N * B1 * B2 * !Y)	0.00265	0.00231	0.01528

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)	-0.00115	-0.00116	-0.00119
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00085	0.00084	0.00081
	(!A1_N * B1 * B2 * !Y)	0.00146	0.00183	0.00995
	(!A1_N * B1 * B2 * !Y)	0.00487	0.00525	0.01336
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00132	-0.00133	-0.00136
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00084	0.00084	0.00081
	(!A1_N * B1 * B2 * !Y)	0.00271	0.00306	0.01185
	(!A1_N * B1 * B2 * !Y)	0.00633	0.00670	0.01548
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00182	-0.00183	-0.00197
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00177	0.00177	0.00166
	(!A1_N * B1 * B2 * !Y)	0.00525	0.00567	0.01990
	(!A1_N * B1 * B2 * !Y)	0.01134	0.01179	0.02600

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)	0.00130	0.00130	0.00129
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00177	-0.00177	-0.00177
	(!A1_N * !A2_N * B2 * !Y)	0.00153	0.00136	0.00135
	(!A1_N * !A2_N * B2 * !Y)	-0.00154	-0.00175	-0.00175
	(!A1_N * !A2_N * !B2 * !Y)	0.00129	0.00129	0.00129
	(!A1_N * !A2_N * !B2 * !Y)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00246	0.00250	0.00248
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00357	-0.00360	-0.00358
	(!A1_N * !A2_N * B2 * !Y)	0.00295	0.00263	0.00261
	(!A1_N * !A2_N * B2 * !Y)	-0.00313	-0.00354	-0.00353
	(!A1_N * !A2_N * !B2 * !Y)	0.00247	0.00250	0.00247
	(!A1_N * !A2_N * !B2 * !Y)	-0.00359	-0.00361	-0.00359
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00490	0.00493	0.00493
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00715	-0.00718	-0.00717
	(!A1_N * !A2_N * B2 * !Y)	0.00598	0.00525	0.00521
	(!A1_N * !A2_N * B2 * !Y)	-0.00620	-0.00708	-0.00707
	(!A1_N * !A2_N * !B2 * !Y)	0.00487	0.00493	0.00491
	(!A1_N * !A2_N * !B2 * !Y)	-0.00715	-0.00720	-0.00719

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)	-0.00121	-0.00129	-0.00129
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00183	0.00180	0.00178
	(!A1_N * !A2_N * B2 * !Y)	-0.00135	-0.00135	-0.00135
	(!A1_N * !A2_N * B2 * !Y)	0.00174	0.00176	0.00175
	(!A1_N * !A2_N * !B2 * !Y)	-0.00126	-0.00129	-0.00129
	(!A1_N * !A2_N * !B2 * !Y)	0.00177	0.00179	0.00178
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00229	-0.00249	-0.00248
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00371	0.00365	0.00360
	(!A1_N * !A2_N * B2 * !Y)	-0.00259	-0.00261	-0.00260
	(!A1_N * !A2_N * B2 * !Y)	0.00351	0.00356	0.00353
	(!A1_N * !A2_N * !B2 * !Y)	-0.00240	-0.00250	-0.00247
	(!A1_N * !A2_N * !B2 * !Y)	0.00359	0.00364	0.00360
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00455	-0.00493	-0.00493
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00748	0.00731	0.00721
	(!A1_N * !A2_N * B2 * !Y)	-0.00519	-0.00522	-0.00519
	(!A1_N * !A2_N * B2 * !Y)	0.00705	0.00712	0.00707
	(!A1_N * !A2_N * !B2 * !Y)	-0.00480	-0.00493	-0.00491
	(!A1_N * !A2_N * !B2 * !Y)	0.00719	0.00729	0.00721

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)	0.00059	0.00059	0.00057
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00205	-0.00204	-0.00208
	(!A1_N * !A2_N * B1 * !Y)	0.00152	0.00135	0.00134
	(!A1_N * !A2_N * B1 * !Y)	-0.00165	-0.00186	-0.00185
	(!A1_N * !A2_N * !B1 * !Y)	0.00128	0.00129	0.00128
	(!A1_N * !A2_N * !B1 * !Y)	-0.00187	-0.00189	-0.00188
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00100	0.00099	0.00093
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00399	-0.00398	-0.00409
	(!A1_N * !A2_N * B1 * !Y)	0.00292	0.00262	0.00260
	(!A1_N * !A2_N * B1 * !Y)	-0.00311	-0.00351	-0.00351
	(!A1_N * !A2_N * !B1 * !Y)	0.00246	0.00250	0.00247
	(!A1_N * !A2_N * !B1 * !Y)	-0.00355	-0.00358	-0.00356
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00186	0.00186	0.00177
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00809	-0.00813	-0.00833
	(!A1_N * !A2_N * B1 * !Y)	0.00592	0.00521	0.00518
	(!A1_N * !A2_N * B1 * !Y)	-0.00622	-0.00708	-0.00710
	(!A1_N * !A2_N * !B1 * !Y)	0.00490	0.00489	0.00491
	(!A1_N * !A2_N * !B1 * !Y)	-0.00721	-0.00720	-0.00721

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)	-0.00055	-0.00056	-0.00055
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00208	0.00210	0.00209
	(!A1_N * !A2_N * B1 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1_N * !A2_N * B1 * !Y)	0.00185	0.00187	0.00185
	(!A1_N * !A2_N * !B1 * !Y)	-0.00125	-0.00129	-0.00128
	(!A1_N * !A2_N * !B1 * !Y)	0.00187	0.00192	0.00189
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00091	-0.00091	-0.00090
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00412	0.00413	0.00411
	(!A1_N * !A2_N * B1 * !Y)	-0.00258	-0.00260	-0.00259
	(!A1_N * !A2_N * B1 * !Y)	0.00348	0.00353	0.00351
	(!A1_N * !A2_N * !B1 * !Y)	-0.00239	-0.00249	-0.00247
	(!A1_N * !A2_N * !B1 * !Y)	0.00358	0.00358	0.00357
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00171	-0.00172	-0.00170
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00835	0.00842	0.00836
	(!A1_N * !A2_N * B1 * !Y)	-0.00516	-0.00515	-0.00515
	(!A1_N * !A2_N * B1 * !Y)	0.00708	0.00708	0.00710
	(!A1_N * !A2_N * !B1 * !Y)	-0.00477	-0.00489	-0.00491
	(!A1_N * !A2_N * !B1 * !Y)	0.00726	0.00727	0.00724

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00236	0.00244	0.00259	0.00251	0.74844
sky130_fd_sc_hs__a2bb2o_2	0.00248	0.00254	0.00272	0.00291	1.35358
sky130_fd_sc_hs__a2bb2o_4	0.00273	0.00289	0.00491	0.00495	2.84066

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.13765	0.18516
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.16703	0.22054
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.26846	0.37240

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)	0.26826	1.03747	8.25343
	A2_N->X (FR)	0.24696	1.02204	8.19522
	B1->X (RR)	0.13773	0.85434	7.52268
	B2->X (RR)	0.13074	0.85799	7.49850
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.27407	0.93414	8.11543
	A2_N->X (FR)	0.25328	0.91849	8.06037
	B1->X (RR)	0.13604	0.75135	7.39094
	B2->X (RR)	0.13155	0.76566	7.39386
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.34651	0.94937	8.55688
	A2_N->X (FR)	0.32691	0.94240	8.52063
	B1->X (RR)	0.15054	0.68778	7.61781
	B2->X (RR)	0.14193	0.69648	7.61867

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)	0.26302	0.69033	3.43963
	A2_N->X (RF)	0.25297	0.65665	3.32031
	B1->X (FF)	0.24449	0.78307	4.50349
	B2->X (FF)	0.21115	0.73513	4.38417
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.32114	0.72657	3.33981
	A2_N->X (RF)	0.31082	0.68962	3.21659
	B1->X (FF)	0.30195	0.83198	4.62584
	B2->X (FF)	0.26978	0.78822	4.51094
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.30625	0.68599	3.53005
	A2_N->X (RF)	0.29536	0.65246	3.41554
	B1->X (FF)	0.29834	0.79326	4.81981
	B2->X (FF)	0.26050	0.74307	4.69036

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	0.00767	0.00773	0.01347
	A1_N	0.01040	0.01047	0.01630
	A2_N	0.00761	0.00804	0.01655
	A2_N	0.00955	0.00998	0.01863
	B1	0.00883	0.00889	0.01435
	B1	0.00443	0.00449	0.00996
	B2	0.00794	0.00806	0.01487
	B2	0.00442	0.00455	0.01139
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01018	0.01064	0.01629
	A1_N	0.01314	0.01359	0.01937
	A2_N	0.01024	0.01102	0.01951
	A2_N	0.01223	0.01303	0.02176
	B1	0.01147	0.01183	0.01744
	B1	0.00700	0.00736	0.01307
	B2	0.01071	0.01103	0.01798
	B2	0.00701	0.00734	0.01439
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01690	0.01778	0.02414
	A1_N	0.01928	0.02016	0.02658
	A2_N	0.01685	0.01815	0.02691
	A2_N	0.01831	0.01966	0.02859
	B1	0.02109	0.02167	0.03227
	B1	0.01278	0.01337	0.02449
	B2	0.01947	0.02010	0.03352
	B2	0.01278	0.01344	0.02737

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01123	0.01134	0.01745
	A1_N	0.00842	0.00849	0.01444
	A2_N	0.00960	0.00977	0.01775
	A2_N	0.00756	0.00775	0.01557
	B1	0.00438	0.00456	0.01026
	B1	0.00875	0.00894	0.01444
	B2	0.00412	0.00422	0.01035
	B2	0.00765	0.00774	0.01366
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01357	0.01389	0.01985
	A1_N	0.01057	0.01091	0.01682
	A2_N	0.01190	0.01229	0.02015
	A2_N	0.00980	0.01019	0.01797
	B1	0.00657	0.00695	0.01295
	B1	0.01101	0.01140	0.01708
	B2	0.00618	0.00649	0.01242
	B2	0.00991	0.01022	0.01613
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02279	0.02378	0.03152
	A1_N	0.02031	0.02130	0.02853
	A2_N	0.02095	0.02209	0.03164
	A2_N	0.01933	0.02047	0.02922
	B1	0.01385	0.01459	0.02626
	B1	0.02208	0.02280	0.03347
	B2	0.01270	0.01346	0.02488
	B2	0.01942	0.02018	0.03143

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)	0.00132	0.00109	0.00108
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00128	-0.00151	-0.00154
	(!A2_N * B1 * B2 * X)	0.00539	0.00531	0.01113
	(!A2_N * B1 * B2 * X)	0.00138	0.00129	0.00715
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00137	0.00113	0.00112
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00135	-0.00159	-0.00161
	(!A2_N * B1 * B2 * X)	0.00551	0.00541	0.01119
	(!A2_N * B1 * B2 * X)	0.00130	0.00119	0.00701
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00151	0.00128	0.00128
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00149	-0.00173	-0.00174
	(!A2_N * B1 * B2 * X)	0.00716	0.00707	0.01360
	(!A2_N * B1 * B2 * X)	0.00241	0.00231	0.00888

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)	-0.00107	-0.00107	-0.00106
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00153	0.00155	0.00154
	(!A2_N * B1 * B2 * X)	0.00145	0.00139	0.00717
	(!A2_N * B1 * B2 * X)	0.00544	0.00538	0.01116
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00110	-0.00111	-0.00110
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00161	0.00162	0.00162
	(!A2_N * B1 * B2 * X)	0.00138	0.00130	0.00705
	(!A2_N * B1 * B2 * X)	0.00556	0.00549	0.01124
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00126	-0.00127	-0.00126
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00174	0.00175	0.00174
	(!A2_N * B1 * B2 * X)	0.00128	0.00116	0.00738
	(!A2_N * B1 * B2 * X)	0.00599	0.00587	0.01209

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)	0.00120	0.00120	0.00119
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00077	-0.00077	-0.00076
	(!A1_N * B1 * B2 * X)	0.00382	0.00382	0.01155
	(!A1_N * B1 * B2 * X)	0.00059	0.00057	0.00833
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00121	0.00121	0.00121
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00077	-0.00076	-0.00076
	(!A1_N * B1 * B2 * X)	0.00391	0.00386	0.01158
	(!A1_N * B1 * B2 * X)	0.00057	0.00052	0.00826
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00145	0.00145	0.00145
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00086	-0.00085	-0.00085
	(!A1_N * B1 * B2 * X)	0.00549	0.00544	0.01359
	(!A1_N * B1 * B2 * X)	0.00160	0.00153	0.00970

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)	-0.00115	-0.00115	-0.00119
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00081	0.00081	0.00078
	(!A1_N * B1 * B2 * X)	0.00143	0.00183	0.00993
	(!A1_N * B1 * B2 * X)	0.00465	0.00507	0.01316
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00116	-0.00116	-0.00120
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00081	0.00081	0.00078
	(!A1_N * B1 * B2 * X)	0.00142	0.00181	0.00990
	(!A1_N * B1 * B2 * X)	0.00473	0.00513	0.01320
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00140	-0.00140	-0.00144
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00090	0.00090	0.00087
	(!A1_N * B1 * B2 * X)	0.00127	0.00158	0.00998
	(!A1_N * B1 * B2 * X)	0.00513	0.00545	0.01384

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)	0.00134	0.00134	0.00134
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00160	-0.00160	-0.00160
	(!A1_N * !A2_N * B2 * X)	0.00157	0.00140	0.00138
	(!A1_N * !A2_N * B2 * X)	-0.00138	-0.00159	-0.00159
	(!A1_N * !A2_N * !B2 * X)	0.00134	0.00135	0.00133
	(!A1_N * !A2_N * !B2 * X)	-0.00161	-0.00162	-0.00161
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00130	0.00131	0.00130
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00163	-0.00164	-0.00163
	(!A1_N * !A2_N * B2 * X)	0.00156	0.00137	0.00136
	(!A1_N * !A2_N * B2 * X)	-0.00139	-0.00160	-0.00161
	(!A1_N * !A2_N * !B2 * X)	0.00129	0.00130	0.00129
	(!A1_N * !A2_N * !B2 * X)	-0.00164	-0.00164	-0.00163
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00215	0.00218	0.00216
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00326	-0.00329	-0.00327
	(!A1_N * !A2_N * B2 * X)	0.00271	0.00231	0.00228
	(!A1_N * !A2_N * B2 * X)	-0.00275	-0.00322	-0.00324
	(!A1_N * !A2_N * !B2 * X)	0.00216	0.00217	0.00216
	(!A1_N * !A2_N * !B2 * X)	-0.00327	-0.00328	-0.00327

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)	-0.00127	-0.00134	-0.00134
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00165	0.00163	0.00161
	(!A1_N * !A2_N * B2 * X)	-0.00138	-0.00138	-0.00137
	(!A1_N * !A2_N * B2 * X)	0.00159	0.00160	0.00159
	(!A1_N * !A2_N * !B2 * X)	-0.00131	-0.00135	-0.00133
	(!A1_N * !A2_N * !B2 * X)	0.00161	0.00163	0.00161
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00121	-0.00130	-0.00130
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00170	0.00167	0.00164
	(!A1_N * !A2_N * B2 * X)	-0.00135	-0.00136	-0.00135
	(!A1_N * !A2_N * B2 * X)	0.00160	0.00162	0.00161
	(!A1_N * !A2_N * !B2 * X)	-0.00127	-0.00130	-0.00129
	(!A1_N * !A2_N * !B2 * X)	0.00164	0.00165	0.00164
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00199	-0.00217	-0.00216
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00340	0.00333	0.00329
	(!A1_N * !A2_N * B2 * X)	-0.00227	-0.00227	-0.00226
	(!A1_N * !A2_N * B2 * X)	0.00324	0.00325	0.00324
	(!A1_N * !A2_N * !B2 * X)	-0.00209	-0.00217	-0.00216
	(!A1_N * !A2_N * !B2 * X)	0.00327	0.00332	0.00328

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)	0.00054	0.00054	0.00051
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00179	-0.00179	-0.00182
	(!A1_N * !A2_N * B1 * X)	0.00128	0.00108	0.00107
	(!A1_N * !A2_N * B1 * X)	-0.00150	-0.00171	-0.00172
	(!A1_N * !A2_N * !B1 * X)	0.00102	0.00103	0.00102
	(!A1_N * !A2_N * !B1 * X)	-0.00174	-0.00175	-0.00174
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00053	0.00053	0.00051
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00194	-0.00194	-0.00197
	(!A1_N * !A2_N * B1 * X)	0.00157	0.00135	0.00134
	(!A1_N * !A2_N * B1 * X)	-0.00147	-0.00169	-0.00170
	(!A1_N * !A2_N * !B1 * X)	0.00127	0.00127	0.00127
	(!A1_N * !A2_N * !B1 * X)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00090	0.00091	0.00086
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00359	-0.00362	-0.00369
	(!A1_N * !A2_N * B1 * X)	0.00269	0.00231	0.00228
	(!A1_N * !A2_N * B1 * X)	-0.00276	-0.00322	-0.00323
	(!A1_N * !A2_N * !B1 * X)	0.00214	0.00216	0.00215
	(!A1_N * !A2_N * !B1 * X)	-0.00325	-0.00328	-0.00327

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)	-0.00050	-0.00050	-0.00050
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00183	0.00183	0.00183
	(!A1_N * !A2_N * B1 * X)	-0.00106	-0.00107	-0.00106
	(!A1_N * !A2_N * B1 * X)	0.00171	0.00172	0.00172
	(!A1_N * !A2_N * !B1 * X)	-0.00100	-0.00103	-0.00102
	(!A1_N * !A2_N * !B1 * X)	0.00175	0.00177	0.00174
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00197	0.00198	0.00197
	(!A1_N * !A2_N * B1 * X)	-0.00133	-0.00134	-0.00133
	(!A1_N * !A2_N * B1 * X)	0.00169	0.00171	0.00170
	(!A1_N * !A2_N * !B1 * X)	-0.00124	-0.00127	-0.00127
	(!A1_N * !A2_N * !B1 * X)	0.00173	0.00176	0.00174
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00083	-0.00083	-0.00082
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00370	0.00372	0.00371
	(!A1_N * !A2_N * B1 * X)	-0.00226	-0.00227	-0.00226
	(!A1_N * !A2_N * B1 * X)	0.00321	0.00324	0.00323
	(!A1_N * !A2_N * !B1 * X)	-0.00208	-0.00216	-0.00215
	(!A1_N * !A2_N * !B1 * X)	0.00326	0.00328	0.00328

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00298	0.00303	0.00294	0.00311	0.00298	0.22961
sky130_fd_sc_hs__a311oi_2	0.00568	0.00546	0.00528	0.00458	0.00448	0.43728
sky130_fd_sc_hs__a311oi_4	0.01100	0.01068	0.01069	0.00863	0.00877	0.80771

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311oi_1	0.00000	0.03510	0.11271
sky130_fd_sc_hs__a311oi_2	0.00000	0.05232	0.15044
sky130_fd_sc_hs__a311oi_4	0.00000	0.10191	0.29802

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)	0.25127	1.33704	9.94222
	A2->Y (FR)	0.30774	1.41747	10.17320
	A3->Y (FR)	0.33384	1.43500	10.07810
	B1->Y (FR)	0.26786	1.39400	10.71130
	C1->Y (FR)	0.20585	1.33473	10.76670
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.21080	1.12523	9.82686
	A2->Y (FR)	0.25942	1.17906	9.91813
	A3->Y (FR)	0.30335	1.23023	9.97631
	B1->Y (FR)	0.25860	1.20612	10.55180
	C1->Y (FR)	0.18454	1.13291	10.60560
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.19700	0.95782	9.53275
	A2->Y (FR)	0.25114	1.01973	9.69379
	A3->Y (FR)	0.30124	1.08397	9.84341
	B1->Y (FR)	0.25299	1.05968	10.48960
	C1->Y (FR)	0.18039	0.99310	10.58290

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.08162	0.64782	5.33897
	A2->Y (RF)	0.09504	0.62548	4.97756
	A3->Y (RF)	0.09967	0.58384	4.43463
	B1->Y (RF)	0.03848	0.42904	3.69437
	C1->Y (RF)	0.03354	0.41669	3.68204
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.07056	0.60660	5.62883
	A2->Y (RF)	0.08370	0.56634	5.05235
	A3->Y (RF)	0.09132	0.53152	4.50896
	B1->Y (RF)	0.05077	0.52462	5.12198
	C1->Y (RF)	0.03798	0.49956	5.08508
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.06851	0.55243	5.61560
	A2->Y (RF)	0.08273	0.51167	5.01878
	A3->Y (RF)	0.09014	0.47001	4.38545
	B1->Y (RF)	0.04648	0.46212	4.94624
	C1->Y (RF)	0.03621	0.44914	5.11586

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00069	0.00050	0.00138
	A1	0.00731	0.00710	0.00799
	A2	0.00132	0.00109	0.00197
	A2	0.00877	0.00857	0.00942
	A3	0.00158	0.00142	0.00230
	A3	0.00990	0.00974	0.01061
	B1	0.00122	0.00104	0.00243
	B1	0.00885	0.00864	0.00992
	C1	0.00114	0.00122	0.00377
	C1	0.00784	0.00777	0.01032
sky130_fd_sc_hs__a311oi_2	A1	0.00029	-0.00003	0.00166
	A1	0.01258	0.01227	0.01392
	A2	0.00151	0.00115	0.00281
	A2	0.01533	0.01500	0.01663
	A3	0.00281	0.00252	0.00415
	A3	0.01818	0.01788	0.01948
	B1	0.00368	0.00350	0.00481
	B1	0.01552	0.01534	0.01664
	C1	0.00360	0.00366	0.00657
	C1	0.01341	0.01349	0.01639

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00001	-0.00065	0.00298
	A1	0.02400	0.02337	0.02702
	A2	0.00245	0.00167	0.00519
	A2	0.02966	0.02887	0.03242
	A3	0.00477	0.00414	0.00761
	A3	0.03536	0.03476	0.03781
	B1	0.00650	0.00616	0.00900
	B1	0.02978	0.02941	0.03225
	C1	0.00635	0.00654	0.01231
	C1	0.02582	0.02602	0.03176

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00889	0.00872	0.01007
	A1	0.00240	0.00221	0.00345
	A2	0.00979	0.00955	0.01060
	A2	0.00239	0.00215	0.00311
	A3	0.01068	0.01046	0.01148
	A3	0.00235	0.00211	0.00307
	B1	0.00812	0.00806	0.00956
	B1	0.00086	0.00080	0.00238
	C1	0.00621	0.00632	0.00780
	C1	-0.00013	-0.00008	0.00149

sky130_fd_sc_hs__a311oi_2	**A1**	0.01670	0.01631	0.01907
	A1	0.00472	0.00433	0.00671
	A2	0.01840	0.01795	0.02004
	A2	0.00475	0.00428	0.00620
	A3	0.02005	0.01963	0.02159
	A3	0.00474	0.00427	0.00614
	B1	0.01350	0.01341	0.01534
	B1	0.00142	0.00115	0.00311
	C1	0.00885	0.00905	0.01130
	C1	-0.00124	-0.00115	0.00087
sky130_fd_sc_hs__a311oi_4	**A1**	0.03225	0.03138	0.03697
	A1	0.00881	0.00789	0.01285
	A2	0.03567	0.03483	0.03860
	A2	0.00881	0.00782	0.01178
	A3	0.03932	0.03842	0.04261
	A3	0.00873	0.00777	0.01167
	B1	0.02611	0.02559	0.03002
	B1	0.00226	0.00182	0.00588
	C1	0.01742	0.01788	0.02217
	C1	-0.00260	-0.00244	0.00174

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)**	0.00136	0.00135	0.00135
	(A2 * A3 * B1 * C1 * !Y)	-0.00161	-0.00171	-0.00169
	(A2 * A3 * B1 * !C1 * !Y)	0.00135	0.00135	0.00135
	(A2 * A3 * B1 * !C1 * !Y)	-0.00160	-0.00171	-0.00170
	(A2 * A3 * !B1 * C1 * !Y)	0.00136	0.00136	0.00135
	(A2 * A3 * !B1 * C1 * !Y)	-0.00152	-0.00166	-0.00164
	(A2 * !A3 * B1 * C1 * !Y)	0.00124	0.00126	0.00125
	(A2 * !A3 * B1 * C1 * !Y)	-0.00175	-0.00176	-0.00175
	(A2 * !A3 * B1 * !C1 * !Y)	0.00124	0.00125	0.00124
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00174	-0.00176	-0.00175
	(A2 * !A3 * !B1 * C1 * !Y)	0.00124	0.00125	0.00125
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00175	-0.00176	-0.00175
	(A2 * !A3 * !B1 * !C1 * Y)	0.00046	0.00046	0.00042
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00199	-0.00200	-0.00208
	(!A2 * B1 * C1 * !Y)	0.00129	0.00129	0.00129
	(!A2 * B1 * C1 * !Y)	-0.00175	-0.00176	-0.00175
	(!A2 * B1 * !C1 * !Y)	0.00128	0.00129	0.00128
	(!A2 * B1 * !C1 * !Y)	-0.00175	-0.00175	-0.00175
	(!A2 * !B1 * C1 * !Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * C1 * !Y)	-0.00175	-0.00175	-0.00175
	(!A2 * !B1 * !C1 * Y)	0.00047	0.00047	0.00044
	(!A2 * !B1 * !C1 * Y)	-0.00205	-0.00206	-0.00209

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00264	0.00263	0.00264
	(A2 * A3 * B1 * C1 * !Y)	-0.00337	-0.00354	-0.00351
	(A2 * A3 * B1 * !C1 * !Y)	0.00265	0.00263	0.00264
	(A2 * A3 * B1 * !C1 * !Y)	-0.00335	-0.00354	-0.00351
	(A2 * A3 * !B1 * C1 * !Y)	0.00267	0.00267	0.00264
	(A2 * A3 * !B1 * C1 * !Y)	-0.00320	-0.00344	-0.00340
	(A2 * !A3 * B1 * C1 * !Y)	0.00243	0.00245	0.00244
	(A2 * !A3 * B1 * C1 * !Y)	-0.00363	-0.00365	-0.00364
	(A2 * !A3 * B1 * !C1 * !Y)	0.00243	0.00245	0.00244
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00363	-0.00364	-0.00364
	(A2 * !A3 * !B1 * C1 * !Y)	0.00242	0.00245	0.00243
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00363	-0.00364	-0.00364
	(A2 * !A3 * !B1 * !C1 * Y)	0.00102	0.00101	0.00090
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00398	-0.00400	-0.00419
	(!A2 * B1 * C1 * !Y)	0.00251	0.00253	0.00251
	(!A2 * B1 * C1 * !Y)	-0.00364	-0.00366	-0.00364
	(!A2 * B1 * !C1 * !Y)	0.00250	0.00253	0.00251
	(!A2 * B1 * !C1 * !Y)	-0.00363	-0.00366	-0.00364
	(!A2 * !B1 * C1 * !Y)	0.00250	0.00251	0.00251
	(!A2 * !B1 * C1 * !Y)	-0.00364	-0.00364	-0.00364
	(!A2 * !B1 * !C1 * Y)	0.00098	0.00098	0.00092
	(!A2 * !B1 * !C1 * Y)	-0.00413	-0.00415	-0.00421

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00515	0.00518	0.00516
	(A2 * A3 * B1 * C1 * !Y)	-0.00666	-0.00702	-0.00696
	(A2 * A3 * B1 * !C1 * !Y)	0.00517	0.00518	0.00516
	(A2 * A3 * B1 * !C1 * !Y)	-0.00662	-0.00702	-0.00696
	(A2 * A3 * !B1 * C1 * !Y)	0.00521	0.00518	0.00516
	(A2 * A3 * !B1 * C1 * !Y)	-0.00630	-0.00676	-0.00673
	(A2 * !A3 * B1 * C1 * !Y)	0.00476	0.00480	0.00476
	(A2 * !A3 * B1 * C1 * !Y)	-0.00721	-0.00720	-0.00721
	(A2 * !A3 * B1 * !C1 * !Y)	0.00473	0.00474	0.00473
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00721	-0.00721	-0.00721
	(A2 * !A3 * !B1 * C1 * !Y)	0.00472	0.00473	0.00472
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00721	-0.00721	-0.00721
	(A2 * !A3 * !B1 * !C1 * Y)	0.00191	0.00190	0.00170
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00784	-0.00785	-0.00827
	(!A2 * B1 * C1 * !Y)	0.00490	0.00492	0.00489
	(!A2 * B1 * C1 * !Y)	-0.00720	-0.00724	-0.00721
	(!A2 * B1 * !C1 * !Y)	0.00486	0.00492	0.00489
	(!A2 * B1 * !C1 * !Y)	-0.00717	-0.00723	-0.00720
	(!A2 * !B1 * C1 * !Y)	0.00486	0.00492	0.00489
	(!A2 * !B1 * C1 * !Y)	-0.00719	-0.00724	-0.00720
	(!A2 * !B1 * !C1 * Y)	0.00186	0.00186	0.00176
	(!A2 * !B1 * !C1 * Y)	-0.00814	-0.00815	-0.00832

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)**	-0.00135	-0.00135	-0.00135
	(A2 * A3 * B1 * C1 * !Y)	0.00169	0.00171	0.00169
	(A2 * A3 * B1 * !C1 * !Y)	-0.00135	-0.00135	-0.00135
	(A2 * A3 * B1 * !C1 * !Y)	0.00169	0.00171	0.00170
	(A2 * A3 * !B1 * C1 * !Y)	-0.00135	-0.00135	-0.00135
	(A2 * A3 * !B1 * C1 * !Y)	0.00165	0.00166	0.00164
	(A2 * !A3 * B1 * C1 * !Y)	-0.00116	-0.00126	-0.00125
	(A2 * !A3 * B1 * C1 * !Y)	0.00175	0.00177	0.00175
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00114	-0.00125	-0.00124
	(A2 * !A3 * B1 * !C1 * !Y)	0.00174	0.00177	0.00175
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00115	-0.00125	-0.00125
	(A2 * !A3 * !B1 * C1 * !Y)	0.00177	0.00177	0.00175
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00041	-0.00041	-0.00041
	(A2 * !A3 * !B1 * !C1 * Y)	0.00209	0.00210	0.00209
	(!A2 * B1 * C1 * !Y)	-0.00125	-0.00129	-0.00129
	(!A2 * B1 * C1 * !Y)	0.00175	0.00177	0.00175
	(!A2 * B1 * !C1 * !Y)	-0.00126	-0.00129	-0.00128
	(!A2 * B1 * !C1 * !Y)	0.00176	0.00177	0.00175
	(!A2 * !B1 * C1 * !Y)	-0.00126	-0.00129	-0.00128
	(!A2 * !B1 * C1 * !Y)	0.00176	0.00177	0.00175
	(!A2 * !B1 * !C1 * Y)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * !C1 * Y)	0.00209	0.00210	0.00209

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00263	-0.00263	-0.00263
	(A2 * A3 * B1 * C1 * !Y)	0.00351	0.00354	0.00351
	(A2 * A3 * B1 * !C1 * !Y)	-0.00263	-0.00263	-0.00263
	(A2 * A3 * B1 * !C1 * !Y)	0.00350	0.00354	0.00351
	(A2 * A3 * !B1 * C1 * !Y)	-0.00263	-0.00265	-0.00263
	(A2 * A3 * !B1 * C1 * !Y)	0.00339	0.00344	0.00340
	(A2 * !A3 * B1 * C1 * !Y)	-0.00225	-0.00245	-0.00244
	(A2 * !A3 * B1 * C1 * !Y)	0.00364	0.00369	0.00365
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00221	-0.00245	-0.00244
	(A2 * !A3 * B1 * !C1 * !Y)	0.00363	0.00364	0.00365
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00220	-0.00245	-0.00243
	(A2 * !A3 * !B1 * C1 * !Y)	0.00363	0.00364	0.00365
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00087	-0.00088	-0.00087
	(A2 * !A3 * !B1 * !C1 * Y)	0.00421	0.00424	0.00422
	(!A2 * B1 * C1 * !Y)	-0.00246	-0.00253	-0.00251
	(!A2 * B1 * C1 * !Y)	0.00366	0.00369	0.00365
	(!A2 * B1 * !C1 * !Y)	-0.00245	-0.00253	-0.00251
	(!A2 * B1 * !C1 * !Y)	0.00365	0.00366	0.00365
	(!A2 * !B1 * C1 * !Y)	-0.00245	-0.00251	-0.00251
	(!A2 * !B1 * C1 * !Y)	0.00365	0.00366	0.00365
	(!A2 * !B1 * !C1 * Y)	-0.00089	-0.00090	-0.00089
	(!A2 * !B1 * !C1 * Y)	0.00421	0.00424	0.00422

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00515	-0.00517	-0.00515
	(A2 * A3 * B1 * C1 * !Y)	0.00698	0.00702	0.00696
	(A2 * A3 * B1 * !C1 * !Y)	-0.00514	-0.00517	-0.00515
	(A2 * A3 * B1 * !C1 * !Y)	0.00694	0.00702	0.00696
	(A2 * A3 * !B1 * C1 * !Y)	-0.00515	-0.00516	-0.00515
	(A2 * A3 * !B1 * C1 * !Y)	0.00672	0.00676	0.00673
	(A2 * !A3 * B1 * C1 * !Y)	-0.00435	-0.00480	-0.00476
	(A2 * !A3 * B1 * C1 * !Y)	0.00725	0.00720	0.00722
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00428	-0.00474	-0.00473
	(A2 * !A3 * B1 * !C1 * !Y)	0.00722	0.00727	0.00723
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00424	-0.00473	-0.00472
	(A2 * !A3 * !B1 * C1 * !Y)	0.00722	0.00725	0.00723
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00166	-0.00167	-0.00165
	(A2 * !A3 * !B1 * !C1 * Y)	0.00831	0.00839	0.00834
	(!A2 * B1 * C1 * !Y)	-0.00477	-0.00492	-0.00489
	(!A2 * B1 * C1 * !Y)	0.00720	0.00726	0.00722
	(!A2 * B1 * !C1 * !Y)	-0.00479	-0.00492	-0.00489
	(!A2 * B1 * !C1 * !Y)	0.00725	0.00725	0.00722
	(!A2 * !B1 * C1 * !Y)	-0.00479	-0.00492	-0.00489
	(!A2 * !B1 * C1 * !Y)	0.00725	0.00725	0.00723
	(!A2 * !B1 * !C1 * Y)	-0.00170	-0.00172	-0.00170
	(!A2 * !B1 * !C1 * Y)	0.00831	0.00840	0.00834

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)**	0.00143	0.00141	0.00141
	(A1 * A3 * B1 * C1 * !Y)	-0.00162	-0.00171	-0.00170
	(A1 * A3 * B1 * !C1 * !Y)	0.00141	0.00141	0.00141
	(A1 * A3 * B1 * !C1 * !Y)	-0.00160	-0.00171	-0.00170
	(A1 * A3 * !B1 * C1 * !Y)	0.00142	0.00142	0.00141
	(A1 * A3 * !B1 * C1 * !Y)	-0.00152	-0.00166	-0.00164
	(A1 * !A3 * B1 * C1 * !Y)	0.00134	0.00135	0.00133
	(A1 * !A3 * B1 * C1 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A3 * B1 * !C1 * !Y)	0.00133	0.00133	0.00133
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00175	-0.00175	-0.00175
	(A1 * !A3 * !B1 * C1 * !Y)	0.00133	0.00135	0.00133
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A3 * !B1 * !C1 * Y)	0.00054	0.00054	0.00054
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00192	-0.00193	-0.00191
	(!A1 * A3 * B1 * !Y)	0.00134	0.00135	0.00134
	(!A1 * A3 * B1 * !Y)	-0.00175	-0.00176	-0.00175
	(!A1 * A3 * !B1 * C1 * !Y)	0.00134	0.00135	0.00134
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00174	-0.00175	-0.00175
	(!A1 * A3 * !B1 * !C1 * Y)	0.00118	0.00119	0.00118
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00192	-0.00193	-0.00192
	(!A1 * !A3 * B1 * !Y)	0.00085	0.00086	0.00086
	(!A1 * !A3 * B1 * !Y)	-0.00175	-0.00175	-0.00175
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00085	0.00086	0.00086
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00174	-0.00175	-0.00175
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00067	0.00067	0.00067
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00193	-0.00193	-0.00192

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00258	0.00259	0.00259
	(A1 * A3 * B1 * C1 * !Y)	-0.00331	-0.00351	-0.00348
	(A1 * A3 * B1 * !C1 * !Y)	0.00260	0.00259	0.00259
	(A1 * A3 * B1 * !C1 * !Y)	-0.00330	-0.00350	-0.00348
	(A1 * A3 * !B1 * C1 * !Y)	0.00262	0.00259	0.00260
	(A1 * A3 * !B1 * C1 * !Y)	-0.00314	-0.00340	-0.00336
	(A1 * !A3 * B1 * C1 * !Y)	0.00245	0.00245	0.00245
	(A1 * !A3 * B1 * C1 * !Y)	-0.00361	-0.00360	-0.00360
	(A1 * !A3 * B1 * !C1 * !Y)	0.00244	0.00244	0.00245
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00360	-0.00360	-0.00360
	(A1 * !A3 * !B1 * C1 * !Y)	0.00244	0.00245	0.00245
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00361	-0.00361	-0.00360
	(A1 * !A3 * !B1 * !C1 * Y)	0.00120	0.00120	0.00120
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00362	-0.00363	-0.00359
	(!A1 * A3 * B1 * !Y)	0.00247	0.00249	0.00247
	(!A1 * A3 * B1 * !Y)	-0.00361	-0.00362	-0.00360
	(!A1 * A3 * !B1 * C1 * !Y)	0.00247	0.00248	0.00247
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00361	-0.00361	-0.00360
	(!A1 * A3 * !B1 * !C1 * Y)	0.00247	0.00249	0.00247
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00361	-0.00362	-0.00360
	(!A1 * !A3 * B1 * !Y)	0.00153	0.00153	0.00152
	(!A1 * !A3 * B1 * !Y)	-0.00361	-0.00363	-0.00361
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00153	0.00153	0.00152
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00360	-0.00363	-0.00360
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00148	0.00148	0.00147
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00364	-0.00365	-0.00363

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00516	0.00517	0.00517
	(A1 * A3 * B1 * C1 * !Y)	-0.00660	-0.00697	-0.00692
	(A1 * A3 * B1 * !C1 * !Y)	0.00517	0.00517	0.00517
	(A1 * A3 * B1 * !C1 * !Y)	-0.00656	-0.00698	-0.00692
	(A1 * A3 * !B1 * C1 * !Y)	0.00522	0.00518	0.00517
	(A1 * A3 * !B1 * C1 * !Y)	-0.00626	-0.00677	-0.00669
	(A1 * !A3 * B1 * C1 * !Y)	0.00484	0.00487	0.00485
	(A1 * !A3 * B1 * C1 * !Y)	-0.00716	-0.00718	-0.00716
	(A1 * !A3 * B1 * !C1 * !Y)	0.00483	0.00484	0.00484
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00716	-0.00716	-0.00716
	(A1 * !A3 * !B1 * C1 * !Y)	0.00483	0.00483	0.00483
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00716	-0.00716	-0.00716
	(A1 * !A3 * !B1 * !C1 * Y)	0.00230	0.00231	0.00231
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00717	-0.00719	-0.00712
	(!A1 * A3 * B1 * !Y)	0.00491	0.00492	0.00492
	(!A1 * A3 * B1 * !Y)	-0.00715	-0.00716	-0.00716
	(!A1 * A3 * !B1 * C1 * !Y)	0.00490	0.00494	0.00492
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00714	-0.00718	-0.00715
	(!A1 * A3 * !B1 * !C1 * Y)	0.00491	0.00497	0.00494
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00713	-0.00718	-0.00714
	(!A1 * !A3 * B1 * !Y)	0.00293	0.00293	0.00290
	(!A1 * !A3 * B1 * !Y)	-0.00718	-0.00720	-0.00716
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00290	0.00293	0.00290
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00715	-0.00720	-0.00716
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00284	0.00283	0.00281
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00722	-0.00723	-0.00719

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)**	-0.00141	-0.00141	-0.00141
	(A1 * A3 * B1 * C1 * !Y)	0.00170	0.00171	0.00170
	(A1 * A3 * B1 * !C1 * !Y)	-0.00141	-0.00141	-0.00141
	(A1 * A3 * B1 * !C1 * !Y)	0.00169	0.00171	0.00170
	(A1 * A3 * !B1 * C1 * !Y)	-0.00140	-0.00141	-0.00140
	(A1 * A3 * !B1 * C1 * !Y)	0.00164	0.00166	0.00164
	(A1 * !A3 * B1 * C1 * !Y)	-0.00132	-0.00135	-0.00133
	(A1 * !A3 * B1 * C1 * !Y)	0.00176	0.00176	0.00175
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00132	-0.00133	-0.00133
	(A1 * !A3 * B1 * !C1 * !Y)	0.00176	0.00176	0.00175
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00132	-0.00134	-0.00133
	(A1 * !A3 * !B1 * C1 * !Y)	0.00176	0.00176	0.00175
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00050	-0.00050	-0.00052
	(A1 * !A3 * !B1 * !C1 * Y)	0.00197	0.00197	0.00194
	(!A1 * A3 * B1 * !Y)	-0.00131	-0.00135	-0.00134
	(!A1 * A3 * B1 * !Y)	0.00175	0.00177	0.00175
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00131	-0.00135	-0.00134
	(!A1 * A3 * !B1 * C1 * !Y)	0.00174	0.00177	0.00175
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00107	-0.00118	-0.00118
	(!A1 * A3 * !B1 * !C1 * Y)	0.00199	0.00195	0.00193
	(!A1 * !A3 * B1 * !Y)	-0.00085	-0.00086	-0.00086
	(!A1 * !A3 * B1 * !Y)	0.00175	0.00176	0.00175
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00085	-0.00086	-0.00086
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00175	0.00176	0.00176
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00201	0.00202	0.00195

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00258	-0.00259	-0.00259
	(A1 * A3 * B1 * C1 * !Y)	0.00347	0.00351	0.00348
	(A1 * A3 * B1 * !C1 * !Y)	-0.00259	-0.00259	-0.00259
	(A1 * A3 * B1 * !C1 * !Y)	0.00347	0.00350	0.00348
	(A1 * A3 * !B1 * C1 * !Y)	-0.00259	-0.00259	-0.00259
	(A1 * A3 * !B1 * C1 * !Y)	0.00336	0.00340	0.00336
	(A1 * !A3 * B1 * C1 * !Y)	-0.00239	-0.00245	-0.00245
	(A1 * !A3 * B1 * C1 * !Y)	0.00362	0.00363	0.00361
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00239	-0.00244	-0.00245
	(A1 * !A3 * B1 * !C1 * !Y)	0.00362	0.00363	0.00361
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00239	-0.00245	-0.00245
	(A1 * !A3 * !B1 * C1 * !Y)	0.00362	0.00362	0.00361
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00111	-0.00111	-0.00114
	(A1 * !A3 * !B1 * !C1 * Y)	0.00372	0.00373	0.00365
	(!A1 * A3 * B1 * !Y)	-0.00242	-0.00249	-0.00247
	(!A1 * A3 * B1 * !Y)	0.00363	0.00366	0.00361
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00241	-0.00248	-0.00247
	(!A1 * A3 * !B1 * C1 * !Y)	0.00363	0.00365	0.00361
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00225	-0.00249	-0.00247
	(!A1 * A3 * !B1 * !C1 * Y)	0.00381	0.00367	0.00362
	(!A1 * !A3 * B1 * !Y)	-0.00153	-0.00153	-0.00152
	(!A1 * !A3 * B1 * !Y)	0.00361	0.00363	0.00362
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00153	-0.00153	-0.00152
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00360	0.00363	0.00362
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00148	-0.00148	-0.00147
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00384	0.00384	0.00369

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00516	-0.00517	-0.00516
	(A1 * A3 * B1 * C1 * !Y)	0.00691	0.00697	0.00692
	(A1 * A3 * B1 * !C1 * !Y)	-0.00516	-0.00517	-0.00516
	(A1 * A3 * B1 * !C1 * !Y)	0.00691	0.00698	0.00692
	(A1 * A3 * !B1 * C1 * !Y)	-0.00516	-0.00518	-0.00516
	(A1 * A3 * !B1 * C1 * !Y)	0.00669	0.00677	0.00669
	(A1 * !A3 * B1 * C1 * !Y)	-0.00474	-0.00487	-0.00485
	(A1 * !A3 * B1 * C1 * !Y)	0.00719	0.00720	0.00718
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00473	-0.00484	-0.00484
	(A1 * !A3 * B1 * !C1 * !Y)	0.00719	0.00721	0.00718
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00472	-0.00483	-0.00483
	(A1 * !A3 * !B1 * C1 * !Y)	0.00717	0.00722	0.00718
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00214	-0.00214	-0.00220
	(A1 * !A3 * !B1 * !C1 * Y)	0.00737	0.00739	0.00723
	(!A1 * A3 * B1 * !Y)	-0.00481	-0.00492	-0.00492
	(!A1 * A3 * B1 * !Y)	0.00720	0.00720	0.00717
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00481	-0.00494	-0.00492
	(!A1 * A3 * !B1 * C1 * !Y)	0.00720	0.00720	0.00717
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00446	-0.00494	-0.00494
	(!A1 * A3 * !B1 * !C1 * Y)	0.00759	0.00722	0.00717
	(!A1 * !A3 * B1 * !Y)	-0.00293	-0.00293	-0.00290
	(!A1 * !A3 * B1 * !Y)	0.00718	0.00721	0.00718
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00290	-0.00293	-0.00290
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00718	0.00721	0.00718
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00284	-0.00283	-0.00281
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00758	0.00762	0.00731

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)**	0.00151	0.00150	0.00149
	(A1 * A2 * B1 * C1 * !Y)	-0.00163	-0.00172	-0.00170
	(A1 * A2 * B1 * !C1 * !Y)	0.00150	0.00150	0.00149
	(A1 * A2 * B1 * !C1 * !Y)	-0.00162	-0.00172	-0.00171
	(A1 * A2 * !B1 * C1 * !Y)	0.00151	0.00148	0.00149
	(A1 * A2 * !B1 * C1 * !Y)	-0.00154	-0.00167	-0.00165
	(A1 * !A2 * !B1 * !C1 * Y)	0.00129	0.00130	0.00129
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00189	-0.00190	-0.00189
	(!A2 * B1 * !Y)	0.00142	0.00142	0.00142
	(!A2 * B1 * !Y)	-0.00175	-0.00176	-0.00176
	(!A2 * !B1 * C1 * !Y)	0.00142	0.00143	0.00142
	(!A2 * !B1 * C1 * !Y)	-0.00176	-0.00176	-0.00176
	(!A1 * A2 * B1 * !Y)	0.00139	0.00140	0.00139
	(!A1 * A2 * B1 * !Y)	-0.00176	-0.00176	-0.00176
	(!A1 * A2 * !B1 * C1 * !Y)	0.00139	0.00140	0.00139
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00176	-0.00176	-0.00176
	(!A1 * A2 * !B1 * !C1 * Y)	0.00126	0.00127	0.00126
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00129	0.00128	0.00128
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00189	-0.00189	-0.00189

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00254	0.00255	0.00254
	(A1 * A2 * B1 * C1 * !Y)	-0.00325	-0.00344	-0.00341
	(A1 * A2 * B1 * !C1 * !Y)	0.00255	0.00255	0.00254
	(A1 * A2 * B1 * !C1 * !Y)	-0.00324	-0.00343	-0.00341
	(A1 * A2 * !B1 * C1 * !Y)	0.00257	0.00255	0.00254
	(A1 * A2 * !B1 * C1 * !Y)	-0.00310	-0.00334	-0.00331
	(A1 * !A2 * !B1 * !C1 * Y)	0.00242	0.00244	0.00241
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00353	-0.00355	-0.00353
	(!A2 * B1 * !Y)	0.00242	0.00244	0.00241
	(!A2 * B1 * !Y)	-0.00353	-0.00355	-0.00353
	(!A2 * !B1 * C1 * !Y)	0.00242	0.00241	0.00241
	(!A2 * !B1 * C1 * !Y)	-0.00352	-0.00353	-0.00353
	(!A1 * A2 * B1 * !Y)	0.00235	0.00237	0.00235
	(!A1 * A2 * B1 * !Y)	-0.00353	-0.00354	-0.00353
	(!A1 * A2 * !B1 * C1 * !Y)	0.00235	0.00237	0.00235
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00353	-0.00354	-0.00353
	(!A1 * A2 * !B1 * !C1 * Y)	0.00235	0.00237	0.00235
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00353	-0.00354	-0.00353
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00242	0.00243	0.00241
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00353	-0.00355	-0.00353

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00516	0.00516	0.00516
	(A1 * A2 * B1 * C1 * !Y)	-0.00659	-0.00694	-0.00689
	(A1 * A2 * B1 * !C1 * !Y)	0.00517	0.00516	0.00516
	(A1 * A2 * B1 * !C1 * !Y)	-0.00655	-0.00695	-0.00689
	(A1 * A2 * !B1 * C1 * !Y)	0.00522	0.00517	0.00516
	(A1 * A2 * !B1 * C1 * !Y)	-0.00626	-0.00673	-0.00667
	(A1 * !A2 * !B1 * !C1 * Y)	0.00482	0.00491	0.00486
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00710	-0.00717	-0.00713
	(!A2 * B1 * !Y)	0.00487	0.00485	0.00486
	(!A2 * B1 * !Y)	-0.00713	-0.00712	-0.00713
	(!A2 * !B1 * C1 * !Y)	0.00482	0.00487	0.00485
	(!A2 * !B1 * C1 * !Y)	-0.00710	-0.00714	-0.00712
	(!A1 * A2 * B1 * !Y)	0.00473	0.00476	0.00472
	(!A1 * A2 * B1 * !Y)	-0.00713	-0.00716	-0.00713
	(!A1 * A2 * !B1 * C1 * !Y)	0.00473	0.00477	0.00472
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00713	-0.00716	-0.00712
	(!A1 * A2 * !B1 * !C1 * Y)	0.00473	0.00477	0.00473
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00713	-0.00715	-0.00712
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00483	0.00488	0.00486
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00710	-0.00714	-0.00713

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)**	-0.00149	-0.00150	-0.00149
	(A1 * A2 * B1 * C1 * !Y)	0.00170	0.00172	0.00170
	(A1 * A2 * B1 * !C1 * !Y)	-0.00149	-0.00150	-0.00149
	(A1 * A2 * B1 * !C1 * !Y)	0.00170	0.00172	0.00171
	(A1 * A2 * !B1 * C1 * !Y)	-0.00148	-0.00148	-0.00149
	(A1 * A2 * !B1 * C1 * !Y)	0.00165	0.00167	0.00165
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00124	-0.00129	-0.00129
	(A1 * !A2 * !B1 * !C1 * Y)	0.00189	0.00191	0.00190
	(!A2 * B1 * !Y)	-0.00140	-0.00142	-0.00142
	(!A2 * B1 * !Y)	0.00175	0.00177	0.00176
	(!A2 * !B1 * C1 * !Y)	-0.00140	-0.00143	-0.00142
	(!A2 * !B1 * C1 * !Y)	0.00176	0.00177	0.00176
	(!A1 * A2 * B1 * !Y)	-0.00132	-0.00140	-0.00139
	(!A1 * A2 * B1 * !Y)	0.00176	0.00177	0.00176
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00132	-0.00140	-0.00139
	(!A1 * A2 * !B1 * C1 * !Y)	0.00176	0.00177	0.00176
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00118	-0.00127	-0.00126
	(!A1 * A2 * !B1 * !C1 * Y)	0.00190	0.00191	0.00190
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00125	-0.00128	-0.00128
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00189	0.00191	0.00190

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00253	-0.00255	-0.00254
	(A1 * A2 * B1 * C1 * !Y)	0.00340	0.00344	0.00341
	(A1 * A2 * B1 * !C1 * !Y)	-0.00253	-0.00255	-0.00254
	(A1 * A2 * B1 * !C1 * !Y)	0.00340	0.00343	0.00341
	(A1 * A2 * !B1 * C1 * !Y)	-0.00254	-0.00255	-0.00254
	(A1 * A2 * !B1 * C1 * !Y)	0.00330	0.00334	0.00331
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00230	-0.00244	-0.00241
	(A1 * !A2 * !B1 * !C1 * Y)	0.00353	0.00358	0.00354
	(!A2 * B1 * !Y)	-0.00234	-0.00244	-0.00241
	(!A2 * B1 * !Y)	0.00353	0.00358	0.00354
	(!A2 * !B1 * C1 * !Y)	-0.00234	-0.00241	-0.00241
	(!A2 * !B1 * C1 * !Y)	0.00352	0.00357	0.00354
	(!A1 * A2 * B1 * !Y)	-0.00219	-0.00237	-0.00235
	(!A1 * A2 * B1 * !Y)	0.00353	0.00357	0.00354
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00219	-0.00237	-0.00235
	(!A1 * A2 * !B1 * C1 * !Y)	0.00353	0.00357	0.00354
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00218	-0.00237	-0.00235
	(!A1 * A2 * !B1 * !C1 * Y)	0.00355	0.00357	0.00354
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00232	-0.00243	-0.00241
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00353	0.00358	0.00354

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00514	-0.00516	-0.00515
	(A1 * A2 * B1 * C1 * !Y)	0.00688	0.00694	0.00689
	(A1 * A2 * B1 * !C1 * !Y)	-0.00514	-0.00516	-0.00515
	(A1 * A2 * B1 * !C1 * !Y)	0.00688	0.00696	0.00689
	(A1 * A2 * !B1 * C1 * !Y)	-0.00515	-0.00517	-0.00515
	(A1 * A2 * !B1 * C1 * !Y)	0.00668	0.00673	0.00667
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00463	-0.00491	-0.00486
	(A1 * !A2 * !B1 * !C1 * Y)	0.00713	0.00722	0.00715
	(!A2 * B1 * !Y)	-0.00473	-0.00485	-0.00486
	(!A2 * B1 * !Y)	0.00713	0.00722	0.00714
	(!A2 * !B1 * C1 * !Y)	-0.00473	-0.00487	-0.00485
	(!A2 * !B1 * C1 * !Y)	0.00713	0.00722	0.00714
	(!A1 * A2 * B1 * !Y)	-0.00441	-0.00476	-0.00472
	(!A1 * A2 * B1 * !Y)	0.00714	0.00721	0.00714
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00441	-0.00477	-0.00472
	(!A1 * A2 * !B1 * C1 * !Y)	0.00714	0.00721	0.00714
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00438	-0.00477	-0.00473
	(!A1 * A2 * !B1 * !C1 * Y)	0.00718	0.00721	0.00715
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00468	-0.00488	-0.00486
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00713	0.00722	0.00715

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)**	0.00168	0.00160	0.00152
	(A1 * A2 * A3 * C1 * !Y)	-0.00120	-0.00123	-0.00122
	(A1 * A2 * A3 * !C1 * !Y)	0.00145	0.00146	0.00144
	(A1 * A2 * A3 * !C1 * !Y)	-0.00091	-0.00092	-0.00092
	(A1 * A2 * !A3 * C1 * !Y)	0.00173	0.00145	0.00143
	(A1 * A2 * !A3 * C1 * !Y)	-0.00140	-0.00171	-0.00171
	(A1 * !A2 * C1 * !Y)	0.00174	0.00145	0.00143
	(A1 * !A2 * C1 * !Y)	-0.00140	-0.00171	-0.00171
	(!A1 * C1 * !Y)	0.00173	0.00145	0.00143
	(!A1 * C1 * !Y)	-0.00141	-0.00171	-0.00171
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00188	0.00176	0.00157
	(A1 * A2 * A3 * C1 * !Y)	-0.00251	-0.00258	-0.00257
	(A1 * A2 * A3 * !C1 * !Y)	0.00148	0.00149	0.00146
	(A1 * A2 * A3 * !C1 * !Y)	-0.00191	-0.00193	-0.00194
	(A1 * A2 * !A3 * C1 * !Y)	0.00207	0.00147	0.00144
	(A1 * A2 * !A3 * C1 * !Y)	-0.00286	-0.00353	-0.00352
	(A1 * !A2 * C1 * !Y)	0.00207	0.00147	0.00144
	(A1 * !A2 * C1 * !Y)	-0.00287	-0.00353	-0.00352
	(!A1 * C1 * !Y)	0.00206	0.00147	0.00144
	(!A1 * C1 * !Y)	-0.00287	-0.00353	-0.00352
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00364	0.00338	0.00303
	(A1 * A2 * A3 * C1 * !Y)	-0.00487	-0.00504	-0.00500
	(A1 * A2 * A3 * !C1 * !Y)	0.00285	0.00286	0.00280
	(A1 * A2 * A3 * !C1 * !Y)	-0.00374	-0.00377	-0.00379
	(A1 * A2 * !A3 * C1 * !Y)	0.00409	0.00283	0.00277
	(A1 * A2 * !A3 * C1 * !Y)	-0.00564	-0.00692	-0.00695
	(A1 * !A2 * C1 * !Y)	0.00408	0.00283	0.00277
	(A1 * !A2 * C1 * !Y)	-0.00566	-0.00697	-0.00695
	(!A1 * C1 * !Y)	0.00405	0.00283	0.00277
	(!A1 * C1 * !Y)	-0.00569	-0.00698	-0.00695

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)	-0.00145	-0.00146	-0.00145
	(A1 * A2 * A3 * C1 * !Y)	0.00122	0.00123	0.00122
	(A1 * A2 * A3 * !C1 * !Y)	-0.00140	-0.00141	-0.00142
	(A1 * A2 * A3 * !C1 * !Y)	0.00098	0.00098	0.00096
	(A1 * A2 * !A3 * C1 * !Y)	-0.00142	-0.00143	-0.00141
	(A1 * A2 * !A3 * C1 * !Y)	0.00170	0.00172	0.00171
	(A1 * !A2 * C1 * !Y)	-0.00142	-0.00142	-0.00141
	(A1 * !A2 * C1 * !Y)	0.00170	0.00171	0.00171
	(!A1 * C1 * !Y)	-0.00142	-0.00143	-0.00141
	(!A1 * C1 * !Y)	0.00170	0.00172	0.00171
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00147	-0.00147	-0.00147
	(A1 * A2 * A3 * C1 * !Y)	0.00259	0.00258	0.00257
	(A1 * A2 * A3 * !C1 * !Y)	-0.00137	-0.00137	-0.00139
	(A1 * A2 * A3 * !C1 * !Y)	0.00204	0.00203	0.00202
	(A1 * A2 * !A3 * C1 * !Y)	-0.00144	-0.00144	-0.00143
	(A1 * A2 * !A3 * C1 * !Y)	0.00352	0.00353	0.00352
	(A1 * !A2 * C1 * !Y)	-0.00144	-0.00144	-0.00143
	(A1 * !A2 * C1 * !Y)	0.00352	0.00353	0.00352
	(!A1 * C1 * !Y)	-0.00144	-0.00144	-0.00143
	(!A1 * C1 * !Y)	0.00353	0.00353	0.00352

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00281	-0.00283	-0.00282
	(A1 * A2 * A3 * C1 * !Y)	0.00499	0.00504	0.00500
	(A1 * A2 * A3 * !C1 * !Y)	-0.00260	-0.00262	-0.00268
	(A1 * A2 * A3 * !C1 * !Y)	0.00401	0.00399	0.00395
	(A1 * A2 * !A3 * C1 * !Y)	-0.00276	-0.00275	-0.00273
	(A1 * A2 * !A3 * C1 * !Y)	0.00694	0.00692	0.00695
	(A1 * !A2 * C1 * !Y)	-0.00276	-0.00277	-0.00273
	(A1 * !A2 * C1 * !Y)	0.00694	0.00699	0.00695
	(!A1 * C1 * !Y)	-0.00275	-0.00277	-0.00273
	(!A1 * C1 * !Y)	0.00692	0.00699	0.00695

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)	0.00152	0.00153	0.00153
	(A1 * A2 * B1 * !Y)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * A3 * !B1 * !Y)	0.00153	0.00154	0.00153
	(A1 * A2 * A3 * !B1 * !Y)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * B1 * !Y)	0.00154	0.00153	0.00153
	(A1 * !A2 * B1 * !Y)	-0.00088	-0.00087	-0.00087
	(!A1 * B1 * !Y)	0.00152	0.00153	0.00153
	(!A1 * B1 * !Y)	-0.00087	-0.00087	-0.00087
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00172	0.00173	0.00173
	(A1 * A2 * B1 * !Y)	-0.00170	-0.00170	-0.00170
	(A1 * A2 * A3 * !B1 * !Y)	0.00172	0.00173	0.00173
	(A1 * A2 * A3 * !B1 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * B1 * !Y)	0.00172	0.00173	0.00173
	(A1 * !A2 * B1 * !Y)	-0.00170	-0.00171	-0.00170
	(!A1 * B1 * !Y)	0.00173	0.00173	0.00173
	(!A1 * B1 * !Y)	-0.00171	-0.00171	-0.00170
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00343	0.00344	0.00343
	(A1 * A2 * B1 * !Y)	-0.00338	-0.00338	-0.00337
	(A1 * A2 * A3 * !B1 * !Y)	0.00343	0.00345	0.00343
	(A1 * A2 * A3 * !B1 * !Y)	-0.00336	-0.00338	-0.00335
	(A1 * !A2 * B1 * !Y)	0.00343	0.00345	0.00343
	(A1 * !A2 * B1 * !Y)	-0.00338	-0.00339	-0.00338
	(!A1 * B1 * !Y)	0.00344	0.00345	0.00343
	(!A1 * B1 * !Y)	-0.00339	-0.00340	-0.00338

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)	-0.00148	-0.00148	-0.00152
	(A1 * A2 * B1 * !Y)	0.00092	0.00092	0.00088
	(A1 * A2 * A3 * !B1 * !Y)	-0.00131	-0.00133	-0.00150
	(A1 * A2 * A3 * !B1 * !Y)	0.00102	0.00102	0.00090
	(A1 * !A2 * B1 * !Y)	-0.00148	-0.00148	-0.00152
	(A1 * !A2 * B1 * !Y)	0.00092	0.00092	0.00089
	(!A1 * B1 * !Y)	-0.00147	-0.00148	-0.00152
	(!A1 * B1 * !Y)	0.00092	0.00092	0.00089
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00157	-0.00158	-0.00172
	(A1 * A2 * B1 * !Y)	0.00186	0.00185	0.00174
	(A1 * A2 * A3 * !B1 * !Y)	-0.00121	-0.00122	-0.00164
	(A1 * A2 * A3 * !B1 * !Y)	0.00207	0.00206	0.00177
	(A1 * !A2 * B1 * !Y)	-0.00157	-0.00158	-0.00172
	(A1 * !A2 * B1 * !Y)	0.00186	0.00185	0.00174
	(!A1 * B1 * !Y)	-0.00156	-0.00158	-0.00172
	(!A1 * B1 * !Y)	0.00185	0.00185	0.00174
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00316	-0.00317	-0.00342
	(A1 * A2 * B1 * !Y)	0.00365	0.00363	0.00345
	(A1 * A2 * A3 * !B1 * !Y)	-0.00243	-0.00247	-0.00326
	(A1 * A2 * A3 * !B1 * !Y)	0.00403	0.00404	0.00350
	(A1 * !A2 * B1 * !Y)	-0.00316	-0.00318	-0.00342
	(A1 * !A2 * B1 * !Y)	0.00365	0.00364	0.00345
	(!A1 * B1 * !Y)	-0.00315	-0.00318	-0.00342
	(!A1 * B1 * !Y)	0.00363	0.00364	0.00345

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00270	0.00256	0.00258	0.00266	0.00275	0.75762
sky130_fd_sc_hs__a311o_2	0.00280	0.00279	0.00295	0.00299	0.00284	1.35858
sky130_fd_sc_hs__a311o_4	0.00511	0.00477	0.00504	0.00492	0.00493	2.42759

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311o_1	0.00000	0.08808	0.14646
sky130_fd_sc_hs__a311o_2	0.00000	0.12116	0.16959
sky130_fd_sc_hs__a311o_4	0.00000	0.24189	0.34275

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)	0.17631	0.94071	7.70774
	A2->X (RR)	0.18814	0.94195	7.73898
	A3->X (RR)	0.19492	0.91909	7.64841
	B1->X (RR)	0.10507	0.82708	7.41583
	C1->X (RR)	0.09820	0.80254	7.35169
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.18896	0.87616	7.71156
	A2->X (RR)	0.20122	0.87032	7.72340
	A3->X (RR)	0.20892	0.84335	7.60458
	B1->X (RR)	0.10772	0.74546	7.38842
	C1->X (RR)	0.10102	0.72681	7.32141
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.21923	0.83853	7.63592
	A2->X (RR)	0.23756	0.84220	7.67373
	A3->X (RR)	0.24497	0.79506	7.46912
	B1->X (RR)	0.10670	0.65797	7.18471
	C1->X (RR)	0.09824	0.63283	7.10275

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.33464	0.89172	4.67477
	A2->X (FF)	0.38226	0.94913	4.80099
	A3->X (FF)	0.41802	0.99044	4.90687
	B1->X (FF)	0.38082	0.96330	5.08936
	C1->X (FF)	0.33009	0.92843	4.98499
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.45068	0.99631	4.79637
	A2->X (FF)	0.51343	1.06888	4.93901
	A3->X (FF)	0.55853	1.11939	5.04406
	B1->X (FF)	0.52270	1.09744	5.29242
	C1->X (FF)	0.46404	1.05129	5.22030
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.45485	0.94161	4.48820
	A2->X (FF)	0.51608	1.00983	4.63628
	A3->X (FF)	0.56499	1.06897	4.76787
	B1->X (FF)	0.52653	1.04785	5.06142
	C1->X (FF)	0.44770	0.98444	4.96828

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01087	0.01076	0.01634
	A1	0.00518	0.00506	0.01077
	A2	0.01145	0.01125	0.01564
	A2	0.00516	0.00496	0.00948
	A3	0.01222	0.01195	0.01568
	A3	0.00515	0.00488	0.00875
	B1	0.00987	0.00999	0.01595
	B1	0.00377	0.00389	0.01046
	C1	0.00843	0.00856	0.01576
	C1	0.00296	0.00316	0.01164
sky130_fd_sc_hs__a311o_2	A1	0.01395	0.01402	0.01963
	A1	0.00784	0.00792	0.01382
	A2	0.01477	0.01480	0.01919
	A2	0.00782	0.00785	0.01253
	A3	0.01579	0.01572	0.01907
	A3	0.00784	0.00777	0.01141
	B1	0.01340	0.01380	0.01919
	B1	0.00643	0.00680	0.01307
	C1	0.01173	0.01214	0.01831
	C1	0.00557	0.00597	0.01339

sky130_fd_sc_hs__a311o_4	**A1**	0.02738	0.02760	0.03858
	A1	0.01654	0.01680	0.02842
	A2	0.02872	0.02896	0.03738
	A2	0.01645	0.01671	0.02577
	A3	0.03055	0.03071	0.03797
	A3	0.01658	0.01676	0.02450
	B1	0.02524	0.02577	0.03659
	B1	0.01330	0.01387	0.02607
	C1	0.02099	0.02185	0.03508
	C1	0.01072	0.01154	0.02639

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00310	0.00312	0.00740
	A1	0.00887	0.00892	0.01315
	A2	0.00373	0.00377	0.00815
	A2	0.01004	0.01012	0.01416
	A3	0.00409	0.00384	0.00828
	A3	0.01112	0.01109	0.01499
	B1	0.00400	0.00395	0.00906
	B1	0.00998	0.01001	0.01502
	C1	0.00334	0.00381	0.01225
	C1	0.00917	0.00949	0.01683

sky130_fd_sc_hs__a311o_2	**A1**	0.00594	0.00588	0.01091
	A1	0.01212	0.01215	0.01654
	A2	0.00666	0.00657	0.01166
	A2	0.01362	0.01352	0.01781
	A3	0.00694	0.00639	0.01087
	A3	0.01482	0.01441	0.01828
	B1	0.00705	0.00655	0.01177
	B1	0.01387	0.01351	0.01820
	C1	0.00689	0.00646	0.01446
	C1	0.01291	0.01300	0.01999
sky130_fd_sc_hs__a311o_4	**A1**	0.01193	0.01198	0.02062
	A1	0.02292	0.02294	0.03111
	A2	0.01392	0.01366	0.02157
	A2	0.02620	0.02608	0.03379
	A3	0.01445	0.01387	0.02221
	A3	0.02828	0.02788	0.03522
	B1	0.01466	0.01421	0.02462
	B1	0.02631	0.02585	0.03467
	C1	0.01454	0.01458	0.02907
	C1	0.02454	0.02471	0.03829

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)**	0.00126	0.00126	0.00125
	(A2 * A3 * B1 * C1 * X)	-0.00147	-0.00155	-0.00154
	(A2 * A3 * B1 * !C1 * X)	0.00127	0.00126	0.00125
	(A2 * A3 * B1 * !C1 * X)	-0.00145	-0.00155	-0.00154
	(A2 * A3 * !B1 * C1 * X)	0.00129	0.00126	0.00125
	(A2 * A3 * !B1 * C1 * X)	-0.00137	-0.00151	-0.00149
	(A2 * !A3 * B1 * C1 * X)	0.00117	0.00118	0.00117
	(A2 * !A3 * B1 * C1 * X)	-0.00159	-0.00160	-0.00159
	(A2 * !A3 * B1 * !C1 * X)	0.00117	0.00118	0.00117
	(A2 * !A3 * B1 * !C1 * X)	-0.00159	-0.00160	-0.00159
	(A2 * !A3 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(A2 * !A3 * !B1 * C1 * X)	-0.00159	-0.00159	-0.00159
	(A2 * !A3 * !B1 * !C1 * !X)	0.00054	0.00054	0.00050
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00175	-0.00176	-0.00184
	(!A2 * B1 * C1 * X)	0.00120	0.00121	0.00120
	(!A2 * B1 * C1 * X)	-0.00159	-0.00160	-0.00159
	(!A2 * B1 * !C1 * X)	0.00120	0.00121	0.00120
	(!A2 * B1 * !C1 * X)	-0.00159	-0.00160	-0.00159
	(!A2 * !B1 * C1 * X)	0.00120	0.00121	0.00120
	(!A2 * !B1 * C1 * X)	-0.00158	-0.00159	-0.00159
	(!A2 * !B1 * !C1 * !X)	0.00053	0.00054	0.00051
	(!A2 * !B1 * !C1 * !X)	-0.00180	-0.00182	-0.00184

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00135	0.00134	0.00134
	(A2 * A3 * B1 * C1 * X)	-0.00146	-0.00154	-0.00153
	(A2 * A3 * B1 * !C1 * X)	0.00136	0.00134	0.00134
	(A2 * A3 * B1 * !C1 * X)	-0.00145	-0.00152	-0.00153
	(A2 * A3 * !B1 * C1 * X)	0.00137	0.00135	0.00134
	(A2 * A3 * !B1 * C1 * X)	-0.00136	-0.00150	-0.00149
	(A2 * !A3 * B1 * C1 * X)	0.00123	0.00125	0.00124
	(A2 * !A3 * B1 * C1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * !A3 * B1 * !C1 * X)	0.00123	0.00124	0.00124
	(A2 * !A3 * B1 * !C1 * X)	-0.00158	-0.00158	-0.00158
	(A2 * !A3 * !B1 * C1 * X)	0.00123	0.00124	0.00124
	(A2 * !A3 * !B1 * C1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * !A3 * !B1 * !C1 * !X)	0.00047	0.00047	0.00042
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00189
	(!A2 * B1 * C1 * X)	0.00127	0.00128	0.00127
	(!A2 * B1 * C1 * X)	-0.00158	-0.00158	-0.00158
	(!A2 * B1 * !C1 * X)	0.00127	0.00128	0.00127
	(!A2 * B1 * !C1 * X)	-0.00157	-0.00158	-0.00158
	(!A2 * !B1 * C1 * X)	0.00127	0.00128	0.00127
	(!A2 * !B1 * C1 * X)	-0.00158	-0.00158	-0.00158
	(!A2 * !B1 * !C1 * !X)	0.00047	0.00047	0.00045
	(!A2 * !B1 * !C1 * !X)	-0.00186	-0.00187	-0.00190

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00229	0.00229	0.00228
	(A2 * A3 * B1 * C1 * X)	-0.00305	-0.00320	-0.00318
	(A2 * A3 * B1 * !C1 * X)	0.00229	0.00229	0.00228
	(A2 * A3 * B1 * !C1 * X)	-0.00303	-0.00320	-0.00318
	(A2 * A3 * !B1 * C1 * X)	0.00233	0.00229	0.00228
	(A2 * A3 * !B1 * C1 * X)	-0.00287	-0.00312	-0.00309
	(A2 * !A3 * B1 * C1 * X)	0.00209	0.00211	0.00210
	(A2 * !A3 * B1 * C1 * X)	-0.00328	-0.00330	-0.00329
	(A2 * !A3 * B1 * !C1 * X)	0.00209	0.00211	0.00210
	(A2 * !A3 * B1 * !C1 * X)	-0.00328	-0.00330	-0.00329
	(A2 * !A3 * !B1 * C1 * X)	0.00209	0.00211	0.00210
	(A2 * !A3 * !B1 * C1 * X)	-0.00328	-0.00330	-0.00329
	(A2 * !A3 * !B1 * !C1 * !X)	0.00089	0.00090	0.00078
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00353	-0.00357	-0.00376
	(!A2 * B1 * C1 * X)	0.00218	0.00219	0.00218
	(!A2 * B1 * C1 * X)	-0.00328	-0.00331	-0.00329
	(!A2 * B1 * !C1 * X)	0.00217	0.00219	0.00218
	(!A2 * B1 * !C1 * X)	-0.00329	-0.00331	-0.00329
	(!A2 * !B1 * C1 * X)	0.00217	0.00219	0.00218
	(!A2 * !B1 * C1 * X)	-0.00329	-0.00331	-0.00329
	(!A2 * !B1 * !C1 * !X)	0.00093	0.00094	0.00086
	(!A2 * !B1 * !C1 * !X)	-0.00364	-0.00367	-0.00377

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)**	-0.00126	-0.00126	-0.00125
	(A2 * A3 * B1 * C1 * X)	0.00154	0.00155	0.00154
	(A2 * A3 * B1 * !C1 * X)	-0.00126	-0.00126	-0.00125
	(A2 * A3 * B1 * !C1 * X)	0.00154	0.00155	0.00154
	(A2 * A3 * !B1 * C1 * X)	-0.00125	-0.00126	-0.00125
	(A2 * A3 * !B1 * C1 * X)	0.00148	0.00151	0.00149
	(A2 * !A3 * B1 * C1 * X)	-0.00110	-0.00118	-0.00117
	(A2 * !A3 * B1 * C1 * X)	0.00159	0.00162	0.00159
	(A2 * !A3 * B1 * !C1 * X)	-0.00109	-0.00118	-0.00117
	(A2 * !A3 * B1 * !C1 * X)	0.00159	0.00162	0.00159
	(A2 * !A3 * !B1 * C1 * X)	-0.00109	-0.00118	-0.00117
	(A2 * !A3 * !B1 * C1 * X)	0.00159	0.00161	0.00159
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00049	-0.00050	-0.00049
	(A2 * !A3 * !B1 * !C1 * !X)	0.00184	0.00186	0.00185
	(!A2 * B1 * C1 * X)	-0.00117	-0.00121	-0.00120
	(!A2 * B1 * C1 * X)	0.00159	0.00161	0.00159
	(!A2 * B1 * !C1 * X)	-0.00117	-0.00121	-0.00120
	(!A2 * B1 * !C1 * X)	0.00159	0.00162	0.00159
	(!A2 * !B1 * C1 * X)	-0.00117	-0.00121	-0.00120
	(!A2 * !B1 * C1 * X)	0.00158	0.00159	0.00159
	(!A2 * !B1 * !C1 * !X)	-0.00050	-0.00051	-0.00050
	(!A2 * !B1 * !C1 * !X)	0.00184	0.00186	0.00185

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00134	-0.00134	-0.00134
	(A2 * A3 * B1 * C1 * X)	0.00152	0.00154	0.00153
	(A2 * A3 * B1 * !C1 * X)	-0.00134	-0.00134	-0.00134
	(A2 * A3 * B1 * !C1 * X)	0.00153	0.00152	0.00153
	(A2 * A3 * !B1 * C1 * X)	-0.00133	-0.00134	-0.00133
	(A2 * A3 * !B1 * C1 * X)	0.00147	0.00150	0.00149
	(A2 * !A3 * B1 * C1 * X)	-0.00115	-0.00125	-0.00124
	(A2 * !A3 * B1 * C1 * X)	0.00158	0.00160	0.00158
	(A2 * !A3 * B1 * !C1 * X)	-0.00114	-0.00124	-0.00124
	(A2 * !A3 * B1 * !C1 * X)	0.00158	0.00160	0.00158
	(A2 * !A3 * !B1 * C1 * X)	-0.00115	-0.00124	-0.00124
	(A2 * !A3 * !B1 * C1 * X)	0.00160	0.00160	0.00158
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00042	-0.00042	-0.00042
	(A2 * !A3 * !B1 * !C1 * !X)	0.00192	0.00191	0.00191
	(!A2 * B1 * C1 * X)	-0.00124	-0.00128	-0.00127
	(!A2 * B1 * C1 * X)	0.00158	0.00159	0.00158
	(!A2 * B1 * !C1 * X)	-0.00124	-0.00128	-0.00127
	(!A2 * B1 * !C1 * X)	0.00157	0.00160	0.00158
	(!A2 * !B1 * C1 * X)	-0.00125	-0.00128	-0.00127
	(!A2 * !B1 * C1 * X)	0.00159	0.00160	0.00158
	(!A2 * !B1 * !C1 * !X)	-0.00044	-0.00043	-0.00043
	(!A2 * !B1 * !C1 * !X)	0.00192	0.00191	0.00191

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00228	-0.00229	-0.00228
	(A2 * A3 * B1 * C1 * X)	0.00317	0.00320	0.00318
	(A2 * A3 * B1 * !C1 * X)	-0.00228	-0.00229	-0.00228
	(A2 * A3 * B1 * !C1 * X)	0.00317	0.00320	0.00318
	(A2 * A3 * !B1 * C1 * X)	-0.00227	-0.00228	-0.00227
	(A2 * A3 * !B1 * C1 * X)	0.00308	0.00312	0.00309
	(A2 * !A3 * B1 * C1 * X)	-0.00193	-0.00211	-0.00210
	(A2 * !A3 * B1 * C1 * X)	0.00329	0.00334	0.00330
	(A2 * !A3 * B1 * !C1 * X)	-0.00192	-0.00211	-0.00210
	(A2 * !A3 * B1 * !C1 * X)	0.00329	0.00334	0.00330
	(A2 * !A3 * !B1 * C1 * X)	-0.00192	-0.00211	-0.00210
	(A2 * !A3 * !B1 * C1 * X)	0.00329	0.00334	0.00330
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00077	-0.00077	-0.00077
	(A2 * !A3 * !B1 * !C1 * !X)	0.00381	0.00380	0.00379
	(!A2 * B1 * C1 * X)	-0.00209	-0.00219	-0.00218
	(!A2 * B1 * C1 * X)	0.00328	0.00333	0.00330
	(!A2 * B1 * !C1 * X)	-0.00211	-0.00219	-0.00218
	(!A2 * B1 * !C1 * X)	0.00331	0.00334	0.00330
	(!A2 * !B1 * C1 * X)	-0.00210	-0.00219	-0.00218
	(!A2 * !B1 * C1 * X)	0.00331	0.00334	0.00330
	(!A2 * !B1 * !C1 * !X)	-0.00082	-0.00082	-0.00082
	(!A2 * !B1 * !C1 * !X)	0.00379	0.00380	0.00379

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)**	0.00110	0.00109	0.00109
	(A1 * A3 * B1 * C1 * X)	-0.00152	-0.00159	-0.00158
	(A1 * A3 * B1 * !C1 * X)	0.00112	0.00109	0.00109
	(A1 * A3 * B1 * !C1 * X)	-0.00149	-0.00159	-0.00158
	(A1 * A3 * !B1 * C1 * X)	0.00113	0.00110	0.00109
	(A1 * A3 * !B1 * C1 * X)	-0.00141	-0.00154	-0.00153
	(A1 * !A3 * B1 * C1 * X)	0.00103	0.00104	0.00103
	(A1 * !A3 * B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * !A3 * B1 * !C1 * X)	0.00103	0.00104	0.00103
	(A1 * !A3 * B1 * !C1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * !A3 * !B1 * C1 * X)	0.00103	0.00104	0.00103
	(A1 * !A3 * !B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * !A3 * !B1 * !C1 * !X)	0.00045	0.00045	0.00045
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00168
	(!A1 * A3 * B1 * X)	0.00103	0.00104	0.00103
	(!A1 * A3 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * A3 * !B1 * C1 * X)	0.00103	0.00104	0.00103
	(!A1 * A3 * !B1 * C1 * X)	-0.00162	-0.00164	-0.00163
	(!A1 * A3 * !B1 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * !A3 * B1 * X)	0.00064	0.00064	0.00064
	(!A1 * !A3 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * !A3 * !B1 * C1 * X)	0.00064	0.00064	0.00064
	(!A1 * !A3 * !B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00170	-0.00170	-0.00170

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00135	0.00133	0.00133
	(A1 * A3 * B1 * C1 * X)	-0.00147	-0.00154	-0.00153
	(A1 * A3 * B1 * !C1 * X)	0.00135	0.00133	0.00133
	(A1 * A3 * B1 * !C1 * X)	-0.00145	-0.00154	-0.00153
	(A1 * A3 * !B1 * C1 * X)	0.00136	0.00134	0.00133
	(A1 * A3 * !B1 * C1 * X)	-0.00136	-0.00150	-0.00149
	(A1 * !A3 * B1 * C1 * X)	0.00126	0.00127	0.00126
	(A1 * !A3 * B1 * C1 * X)	-0.00157	-0.00158	-0.00158
	(A1 * !A3 * B1 * !C1 * X)	0.00125	0.00126	0.00125
	(A1 * !A3 * B1 * !C1 * X)	-0.00157	-0.00158	-0.00158
	(A1 * !A3 * !B1 * C1 * X)	0.00125	0.00126	0.00125
	(A1 * !A3 * !B1 * C1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !A3 * !B1 * !C1 * !X)	0.00054	0.00054	0.00055
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00167	-0.00167	-0.00166
	(!A1 * A3 * B1 * X)	0.00127	0.00127	0.00127
	(!A1 * A3 * B1 * X)	-0.00158	-0.00158	-0.00158
	(!A1 * A3 * !B1 * C1 * X)	0.00127	0.00127	0.00127
	(!A1 * A3 * !B1 * C1 * X)	-0.00157	-0.00158	-0.00158
	(!A1 * A3 * !B1 * !C1 * !X)	0.00118	0.00119	0.00118
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00167	-0.00167	-0.00166
	(!A1 * !A3 * B1 * X)	0.00078	0.00079	0.00078
	(!A1 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00158
	(!A1 * !A3 * !B1 * C1 * X)	0.00078	0.00078	0.00078
	(!A1 * !A3 * !B1 * C1 * X)	-0.00157	-0.00158	-0.00158
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00168	-0.00168	-0.00167

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00220	0.00219	0.00218
	(A1 * A3 * B1 * C1 * X)	-0.00303	-0.00317	-0.00315
	(A1 * A3 * B1 * !C1 * X)	0.00220	0.00219	0.00218
	(A1 * A3 * B1 * !C1 * X)	-0.00302	-0.00317	-0.00315
	(A1 * A3 * !B1 * C1 * X)	0.00222	0.00218	0.00218
	(A1 * A3 * !B1 * C1 * X)	-0.00288	-0.00310	-0.00307
	(A1 * !A3 * B1 * C1 * X)	0.00206	0.00207	0.00207
	(A1 * !A3 * B1 * C1 * X)	-0.00323	-0.00324	-0.00324
	(A1 * !A3 * B1 * !C1 * X)	0.00206	0.00206	0.00207
	(A1 * !A3 * B1 * !C1 * X)	-0.00323	-0.00323	-0.00324
	(A1 * !A3 * !B1 * C1 * X)	0.00206	0.00207	0.00207
	(A1 * !A3 * !B1 * C1 * X)	-0.00323	-0.00324	-0.00324
	(A1 * !A3 * !B1 * !C1 * !X)	0.00101	0.00103	0.00104
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00322	-0.00325	-0.00321
	(!A1 * A3 * B1 * X)	0.00207	0.00209	0.00208
	(!A1 * A3 * B1 * X)	-0.00324	-0.00325	-0.00324
	(!A1 * A3 * !B1 * C1 * X)	0.00208	0.00210	0.00208
	(!A1 * A3 * !B1 * C1 * X)	-0.00324	-0.00325	-0.00324
	(!A1 * A3 * !B1 * !C1 * !X)	0.00208	0.00210	0.00209
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00323	-0.00324	-0.00323
	(!A1 * !A3 * B1 * X)	0.00134	0.00136	0.00135
	(!A1 * !A3 * B1 * X)	-0.00323	-0.00326	-0.00324
	(!A1 * !A3 * !B1 * C1 * X)	0.00134	0.00136	0.00135
	(!A1 * !A3 * !B1 * C1 * X)	-0.00323	-0.00326	-0.00324
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00131	0.00131	0.00130
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00326	-0.00327	-0.00325

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)**	-0.00109	-0.00109	-0.00109
	(A1 * A3 * B1 * C1 * X)	0.00157	0.00159	0.00158
	(A1 * A3 * B1 * !C1 * X)	-0.00109	-0.00109	-0.00109
	(A1 * A3 * B1 * !C1 * X)	0.00157	0.00159	0.00158
	(A1 * A3 * !B1 * C1 * X)	-0.00108	-0.00109	-0.00108
	(A1 * A3 * !B1 * C1 * X)	0.00152	0.00154	0.00153
	(A1 * !A3 * B1 * C1 * X)	-0.00101	-0.00104	-0.00103
	(A1 * !A3 * B1 * C1 * X)	0.00164	0.00165	0.00163
	(A1 * !A3 * B1 * !C1 * X)	-0.00101	-0.00104	-0.00103
	(A1 * !A3 * B1 * !C1 * X)	0.00164	0.00164	0.00163
	(A1 * !A3 * !B1 * C1 * X)	-0.00101	-0.00104	-0.00103
	(A1 * !A3 * !B1 * C1 * X)	0.00164	0.00164	0.00163
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00041	-0.00042	-0.00043
	(A1 * !A3 * !B1 * !C1 * !X)	0.00173	0.00174	0.00171
	(!A1 * A3 * B1 * X)	-0.00101	-0.00104	-0.00103
	(!A1 * A3 * B1 * X)	0.00163	0.00165	0.00163
	(!A1 * A3 * !B1 * C1 * X)	-0.00100	-0.00104	-0.00103
	(!A1 * A3 * !B1 * C1 * X)	0.00162	0.00165	0.00163
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00088	-0.00098	-0.00097
	(!A1 * A3 * !B1 * !C1 * !X)	0.00178	0.00172	0.00170
	(!A1 * !A3 * B1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A3 * B1 * X)	0.00163	0.00164	0.00163
	(!A1 * !A3 * !B1 * C1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A3 * !B1 * C1 * X)	0.00163	0.00164	0.00164
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00056	-0.00056	-0.00056
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00180	0.00179	0.00172

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00133	-0.00133	-0.00133
	(A1 * A3 * B1 * C1 * X)	0.00153	0.00154	0.00153
	(A1 * A3 * B1 * !C1 * X)	-0.00133	-0.00133	-0.00133
	(A1 * A3 * B1 * !C1 * X)	0.00153	0.00154	0.00153
	(A1 * A3 * !B1 * C1 * X)	-0.00132	-0.00133	-0.00132
	(A1 * A3 * !B1 * C1 * X)	0.00148	0.00150	0.00149
	(A1 * !A3 * B1 * C1 * X)	-0.00123	-0.00126	-0.00126
	(A1 * !A3 * B1 * C1 * X)	0.00157	0.00158	0.00158
	(A1 * !A3 * B1 * !C1 * X)	-0.00123	-0.00126	-0.00125
	(A1 * !A3 * B1 * !C1 * X)	0.00157	0.00158	0.00158
	(A1 * !A3 * !B1 * C1 * X)	-0.00124	-0.00126	-0.00125
	(A1 * !A3 * !B1 * C1 * X)	0.00159	0.00159	0.00158
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00050	-0.00051	-0.00052
	(A1 * !A3 * !B1 * !C1 * !X)	0.00171	0.00172	0.00168
	(!A1 * A3 * B1 * X)	-0.00123	-0.00127	-0.00127
	(!A1 * A3 * B1 * X)	0.00158	0.00160	0.00158
	(!A1 * A3 * !B1 * C1 * X)	-0.00123	-0.00127	-0.00127
	(!A1 * A3 * !B1 * C1 * X)	0.00157	0.00160	0.00158
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00107	-0.00119	-0.00118
	(!A1 * A3 * !B1 * !C1 * !X)	0.00174	0.00169	0.00167
	(!A1 * !A3 * B1 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A3 * B1 * X)	0.00158	0.00159	0.00158
	(!A1 * !A3 * !B1 * C1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A3 * !B1 * C1 * X)	0.00158	0.00159	0.00158
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00176	0.00177	0.00170

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00218	-0.00219	-0.00218
	(A1 * A3 * B1 * C1 * X)	0.00314	0.00317	0.00315
	(A1 * A3 * B1 * !C1 * X)	-0.00218	-0.00219	-0.00218
	(A1 * A3 * B1 * !C1 * X)	0.00314	0.00317	0.00315
	(A1 * A3 * !B1 * C1 * X)	-0.00217	-0.00218	-0.00217
	(A1 * A3 * !B1 * C1 * X)	0.00306	0.00310	0.00307
	(A1 * !A3 * B1 * C1 * X)	-0.00202	-0.00207	-0.00207
	(A1 * !A3 * B1 * C1 * X)	0.00326	0.00326	0.00325
	(A1 * !A3 * B1 * !C1 * X)	-0.00202	-0.00206	-0.00207
	(A1 * !A3 * B1 * !C1 * X)	0.00326	0.00326	0.00325
	(A1 * !A3 * !B1 * C1 * X)	-0.00202	-0.00207	-0.00207
	(A1 * !A3 * !B1 * C1 * X)	0.00326	0.00326	0.00325
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00094	-0.00095	-0.00098
	(A1 * !A3 * !B1 * !C1 * !X)	0.00335	0.00336	0.00328
	(!A1 * A3 * B1 * X)	-0.00200	-0.00209	-0.00208
	(!A1 * A3 * B1 * X)	0.00326	0.00325	0.00325
	(!A1 * A3 * !B1 * C1 * X)	-0.00200	-0.00209	-0.00208
	(!A1 * A3 * !B1 * C1 * X)	0.00326	0.00325	0.00325
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00188	-0.00209	-0.00209
	(!A1 * A3 * !B1 * !C1 * !X)	0.00340	0.00326	0.00325
	(!A1 * !A3 * B1 * X)	-0.00134	-0.00136	-0.00135
	(!A1 * !A3 * B1 * X)	0.00324	0.00327	0.00325
	(!A1 * !A3 * !B1 * C1 * X)	-0.00134	-0.00136	-0.00135
	(!A1 * !A3 * !B1 * C1 * X)	0.00324	0.00327	0.00325
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00131	-0.00130
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00341	0.00345	0.00331

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)**	0.00121	0.00119	0.00120
	(A1 * A2 * B1 * C1 * X)	-0.00149	-0.00156	-0.00155
	(A1 * A2 * B1 * !C1 * X)	0.00121	0.00119	0.00120
	(A1 * A2 * B1 * !C1 * X)	-0.00146	-0.00156	-0.00155
	(A1 * A2 * !B1 * C1 * X)	0.00122	0.00121	0.00120
	(A1 * A2 * !B1 * C1 * X)	-0.00139	-0.00152	-0.00151
	(A1 * !A2 * !B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00175	-0.00176	-0.00175
	(!A2 * B1 * X)	0.00114	0.00115	0.00114
	(!A2 * B1 * X)	-0.00160	-0.00160	-0.00160
	(!A2 * !B1 * C1 * X)	0.00115	0.00115	0.00114
	(!A2 * !B1 * C1 * X)	-0.00160	-0.00160	-0.00160
	(!A1 * A2 * B1 * X)	0.00111	0.00113	0.00112
	(!A1 * A2 * B1 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * A2 * !B1 * C1 * X)	0.00112	0.00113	0.00112
	(!A1 * A2 * !B1 * C1 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * A2 * !B1 * !C1 * !X)	0.00096	0.00096	0.00096
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00175	-0.00175	-0.00175
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00099	0.00099	0.00099
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00175	-0.00176	-0.00175

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00153	0.00152	0.00151
	(A1 * A2 * B1 * C1 * X)	-0.00145	-0.00153	-0.00152
	(A1 * A2 * B1 * !C1 * X)	0.00153	0.00152	0.00151
	(A1 * A2 * B1 * !C1 * X)	-0.00143	-0.00153	-0.00152
	(A1 * A2 * !B1 * C1 * X)	0.00155	0.00153	0.00151
	(A1 * A2 * !B1 * C1 * X)	-0.00136	-0.00149	-0.00148
	(A1 * !A2 * !B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00183	-0.00183	-0.00183
	(!A2 * B1 * X)	0.00144	0.00146	0.00144
	(!A2 * B1 * X)	-0.00156	-0.00157	-0.00157
	(!A2 * !B1 * C1 * X)	0.00145	0.00146	0.00145
	(!A2 * !B1 * C1 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * A2 * B1 * X)	0.00141	0.00143	0.00142
	(!A1 * A2 * B1 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * A2 * !B1 * C1 * X)	0.00142	0.00143	0.00142
	(!A1 * A2 * !B1 * C1 * X)	-0.00157	-0.00157	-0.00157
	(!A1 * A2 * !B1 * !C1 * !X)	0.00116	0.00117	0.00116
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00183	-0.00183	-0.00182
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00119	0.00120	0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00251	0.00251	0.00250
	(A1 * A2 * B1 * C1 * X)	-0.00293	-0.00308	-0.00306
	(A1 * A2 * B1 * !C1 * X)	0.00251	0.00251	0.00250
	(A1 * A2 * B1 * !C1 * X)	-0.00292	-0.00308	-0.00306
	(A1 * A2 * !B1 * C1 * X)	0.00254	0.00250	0.00250
	(A1 * A2 * !B1 * C1 * X)	-0.00278	-0.00300	-0.00298
	(A1 * !A2 * !B1 * !C1 * !X)	0.00212	0.00213	0.00212
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00343	-0.00343	-0.00342
	(!A2 * B1 * X)	0.00240	0.00239	0.00239
	(!A2 * B1 * X)	-0.00315	-0.00315	-0.00315
	(!A2 * !B1 * C1 * X)	0.00240	0.00240	0.00239
	(!A2 * !B1 * C1 * X)	-0.00315	-0.00316	-0.00315
	(!A1 * A2 * B1 * X)	0.00234	0.00236	0.00235
	(!A1 * A2 * B1 * X)	-0.00315	-0.00316	-0.00315
	(!A1 * A2 * !B1 * C1 * X)	0.00236	0.00236	0.00235
	(!A1 * A2 * !B1 * C1 * X)	-0.00316	-0.00316	-0.00315
	(!A1 * A2 * !B1 * !C1 * !X)	0.00208	0.00209	0.00208
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00342	-0.00343	-0.00342
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00212	0.00212	0.00211
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00342	-0.00343	-0.00342

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)**	-0.00119	-0.00119	-0.00120
	(A1 * A2 * B1 * C1 * X)	0.00155	0.00156	0.00155
	(A1 * A2 * B1 * !C1 * X)	-0.00119	-0.00119	-0.00120
	(A1 * A2 * B1 * !C1 * X)	0.00155	0.00156	0.00155
	(A1 * A2 * !B1 * C1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * A2 * !B1 * C1 * X)	0.00150	0.00152	0.00151
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00100	-0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	0.00175	0.00178	0.00176
	(!A2 * B1 * X)	-0.00112	-0.00115	-0.00114
	(!A2 * B1 * X)	0.00160	0.00162	0.00160
	(!A2 * !B1 * C1 * X)	-0.00112	-0.00115	-0.00114
	(!A2 * !B1 * C1 * X)	0.00160	0.00162	0.00161
	(!A1 * A2 * B1 * X)	-0.00106	-0.00113	-0.00112
	(!A1 * A2 * B1 * X)	0.00160	0.00161	0.00160
	(!A1 * A2 * !B1 * C1 * X)	-0.00105	-0.00113	-0.00112
	(!A1 * A2 * !B1 * C1 * X)	0.00160	0.00161	0.00161
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00090	-0.00096	-0.00096
	(!A1 * A2 * !B1 * !C1 * !X)	0.00176	0.00177	0.00176
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00099	-0.00099
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00175	0.00178	0.00176

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00151	-0.00152	-0.00151
	(A1 * A2 * B1 * C1 * X)	0.00152	0.00153	0.00152
	(A1 * A2 * B1 * !C1 * X)	-0.00151	-0.00152	-0.00151
	(A1 * A2 * B1 * !C1 * X)	0.00152	0.00153	0.00152
	(A1 * A2 * !B1 * C1 * X)	-0.00151	-0.00152	-0.00151
	(A1 * A2 * !B1 * C1 * X)	0.00147	0.00149	0.00148
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00114	-0.00119	-0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	0.00183	0.00185	0.00183
	(!A2 * B1 * X)	-0.00142	-0.00145	-0.00144
	(!A2 * B1 * X)	0.00157	0.00158	0.00157
	(!A2 * !B1 * C1 * X)	-0.00142	-0.00145	-0.00145
	(!A2 * !B1 * C1 * X)	0.00157	0.00158	0.00157
	(!A1 * A2 * B1 * X)	-0.00134	-0.00143	-0.00142
	(!A1 * A2 * B1 * X)	0.00157	0.00158	0.00157
	(!A1 * A2 * !B1 * C1 * X)	-0.00134	-0.00143	-0.00142
	(!A1 * A2 * !B1 * C1 * X)	0.00157	0.00158	0.00157
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00108	-0.00117	-0.00116
	(!A1 * A2 * !B1 * !C1 * !X)	0.00183	0.00184	0.00183
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00119	-0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00183	0.00185	0.00183

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00249	-0.00251	-0.00250
	(A1 * A2 * B1 * C1 * X)	0.00305	0.00308	0.00306
	(A1 * A2 * B1 * !C1 * X)	-0.00249	-0.00251	-0.00250
	(A1 * A2 * B1 * !C1 * X)	0.00305	0.00308	0.00306
	(A1 * A2 * !B1 * C1 * X)	-0.00248	-0.00250	-0.00249
	(A1 * A2 * !B1 * C1 * X)	0.00297	0.00300	0.00298
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00203	-0.00213	-0.00212
	(A1 * !A2 * !B1 * !C1 * !X)	0.00343	0.00347	0.00343
	(!A2 * B1 * X)	-0.00233	-0.00239	-0.00239
	(!A2 * B1 * X)	0.00315	0.00319	0.00316
	(!A2 * !B1 * C1 * X)	-0.00233	-0.00240	-0.00239
	(!A2 * !B1 * C1 * X)	0.00315	0.00319	0.00317
	(!A1 * A2 * B1 * X)	-0.00223	-0.00236	-0.00235
	(!A1 * A2 * B1 * X)	0.00315	0.00318	0.00316
	(!A1 * A2 * !B1 * C1 * X)	-0.00223	-0.00236	-0.00235
	(!A1 * A2 * !B1 * C1 * X)	0.00316	0.00318	0.00316
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00195	-0.00209	-0.00208
	(!A1 * A2 * !B1 * !C1 * !X)	0.00343	0.00345	0.00343
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00204	-0.00212	-0.00211
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00342	0.00347	0.00343

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)**	0.00145	0.00139	0.00130
	(A1 * A2 * A3 * C1 * X)	-0.00105	-0.00111	-0.00111
	(A1 * A2 * A3 * !C1 * X)	0.00125	0.00126	0.00123
	(A1 * A2 * A3 * !C1 * X)	-0.00084	-0.00084	-0.00085
	(A1 * A2 * !A3 * C1 * X)	0.00153	0.00125	0.00122
	(A1 * A2 * !A3 * C1 * X)	-0.00124	-0.00154	-0.00155
	(A1 * !A2 * C1 * X)	0.00153	0.00125	0.00122
	(A1 * !A2 * C1 * X)	-0.00124	-0.00154	-0.00155
	(!A1 * C1 * X)	0.00152	0.00125	0.00122
	(!A1 * C1 * X)	-0.00124	-0.00154	-0.00155
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00169	0.00161	0.00153
	(A1 * A2 * A3 * C1 * X)	-0.00107	-0.00112	-0.00111
	(A1 * A2 * A3 * !C1 * X)	0.00146	0.00147	0.00145
	(A1 * A2 * A3 * !C1 * X)	-0.00083	-0.00084	-0.00085
	(A1 * A2 * !A3 * C1 * X)	0.00175	0.00147	0.00144
	(A1 * A2 * !A3 * C1 * X)	-0.00124	-0.00153	-0.00155
	(A1 * !A2 * C1 * X)	0.00175	0.00147	0.00144
	(A1 * !A2 * C1 * X)	-0.00124	-0.00153	-0.00155
	(!A1 * C1 * X)	0.00174	0.00147	0.00144
	(!A1 * C1 * X)	-0.00125	-0.00153	-0.00155
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00269	0.00257	0.00241
	(A1 * A2 * A3 * C1 * X)	-0.00229	-0.00242	-0.00242
	(A1 * A2 * A3 * !C1 * X)	0.00231	0.00232	0.00229
	(A1 * A2 * A3 * !C1 * X)	-0.00180	-0.00182	-0.00183
	(A1 * A2 * !A3 * C1 * X)	0.00292	0.00232	0.00227
	(A1 * A2 * !A3 * C1 * X)	-0.00257	-0.00320	-0.00322
	(A1 * !A2 * C1 * X)	0.00292	0.00232	0.00227
	(A1 * !A2 * C1 * X)	-0.00257	-0.00320	-0.00322
	(!A1 * C1 * X)	0.00292	0.00232	0.00227
	(!A1 * C1 * X)	-0.00257	-0.00320	-0.00322

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)	-0.00123	-0.00124	-0.00123
	(A1 * A2 * A3 * C1 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * A3 * !C1 * X)	-0.00118	-0.00119	-0.00121
	(A1 * A2 * A3 * !C1 * X)	0.00091	0.00091	0.00088
	(A1 * A2 * !A3 * C1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * !A3 * C1 * X)	0.00154	0.00156	0.00155
	(A1 * !A2 * C1 * X)	-0.00121	-0.00121	-0.00121
	(A1 * !A2 * C1 * X)	0.00154	0.00154	0.00155
	(!A1 * C1 * X)	-0.00121	-0.00122	-0.00121
	(!A1 * C1 * X)	0.00154	0.00156	0.00155
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00146	-0.00147	-0.00146
	(A1 * A2 * A3 * C1 * X)	0.00110	0.00112	0.00111
	(A1 * A2 * A3 * !C1 * X)	-0.00141	-0.00141	-0.00143
	(A1 * A2 * A3 * !C1 * X)	0.00090	0.00090	0.00088
	(A1 * A2 * !A3 * C1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * A2 * !A3 * C1 * X)	0.00154	0.00155	0.00155
	(A1 * !A2 * C1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * !A2 * C1 * X)	0.00154	0.00155	0.00155
	(!A1 * C1 * X)	-0.00142	-0.00143	-0.00142
	(!A1 * C1 * X)	0.00154	0.00155	0.00155

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00228	-0.00230	-0.00229
	(A1 * A2 * A3 * C1 * X)	0.00241	0.00244	0.00242
	(A1 * A2 * A3 * !C1 * X)	-0.00218	-0.00220	-0.00222
	(A1 * A2 * A3 * !C1 * X)	0.00194	0.00194	0.00191
	(A1 * A2 * !A3 * C1 * X)	-0.00225	-0.00225	-0.00223
	(A1 * A2 * !A3 * C1 * X)	0.00322	0.00321	0.00322
	(A1 * !A2 * C1 * X)	-0.00225	-0.00225	-0.00223
	(A1 * !A2 * C1 * X)	0.00321	0.00321	0.00322
	(!A1 * C1 * X)	-0.00225	-0.00225	-0.00223
	(!A1 * C1 * X)	0.00321	0.00321	0.00322

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)	0.00150	0.00151	0.00150
	(A1 * A2 * B1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * A3 * !B1 * X)	0.00150	0.00152	0.00150
	(A1 * A2 * A3 * !B1 * X)	-0.00078	-0.00078	-0.00077
	(A1 * !A2 * B1 * X)	0.00150	0.00151	0.00150
	(A1 * !A2 * B1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * B1 * X)	0.00150	0.00151	0.00150
	(!A1 * B1 * X)	-0.00078	-0.00078	-0.00078
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00149	0.00150	0.00149
	(A1 * A2 * B1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * A3 * !B1 * X)	0.00150	0.00150	0.00150
	(A1 * A2 * A3 * !B1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * B1 * X)	0.00149	0.00150	0.00150
	(A1 * !A2 * B1 * X)	-0.00082	-0.00083	-0.00082
	(!A1 * B1 * X)	0.00149	0.00150	0.00150
	(!A1 * B1 * X)	-0.00082	-0.00083	-0.00082
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00244	0.00245	0.00244
	(A1 * A2 * B1 * X)	-0.00175	-0.00175	-0.00174
	(A1 * A2 * A3 * !B1 * X)	0.00244	0.00245	0.00244
	(A1 * A2 * A3 * !B1 * X)	-0.00174	-0.00174	-0.00174
	(A1 * !A2 * B1 * X)	0.00244	0.00245	0.00244
	(A1 * !A2 * B1 * X)	-0.00175	-0.00175	-0.00175
	(!A1 * B1 * X)	0.00244	0.00245	0.00244
	(!A1 * B1 * X)	-0.00175	-0.00175	-0.00175

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)	-0.00145	-0.00147	-0.00150
	(A1 * A2 * B1 * X)	0.00082	0.00082	0.00079
	(A1 * A2 * A3 * !B1 * X)	-0.00130	-0.00131	-0.00147
	(A1 * A2 * A3 * !B1 * X)	0.00091	0.00092	0.00080
	(A1 * !A2 * B1 * X)	-0.00145	-0.00147	-0.00150
	(A1 * !A2 * B1 * X)	0.00081	0.00082	0.00079
	(!A1 * B1 * X)	-0.00145	-0.00147	-0.00150
	(!A1 * B1 * X)	0.00082	0.00082	0.00079
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00145	-0.00145	-0.00149
	(A1 * A2 * B1 * X)	0.00087	0.00087	0.00083
	(A1 * A2 * A3 * !B1 * X)	-0.00130	-0.00131	-0.00146
	(A1 * A2 * A3 * !B1 * X)	0.00097	0.00096	0.00085
	(A1 * !A2 * B1 * X)	-0.00145	-0.00145	-0.00149
	(A1 * !A2 * B1 * X)	0.00087	0.00087	0.00084
	(!A1 * B1 * X)	-0.00145	-0.00145	-0.00149
	(!A1 * B1 * X)	0.00087	0.00087	0.00084
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00229	-0.00230	-0.00242
	(A1 * A2 * B1 * X)	0.00190	0.00189	0.00178
	(A1 * A2 * A3 * !B1 * X)	-0.00196	-0.00198	-0.00236
	(A1 * A2 * A3 * !B1 * X)	0.00211	0.00210	0.00181
	(A1 * !A2 * B1 * X)	-0.00229	-0.00230	-0.00242
	(A1 * !A2 * B1 * X)	0.00190	0.00190	0.00179
	(!A1 * B1 * X)	-0.00229	-0.00230	-0.00242
	(!A1 * B1 * X)	0.00190	0.00190	0.00179

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00293	0.00301	0.00291	0.00298	0.35726
sky130_fd_sc_hs__a31oi_2	0.00562	0.00547	0.00581	0.00452	0.69674
sky130_fd_sc_hs__a31oi_4	0.01137	0.01078	0.01076	0.00912	1.21032

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31oi_1	0.00000	0.04251	0.07453
sky130_fd_sc_hs__a31oi_2	0.00000	0.06768	0.11478
sky130_fd_sc_hs__a31oi_4	0.00000	0.13395	0.22516

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)	0.13618	1.13739	10.49750
	A2->Y (FR)	0.17157	1.18953	10.68850
	A3->Y (FR)	0.18867	1.20544	10.64410
	B1->Y (FR)	0.12721	1.15398	10.98850
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.12205	0.98394	10.63430
	A2->Y (FR)	0.14826	1.00658	10.62010
	A3->Y (FR)	0.16959	1.02124	10.49370
	B1->Y (FR)	0.09754	0.97489	10.93100
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.11961	0.84975	10.22400
	A2->Y (FR)	0.15091	0.87472	10.14500
	A3->Y (FR)	0.18110	0.91761	10.28680
	B1->Y (FR)	0.13009	0.89160	10.73260

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.07113	0.70644	6.73667
	A2->Y (RF)	0.08481	0.68361	6.29504
	A3->Y (RF)	0.08906	0.64139	5.71697
	B1->Y (RF)	0.03007	0.46067	4.57322
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.06615	0.65482	7.11122
	A2->Y (RF)	0.07684	0.60491	6.37554
	A3->Y (RF)	0.08403	0.57295	5.85337
	B1->Y (RF)	0.03674	0.57576	6.55178
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.06783	0.59226	7.07124
	A2->Y (RF)	0.08225	0.55111	6.34790
	A3->Y (RF)	0.08933	0.50843	5.67502
	B1->Y (RF)	0.03390	0.48020	6.03471

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00017	0.00004	0.00092
	A1	0.00540	0.00527	0.00618
	A2	0.00082	0.00064	0.00151
	A2	0.00694	0.00677	0.00766
	A3	0.00111	0.00097	0.00185
	A3	0.00808	0.00797	0.00885
	B1	-0.00018	-0.00008	0.00229
	B1	0.00688	0.00685	0.00897
sky130_fd_sc_hs__a31oi_2	A1	0.00035	0.00012	0.00186
	A1	0.01024	0.01000	0.01181
	A2	0.00151	0.00124	0.00296
	A2	0.01297	0.01258	0.01446
	A3	0.00248	0.00222	0.00389
	A3	0.01574	0.01536	0.01718
	B1	0.00083	0.00116	0.00367
	B1	0.01291	0.01290	0.01536
sky130_fd_sc_hs__a31oi_4	A1	-0.00079	-0.00123	0.00255
	A1	0.01946	0.01890	0.02287
	A2	0.00230	0.00162	0.00532
	A2	0.02576	0.02500	0.02884
	A3	0.00461	0.00404	0.00763
	A3	0.03139	0.03085	0.03441
	B1	0.00355	0.00369	0.00914
	B1	0.02583	0.02616	0.03092

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00679	0.00667	0.00770
	A1	0.00163	0.00149	0.00255
	A2	0.00773	0.00754	0.00862
	A2	0.00162	0.00143	0.00224
	A3	0.00860	0.00842	0.00925
	A3	0.00155	0.00136	0.00219
	B1	0.00587	0.00596	0.00721
	B1	-0.00010	-0.00008	0.00128
sky130_fd_sc_hs__a31oi_2	A1	0.01251	0.01224	0.01452
	A1	0.00278	0.00245	0.00443
	A2	0.01417	0.01380	0.01596
	A2	0.00276	0.00237	0.00400
	A3	0.01617	0.01581	0.01759
	A3	0.00279	0.00235	0.00399
	B1	0.00841	0.00859	0.01069
	B1	-0.00139	-0.00124	0.00031
sky130_fd_sc_hs__a31oi_4	A1	0.02525	0.02463	0.02924
	A1	0.00530	0.00463	0.00866
	A2	0.02856	0.02765	0.03134
	A2	0.00522	0.00430	0.00770
	A3	0.03222	0.03131	0.03528
	A3	0.00515	0.00424	0.00766
	B1	0.01750	0.01781	0.02329
	B1	-0.00289	-0.00285	0.00085

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)**	0.00145	0.00133	0.00133
	(A2 * A3 * B1 * !Y)	-0.00153	-0.00171	-0.00170
	(A2 * !A3 * B1 * !Y)	0.00122	0.00123	0.00123
	(A2 * !A3 * B1 * !Y)	-0.00175	-0.00175	-0.00175
	(A2 * !A3 * !B1 * Y)	0.00048	0.00048	0.00043
	(A2 * !A3 * !B1 * Y)	-0.00196	-0.00197	-0.00205
	(!A2 * B1 * !Y)	0.00126	0.00128	0.00126
	(!A2 * B1 * !Y)	-0.00175	-0.00176	-0.00175
	(!A2 * !B1 * Y)	0.00048	0.00048	0.00045
	(!A2 * !B1 * Y)	-0.00202	-0.00203	-0.00206
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00289	0.00269	0.00267
	(A2 * A3 * B1 * !Y)	-0.00315	-0.00346	-0.00346
	(A2 * !A3 * B1 * !Y)	0.00246	0.00248	0.00247
	(A2 * !A3 * B1 * !Y)	-0.00357	-0.00358	-0.00356
	(A2 * !A3 * !B1 * Y)	0.00094	0.00093	0.00084
	(A2 * !A3 * !B1 * Y)	-0.00400	-0.00401	-0.00421
	(!A2 * B1 * !Y)	0.00252	0.00255	0.00253
	(!A2 * B1 * !Y)	-0.00355	-0.00358	-0.00356
	(!A2 * !B1 * Y)	0.00090	0.00089	0.00084
	(!A2 * !B1 * Y)	-0.00415	-0.00415	-0.00424
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00598	0.00557	0.00553
	(A2 * A3 * B1 * !Y)	-0.00615	-0.00685	-0.00684
	(A2 * !A3 * B1 * !Y)	0.00511	0.00512	0.00510
	(A2 * !A3 * B1 * !Y)	-0.00706	-0.00705	-0.00704
	(A2 * !A3 * !B1 * Y)	0.00199	0.00198	0.00176
	(A2 * !A3 * !B1 * Y)	-0.00798	-0.00801	-0.00842
	(!A2 * B1 * !Y)	0.00525	0.00531	0.00527
	(!A2 * B1 * !Y)	-0.00702	-0.00708	-0.00704
	(!A2 * !B1 * Y)	0.00198	0.00197	0.00185
	(!A2 * !B1 * Y)	-0.00828	-0.00829	-0.00847

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)	-0.00133	-0.00133	-0.00132
	(A2 * A3 * B1 * !Y)	0.00170	0.00171	0.00170
	(A2 * !A3 * B1 * !Y)	-0.00113	-0.00123	-0.00123
	(A2 * !A3 * B1 * !Y)	0.00175	0.00177	0.00175
	(A2 * !A3 * !B1 * Y)	-0.00042	-0.00043	-0.00042
	(A2 * !A3 * !B1 * Y)	0.00205	0.00208	0.00206
	(!A2 * B1 * !Y)	-0.00124	-0.00128	-0.00126
	(!A2 * B1 * !Y)	0.00176	0.00177	0.00175
	(!A2 * !B1 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * Y)	0.00206	0.00208	0.00206
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00266	-0.00266	-0.00266
	(A2 * A3 * B1 * !Y)	0.00345	0.00346	0.00346
	(A2 * !A3 * B1 * !Y)	-0.00223	-0.00248	-0.00247
	(A2 * !A3 * B1 * !Y)	0.00357	0.00359	0.00357
	(A2 * !A3 * !B1 * Y)	-0.00081	-0.00081	-0.00079
	(A2 * !A3 * !B1 * Y)	0.00425	0.00430	0.00425
	(!A2 * B1 * !Y)	-0.00247	-0.00255	-0.00253
	(!A2 * B1 * !Y)	0.00358	0.00358	0.00357
	(!A2 * !B1 * Y)	-0.00082	-0.00082	-0.00081
	(!A2 * !B1 * Y)	0.00426	0.00428	0.00425

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00553	-0.00553	-0.00551
	(A2 * A3 * B1 * !Y)	0.00685	0.00685	0.00684
	(A2 * !A3 * B1 * !Y)	-0.00465	-0.00512	-0.00510
	(A2 * !A3 * B1 * !Y)	0.00708	0.00708	0.00706
	(A2 * !A3 * !B1 * Y)	-0.00171	-0.00175	-0.00172
	(A2 * !A3 * !B1 * Y)	0.00846	0.00861	0.00849
	(!A2 * B1 * !Y)	-0.00515	-0.00531	-0.00527
	(!A2 * B1 * !Y)	0.00708	0.00710	0.00706
	(!A2 * !B1 * Y)	-0.00177	-0.00181	-0.00178
	(!A2 * !B1 * Y)	0.00846	0.00862	0.00850

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)**	0.00154	0.00142	0.00141
	(A1 * A3 * B1 * !Y)	-0.00153	-0.00171	-0.00170
	(A1 * !A3 * B1 * !Y)	0.00134	0.00136	0.00134
	(A1 * !A3 * B1 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A3 * !B1 * Y)	0.00055	0.00055	0.00055
	(A1 * !A3 * !B1 * Y)	-0.00192	-0.00193	-0.00191
	(!A1 * A3 * B1 * !Y)	0.00135	0.00136	0.00135
	(!A1 * A3 * B1 * !Y)	-0.00174	-0.00176	-0.00175
	(!A1 * A3 * !B1 * Y)	0.00118	0.00119	0.00118
	(!A1 * A3 * !B1 * Y)	-0.00192	-0.00192	-0.00191
	(!A1 * !A3 * B1 * !Y)	0.00087	0.00088	0.00088
	(!A1 * !A3 * B1 * !Y)	-0.00174	-0.00175	-0.00175
	(!A1 * !A3 * !B1 * Y)	0.00069	0.00069	0.00068
	(!A1 * !A3 * !B1 * Y)	-0.00193	-0.00194	-0.00193

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00268	0.00247	0.00247
	(A1 * A3 * B1 * !Y)	-0.00316	-0.00349	-0.00348
	(A1 * !A3 * B1 * !Y)	0.00233	0.00234	0.00233
	(A1 * !A3 * B1 * !Y)	-0.00359	-0.00360	-0.00358
	(A1 * !A3 * !B1 * Y)	0.00109	0.00109	0.00108
	(A1 * !A3 * !B1 * Y)	-0.00360	-0.00361	-0.00357
	(!A1 * A3 * B1 * !Y)	0.00234	0.00236	0.00234
	(!A1 * A3 * B1 * !Y)	-0.00358	-0.00360	-0.00358
	(!A1 * A3 * !B1 * Y)	0.00233	0.00236	0.00234
	(!A1 * A3 * !B1 * Y)	-0.00359	-0.00361	-0.00358
	(!A1 * !A3 * B1 * !Y)	0.00141	0.00141	0.00140
	(!A1 * !A3 * B1 * !Y)	-0.00359	-0.00361	-0.00358
	(!A1 * !A3 * !B1 * Y)	0.00134	0.00134	0.00133
	(!A1 * !A3 * !B1 * Y)	-0.00363	-0.00364	-0.00362
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00573	0.00526	0.00525
	(A1 * A3 * B1 * !Y)	-0.00625	-0.00702	-0.00698
	(A1 * !A3 * B1 * !Y)	0.00489	0.00490	0.00490
	(A1 * !A3 * B1 * !Y)	-0.00720	-0.00720	-0.00719
	(A1 * !A3 * !B1 * Y)	0.00232	0.00235	0.00237
	(A1 * !A3 * !B1 * Y)	-0.00723	-0.00728	-0.00719
	(!A1 * A3 * B1 * !Y)	0.00498	0.00502	0.00501
	(!A1 * A3 * B1 * !Y)	-0.00716	-0.00720	-0.00719
	(!A1 * A3 * !B1 * Y)	0.00495	0.00502	0.00498
	(!A1 * A3 * !B1 * Y)	-0.00721	-0.00726	-0.00722
	(!A1 * !A3 * B1 * !Y)	0.00309	0.00310	0.00307
	(!A1 * !A3 * B1 * !Y)	-0.00721	-0.00724	-0.00719
	(!A1 * !A3 * !B1 * Y)	0.00291	0.00294	0.00292
	(!A1 * !A3 * !B1 * Y)	-0.00726	-0.00732	-0.00728

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)	-0.00141	-0.00142	-0.00141
	(A1 * A3 * B1 * !Y)	0.00169	0.00171	0.00170
	(A1 * !A3 * B1 * !Y)	-0.00133	-0.00136	-0.00134
	(A1 * !A3 * B1 * !Y)	0.00176	0.00176	0.00175
	(A1 * !A3 * !B1 * Y)	-0.00052	-0.00051	-0.00053
	(A1 * !A3 * !B1 * Y)	0.00199	0.00198	0.00194
	(!A1 * A3 * B1 * !Y)	-0.00132	-0.00136	-0.00135
	(!A1 * A3 * B1 * !Y)	0.00174	0.00177	0.00175
	(!A1 * A3 * !B1 * Y)	-0.00109	-0.00119	-0.00118
	(!A1 * A3 * !B1 * Y)	0.00201	0.00195	0.00192
	(!A1 * !A3 * B1 * !Y)	-0.00087	-0.00088	-0.00088
	(!A1 * !A3 * B1 * !Y)	0.00175	0.00176	0.00175
	(!A1 * !A3 * !B1 * Y)	-0.00069	-0.00069	-0.00068
	(!A1 * !A3 * !B1 * Y)	0.00203	0.00203	0.00195
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00246	-0.00247	-0.00246
	(A1 * A3 * B1 * !Y)	0.00348	0.00350	0.00348
	(A1 * !A3 * B1 * !Y)	-0.00228	-0.00234	-0.00233
	(A1 * !A3 * B1 * !Y)	0.00361	0.00361	0.00359
	(A1 * !A3 * !B1 * Y)	-0.00100	-0.00101	-0.00103
	(A1 * !A3 * !B1 * Y)	0.00370	0.00371	0.00363
	(!A1 * A3 * B1 * !Y)	-0.00226	-0.00236	-0.00234
	(!A1 * A3 * B1 * !Y)	0.00358	0.00363	0.00359
	(!A1 * A3 * !B1 * Y)	-0.00214	-0.00236	-0.00234
	(!A1 * A3 * !B1 * Y)	0.00377	0.00365	0.00360
	(!A1 * !A3 * B1 * !Y)	-0.00141	-0.00141	-0.00140
	(!A1 * !A3 * B1 * !Y)	0.00362	0.00361	0.00360
	(!A1 * !A3 * !B1 * Y)	-0.00134	-0.00134	-0.00133
	(!A1 * !A3 * !B1 * Y)	0.00381	0.00383	0.00368

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00523	-0.00526	-0.00523
	(A1 * A3 * B1 * !Y)	0.00695	0.00702	0.00698
	(A1 * !A3 * B1 * !Y)	-0.00480	-0.00490	-0.00490
	(A1 * !A3 * B1 * !Y)	0.00723	0.00725	0.00721
	(A1 * !A3 * !B1 * Y)	-0.00218	-0.00219	-0.00225
	(A1 * !A3 * !B1 * Y)	0.00745	0.00747	0.00732
	(!A1 * A3 * B1 * !Y)	-0.00487	-0.00502	-0.00501
	(!A1 * A3 * B1 * !Y)	0.00723	0.00722	0.00721
	(!A1 * A3 * !B1 * Y)	-0.00452	-0.00499	-0.00498
	(!A1 * A3 * !B1 * Y)	0.00762	0.00728	0.00725
	(!A1 * !A3 * B1 * !Y)	-0.00309	-0.00310	-0.00307
	(!A1 * !A3 * B1 * !Y)	0.00725	0.00724	0.00721
	(!A1 * !A3 * !B1 * Y)	-0.00291	-0.00294	-0.00292
	(!A1 * !A3 * !B1 * Y)	0.00767	0.00771	0.00740

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)**	0.00158	0.00147	0.00146
	(A1 * A2 * B1 * !Y)	-0.00159	-0.00176	-0.00175
	(A1 * !A2 * !B1 * Y)	0.00130	0.00130	0.00130
	(A1 * !A2 * !B1 * Y)	-0.00190	-0.00190	-0.00190
	(!A2 * B1 * !Y)	0.00140	0.00140	0.00139
	(!A2 * B1 * !Y)	-0.00180	-0.00180	-0.00180
	(!A1 * A2 * B1 * !Y)	0.00137	0.00138	0.00137
	(!A1 * A2 * B1 * !Y)	-0.00179	-0.00180	-0.00180
	(!A1 * A2 * !B1 * Y)	0.00127	0.00128	0.00127
	(!A1 * A2 * !B1 * Y)	-0.00190	-0.00190	-0.00190
	(!A1 * !A2 * !B1 * Y)	0.00129	0.00129	0.00129
	(!A1 * !A2 * !B1 * Y)	-0.00190	-0.00190	-0.00190

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00294	0.00274	0.00273
	(A1 * A2 * B1 * !Y)	-0.00313	-0.00347	-0.00345
	(A1 * !A2 * !B1 * Y)	0.00256	0.00256	0.00255
	(A1 * !A2 * !B1 * Y)	-0.00356	-0.00357	-0.00355
	(!A2 * B1 * !Y)	0.00259	0.00261	0.00260
	(!A2 * B1 * !Y)	-0.00354	-0.00356	-0.00355
	(!A1 * A2 * B1 * !Y)	0.00251	0.00253	0.00251
	(!A1 * A2 * B1 * !Y)	-0.00355	-0.00356	-0.00355
	(!A1 * A2 * !B1 * Y)	0.00250	0.00253	0.00250
	(!A1 * A2 * !B1 * Y)	-0.00356	-0.00357	-0.00355
	(!A1 * !A2 * !B1 * Y)	0.00256	0.00258	0.00255
	(!A1 * !A2 * !B1 * Y)	-0.00355	-0.00358	-0.00355
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00567	0.00523	0.00521
	(A1 * A2 * B1 * !Y)	-0.00628	-0.00698	-0.00695
	(A1 * !A2 * !B1 * Y)	0.00486	0.00490	0.00490
	(A1 * !A2 * !B1 * Y)	-0.00714	-0.00717	-0.00717
	(!A2 * B1 * !Y)	0.00486	0.00489	0.00489
	(!A2 * B1 * !Y)	-0.00713	-0.00716	-0.00716
	(!A1 * A2 * B1 * !Y)	0.00479	0.00482	0.00478
	(!A1 * A2 * B1 * !Y)	-0.00717	-0.00719	-0.00716
	(!A1 * A2 * !B1 * Y)	0.00478	0.00482	0.00478
	(!A1 * A2 * !B1 * Y)	-0.00717	-0.00719	-0.00716
	(!A1 * !A2 * !B1 * Y)	0.00485	0.00493	0.00488
	(!A1 * !A2 * !B1 * Y)	-0.00713	-0.00720	-0.00717

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)**	-0.00146	-0.00147	-0.00146
	(A1 * A2 * B1 * !Y)	0.00174	0.00176	0.00175
	(A1 * !A2 * !B1 * Y)	-0.00125	-0.00130	-0.00130
	(A1 * !A2 * !B1 * Y)	0.00190	0.00192	0.00190
	(!A2 * B1 * !Y)	-0.00137	-0.00140	-0.00139
	(!A2 * B1 * !Y)	0.00180	0.00182	0.00180
	(!A1 * A2 * B1 * !Y)	-0.00130	-0.00138	-0.00137
	(!A1 * A2 * B1 * !Y)	0.00179	0.00181	0.00180
	(!A1 * A2 * !B1 * Y)	-0.00119	-0.00128	-0.00127
	(!A1 * A2 * !B1 * Y)	0.00190	0.00191	0.00190
	(!A1 * !A2 * !B1 * Y)	-0.00126	-0.00129	-0.00129
	(!A1 * !A2 * !B1 * Y)	0.00190	0.00192	0.00190
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00272	-0.00274	-0.00272
	(A1 * A2 * B1 * !Y)	0.00344	0.00350	0.00345
	(A1 * !A2 * !B1 * Y)	-0.00244	-0.00256	-0.00255
	(A1 * !A2 * !B1 * Y)	0.00357	0.00360	0.00357
	(!A2 * B1 * !Y)	-0.00254	-0.00261	-0.00260
	(!A2 * B1 * !Y)	0.00355	0.00359	0.00356
	(!A1 * A2 * B1 * !Y)	-0.00235	-0.00253	-0.00251
	(!A1 * A2 * B1 * !Y)	0.00356	0.00359	0.00356
	(!A1 * A2 * !B1 * Y)	-0.00233	-0.00253	-0.00250
	(!A1 * A2 * !B1 * Y)	0.00358	0.00359	0.00356
	(!A1 * !A2 * !B1 * Y)	-0.00247	-0.00258	-0.00255
	(!A1 * !A2 * !B1 * Y)	0.00355	0.00360	0.00356

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00519	-0.00521	-0.00519
	(A1 * A2 * B1 * !Y)	0.00693	0.00698	0.00695
	(A1 * !A2 * !B1 * Y)	-0.00468	-0.00490	-0.00490
	(A1 * !A2 * !B1 * Y)	0.00717	0.00726	0.00719
	(!A2 * B1 * !Y)	-0.00477	-0.00489	-0.00489
	(!A2 * B1 * !Y)	0.00716	0.00726	0.00718
	(!A1 * A2 * B1 * !Y)	-0.00448	-0.00482	-0.00478
	(!A1 * A2 * B1 * !Y)	0.00718	0.00724	0.00718
	(!A1 * A2 * !B1 * Y)	-0.00444	-0.00482	-0.00478
	(!A1 * A2 * !B1 * Y)	0.00721	0.00725	0.00718
	(!A1 * !A2 * !B1 * Y)	-0.00472	-0.00493	-0.00488
	(!A1 * !A2 * !B1 * Y)	0.00716	0.00726	0.00719

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)**	0.00162	0.00163	0.00162
	(A1 * A2 * A3 * !Y)	-0.00084	-0.00084	-0.00084
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00173	0.00174	0.00173
	(A1 * A2 * A3 * !Y)	-0.00166	-0.00167	-0.00166
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00360	0.00363	0.00361
	(A1 * A2 * A3 * !Y)	-0.00340	-0.00342	-0.00339

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)**	-0.00150	-0.00151	-0.00161
	(A1 * A2 * A3 * !Y)	0.00095	0.00094	0.00086
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	-0.00145	-0.00146	-0.00170
	(A1 * A2 * A3 * !Y)	0.00192	0.00190	0.00172
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	-0.00304	-0.00309	-0.00355
	(A1 * A2 * A3 * !Y)	0.00386	0.00386	0.00351

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00260	0.00258	0.00258	0.00280	0.75670
sky130_fd_sc_hs__a31o_2	0.00289	0.00280	0.00282	0.00274	1.48416
sky130_fd_sc_hs__a31o_4	0.00512	0.00498	0.00496	0.00511	2.91749

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31o_1	0.00000	0.10140	0.13715
sky130_fd_sc_hs__a31o_2	0.00000	0.13239	0.17278
sky130_fd_sc_hs__a31o_4	0.00000	0.26505	0.34616

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)	0.15955	0.89690	7.58730
	A2->X (RR)	0.17142	0.90245	7.62949
	A3->X (RR)	0.17742	0.88246	7.54197
	B1->X (RR)	0.09508	0.79287	7.36014
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.16596	0.81433	7.62049
	A2->X (RR)	0.17753	0.81257	7.63653
	A3->X (RR)	0.18351	0.78788	7.53694
	B1->X (RR)	0.09038	0.69269	7.35139
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.18598	0.77018	7.80522
	A2->X (RR)	0.19861	0.76247	7.79342
	A3->X (RR)	0.20619	0.73814	7.68601
	B1->X (RR)	0.09009	0.61550	7.45763

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.20926	0.73466	4.37651
	A2->X (FF)	0.24236	0.78204	4.50950
	A3->X (FF)	0.26195	0.81076	4.60285
	B1->X (FF)	0.22545	0.78462	4.57359
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.27736	0.80494	4.70936
	A2->X (FF)	0.31964	0.85768	4.84351
	A3->X (FF)	0.33581	0.87894	4.91995
	B1->X (FF)	0.29705	0.86401	4.93555
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.26962	0.75953	4.71953
	A2->X (FF)	0.30265	0.80406	4.83940
	A3->X (FF)	0.33310	0.84383	4.95789
	B1->X (FF)	0.28615	0.81042	4.93211

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00890	0.00887	0.01528
	A1	0.00430	0.00429	0.01082
	A2	0.00958	0.00949	0.01461
	A2	0.00429	0.00421	0.00945
	A3	0.01036	0.01022	0.01463
	A3	0.00428	0.00414	0.00856
	B1	0.00823	0.00837	0.01644
	B1	0.00285	0.00306	0.01279
sky130_fd_sc_hs__a31o_2	A1	0.01176	0.01191	0.01835
	A1	0.00676	0.00693	0.01365
	A2	0.01256	0.01268	0.01780
	A2	0.00677	0.00689	0.01231
	A3	0.01346	0.01353	0.01795
	A3	0.00676	0.00684	0.01128
	B1	0.01105	0.01141	0.01940
	B1	0.00531	0.00570	0.01484
sky130_fd_sc_hs__a31o_4	A1	0.02280	0.02315	0.03567
	A1	0.01361	0.01396	0.02700
	A2	0.02430	0.02467	0.03464
	A2	0.01359	0.01430	0.02448
	A3	0.02591	0.02626	0.03549
	A3	0.01357	0.01393	0.02371
	B1	0.01986	0.02066	0.03760
	B1	0.00962	0.01055	0.02902

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00307	0.00312	0.00897
	A1	0.00770	0.00774	0.01316
	A2	0.00355	0.00366	0.00905
	A2	0.00884	0.00894	0.01403
	A3	0.00380	0.00385	0.00908
	A3	0.00981	0.00984	0.01478
	B1	0.00258	0.00327	0.01307
	B1	0.00870	0.00908	0.01746
sky130_fd_sc_hs__a31o_2	A1	0.00523	0.00545	0.01122
	A1	0.01026	0.01047	0.01596
	A2	0.00584	0.00609	0.01211
	A2	0.01160	0.01185	0.01715
	A3	0.00619	0.00623	0.01199
	A3	0.01278	0.01294	0.01811
	B1	0.00555	0.00624	0.01654
	B1	0.01168	0.01233	0.02063
sky130_fd_sc_hs__a31o_4	A1	0.01069	0.01119	0.02282
	A1	0.02000	0.02049	0.03098
	A2	0.01164	0.01224	0.02225
	A2	0.02236	0.02294	0.03290
	A3	0.01277	0.01344	0.02367
	A3	0.02493	0.02558	0.03538
	B1	0.01015	0.01209	0.03293
	B1	0.02269	0.02400	0.04020

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)**	0.00128	0.00110	0.00110
	(A2 * A3 * B1 * X)	-0.00138	-0.00158	-0.00158
	(A2 * !A3 * B1 * X)	0.00101	0.00102	0.00101
	(A2 * !A3 * B1 * X)	-0.00163	-0.00164	-0.00163
	(A2 * !A3 * !B1 * !X)	0.00038	0.00038	0.00034
	(A2 * !A3 * !B1 * !X)	-0.00181	-0.00182	-0.00188
	(!A2 * B1 * X)	0.00104	0.00106	0.00105
	(!A2 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A2 * !B1 * !X)	0.00038	0.00038	0.00036
	(!A2 * !B1 * !X)	-0.00185	-0.00186	-0.00189
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00156	0.00140	0.00140
	(A2 * A3 * B1 * X)	-0.00132	-0.00153	-0.00153
	(A2 * !A3 * B1 * X)	0.00130	0.00131	0.00130
	(A2 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00157
	(A2 * !A3 * !B1 * !X)	0.00049	0.00049	0.00044
	(A2 * !A3 * !B1 * !X)	-0.00185	-0.00186	-0.00194
	(!A2 * B1 * X)	0.00134	0.00134	0.00134
	(!A2 * B1 * X)	-0.00158	-0.00158	-0.00157
	(!A2 * !B1 * !X)	0.00049	0.00049	0.00046
	(!A2 * !B1 * !X)	-0.00191	-0.00192	-0.00195
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00263	0.00235	0.00235
	(A2 * A3 * B1 * X)	-0.00276	-0.00317	-0.00317
	(A2 * !A3 * B1 * X)	0.00217	0.00219	0.00217
	(A2 * !A3 * B1 * X)	-0.00326	-0.00328	-0.00327
	(A2 * !A3 * !B1 * !X)	0.00090	0.00090	0.00079
	(A2 * !A3 * !B1 * !X)	-0.00362	-0.00364	-0.00382
	(!A2 * B1 * X)	0.00223	0.00223	0.00223
	(!A2 * B1 * X)	-0.00328	-0.00327	-0.00327
	(!A2 * !B1 * !X)	0.00087	0.00087	0.00082
	(!A2 * !B1 * !X)	-0.00376	-0.00378	-0.00384

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)	-0.00109	-0.00109	-0.00109
	(A2 * A3 * B1 * X)	0.00157	0.00158	0.00158
	(A2 * !A3 * B1 * X)	-0.00094	-0.00102	-0.00101
	(A2 * !A3 * B1 * X)	0.00165	0.00165	0.00163
	(A2 * !A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A2 * !A3 * !B1 * !X)	0.00191	0.00190	0.00189
	(!A2 * B1 * X)	-0.00102	-0.00106	-0.00105
	(!A2 * B1 * X)	0.00164	0.00165	0.00163
	(!A2 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !X)	0.00191	0.00190	0.00189
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00139	-0.00140	-0.00139
	(A2 * A3 * B1 * X)	0.00152	0.00154	0.00153
	(A2 * !A3 * B1 * X)	-0.00121	-0.00131	-0.00130
	(A2 * !A3 * B1 * X)	0.00159	0.00160	0.00158
	(A2 * !A3 * !B1 * !X)	-0.00044	-0.00043	-0.00043
	(A2 * !A3 * !B1 * !X)	0.00197	0.00196	0.00195
	(!A2 * B1 * X)	-0.00131	-0.00134	-0.00134
	(!A2 * B1 * X)	0.00159	0.00160	0.00158
	(!A2 * !B1 * !X)	-0.00045	-0.00045	-0.00044
	(!A2 * !B1 * !X)	0.00197	0.00196	0.00195

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00233	-0.00235	-0.00233
	(A2 * A3 * B1 * X)	0.00315	0.00322	0.00317
	(A2 * !A3 * B1 * X)	-0.00201	-0.00219	-0.00217
	(A2 * !A3 * B1 * X)	0.00326	0.00332	0.00328
	(A2 * !A3 * !B1 * !X)	-0.00077	-0.00077	-0.00076
	(A2 * !A3 * !B1 * !X)	0.00384	0.00387	0.00385
	(!A2 * B1 * X)	-0.00219	-0.00223	-0.00223
	(!A2 * B1 * X)	0.00330	0.00332	0.00328
	(!A2 * !B1 * !X)	-0.00080	-0.00079	-0.00079
	(!A2 * !B1 * !X)	0.00388	0.00387	0.00385

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)**	0.00126	0.00109	0.00108
	(A1 * A3 * B1 * X)	-0.00137	-0.00158	-0.00158
	(A1 * !A3 * B1 * X)	0.00102	0.00103	0.00102
	(A1 * !A3 * B1 * X)	-0.00163	-0.00163	-0.00162
	(A1 * !A3 * !B1 * !X)	0.00044	0.00044	0.00045
	(A1 * !A3 * !B1 * !X)	-0.00168	-0.00168	-0.00166
	(!A1 * A3 * B1 * X)	0.00103	0.00104	0.00103
	(!A1 * A3 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * A3 * !B1 * !X)	0.00098	0.00099	0.00098
	(!A1 * A3 * !B1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A3 * B1 * X)	0.00062	0.00062	0.00062
	(!A1 * !A3 * B1 * X)	-0.00162	-0.00162	-0.00162
	(!A1 * !A3 * !B1 * !X)	0.00056	0.00056	0.00055
	(!A1 * !A3 * !B1 * !X)	-0.00168	-0.00169	-0.00168

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00152	0.00135	0.00135
	(A1 * A3 * B1 * X)	-0.00134	-0.00153	-0.00153
	(A1 * !A3 * B1 * X)	0.00128	0.00129	0.00128
	(A1 * !A3 * B1 * X)	-0.00158	-0.00158	-0.00157
	(A1 * !A3 * !B1 * !X)	0.00055	0.00055	0.00056
	(A1 * !A3 * !B1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * A3 * B1 * X)	0.00129	0.00129	0.00129
	(!A1 * A3 * B1 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * A3 * !B1 * !X)	0.00119	0.00120	0.00118
	(!A1 * A3 * !B1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A3 * B1 * X)	0.00081	0.00082	0.00081
	(!A1 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * !A3 * !B1 * !X)	0.00069	0.00069	0.00069
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00169	-0.00169
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00264	0.00233	0.00232
	(A1 * A3 * B1 * X)	-0.00281	-0.00318	-0.00320
	(A1 * !A3 * B1 * X)	0.00218	0.00220	0.00218
	(A1 * !A3 * B1 * X)	-0.00330	-0.00332	-0.00330
	(A1 * !A3 * !B1 * !X)	0.00110	0.00110	0.00111
	(A1 * !A3 * !B1 * !X)	-0.00332	-0.00333	-0.00330
	(!A1 * A3 * B1 * X)	0.00220	0.00223	0.00221
	(!A1 * A3 * B1 * X)	-0.00329	-0.00332	-0.00330
	(!A1 * A3 * !B1 * !X)	0.00222	0.00222	0.00222
	(!A1 * A3 * !B1 * !X)	-0.00330	-0.00330	-0.00329
	(!A1 * !A3 * B1 * X)	0.00141	0.00141	0.00140
	(!A1 * !A3 * B1 * X)	-0.00331	-0.00332	-0.00330
	(!A1 * !A3 * !B1 * !X)	0.00135	0.00135	0.00134
	(!A1 * !A3 * !B1 * !X)	-0.00334	-0.00335	-0.00333

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)	-0.00107	-0.00108	-0.00107
	(A1 * A3 * B1 * X)	0.00157	0.00158	0.00158
	(A1 * !A3 * B1 * X)	-0.00100	-0.00103	-0.00102
	(A1 * !A3 * B1 * X)	0.00164	0.00164	0.00163
	(A1 * !A3 * !B1 * !X)	-0.00041	-0.00041	-0.00042
	(A1 * !A3 * !B1 * !X)	0.00171	0.00172	0.00169
	(!A1 * A3 * B1 * X)	-0.00100	-0.00104	-0.00103
	(!A1 * A3 * B1 * X)	0.00162	0.00165	0.00163
	(!A1 * A3 * !B1 * !X)	-0.00089	-0.00098	-0.00098
	(!A1 * A3 * !B1 * !X)	0.00176	0.00170	0.00168
	(!A1 * !A3 * B1 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A3 * B1 * X)	0.00163	0.00164	0.00163
	(!A1 * !A3 * !B1 * !X)	-0.00056	-0.00056	-0.00055
	(!A1 * !A3 * !B1 * !X)	0.00175	0.00177	0.00170
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00134	-0.00135	-0.00134
	(A1 * A3 * B1 * X)	0.00153	0.00154	0.00153
	(A1 * !A3 * B1 * X)	-0.00126	-0.00129	-0.00128
	(A1 * !A3 * B1 * X)	0.00159	0.00158	0.00158
	(A1 * !A3 * !B1 * !X)	-0.00051	-0.00052	-0.00053
	(A1 * !A3 * !B1 * !X)	0.00172	0.00173	0.00170
	(!A1 * A3 * B1 * X)	-0.00125	-0.00129	-0.00129
	(!A1 * A3 * B1 * X)	0.00157	0.00160	0.00158
	(!A1 * A3 * !B1 * !X)	-0.00109	-0.00119	-0.00118
	(!A1 * A3 * !B1 * !X)	0.00176	0.00170	0.00168
	(!A1 * !A3 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A3 * B1 * X)	0.00157	0.00159	0.00158
	(!A1 * !A3 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A3 * !B1 * !X)	0.00179	0.00178	0.00171

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00230	-0.00230	-0.00230
	(A1 * A3 * B1 * X)	0.00319	0.00318	0.00320
	(A1 * !A3 * B1 * X)	-0.00212	-0.00220	-0.00218
	(A1 * !A3 * B1 * X)	0.00332	0.00333	0.00331
	(A1 * !A3 * !B1 * !X)	-0.00101	-0.00102	-0.00105
	(A1 * !A3 * !B1 * !X)	0.00339	0.00342	0.00335
	(!A1 * A3 * B1 * X)	-0.00216	-0.00223	-0.00221
	(!A1 * A3 * B1 * X)	0.00333	0.00335	0.00331
	(!A1 * A3 * !B1 * !X)	-0.00202	-0.00222	-0.00222
	(!A1 * A3 * !B1 * !X)	0.00348	0.00336	0.00331
	(!A1 * !A3 * B1 * X)	-0.00141	-0.00141	-0.00140
	(!A1 * !A3 * B1 * X)	0.00331	0.00333	0.00331
	(!A1 * !A3 * !B1 * !X)	-0.00135	-0.00135	-0.00134
	(!A1 * !A3 * !B1 * !X)	0.00352	0.00353	0.00339

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)**	0.00133	0.00121	0.00119
	(A1 * A2 * B1 * X)	-0.00136	-0.00156	-0.00156
	(A1 * !A2 * !B1 * !X)	0.00099	0.00100	0.00100
	(A1 * !A2 * !B1 * !X)	-0.00173	-0.00174	-0.00174
	(!A2 * B1 * X)	0.00112	0.00114	0.00113
	(!A2 * B1 * X)	-0.00159	-0.00161	-0.00160
	(!A1 * A2 * B1 * X)	0.00110	0.00112	0.00111
	(!A1 * A2 * B1 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * A2 * !B1 * !X)	0.00097	0.00098	0.00097
	(!A1 * A2 * !B1 * !X)	-0.00173	-0.00175	-0.00174
	(!A1 * !A2 * !B1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !A2 * !B1 * !X)	-0.00173	-0.00175	-0.00174

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00159	0.00144	0.00144
	(A1 * A2 * B1 * X)	-0.00133	-0.00151	-0.00152
	(A1 * !A2 * !B1 * !X)	0.00118	0.00120	0.00119
	(A1 * !A2 * !B1 * !X)	-0.00174	-0.00175	-0.00175
	(!A2 * B1 * X)	0.00137	0.00138	0.00137
	(!A2 * B1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * A2 * B1 * X)	0.00135	0.00136	0.00135
	(!A1 * A2 * B1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * A2 * !B1 * !X)	0.00116	0.00117	0.00116
	(!A1 * A2 * !B1 * !X)	-0.00174	-0.00175	-0.00174
	(!A1 * !A2 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !B1 * !X)	-0.00174	-0.00175	-0.00175
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00260	0.00230	0.00230
	(A1 * A2 * B1 * X)	-0.00280	-0.00321	-0.00321
	(A1 * !A2 * !B1 * !X)	0.00216	0.00217	0.00216
	(A1 * !A2 * !B1 * !X)	-0.00332	-0.00332	-0.00331
	(!A2 * B1 * X)	0.00217	0.00219	0.00216
	(!A2 * B1 * X)	-0.00331	-0.00333	-0.00331
	(!A1 * A2 * B1 * X)	0.00211	0.00212	0.00211
	(!A1 * A2 * B1 * X)	-0.00330	-0.00332	-0.00331
	(!A1 * A2 * !B1 * !X)	0.00210	0.00212	0.00211
	(!A1 * A2 * !B1 * !X)	-0.00331	-0.00332	-0.00331
	(!A1 * !A2 * !B1 * !X)	0.00216	0.00216	0.00215
	(!A1 * !A2 * !B1 * !X)	-0.00331	-0.00332	-0.00331

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)**	-0.00118	-0.00119	-0.00118
	(A1 * A2 * B1 * X)	0.00155	0.00156	0.00156
	(A1 * !A2 * !B1 * !X)	-0.00095	-0.00100	-0.00100
	(A1 * !A2 * !B1 * !X)	0.00174	0.00177	0.00174
	(!A2 * B1 * X)	-0.00111	-0.00114	-0.00113
	(!A2 * B1 * X)	0.00160	0.00163	0.00161
	(!A1 * A2 * B1 * X)	-0.00105	-0.00112	-0.00111
	(!A1 * A2 * B1 * X)	0.00160	0.00161	0.00161
	(!A1 * A2 * !B1 * !X)	-0.00091	-0.00098	-0.00097
	(!A1 * A2 * !B1 * !X)	0.00174	0.00175	0.00174
	(!A1 * !A2 * !B1 * !X)	-0.00096	-0.00100	-0.00099
	(!A1 * !A2 * !B1 * !X)	0.00173	0.00176	0.00174
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00144	-0.00144	-0.00144
	(A1 * A2 * B1 * X)	0.00151	0.00152	0.00152
	(A1 * !A2 * !B1 * !X)	-0.00114	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !X)	0.00175	0.00178	0.00175
	(!A2 * B1 * X)	-0.00135	-0.00138	-0.00137
	(!A2 * B1 * X)	0.00156	0.00157	0.00156
	(!A1 * A2 * B1 * X)	-0.00128	-0.00136	-0.00135
	(!A1 * A2 * B1 * X)	0.00155	0.00157	0.00156
	(!A1 * A2 * !B1 * !X)	-0.00108	-0.00117	-0.00116
	(!A1 * A2 * !B1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !A2 * !B1 * !X)	-0.00114	-0.00119	-0.00118
	(!A1 * !A2 * !B1 * !X)	0.00174	0.00178	0.00175

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00228	-0.00229	-0.00228
	(A1 * A2 * B1 * X)	0.00319	0.00323	0.00321
	(A1 * !A2 * !B1 * !X)	-0.00206	-0.00217	-0.00216
	(A1 * !A2 * !B1 * !X)	0.00332	0.00336	0.00332
	(!A2 * B1 * X)	-0.00210	-0.00218	-0.00216
	(!A2 * B1 * X)	0.00331	0.00334	0.00332
	(!A1 * A2 * B1 * X)	-0.00198	-0.00212	-0.00211
	(!A1 * A2 * B1 * X)	0.00331	0.00334	0.00332
	(!A1 * A2 * !B1 * !X)	-0.00196	-0.00212	-0.00211
	(!A1 * A2 * !B1 * !X)	0.00333	0.00334	0.00332
	(!A1 * !A2 * !B1 * !X)	-0.00207	-0.00216	-0.00215
	(!A1 * !A2 * !B1 * !X)	0.00331	0.00336	0.00332

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)**	0.00160	0.00161	0.00160
	(A1 * A2 * A3 * X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00152	0.00153	0.00153
	(A1 * A2 * A3 * X)	-0.00076	-0.00077	-0.00076
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00262	0.00264	0.00263
	(A1 * A2 * A3 * X)	-0.00164	-0.00166	-0.00165

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)**	-0.00148	-0.00149	-0.00158
	(A1 * A2 * A3 * X)	0.00087	0.00088	0.00080
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	-0.00141	-0.00142	-0.00151
	(A1 * A2 * A3 * X)	0.00086	0.00086	0.00079
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	-0.00233	-0.00234	-0.00259
	(A1 * A2 * A3 * X)	0.00190	0.00189	0.00171

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00299	0.00299	0.00271	0.00306	0.00283	0.35396
sky130_fd_sc_hs__a32oi_2	0.00565	0.00549	0.00540	0.00570	0.00556	0.66695
sky130_fd_sc_hs__a32oi_4	0.01118	0.01085	0.01079	0.01139	0.01102	1.14161

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32oi_1	0.00000	0.05040	0.07680
sky130_fd_sc_hs__a32oi_2	0.00000	0.09957	0.14747
sky130_fd_sc_hs__a32oi_4	0.00000	0.19588	0.29533

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)	0.19004	1.21137	10.66460
	A2->Y (FR)	0.21630	1.23921	10.68280
	A3->Y (FR)	0.23646	1.25875	10.66380
	B1->Y (FR)	0.13468	1.15929	10.96340
	B2->Y (FR)	0.15743	1.19050	10.97740
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.16966	1.01228	10.31230
	A2->Y (FR)	0.21335	1.08138	10.61850
	A3->Y (FR)	0.23342	1.10109	10.56000
	B1->Y (FR)	0.11504	0.98744	10.82220
	B2->Y (FR)	0.15159	1.03060	10.93150
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.18415	0.91706	10.15800
	A2->Y (FR)	0.21774	0.94841	10.13750
	A3->Y (FR)	0.24408	0.97987	10.15120
	B1->Y (FR)	0.14830	0.89643	10.43340
	B2->Y (FR)	0.19080	0.95176	10.67620

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.09495	0.73004	6.71957
	A2->Y (RF)	0.10578	0.70529	6.28753
	A3->Y (RF)	0.11063	0.66318	5.69540
	B1->Y (RF)	0.04463	0.58012	5.65935
	B2->Y (RF)	0.04974	0.53457	5.10957
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.09244	0.67713	6.99808
	A2->Y (RF)	0.10988	0.65820	6.55089
	A3->Y (RF)	0.11524	0.59949	5.75443
	B1->Y (RF)	0.03818	0.51557	5.77219
	B2->Y (RF)	0.04754	0.47811	5.17844
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.09424	0.60622	6.73636
	A2->Y (RF)	0.10968	0.57962	6.21275
	A3->Y (RF)	0.11531	0.51983	5.38714
	B1->Y (RF)	0.03888	0.44954	5.54432
	B2->Y (RF)	0.04731	0.40566	4.80388

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00110	0.00091	0.00172
	A1	0.00742	0.00723	0.00806
	A2	0.00151	0.00134	0.00214
	A2	0.00870	0.00852	0.00933
	A3	0.00207	0.00196	0.00276
	A3	0.00994	0.00983	0.01064
	B1	0.00042	0.00044	0.00268
	B1	0.00752	0.00741	0.00941
	B2	0.00139	0.00140	0.00355
	B2	0.00868	0.00877	0.01066
sky130_fd_sc_hs__a32oi_2	A1	0.00139	0.00103	0.00269
	A1	0.01385	0.01321	0.01519
	A2	0.00309	0.00268	0.00427
	A2	0.01725	0.01686	0.01846
	A3	0.00387	0.00364	0.00521
	A3	0.01966	0.01945	0.02102
	B1	0.00125	0.00150	0.00545
	B1	0.01386	0.01379	0.01770
	B2	0.00273	0.00272	0.00687
	B2	0.01708	0.01724	0.02085

sky130_fd_sc_hs__a32oi_4	**A1**	0.00256	0.00171	0.00541
	A1	0.02761	0.02676	0.03051
	A2	0.00513	0.00426	0.00790
	A2	0.03348	0.03265	0.03615
	A3	0.00685	0.00634	0.00993
	A3	0.03853	0.03805	0.04148
	B1	-0.00126	-0.00058	0.00834
	B1	0.02730	0.02737	0.03529
	B2	0.00457	0.00509	0.01329
	B2	0.03326	0.03352	0.04124

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00907	0.00897	0.01008
	A1	0.00290	0.00279	0.00384
	A2	0.00997	0.00979	0.01088
	A2	0.00290	0.00271	0.00355
	A3	0.01071	0.01054	0.01149
	A3	0.00286	0.00269	0.00352
	B1	0.00595	0.00604	0.00790
	B1	-0.00003	0.00005	0.00121
	B2	0.00680	0.00677	0.00802
	B2	-0.00003	-0.00012	0.00091

sky130_fd_sc_hs__a32oi_2	**A1**	0.01767	0.01735	0.01945
	A1	0.00559	0.00527	0.00740
	A2	0.01950	0.01911	0.02085
	A2	0.00559	0.00517	0.00677
	A3	0.02128	0.02087	0.02285
	A3	0.00558	0.00517	0.00682
	B1	0.01134	0.01158	0.01435
	B1	-0.00037	-0.00041	0.00220
	B2	0.01330	0.01329	0.01518
	B2	-0.00029	-0.00048	0.00157
sky130_fd_sc_hs__a32oi_4	**A1**	0.03454	0.03380	0.03813
	A1	0.01034	0.00956	0.01400
	A2	0.03801	0.03712	0.04141
	A2	0.01024	0.00931	0.01282
	A3	0.04159	0.04082	0.04485
	A3	0.01011	0.00919	0.01280
	B1	0.02286	0.02319	0.02888
	B1	-0.00079	-0.00079	0.00452
	B2	0.02672	0.02645	0.03140
	B2	-0.00057	-0.00106	0.00340

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)**	0.00146	0.00140	0.00138
	(A2 * A3 * B1 * B2 * !Y)	-0.00156	-0.00170	-0.00170
	(A2 * !A3 * B1 * B2 * !Y)	0.00127	0.00128	0.00128
	(A2 * !A3 * B1 * B2 * !Y)	-0.00174	-0.00176	-0.00175
	(A2 * !A3 * B1 * !B2 * Y)	0.00050	0.00050	0.00045
	(A2 * !A3 * B1 * !B2 * Y)	-0.00198	-0.00200	-0.00208
	(A2 * !A3 * !B1 * Y)	0.00050	0.00050	0.00045
	(A2 * !A3 * !B1 * Y)	-0.00198	-0.00200	-0.00208
	(!A2 * B1 * B2 * !Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * B2 * !Y)	-0.00175	-0.00176	-0.00175
	(!A2 * B1 * !B2 * Y)	0.00048	0.00048	0.00046
	(!A2 * B1 * !B2 * Y)	-0.00205	-0.00206	-0.00209
	(!A2 * !B1 * Y)	0.00048	0.00048	0.00046
	(!A2 * !B1 * Y)	-0.00205	-0.00206	-0.00209
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00289	0.00274	0.00273
	(A2 * A3 * B1 * B2 * !Y)	-0.00312	-0.00342	-0.00339
	(A2 * !A3 * B1 * B2 * !Y)	0.00251	0.00252	0.00252
	(A2 * !A3 * B1 * B2 * !Y)	-0.00349	-0.00349	-0.00349
	(A2 * !A3 * B1 * !B2 * Y)	0.00105	0.00104	0.00092
	(A2 * !A3 * B1 * !B2 * Y)	-0.00389	-0.00389	-0.00411
	(A2 * !A3 * !B1 * Y)	0.00105	0.00104	0.00093
	(A2 * !A3 * !B1 * Y)	-0.00389	-0.00389	-0.00411
	(!A2 * B1 * B2 * !Y)	0.00259	0.00262	0.00260
	(!A2 * B1 * B2 * !Y)	-0.00348	-0.00351	-0.00349
	(!A2 * B1 * !B2 * Y)	0.00105	0.00104	0.00097
	(!A2 * B1 * !B2 * Y)	-0.00402	-0.00402	-0.00413
	(!A2 * !B1 * Y)	0.00105	0.00104	0.00098
	(!A2 * !B1 * Y)	-0.00402	-0.00402	-0.00413

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00582	0.00543	0.00539
	(A2 * A3 * B1 * B2 * !Y)	-0.00608	-0.00679	-0.00678
	(A2 * !A3 * B1 * B2 * !Y)	0.00495	0.00495	0.00495
	(A2 * !A3 * B1 * B2 * !Y)	-0.00700	-0.00701	-0.00700
	(A2 * !A3 * B1 * !B2 * Y)	0.00186	0.00187	0.00167
	(A2 * !A3 * B1 * !B2 * Y)	-0.00785	-0.00792	-0.00832
	(A2 * !A3 * !B1 * Y)	0.00186	0.00188	0.00168
	(A2 * !A3 * !B1 * Y)	-0.00784	-0.00793	-0.00832
	(!A2 * B1 * B2 * !Y)	0.00513	0.00514	0.00513
	(!A2 * B1 * B2 * !Y)	-0.00702	-0.00702	-0.00700
	(!A2 * B1 * !B2 * Y)	0.00187	0.00187	0.00177
	(!A2 * B1 * !B2 * Y)	-0.00816	-0.00819	-0.00837
	(!A2 * !B1 * Y)	0.00189	0.00188	0.00177
	(!A2 * !B1 * Y)	-0.00819	-0.00818	-0.00837

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)**	-0.00138	-0.00138	-0.00138
	(A2 * A3 * B1 * B2 * !Y)	0.00171	0.00170	0.00170
	(A2 * !A3 * B1 * B2 * !Y)	-0.00117	-0.00128	-0.00128
	(A2 * !A3 * B1 * B2 * !Y)	0.00175	0.00178	0.00175
	(A2 * !A3 * B1 * !B2 * Y)	-0.00044	-0.00044	-0.00043
	(A2 * !A3 * B1 * !B2 * Y)	0.00208	0.00210	0.00209
	(A2 * !A3 * !B1 * Y)	-0.00044	-0.00044	-0.00043
	(A2 * !A3 * !B1 * Y)	0.00208	0.00210	0.00209
	(!A2 * B1 * B2 * !Y)	-0.00129	-0.00132	-0.00131
	(!A2 * B1 * B2 * !Y)	0.00176	0.00176	0.00175
	(!A2 * B1 * !B2 * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * B1 * !B2 * Y)	0.00208	0.00210	0.00209
	(!A2 * !B1 * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * Y)	0.00208	0.00210	0.00209
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00273	-0.00273	-0.00272
	(A2 * A3 * B1 * B2 * !Y)	0.00341	0.00342	0.00339
	(A2 * !A3 * B1 * B2 * !Y)	-0.00227	-0.00252	-0.00252
	(A2 * !A3 * B1 * B2 * !Y)	0.00349	0.00352	0.00350
	(A2 * !A3 * B1 * !B2 * Y)	-0.00090	-0.00091	-0.00091
	(A2 * !A3 * B1 * !B2 * Y)	0.00413	0.00418	0.00415
	(A2 * !A3 * !B1 * Y)	-0.00091	-0.00092	-0.00091
	(A2 * !A3 * !B1 * Y)	0.00413	0.00418	0.00415
	(!A2 * B1 * B2 * !Y)	-0.00253	-0.00262	-0.00260
	(!A2 * B1 * B2 * !Y)	0.00351	0.00351	0.00350
	(!A2 * B1 * !B2 * Y)	-0.00094	-0.00094	-0.00094
	(!A2 * B1 * !B2 * Y)	0.00416	0.00418	0.00415
	(!A2 * !B1 * Y)	-0.00095	-0.00095	-0.00094
	(!A2 * !B1 * Y)	0.00416	0.00418	0.00415

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00536	-0.00538	-0.00537
	(A2 * A3 * B1 * B2 * !Y)	0.00674	0.00679	0.00678
	(A2 * !A3 * B1 * B2 * !Y)	-0.00445	-0.00495	-0.00495
	(A2 * !A3 * B1 * B2 * !Y)	0.00700	0.00702	0.00702
	(A2 * !A3 * B1 * !B2 * Y)	-0.00165	-0.00166	-0.00164
	(A2 * !A3 * B1 * !B2 * Y)	0.00838	0.00844	0.00839
	(A2 * !A3 * !B1 * Y)	-0.00165	-0.00166	-0.00165
	(A2 * !A3 * !B1 * Y)	0.00838	0.00844	0.00839
	(!A2 * B1 * B2 * !Y)	-0.00501	-0.00514	-0.00513
	(!A2 * B1 * B2 * !Y)	0.00704	0.00706	0.00702
	(!A2 * B1 * !B2 * Y)	-0.00172	-0.00171	-0.00170
	(!A2 * B1 * !B2 * Y)	0.00843	0.00845	0.00840
	(!A2 * !B1 * Y)	-0.00171	-0.00172	-0.00170
	(!A2 * !B1 * Y)	0.00838	0.00845	0.00840

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)**	0.00151	0.00144	0.00142
	(A1 * A3 * B1 * B2 * !Y)	-0.00156	-0.00170	-0.00170
	(A1 * !A3 * B1 * B2 * !Y)	0.00135	0.00136	0.00135
	(A1 * !A3 * B1 * B2 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A3 * B1 * !B2 * Y)	0.00065	0.00065	0.00064
	(A1 * !A3 * B1 * !B2 * Y)	-0.00183	-0.00184	-0.00182
	(A1 * !A3 * !B1 * Y)	0.00065	0.00065	0.00064
	(A1 * !A3 * !B1 * Y)	-0.00183	-0.00184	-0.00182
	(!A1 * A3 * B1 * B2 * !Y)	0.00134	0.00136	0.00135
	(!A1 * A3 * B1 * B2 * !Y)	-0.00175	-0.00176	-0.00175
	(!A1 * A3 * B1 * !B2 * Y)	0.00126	0.00127	0.00127
	(!A1 * A3 * B1 * !B2 * Y)	-0.00183	-0.00183	-0.00183
	(!A1 * A3 * !B1 * Y)	0.00126	0.00127	0.00127
	(!A1 * A3 * !B1 * Y)	-0.00183	-0.00183	-0.00183
	(!A1 * !A3 * B1 * B2 * !Y)	0.00087	0.00087	0.00087
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00175	-0.00176	-0.00175
	(!A1 * !A3 * B1 * !B2 * Y)	0.00077	0.00077	0.00077
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !A3 * !B1 * Y)	0.00077	0.00077	0.00077
	(!A1 * !A3 * !B1 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00284	0.00262	0.00262
	(A1 * A3 * B1 * B2 * !Y)	-0.00315	-0.00351	-0.00350
	(A1 * !A3 * B1 * B2 * !Y)	0.00245	0.00247	0.00246
	(A1 * !A3 * B1 * B2 * !Y)	-0.00360	-0.00362	-0.00362
	(A1 * !A3 * B1 * !B2 * Y)	0.00119	0.00119	0.00120
	(A1 * !A3 * B1 * !B2 * Y)	-0.00366	-0.00367	-0.00363
	(A1 * !A3 * !B1 * Y)	0.00119	0.00119	0.00121
	(A1 * !A3 * !B1 * Y)	-0.00366	-0.00367	-0.00363
	(!A1 * A3 * B1 * B2 * !Y)	0.00250	0.00252	0.00250
	(!A1 * A3 * B1 * B2 * !Y)	-0.00361	-0.00362	-0.00361
	(!A1 * A3 * B1 * !B2 * Y)	0.00246	0.00249	0.00247
	(!A1 * A3 * B1 * !B2 * Y)	-0.00365	-0.00365	-0.00364
	(!A1 * A3 * !B1 * Y)	0.00247	0.00249	0.00247
	(!A1 * A3 * !B1 * Y)	-0.00366	-0.00365	-0.00364
	(!A1 * !A3 * B1 * B2 * !Y)	0.00157	0.00160	0.00158
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00362	-0.00365	-0.00362
	(!A1 * !A3 * B1 * !B2 * Y)	0.00150	0.00151	0.00149
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00368	-0.00370	-0.00367
	(!A1 * !A3 * !B1 * Y)	0.00151	0.00151	0.00150
	(!A1 * !A3 * !B1 * Y)	-0.00368	-0.00370	-0.00367

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00575	0.00528	0.00525
	(A1 * A3 * B1 * B2 * !Y)	-0.00619	-0.00697	-0.00694
	(A1 * !A3 * B1 * B2 * !Y)	0.00488	0.00491	0.00489
	(A1 * !A3 * B1 * B2 * !Y)	-0.00717	-0.00720	-0.00718
	(A1 * !A3 * B1 * !B2 * Y)	0.00226	0.00229	0.00230
	(A1 * !A3 * B1 * !B2 * Y)	-0.00722	-0.00727	-0.00720
	(A1 * !A3 * !B1 * Y)	0.00226	0.00229	0.00231
	(A1 * !A3 * !B1 * Y)	-0.00722	-0.00727	-0.00720
	(!A1 * A3 * B1 * B2 * !Y)	0.00499	0.00502	0.00501
	(!A1 * A3 * B1 * B2 * !Y)	-0.00716	-0.00719	-0.00717
	(!A1 * A3 * B1 * !B2 * Y)	0.00494	0.00500	0.00496
	(!A1 * A3 * B1 * !B2 * Y)	-0.00721	-0.00726	-0.00722
	(!A1 * A3 * !B1 * Y)	0.00494	0.00501	0.00497
	(!A1 * A3 * !B1 * Y)	-0.00721	-0.00726	-0.00722
	(!A1 * !A3 * B1 * B2 * !Y)	0.00298	0.00299	0.00298
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00717	-0.00719	-0.00718
	(!A1 * !A3 * B1 * !B2 * Y)	0.00281	0.00284	0.00281
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00728	-0.00733	-0.00728
	(!A1 * !A3 * !B1 * Y)	0.00281	0.00284	0.00282
	(!A1 * !A3 * !B1 * Y)	-0.00728	-0.00733	-0.00728

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)**	-0.00142	-0.00142	-0.00142
	(A1 * A3 * B1 * B2 * !Y)	0.00170	0.00170	0.00170
	(A1 * !A3 * B1 * B2 * !Y)	-0.00133	-0.00136	-0.00135
	(A1 * !A3 * B1 * B2 * !Y)	0.00176	0.00176	0.00176
	(A1 * !A3 * B1 * !B2 * Y)	-0.00061	-0.00060	-0.00061
	(A1 * !A3 * B1 * !B2 * Y)	0.00190	0.00188	0.00185
	(A1 * !A3 * !B1 * Y)	-0.00061	-0.00060	-0.00061
	(A1 * !A3 * !B1 * Y)	0.00190	0.00188	0.00185
	(!A1 * A3 * B1 * B2 * !Y)	-0.00132	-0.00136	-0.00135
	(!A1 * A3 * B1 * B2 * !Y)	0.00175	0.00178	0.00176
	(!A1 * A3 * B1 * !B2 * Y)	-0.00116	-0.00127	-0.00127
	(!A1 * A3 * B1 * !B2 * Y)	0.00192	0.00187	0.00184
	(!A1 * A3 * !B1 * Y)	-0.00116	-0.00127	-0.00127
	(!A1 * A3 * !B1 * Y)	0.00192	0.00187	0.00184
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00087	-0.00087	-0.00087
	(!A1 * !A3 * B1 * B2 * !Y)	0.00175	0.00176	0.00176
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * B1 * !B2 * Y)	0.00196	0.00194	0.00186
	(!A1 * !A3 * !B1 * Y)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * !B1 * Y)	0.00196	0.00194	0.00186

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00260	-0.00262	-0.00261
	(A1 * A3 * B1 * B2 * !Y)	0.00348	0.00351	0.00350
	(A1 * !A3 * B1 * B2 * !Y)	-0.00241	-0.00247	-0.00246
	(A1 * !A3 * B1 * B2 * !Y)	0.00364	0.00364	0.00363
	(A1 * !A3 * B1 * !B2 * Y)	-0.00110	-0.00111	-0.00114
	(A1 * !A3 * B1 * !B2 * Y)	0.00375	0.00377	0.00369
	(A1 * !A3 * !B1 * Y)	-0.00110	-0.00111	-0.00114
	(A1 * !A3 * !B1 * Y)	0.00375	0.00377	0.00369
	(!A1 * A3 * B1 * B2 * !Y)	-0.00243	-0.00252	-0.00250
	(!A1 * A3 * B1 * B2 * !Y)	0.00363	0.00362	0.00362
	(!A1 * A3 * B1 * !B2 * Y)	-0.00224	-0.00247	-0.00247
	(!A1 * A3 * B1 * !B2 * Y)	0.00384	0.00365	0.00366
	(!A1 * A3 * !B1 * Y)	-0.00224	-0.00247	-0.00247
	(!A1 * A3 * !B1 * Y)	0.00384	0.00365	0.00366
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00157	-0.00160	-0.00158
	(!A1 * !A3 * B1 * B2 * !Y)	0.00363	0.00365	0.00364
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00150	-0.00151	-0.00149
	(!A1 * !A3 * B1 * !B2 * Y)	0.00387	0.00389	0.00373
	(!A1 * !A3 * !B1 * Y)	-0.00151	-0.00151	-0.00150
	(!A1 * !A3 * !B1 * Y)	0.00387	0.00389	0.00373

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00523	-0.00525	-0.00522
	(A1 * A3 * B1 * B2 * !Y)	0.00692	0.00697	0.00694
	(A1 * !A3 * B1 * B2 * !Y)	-0.00482	-0.00491	-0.00489
	(A1 * !A3 * B1 * B2 * !Y)	0.00722	0.00728	0.00720
	(A1 * !A3 * B1 * !B2 * Y)	-0.00212	-0.00214	-0.00219
	(A1 * !A3 * B1 * !B2 * Y)	0.00743	0.00747	0.00732
	(A1 * !A3 * !B1 * Y)	-0.00212	-0.00214	-0.00219
	(A1 * !A3 * !B1 * Y)	0.00743	0.00747	0.00732
	(!A1 * A3 * B1 * B2 * !Y)	-0.00488	-0.00502	-0.00501
	(!A1 * A3 * B1 * B2 * !Y)	0.00722	0.00723	0.00720
	(!A1 * A3 * B1 * !B2 * Y)	-0.00448	-0.00498	-0.00496
	(!A1 * A3 * B1 * !B2 * Y)	0.00766	0.00730	0.00725
	(!A1 * A3 * !B1 * Y)	-0.00448	-0.00498	-0.00497
	(!A1 * A3 * !B1 * Y)	0.00766	0.00730	0.00725
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00298	-0.00299	-0.00298
	(!A1 * !A3 * B1 * B2 * !Y)	0.00720	0.00723	0.00720
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00281	-0.00284	-0.00281
	(!A1 * !A3 * B1 * !B2 * Y)	0.00765	0.00770	0.00739
	(!A1 * !A3 * !B1 * Y)	-0.00281	-0.00284	-0.00282
	(!A1 * !A3 * !B1 * Y)	0.00765	0.00770	0.00739

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)**	0.00140	0.00135	0.00133
	(A1 * A2 * B1 * B2 * !Y)	-0.00158	-0.00173	-0.00172
	(A1 * !A2 * B1 * !B2 * Y)	0.00128	0.00128	0.00127
	(A1 * !A2 * B1 * !B2 * Y)	-0.00177	-0.00177	-0.00177
	(A1 * !A2 * !B1 * Y)	0.00128	0.00128	0.00127
	(A1 * !A2 * !B1 * Y)	-0.00177	-0.00177	-0.00177
	(!A2 * B1 * B2 * !Y)	0.00127	0.00128	0.00127
	(!A2 * B1 * B2 * !Y)	-0.00176	-0.00178	-0.00177
	(!A1 * A2 * B1 * B2 * !Y)	0.00124	0.00125	0.00124
	(!A1 * A2 * B1 * B2 * !Y)	-0.00176	-0.00177	-0.00177
	(!A1 * A2 * B1 * !B2 * Y)	0.00123	0.00125	0.00124
	(!A1 * A2 * B1 * !B2 * Y)	-0.00176	-0.00177	-0.00176
	(!A1 * A2 * !B1 * Y)	0.00124	0.00125	0.00124
	(!A1 * A2 * !B1 * Y)	-0.00176	-0.00177	-0.00176
	(!A1 * !A2 * B1 * !B2 * Y)	0.00128	0.00127	0.00127
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00177	-0.00177	-0.00177
	(!A1 * !A2 * !B1 * Y)	0.00128	0.00127	0.00127
	(!A1 * !A2 * !B1 * Y)	-0.00177	-0.00177	-0.00177

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00288	0.00270	0.00268
	(A1 * A2 * B1 * B2 * !Y)	-0.00314	-0.00348	-0.00346
	(A1 * !A2 * B1 * !B2 * Y)	0.00253	0.00255	0.00254
	(A1 * !A2 * B1 * !B2 * Y)	-0.00357	-0.00358	-0.00357
	(A1 * !A2 * !B1 * Y)	0.00254	0.00255	0.00254
	(A1 * !A2 * !B1 * Y)	-0.00357	-0.00358	-0.00357
	(!A2 * B1 * B2 * !Y)	0.00253	0.00256	0.00254
	(!A2 * B1 * B2 * !Y)	-0.00357	-0.00359	-0.00357
	(!A1 * A2 * B1 * B2 * !Y)	0.00250	0.00251	0.00250
	(!A1 * A2 * B1 * B2 * !Y)	-0.00357	-0.00358	-0.00357
	(!A1 * A2 * B1 * !B2 * Y)	0.00250	0.00251	0.00250
	(!A1 * A2 * B1 * !B2 * Y)	-0.00357	-0.00358	-0.00357
	(!A1 * A2 * !B1 * Y)	0.00251	0.00251	0.00250
	(!A1 * A2 * !B1 * Y)	-0.00358	-0.00358	-0.00357
	(!A1 * !A2 * B1 * !B2 * Y)	0.00253	0.00254	0.00254
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00357	-0.00358	-0.00357
	(!A1 * !A2 * !B1 * Y)	0.00253	0.00254	0.00254
	(!A1 * !A2 * !B1 * Y)	-0.00357	-0.00358	-0.00357

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00568	0.00524	0.00520
	(A1 * A2 * B1 * B2 * !Y)	-0.00628	-0.00704	-0.00698
	(A1 * !A2 * B1 * !B2 * Y)	0.00489	0.00495	0.00489
	(A1 * !A2 * B1 * !B2 * Y)	-0.00721	-0.00726	-0.00721
	(A1 * !A2 * !B1 * Y)	0.00487	0.00491	0.00489
	(A1 * !A2 * !B1 * Y)	-0.00720	-0.00723	-0.00721
	(!A2 * B1 * B2 * !Y)	0.00487	0.00493	0.00489
	(!A2 * B1 * B2 * !Y)	-0.00719	-0.00724	-0.00721
	(!A1 * A2 * B1 * B2 * !Y)	0.00479	0.00483	0.00478
	(!A1 * A2 * B1 * B2 * !Y)	-0.00722	-0.00724	-0.00721
	(!A1 * A2 * B1 * !B2 * Y)	0.00474	0.00481	0.00478
	(!A1 * A2 * B1 * !B2 * Y)	-0.00718	-0.00724	-0.00721
	(!A1 * A2 * !B1 * Y)	0.00474	0.00482	0.00478
	(!A1 * A2 * !B1 * Y)	-0.00718	-0.00724	-0.00721
	(!A1 * !A2 * B1 * !B2 * Y)	0.00487	0.00494	0.00488
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00721	-0.00726	-0.00721
	(!A1 * !A2 * !B1 * Y)	0.00487	0.00493	0.00488
	(!A1 * !A2 * !B1 * Y)	-0.00721	-0.00725	-0.00721

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)**	-0.00132	-0.00133	-0.00133
	(A1 * A2 * B1 * B2 * !Y)	0.00171	0.00173	0.00172
	(A1 * !A2 * B1 * !B2 * Y)	-0.00123	-0.00128	-0.00127
	(A1 * !A2 * B1 * !B2 * Y)	0.00178	0.00179	0.00177
	(A1 * !A2 * !B1 * Y)	-0.00123	-0.00128	-0.00127
	(A1 * !A2 * !B1 * Y)	0.00178	0.00179	0.00177
	(!A2 * B1 * B2 * !Y)	-0.00124	-0.00128	-0.00127
	(!A2 * B1 * B2 * !Y)	0.00176	0.00178	0.00177
	(!A1 * A2 * B1 * B2 * !Y)	-0.00117	-0.00125	-0.00124
	(!A1 * A2 * B1 * B2 * !Y)	0.00177	0.00178	0.00177
	(!A1 * A2 * B1 * !B2 * Y)	-0.00116	-0.00125	-0.00124
	(!A1 * A2 * B1 * !B2 * Y)	0.00177	0.00178	0.00177
	(!A1 * A2 * !B1 * Y)	-0.00116	-0.00125	-0.00124
	(!A1 * A2 * !B1 * Y)	0.00177	0.00178	0.00177
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00124	-0.00127	-0.00127
	(!A1 * !A2 * B1 * !B2 * Y)	0.00178	0.00179	0.00177
	(!A1 * !A2 * !B1 * Y)	-0.00124	-0.00127	-0.00127
	(!A1 * !A2 * !B1 * Y)	0.00178	0.00179	0.00177

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00267	-0.00268	-0.00267
	(A1 * A2 * B1 * B2 * !Y)	0.00345	0.00348	0.00346
	(A1 * !A2 * B1 * !B2 * Y)	-0.00245	-0.00255	-0.00254
	(A1 * !A2 * B1 * !B2 * Y)	0.00358	0.00362	0.00358
	(A1 * !A2 * !B1 * Y)	-0.00245	-0.00255	-0.00254
	(A1 * !A2 * !B1 * Y)	0.00358	0.00362	0.00358
	(!A2 * B1 * B2 * !Y)	-0.00247	-0.00256	-0.00254
	(!A2 * B1 * B2 * !Y)	0.00357	0.00360	0.00358
	(!A1 * A2 * B1 * B2 * !Y)	-0.00235	-0.00251	-0.00250
	(!A1 * A2 * B1 * B2 * !Y)	0.00357	0.00361	0.00358
	(!A1 * A2 * B1 * !B2 * Y)	-0.00234	-0.00251	-0.00250
	(!A1 * A2 * B1 * !B2 * Y)	0.00358	0.00361	0.00358
	(!A1 * A2 * !B1 * Y)	-0.00234	-0.00251	-0.00250
	(!A1 * A2 * !B1 * Y)	0.00358	0.00361	0.00358
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00246	-0.00254	-0.00254
	(!A1 * !A2 * B1 * !B2 * Y)	0.00357	0.00362	0.00358
	(!A1 * !A2 * !B1 * Y)	-0.00246	-0.00254	-0.00254
	(!A1 * !A2 * !B1 * Y)	0.00357	0.00362	0.00358

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00517	-0.00522	-0.00517
	(A1 * A2 * B1 * B2 * !Y)	0.00695	0.00709	0.00698
	(A1 * !A2 * B1 * !B2 * Y)	-0.00468	-0.00494	-0.00489
	(A1 * !A2 * B1 * !B2 * Y)	0.00722	0.00731	0.00724
	(A1 * !A2 * !B1 * Y)	-0.00468	-0.00491	-0.00489
	(A1 * !A2 * !B1 * Y)	0.00722	0.00731	0.00724
	(!A2 * B1 * B2 * !Y)	-0.00477	-0.00493	-0.00489
	(!A2 * B1 * B2 * !Y)	0.00721	0.00731	0.00723
	(!A1 * A2 * B1 * B2 * !Y)	-0.00449	-0.00483	-0.00478
	(!A1 * A2 * B1 * B2 * !Y)	0.00723	0.00729	0.00723
	(!A1 * A2 * B1 * !B2 * Y)	-0.00446	-0.00481	-0.00478
	(!A1 * A2 * B1 * !B2 * Y)	0.00726	0.00729	0.00723
	(!A1 * A2 * !B1 * Y)	-0.00446	-0.00482	-0.00478
	(!A1 * A2 * !B1 * Y)	0.00726	0.00729	0.00723
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00472	-0.00494	-0.00488
	(!A1 * !A2 * B1 * !B2 * Y)	0.00722	0.00731	0.00723
	(!A1 * !A2 * !B1 * Y)	-0.00472	-0.00493	-0.00488
	(!A1 * !A2 * !B1 * Y)	0.00722	0.00731	0.00723

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)**	0.00157	0.00158	0.00157
	(A1 * A2 * A3 * B2 * !Y)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * A3 * !B2 * !Y)	0.00149	0.00150	0.00149
	(A1 * A2 * A3 * !B2 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * !A3 * !B2 * Y)	0.00047	0.00047	0.00045
	(A1 * A2 * !A3 * !B2 * Y)	-0.00209	-0.00210	-0.00213
	(A1 * !A2 * !B2 * Y)	0.00047	0.00047	0.00045
	(A1 * !A2 * !B2 * Y)	-0.00209	-0.00210	-0.00213
	(!A1 * !B2 * Y)	0.00047	0.00047	0.00045
	(!A1 * !B2 * Y)	-0.00209	-0.00210	-0.00213
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00298	0.00299	0.00297
	(A1 * A2 * A3 * B2 * !Y)	-0.00169	-0.00169	-0.00167
	(A1 * A2 * A3 * !B2 * !Y)	0.00283	0.00285	0.00284
	(A1 * A2 * A3 * !B2 * !Y)	-0.00166	-0.00167	-0.00167
	(A1 * A2 * !A3 * !B2 * Y)	0.00100	0.00099	0.00092
	(A1 * A2 * !A3 * !B2 * Y)	-0.00403	-0.00404	-0.00414
	(A1 * !A2 * !B2 * Y)	0.00100	0.00099	0.00092
	(A1 * !A2 * !B2 * Y)	-0.00403	-0.00404	-0.00414
	(!A1 * !B2 * Y)	0.00100	0.00099	0.00093
	(!A1 * !B2 * Y)	-0.00403	-0.00404	-0.00414
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00597	0.00608	0.00601
	(A1 * A2 * A3 * B2 * !Y)	-0.00336	-0.00344	-0.00338
	(A1 * A2 * A3 * !B2 * !Y)	0.00569	0.00577	0.00570
	(A1 * A2 * A3 * !B2 * !Y)	-0.00338	-0.00340	-0.00338
	(A1 * A2 * !A3 * !B2 * Y)	0.00190	0.00189	0.00177
	(A1 * A2 * !A3 * !B2 * Y)	-0.00821	-0.00823	-0.00841
	(A1 * !A2 * !B2 * Y)	0.00190	0.00189	0.00177
	(A1 * !A2 * !B2 * Y)	-0.00821	-0.00823	-0.00841
	(!A1 * !B2 * Y)	0.00190	0.00189	0.00178
	(!A1 * !B2 * Y)	-0.00822	-0.00823	-0.00841

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)	-0.00138	-0.00139	-0.00154
	(A1 * A2 * A3 * B2 * !Y)	0.00100	0.00100	0.00087
	(A1 * A2 * A3 * !B2 * !Y)	-0.00147	-0.00150	-0.00149
	(A1 * A2 * A3 * !B2 * !Y)	0.00083	0.00083	0.00083
	(A1 * A2 * !A3 * !B2 * Y)	-0.00044	-0.00045	-0.00044
	(A1 * A2 * !A3 * !B2 * Y)	0.00213	0.00216	0.00213
	(A1 * !A2 * !B2 * Y)	-0.00044	-0.00045	-0.00044
	(A1 * !A2 * !B2 * Y)	0.00213	0.00216	0.00213
	(!A1 * !B2 * Y)	-0.00044	-0.00045	-0.00044
	(!A1 * !B2 * Y)	0.00213	0.00216	0.00213
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00259	-0.00263	-0.00293
	(A1 * A2 * A3 * B2 * !Y)	0.00199	0.00199	0.00174
	(A1 * A2 * A3 * !B2 * !Y)	-0.00275	-0.00285	-0.00284
	(A1 * A2 * A3 * !B2 * !Y)	0.00166	0.00167	0.00167
	(A1 * A2 * !A3 * !B2 * Y)	-0.00090	-0.00090	-0.00089
	(A1 * A2 * !A3 * !B2 * Y)	0.00417	0.00420	0.00416
	(A1 * !A2 * !B2 * Y)	-0.00090	-0.00090	-0.00089
	(A1 * !A2 * !B2 * Y)	0.00417	0.00420	0.00416
	(!A1 * !B2 * Y)	-0.00090	-0.00091	-0.00089
	(!A1 * !B2 * Y)	0.00417	0.00420	0.00416

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00531	-0.00538	-0.00593
	(A1 * A2 * A3 * B2 * !Y)	0.00396	0.00397	0.00352
	(A1 * A2 * A3 * !B2 * !Y)	-0.00556	-0.00577	-0.00570
	(A1 * A2 * A3 * !B2 * !Y)	0.00338	0.00340	0.00338
	(A1 * A2 * !A3 * !B2 * Y)	-0.00173	-0.00174	-0.00170
	(A1 * A2 * !A3 * !B2 * Y)	0.00846	0.00852	0.00843
	(A1 * !A2 * !B2 * Y)	-0.00173	-0.00174	-0.00171
	(A1 * !A2 * !B2 * Y)	0.00846	0.00852	0.00843
	(!A1 * !B2 * Y)	-0.00174	-0.00174	-0.00171
	(!A1 * !B2 * Y)	0.00846	0.00852	0.00843

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)**	0.00150	0.00151	0.00150
	(A1 * A2 * A3 * B1 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * A3 * !B1 * !Y)	0.00144	0.00145	0.00144
	(A1 * A2 * A3 * !B1 * !Y)	-0.00088	-0.00088	-0.00087
	(A1 * A2 * !A3 * !B1 * Y)	0.00126	0.00128	0.00127
	(A1 * A2 * !A3 * !B1 * Y)	-0.00181	-0.00183	-0.00182
	(A1 * !A2 * !B1 * Y)	0.00126	0.00128	0.00127
	(A1 * !A2 * !B1 * Y)	-0.00181	-0.00183	-0.00182
	(!A1 * !B1 * Y)	0.00126	0.00128	0.00127
	(!A1 * !B1 * Y)	-0.00181	-0.00183	-0.00182

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00296	0.00299	0.00297
	(A1 * A2 * A3 * B1 * !Y)	-0.00172	-0.00173	-0.00171
	(A1 * A2 * A3 * !B1 * !Y)	0.00283	0.00286	0.00283
	(A1 * A2 * A3 * !B1 * !Y)	-0.00170	-0.00172	-0.00171
	(A1 * A2 * !A3 * !B1 * Y)	0.00252	0.00252	0.00252
	(A1 * A2 * !A3 * !B1 * Y)	-0.00358	-0.00358	-0.00357
	(A1 * !A2 * !B1 * Y)	0.00252	0.00252	0.00252
	(A1 * !A2 * !B1 * Y)	-0.00358	-0.00357	-0.00357
	(!A1 * !B1 * Y)	0.00252	0.00253	0.00252
	(!A1 * !B1 * Y)	-0.00358	-0.00358	-0.00357
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00590	0.00592	0.00588
	(A1 * A2 * A3 * B1 * !Y)	-0.00343	-0.00343	-0.00340
	(A1 * A2 * A3 * !B1 * !Y)	0.00559	0.00560	0.00558
	(A1 * A2 * A3 * !B1 * !Y)	-0.00339	-0.00340	-0.00339
	(A1 * A2 * !A3 * !B1 * Y)	0.00495	0.00499	0.00495
	(A1 * A2 * !A3 * !B1 * Y)	-0.00716	-0.00718	-0.00714
	(A1 * !A2 * !B1 * Y)	0.00495	0.00498	0.00495
	(A1 * !A2 * !B1 * Y)	-0.00716	-0.00717	-0.00714
	(!A1 * !B1 * Y)	0.00496	0.00500	0.00495
	(!A1 * !B1 * Y)	-0.00716	-0.00718	-0.00714

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)**	-0.00132	-0.00132	-0.00148
	(A1 * A2 * A3 * B1 * !Y)	0.00105	0.00104	0.00091
	(A1 * A2 * A3 * !B1 * !Y)	-0.00142	-0.00145	-0.00144
	(A1 * A2 * A3 * !B1 * !Y)	0.00088	0.00088	0.00087
	(A1 * A2 * !A3 * !B1 * Y)	-0.00119	-0.00128	-0.00127
	(A1 * A2 * !A3 * !B1 * Y)	0.00189	0.00185	0.00183
	(A1 * !A2 * !B1 * Y)	-0.00120	-0.00128	-0.00127
	(A1 * !A2 * !B1 * Y)	0.00189	0.00185	0.00183
	(!A1 * !B1 * Y)	-0.00120	-0.00128	-0.00127
	(!A1 * !B1 * Y)	0.00189	0.00185	0.00183
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00258	-0.00261	-0.00292
	(A1 * A2 * A3 * B1 * !Y)	0.00203	0.00203	0.00179
	(A1 * A2 * A3 * !B1 * !Y)	-0.00277	-0.00286	-0.00283
	(A1 * A2 * A3 * !B1 * !Y)	0.00171	0.00172	0.00171
	(A1 * A2 * !A3 * !B1 * Y)	-0.00234	-0.00252	-0.00252
	(A1 * A2 * !A3 * !B1 * Y)	0.00369	0.00362	0.00358
	(A1 * !A2 * !B1 * Y)	-0.00234	-0.00252	-0.00252
	(A1 * !A2 * !B1 * Y)	0.00369	0.00362	0.00358
	(!A1 * !B1 * Y)	-0.00234	-0.00253	-0.00252
	(!A1 * !B1 * Y)	0.00369	0.00362	0.00358
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00518	-0.00524	-0.00580
	(A1 * A2 * A3 * B1 * !Y)	0.00398	0.00397	0.00354
	(A1 * A2 * A3 * !B1 * !Y)	-0.00546	-0.00560	-0.00558
	(A1 * A2 * A3 * !B1 * !Y)	0.00339	0.00342	0.00339
	(A1 * A2 * !A3 * !B1 * Y)	-0.00457	-0.00498	-0.00495
	(A1 * A2 * !A3 * !B1 * Y)	0.00741	0.00725	0.00717
	(A1 * !A2 * !B1 * Y)	-0.00457	-0.00498	-0.00495
	(A1 * !A2 * !B1 * Y)	0.00741	0.00725	0.00717
	(!A1 * !B1 * Y)	-0.00457	-0.00499	-0.00495
	(!A1 * !B1 * Y)	0.00741	0.00725	0.00717

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00265	0.00262	0.00271	0.00265	0.00246	0.74571
sky130_fd_sc_hs__a32o_2	0.00284	0.00279	0.00288	0.00279	0.00265	1.36896
sky130_fd_sc_hs__a32o_4	0.00488	0.00545	0.00491	0.00508	0.00576	2.84997

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32o_1	0.00000	0.10855	0.18739
sky130_fd_sc_hs__a32o_2	0.00000	0.13746	0.22271
sky130_fd_sc_hs__a32o_4	0.00000	0.27441	0.44508

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)	0.18985	0.96504	7.79872
	A2->X (RR)	0.20692	0.96464	7.81837
	A3->X (RR)	0.21402	0.93886	7.71067
	B1->X (RR)	0.13168	0.86674	7.55428
	B2->X (RR)	0.13655	0.85463	7.53613
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.19021	0.88127	7.80301
	A2->X (RR)	0.20272	0.87434	7.80434
	A3->X (RR)	0.20988	0.84741	7.68068
	B1->X (RR)	0.13063	0.78369	7.54540
	B2->X (RR)	0.13695	0.76771	7.51647
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.20251	0.81230	7.93187
	A2->X (RR)	0.22669	0.81186	7.95270
	A3->X (RR)	0.23412	0.78502	7.83209
	B1->X (RR)	0.12905	0.69733	7.66523
	B2->X (RR)	0.13568	0.68374	7.64115

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.27893	0.84144	4.65340
	A2->X (FF)	0.30900	0.88152	4.77422
	A3->X (FF)	0.32475	0.90184	4.84759
	B1->X (FF)	0.24578	0.82199	4.68299
	B2->X (FF)	0.26835	0.85812	4.78585
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.34182	0.88416	4.74280
	A2->X (FF)	0.37716	0.92820	4.86628
	A3->X (FF)	0.40452	0.96163	4.96229
	B1->X (FF)	0.31353	0.87899	4.81326
	B2->X (FF)	0.34722	0.92384	4.94538
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.31782	0.82159	4.84114
	A2->X (FF)	0.33989	0.85375	4.93745
	A3->X (FF)	0.37761	0.89962	5.05925
	B1->X (FF)	0.30122	0.82998	4.92981
	B2->X (FF)	0.32227	0.85794	5.01174

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01132	0.01115	0.01706
	A1	0.00569	0.00553	0.01157
	A2	0.01199	0.01177	0.01645
	A2	0.00568	0.00545	0.01024
	A3	0.01281	0.01250	0.01639
	A3	0.00567	0.00535	0.00938
	B1	0.00847	0.00860	0.01591
	B1	0.00318	0.00335	0.01221
	B2	0.00919	0.00923	0.01534
	B2	0.00319	0.00324	0.01074
sky130_fd_sc_hs__a32o_2	A1	0.01373	0.01382	0.01993
	A1	0.00774	0.00782	0.01420
	A2	0.01456	0.01459	0.01941
	A2	0.00817	0.00818	0.01324
	A3	0.01578	0.01571	0.01938
	A3	0.00817	0.00810	0.01206
	B1	0.01143	0.01183	0.01858
	B1	0.00569	0.00611	0.01409
	B2	0.01231	0.01265	0.01810
	B2	0.00568	0.00601	0.01262

sky130_fd_sc_hs__a32o_4	**A1**	0.02621	0.02660	0.03896
	A1	0.01523	0.01562	0.02839
	A2	0.02872	0.02885	0.03860
	A2	0.01610	0.01623	0.02629
	A3	0.02950	0.02981	0.03883
	A3	0.01518	0.01550	0.02503
	B1	0.02101	0.02164	0.03739
	B1	0.01068	0.01137	0.02882
	B2	0.02331	0.02375	0.03722
	B2	0.01062	0.01110	0.02618

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00384	0.00385	0.00859
	A1	0.00953	0.00955	0.01424
	A2	0.00433	0.00438	0.00941
	A2	0.01067	0.01074	0.01528
	A3	0.00459	0.00448	0.00920
	A3	0.01168	0.01159	0.01596
	B1	0.00331	0.00377	0.01318
	B1	0.00939	0.00967	0.01755
	B2	0.00411	0.00458	0.01332
	B2	0.01034	0.01067	0.01837

sky130_fd_sc_hs__a32o_2	**A1**	0.00595	0.00614	0.01166
	A1	0.01194	0.01213	0.01709
	A2	0.00657	0.00671	0.01260
	A2	0.01333	0.01357	0.01835
	A3	0.00686	0.00668	0.01184
	A3	0.01452	0.01442	0.01880
	B1	0.00574	0.00632	0.01593
	B1	0.01186	0.01215	0.01991
	B2	0.00621	0.00680	0.01600
	B2	0.01319	0.01349	0.02114
sky130_fd_sc_hs__a32o_4	**A1**	0.01120	0.01165	0.02297
	A1	0.02220	0.02268	0.03254
	A2	0.01210	0.01242	0.02314
	A2	0.02487	0.02537	0.03469
	A3	0.01343	0.01376	0.02335
	A3	0.02748	0.02802	0.03716
	B1	0.01265	0.01350	0.02910
	B1	0.02267	0.02349	0.03906
	B2	0.01277	0.01349	0.02924
	B2	0.02499	0.02590	0.04140

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)**	0.00133	0.00120	0.00118
	(A2 * A3 * B1 * B2 * X)	-0.00134	-0.00154	-0.00154
	(A2 * !A3 * B1 * B2 * X)	0.00109	0.00110	0.00109
	(A2 * !A3 * B1 * B2 * X)	-0.00157	-0.00159	-0.00158
	(A2 * !A3 * B1 * !B2 * !X)	0.00043	0.00043	0.00039
	(A2 * !A3 * B1 * !B2 * !X)	-0.00179	-0.00180	-0.00187
	(A2 * !A3 * !B1 * !X)	0.00043	0.00043	0.00039
	(A2 * !A3 * !B1 * !X)	-0.00179	-0.00180	-0.00187
	(!A2 * B1 * B2 * X)	0.00113	0.00113	0.00113
	(!A2 * B1 * B2 * X)	-0.00158	-0.00158	-0.00158
	(!A2 * B1 * !B2 * !X)	0.00043	0.00043	0.00040
	(!A2 * B1 * !B2 * !X)	-0.00184	-0.00185	-0.00188
	(!A2 * !B1 * !X)	0.00043	0.00043	0.00040
	(!A2 * !B1 * !X)	-0.00184	-0.00185	-0.00188
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00151	0.00138	0.00136
	(A2 * A3 * B1 * B2 * X)	-0.00134	-0.00154	-0.00153
	(A2 * !A3 * B1 * B2 * X)	0.00125	0.00126	0.00125
	(A2 * !A3 * B1 * B2 * X)	-0.00157	-0.00158	-0.00157
	(A2 * !A3 * B1 * !B2 * !X)	0.00048	0.00048	0.00043
	(A2 * !A3 * B1 * !B2 * !X)	-0.00182	-0.00183	-0.00191
	(A2 * !A3 * !B1 * !X)	0.00048	0.00048	0.00043
	(A2 * !A3 * !B1 * !X)	-0.00182	-0.00183	-0.00191
	(!A2 * B1 * B2 * X)	0.00129	0.00130	0.00129
	(!A2 * B1 * B2 * X)	-0.00158	-0.00158	-0.00157
	(!A2 * B1 * !B2 * !X)	0.00048	0.00048	0.00045
	(!A2 * B1 * !B2 * !X)	-0.00187	-0.00188	-0.00192
	(!A2 * !B1 * !X)	0.00048	0.00048	0.00045
	(!A2 * !B1 * !X)	-0.00187	-0.00188	-0.00192

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00239	0.00215	0.00214
	(A2 * A3 * B1 * B2 * X)	-0.00273	-0.00307	-0.00307
	(A2 * !A3 * B1 * B2 * X)	0.00197	0.00198	0.00197
	(A2 * !A3 * B1 * B2 * X)	-0.00316	-0.00317	-0.00315
	(A2 * !A3 * B1 * !B2 * !X)	0.00082	0.00082	0.00071
	(A2 * !A3 * B1 * !B2 * !X)	-0.00339	-0.00341	-0.00358
	(A2 * !A3 * !B1 * !X)	0.00082	0.00082	0.00071
	(A2 * !A3 * !B1 * !X)	-0.00339	-0.00341	-0.00359
	(!A2 * B1 * B2 * X)	0.00202	0.00203	0.00203
	(!A2 * B1 * B2 * X)	-0.00314	-0.00315	-0.00315
	(!A2 * B1 * !B2 * !X)	0.00076	0.00076	0.00072
	(!A2 * B1 * !B2 * !X)	-0.00354	-0.00356	-0.00361
	(!A2 * !B1 * !X)	0.00076	0.00076	0.00072
	(!A2 * !B1 * !X)	-0.00354	-0.00356	-0.00361

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)**	-0.00118	-0.00118	-0.00117
	(A2 * A3 * B1 * B2 * X)	0.00154	0.00154	0.00154
	(A2 * !A3 * B1 * B2 * X)	-0.00101	-0.00110	-0.00109
	(A2 * !A3 * B1 * B2 * X)	0.00158	0.00161	0.00158
	(A2 * !A3 * B1 * !B2 * !X)	-0.00039	-0.00038	-0.00038
	(A2 * !A3 * B1 * !B2 * !X)	0.00190	0.00189	0.00188
	(A2 * !A3 * !B1 * !X)	-0.00039	-0.00038	-0.00038
	(A2 * !A3 * !B1 * !X)	0.00190	0.00189	0.00188
	(!A2 * B1 * B2 * X)	-0.00110	-0.00113	-0.00113
	(!A2 * B1 * B2 * X)	0.00159	0.00161	0.00158
	(!A2 * B1 * !B2 * !X)	-0.00040	-0.00039	-0.00039
	(!A2 * B1 * !B2 * !X)	0.00190	0.00189	0.00188
	(!A2 * !B1 * !X)	-0.00040	-0.00039	-0.00039
	(!A2 * !B1 * !X)	0.00190	0.00189	0.00188
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00136	-0.00135	-0.00135
	(A2 * A3 * B1 * B2 * X)	0.00154	0.00154	0.00153
	(A2 * !A3 * B1 * B2 * X)	-0.00117	-0.00126	-0.00125
	(A2 * !A3 * B1 * B2 * X)	0.00159	0.00160	0.00158
	(A2 * !A3 * B1 * !B2 * !X)	-0.00043	-0.00043	-0.00043
	(A2 * !A3 * B1 * !B2 * !X)	0.00193	0.00193	0.00192
	(A2 * !A3 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(A2 * !A3 * !B1 * !X)	0.00193	0.00193	0.00192
	(!A2 * B1 * B2 * X)	-0.00127	-0.00130	-0.00129
	(!A2 * B1 * B2 * X)	0.00159	0.00160	0.00158
	(!A2 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00044
	(!A2 * B1 * !B2 * !X)	0.00194	0.00193	0.00192
	(!A2 * !B1 * !X)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * !X)	0.00194	0.00193	0.00192

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00212	-0.00213	-0.00212
	(A2 * A3 * B1 * B2 * X)	0.00305	0.00308	0.00307
	(A2 * !A3 * B1 * B2 * X)	-0.00180	-0.00198	-0.00197
	(A2 * !A3 * B1 * B2 * X)	0.00316	0.00320	0.00317
	(A2 * !A3 * B1 * !B2 * !X)	-0.00067	-0.00067	-0.00066
	(A2 * !A3 * B1 * !B2 * !X)	0.00364	0.00363	0.00362
	(A2 * !A3 * !B1 * !X)	-0.00067	-0.00067	-0.00066
	(A2 * !A3 * !B1 * !X)	0.00364	0.00363	0.00362
	(!A2 * B1 * B2 * X)	-0.00197	-0.00203	-0.00203
	(!A2 * B1 * B2 * X)	0.00315	0.00316	0.00317
	(!A2 * B1 * !B2 * !X)	-0.00070	-0.00069	-0.00069
	(!A2 * B1 * !B2 * !X)	0.00364	0.00363	0.00362
	(!A2 * !B1 * !X)	-0.00070	-0.00069	-0.00069
	(!A2 * !B1 * !X)	0.00364	0.00363	0.00362

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)**	0.00131	0.00118	0.00116
	(A1 * A3 * B1 * B2 * X)	-0.00134	-0.00155	-0.00154
	(A1 * !A3 * B1 * B2 * X)	0.00110	0.00110	0.00110
	(A1 * !A3 * B1 * B2 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !A3 * B1 * !B2 * !X)	0.00048	0.00048	0.00048
	(A1 * !A3 * B1 * !B2 * !X)	-0.00168	-0.00168	-0.00167
	(A1 * !A3 * !B1 * !X)	0.00048	0.00048	0.00048
	(A1 * !A3 * !B1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * A3 * B1 * B2 * X)	0.00111	0.00111	0.00111
	(!A1 * A3 * B1 * B2 * X)	-0.00158	-0.00158	-0.00158
	(!A1 * A3 * B1 * !B2 * !X)	0.00101	0.00102	0.00101
	(!A1 * A3 * B1 * !B2 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * A3 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A3 * B1 * B2 * X)	0.00071	0.00071	0.00071
	(!A1 * !A3 * B1 * B2 * X)	-0.00158	-0.00158	-0.00158
	(!A1 * !A3 * B1 * !B2 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !A3 * !B1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A3 * !B1 * !X)	-0.00168	-0.00169	-0.00168

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00148	0.00136	0.00133
	(A1 * A3 * B1 * B2 * X)	-0.00135	-0.00154	-0.00153
	(A1 * !A3 * B1 * B2 * X)	0.00126	0.00127	0.00126
	(A1 * !A3 * B1 * B2 * X)	-0.00158	-0.00159	-0.00157
	(A1 * !A3 * B1 * !B2 * !X)	0.00055	0.00055	0.00055
	(A1 * !A3 * B1 * !B2 * !X)	-0.00167	-0.00168	-0.00166
	(A1 * !A3 * !B1 * !X)	0.00055	0.00055	0.00055
	(A1 * !A3 * !B1 * !X)	-0.00167	-0.00168	-0.00166
	(!A1 * A3 * B1 * B2 * X)	0.00127	0.00128	0.00127
	(!A1 * A3 * B1 * B2 * X)	-0.00158	-0.00158	-0.00157
	(!A1 * A3 * B1 * !B2 * !X)	0.00118	0.00118	0.00118
	(!A1 * A3 * B1 * !B2 * !X)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * !B1 * !X)	0.00118	0.00118	0.00118
	(!A1 * A3 * !B1 * !X)	-0.00167	-0.00167	-0.00167
	(!A1 * !A3 * B1 * B2 * X)	0.00080	0.00080	0.00080
	(!A1 * !A3 * B1 * B2 * X)	-0.00158	-0.00158	-0.00157
	(!A1 * !A3 * B1 * !B2 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !A3 * !B1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A3 * !B1 * !X)	-0.00168	-0.00169	-0.00168

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00265	0.00229	0.00227
	(A1 * A3 * B1 * B2 * X)	-0.00285	-0.00331	-0.00331
	(A1 * !A3 * B1 * B2 * X)	0.00216	0.00217	0.00216
	(A1 * !A3 * B1 * B2 * X)	-0.00342	-0.00344	-0.00342
	(A1 * !A3 * B1 * !B2 * !X)	0.00101	0.00101	0.00100
	(A1 * !A3 * B1 * !B2 * !X)	-0.00357	-0.00358	-0.00355
	(A1 * !A3 * !B1 * !X)	0.00101	0.00101	0.00100
	(A1 * !A3 * !B1 * !X)	-0.00357	-0.00358	-0.00355
	(!A1 * A3 * B1 * B2 * X)	0.00216	0.00217	0.00216
	(!A1 * A3 * B1 * B2 * X)	-0.00341	-0.00343	-0.00341
	(!A1 * A3 * B1 * !B2 * !X)	0.00203	0.00205	0.00203
	(!A1 * A3 * B1 * !B2 * !X)	-0.00356	-0.00357	-0.00355
	(!A1 * A3 * !B1 * !X)	0.00203	0.00205	0.00203
	(!A1 * A3 * !B1 * !X)	-0.00356	-0.00357	-0.00355
	(!A1 * !A3 * B1 * B2 * X)	0.00144	0.00145	0.00144
	(!A1 * !A3 * B1 * B2 * X)	-0.00342	-0.00343	-0.00342
	(!A1 * !A3 * B1 * !B2 * !X)	0.00124	0.00126	0.00125
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00356	-0.00360	-0.00358
	(!A1 * !A3 * !B1 * !X)	0.00124	0.00126	0.00125
	(!A1 * !A3 * !B1 * !X)	-0.00356	-0.00360	-0.00358

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)**	-0.00115	-0.00116	-0.00115
	(A1 * A3 * B1 * B2 * X)	0.00153	0.00155	0.00154
	(A1 * !A3 * B1 * B2 * X)	-0.00108	-0.00110	-0.00110
	(A1 * !A3 * B1 * B2 * X)	0.00159	0.00160	0.00159
	(A1 * !A3 * B1 * !B2 * !X)	-0.00045	-0.00045	-0.00046
	(A1 * !A3 * B1 * !B2 * !X)	0.00173	0.00172	0.00169
	(A1 * !A3 * !B1 * !X)	-0.00045	-0.00045	-0.00046
	(A1 * !A3 * !B1 * !X)	0.00173	0.00172	0.00169
	(!A1 * A3 * B1 * B2 * X)	-0.00108	-0.00111	-0.00111
	(!A1 * A3 * B1 * B2 * X)	0.00159	0.00160	0.00159
	(!A1 * A3 * B1 * !B2 * !X)	-0.00093	-0.00102	-0.00101
	(!A1 * A3 * B1 * !B2 * !X)	0.00176	0.00170	0.00168
	(!A1 * A3 * !B1 * !X)	-0.00093	-0.00102	-0.00101
	(!A1 * A3 * !B1 * !X)	0.00176	0.00170	0.00168
	(!A1 * !A3 * B1 * B2 * X)	-0.00071	-0.00071	-0.00071
	(!A1 * !A3 * B1 * B2 * X)	0.00158	0.00159	0.00159
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A3 * B1 * !B2 * !X)	0.00178	0.00177	0.00171
	(!A1 * !A3 * !B1 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A3 * !B1 * !X)	0.00178	0.00177	0.00171

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00132	-0.00134	-0.00132
	(A1 * A3 * B1 * B2 * X)	0.00152	0.00156	0.00153
	(A1 * !A3 * B1 * B2 * X)	-0.00124	-0.00127	-0.00126
	(A1 * !A3 * B1 * B2 * X)	0.00159	0.00159	0.00158
	(A1 * !A3 * B1 * !B2 * !X)	-0.00052	-0.00051	-0.00053
	(A1 * !A3 * B1 * !B2 * !X)	0.00174	0.00173	0.00169
	(A1 * !A3 * !B1 * !X)	-0.00052	-0.00051	-0.00053
	(A1 * !A3 * !B1 * !X)	0.00174	0.00173	0.00169
	(!A1 * A3 * B1 * B2 * X)	-0.00124	-0.00128	-0.00127
	(!A1 * A3 * B1 * B2 * X)	0.00159	0.00160	0.00158
	(!A1 * A3 * B1 * !B2 * !X)	-0.00108	-0.00118	-0.00118
	(!A1 * A3 * B1 * !B2 * !X)	0.00176	0.00170	0.00168
	(!A1 * A3 * !B1 * !X)	-0.00108	-0.00118	-0.00118
	(!A1 * A3 * !B1 * !X)	0.00176	0.00170	0.00168
	(!A1 * !A3 * B1 * B2 * X)	-0.00080	-0.00080	-0.00080
	(!A1 * !A3 * B1 * B2 * X)	0.00158	0.00159	0.00158
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00068	-0.00069	-0.00068
	(!A1 * !A3 * B1 * !B2 * !X)	0.00178	0.00178	0.00170
	(!A1 * !A3 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(!A1 * !A3 * !B1 * !X)	0.00178	0.00178	0.00170

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00225	-0.00227	-0.00224
	(A1 * A3 * B1 * B2 * X)	0.00330	0.00336	0.00331
	(A1 * !A3 * B1 * B2 * X)	-0.00208	-0.00217	-0.00216
	(A1 * !A3 * B1 * B2 * X)	0.00345	0.00345	0.00343
	(A1 * !A3 * B1 * !B2 * !X)	-0.00091	-0.00091	-0.00094
	(A1 * !A3 * B1 * !B2 * !X)	0.00365	0.00367	0.00360
	(A1 * !A3 * !B1 * !X)	-0.00091	-0.00091	-0.00094
	(A1 * !A3 * !B1 * !X)	0.00365	0.00367	0.00360
	(!A1 * A3 * B1 * B2 * X)	-0.00211	-0.00217	-0.00216
	(!A1 * A3 * B1 * B2 * X)	0.00345	0.00347	0.00343
	(!A1 * A3 * B1 * !B2 * !X)	-0.00184	-0.00204	-0.00203
	(!A1 * A3 * B1 * !B2 * !X)	0.00374	0.00361	0.00357
	(!A1 * A3 * !B1 * !X)	-0.00184	-0.00204	-0.00203
	(!A1 * A3 * !B1 * !X)	0.00374	0.00361	0.00357
	(!A1 * !A3 * B1 * B2 * X)	-0.00144	-0.00145	-0.00144
	(!A1 * !A3 * B1 * B2 * X)	0.00343	0.00344	0.00343
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00124	-0.00126	-0.00125
	(!A1 * !A3 * B1 * !B2 * !X)	0.00379	0.00377	0.00364
	(!A1 * !A3 * !B1 * !X)	-0.00124	-0.00126	-0.00125
	(!A1 * !A3 * !B1 * !X)	0.00379	0.00377	0.00364

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)**	0.00143	0.00132	0.00130
	(A1 * A2 * B1 * B2 * X)	-0.00134	-0.00153	-0.00152
	(A1 * !A2 * B1 * !B2 * !X)	0.00101	0.00103	0.00102
	(A1 * !A2 * B1 * !B2 * !X)	-0.00177	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !X)	0.00101	0.00103	0.00102
	(A1 * !A2 * !B1 * !X)	-0.00177	-0.00179	-0.00178
	(!A2 * B1 * B2 * X)	0.00125	0.00124	0.00124
	(!A2 * B1 * B2 * X)	-0.00156	-0.00156	-0.00156
	(!A1 * A2 * B1 * B2 * X)	0.00121	0.00123	0.00122
	(!A1 * A2 * B1 * B2 * X)	-0.00155	-0.00156	-0.00156
	(!A1 * A2 * B1 * !B2 * !X)	0.00099	0.00101	0.00100
	(!A1 * A2 * B1 * !B2 * !X)	-0.00177	-0.00179	-0.00178
	(!A1 * A2 * !B1 * !X)	0.00100	0.00101	0.00100
	(!A1 * A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * B1 * !B2 * !X)	0.00101	0.00103	0.00102
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00177	-0.00179	-0.00178
	(!A1 * !A2 * !B1 * !X)	0.00101	0.00103	0.00102
	(!A1 * !A2 * !B1 * !X)	-0.00177	-0.00179	-0.00178

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00162	0.00150	0.00148
	(A1 * A2 * B1 * B2 * X)	-0.00134	-0.00153	-0.00152
	(A1 * !A2 * B1 * !B2 * !X)	0.00119	0.00121	0.00120
	(A1 * !A2 * B1 * !B2 * !X)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !X)	0.00119	0.00121	0.00120
	(A1 * !A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(!A2 * B1 * B2 * X)	0.00140	0.00142	0.00141
	(!A2 * B1 * B2 * X)	-0.00155	-0.00157	-0.00156
	(!A1 * A2 * B1 * B2 * X)	0.00139	0.00140	0.00139
	(!A1 * A2 * B1 * B2 * X)	-0.00156	-0.00157	-0.00156
	(!A1 * A2 * B1 * !B2 * !X)	0.00116	0.00118	0.00117
	(!A1 * A2 * B1 * !B2 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * A2 * !B1 * !X)	0.00116	0.00118	0.00117
	(!A1 * A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * B1 * !B2 * !X)	0.00119	0.00120	0.00119
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A1 * !A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00256	0.00230	0.00225
	(A1 * A2 * B1 * B2 * X)	-0.00276	-0.00323	-0.00321
	(A1 * !A2 * B1 * !B2 * !X)	0.00212	0.00214	0.00213
	(A1 * !A2 * B1 * !B2 * !X)	-0.00330	-0.00332	-0.00331
	(A1 * !A2 * !B1 * !X)	0.00212	0.00212	0.00213
	(A1 * !A2 * !B1 * !X)	-0.00330	-0.00330	-0.00331
	(!A2 * B1 * B2 * X)	0.00213	0.00216	0.00214
	(!A2 * B1 * B2 * X)	-0.00330	-0.00332	-0.00330
	(!A1 * A2 * B1 * B2 * X)	0.00207	0.00209	0.00207
	(!A1 * A2 * B1 * B2 * X)	-0.00330	-0.00332	-0.00330
	(!A1 * A2 * B1 * !B2 * !X)	0.00206	0.00208	0.00207
	(!A1 * A2 * B1 * !B2 * !X)	-0.00330	-0.00332	-0.00331
	(!A1 * A2 * !B1 * !X)	0.00206	0.00208	0.00207
	(!A1 * A2 * !B1 * !X)	-0.00330	-0.00332	-0.00331
	(!A1 * !A2 * B1 * !B2 * !X)	0.00212	0.00214	0.00213
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00330	-0.00332	-0.00331
	(!A1 * !A2 * !B1 * !X)	0.00212	0.00214	0.00213
	(!A1 * !A2 * !B1 * !X)	-0.00330	-0.00332	-0.00331

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)**	-0.00129	-0.00130	-0.00129
	(A1 * A2 * B1 * B2 * X)	0.00151	0.00153	0.00152
	(A1 * !A2 * B1 * !B2 * !X)	-0.00098	-0.00103	-0.00102
	(A1 * !A2 * B1 * !B2 * !X)	0.00178	0.00180	0.00179
	(A1 * !A2 * !B1 * !X)	-0.00098	-0.00103	-0.00102
	(A1 * !A2 * !B1 * !X)	0.00178	0.00180	0.00179
	(!A2 * B1 * B2 * X)	-0.00122	-0.00124	-0.00124
	(!A2 * B1 * B2 * X)	0.00156	0.00157	0.00156
	(!A1 * A2 * B1 * B2 * X)	-0.00116	-0.00123	-0.00122
	(!A1 * A2 * B1 * B2 * X)	0.00156	0.00157	0.00156
	(!A1 * A2 * B1 * !B2 * !X)	-0.00093	-0.00101	-0.00100
	(!A1 * A2 * B1 * !B2 * !X)	0.00179	0.00180	0.00179
	(!A1 * A2 * !B1 * !X)	-0.00093	-0.00101	-0.00100
	(!A1 * A2 * !B1 * !X)	0.00179	0.00180	0.00179
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00098	-0.00103	-0.00102
	(!A1 * !A2 * B1 * !B2 * !X)	0.00177	0.00180	0.00179
	(!A1 * !A2 * !B1 * !X)	-0.00099	-0.00103	-0.00102
	(!A1 * !A2 * !B1 * !X)	0.00178	0.00180	0.00179

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00147	-0.00148	-0.00147
	(A1 * A2 * B1 * B2 * X)	0.00151	0.00153	0.00152
	(A1 * !A2 * B1 * !B2 * !X)	-0.00115	-0.00120	-0.00120
	(A1 * !A2 * B1 * !B2 * !X)	0.00178	0.00180	0.00179
	(A1 * !A2 * !B1 * !X)	-0.00115	-0.00120	-0.00120
	(A1 * !A2 * !B1 * !X)	0.00178	0.00180	0.00179
	(!A2 * B1 * B2 * X)	-0.00139	-0.00142	-0.00141
	(!A2 * B1 * B2 * X)	0.00157	0.00158	0.00157
	(!A1 * A2 * B1 * B2 * X)	-0.00131	-0.00140	-0.00139
	(!A1 * A2 * B1 * B2 * X)	0.00156	0.00158	0.00157
	(!A1 * A2 * B1 * !B2 * !X)	-0.00109	-0.00118	-0.00117
	(!A1 * A2 * B1 * !B2 * !X)	0.00179	0.00179	0.00179
	(!A1 * A2 * !B1 * !X)	-0.00109	-0.00118	-0.00117
	(!A1 * A2 * !B1 * !X)	0.00179	0.00179	0.00179
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00116	-0.00120	-0.00119
	(!A1 * !A2 * B1 * !B2 * !X)	0.00178	0.00180	0.00179
	(!A1 * !A2 * !B1 * !X)	-0.00116	-0.00120	-0.00119
	(!A1 * !A2 * !B1 * !X)	0.00178	0.00180	0.00179

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00223	-0.00224	-0.00223
	(A1 * A2 * B1 * B2 * X)	0.00320	0.00323	0.00321
	(A1 * !A2 * B1 * !B2 * !X)	-0.00204	-0.00214	-0.00213
	(A1 * !A2 * B1 * !B2 * !X)	0.00334	0.00335	0.00332
	(A1 * !A2 * !B1 * !X)	-0.00202	-0.00212	-0.00213
	(A1 * !A2 * !B1 * !X)	0.00330	0.00335	0.00332
	(!A2 * B1 * B2 * X)	-0.00206	-0.00216	-0.00214
	(!A2 * B1 * B2 * X)	0.00330	0.00335	0.00332
	(!A1 * A2 * B1 * B2 * X)	-0.00193	-0.00209	-0.00207
	(!A1 * A2 * B1 * B2 * X)	0.00331	0.00334	0.00332
	(!A1 * A2 * B1 * !B2 * !X)	-0.00191	-0.00208	-0.00207
	(!A1 * A2 * B1 * !B2 * !X)	0.00333	0.00334	0.00332
	(!A1 * A2 * !B1 * !X)	-0.00191	-0.00208	-0.00207
	(!A1 * A2 * !B1 * !X)	0.00333	0.00335	0.00332
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00206	-0.00214	-0.00213
	(!A1 * !A2 * B1 * !B2 * !X)	0.00334	0.00335	0.00332
	(!A1 * !A2 * !B1 * !X)	-0.00206	-0.00214	-0.00213
	(!A1 * !A2 * !B1 * !X)	0.00334	0.00335	0.00332

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)**	0.00129	0.00129	0.00129
	(A1 * A2 * A3 * B2 * X)	-0.00077	-0.00077	-0.00076
	(A1 * A2 * A3 * !B2 * X)	0.00122	0.00124	0.00123
	(A1 * A2 * A3 * !B2 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * !A3 * !B2 * !X)	0.00040	0.00040	0.00039
	(A1 * A2 * !A3 * !B2 * !X)	-0.00182	-0.00182	-0.00185
	(A1 * !A2 * !B2 * !X)	0.00040	0.00040	0.00039
	(A1 * !A2 * !B2 * !X)	-0.00182	-0.00182	-0.00185
	(!A1 * !B2 * !X)	0.00040	0.00040	0.00039
	(!A1 * !B2 * !X)	-0.00182	-0.00182	-0.00185
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00144	0.00145	0.00145
	(A1 * A2 * A3 * B2 * X)	-0.00078	-0.00078	-0.00077
	(A1 * A2 * A3 * !B2 * X)	0.00138	0.00139	0.00138
	(A1 * A2 * A3 * !B2 * X)	-0.00078	-0.00078	-0.00077
	(A1 * A2 * !A3 * !B2 * !X)	0.00050	0.00051	0.00048
	(A1 * A2 * !A3 * !B2 * !X)	-0.00181	-0.00182	-0.00186
	(A1 * !A2 * !B2 * !X)	0.00050	0.00051	0.00048
	(A1 * !A2 * !B2 * !X)	-0.00181	-0.00182	-0.00186
	(!A1 * !B2 * !X)	0.00050	0.00051	0.00048
	(!A1 * !B2 * !X)	-0.00181	-0.00182	-0.00186
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00257	0.00258	0.00257
	(A1 * A2 * A3 * B2 * X)	-0.00155	-0.00155	-0.00154
	(A1 * A2 * A3 * !B2 * X)	0.00243	0.00244	0.00243
	(A1 * A2 * A3 * !B2 * X)	-0.00153	-0.00155	-0.00154
	(A1 * A2 * !A3 * !B2 * !X)	0.00076	0.00074	0.00071
	(A1 * A2 * !A3 * !B2 * !X)	-0.00369	-0.00366	-0.00375
	(A1 * !A2 * !B2 * !X)	0.00076	0.00074	0.00071
	(A1 * !A2 * !B2 * !X)	-0.00369	-0.00367	-0.00375
	(!A1 * !B2 * !X)	0.00076	0.00074	0.00071
	(!A1 * !B2 * !X)	-0.00369	-0.00366	-0.00375

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)	-0.00112	-0.00113	-0.00127
	(A1 * A2 * A3 * B2 * X)	0.00091	0.00091	0.00080
	(A1 * A2 * A3 * !B2 * X)	-0.00121	-0.00124	-0.00123
	(A1 * A2 * A3 * !B2 * X)	0.00077	0.00077	0.00076
	(A1 * A2 * !A3 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(A1 * A2 * !A3 * !B2 * !X)	0.00185	0.00186	0.00186
	(A1 * !A2 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(A1 * !A2 * !B2 * !X)	0.00185	0.00186	0.00186
	(!A1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * !B2 * !X)	0.00185	0.00186	0.00186
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00128	-0.00129	-0.00142
	(A1 * A2 * A3 * B2 * X)	0.00092	0.00091	0.00081
	(A1 * A2 * A3 * !B2 * X)	-0.00136	-0.00139	-0.00138
	(A1 * A2 * A3 * !B2 * X)	0.00078	0.00078	0.00077
	(A1 * A2 * !A3 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(A1 * A2 * !A3 * !B2 * !X)	0.00186	0.00187	0.00186
	(A1 * !A2 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * !B2 * !X)	0.00186	0.00187	0.00186
	(!A1 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * !B2 * !X)	0.00186	0.00187	0.00186

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00222	-0.00224	-0.00253
	(A1 * A2 * A3 * B2 * X)	0.00185	0.00184	0.00161
	(A1 * A2 * A3 * !B2 * X)	-0.00239	-0.00244	-0.00243
	(A1 * A2 * A3 * !B2 * X)	0.00155	0.00155	0.00154
	(A1 * A2 * !A3 * !B2 * !X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * !A3 * !B2 * !X)	0.00375	0.00376	0.00375
	(A1 * !A2 * !B2 * !X)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * !B2 * !X)	0.00375	0.00376	0.00375
	(!A1 * !B2 * !X)	-0.00069	-0.00070	-0.00069
	(!A1 * !B2 * !X)	0.00375	0.00376	0.00375

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)**	0.00126	0.00126	0.00126
	(A1 * A2 * A3 * B1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * A3 * !B1 * X)	0.00121	0.00122	0.00121
	(A1 * A2 * A3 * !B1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * !A3 * !B1 * !X)	0.00110	0.00111	0.00110
	(A1 * A2 * !A3 * !B1 * !X)	-0.00159	-0.00160	-0.00159
	(A1 * !A2 * !B1 * !X)	0.00110	0.00111	0.00110
	(A1 * !A2 * !B1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * !B1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !B1 * !X)	-0.00159	-0.00160	-0.00159

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00146	0.00146	0.00146
	(A1 * A2 * A3 * B1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * A3 * !B1 * X)	0.00140	0.00141	0.00140
	(A1 * A2 * A3 * !B1 * X)	-0.00080	-0.00081	-0.00081
	(A1 * A2 * !A3 * !B1 * !X)	0.00129	0.00130	0.00130
	(A1 * A2 * !A3 * !B1 * !X)	-0.00160	-0.00160	-0.00160
	(A1 * !A2 * !B1 * !X)	0.00129	0.00130	0.00130
	(A1 * !A2 * !B1 * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * !B1 * !X)	0.00129	0.00131	0.00130
	(!A1 * !B1 * !X)	-0.00160	-0.00161	-0.00160
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00328	0.00331	0.00327
	(A1 * A2 * A3 * B1 * X)	-0.00162	-0.00163	-0.00160
	(A1 * A2 * A3 * !B1 * X)	0.00311	0.00313	0.00312
	(A1 * A2 * A3 * !B1 * X)	-0.00159	-0.00160	-0.00160
	(A1 * A2 * !A3 * !B1 * !X)	0.00274	0.00276	0.00274
	(A1 * A2 * !A3 * !B1 * !X)	-0.00337	-0.00339	-0.00337
	(A1 * !A2 * !B1 * !X)	0.00274	0.00276	0.00274
	(A1 * !A2 * !B1 * !X)	-0.00337	-0.00339	-0.00337
	(!A1 * !B1 * !X)	0.00274	0.00276	0.00274
	(!A1 * !B1 * !X)	-0.00337	-0.00339	-0.00337

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)**	-0.00109	-0.00110	-0.00124
	(A1 * A2 * A3 * B1 * X)	0.00095	0.00094	0.00083
	(A1 * A2 * A3 * !B1 * X)	-0.00119	-0.00122	-0.00121
	(A1 * A2 * A3 * !B1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * !A3 * !B1 * !X)	-0.00103	-0.00110	-0.00110
	(A1 * A2 * !A3 * !B1 * !X)	0.00167	0.00162	0.00160
	(A1 * !A2 * !B1 * !X)	-0.00103	-0.00110	-0.00110
	(A1 * !A2 * !B1 * !X)	0.00167	0.00162	0.00160
	(!A1 * !B1 * !X)	-0.00103	-0.00110	-0.00110
	(!A1 * !B1 * !X)	0.00167	0.00162	0.00160
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00129	-0.00130	-0.00144
	(A1 * A2 * A3 * B1 * X)	0.00096	0.00095	0.00085
	(A1 * A2 * A3 * !B1 * X)	-0.00138	-0.00141	-0.00140
	(A1 * A2 * A3 * !B1 * X)	0.00082	0.00082	0.00081
	(A1 * A2 * !A3 * !B1 * !X)	-0.00123	-0.00130	-0.00130
	(A1 * A2 * !A3 * !B1 * !X)	0.00167	0.00162	0.00161
	(A1 * !A2 * !B1 * !X)	-0.00123	-0.00130	-0.00130
	(A1 * !A2 * !B1 * !X)	0.00167	0.00162	0.00161
	(!A1 * !B1 * !X)	-0.00123	-0.00130	-0.00130
	(!A1 * !B1 * !X)	0.00167	0.00162	0.00161
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00291	-0.00294	-0.00322
	(A1 * A2 * A3 * B1 * X)	0.00191	0.00191	0.00167
	(A1 * A2 * A3 * !B1 * X)	-0.00309	-0.00313	-0.00312
	(A1 * A2 * A3 * !B1 * X)	0.00161	0.00162	0.00160
	(A1 * A2 * !A3 * !B1 * !X)	-0.00257	-0.00275	-0.00274
	(A1 * A2 * !A3 * !B1 * !X)	0.00354	0.00343	0.00338
	(A1 * !A2 * !B1 * !X)	-0.00257	-0.00275	-0.00274
	(A1 * !A2 * !B1 * !X)	0.00353	0.00343	0.00338
	(!A1 * !B1 * !X)	-0.00257	-0.00276	-0.00274
	(!A1 * !B1 * !X)	0.00354	0.00343	0.00338

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00294	0.00298	0.00293	0.00296	0.00300	0.33540
sky130_fd_sc_hs__a41oi_2	0.00570	0.00556	0.00546	0.00546	0.00445	0.65290
sky130_fd_sc_hs__a41oi_4	0.01115	0.01079	0.01090	0.01080	0.00880	1.19616

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41oi_1	0.00000	0.04360	0.07729
sky130_fd_sc_hs__a41oi_2	0.00000	0.06605	0.11748
sky130_fd_sc_hs__a41oi_4	0.00000	0.12987	0.22983

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)	0.15928	1.17711	10.46240
	A2->Y (FR)	0.19458	1.22532	10.60890
	A3->Y (FR)	0.21463	1.23266	10.46540
	A4->Y (FR)	0.22335	1.21414	10.19740
	B1->Y (FR)	0.13614	1.17748	10.94090
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.13081	1.00489	10.56600
	A2->Y (FR)	0.16227	1.01894	10.37780
	A3->Y (FR)	0.18695	1.05204	10.44930
	A4->Y (FR)	0.21162	1.08711	10.50660
	B1->Y (FR)	0.14741	1.03288	10.80640
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.12066	0.85333	10.18270
	A2->Y (FR)	0.15707	0.87976	10.04660
	A3->Y (FR)	0.18729	0.92288	10.20980
	A4->Y (FR)	0.21473	0.96781	10.39860
	B1->Y (FR)	0.15318	0.93323	10.86920

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.09526	0.80101	7.40512
	A2->Y (RF)	0.11423	0.79445	7.06670
	A3->Y (RF)	0.12546	0.76758	6.57737
	A4->Y (RF)	0.13189	0.74191	6.12867
	B1->Y (RF)	0.03038	0.45135	4.40663
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.08370	0.74228	7.93834
	A2->Y (RF)	0.10814	0.74327	7.61011
	A3->Y (RF)	0.12049	0.70347	6.95924
	A4->Y (RF)	0.12872	0.68514	6.52270
	B1->Y (RF)	0.03449	0.55571	6.25363
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.08019	0.66180	7.89016
	A2->Y (RF)	0.10755	0.65925	7.52147
	A3->Y (RF)	0.12159	0.62321	6.88290
	A4->Y (RF)	0.12813	0.59496	6.34782
	B1->Y (RF)	0.03228	0.47960	6.04896

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00044	0.00031	0.00111
	A1	0.00604	0.00593	0.00675
	A2	0.00116	0.00099	0.00178
	A2	0.00751	0.00735	0.00815
	A3	0.00175	0.00158	0.00237
	A3	0.00885	0.00868	0.00947
	A4	0.00211	0.00197	0.00275
	A4	0.01000	0.00987	0.01064
	B1	0.00154	0.00153	0.00394
	B1	0.00864	0.00872	0.01084
sky130_fd_sc_hs__a41oi_2	A1	-0.00045	-0.00056	0.00104
	A1	0.00982	0.00969	0.01137
	A2	0.00129	0.00093	0.00250
	A2	0.01325	0.01289	0.01451
	A3	0.00236	0.00202	0.00356
	A3	0.01581	0.01546	0.01703
	A4	0.00367	0.00336	0.00486
	A4	0.01880	0.01851	0.02000
	B1	0.00438	0.00437	0.00686
	B1	0.01560	0.01538	0.01805

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00148	-0.00174	0.00202
	A1	0.01894	0.01847	0.02255
	A2	0.00241	0.00161	0.00525
	A2	0.02616	0.02535	0.02896
	A3	0.00453	0.00372	0.00726
	A3	0.03168	0.03090	0.03439
	A4	0.00665	0.00606	0.00948
	A4	0.03693	0.03635	0.03966
	B1	0.00560	0.00574	0.01157
	B1	0.03057	0.03066	0.03599

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00756	0.00740	0.00839
	A1	0.00205	0.00188	0.00288
	A2	0.00836	0.00816	0.00890
	A2	0.00205	0.00184	0.00260
	A3	0.00915	0.00894	0.00970
	A3	0.00203	0.00182	0.00255
	A4	0.01006	0.00984	0.01082
	A4	0.00205	0.00181	0.00255
	B1	0.00653	0.00661	0.00805
	B1	-0.00030	-0.00030	0.00112

sky130_fd_sc_hs__a41oi_2	**A1**	0.01378	0.01332	0.01533
	A1	0.00370	0.00333	0.00519
	A2	0.01557	0.01510	0.01650
	A2	0.00368	0.00318	0.00463
	A3	0.01721	0.01675	0.01814
	A3	0.00365	0.00317	0.00460
	A4	0.01906	0.01858	0.01996
	A4	0.00361	0.00314	0.00455
	B1	0.01032	0.01051	0.01238
	B1	-0.00143	-0.00142	0.00038
sky130_fd_sc_hs__a41oi_4	**A1**	0.02671	0.02598	0.03040
	A1	0.00663	0.00584	0.00993
	A2	0.03022	0.02928	0.03235
	A2	0.00658	0.00556	0.00876
	A3	0.03388	0.03288	0.03664
	A3	0.00648	0.00546	0.00860
	A4	0.03736	0.03637	0.03971
	A4	0.00644	0.00546	0.00868
	B1	0.02057	0.02107	0.02579
	B1	-0.00295	-0.00280	0.00135

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)**	0.00143	0.00136	0.00137
	(A2 * A3 * A4 * B1 * !Y)	-0.00159	-0.00175	-0.00175
	(A2 * A3 * !A4 * B1 * !Y)	0.00126	0.00125	0.00125
	(A2 * A3 * !A4 * B1 * !Y)	-0.00181	-0.00180	-0.00181
	(A2 * A3 * !A4 * !B1 * Y)	0.00056	0.00056	0.00049
	(A2 * A3 * !A4 * !B1 * Y)	-0.00194	-0.00195	-0.00209
	(A2 * !A3 * B1 * !Y)	0.00127	0.00128	0.00127
	(A2 * !A3 * B1 * !Y)	-0.00180	-0.00182	-0.00181
	(A2 * !A3 * !B1 * Y)	0.00055	0.00055	0.00049
	(A2 * !A3 * !B1 * Y)	-0.00200	-0.00201	-0.00210
	(!A2 * B1 * !Y)	0.00131	0.00131	0.00131
	(!A2 * B1 * !Y)	-0.00181	-0.00181	-0.00181
	(!A2 * !B1 * Y)	0.00053	0.00053	0.00050
	(!A2 * !B1 * Y)	-0.00207	-0.00208	-0.00211
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00284	0.00273	0.00272
	(A2 * A3 * A4 * B1 * !Y)	-0.00313	-0.00343	-0.00342
	(A2 * A3 * !A4 * B1 * !Y)	0.00247	0.00248	0.00247
	(A2 * A3 * !A4 * B1 * !Y)	-0.00354	-0.00355	-0.00354
	(A2 * A3 * !A4 * !B1 * Y)	0.00107	0.00106	0.00088
	(A2 * A3 * !A4 * !B1 * Y)	-0.00381	-0.00382	-0.00417
	(A2 * !A3 * B1 * !Y)	0.00252	0.00251	0.00252
	(A2 * !A3 * B1 * !Y)	-0.00354	-0.00354	-0.00354
	(A2 * !A3 * !B1 * Y)	0.00099	0.00099	0.00087
	(A2 * !A3 * !B1 * Y)	-0.00399	-0.00400	-0.00420
	(!A2 * B1 * !Y)	0.00259	0.00258	0.00260
	(!A2 * B1 * !Y)	-0.00354	-0.00353	-0.00354
	(!A2 * !B1 * Y)	0.00098	0.00097	0.00091
	(!A2 * !B1 * Y)	-0.00413	-0.00414	-0.00423

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00571	0.00547	0.00545
	(A2 * A3 * A4 * B1 * !Y)	-0.00619	-0.00681	-0.00677
	(A2 * A3 * !A4 * B1 * !Y)	0.00490	0.00492	0.00489
	(A2 * A3 * !A4 * B1 * !Y)	-0.00701	-0.00704	-0.00701
	(A2 * A3 * !A4 * !B1 * Y)	0.00212	0.00212	0.00179
	(A2 * A3 * !A4 * !B1 * Y)	-0.00746	-0.00752	-0.00820
	(A2 * !A3 * B1 * !Y)	0.00501	0.00501	0.00500
	(A2 * !A3 * B1 * !Y)	-0.00701	-0.00702	-0.00701
	(A2 * !A3 * !B1 * Y)	0.00200	0.00200	0.00178
	(A2 * !A3 * !B1 * Y)	-0.00778	-0.00783	-0.00826
	(!A2 * B1 * !Y)	0.00519	0.00519	0.00519
	(!A2 * B1 * !Y)	-0.00703	-0.00702	-0.00701
	(!A2 * !B1 * Y)	0.00203	0.00203	0.00190
	(!A2 * !B1 * Y)	-0.00806	-0.00810	-0.00831

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)**	-0.00135	-0.00136	-0.00136
	(A2 * A3 * A4 * B1 * !Y)	0.00173	0.00175	0.00175
	(A2 * A3 * !A4 * B1 * !Y)	-0.00114	-0.00125	-0.00125
	(A2 * A3 * !A4 * B1 * !Y)	0.00181	0.00183	0.00181
	(A2 * A3 * !A4 * !B1 * Y)	-0.00048	-0.00048	-0.00048
	(A2 * A3 * !A4 * !B1 * Y)	0.00213	0.00213	0.00211
	(A2 * !A3 * B1 * !Y)	-0.00117	-0.00128	-0.00127
	(A2 * !A3 * B1 * !Y)	0.00180	0.00183	0.00181
	(A2 * !A3 * !B1 * Y)	-0.00049	-0.00048	-0.00048
	(A2 * !A3 * !B1 * Y)	0.00213	0.00213	0.00211
	(!A2 * B1 * !Y)	-0.00128	-0.00131	-0.00131
	(!A2 * B1 * !Y)	0.00182	0.00183	0.00181
	(!A2 * !B1 * Y)	-0.00050	-0.00049	-0.00049
	(!A2 * !B1 * Y)	0.00213	0.00213	0.00211
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00271	-0.00271	-0.00271
	(A2 * A3 * A4 * B1 * !Y)	0.00341	0.00343	0.00342
	(A2 * A3 * !A4 * B1 * !Y)	-0.00220	-0.00248	-0.00247
	(A2 * A3 * !A4 * B1 * !Y)	0.00354	0.00357	0.00355
	(A2 * A3 * !A4 * !B1 * Y)	-0.00084	-0.00085	-0.00084
	(A2 * A3 * !A4 * !B1 * Y)	0.00422	0.00427	0.00424
	(A2 * !A3 * B1 * !Y)	-0.00227	-0.00251	-0.00252
	(A2 * !A3 * B1 * !Y)	0.00354	0.00356	0.00355
	(A2 * !A3 * !B1 * Y)	-0.00085	-0.00086	-0.00085
	(A2 * !A3 * !B1 * Y)	0.00422	0.00427	0.00424
	(!A2 * B1 * !Y)	-0.00252	-0.00258	-0.00260
	(!A2 * B1 * !Y)	0.00355	0.00357	0.00355
	(!A2 * !B1 * Y)	-0.00088	-0.00088	-0.00087
	(!A2 * !B1 * Y)	0.00426	0.00428	0.00425

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00542	-0.00545	-0.00543
	(A2 * A3 * A4 * B1 * !Y)	0.00674	0.00681	0.00677
	(A2 * A3 * !A4 * B1 * !Y)	-0.00434	-0.00492	-0.00489
	(A2 * A3 * !A4 * B1 * !Y)	0.00701	0.00707	0.00703
	(A2 * A3 * !A4 * !B1 * Y)	-0.00176	-0.00176	-0.00176
	(A2 * A3 * !A4 * !B1 * Y)	0.00836	0.00839	0.00833
	(A2 * !A3 * B1 * !Y)	-0.00447	-0.00501	-0.00500
	(A2 * !A3 * B1 * !Y)	0.00701	0.00706	0.00703
	(A2 * !A3 * !B1 * Y)	-0.00177	-0.00177	-0.00176
	(A2 * !A3 * !B1 * Y)	0.00836	0.00839	0.00833
	(!A2 * B1 * !Y)	-0.00503	-0.00519	-0.00519
	(!A2 * B1 * !Y)	0.00703	0.00707	0.00703
	(!A2 * !B1 * Y)	-0.00184	-0.00184	-0.00182
	(!A2 * !B1 * Y)	0.00836	0.00840	0.00834

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)**	0.00139	0.00131	0.00131
	(A1 * A3 * A4 * B1 * !Y)	-0.00161	-0.00175	-0.00175
	(A1 * A3 * !A4 * B1 * !Y)	0.00122	0.00122	0.00121
	(A1 * A3 * !A4 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(A1 * A3 * !A4 * !B1 * Y)	0.00054	0.00054	0.00055
	(A1 * A3 * !A4 * !B1 * Y)	-0.00188	-0.00189	-0.00187
	(A1 * !A3 * B1 * !Y)	0.00125	0.00126	0.00125
	(A1 * !A3 * B1 * !Y)	-0.00180	-0.00182	-0.00181
	(A1 * !A3 * !B1 * Y)	0.00058	0.00058	0.00058
	(A1 * !A3 * !B1 * Y)	-0.00189	-0.00189	-0.00187
	(!A1 * A3 * A4 * B1 * !Y)	0.00125	0.00126	0.00125
	(!A1 * A3 * A4 * B1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A1 * A3 * A4 * !B1 * Y)	0.00118	0.00118	0.00118
	(!A1 * A3 * A4 * !B1 * Y)	-0.00188	-0.00187	-0.00188
	(!A1 * A3 * !A4 * B1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00181	-0.00181	-0.00181
	(!A1 * A3 * !A4 * !B1 * Y)	0.00070	0.00070	0.00070
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00188	-0.00189	-0.00189
	(!A1 * !A3 * B1 * !Y)	0.00082	0.00083	0.00082
	(!A1 * !A3 * B1 * !Y)	-0.00180	-0.00182	-0.00181
	(!A1 * !A3 * !B1 * Y)	0.00073	0.00073	0.00072
	(!A1 * !A3 * !B1 * Y)	-0.00189	-0.00190	-0.00189

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00281	0.00265	0.00265
	(A1 * A3 * A4 * B1 * !Y)	-0.00320	-0.00350	-0.00348
	(A1 * A3 * !A4 * B1 * !Y)	0.00243	0.00243	0.00243
	(A1 * A3 * !A4 * B1 * !Y)	-0.00361	-0.00361	-0.00360
	(A1 * A3 * !A4 * !B1 * Y)	0.00119	0.00119	0.00120
	(A1 * A3 * !A4 * !B1 * Y)	-0.00363	-0.00365	-0.00361
	(A1 * !A3 * B1 * !Y)	0.00250	0.00253	0.00251
	(A1 * !A3 * B1 * !Y)	-0.00359	-0.00361	-0.00360
	(A1 * !A3 * !B1 * Y)	0.00123	0.00125	0.00125
	(A1 * !A3 * !B1 * Y)	-0.00361	-0.00365	-0.00362
	(!A1 * A3 * A4 * B1 * !Y)	0.00252	0.00255	0.00252
	(!A1 * A3 * A4 * B1 * !Y)	-0.00360	-0.00362	-0.00360
	(!A1 * A3 * A4 * !B1 * Y)	0.00249	0.00251	0.00249
	(!A1 * A3 * A4 * !B1 * Y)	-0.00363	-0.00365	-0.00363
	(!A1 * A3 * !A4 * B1 * !Y)	0.00159	0.00161	0.00159
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00360	-0.00363	-0.00360
	(!A1 * A3 * !A4 * !B1 * Y)	0.00152	0.00152	0.00152
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00364	-0.00365	-0.00365
	(!A1 * !A3 * B1 * !Y)	0.00162	0.00165	0.00163
	(!A1 * !A3 * B1 * !Y)	-0.00359	-0.00363	-0.00360
	(!A1 * !A3 * !B1 * Y)	0.00153	0.00155	0.00154
	(!A1 * !A3 * !B1 * Y)	-0.00365	-0.00368	-0.00366

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00558	0.00525	0.00524
	(A1 * A3 * A4 * B1 * !Y)	-0.00632	-0.00687	-0.00690
	(A1 * A3 * !A4 * B1 * !Y)	0.00475	0.00474	0.00473
	(A1 * A3 * !A4 * B1 * !Y)	-0.00714	-0.00717	-0.00715
	(A1 * A3 * !A4 * !B1 * Y)	0.00223	0.00226	0.00233
	(A1 * A3 * !A4 * !B1 * Y)	-0.00714	-0.00720	-0.00712
	(A1 * !A3 * B1 * !Y)	0.00488	0.00491	0.00490
	(A1 * !A3 * B1 * !Y)	-0.00713	-0.00717	-0.00715
	(A1 * !A3 * !B1 * Y)	0.00232	0.00236	0.00238
	(A1 * !A3 * !B1 * Y)	-0.00714	-0.00721	-0.00712
	(!A1 * A3 * A4 * B1 * !Y)	0.00498	0.00503	0.00499
	(!A1 * A3 * A4 * B1 * !Y)	-0.00715	-0.00719	-0.00715
	(!A1 * A3 * A4 * !B1 * Y)	0.00495	0.00500	0.00497
	(!A1 * A3 * A4 * !B1 * Y)	-0.00718	-0.00721	-0.00717
	(!A1 * A3 * !A4 * B1 * !Y)	0.00303	0.00306	0.00303
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00715	-0.00720	-0.00715
	(!A1 * A3 * !A4 * !B1 * Y)	0.00293	0.00297	0.00294
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00718	-0.00725	-0.00720
	(!A1 * !A3 * B1 * !Y)	0.00306	0.00310	0.00307
	(!A1 * !A3 * B1 * !Y)	-0.00714	-0.00720	-0.00715
	(!A1 * !A3 * !B1 * Y)	0.00297	0.00297	0.00294
	(!A1 * !A3 * !B1 * Y)	-0.00723	-0.00726	-0.00721

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)**	-0.00131	-0.00131	-0.00131
	(A1 * A3 * A4 * B1 * !Y)	0.00174	0.00175	0.00175
	(A1 * A3 * !A4 * B1 * !Y)	-0.00111	-0.00122	-0.00121
	(A1 * A3 * !A4 * B1 * !Y)	0.00182	0.00183	0.00181
	(A1 * A3 * !A4 * !B1 * Y)	-0.00052	-0.00052	-0.00054
	(A1 * A3 * !A4 * !B1 * Y)	0.00193	0.00194	0.00190
	(A1 * !A3 * B1 * !Y)	-0.00123	-0.00126	-0.00125
	(A1 * !A3 * B1 * !Y)	0.00182	0.00182	0.00181
	(A1 * !A3 * !B1 * Y)	-0.00054	-0.00054	-0.00055
	(A1 * !A3 * !B1 * Y)	0.00195	0.00194	0.00190
	(!A1 * A3 * A4 * B1 * !Y)	-0.00123	-0.00126	-0.00125
	(!A1 * A3 * A4 * B1 * !Y)	0.00182	0.00182	0.00181
	(!A1 * A3 * A4 * !B1 * Y)	-0.00107	-0.00118	-0.00118
	(!A1 * A3 * A4 * !B1 * Y)	0.00198	0.00190	0.00189
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00079	-0.00079	-0.00079
	(!A1 * A3 * !A4 * B1 * !Y)	0.00181	0.00182	0.00181
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00070	-0.00070	-0.00070
	(!A1 * A3 * !A4 * !B1 * Y)	0.00199	0.00196	0.00190
	(!A1 * !A3 * B1 * !Y)	-0.00082	-0.00083	-0.00082
	(!A1 * !A3 * B1 * !Y)	0.00180	0.00182	0.00181
	(!A1 * !A3 * !B1 * Y)	-0.00073	-0.00073	-0.00072
	(!A1 * !A3 * !B1 * Y)	0.00198	0.00199	0.00192

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00266	-0.00265	-0.00264
	(A1 * A3 * A4 * B1 * !Y)	0.00350	0.00351	0.00348
	(A1 * A3 * !A4 * B1 * !Y)	-0.00222	-0.00243	-0.00243
	(A1 * A3 * !A4 * B1 * !Y)	0.00364	0.00361	0.00361
	(A1 * A3 * !A4 * !B1 * Y)	-0.00111	-0.00112	-0.00115
	(A1 * A3 * !A4 * !B1 * Y)	0.00374	0.00376	0.00368
	(A1 * !A3 * B1 * !Y)	-0.00246	-0.00253	-0.00251
	(A1 * !A3 * B1 * !Y)	0.00361	0.00362	0.00361
	(A1 * !A3 * !B1 * Y)	-0.00115	-0.00116	-0.00119
	(A1 * !A3 * !B1 * Y)	0.00374	0.00376	0.00368
	(!A1 * A3 * A4 * B1 * !Y)	-0.00245	-0.00255	-0.00252
	(!A1 * A3 * A4 * B1 * !Y)	0.00362	0.00363	0.00361
	(!A1 * A3 * A4 * !B1 * Y)	-0.00221	-0.00250	-0.00249
	(!A1 * A3 * A4 * !B1 * Y)	0.00387	0.00367	0.00365
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00159	-0.00161	-0.00159
	(!A1 * A3 * !A4 * B1 * !Y)	0.00360	0.00364	0.00361
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00152	-0.00152	-0.00152
	(!A1 * A3 * !A4 * !B1 * Y)	0.00385	0.00378	0.00367
	(!A1 * !A3 * B1 * !Y)	-0.00162	-0.00165	-0.00163
	(!A1 * !A3 * B1 * !Y)	0.00360	0.00363	0.00361
	(!A1 * !A3 * !B1 * Y)	-0.00153	-0.00155	-0.00154
	(!A1 * !A3 * !B1 * Y)	0.00385	0.00387	0.00372

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00521	-0.00521	-0.00522
	(A1 * A3 * A4 * B1 * !Y)	0.00686	0.00687	0.00690
	(A1 * A3 * !A4 * B1 * !Y)	-0.00425	-0.00474	-0.00473
	(A1 * A3 * !A4 * B1 * !Y)	0.00714	0.00720	0.00717
	(A1 * A3 * !A4 * !B1 * Y)	-0.00215	-0.00216	-0.00221
	(A1 * A3 * !A4 * !B1 * Y)	0.00739	0.00741	0.00725
	(A1 * !A3 * B1 * !Y)	-0.00480	-0.00491	-0.00490
	(A1 * !A3 * B1 * !Y)	0.00716	0.00719	0.00718
	(A1 * !A3 * !B1 * Y)	-0.00219	-0.00220	-0.00226
	(A1 * !A3 * !B1 * Y)	0.00739	0.00741	0.00725
	(!A1 * A3 * A4 * B1 * !Y)	-0.00483	-0.00503	-0.00499
	(!A1 * A3 * A4 * B1 * !Y)	0.00718	0.00720	0.00717
	(!A1 * A3 * A4 * !B1 * Y)	-0.00441	-0.00498	-0.00497
	(!A1 * A3 * A4 * !B1 * Y)	0.00765	0.00725	0.00721
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00303	-0.00306	-0.00303
	(!A1 * A3 * !A4 * B1 * !Y)	0.00716	0.00722	0.00717
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00293	-0.00297	-0.00294
	(!A1 * A3 * !A4 * !B1 * Y)	0.00758	0.00747	0.00725
	(!A1 * !A3 * B1 * !Y)	-0.00306	-0.00310	-0.00307
	(!A1 * !A3 * B1 * !Y)	0.00715	0.00720	0.00718
	(!A1 * !A3 * !B1 * Y)	-0.00297	-0.00297	-0.00294
	(!A1 * !A3 * !B1 * Y)	0.00759	0.00764	0.00733

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)**	0.00136	0.00131	0.00129
	(A1 * A2 * A4 * B1 * !Y)	-0.00161	-0.00175	-0.00175
	(A1 * A2 * !A4 * B1 * !Y)	0.00122	0.00122	0.00122
	(A1 * A2 * !A4 * B1 * !Y)	-0.00180	-0.00181	-0.00180
	(A1 * A2 * !A4 * !B1 * Y)	0.00056	0.00056	0.00057
	(A1 * A2 * !A4 * !B1 * Y)	-0.00183	-0.00184	-0.00183
	(A1 * !A2 * A4 * !B1 * Y)	0.00118	0.00119	0.00118
	(A1 * !A2 * A4 * !B1 * Y)	-0.00186	-0.00187	-0.00186
	(A1 * !A2 * !A4 * !B1 * Y)	0.00069	0.00069	0.00069
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00187	-0.00187	-0.00186
	(!A2 * A4 * B1 * !Y)	0.00123	0.00124	0.00123
	(!A2 * A4 * B1 * !Y)	-0.00181	-0.00181	-0.00180
	(!A2 * !A4 * B1 * !Y)	0.00076	0.00076	0.00076
	(!A2 * !A4 * B1 * !Y)	-0.00180	-0.00181	-0.00180
	(!A1 * A2 * A4 * B1 * !Y)	0.00120	0.00121	0.00120
	(!A1 * A2 * A4 * B1 * !Y)	-0.00180	-0.00181	-0.00180
	(!A1 * A2 * A4 * !B1 * Y)	0.00114	0.00115	0.00115
	(!A1 * A2 * A4 * !B1 * Y)	-0.00185	-0.00186	-0.00186
	(!A1 * A2 * !A4 * B1 * !Y)	0.00076	0.00076	0.00076
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00180	-0.00181	-0.00180
	(!A1 * A2 * !A4 * !B1 * Y)	0.00069	0.00068	0.00069
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00186	-0.00186	-0.00186
	(!A1 * !A2 * A4 * !B1 * Y)	0.00118	0.00118	0.00118
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00186	-0.00186	-0.00186
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00070	0.00070	0.00069
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00274	0.00262	0.00260
	(A1 * A2 * A4 * B1 * !Y)	-0.00318	-0.00348	-0.00346
	(A1 * A2 * !A4 * B1 * !Y)	0.00243	0.00246	0.00244
	(A1 * A2 * !A4 * B1 * !Y)	-0.00357	-0.00360	-0.00358
	(A1 * A2 * !A4 * !B1 * Y)	0.00125	0.00126	0.00126
	(A1 * A2 * !A4 * !B1 * Y)	-0.00349	-0.00350	-0.00347
	(A1 * !A2 * A4 * !B1 * Y)	0.00247	0.00250	0.00248
	(A1 * !A2 * A4 * !B1 * Y)	-0.00358	-0.00360	-0.00358
	(A1 * !A2 * !A4 * !B1 * Y)	0.00148	0.00150	0.00149
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00358	-0.00361	-0.00358
	(!A2 * A4 * B1 * !Y)	0.00246	0.00249	0.00247
	(!A2 * A4 * B1 * !Y)	-0.00358	-0.00360	-0.00358
	(!A2 * !A4 * B1 * !Y)	0.00152	0.00154	0.00152
	(!A2 * !A4 * B1 * !Y)	-0.00357	-0.00361	-0.00358
	(!A1 * A2 * A4 * B1 * !Y)	0.00241	0.00243	0.00242
	(!A1 * A2 * A4 * B1 * !Y)	-0.00357	-0.00359	-0.00358
	(!A1 * A2 * A4 * !B1 * Y)	0.00241	0.00243	0.00241
	(!A1 * A2 * A4 * !B1 * Y)	-0.00358	-0.00360	-0.00358
	(!A1 * A2 * !A4 * B1 * !Y)	0.00152	0.00153	0.00153
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00357	-0.00359	-0.00358
	(!A1 * A2 * !A4 * !B1 * Y)	0.00148	0.00149	0.00149
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00359	-0.00361	-0.00360
	(!A1 * !A2 * A4 * !B1 * Y)	0.00246	0.00248	0.00247
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00358	-0.00359	-0.00358
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00150	0.00152	0.00150
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00357	-0.00360	-0.00358

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00550	0.00519	0.00518
	(A1 * A2 * A4 * B1 * !Y)	-0.00635	-0.00701	-0.00697
	(A1 * A2 * !A4 * B1 * !Y)	0.00487	0.00488	0.00488
	(A1 * A2 * !A4 * B1 * !Y)	-0.00723	-0.00724	-0.00722
	(A1 * A2 * !A4 * !B1 * Y)	0.00238	0.00239	0.00239
	(A1 * A2 * !A4 * !B1 * Y)	-0.00705	-0.00708	-0.00702
	(A1 * !A2 * A4 * !B1 * Y)	0.00487	0.00489	0.00487
	(A1 * !A2 * A4 * !B1 * Y)	-0.00724	-0.00725	-0.00722
	(A1 * !A2 * !A4 * !B1 * Y)	0.00278	0.00282	0.00279
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00719	-0.00727	-0.00722
	(!A2 * A4 * B1 * !Y)	0.00487	0.00488	0.00486
	(!A2 * A4 * B1 * !Y)	-0.00724	-0.00724	-0.00722
	(!A2 * !A4 * B1 * !Y)	0.00286	0.00288	0.00287
	(!A2 * !A4 * B1 * !Y)	-0.00720	-0.00724	-0.00722
	(!A1 * A2 * A4 * B1 * !Y)	0.00474	0.00479	0.00475
	(!A1 * A2 * A4 * B1 * !Y)	-0.00722	-0.00726	-0.00722
	(!A1 * A2 * A4 * !B1 * Y)	0.00474	0.00479	0.00475
	(!A1 * A2 * A4 * !B1 * Y)	-0.00722	-0.00725	-0.00722
	(!A1 * A2 * !A4 * B1 * !Y)	0.00295	0.00295	0.00295
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00722	-0.00723	-0.00722
	(!A1 * A2 * !A4 * !B1 * Y)	0.00288	0.00289	0.00288
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00725	-0.00726	-0.00724
	(!A1 * !A2 * A4 * !B1 * Y)	0.00484	0.00491	0.00486
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00721	-0.00727	-0.00722
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00283	0.00285	0.00283
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00722	-0.00726	-0.00723

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)**	-0.00128	-0.00129	-0.00129
	(A1 * A2 * A4 * B1 * !Y)	0.00174	0.00175	0.00175
	(A1 * A2 * !A4 * B1 * !Y)	-0.00120	-0.00122	-0.00122
	(A1 * A2 * !A4 * B1 * !Y)	0.00182	0.00182	0.00181
	(A1 * A2 * !A4 * !B1 * Y)	-0.00053	-0.00054	-0.00054
	(A1 * A2 * !A4 * !B1 * Y)	0.00187	0.00188	0.00187
	(A1 * !A2 * A4 * !B1 * Y)	-0.00113	-0.00119	-0.00118
	(A1 * !A2 * A4 * !B1 * Y)	0.00187	0.00188	0.00186
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * !A4 * !B1 * Y)	0.00194	0.00193	0.00189
	(!A2 * A4 * B1 * !Y)	-0.00121	-0.00124	-0.00123
	(!A2 * A4 * B1 * !Y)	0.00182	0.00183	0.00181
	(!A2 * !A4 * B1 * !Y)	-0.00076	-0.00076	-0.00076
	(!A2 * !A4 * B1 * !Y)	0.00181	0.00182	0.00181
	(!A1 * A2 * A4 * B1 * !Y)	-0.00110	-0.00121	-0.00120
	(!A1 * A2 * A4 * B1 * !Y)	0.00181	0.00183	0.00181
	(!A1 * A2 * A4 * !B1 * Y)	-0.00104	-0.00115	-0.00115
	(!A1 * A2 * A4 * !B1 * Y)	0.00187	0.00188	0.00186
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00076	-0.00076	-0.00076
	(!A1 * A2 * !A4 * B1 * !Y)	0.00181	0.00182	0.00181
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00069	-0.00068	-0.00069
	(!A1 * A2 * !A4 * !B1 * Y)	0.00189	0.00191	0.00187
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00114	-0.00118	-0.00118
	(!A1 * !A2 * A4 * !B1 * Y)	0.00187	0.00188	0.00186
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00070	-0.00070	-0.00069
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00186	0.00188	0.00187

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00259	-0.00260	-0.00259
	(A1 * A2 * A4 * B1 * !Y)	0.00345	0.00348	0.00346
	(A1 * A2 * !A4 * B1 * !Y)	-0.00238	-0.00246	-0.00244
	(A1 * A2 * !A4 * B1 * !Y)	0.00360	0.00361	0.00359
	(A1 * A2 * !A4 * !B1 * Y)	-0.00116	-0.00117	-0.00116
	(A1 * A2 * !A4 * !B1 * Y)	0.00359	0.00362	0.00360
	(A1 * !A2 * A4 * !B1 * Y)	-0.00235	-0.00249	-0.00248
	(A1 * !A2 * A4 * !B1 * Y)	0.00358	0.00360	0.00359
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00148	-0.00150	-0.00149
	(A1 * !A2 * !A4 * !B1 * Y)	0.00369	0.00368	0.00361
	(!A2 * A4 * B1 * !Y)	-0.00241	-0.00249	-0.00247
	(!A2 * A4 * B1 * !Y)	0.00358	0.00360	0.00359
	(!A2 * !A4 * B1 * !Y)	-0.00152	-0.00154	-0.00152
	(!A2 * !A4 * B1 * !Y)	0.00357	0.00361	0.00359
	(!A1 * A2 * A4 * B1 * !Y)	-0.00223	-0.00243	-0.00242
	(!A1 * A2 * A4 * B1 * !Y)	0.00360	0.00363	0.00359
	(!A1 * A2 * A4 * !B1 * Y)	-0.00220	-0.00243	-0.00241
	(!A1 * A2 * A4 * !B1 * Y)	0.00363	0.00364	0.00359
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00152	-0.00153	-0.00153
	(!A1 * A2 * !A4 * B1 * !Y)	0.00359	0.00362	0.00359
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00148	-0.00149	-0.00149
	(!A1 * A2 * !A4 * !B1 * Y)	0.00366	0.00369	0.00362
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00237	-0.00248	-0.00247
	(!A1 * !A2 * A4 * !B1 * Y)	0.00358	0.00360	0.00359
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00150	-0.00152	-0.00150
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00362	0.00362	0.00359

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00516	-0.00519	-0.00517
	(A1 * A2 * A4 * B1 * !Y)	0.00695	0.00701	0.00697
	(A1 * A2 * !A4 * B1 * !Y)	-0.00476	-0.00488	-0.00488
	(A1 * A2 * !A4 * B1 * !Y)	0.00724	0.00731	0.00725
	(A1 * A2 * !A4 * !B1 * Y)	-0.00220	-0.00221	-0.00219
	(A1 * A2 * !A4 * !B1 * Y)	0.00730	0.00732	0.00727
	(A1 * !A2 * A4 * !B1 * Y)	-0.00462	-0.00489	-0.00487
	(A1 * !A2 * A4 * !B1 * Y)	0.00728	0.00728	0.00725
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00278	-0.00282	-0.00279
	(A1 * !A2 * !A4 * !B1 * Y)	0.00743	0.00746	0.00731
	(!A2 * A4 * B1 * !Y)	-0.00476	-0.00488	-0.00486
	(!A2 * A4 * B1 * !Y)	0.00727	0.00728	0.00724
	(!A2 * !A4 * B1 * !Y)	-0.00286	-0.00288	-0.00287
	(!A2 * !A4 * B1 * !Y)	0.00725	0.00727	0.00725
	(!A1 * A2 * A4 * B1 * !Y)	-0.00432	-0.00479	-0.00475
	(!A1 * A2 * A4 * B1 * !Y)	0.00727	0.00733	0.00724
	(!A1 * A2 * A4 * !B1 * Y)	-0.00427	-0.00479	-0.00475
	(!A1 * A2 * A4 * !B1 * Y)	0.00734	0.00733	0.00724
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00295	-0.00295	-0.00295
	(!A1 * A2 * !A4 * B1 * !Y)	0.00724	0.00729	0.00725
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00288	-0.00289	-0.00288
	(!A1 * A2 * !A4 * !B1 * Y)	0.00739	0.00745	0.00728
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00468	-0.00491	-0.00486
	(!A1 * !A2 * A4 * !B1 * Y)	0.00727	0.00728	0.00724
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00283	-0.00285	-0.00283
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00724	0.00728	0.00725

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)**	0.00145	0.00139	0.00138
	(A1 * A2 * A3 * B1 * !Y)	-0.00161	-0.00176	-0.00174
	(A1 * A2 * !A3 * !B1 * Y)	0.00119	0.00120	0.00120
	(A1 * A2 * !A3 * !B1 * Y)	-0.00191	-0.00192	-0.00191
	(A1 * !A2 * A3 * !B1 * Y)	0.00116	0.00118	0.00117
	(A1 * !A2 * A3 * !B1 * Y)	-0.00191	-0.00192	-0.00191
	(A1 * !A2 * !A3 * !B1 * Y)	0.00119	0.00120	0.00119
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00191	-0.00192	-0.00191
	(!A3 * B1 * !Y)	0.00130	0.00131	0.00131
	(!A3 * B1 * !Y)	-0.00179	-0.00180	-0.00180
	(!A2 * A3 * B1 * !Y)	0.00128	0.00129	0.00128
	(!A2 * A3 * B1 * !Y)	-0.00179	-0.00181	-0.00180
	(!A1 * A2 * A3 * B1 * !Y)	0.00126	0.00129	0.00127
	(!A1 * A2 * A3 * B1 * !Y)	-0.00179	-0.00181	-0.00180
	(!A1 * A2 * A3 * !B1 * Y)	0.00115	0.00117	0.00116
	(!A1 * A2 * A3 * !B1 * Y)	-0.00190	-0.00192	-0.00191
	(!A1 * !A3 * !B1 * Y)	0.00119	0.00121	0.00119
	(!A1 * !A3 * !B1 * Y)	-0.00191	-0.00192	-0.00191
	(!A1 * !A2 * A3 * !B1 * Y)	0.00116	0.00118	0.00117
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00191	-0.00192	-0.00191

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00275	0.00264	0.00262
	(A1 * A2 * A3 * B1 * !Y)	-0.00319	-0.00348	-0.00347
	(A1 * A2 * !A3 * !B1 * Y)	0.00248	0.00249	0.00248
	(A1 * A2 * !A3 * !B1 * Y)	-0.00359	-0.00360	-0.00359
	(A1 * !A2 * A3 * !B1 * Y)	0.00242	0.00244	0.00241
	(A1 * !A2 * A3 * !B1 * Y)	-0.00360	-0.00360	-0.00359
	(A1 * !A2 * !A3 * !B1 * Y)	0.00248	0.00250	0.00248
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00359	-0.00361	-0.00359
	(!A3 * B1 * !Y)	0.00248	0.00251	0.00248
	(!A3 * B1 * !Y)	-0.00359	-0.00361	-0.00359
	(!A2 * A3 * B1 * !Y)	0.00241	0.00244	0.00242
	(!A2 * A3 * B1 * !Y)	-0.00359	-0.00360	-0.00359
	(!A1 * A2 * A3 * B1 * !Y)	0.00239	0.00242	0.00239
	(!A1 * A2 * A3 * B1 * !Y)	-0.00359	-0.00361	-0.00359
	(!A1 * A2 * A3 * !B1 * Y)	0.00238	0.00238	0.00239
	(!A1 * A2 * A3 * !B1 * Y)	-0.00359	-0.00358	-0.00359
	(!A1 * !A3 * !B1 * Y)	0.00248	0.00250	0.00248
	(!A1 * !A3 * !B1 * Y)	-0.00359	-0.00361	-0.00359
	(!A1 * !A2 * A3 * !B1 * Y)	0.00242	0.00243	0.00241
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00360	-0.00360	-0.00359

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00551	0.00521	0.00520
	(A1 * A2 * A3 * B1 * !Y)	-0.00636	-0.00699	-0.00693
	(A1 * A2 * !A3 * !B1 * Y)	0.00489	0.00493	0.00492
	(A1 * A2 * !A3 * !B1 * Y)	-0.00716	-0.00719	-0.00718
	(A1 * !A2 * A3 * !B1 * Y)	0.00475	0.00479	0.00474
	(A1 * !A2 * A3 * !B1 * Y)	-0.00719	-0.00721	-0.00718
	(A1 * !A2 * !A3 * !B1 * Y)	0.00487	0.00495	0.00490
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00715	-0.00722	-0.00718
	(!A3 * B1 * !Y)	0.00487	0.00493	0.00490
	(!A3 * B1 * !Y)	-0.00715	-0.00720	-0.00718
	(!A2 * A3 * B1 * !Y)	0.00475	0.00479	0.00475
	(!A2 * A3 * B1 * !Y)	-0.00719	-0.00721	-0.00718
	(!A1 * A2 * A3 * B1 * !Y)	0.00471	0.00476	0.00471
	(!A1 * A2 * A3 * B1 * !Y)	-0.00719	-0.00723	-0.00718
	(!A1 * A2 * A3 * !B1 * Y)	0.00471	0.00470	0.00471
	(!A1 * A2 * A3 * !B1 * Y)	-0.00719	-0.00717	-0.00718
	(!A1 * !A3 * !B1 * Y)	0.00487	0.00495	0.00490
	(!A1 * !A3 * !B1 * Y)	-0.00715	-0.00722	-0.00718
	(!A1 * !A2 * A3 * !B1 * Y)	0.00475	0.00478	0.00474
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00719	-0.00721	-0.00718

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)**	-0.00137	-0.00138	-0.00137
	(A1 * A2 * A3 * B1 * !Y)	0.00173	0.00177	0.00174
	(A1 * A2 * !A3 * !B1 * Y)	-0.00115	-0.00120	-0.00120
	(A1 * A2 * !A3 * !B1 * Y)	0.00191	0.00194	0.00192
	(A1 * !A2 * A3 * !B1 * Y)	-0.00110	-0.00118	-0.00117
	(A1 * !A2 * A3 * !B1 * Y)	0.00192	0.00193	0.00192
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00116	-0.00120	-0.00119
	(A1 * !A2 * !A3 * !B1 * Y)	0.00191	0.00194	0.00192
	(!A3 * B1 * !Y)	-0.00129	-0.00131	-0.00131
	(!A3 * B1 * !Y)	0.00179	0.00182	0.00180
	(!A2 * A3 * B1 * !Y)	-0.00122	-0.00129	-0.00128
	(!A2 * A3 * B1 * !Y)	0.00180	0.00181	0.00180
	(!A1 * A2 * A3 * B1 * !Y)	-0.00120	-0.00129	-0.00127
	(!A1 * A2 * A3 * B1 * !Y)	0.00179	0.00181	0.00180
	(!A1 * A2 * A3 * !B1 * Y)	-0.00109	-0.00117	-0.00116
	(!A1 * A2 * A3 * !B1 * Y)	0.00193	0.00193	0.00192
	(!A1 * !A3 * !B1 * Y)	-0.00116	-0.00121	-0.00119
	(!A1 * !A3 * !B1 * Y)	0.00191	0.00194	0.00192
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00110	-0.00118	-0.00117
	(!A1 * !A2 * A3 * !B1 * Y)	0.00192	0.00193	0.00192

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00261	-0.00262	-0.00261
	(A1 * A2 * A3 * B1 * !Y)	0.00346	0.00348	0.00347
	(A1 * A2 * !A3 * !B1 * Y)	-0.00237	-0.00249	-0.00248
	(A1 * A2 * !A3 * !B1 * Y)	0.00359	0.00364	0.00360
	(A1 * !A2 * A3 * !B1 * Y)	-0.00224	-0.00244	-0.00241
	(A1 * !A2 * A3 * !B1 * Y)	0.00360	0.00363	0.00360
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00238	-0.00250	-0.00248
	(A1 * !A2 * !A3 * !B1 * Y)	0.00359	0.00364	0.00360
	(!A3 * B1 * !Y)	-0.00240	-0.00251	-0.00248
	(!A3 * B1 * !Y)	0.00359	0.00364	0.00360
	(!A2 * A3 * B1 * !Y)	-0.00225	-0.00244	-0.00242
	(!A2 * A3 * B1 * !Y)	0.00360	0.00363	0.00360
	(!A1 * A2 * A3 * B1 * !Y)	-0.00221	-0.00242	-0.00239
	(!A1 * A2 * A3 * B1 * !Y)	0.00360	0.00363	0.00360
	(!A1 * A2 * A3 * !B1 * Y)	-0.00221	-0.00238	-0.00239
	(!A1 * A2 * A3 * !B1 * Y)	0.00361	0.00363	0.00360
	(!A1 * !A3 * !B1 * Y)	-0.00238	-0.00250	-0.00248
	(!A1 * !A3 * !B1 * Y)	0.00359	0.00364	0.00360
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00224	-0.00243	-0.00241
	(!A1 * !A2 * A3 * !B1 * Y)	0.00360	0.00363	0.00360

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00518	-0.00521	-0.00518
	(A1 * A2 * A3 * B1 * !Y)	0.00691	0.00704	0.00693
	(A1 * A2 * !A3 * !B1 * Y)	-0.00468	-0.00493	-0.00492
	(A1 * A2 * !A3 * !B1 * Y)	0.00718	0.00728	0.00720
	(A1 * !A2 * A3 * !B1 * Y)	-0.00442	-0.00479	-0.00474
	(A1 * !A2 * A3 * !B1 * Y)	0.00720	0.00726	0.00720
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00473	-0.00495	-0.00490
	(A1 * !A2 * !A3 * !B1 * Y)	0.00718	0.00728	0.00720
	(!A3 * B1 * !Y)	-0.00479	-0.00493	-0.00490
	(!A3 * B1 * !Y)	0.00718	0.00728	0.00720
	(!A2 * A3 * B1 * !Y)	-0.00443	-0.00479	-0.00475
	(!A2 * A3 * B1 * !Y)	0.00720	0.00726	0.00720
	(!A1 * A2 * A3 * B1 * !Y)	-0.00439	-0.00476	-0.00471
	(!A1 * A2 * A3 * B1 * !Y)	0.00720	0.00726	0.00720
	(!A1 * A2 * A3 * !B1 * Y)	-0.00437	-0.00470	-0.00471
	(!A1 * A2 * A3 * !B1 * Y)	0.00721	0.00726	0.00720
	(!A1 * !A3 * !B1 * Y)	-0.00472	-0.00495	-0.00490
	(!A1 * !A3 * !B1 * Y)	0.00718	0.00728	0.00720
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00442	-0.00478	-0.00474
	(!A1 * !A2 * A3 * !B1 * Y)	0.00720	0.00726	0.00720

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)	0.00162	0.00163	0.00162
	(A1 * A2 * A3 * A4 * !Y)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00173	0.00175	0.00174
	(A1 * A2 * A3 * A4 * !Y)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00343	0.00345	0.00343
	(A1 * A2 * A3 * A4 * !Y)	-0.00342	-0.00344	-0.00341

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)	-0.00144	-0.00145	-0.00160
	(A1 * A2 * A3 * A4 * !Y)	0.00100	0.00099	0.00088
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00137	-0.00139	-0.00170
	(A1 * A2 * A3 * A4 * !Y)	0.00205	0.00203	0.00180
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00275	-0.00277	-0.00335
	(A1 * A2 * A3 * A4 * !Y)	0.00399	0.00396	0.00354

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00276	0.00272	0.00274	0.00268	0.00283	0.76089
sky130_fd_sc_hs__a41o_2	0.00271	0.00278	0.00285	0.00268	0.00286	1.47669
sky130_fd_sc_hs__a41o_4	0.00535	0.00519	0.00535	0.00515	0.00529	2.57949

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41o_1	0.00000	0.10256	0.17273
sky130_fd_sc_hs__a41o_2	0.00000	0.13254	0.20492
sky130_fd_sc_hs__a41o_4	0.00000	0.26171	0.40481

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)	0.19530	0.94264	7.65343
	A2->X (RR)	0.21266	0.95450	7.70428
	A3->X (RR)	0.22512	0.94775	7.65746
	A4->X (RR)	0.23106	0.93268	7.57507
	B1->X (RR)	0.10058	0.79703	7.37040
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.20623	0.88127	7.80491
	A2->X (RR)	0.22626	0.89114	7.84345
	A3->X (RR)	0.23840	0.87780	7.76941
	A4->X (RR)	0.24336	0.85736	7.66122
	B1->X (RR)	0.09100	0.70487	7.43283
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.21776	0.82844	7.80188
	A2->X (RR)	0.24153	0.84464	7.85696
	A3->X (RR)	0.25380	0.81503	7.71652
	A4->X (RR)	0.26037	0.80163	7.61385
	B1->X (RR)	0.08518	0.62003	7.35462

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.23017	0.76494	4.47134
	A2->X (FF)	0.26865	0.81594	4.60249
	A3->X (FF)	0.29663	0.85437	4.72591
	A4->X (FF)	0.32262	0.89240	4.84356
	B1->X (FF)	0.27420	0.85149	4.77946
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.27523	0.80463	4.66784
	A2->X (FF)	0.31827	0.85763	4.80307
	A3->X (FF)	0.34491	0.89260	4.91018
	A4->X (FF)	0.36819	0.92294	5.00585
	B1->X (FF)	0.32190	0.88980	4.97890
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.27893	0.76505	4.49568
	A2->X (FF)	0.31880	0.81431	4.63024
	A3->X (FF)	0.35021	0.85431	4.74864
	A4->X (FF)	0.38036	0.89330	4.86354
	B1->X (FF)	0.32776	0.86220	4.88627

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01095	0.01100	0.01745
	A1	0.00610	0.00614	0.01272
	A2	0.01183	0.01182	0.01701
	A2	0.00611	0.00610	0.01141
	A3	0.01267	0.01265	0.01745
	A3	0.00610	0.00607	0.01101
	A4	0.01356	0.01356	0.01802
	A4	0.00609	0.00608	0.01068
	B1	0.01024	0.01030	0.01928
	B1	0.00394	0.00404	0.01457
sky130_fd_sc_hs__a41o_2	A1	0.01257	0.01279	0.01911
	A1	0.00771	0.00793	0.01452
	A2	0.01349	0.01367	0.01867
	A2	0.00773	0.00791	0.01316
	A3	0.01437	0.01455	0.01916
	A3	0.00773	0.00791	0.01280
	A4	0.01519	0.01540	0.01975
	A4	0.00771	0.00791	0.01255
	B1	0.01184	0.01214	0.02074
	B1	0.00550	0.00580	0.01556

sky130_fd_sc_hs__a41o_4	**A1**	0.02416	0.02445	0.03614
	A1	0.01444	0.01475	0.02694
	A2	0.02590	0.02613	0.03596
	A2	0.01448	0.01472	0.02501
	A3	0.02781	0.02806	0.03727
	A3	0.01448	0.01471	0.02448
	A4	0.02948	0.02981	0.03834
	A4	0.01444	0.01476	0.02385
	B1	0.02243	0.02315	0.04031
	B1	0.00969	0.01044	0.02932

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00314	0.00312	0.00918
	A1	0.00806	0.00804	0.01367
	A2	0.00365	0.00367	0.00911
	A2	0.00937	0.00938	0.01459
	A3	0.00422	0.00431	0.00989
	A3	0.01072	0.01079	0.01587
	A4	0.00467	0.00479	0.01024
	A4	0.01195	0.01210	0.01708
	B1	0.00416	0.00476	0.01405
	B1	0.01075	0.01130	0.01963

sky130_fd_sc_hs__a41o_2	**A1**	0.00522	0.00553	0.01124
	A1	0.01014	0.01045	0.01578
	A2	0.00589	0.00612	0.01229
	A2	0.01165	0.01196	0.01698
	A3	0.00648	0.00677	0.01241
	A3	0.01304	0.01331	0.01826
	A4	0.00683	0.00710	0.01253
	A4	0.01412	0.01450	0.01937
	B1	0.00637	0.00718	0.01663
	B1	0.01299	0.01360	0.02190
sky130_fd_sc_hs__a41o_4	**A1**	0.01015	0.01043	0.02129
	A1	0.01999	0.02027	0.03041
	A2	0.01182	0.01220	0.02367
	A2	0.02321	0.02359	0.03351
	A3	0.01266	0.01302	0.02396
	A3	0.02579	0.02629	0.03609
	A4	0.01400	0.01439	0.02451
	A4	0.02858	0.02912	0.03877
	B1	0.01414	0.01508	0.03168
	B1	0.02626	0.02718	0.04368

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)**	0.00137	0.00128	0.00127
	(A2 * A3 * A4 * B1 * X)	-0.00143	-0.00160	-0.00158
	(A2 * A3 * !A4 * B1 * X)	0.00116	0.00117	0.00116
	(A2 * A3 * !A4 * B1 * X)	-0.00163	-0.00165	-0.00164
	(A2 * A3 * !A4 * !B1 * !X)	0.00051	0.00051	0.00044
	(A2 * A3 * !A4 * !B1 * !X)	-0.00171	-0.00172	-0.00187
	(A2 * !A3 * B1 * X)	0.00117	0.00118	0.00117
	(A2 * !A3 * B1 * X)	-0.00164	-0.00164	-0.00164
	(A2 * !A3 * !B1 * !X)	0.00048	0.00048	0.00043
	(A2 * !A3 * !B1 * !X)	-0.00179	-0.00180	-0.00188
	(!A2 * B1 * X)	0.00120	0.00121	0.00120
	(!A2 * B1 * X)	-0.00163	-0.00165	-0.00164
	(!A2 * !B1 * !X)	0.00046	0.00046	0.00044
	(!A2 * !B1 * !X)	-0.00185	-0.00186	-0.00189
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00136	0.00127	0.00126
	(A2 * A3 * A4 * B1 * X)	-0.00143	-0.00161	-0.00159
	(A2 * A3 * !A4 * B1 * X)	0.00115	0.00116	0.00115
	(A2 * A3 * !A4 * B1 * X)	-0.00164	-0.00165	-0.00164
	(A2 * A3 * !A4 * !B1 * !X)	0.00052	0.00052	0.00044
	(A2 * A3 * !A4 * !B1 * !X)	-0.00170	-0.00171	-0.00186
	(A2 * !A3 * B1 * X)	0.00116	0.00117	0.00116
	(A2 * !A3 * B1 * X)	-0.00165	-0.00165	-0.00164
	(A2 * !A3 * !B1 * !X)	0.00050	0.00050	0.00044
	(A2 * !A3 * !B1 * !X)	-0.00177	-0.00178	-0.00187
	(!A2 * B1 * X)	0.00119	0.00121	0.00120
	(!A2 * B1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * !X)	0.00049	0.00049	0.00046
	(!A2 * !B1 * !X)	-0.00183	-0.00184	-0.00188

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00283	0.00267	0.00266
	(A2 * A3 * A4 * B1 * X)	-0.00290	-0.00323	-0.00322
	(A2 * A3 * !A4 * B1 * X)	0.00241	0.00242	0.00240
	(A2 * A3 * !A4 * B1 * X)	-0.00334	-0.00336	-0.00333
	(A2 * A3 * !A4 * !B1 * !X)	0.00113	0.00113	0.00095
	(A2 * A3 * !A4 * !B1 * !X)	-0.00344	-0.00347	-0.00380
	(A2 * !A3 * B1 * X)	0.00243	0.00246	0.00244
	(A2 * !A3 * B1 * X)	-0.00332	-0.00333	-0.00333
	(A2 * !A3 * !B1 * !X)	0.00105	0.00105	0.00094
	(A2 * !A3 * !B1 * !X)	-0.00361	-0.00364	-0.00383
	(!A2 * B1 * X)	0.00251	0.00255	0.00252
	(!A2 * B1 * X)	-0.00331	-0.00335	-0.00333
	(!A2 * !B1 * !X)	0.00106	0.00106	0.00099
	(!A2 * !B1 * !X)	-0.00375	-0.00377	-0.00385

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)**	-0.00127	-0.00127	-0.00126
	(A2 * A3 * A4 * B1 * X)	0.00159	0.00161	0.00158
	(A2 * A3 * !A4 * B1 * X)	-0.00105	-0.00117	-0.00116
	(A2 * A3 * !A4 * B1 * X)	0.00163	0.00167	0.00164
	(A2 * A3 * !A4 * !B1 * !X)	-0.00042	-0.00042	-0.00041
	(A2 * A3 * !A4 * !B1 * !X)	0.00191	0.00190	0.00189
	(A2 * !A3 * B1 * X)	-0.00109	-0.00118	-0.00117
	(A2 * !A3 * B1 * X)	0.00165	0.00167	0.00164
	(A2 * !A3 * !B1 * !X)	-0.00042	-0.00042	-0.00041
	(A2 * !A3 * !B1 * !X)	0.00191	0.00190	0.00189
	(!A2 * B1 * X)	-0.00118	-0.00121	-0.00120
	(!A2 * B1 * X)	0.00165	0.00167	0.00164
	(!A2 * !B1 * !X)	-0.00043	-0.00043	-0.00042
	(!A2 * !B1 * !X)	0.00191	0.00190	0.00190
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00125	-0.00126	-0.00125
	(A2 * A3 * A4 * B1 * X)	0.00160	0.00161	0.00159
	(A2 * A3 * !A4 * B1 * X)	-0.00104	-0.00116	-0.00115
	(A2 * A3 * !A4 * B1 * X)	0.00164	0.00166	0.00165
	(A2 * A3 * !A4 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(A2 * A3 * !A4 * !B1 * !X)	0.00188	0.00189	0.00189
	(A2 * !A3 * B1 * X)	-0.00109	-0.00117	-0.00116
	(A2 * !A3 * B1 * X)	0.00166	0.00167	0.00165
	(A2 * !A3 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(A2 * !A3 * !B1 * !X)	0.00188	0.00189	0.00189
	(!A2 * B1 * X)	-0.00117	-0.00121	-0.00120
	(!A2 * B1 * X)	0.00166	0.00167	0.00165
	(!A2 * !B1 * !X)	-0.00045	-0.00044	-0.00044
	(!A2 * !B1 * !X)	0.00190	0.00189	0.00189

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00264	-0.00265	-0.00264
	(A2 * A3 * A4 * B1 * X)	0.00320	0.00323	0.00322
	(A2 * A3 * !A4 * B1 * X)	-0.00217	-0.00242	-0.00240
	(A2 * A3 * !A4 * B1 * X)	0.00334	0.00338	0.00334
	(A2 * A3 * !A4 * !B1 * !X)	-0.00091	-0.00092	-0.00092
	(A2 * A3 * !A4 * !B1 * !X)	0.00386	0.00388	0.00387
	(A2 * !A3 * B1 * X)	-0.00221	-0.00246	-0.00244
	(A2 * !A3 * B1 * X)	0.00334	0.00333	0.00334
	(A2 * !A3 * !B1 * !X)	-0.00092	-0.00093	-0.00092
	(A2 * !A3 * !B1 * !X)	0.00386	0.00388	0.00387
	(!A2 * B1 * X)	-0.00244	-0.00254	-0.00252
	(!A2 * B1 * X)	0.00333	0.00335	0.00334
	(!A2 * !B1 * !X)	-0.00096	-0.00096	-0.00095
	(!A2 * !B1 * !X)	0.00387	0.00388	0.00387

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)**	0.00139	0.00131	0.00129
	(A1 * A3 * A4 * B1 * X)	-0.00142	-0.00159	-0.00157
	(A1 * A3 * !A4 * B1 * X)	0.00119	0.00120	0.00119
	(A1 * A3 * !A4 * B1 * X)	-0.00162	-0.00163	-0.00163
	(A1 * A3 * !A4 * !B1 * !X)	0.00059	0.00059	0.00059
	(A1 * A3 * !A4 * !B1 * !X)	-0.00163	-0.00164	-0.00162
	(A1 * !A3 * B1 * X)	0.00122	0.00124	0.00123
	(A1 * !A3 * B1 * X)	-0.00162	-0.00164	-0.00163
	(A1 * !A3 * !B1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A3 * !B1 * !X)	-0.00163	-0.00164	-0.00162
	(!A1 * A3 * A4 * B1 * X)	0.00123	0.00122	0.00122
	(!A1 * A3 * A4 * B1 * X)	-0.00163	-0.00163	-0.00163
	(!A1 * A3 * A4 * !B1 * !X)	0.00122	0.00123	0.00122
	(!A1 * A3 * A4 * !B1 * !X)	-0.00163	-0.00164	-0.00163
	(!A1 * A3 * !A4 * B1 * X)	0.00076	0.00077	0.00076
	(!A1 * A3 * !A4 * B1 * X)	-0.00162	-0.00163	-0.00163
	(!A1 * A3 * !A4 * !B1 * !X)	0.00074	0.00074	0.00074
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00163	-0.00163	-0.00163
	(!A1 * !A3 * B1 * X)	0.00077	0.00077	0.00076
	(!A1 * !A3 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * !A3 * !B1 * !X)	0.00074	0.00074	0.00074
	(!A1 * !A3 * !B1 * !X)	-0.00164	-0.00164	-0.00163

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00141	0.00132	0.00130
	(A1 * A3 * A4 * B1 * X)	-0.00142	-0.00160	-0.00158
	(A1 * A3 * !A4 * B1 * X)	0.00120	0.00121	0.00120
	(A1 * A3 * !A4 * B1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * A3 * !A4 * !B1 * !X)	0.00059	0.00059	0.00060
	(A1 * A3 * !A4 * !B1 * !X)	-0.00164	-0.00164	-0.00162
	(A1 * !A3 * B1 * X)	0.00124	0.00125	0.00124
	(A1 * !A3 * B1 * X)	-0.00163	-0.00163	-0.00163
	(A1 * !A3 * !B1 * !X)	0.00063	0.00063	0.00063
	(A1 * !A3 * !B1 * !X)	-0.00164	-0.00164	-0.00162
	(!A1 * A3 * A4 * B1 * X)	0.00124	0.00124	0.00124
	(!A1 * A3 * A4 * B1 * X)	-0.00163	-0.00163	-0.00163
	(!A1 * A3 * A4 * !B1 * !X)	0.00123	0.00125	0.00124
	(!A1 * A3 * A4 * !B1 * !X)	-0.00163	-0.00164	-0.00164
	(!A1 * A3 * !A4 * B1 * X)	0.00078	0.00078	0.00077
	(!A1 * A3 * !A4 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * A3 * !A4 * !B1 * !X)	0.00076	0.00076	0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A3 * B1 * X)	0.00081	0.00081	0.00080
	(!A1 * !A3 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * !A3 * !B1 * !X)	0.00079	0.00079	0.00078
	(!A1 * !A3 * !B1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00278	0.00260	0.00259
	(A1 * A3 * A4 * B1 * X)	-0.00288	-0.00318	-0.00317
	(A1 * A3 * !A4 * B1 * X)	0.00236	0.00237	0.00236
	(A1 * A3 * !A4 * B1 * X)	-0.00329	-0.00330	-0.00328
	(A1 * A3 * !A4 * !B1 * !X)	0.00113	0.00113	0.00115
	(A1 * A3 * !A4 * !B1 * !X)	-0.00328	-0.00329	-0.00326
	(A1 * !A3 * B1 * X)	0.00241	0.00243	0.00242
	(A1 * !A3 * B1 * X)	-0.00328	-0.00330	-0.00328
	(A1 * !A3 * !B1 * !X)	0.00115	0.00115	0.00116
	(A1 * !A3 * !B1 * !X)	-0.00329	-0.00329	-0.00326
	(!A1 * A3 * A4 * B1 * X)	0.00245	0.00248	0.00246
	(!A1 * A3 * A4 * B1 * X)	-0.00328	-0.00330	-0.00328
	(!A1 * A3 * A4 * !B1 * !X)	0.00245	0.00248	0.00246
	(!A1 * A3 * A4 * !B1 * !X)	-0.00327	-0.00329	-0.00328
	(!A1 * A3 * !A4 * B1 * X)	0.00148	0.00150	0.00149
	(!A1 * A3 * !A4 * B1 * X)	-0.00328	-0.00331	-0.00329
	(!A1 * A3 * !A4 * !B1 * !X)	0.00146	0.00147	0.00146
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00330	-0.00332	-0.00329
	(!A1 * !A3 * B1 * X)	0.00148	0.00150	0.00148
	(!A1 * !A3 * B1 * X)	-0.00328	-0.00331	-0.00329
	(!A1 * !A3 * !B1 * !X)	0.00144	0.00144	0.00143
	(!A1 * !A3 * !B1 * !X)	-0.00331	-0.00332	-0.00330

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)**	-0.00128	-0.00130	-0.00128
	(A1 * A3 * A4 * B1 * X)	0.00157	0.00160	0.00157
	(A1 * A3 * !A4 * B1 * X)	-0.00109	-0.00120	-0.00119
	(A1 * A3 * !A4 * B1 * X)	0.00164	0.00165	0.00163
	(A1 * A3 * !A4 * !B1 * !X)	-0.00055	-0.00055	-0.00056
	(A1 * A3 * !A4 * !B1 * !X)	0.00167	0.00168	0.00165
	(A1 * !A3 * B1 * X)	-0.00120	-0.00124	-0.00123
	(A1 * !A3 * B1 * X)	0.00164	0.00164	0.00163
	(A1 * !A3 * !B1 * !X)	-0.00057	-0.00056	-0.00058
	(A1 * !A3 * !B1 * !X)	0.00169	0.00168	0.00165
	(!A1 * A3 * A4 * B1 * X)	-0.00120	-0.00122	-0.00122
	(!A1 * A3 * A4 * B1 * X)	0.00164	0.00164	0.00163
	(!A1 * A3 * A4 * !B1 * !X)	-0.00110	-0.00122	-0.00122
	(!A1 * A3 * A4 * !B1 * !X)	0.00175	0.00165	0.00164
	(!A1 * A3 * !A4 * B1 * X)	-0.00076	-0.00077	-0.00076
	(!A1 * A3 * !A4 * B1 * X)	0.00163	0.00164	0.00163
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * A3 * !A4 * !B1 * !X)	0.00174	0.00170	0.00165
	(!A1 * !A3 * B1 * X)	-0.00077	-0.00077	-0.00076
	(!A1 * !A3 * B1 * X)	0.00163	0.00164	0.00163
	(!A1 * !A3 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !A3 * !B1 * !X)	0.00175	0.00174	0.00166

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00129	-0.00131	-0.00129
	(A1 * A3 * A4 * B1 * X)	0.00157	0.00160	0.00158
	(A1 * A3 * !A4 * B1 * X)	-0.00109	-0.00121	-0.00120
	(A1 * A3 * !A4 * B1 * X)	0.00163	0.00166	0.00164
	(A1 * A3 * !A4 * !B1 * !X)	-0.00057	-0.00057	-0.00059
	(A1 * A3 * !A4 * !B1 * !X)	0.00168	0.00169	0.00165
	(A1 * !A3 * B1 * X)	-0.00121	-0.00125	-0.00124
	(A1 * !A3 * B1 * X)	0.00165	0.00163	0.00164
	(A1 * !A3 * !B1 * !X)	-0.00059	-0.00059	-0.00060
	(A1 * !A3 * !B1 * !X)	0.00170	0.00169	0.00165
	(!A1 * A3 * A4 * B1 * X)	-0.00121	-0.00124	-0.00124
	(!A1 * A3 * A4 * B1 * X)	0.00164	0.00165	0.00164
	(!A1 * A3 * A4 * !B1 * !X)	-0.00112	-0.00124	-0.00124
	(!A1 * A3 * A4 * !B1 * !X)	0.00174	0.00166	0.00165
	(!A1 * A3 * !A4 * B1 * X)	-0.00078	-0.00078	-0.00077
	(!A1 * A3 * !A4 * B1 * X)	0.00163	0.00165	0.00164
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	0.00173	0.00171	0.00166
	(!A1 * !A3 * B1 * X)	-0.00081	-0.00081	-0.00080
	(!A1 * !A3 * B1 * X)	0.00163	0.00164	0.00164
	(!A1 * !A3 * !B1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A3 * !B1 * !X)	0.00174	0.00175	0.00167

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00258	-0.00259	-0.00258
	(A1 * A3 * A4 * B1 * X)	0.00315	0.00318	0.00317
	(A1 * A3 * !A4 * B1 * X)	-0.00213	-0.00237	-0.00236
	(A1 * A3 * !A4 * B1 * X)	0.00329	0.00331	0.00330
	(A1 * A3 * !A4 * !B1 * !X)	-0.00104	-0.00105	-0.00107
	(A1 * A3 * !A4 * !B1 * !X)	0.00339	0.00340	0.00332
	(A1 * !A3 * B1 * X)	-0.00237	-0.00243	-0.00242
	(A1 * !A3 * B1 * X)	0.00331	0.00331	0.00330
	(A1 * !A3 * !B1 * !X)	-0.00107	-0.00107	-0.00110
	(A1 * !A3 * !B1 * !X)	0.00339	0.00340	0.00332
	(!A1 * A3 * A4 * B1 * X)	-0.00238	-0.00247	-0.00246
	(!A1 * A3 * A4 * B1 * X)	0.00331	0.00330	0.00329
	(!A1 * A3 * A4 * !B1 * !X)	-0.00219	-0.00247	-0.00246
	(!A1 * A3 * A4 * !B1 * !X)	0.00352	0.00332	0.00329
	(!A1 * A3 * !A4 * B1 * X)	-0.00148	-0.00150	-0.00149
	(!A1 * A3 * !A4 * B1 * X)	0.00330	0.00332	0.00330
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00146	-0.00147	-0.00146
	(!A1 * A3 * !A4 * !B1 * !X)	0.00352	0.00343	0.00332
	(!A1 * !A3 * B1 * X)	-0.00148	-0.00150	-0.00148
	(!A1 * !A3 * B1 * X)	0.00328	0.00332	0.00330
	(!A1 * !A3 * !B1 * !X)	-0.00144	-0.00144	-0.00143
	(!A1 * !A3 * !B1 * !X)	0.00351	0.00352	0.00336

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)**	0.00138	0.00128	0.00127
	(A1 * A2 * A4 * B1 * X)	-0.00144	-0.00162	-0.00160
	(A1 * A2 * !A4 * B1 * X)	0.00120	0.00121	0.00120
	(A1 * A2 * !A4 * B1 * X)	-0.00166	-0.00167	-0.00166
	(A1 * A2 * !A4 * !B1 * !X)	0.00062	0.00061	0.00062
	(A1 * A2 * !A4 * !B1 * !X)	-0.00162	-0.00161	-0.00161
	(A1 * !A2 * A4 * !B1 * !X)	0.00121	0.00121	0.00121
	(A1 * !A2 * A4 * !B1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !A2 * !A4 * !B1 * !X)	0.00076	0.00076	0.00075
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(!A2 * A4 * B1 * X)	0.00121	0.00122	0.00120
	(!A2 * A4 * B1 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * !A4 * B1 * X)	0.00077	0.00077	0.00076
	(!A2 * !A4 * B1 * X)	-0.00166	-0.00167	-0.00166
	(!A1 * A2 * A4 * B1 * X)	0.00117	0.00118	0.00117
	(!A1 * A2 * A4 * B1 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * A2 * A4 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * A2 * A4 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * !A4 * B1 * X)	0.00075	0.00075	0.00075
	(!A1 * A2 * !A4 * B1 * X)	-0.00166	-0.00166	-0.00166
	(!A1 * A2 * !A4 * !B1 * !X)	0.00073	0.00074	0.00073
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !A2 * A4 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00077	0.00076	0.00076
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00166	-0.00166	-0.00166

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00144	0.00134	0.00132
	(A1 * A2 * A4 * B1 * X)	-0.00143	-0.00161	-0.00159
	(A1 * A2 * !A4 * B1 * X)	0.00125	0.00126	0.00125
	(A1 * A2 * !A4 * B1 * X)	-0.00165	-0.00165	-0.00164
	(A1 * A2 * !A4 * !B1 * !X)	0.00064	0.00064	0.00064
	(A1 * A2 * !A4 * !B1 * !X)	-0.00162	-0.00162	-0.00162
	(A1 * !A2 * A4 * !B1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * A4 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !A4 * !B1 * !X)	0.00077	0.00077	0.00076
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00165	-0.00165	-0.00164
	(!A2 * A4 * B1 * X)	0.00126	0.00127	0.00126
	(!A2 * A4 * B1 * X)	-0.00165	-0.00165	-0.00164
	(!A2 * !A4 * B1 * X)	0.00077	0.00078	0.00078
	(!A2 * !A4 * B1 * X)	-0.00164	-0.00164	-0.00164
	(!A1 * A2 * A4 * B1 * X)	0.00122	0.00123	0.00123
	(!A1 * A2 * A4 * B1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * A2 * A4 * !B1 * !X)	0.00122	0.00124	0.00123
	(!A1 * A2 * A4 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * A2 * !A4 * B1 * X)	0.00078	0.00079	0.00078
	(!A1 * A2 * !A4 * B1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * A2 * !A4 * !B1 * !X)	0.00077	0.00077	0.00077
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * A4 * !B1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00078	0.00077	0.00077
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00165	-0.00165	-0.00164

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00282	0.00268	0.00264
	(A1 * A2 * A4 * B1 * X)	-0.00289	-0.00325	-0.00321
	(A1 * A2 * !A4 * B1 * X)	0.00249	0.00251	0.00249
	(A1 * A2 * !A4 * B1 * X)	-0.00332	-0.00334	-0.00332
	(A1 * A2 * !A4 * !B1 * !X)	0.00125	0.00126	0.00125
	(A1 * A2 * !A4 * !B1 * !X)	-0.00323	-0.00325	-0.00321
	(A1 * !A2 * A4 * !B1 * !X)	0.00248	0.00249	0.00248
	(A1 * !A2 * A4 * !B1 * !X)	-0.00333	-0.00333	-0.00332
	(A1 * !A2 * !A4 * !B1 * !X)	0.00147	0.00147	0.00146
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00334	-0.00334	-0.00333
	(!A2 * A4 * B1 * X)	0.00248	0.00250	0.00248
	(!A2 * A4 * B1 * X)	-0.00333	-0.00333	-0.00332
	(!A2 * !A4 * B1 * X)	0.00150	0.00152	0.00150
	(!A2 * !A4 * B1 * X)	-0.00332	-0.00335	-0.00333
	(!A1 * A2 * A4 * B1 * X)	0.00241	0.00243	0.00242
	(!A1 * A2 * A4 * B1 * X)	-0.00332	-0.00333	-0.00332
	(!A1 * A2 * A4 * !B1 * !X)	0.00241	0.00244	0.00242
	(!A1 * A2 * A4 * !B1 * !X)	-0.00332	-0.00333	-0.00332
	(!A1 * A2 * !A4 * B1 * X)	0.00151	0.00153	0.00151
	(!A1 * A2 * !A4 * B1 * X)	-0.00333	-0.00335	-0.00333
	(!A1 * A2 * !A4 * !B1 * !X)	0.00147	0.00149	0.00147
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00332	-0.00336	-0.00333
	(!A1 * !A2 * A4 * !B1 * !X)	0.00247	0.00249	0.00248
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00333	-0.00333	-0.00332
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00149	0.00149	0.00148
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00334	-0.00334	-0.00333

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)**	-0.00126	-0.00127	-0.00126
	(A1 * A2 * A4 * B1 * X)	0.00159	0.00163	0.00160
	(A1 * A2 * !A4 * B1 * X)	-0.00118	-0.00121	-0.00120
	(A1 * A2 * !A4 * B1 * X)	0.00167	0.00167	0.00166
	(A1 * A2 * !A4 * !B1 * !X)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !A4 * !B1 * !X)	0.00166	0.00167	0.00167
	(A1 * !A2 * A4 * !B1 * !X)	-0.00115	-0.00121	-0.00121
	(A1 * !A2 * A4 * !B1 * !X)	0.00167	0.00168	0.00166
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00076	-0.00076	-0.00075
	(A1 * !A2 * !A4 * !B1 * !X)	0.00171	0.00172	0.00168
	(!A2 * A4 * B1 * X)	-0.00118	-0.00122	-0.00120
	(!A2 * A4 * B1 * X)	0.00167	0.00168	0.00166
	(!A2 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00076
	(!A2 * !A4 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * A2 * A4 * B1 * X)	-0.00107	-0.00118	-0.00117
	(!A1 * A2 * A4 * B1 * X)	0.00166	0.00168	0.00166
	(!A1 * A2 * A4 * !B1 * !X)	-0.00106	-0.00118	-0.00117
	(!A1 * A2 * A4 * !B1 * !X)	0.00167	0.00168	0.00166
	(!A1 * A2 * !A4 * B1 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * A2 * !A4 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00073	-0.00074	-0.00073
	(!A1 * A2 * !A4 * !B1 * !X)	0.00168	0.00170	0.00167
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00117	-0.00121	-0.00120
	(!A1 * !A2 * A4 * !B1 * !X)	0.00167	0.00168	0.00166
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00077	-0.00076	-0.00076
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00168	0.00167	0.00166

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00131	-0.00133	-0.00131
	(A1 * A2 * A4 * B1 * X)	0.00158	0.00161	0.00159
	(A1 * A2 * !A4 * B1 * X)	-0.00123	-0.00126	-0.00125
	(A1 * A2 * !A4 * B1 * X)	0.00166	0.00165	0.00165
	(A1 * A2 * !A4 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !A4 * !B1 * !X)	0.00165	0.00166	0.00165
	(A1 * !A2 * A4 * !B1 * !X)	-0.00121	-0.00127	-0.00126
	(A1 * !A2 * A4 * !B1 * !X)	0.00166	0.00167	0.00165
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00076
	(A1 * !A2 * !A4 * !B1 * !X)	0.00172	0.00171	0.00167
	(!A2 * A4 * B1 * X)	-0.00123	-0.00127	-0.00126
	(!A2 * A4 * B1 * X)	0.00166	0.00167	0.00165
	(!A2 * !A4 * B1 * X)	-0.00077	-0.00078	-0.00078
	(!A2 * !A4 * B1 * X)	0.00165	0.00166	0.00165
	(!A1 * A2 * A4 * B1 * X)	-0.00113	-0.00123	-0.00123
	(!A1 * A2 * A4 * B1 * X)	0.00165	0.00167	0.00165
	(!A1 * A2 * A4 * !B1 * !X)	-0.00112	-0.00124	-0.00123
	(!A1 * A2 * A4 * !B1 * !X)	0.00166	0.00167	0.00165
	(!A1 * A2 * !A4 * B1 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * A2 * !A4 * B1 * X)	0.00165	0.00166	0.00165
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * A2 * !A4 * !B1 * !X)	0.00168	0.00169	0.00165
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00122	-0.00126	-0.00126
	(!A1 * !A2 * A4 * !B1 * !X)	0.00166	0.00167	0.00165
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00078	-0.00077	-0.00077
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00165	0.00166	0.00165

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00263	-0.00266	-0.00263
	(A1 * A2 * A4 * B1 * X)	0.00320	0.00326	0.00321
	(A1 * A2 * !A4 * B1 * X)	-0.00241	-0.00251	-0.00249
	(A1 * A2 * !A4 * B1 * X)	0.00333	0.00336	0.00334
	(A1 * A2 * !A4 * !B1 * !X)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * !A4 * !B1 * !X)	0.00337	0.00338	0.00335
	(A1 * !A2 * A4 * !B1 * !X)	-0.00236	-0.00249	-0.00248
	(A1 * !A2 * A4 * !B1 * !X)	0.00336	0.00333	0.00334
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00147	-0.00147	-0.00146
	(A1 * !A2 * !A4 * !B1 * !X)	0.00344	0.00345	0.00337
	(!A2 * A4 * B1 * X)	-0.00243	-0.00250	-0.00248
	(!A2 * A4 * B1 * X)	0.00335	0.00333	0.00334
	(!A2 * !A4 * B1 * X)	-0.00150	-0.00152	-0.00150
	(!A2 * !A4 * B1 * X)	0.00334	0.00335	0.00334
	(!A1 * A2 * A4 * B1 * X)	-0.00222	-0.00243	-0.00242
	(!A1 * A2 * A4 * B1 * X)	0.00335	0.00338	0.00334
	(!A1 * A2 * A4 * !B1 * !X)	-0.00220	-0.00244	-0.00242
	(!A1 * A2 * A4 * !B1 * !X)	0.00338	0.00337	0.00334
	(!A1 * A2 * !A4 * B1 * X)	-0.00151	-0.00153	-0.00151
	(!A1 * A2 * !A4 * B1 * X)	0.00333	0.00336	0.00334
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00147	-0.00149	-0.00147
	(!A1 * A2 * !A4 * !B1 * !X)	0.00340	0.00344	0.00336
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00239	-0.00249	-0.00248
	(!A1 * !A2 * A4 * !B1 * !X)	0.00335	0.00333	0.00334
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00149	-0.00149	-0.00148
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00334	0.00336	0.00334

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)**	0.00145	0.00135	0.00135
	(A1 * A2 * A3 * B1 * X)	-0.00143	-0.00160	-0.00160
	(A1 * A2 * !A3 * !B1 * !X)	0.00130	0.00130	0.00129
	(A1 * A2 * !A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * A3 * !B1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !A3 * !B1 * !X)	0.00130	0.00129	0.00129
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00164	-0.00165	-0.00165
	(!A3 * B1 * X)	0.00129	0.00131	0.00129
	(!A3 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * A3 * B1 * X)	0.00126	0.00127	0.00126
	(!A2 * A3 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * A3 * B1 * X)	0.00124	0.00126	0.00124
	(!A1 * A2 * A3 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * A3 * !B1 * !X)	0.00124	0.00126	0.00125
	(!A1 * A2 * A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * !A3 * !B1 * !X)	0.00130	0.00129	0.00129
	(!A1 * !A3 * !B1 * !X)	-0.00165	-0.00165	-0.00165
	(!A1 * !A2 * A3 * !B1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00165	-0.00165	-0.00165

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00144	0.00134	0.00134
	(A1 * A2 * A3 * B1 * X)	-0.00143	-0.00160	-0.00160
	(A1 * A2 * !A3 * !B1 * !X)	0.00128	0.00129	0.00128
	(A1 * A2 * !A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * A3 * !B1 * !X)	0.00124	0.00126	0.00124
	(A1 * !A2 * A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !A3 * !B1 * !X)	0.00128	0.00128	0.00127
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(!A3 * B1 * X)	0.00128	0.00127	0.00127
	(!A3 * B1 * X)	-0.00165	-0.00165	-0.00165
	(!A2 * A3 * B1 * X)	0.00125	0.00126	0.00125
	(!A2 * A3 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * A3 * B1 * X)	0.00124	0.00125	0.00124
	(!A1 * A2 * A3 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * A3 * !B1 * !X)	0.00124	0.00124	0.00124
	(!A1 * A2 * A3 * !B1 * !X)	-0.00165	-0.00165	-0.00165
	(!A1 * !A3 * !B1 * !X)	0.00128	0.00128	0.00127
	(!A1 * !A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * !A2 * A3 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00276	0.00262	0.00261
	(A1 * A2 * A3 * B1 * X)	-0.00288	-0.00314	-0.00315
	(A1 * A2 * !A3 * !B1 * !X)	0.00248	0.00248	0.00247
	(A1 * A2 * !A3 * !B1 * !X)	-0.00325	-0.00326	-0.00325
	(A1 * !A2 * A3 * !B1 * !X)	0.00239	0.00242	0.00240
	(A1 * !A2 * A3 * !B1 * !X)	-0.00325	-0.00326	-0.00325
	(A1 * !A2 * !A3 * !B1 * !X)	0.00247	0.00246	0.00247
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00325	-0.00324	-0.00325
	(!A3 * B1 * X)	0.00248	0.00250	0.00248
	(!A3 * B1 * X)	-0.00325	-0.00327	-0.00325
	(!A2 * A3 * B1 * X)	0.00240	0.00241	0.00240
	(!A2 * A3 * B1 * X)	-0.00324	-0.00326	-0.00325
	(!A1 * A2 * A3 * B1 * X)	0.00237	0.00241	0.00238
	(!A1 * A2 * A3 * B1 * X)	-0.00325	-0.00327	-0.00325
	(!A1 * A2 * A3 * !B1 * !X)	0.00237	0.00240	0.00238
	(!A1 * A2 * A3 * !B1 * !X)	-0.00324	-0.00327	-0.00325
	(!A1 * !A3 * !B1 * !X)	0.00247	0.00250	0.00247
	(!A1 * !A3 * !B1 * !X)	-0.00325	-0.00327	-0.00325
	(!A1 * !A2 * A3 * !B1 * !X)	0.00239	0.00242	0.00240
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00325	-0.00327	-0.00325

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)**	-0.00134	-0.00135	-0.00134
	(A1 * A2 * A3 * B1 * X)	0.00159	0.00160	0.00160
	(A1 * A2 * !A3 * !B1 * !X)	-0.00124	-0.00130	-0.00129
	(A1 * A2 * !A3 * !B1 * !X)	0.00165	0.00167	0.00166
	(A1 * !A2 * A3 * !B1 * !X)	-0.00119	-0.00127	-0.00126
	(A1 * !A2 * A3 * !B1 * !X)	0.00165	0.00166	0.00166
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00125	-0.00129	-0.00129
	(A1 * !A2 * !A3 * !B1 * !X)	0.00164	0.00167	0.00166
	(!A3 * B1 * X)	-0.00126	-0.00130	-0.00129
	(!A3 * B1 * X)	0.00165	0.00167	0.00166
	(!A2 * A3 * B1 * X)	-0.00119	-0.00127	-0.00126
	(!A2 * A3 * B1 * X)	0.00165	0.00166	0.00166
	(!A1 * A2 * A3 * B1 * X)	-0.00117	-0.00126	-0.00124
	(!A1 * A2 * A3 * B1 * X)	0.00165	0.00166	0.00166
	(!A1 * A2 * A3 * !B1 * !X)	-0.00116	-0.00126	-0.00125
	(!A1 * A2 * A3 * !B1 * !X)	0.00165	0.00166	0.00166
	(!A1 * !A3 * !B1 * !X)	-0.00125	-0.00129	-0.00129
	(!A1 * !A3 * !B1 * !X)	0.00165	0.00167	0.00166
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00119	-0.00126	-0.00126
	(!A1 * !A2 * A3 * !B1 * !X)	0.00165	0.00166	0.00166

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00133	-0.00134	-0.00133
	(A1 * A2 * A3 * B1 * X)	0.00158	0.00160	0.00160
	(A1 * A2 * !A3 * !B1 * !X)	-0.00123	-0.00128	-0.00128
	(A1 * A2 * !A3 * !B1 * !X)	0.00165	0.00167	0.00166
	(A1 * !A2 * A3 * !B1 * !X)	-0.00117	-0.00126	-0.00124
	(A1 * !A2 * A3 * !B1 * !X)	0.00165	0.00166	0.00166
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00124	-0.00128	-0.00127
	(A1 * !A2 * !A3 * !B1 * !X)	0.00165	0.00167	0.00166
	(!A3 * B1 * X)	-0.00125	-0.00127	-0.00127
	(!A3 * B1 * X)	0.00165	0.00166	0.00166
	(!A2 * A3 * B1 * X)	-0.00118	-0.00126	-0.00125
	(!A2 * A3 * B1 * X)	0.00165	0.00167	0.00166
	(!A1 * A2 * A3 * B1 * X)	-0.00116	-0.00125	-0.00124
	(!A1 * A2 * A3 * B1 * X)	0.00165	0.00166	0.00166
	(!A1 * A2 * A3 * !B1 * !X)	-0.00116	-0.00124	-0.00124
	(!A1 * A2 * A3 * !B1 * !X)	0.00165	0.00166	0.00166
	(!A1 * !A3 * !B1 * !X)	-0.00123	-0.00128	-0.00127
	(!A1 * !A3 * !B1 * !X)	0.00165	0.00167	0.00166
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00117	-0.00126	-0.00125
	(!A1 * !A2 * A3 * !B1 * !X)	0.00165	0.00166	0.00166

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00260	-0.00260	-0.00260
	(A1 * A2 * A3 * B1 * X)	0.00313	0.00314	0.00315
	(A1 * A2 * !A3 * !B1 * !X)	-0.00235	-0.00248	-0.00247
	(A1 * A2 * !A3 * !B1 * !X)	0.00325	0.00329	0.00326
	(A1 * !A2 * A3 * !B1 * !X)	-0.00223	-0.00242	-0.00240
	(A1 * !A2 * A3 * !B1 * !X)	0.00326	0.00329	0.00326
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00237	-0.00246	-0.00247
	(A1 * !A2 * !A3 * !B1 * !X)	0.00325	0.00329	0.00326
	(!A3 * B1 * X)	-0.00240	-0.00250	-0.00248
	(!A3 * B1 * X)	0.00325	0.00330	0.00326
	(!A2 * A3 * B1 * X)	-0.00223	-0.00241	-0.00240
	(!A2 * A3 * B1 * X)	0.00326	0.00329	0.00326
	(!A1 * A2 * A3 * B1 * X)	-0.00220	-0.00241	-0.00238
	(!A1 * A2 * A3 * B1 * X)	0.00326	0.00329	0.00326
	(!A1 * A2 * A3 * !B1 * !X)	-0.00220	-0.00240	-0.00238
	(!A1 * A2 * A3 * !B1 * !X)	0.00327	0.00329	0.00326
	(!A1 * !A3 * !B1 * !X)	-0.00237	-0.00250	-0.00247
	(!A1 * !A3 * !B1 * !X)	0.00325	0.00329	0.00326
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00223	-0.00242	-0.00240
	(!A1 * !A2 * A3 * !B1 * !X)	0.00326	0.00329	0.00326

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)	0.00152	0.00154	0.00153
	(A1 * A2 * A3 * A4 * X)	-0.00079	-0.00080	-0.00079
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00154	0.00155	0.00155
	(A1 * A2 * A3 * A4 * X)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00290	0.00292	0.00291
	(A1 * A2 * A3 * A4 * X)	-0.00165	-0.00166	-0.00165

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)**	-0.00135	-0.00136	-0.00150
	(A1 * A2 * A3 * A4 * X)	0.00094	0.00094	0.00082
sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * A4 * X)**	-0.00137	-0.00137	-0.00152
	(A1 * A2 * A3 * A4 * X)	0.00095	0.00095	0.00084
sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * A4 * X)**	-0.00251	-0.00255	-0.00286
	(A1 * A2 * A3 * A4 * X)	0.00195	0.00196	0.00172

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00260	0.00248	0.76796
sky130_fd_sc_hs__and2b_2	0.00235	0.00289	1.35259
sky130_fd_sc_hs__and2b_4	0.00265	0.00518	2.85264

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.21269	0.35172
sky130_fd_sc_hs__and2b_2	0.00000	0.20333	0.24445
sky130_fd_sc_hs__and2b_4	0.00000	0.36836	0.77629

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)	0.19860	0.96551	8.04170
	B->X (RR)	0.11612	0.79133	7.42890
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.21322	0.88421	7.92630
	B->X (RR)	0.12249	0.70844	7.27439
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.21430	0.81205	8.15752
	B->X (RR)	0.12487	0.62496	7.46685

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)	0.16237	0.55515	3.37505
	B->X (FF)	0.12763	0.64478	4.25788
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.18224	0.53214	3.11146
	B->X (FF)	0.14636	0.65259	4.17980
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.18283	0.51480	3.34736
	B->X (FF)	0.15219	0.63207	4.44248

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	0.00575	0.00618	0.01616
	A_N	0.00888	0.00932	0.01936
	B	0.00699	0.00696	0.01452
	B	0.00383	0.00379	0.01139
sky130_fd_sc_hs__and2b_2	A_N	0.00878	0.00954	0.01892
	A_N	0.01160	0.01238	0.02200
	B	0.00983	0.01003	0.01629
	B	0.00608	0.00629	0.01270
sky130_fd_sc_hs__and2b_4	A_N	0.01629	0.01760	0.02886
	A_N	0.01934	0.02064	0.03206
	B	0.01855	0.01908	0.03427
	B	0.01203	0.01257	0.02786

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00961	0.00972	0.01919
	A_N	0.00649	0.00653	0.01573
	B	0.00325	0.00391	0.01367
	B	0.00640	0.00701	0.01619
sky130_fd_sc_hs__and2b_2	A_N	0.01162	0.01197	0.02060
	A_N	0.00879	0.00914	0.01771
	B	0.00514	0.00610	0.01506
	B	0.00885	0.00965	0.01872
sky130_fd_sc_hs__and2b_4	A_N	0.01807	0.01935	0.03080
	A_N	0.01503	0.01624	0.02703
	B	0.01004	0.01182	0.03241
	B	0.01653	0.01817	0.03723

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00542	0.00540	0.01439
	(!B * !X)	0.00195	0.00191	0.01091
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00520	0.00520	0.01416
	(!B * !X)	0.00195	0.00194	0.01092
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00654	0.00658	0.01662
	(!B * !X)	0.00280	0.00282	0.01286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00014	0.00055	0.00999
	(!B * !X)	0.00362	0.00404	0.01348
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00036	0.00074	0.01014
	(!B * !X)	0.00362	0.00400	0.01339
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00062	0.00096	0.01122
	(!B * !X)	0.00438	0.00474	0.01498

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00116	0.00117	0.00116
	(A_N * !X)	-0.00153	-0.00154	-0.00153
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00143	0.00144	0.00142
	(A_N * !X)	-0.00175	-0.00176	-0.00175
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00248	0.00248	0.00247
	(A_N * !X)	-0.00309	-0.00309	-0.00308

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00108	-0.00115	-0.00115
	(A_N * !X)	0.00159	0.00157	0.00154
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00134	-0.00142	-0.00142
	(A_N * !X)	0.00181	0.00180	0.00176
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00235	-0.00247	-0.00247
	(A_N * !X)	0.00318	0.00314	0.00310

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00253	0.00248	0.74825
sky130_fd_sc_hs__and2_2	0.00278	0.00306	1.45836
sky130_fd_sc_hs__and2_4	0.00450	0.00498	2.88013

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.12812	0.33322
sky130_fd_sc_hs__and2_2	0.00000	0.11945	0.22234
sky130_fd_sc_hs__and2_4	0.00000	0.31075	0.73757

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)	0.10669	0.79025	7.39051
	B->X (RR)	0.11483	0.79631	7.38096
sky130_fd_sc_hs__and2_2	A->X (RR)	0.11174	0.71018	7.41699
	B->X (RR)	0.11984	0.70539	7.39194
sky130_fd_sc_hs__and2_4	A->X (RR)	0.11050	0.62429	7.51951
	B->X (RR)	0.12050	0.62653	7.52391

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.11427	0.60855	4.11430
	B->X (FF)	0.13045	0.64863	4.22821
sky130_fd_sc_hs__and2_2	A->X (FF)	0.12577	0.62084	4.29452
	B->X (FF)	0.14287	0.65569	4.41017
sky130_fd_sc_hs__and2_4	A->X (FF)	0.13819	0.60079	4.32937
	B->X (FF)	0.15249	0.62989	4.41511

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00652	0.00671	0.01660
	A	0.00309	0.00327	0.01320
	B	0.00711	0.00703	0.01411
	B	0.00311	0.00303	0.01015
sky130_fd_sc_hs__and2_2	A	0.00903	0.00937	0.01901
	A	0.00525	0.00560	0.01532
	B	0.01009	0.01021	0.01714
	B	0.00532	0.00545	0.01246
sky130_fd_sc_hs__and2_4	A	0.01666	0.01745	0.03667
	A	0.01072	0.01162	0.03080
	B	0.01867	0.01928	0.03457
	B	0.01068	0.01129	0.02664

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00253	0.00312	0.01263
	A	0.00597	0.00653	0.01605
	B	0.00323	0.00379	0.01286
	B	0.00717	0.00773	0.01670
sky130_fd_sc_hs__and2_2	A	0.00488	0.00574	0.01618
	A	0.00866	0.00951	0.01921
	B	0.00523	0.00612	0.01613
	B	0.00994	0.01072	0.01994
sky130_fd_sc_hs__and2_4	A	0.00928	0.01107	0.03152
	A	0.01526	0.01696	0.03683
	B	0.00982	0.01163	0.03076
	B	0.01770	0.01933	0.03861

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00069	0.00069	0.00066
	(!B * !X)	-0.00159	-0.00160	-0.00163
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00050	0.00050	0.00048
	(!B * !X)	-0.00189	-0.00190	-0.00192
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00076	0.00076	0.00071
	(!B * !X)	-0.00309	-0.00311	-0.00317

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00065	-0.00065	-0.00064
	(!B * !X)	0.00164	0.00164	0.00163
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00046	-0.00047	-0.00047
	(!B * !X)	0.00192	0.00194	0.00193
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00068	-0.00069	-0.00068
	(!B * !X)	0.00317	0.00320	0.00318

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00102	0.00103	0.00102
	(!A * !X)	-0.00154	-0.00155	-0.00154
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00119	0.00120	0.00119
	(!A * !X)	-0.00187	-0.00188	-0.00187
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00238	0.00240	0.00238
	(!A * !X)	-0.00288	-0.00289	-0.00288

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00094	-0.00102	-0.00102
	(!A * !X)	0.00159	0.00157	0.00155
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00111	-0.00120	-0.00119
	(!A * !X)	0.00195	0.00192	0.00188
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00222	-0.00238	-0.00238
	(!A * !X)	0.00299	0.00292	0.00289

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00230	0.00243	0.00242	0.74493
sky130_fd_sc_hs__and3b_2	0.00237	0.00293	0.00281	1.35125
sky130_fd_sc_hs__and3b_4	0.00268	0.00503	0.00516	2.85141

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	0.19055	0.50117
sky130_fd_sc_hs__and3b_2	0.00000	0.19061	0.31737
sky130_fd_sc_hs__and3b_4	0.00000	0.26953	0.63326

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)	0.22509	0.99107	8.01862
	B->X (RR)	0.15613	0.86574	7.59780
	C->X (RR)	0.16334	0.85321	7.50657
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.24686	0.92313	7.94918
	B->X (RR)	0.16718	0.78987	7.53034
	C->X (RR)	0.17451	0.77214	7.40623
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.26793	0.89106	8.28763
	B->X (RR)	0.18710	0.73713	7.79539
	C->X (RR)	0.19405	0.70610	7.65039

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)	0.17200	0.55039	3.22245
	B->X (FF)	0.14402	0.67007	4.19354
	C->X (FF)	0.15285	0.69304	4.27760
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.18394	0.52957	3.05830
	B->X (FF)	0.15177	0.66428	4.16911
	C->X (FF)	0.16945	0.69636	4.28708
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.17669	0.50950	3.32226
	B->X (FF)	0.14302	0.61933	4.34480
	C->X (FF)	0.15262	0.64044	4.44140

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	0.00695	0.00754	0.01733
	A_N	0.00955	0.01013	0.02001
	B	0.00782	0.00781	0.01579
	B	0.00460	0.00458	0.01268
	C	0.00858	0.00850	0.01494
	C	0.00470	0.00462	0.01107
sky130_fd_sc_hs__and3b_2	A_N	0.00992	0.01068	0.02037
	A_N	0.01264	0.01340	0.02330
	B	0.01104	0.01123	0.01885
	B	0.00722	0.00741	0.01525
	C	0.01190	0.01198	0.01748
	C	0.00737	0.00746	0.01304
sky130_fd_sc_hs__and3b_4	A_N	0.01799	0.01911	0.03027
	A_N	0.02069	0.02183	0.03301
	B	0.02027	0.02063	0.03494
	B	0.01349	0.01387	0.02868
	C	0.02195	0.02225	0.03566
	C	0.01356	0.01388	0.02780

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00892	0.00913	0.01849
	A_N	0.00633	0.00648	0.01589
	B	0.00332	0.00386	0.01304
	B	0.00653	0.00706	0.01623
	C	0.00367	0.00421	0.01315
	C	0.00747	0.00799	0.01689
sky130_fd_sc_hs__and3b_2	A_N	0.01136	0.01184	0.02128
	A_N	0.00864	0.00912	0.01825
	B	0.00516	0.00593	0.01567
	B	0.00895	0.00969	0.01904
	C	0.00564	0.00635	0.01522
	C	0.01007	0.01070	0.01938
sky130_fd_sc_hs__and3b_4	A_N	0.01893	0.02021	0.03147
	A_N	0.01623	0.01741	0.02785
	B	0.01086	0.01253	0.03017
	B	0.01758	0.01905	0.03676
	C	0.01151	0.01316	0.03209
	C	0.01970	0.02116	0.03910

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)	0.00462	0.00469	0.01393
	(B * !C * !X)	0.00150	0.00156	0.01080
	(!B * !X)	0.00461	0.00468	0.01391
	(!B * !X)	0.00151	0.00156	0.01080
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00504	0.00505	0.01410
	(B * !C * !X)	0.00180	0.00179	0.01085
	(!B * !X)	0.00503	0.00504	0.01408
	(!B * !X)	0.00180	0.00180	0.01085
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00704	0.00706	0.01702
	(B * !C * !X)	0.00341	0.00339	0.01337
	(!B * !X)	0.00700	0.00701	0.01698
	(!B * !X)	0.00341	0.00340	0.01337

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)	0.00018	0.00062	0.01019
	(B * !C * !X)	0.00337	0.00381	0.01337
	(!B * !X)	0.00016	0.00060	0.01019
	(!B * !X)	0.00329	0.00372	0.01332
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00030	0.00068	0.01011
	(B * !C * !X)	0.00362	0.00400	0.01342
	(!B * !X)	0.00028	0.00066	0.01010
	(!B * !X)	0.00352	0.00390	0.01335
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00055	0.00085	0.01101
	(B * !C * !X)	0.00434	0.00464	0.01477
	(!B * !X)	0.00056	0.00086	0.01104
	(!B * !X)	0.00418	0.00448	0.01466

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)	0.00116	0.00117	0.00116
	(A_N * C * !X)	-0.00142	-0.00143	-0.00142
	(A_N * !C * !X)	0.00078	0.00078	0.00078
	(A_N * !C * !X)	-0.00143	-0.00144	-0.00143
	(!A_N * !C * !X)	0.00048	0.00048	0.00048
	(!A_N * !C * !X)	-0.00160	-0.00161	-0.00161
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00144	0.00145	0.00145
	(A_N * C * !X)	-0.00170	-0.00170	-0.00170
	(A_N * !C * !X)	0.00099	0.00099	0.00099
	(A_N * !C * !X)	-0.00171	-0.00171	-0.00171
	(!A_N * !C * !X)	0.00064	0.00064	0.00064
	(!A_N * !C * !X)	-0.00191	-0.00191	-0.00192
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00224	0.00228	0.00226
	(A_N * C * !X)	-0.00325	-0.00327	-0.00327
	(A_N * !C * !X)	0.00150	0.00150	0.00149
	(A_N * !C * !X)	-0.00331	-0.00332	-0.00330
	(!A_N * !C * !X)	0.00102	0.00102	0.00103
	(!A_N * !C * !X)	-0.00347	-0.00348	-0.00347

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)	-0.00106	-0.00116	-0.00116
	(A_N * C * !X)	0.00150	0.00145	0.00143
	(A_N * !C * !X)	-0.00078	-0.00078	-0.00078
	(A_N * !C * !X)	0.00152	0.00152	0.00146
	(!A_N * !C * !X)	-0.00045	-0.00044	-0.00045
	(!A_N * !C * !X)	0.00166	0.00165	0.00163
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00135	-0.00144	-0.00144
	(A_N * C * !X)	0.00181	0.00174	0.00171
	(A_N * !C * !X)	-0.00099	-0.00099	-0.00099
	(A_N * !C * !X)	0.00183	0.00181	0.00174
	(!A_N * !C * !X)	-0.00061	-0.00060	-0.00061
	(!A_N * !C * !X)	0.00197	0.00196	0.00194
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00208	-0.00224	-0.00226
	(A_N * C * !X)	0.00345	0.00327	0.00328
	(A_N * !C * !X)	-0.00150	-0.00150	-0.00149
	(A_N * !C * !X)	0.00348	0.00349	0.00336
	(!A_N * !C * !X)	-0.00094	-0.00095	-0.00098
	(!A_N * !C * !X)	0.00355	0.00358	0.00352

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)	0.00101	0.00102	0.00101
	(A_N * B * !X)	-0.00148	-0.00149	-0.00148
	(A_N * !B * !X)	0.00102	0.00103	0.00102
	(A_N * !B * !X)	-0.00149	-0.00149	-0.00148
	(!A_N * !B * !X)	0.00103	0.00103	0.00102
	(!A_N * !B * !X)	-0.00148	-0.00149	-0.00148
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00126	0.00128	0.00127
	(A_N * B * !X)	-0.00170	-0.00171	-0.00170
	(A_N * !B * !X)	0.00129	0.00129	0.00128
	(A_N * !B * !X)	-0.00171	-0.00171	-0.00170
	(!A_N * !B * !X)	0.00129	0.00129	0.00129
	(!A_N * !B * !X)	-0.00171	-0.00171	-0.00170
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00212	0.00213	0.00212
	(A_N * B * !X)	-0.00337	-0.00338	-0.00337
	(A_N * !B * !X)	0.00213	0.00215	0.00213
	(A_N * !B * !X)	-0.00338	-0.00340	-0.00338
	(!A_N * !B * !X)	0.00214	0.00214	0.00214
	(!A_N * !B * !X)	-0.00338	-0.00338	-0.00338

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)	-0.00095	-0.00101	-0.00101
	(A_N * B * !X)	0.00149	0.00150	0.00149
	(A_N * !B * !X)	-0.00100	-0.00103	-0.00102
	(A_N * !B * !X)	0.00150	0.00150	0.00149
	(!A_N * !B * !X)	-0.00099	-0.00103	-0.00102
	(!A_N * !B * !X)	0.00151	0.00150	0.00149
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00120	-0.00128	-0.00127
	(A_N * B * !X)	0.00171	0.00172	0.00171
	(A_N * !B * !X)	-0.00126	-0.00129	-0.00128
	(A_N * !B * !X)	0.00172	0.00173	0.00171
	(!A_N * !B * !X)	-0.00125	-0.00129	-0.00129
	(!A_N * !B * !X)	0.00173	0.00173	0.00171
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00200	-0.00213	-0.00212
	(A_N * B * !X)	0.00340	0.00341	0.00339
	(A_N * !B * !X)	-0.00207	-0.00215	-0.00213
	(A_N * !B * !X)	0.00338	0.00342	0.00339
	(!A_N * !B * !X)	-0.00205	-0.00214	-0.00214
	(!A_N * !B * !X)	0.00341	0.00342	0.00339

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00261	0.00241	0.00237	0.76595
sky130_fd_sc_hs__and3_2	0.00258	0.00238	0.00240	1.48417
sky130_fd_sc_hs__and3_4	0.00471	0.00458	0.00473	2.86119

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.10692	0.48216
sky130_fd_sc_hs__and3_2	0.00000	0.13411	0.51765
sky130_fd_sc_hs__and3_4	0.00000	0.26678	1.03136

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)	0.13686	0.84090	7.51425
	B->X (RR)	0.14925	0.85258	7.54569
	C->X (RR)	0.15527	0.84000	7.46986
sky130_fd_sc_hs__and3_2	A->X (RR)	0.15582	0.79533	7.70076
	B->X (RR)	0.16806	0.79779	7.71763
	C->X (RR)	0.17410	0.77682	7.60510
sky130_fd_sc_hs__and3_4	A->X (RR)	0.16110	0.72462	7.77209
	B->X (RR)	0.17781	0.73480	7.79544
	C->X (RR)	0.18521	0.70288	7.64874

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.12576	0.63292	4.15767
	B->X (FF)	0.14218	0.66962	4.26426
	C->X (FF)	0.14682	0.68798	4.33784
sky130_fd_sc_hs__and3_2	A->X (FF)	0.15457	0.66865	4.33509
	B->X (FF)	0.17065	0.69831	4.43636
	C->X (FF)	0.17845	0.71504	4.51242
sky130_fd_sc_hs__and3_4	A->X (FF)	0.14435	0.61632	4.31567
	B->X (FF)	0.16115	0.64881	4.42077
	C->X (FF)	0.17349	0.67417	4.52680

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00728	0.00743	0.01669
	A	0.00367	0.00382	0.01309
	B	0.00768	0.00765	0.01560
	B	0.00370	0.00366	0.01162
	C	0.00843	0.00835	0.01546
	C	0.00366	0.00359	0.01080
sky130_fd_sc_hs__and3_2	A	0.00971	0.01001	0.01870
	A	0.00610	0.00641	0.01537
	B	0.01009	0.01033	0.01768
	B	0.00614	0.00638	0.01400
	C	0.01086	0.01103	0.01710
	C	0.00611	0.00628	0.01263
sky130_fd_sc_hs__and3_4	A	0.01821	0.01887	0.03618
	A	0.01155	0.01224	0.03003
	B	0.01972	0.02018	0.03486
	B	0.01159	0.01207	0.02724
	C	0.02145	0.02185	0.03524
	C	0.01163	0.01204	0.02597

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00240	0.00296	0.01237
	A	0.00601	0.00651	0.01590
	B	0.00327	0.00379	0.01294
	B	0.00721	0.00772	0.01685
	C	0.00362	0.00424	0.01346
	C	0.00826	0.00885	0.01792
sky130_fd_sc_hs__and3_2	A	0.00446	0.00530	0.01492
	A	0.00808	0.00883	0.01812
	B	0.00534	0.00615	0.01560
	B	0.00924	0.01002	0.01917
	C	0.00560	0.00640	0.01572
	C	0.01023	0.01102	0.01983
sky130_fd_sc_hs__and3_4	A	0.00947	0.01113	0.03021
	A	0.01613	0.01768	0.03648
	B	0.01093	0.01251	0.03167
	B	0.01892	0.02039	0.03880
	C	0.01167	0.01332	0.03205
	C	0.02121	0.02272	0.04099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00074	0.00074	0.00070
	(B * !C * !X)	-0.00153	-0.00153	-0.00161
	(!B * !X)	0.00074	0.00073	0.00071
	(!B * !X)	-0.00158	-0.00158	-0.00162
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00075	0.00075	0.00071
	(B * !C * !X)	-0.00151	-0.00152	-0.00159
	(!B * !X)	0.00075	0.00076	0.00073
	(!B * !X)	-0.00156	-0.00157	-0.00160
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00090	0.00090	0.00079
	(B * !C * !X)	-0.00310	-0.00312	-0.00330
	(!B * !X)	0.00090	0.00090	0.00083
	(!B * !X)	-0.00322	-0.00324	-0.00332

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00070	-0.00069	-0.00069
	(B * !C * !X)	0.00163	0.00163	0.00162
	(!B * !X)	-0.00071	-0.00070	-0.00070
	(!B * !X)	0.00163	0.00164	0.00162
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00071	-0.00071	-0.00070
	(B * !C * !X)	0.00160	0.00161	0.00160
	(!B * !X)	-0.00072	-0.00072	-0.00071
	(!B * !X)	0.00160	0.00161	0.00160
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00077	-0.00078	-0.00077
	(B * !C * !X)	0.00333	0.00335	0.00333
	(!B * !X)	-0.00080	-0.00081	-0.00080
	(!B * !X)	0.00334	0.00335	0.00334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00046	0.00046	0.00047
	(A * !C * !X)	-0.00142	-0.00142	-0.00141
	(!A * C * !X)	0.00099	0.00099	0.00099
	(!A * C * !X)	-0.00142	-0.00143	-0.00142
	(!A * !C * !X)	0.00059	0.00059	0.00058
	(!A * !C * !X)	-0.00142	-0.00143	-0.00142
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00044	0.00045	0.00045
	(A * !C * !X)	-0.00139	-0.00140	-0.00139
	(!A * C * !X)	0.00098	0.00099	0.00098
	(!A * C * !X)	-0.00140	-0.00140	-0.00139
	(!A * !C * !X)	0.00056	0.00057	0.00056
	(!A * !C * !X)	-0.00140	-0.00141	-0.00140
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00106	0.00106	0.00108
	(A * !C * !X)	-0.00277	-0.00278	-0.00275
	(!A * C * !X)	0.00215	0.00216	0.00215
	(!A * C * !X)	-0.00277	-0.00278	-0.00277
	(!A * !C * !X)	0.00133	0.00133	0.00132
	(!A * !C * !X)	-0.00280	-0.00280	-0.00279

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00044	-0.00043	-0.00044
	(A * !C * !X)	0.00147	0.00146	0.00143
	(!A * C * !X)	-0.00090	-0.00099	-0.00099
	(!A * C * !X)	0.00150	0.00145	0.00143
	(!A * !C * !X)	-0.00059	-0.00059	-0.00058
	(!A * !C * !X)	0.00150	0.00151	0.00145
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00042	-0.00042	-0.00043
	(A * !C * !X)	0.00145	0.00144	0.00141
	(!A * C * !X)	-0.00090	-0.00099	-0.00098
	(!A * C * !X)	0.00148	0.00142	0.00140
	(!A * !C * !X)	-0.00056	-0.00057	-0.00056
	(!A * !C * !X)	0.00149	0.00148	0.00142
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00099	-0.00100	-0.00102
	(A * !C * !X)	0.00287	0.00287	0.00281
	(!A * C * !X)	-0.00196	-0.00216	-0.00215
	(!A * C * !X)	0.00294	0.00282	0.00278
	(!A * !C * !X)	-0.00133	-0.00133	-0.00132
	(!A * !C * !X)	0.00296	0.00298	0.00285

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00102	0.00102	0.00102
	(A * !B * !X)	-0.00146	-0.00146	-0.00146
	(!A * B * !X)	0.00100	0.00100	0.00099
	(!A * B * !X)	-0.00146	-0.00146	-0.00146
	(!A * !B * !X)	0.00102	0.00102	0.00101
	(!A * !B * !X)	-0.00146	-0.00147	-0.00146
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00100	0.00101	0.00100
	(A * !B * !X)	-0.00147	-0.00148	-0.00147
	(!A * B * !X)	0.00097	0.00099	0.00098
	(!A * B * !X)	-0.00146	-0.00147	-0.00147
	(!A * !B * !X)	0.00100	0.00100	0.00100
	(!A * !B * !X)	-0.00147	-0.00147	-0.00147
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00213	0.00214	0.00212
	(A * !B * !X)	-0.00292	-0.00292	-0.00291
	(!A * B * !X)	0.00208	0.00209	0.00208
	(!A * B * !X)	-0.00291	-0.00292	-0.00291
	(!A * !B * !X)	0.00212	0.00213	0.00211
	(!A * !B * !X)	-0.00292	-0.00292	-0.00291

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00099	-0.00102	-0.00102
	(A * !B * !X)	0.00147	0.00148	0.00146
	(!A * B * !X)	-0.00093	-0.00100	-0.00099
	(!A * B * !X)	0.00146	0.00147	0.00146
	(!A * !B * !X)	-0.00099	-0.00102	-0.00101
	(!A * !B * !X)	0.00147	0.00148	0.00146
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00097	-0.00101	-0.00100
	(A * !B * !X)	0.00148	0.00149	0.00147
	(!A * B * !X)	-0.00091	-0.00099	-0.00098
	(!A * B * !X)	0.00147	0.00148	0.00147
	(!A * !B * !X)	-0.00098	-0.00100	-0.00100
	(!A * !B * !X)	0.00148	0.00149	0.00147
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00204	-0.00214	-0.00212
	(A * !B * !X)	0.00292	0.00295	0.00292
	(!A * B * !X)	-0.00195	-0.00209	-0.00208
	(!A * B * !X)	0.00293	0.00294	0.00292
	(!A * !B * !X)	-0.00205	-0.00213	-0.00211
	(!A * !B * !X)	0.00292	0.00295	0.00292

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00235	0.00238	0.00251	0.00245	0.70390
sky130_fd_sc_hs__and4bb_2	0.00238	0.00226	0.00278	0.00284	1.44659
sky130_fd_sc_hs__and4bb_4	0.00260	0.00275	0.00515	0.00500	2.83518

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	0.25303	0.66513
sky130_fd_sc_hs__and4bb_2	0.00000	0.26162	0.40914
sky130_fd_sc_hs__and4bb_4	0.00000	0.30250	0.82262

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)	0.27094	1.06462	8.12231
	B_N->X (FR)	0.28497	1.07715	8.11591
	C->X (RR)	0.21396	0.94323	7.73872
	D->X (RR)	0.21970	0.93239	7.66283
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.27072	0.95139	8.03057
	B_N->X (FR)	0.29854	0.98561	8.08963
	C->X (RR)	0.22225	0.84657	7.71442
	D->X (RR)	0.23054	0.83243	7.59476
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.32101	0.97464	8.41701
	B_N->X (FR)	0.35833	1.01821	8.48702
	C->X (RR)	0.26165	0.81425	7.93113
	D->X (RR)	0.26863	0.79777	7.78767

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)	0.18209	0.56613	3.19151
	B_N->X (RF)	0.19145	0.57864	3.20942
	C->X (FF)	0.16097	0.70543	4.23321
	D->X (FF)	0.17159	0.72868	4.32248
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.18657	0.54577	3.35952
	B_N->X (RF)	0.20533	0.57593	3.43417
	C->X (FF)	0.16924	0.71285	4.58454
	D->X (FF)	0.18063	0.73460	4.67133
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.19529	0.53616	3.37121
	B_N->X (RF)	0.20457	0.55266	3.41739
	C->X (FF)	0.15633	0.65107	4.44329
	D->X (FF)	0.16662	0.67314	4.54314

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	0.00742	0.00798	0.01726
	A_N	0.01008	0.01066	0.01997
	B_N	0.00800	0.00870	0.01824
	B_N	0.01100	0.01170	0.02128
	C	0.00885	0.00892	0.01627
	C	0.00565	0.00572	0.01319
	D	0.00953	0.00961	0.01679
	D	0.00576	0.00584	0.01314
sky130_fd_sc_hs__and4bb_2	A_N	0.01014	0.01086	0.02058
	A_N	0.01268	0.01340	0.02329
	B_N	0.01144	0.01203	0.02108
	B_N	0.01407	0.01467	0.02384
	C	0.01219	0.01216	0.01889
	C	0.00844	0.00843	0.01544
	D	0.01312	0.01303	0.01845
	D	0.00858	0.00848	0.01418
sky130_fd_sc_hs__and4bb_4	A_N	0.02031	0.02123	0.03227
	A_N	0.02264	0.02354	0.03461
	B_N	0.02213	0.02318	0.03358
	B_N	0.02486	0.02584	0.03644
	C	0.02382	0.02392	0.03683
	C	0.01686	0.01696	0.03026
	D	0.02528	0.02536	0.03702
	D	0.01694	0.01703	0.02921

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00957	0.00966	0.01831
	A_N	0.00690	0.00690	0.01547
	B_N	0.00988	0.01015	0.01942
	B_N	0.00688	0.00709	0.01637
	C	0.00422	0.00475	0.01397
	C	0.00740	0.00792	0.01712
	D	0.00461	0.00516	0.01452
	D	0.00829	0.00883	0.01813
sky130_fd_sc_hs__and4bb_2	A_N	0.01128	0.01176	0.02127
	A_N	0.00874	0.00923	0.01834
	B_N	0.01188	0.01240	0.02100
	B_N	0.00925	0.00969	0.01835
	C	0.00593	0.00666	0.01604
	C	0.00965	0.01037	0.01935
	D	0.00634	0.00707	0.01565
	D	0.01077	0.01149	0.02002
sky130_fd_sc_hs__and4bb_4	A_N	0.01895	0.02024	0.03127
	A_N	0.01664	0.01792	0.02821
	B_N	0.02047	0.02180	0.03274
	B_N	0.01775	0.01898	0.02921
	C	0.01130	0.01267	0.03161
	C	0.01821	0.01958	0.03679
	D	0.01238	0.01410	0.03233
	D	0.02052	0.02207	0.03895

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)	0.00463	0.00465	0.01374
	(B_N * !X)	0.00163	0.00164	0.01073
	(!B_N * C * !D * !X)	0.00482	0.00485	0.01394
	(!B_N * C * !D * !X)	0.00181	0.00183	0.01093
	(!B_N * !C * !X)	0.00482	0.00485	0.01393
	(!B_N * !C * !X)	0.00181	0.00183	0.01093
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00475	0.00477	0.01391
	(B_N * !X)	0.00171	0.00172	0.01087
	(!B_N * C * !D * !X)	0.00493	0.00495	0.01410
	(!B_N * C * !D * !X)	0.00188	0.00189	0.01105
	(!B_N * !C * !X)	0.00493	0.00495	0.01409
	(!B_N * !C * !X)	0.00188	0.00189	0.01105
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00670	0.00674	0.01658
	(B_N * !X)	0.00351	0.00353	0.01338
	(!B_N * C * !D * !X)	0.00708	0.00711	0.01695
	(!B_N * C * !D * !X)	0.00386	0.00389	0.01373
	(!B_N * !C * !X)	0.00707	0.00711	0.01694
	(!B_N * !C * !X)	0.00387	0.00389	0.01373

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)	0.00048	0.00088	0.01036
	(B_N * !X)	0.00349	0.00390	0.01336
	(!B_N * C * !D * !X)	0.00032	0.00082	0.01018
	(!B_N * C * !D * !X)	0.00342	0.00392	0.01326
	(!B_N * !C * !X)	0.00030	0.00079	0.01017
	(!B_N * !C * !X)	0.00333	0.00384	0.01319
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00039	0.00078	0.01032
	(B_N * !X)	0.00343	0.00383	0.01337
	(!B_N * C * !D * !X)	0.00025	0.00065	0.01016
	(!B_N * C * !D * !X)	0.00340	0.00380	0.01329
	(!B_N * !C * !X)	0.00023	0.00062	0.01015
	(!B_N * !C * !X)	0.00330	0.00370	0.01322
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00123	0.00156	0.01163
	(B_N * !X)	0.00442	0.00476	0.01482
	(!B_N * C * !D * !X)	0.00094	0.00128	0.01130
	(!B_N * C * !D * !X)	0.00432	0.00466	0.01465
	(!B_N * !C * !X)	0.00088	0.00121	0.01127
	(!B_N * !C * !X)	0.00412	0.00446	0.01451

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)	0.00468	0.00463	0.01358
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00134	0.00128	0.01023
	(!C * !X)	0.00475	0.00476	0.01379
	(!C * !X)	0.00134	0.00134	0.01038
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00478	0.00470	0.01350
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00164	0.00156	0.01036
	(!C * !X)	0.00485	0.00484	0.01375
	(!C * !X)	0.00163	0.00163	0.01054
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00670	0.00652	0.01601
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00310	0.00290	0.01240
	(!C * !X)	0.00685	0.00682	0.01644
	(!C * !X)	0.00311	0.00307	0.01269

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)	0.00099	0.00147	0.01089
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00432	0.00481	0.01422
	(!C * !X)	0.00061	0.00110	0.01054
	(!C * !X)	0.00401	0.00450	0.01393
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00139	0.00176	0.01121
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00452	0.00491	0.01435
	(!C * !X)	0.00094	0.00131	0.01078
	(!C * !X)	0.00414	0.00452	0.01398
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00272	0.00300	0.01303
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00634	0.00662	0.01664
	(!C * !X)	0.00192	0.00221	0.01226
	(!C * !X)	0.00566	0.00593	0.01599

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)**	0.00129	0.00130	0.00130
	(A_N * B_N * D * !X)	-0.00139	-0.00139	-0.00139
	(A_N * B_N * !D * !X)	0.00095	0.00095	0.00095
	(A_N * B_N * !D * !X)	-0.00139	-0.00139	-0.00139
	(A_N * !B_N * D * !X)	0.00100	0.00101	0.00100
	(A_N * !B_N * D * !X)	-0.00170	-0.00171	-0.00169
	(A_N * !B_N * !D * !X)	0.00063	0.00064	0.00063
	(A_N * !B_N * !D * !X)	-0.00181	-0.00182	-0.00181
	(!A_N * B_N * D * !X)	0.00129	0.00130	0.00130
	(!A_N * B_N * D * !X)	-0.00139	-0.00139	-0.00139
	(!A_N * B_N * !D * !X)	0.00094	0.00095	0.00094
	(!A_N * B_N * !D * !X)	-0.00139	-0.00140	-0.00139
	(!A_N * !B_N * !D * !X)	0.00051	0.00051	0.00052
	(!A_N * !B_N * !D * !X)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00139	0.00140	0.00139
	(A_N * B_N * D * !X)	-0.00165	-0.00165	-0.00165
	(A_N * B_N * !D * !X)	0.00097	0.00097	0.00097
	(A_N * B_N * !D * !X)	-0.00165	-0.00165	-0.00165
	(A_N * !B_N * D * !X)	0.00115	0.00116	0.00115
	(A_N * !B_N * D * !X)	-0.00190	-0.00191	-0.00189
	(A_N * !B_N * !D * !X)	0.00071	0.00072	0.00071
	(A_N * !B_N * !D * !X)	-0.00203	-0.00205	-0.00204
	(!A_N * B_N * D * !X)	0.00139	0.00140	0.00139
	(!A_N * B_N * D * !X)	-0.00165	-0.00166	-0.00165
	(!A_N * B_N * !D * !X)	0.00096	0.00097	0.00096
	(!A_N * B_N * !D * !X)	-0.00165	-0.00166	-0.00165
	(!A_N * !B_N * !D * !X)	0.00057	0.00057	0.00057
	(!A_N * !B_N * !D * !X)	-0.00189	-0.00188	-0.00189

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00231	0.00231	0.00231
	(A_N * B_N * D * !X)	-0.00340	-0.00340	-0.00341
	(A_N * B_N * !D * !X)	0.00155	0.00156	0.00155
	(A_N * B_N * !D * !X)	-0.00343	-0.00343	-0.00342
	(A_N * !B_N * D * !X)	0.00217	0.00219	0.00218
	(A_N * !B_N * D * !X)	-0.00357	-0.00358	-0.00354
	(A_N * !B_N * !D * !X)	0.00139	0.00140	0.00139
	(A_N * !B_N * !D * !X)	-0.00381	-0.00384	-0.00382
	(!A_N * B_N * D * !X)	0.00231	0.00234	0.00232
	(!A_N * B_N * D * !X)	-0.00340	-0.00342	-0.00340
	(!A_N * B_N * !D * !X)	0.00154	0.00154	0.00153
	(!A_N * B_N * !D * !X)	-0.00343	-0.00344	-0.00342
	(!A_N * !B_N * !D * !X)	0.00114	0.00115	0.00115
	(!A_N * !B_N * !D * !X)	-0.00353	-0.00354	-0.00355

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)**	-0.00128	-0.00130	-0.00130
	(A_N * B_N * D * !X)	0.00141	0.00141	0.00140
	(A_N * B_N * !D * !X)	-0.00095	-0.00095	-0.00095
	(A_N * B_N * !D * !X)	0.00142	0.00140	0.00140
	(A_N * !B_N * D * !X)	-0.00092	-0.00101	-0.00100
	(A_N * !B_N * D * !X)	0.00176	0.00171	0.00169
	(A_N * !B_N * !D * !X)	-0.00063	-0.00064	-0.00063
	(A_N * !B_N * !D * !X)	0.00186	0.00188	0.00185
	(!A_N * B_N * D * !X)	-0.00127	-0.00130	-0.00130
	(!A_N * B_N * D * !X)	0.00142	0.00141	0.00140
	(!A_N * B_N * !D * !X)	-0.00094	-0.00095	-0.00094
	(!A_N * B_N * !D * !X)	0.00147	0.00146	0.00141
	(!A_N * !B_N * !D * !X)	-0.00048	-0.00048	-0.00048
	(!A_N * !B_N * !D * !X)	0.00171	0.00173	0.00171
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00137	-0.00140	-0.00139
	(A_N * B_N * D * !X)	0.00167	0.00168	0.00166
	(A_N * B_N * !D * !X)	-0.00097	-0.00097	-0.00097
	(A_N * B_N * !D * !X)	0.00166	0.00167	0.00166
	(A_N * !B_N * D * !X)	-0.00106	-0.00116	-0.00115
	(A_N * !B_N * D * !X)	0.00198	0.00192	0.00189
	(A_N * !B_N * !D * !X)	-0.00071	-0.00072	-0.00071
	(A_N * !B_N * !D * !X)	0.00208	0.00212	0.00208
	(!A_N * B_N * D * !X)	-0.00136	-0.00140	-0.00139
	(!A_N * B_N * D * !X)	0.00169	0.00168	0.00166
	(!A_N * B_N * !D * !X)	-0.00096	-0.00097	-0.00096
	(!A_N * B_N * !D * !X)	0.00172	0.00173	0.00168
	(!A_N * !B_N * !D * !X)	-0.00054	-0.00054	-0.00053
	(!A_N * !B_N * !D * !X)	0.00194	0.00193	0.00192

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	-0.00229	-0.00231	-0.00231
	(A_N * B_N * D * !X)	0.00344	0.00346	0.00342
	(A_N * B_N * !D * !X)	-0.00155	-0.00156	-0.00155
	(A_N * B_N * !D * !X)	0.00343	0.00345	0.00343
	(A_N * !B_N * D * !X)	-0.00202	-0.00219	-0.00218
	(A_N * !B_N * D * !X)	0.00373	0.00360	0.00354
	(A_N * !B_N * !D * !X)	-0.00139	-0.00140	-0.00139
	(A_N * !B_N * !D * !X)	0.00388	0.00395	0.00390
	(!A_N * B_N * D * !X)	-0.00226	-0.00233	-0.00232
	(!A_N * B_N * D * !X)	0.00348	0.00346	0.00342
	(!A_N * B_N * !D * !X)	-0.00154	-0.00154	-0.00153
	(!A_N * B_N * !D * !X)	0.00353	0.00354	0.00346
	(!A_N * !B_N * !D * !X)	-0.00106	-0.00107	-0.00106
	(!A_N * !B_N * !D * !X)	0.00362	0.00364	0.00362

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)**	0.00117	0.00118	0.00117
	(A_N * B_N * C * !X)	-0.00136	-0.00136	-0.00136
	(A_N * !C * !X)	0.00118	0.00118	0.00117
	(A_N * !C * !X)	-0.00136	-0.00136	-0.00136
	(A_N * !B_N * C * !X)	0.00100	0.00100	0.00100
	(A_N * !B_N * C * !X)	-0.00154	-0.00154	-0.00153
	(!A_N * B_N * C * !X)	0.00117	0.00117	0.00117
	(!A_N * B_N * C * !X)	-0.00136	-0.00136	-0.00136
	(!A_N * B_N * !C * !X)	0.00118	0.00118	0.00117
	(!A_N * B_N * !C * !X)	-0.00136	-0.00136	-0.00136
	(!A_N * !B_N * !C * !X)	0.00104	0.00104	0.00103
	(!A_N * !B_N * !C * !X)	-0.00151	-0.00151	-0.00150

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00123	0.00123	0.00123
	(A_N * B_N * C * !X)	-0.00174	-0.00174	-0.00174
	(A_N * !C * !X)	0.00125	0.00125	0.00125
	(A_N * !C * !X)	-0.00174	-0.00175	-0.00174
	(A_N * !B_N * C * !X)	0.00116	0.00116	0.00116
	(A_N * !B_N * C * !X)	-0.00184	-0.00184	-0.00183
	(!A_N * B_N * C * !X)	0.00123	0.00124	0.00123
	(!A_N * B_N * C * !X)	-0.00174	-0.00175	-0.00174
	(!A_N * B_N * !C * !X)	0.00125	0.00125	0.00125
	(!A_N * B_N * !C * !X)	-0.00174	-0.00175	-0.00174
	(!A_N * !B_N * !C * !X)	0.00119	0.00120	0.00119
	(!A_N * !B_N * !C * !X)	-0.00180	-0.00180	-0.00180
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00205	0.00207	0.00205
	(A_N * B_N * C * !X)	-0.00337	-0.00339	-0.00338
	(A_N * !C * !X)	0.00209	0.00209	0.00208
	(A_N * !C * !X)	-0.00338	-0.00339	-0.00338
	(A_N * !B_N * C * !X)	0.00201	0.00205	0.00202
	(A_N * !B_N * C * !X)	-0.00345	-0.00348	-0.00344
	(!A_N * B_N * C * !X)	0.00205	0.00206	0.00205
	(!A_N * B_N * C * !X)	-0.00337	-0.00338	-0.00338
	(!A_N * B_N * !C * !X)	0.00209	0.00210	0.00208
	(!A_N * B_N * !C * !X)	-0.00338	-0.00339	-0.00338
	(!A_N * !B_N * !C * !X)	0.00209	0.00210	0.00208
	(!A_N * !B_N * !C * !X)	-0.00338	-0.00340	-0.00338

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)**	-0.00111	-0.00117	-0.00117
	(A_N * B_N * C * !X)	0.00136	0.00137	0.00137
	(A_N * !C * !X)	-0.00114	-0.00118	-0.00117
	(A_N * !C * !X)	0.00136	0.00138	0.00137
	(A_N * !B_N * C * !X)	-0.00094	-0.00100	-0.00100
	(A_N * !B_N * C * !X)	0.00156	0.00154	0.00153
	(!A_N * B_N * C * !X)	-0.00111	-0.00117	-0.00117
	(!A_N * B_N * C * !X)	0.00136	0.00137	0.00137
	(!A_N * B_N * !C * !X)	-0.00115	-0.00118	-0.00117
	(!A_N * B_N * !C * !X)	0.00137	0.00138	0.00137
	(!A_N * !B_N * !C * !X)	-0.00099	-0.00104	-0.00103
	(!A_N * !B_N * !C * !X)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00117	-0.00123	-0.00123
	(A_N * B_N * C * !X)	0.00175	0.00176	0.00175
	(A_N * !C * !X)	-0.00122	-0.00125	-0.00125
	(A_N * !C * !X)	0.00176	0.00177	0.00175
	(A_N * !B_N * C * !X)	-0.00108	-0.00116	-0.00116
	(A_N * !B_N * C * !X)	0.00187	0.00185	0.00183
	(!A_N * B_N * C * !X)	-0.00117	-0.00124	-0.00123
	(!A_N * B_N * C * !X)	0.00175	0.00176	0.00175
	(!A_N * B_N * !C * !X)	-0.00122	-0.00125	-0.00125
	(!A_N * B_N * !C * !X)	0.00176	0.00177	0.00175
	(!A_N * !B_N * !C * !X)	-0.00115	-0.00120	-0.00119
	(!A_N * !B_N * !C * !X)	0.00182	0.00183	0.00180

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00194	-0.00207	-0.00205
	(A_N * B_N * C * !X)	0.00338	0.00341	0.00339
	(A_N * !C * !X)	-0.00201	-0.00209	-0.00208
	(A_N * !C * !X)	0.00338	0.00342	0.00339
	(A_N * !B_N * C * !X)	-0.00189	-0.00205	-0.00202
	(A_N * !B_N * C * !X)	0.00351	0.00348	0.00344
	(!A_N * B_N * C * !X)	-0.00194	-0.00206	-0.00205
	(!A_N * B_N * C * !X)	0.00339	0.00341	0.00339
	(!A_N * B_N * !C * !X)	-0.00201	-0.00210	-0.00208
	(!A_N * B_N * !C * !X)	0.00338	0.00342	0.00339
	(!A_N * !B_N * !C * !X)	-0.00198	-0.00210	-0.00208
	(!A_N * !B_N * !C * !X)	0.00340	0.00342	0.00339

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00248	0.00262	0.00253	0.00245	0.73757
sky130_fd_sc_hs__and4b_2	0.00231	0.00283	0.00282	0.00290	1.35230
sky130_fd_sc_hs__and4b_4	0.00256	0.00522	0.00561	0.00521	2.58315

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	0.16902	0.64672
sky130_fd_sc_hs__and4b_2	0.00000	0.17814	0.38981
sky130_fd_sc_hs__and4b_4	0.00000	0.24399	0.78328

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)	0.25347	1.02727	8.01854
	B->X (RR)	0.19551	0.92939	7.74086
	C->X (RR)	0.20511	0.92219	7.69088
	D->X (RR)	0.21373	0.91297	7.57989
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.28208	0.97635	8.03562
	B->X (RR)	0.20436	0.85362	7.69158
	C->X (RR)	0.21665	0.84491	7.62391
	D->X (RR)	0.22386	0.82953	7.49084
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.33525	0.99856	8.41570
	B->X (RR)	0.22915	0.81339	7.88664
	C->X (RR)	0.25227	0.81230	7.79516
	D->X (RR)	0.25570	0.79562	7.71429

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)	0.17183	0.55866	3.28399
	B->X (FF)	0.14695	0.68305	4.24045
	C->X (FF)	0.15841	0.70705	4.33586
	D->X (FF)	0.17103	0.73518	4.44073
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.19587	0.55284	3.14043
	B->X (FF)	0.16199	0.68268	4.22675
	C->X (FF)	0.17624	0.70821	4.32427
	D->X (FF)	0.18569	0.72667	4.40472
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.21298	0.56054	3.18457
	B->X (FF)	0.15604	0.63458	4.12336
	C->X (FF)	0.17110	0.66150	4.22832
	D->X (FF)	0.19361	0.69832	4.35604

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	0.00713	0.00765	0.01739
	A_N	0.00966	0.01017	0.02000
	B	0.00828	0.00816	0.01548
	B	0.00455	0.00442	0.01187
	C	0.00906	0.00891	0.01608
	C	0.00472	0.00457	0.01186
	D	0.00965	0.00940	0.01508
	D	0.00471	0.00445	0.01026
sky130_fd_sc_hs__and4b_2	A_N	0.01009	0.01078	0.02000
	A_N	0.01248	0.01318	0.02256
	B	0.01102	0.01114	0.01826
	B	0.00701	0.00713	0.01453
	C	0.01185	0.01190	0.01878
	C	0.00718	0.00723	0.01438
	D	0.01279	0.01281	0.01772
	D	0.00715	0.00717	0.01213
sky130_fd_sc_hs__and4b_4	A_N	0.02031	0.02121	0.03192
	A_N	0.02304	0.02390	0.03468
	B	0.02195	0.02231	0.03586
	B	0.01458	0.01495	0.02892
	C	0.02412	0.02434	0.03584
	C	0.01500	0.01522	0.02723
	D	0.02518	0.02535	0.03772
	D	0.01507	0.01524	0.02815

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00886	0.00899	0.01843
	A_N	0.00633	0.00644	0.01571
	B	0.00335	0.00378	0.01267
	B	0.00707	0.00748	0.01616
	C	0.00356	0.00408	0.01329
	C	0.00782	0.00829	0.01707
	D	0.00421	0.00460	0.01339
	D	0.00899	0.00937	0.01786
sky130_fd_sc_hs__and4b_2	A_N	0.01177	0.01224	0.02069
	A_N	0.00938	0.00980	0.01823
	B	0.00549	0.00621	0.01531
	B	0.00948	0.01018	0.01914
	C	0.00605	0.00676	0.01581
	C	0.01062	0.01132	0.02032
	D	0.00630	0.00693	0.01538
	D	0.01174	0.01235	0.02071
sky130_fd_sc_hs__and4b_4	A_N	0.02032	0.02144	0.03100
	A_N	0.01759	0.01872	0.02826
	B	0.01024	0.01180	0.02935
	B	0.01759	0.01911	0.03636
	C	0.01121	0.01264	0.02947
	C	0.02012	0.02152	0.03801
	D	0.01257	0.01409	0.03184
	D	0.02228	0.02377	0.04077

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)	0.00474	0.00480	0.01395
	(B * C * !D * !X)	0.00136	0.00140	0.01057
	(B * !C * !X)	0.00474	0.00480	0.01395
	(B * !C * !X)	0.00136	0.00141	0.01057
	(!B * !X)	0.00473	0.00478	0.01393
	(!B * !X)	0.00136	0.00141	0.01057
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00527	0.00528	0.01423
	(B * C * !D * !X)	0.00205	0.00205	0.01102
	(B * !C * !X)	0.00527	0.00528	0.01423
	(B * !C * !X)	0.00205	0.00205	0.01102
	(!B * !X)	0.00526	0.00526	0.01421
	(!B * !X)	0.00206	0.00205	0.01102
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00822	0.00823	0.01783
	(B * C * !D * !X)	0.00432	0.00430	0.01391
	(B * !C * !X)	0.00821	0.00822	0.01782
	(B * !C * !X)	0.00432	0.00430	0.01391
	(!B * !X)	0.00815	0.00816	0.01777
	(!B * !X)	0.00432	0.00430	0.01391

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)	0.00027	0.00073	0.01022
	(B * C * !D * !X)	0.00377	0.00422	0.01368
	(B * !C * !X)	0.00024	0.00070	0.01020
	(B * !C * !X)	0.00369	0.00416	0.01364
	(!B * !X)	0.00024	0.00070	0.01021
	(!B * !X)	0.00361	0.00408	0.01359
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00036	0.00073	0.01011
	(B * C * !D * !X)	0.00371	0.00408	0.01342
	(B * !C * !X)	0.00034	0.00071	0.01010
	(B * !C * !X)	0.00364	0.00401	0.01338
	(!B * !X)	0.00033	0.00070	0.01010
	(!B * !X)	0.00354	0.00392	0.01331
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00072	0.00102	0.01086
	(B * C * !D * !X)	0.00487	0.00517	0.01495
	(B * !C * !X)	0.00069	0.00098	0.01085
	(B * !C * !X)	0.00474	0.00504	0.01487
	(!B * !X)	0.00067	0.00096	0.01086
	(!B * !X)	0.00453	0.00484	0.01473

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)**	0.00120	0.00121	0.00120
	(A_N * C * D * !X)	-0.00155	-0.00156	-0.00156
	(A_N * C * !D * !X)	0.00083	0.00082	0.00083
	(A_N * C * !D * !X)	-0.00156	-0.00156	-0.00156
	(A_N * !C * !X)	0.00081	0.00081	0.00081
	(A_N * !C * !X)	-0.00157	-0.00157	-0.00156
	(!A_N * C * !D * !X)	0.00050	0.00050	0.00050
	(!A_N * C * !D * !X)	-0.00172	-0.00173	-0.00174
	(!A_N * !C * !X)	0.00050	0.00050	0.00050
	(!A_N * !C * !X)	-0.00175	-0.00176	-0.00175
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00138	0.00139	0.00138
	(A_N * C * D * !X)	-0.00165	-0.00166	-0.00165
	(A_N * C * !D * !X)	0.00092	0.00093	0.00092
	(A_N * C * !D * !X)	-0.00166	-0.00167	-0.00166
	(A_N * !C * !X)	0.00095	0.00096	0.00095
	(A_N * !C * !X)	-0.00167	-0.00168	-0.00167
	(!A_N * C * !D * !X)	0.00053	0.00054	0.00054
	(!A_N * C * !D * !X)	-0.00185	-0.00186	-0.00188
	(!A_N * !C * !X)	0.00057	0.00057	0.00057
	(!A_N * !C * !X)	-0.00188	-0.00189	-0.00189
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00279	0.00281	0.00281
	(A_N * C * D * !X)	-0.00316	-0.00317	-0.00316
	(A_N * C * !D * !X)	0.00202	0.00203	0.00202
	(A_N * C * !D * !X)	-0.00317	-0.00318	-0.00317
	(A_N * !C * !X)	0.00208	0.00209	0.00209
	(A_N * !C * !X)	-0.00318	-0.00318	-0.00318
	(!A_N * C * !D * !X)	0.00121	0.00122	0.00122
	(!A_N * C * !D * !X)	-0.00362	-0.00365	-0.00369
	(!A_N * !C * !X)	0.00126	0.00127	0.00127
	(!A_N * !C * !X)	-0.00368	-0.00370	-0.00371

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)	-0.00110	-0.00120	-0.00120
	(A_N * C * D * !X)	0.00166	0.00158	0.00157
	(A_N * C * !D * !X)	-0.00082	-0.00082	-0.00083
	(A_N * C * !D * !X)	0.00166	0.00163	0.00158
	(A_N * !C * !X)	-0.00081	-0.00081	-0.00081
	(A_N * !C * !X)	0.00164	0.00165	0.00159
	(!A_N * C * !D * !X)	-0.00046	-0.00047	-0.00047
	(!A_N * C * !D * !X)	0.00178	0.00179	0.00177
	(!A_N * !C * !X)	-0.00047	-0.00047	-0.00048
	(!A_N * !C * !X)	0.00179	0.00179	0.00177
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00128	-0.00138	-0.00138
	(A_N * C * D * !X)	0.00177	0.00168	0.00167
	(A_N * C * !D * !X)	-0.00092	-0.00093	-0.00092
	(A_N * C * !D * !X)	0.00177	0.00174	0.00168
	(A_N * !C * !X)	-0.00095	-0.00096	-0.00095
	(A_N * !C * !X)	0.00176	0.00177	0.00170
	(!A_N * C * !D * !X)	-0.00051	-0.00052	-0.00053
	(!A_N * C * !D * !X)	0.00192	0.00194	0.00191
	(!A_N * !C * !X)	-0.00054	-0.00053	-0.00054
	(!A_N * !C * !X)	0.00195	0.00194	0.00191

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00263	-0.00281	-0.00281
	(A_N * C * D * !X)	0.00334	0.00322	0.00318
	(A_N * C * !D * !X)	-0.00202	-0.00203	-0.00202
	(A_N * C * !D * !X)	0.00334	0.00329	0.00320
	(A_N * !C * !X)	-0.00208	-0.00209	-0.00209
	(A_N * !C * !X)	0.00339	0.00337	0.00324
	(!A_N * C * !D * !X)	-0.00114	-0.00116	-0.00118
	(!A_N * C * !D * !X)	0.00377	0.00380	0.00375
	(!A_N * !C * !X)	-0.00118	-0.00118	-0.00121
	(!A_N * !C * !X)	0.00379	0.00380	0.00376

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)**	0.00121	0.00122	0.00121
	(A_N * B * D * !X)	-0.00141	-0.00142	-0.00141
	(A_N * B * !D * !X)	0.00085	0.00085	0.00085
	(A_N * B * !D * !X)	-0.00142	-0.00142	-0.00142
	(A_N * !B * D * !X)	0.00121	0.00121	0.00121
	(A_N * !B * D * !X)	-0.00142	-0.00142	-0.00142
	(A_N * !B * !D * !X)	0.00084	0.00084	0.00083
	(A_N * !B * !D * !X)	-0.00142	-0.00143	-0.00142
	(!A_N * B * !D * !X)	0.00072	0.00073	0.00072
	(!A_N * B * !D * !X)	-0.00141	-0.00142	-0.00141
	(!A_N * !B * D * !X)	0.00121	0.00121	0.00120
	(!A_N * !B * D * !X)	-0.00143	-0.00143	-0.00143
	(!A_N * !B * !D * !X)	0.00082	0.00082	0.00082
	(!A_N * !B * !D * !X)	-0.00144	-0.00144	-0.00143

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00117	0.00119	0.00118
	(A_N * B * D * !X)	-0.00164	-0.00165	-0.00164
	(A_N * B * !D * !X)	0.00073	0.00074	0.00073
	(A_N * B * !D * !X)	-0.00164	-0.00165	-0.00165
	(A_N * !B * D * !X)	0.00119	0.00120	0.00119
	(A_N * !B * D * !X)	-0.00165	-0.00165	-0.00164
	(A_N * !B * !D * !X)	0.00071	0.00071	0.00070
	(A_N * !B * !D * !X)	-0.00165	-0.00166	-0.00165
	(!A_N * B * !D * !X)	0.00056	0.00056	0.00056
	(!A_N * B * !D * !X)	-0.00165	-0.00165	-0.00165
	(!A_N * !B * D * !X)	0.00118	0.00119	0.00118
	(!A_N * !B * D * !X)	-0.00166	-0.00167	-0.00166
	(!A_N * !B * !D * !X)	0.00068	0.00068	0.00068
	(!A_N * !B * !D * !X)	-0.00167	-0.00167	-0.00167
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00260	0.00261	0.00260
	(A_N * B * D * !X)	-0.00335	-0.00335	-0.00335
	(A_N * B * !D * !X)	0.00186	0.00187	0.00187
	(A_N * B * !D * !X)	-0.00334	-0.00336	-0.00335
	(A_N * !B * D * !X)	0.00261	0.00265	0.00263
	(A_N * !B * D * !X)	-0.00334	-0.00337	-0.00335
	(A_N * !B * !D * !X)	0.00186	0.00187	0.00186
	(A_N * !B * !D * !X)	-0.00336	-0.00338	-0.00336
	(!A_N * B * !D * !X)	0.00154	0.00156	0.00156
	(!A_N * B * !D * !X)	-0.00337	-0.00339	-0.00336
	(!A_N * !B * D * !X)	0.00257	0.00261	0.00259
	(!A_N * !B * D * !X)	-0.00338	-0.00341	-0.00339
	(!A_N * !B * !D * !X)	0.00179	0.00180	0.00179
	(!A_N * !B * !D * !X)	-0.00341	-0.00342	-0.00341

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)	-0.00113	-0.00122	-0.00121
	(A_N * B * D * !X)	0.00144	0.00144	0.00142
	(A_N * B * !D * !X)	-0.00085	-0.00085	-0.00085
	(A_N * B * !D * !X)	0.00145	0.00147	0.00143
	(A_N * !B * D * !X)	-0.00119	-0.00121	-0.00121
	(A_N * !B * D * !X)	0.00142	0.00142	0.00142
	(A_N * !B * !D * !X)	-0.00084	-0.00084	-0.00083
	(A_N * !B * !D * !X)	0.00142	0.00144	0.00143
	(!A_N * B * !D * !X)	-0.00068	-0.00068	-0.00068
	(!A_N * B * !D * !X)	0.00146	0.00146	0.00144
	(!A_N * !B * D * !X)	-0.00116	-0.00121	-0.00120
	(!A_N * !B * D * !X)	0.00145	0.00143	0.00143
	(!A_N * !B * !D * !X)	-0.00082	-0.00082	-0.00082
	(!A_N * !B * !D * !X)	0.00150	0.00150	0.00145
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00108	-0.00119	-0.00118
	(A_N * B * D * !X)	0.00166	0.00167	0.00165
	(A_N * B * !D * !X)	-0.00073	-0.00074	-0.00073
	(A_N * B * !D * !X)	0.00168	0.00170	0.00166
	(A_N * !B * D * !X)	-0.00116	-0.00120	-0.00119
	(A_N * !B * D * !X)	0.00166	0.00167	0.00165
	(A_N * !B * !D * !X)	-0.00071	-0.00071	-0.00070
	(A_N * !B * !D * !X)	0.00165	0.00167	0.00166
	(!A_N * B * !D * !X)	-0.00054	-0.00053	-0.00053
	(!A_N * B * !D * !X)	0.00170	0.00169	0.00168
	(!A_N * !B * D * !X)	-0.00113	-0.00119	-0.00118
	(!A_N * !B * D * !X)	0.00169	0.00168	0.00167
	(!A_N * !B * !D * !X)	-0.00068	-0.00068	-0.00068
	(!A_N * !B * !D * !X)	0.00175	0.00174	0.00169

sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	-0.00245	-0.00261	-0.00260
	(A_N * B * D * !X)	0.00339	0.00338	0.00336
	(A_N * B * !D * !X)	-0.00186	-0.00187	-0.00187
	(A_N * B * !D * !X)	0.00341	0.00343	0.00338
	(A_N * !B * D * !X)	-0.00252	-0.00265	-0.00263
	(A_N * !B * D * !X)	0.00335	0.00338	0.00336
	(A_N * !B * !D * !X)	-0.00186	-0.00187	-0.00186
	(A_N * !B * !D * !X)	0.00337	0.00338	0.00337
	(!A_N * B * !D * !X)	-0.00150	-0.00151	-0.00150
	(!A_N * B * !D * !X)	0.00344	0.00345	0.00342
	(!A_N * !B * D * !X)	-0.00246	-0.00260	-0.00259
	(!A_N * !B * D * !X)	0.00342	0.00342	0.00340
	(!A_N * !B * !D * !X)	-0.00179	-0.00180	-0.00179
	(!A_N * !B * !D * !X)	0.00352	0.00353	0.00345

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)**	0.00099	0.00100	0.00099
	(A_N * B * C * !X)	-0.00153	-0.00154	-0.00153
	(A_N * !C * !X)	0.00102	0.00103	0.00102
	(A_N * !C * !X)	-0.00153	-0.00153	-0.00153
	(A_N * !B * C * !X)	0.00099	0.00100	0.00099
	(A_N * !B * C * !X)	-0.00153	-0.00153	-0.00153
	(!A_N * B * !C * !X)	0.00102	0.00103	0.00102
	(!A_N * B * !C * !X)	-0.00153	-0.00154	-0.00153
	(!A_N * !B * C * !X)	0.00099	0.00100	0.00099
	(!A_N * !B * C * !X)	-0.00153	-0.00154	-0.00153
	(!A_N * !B * !C * !X)	0.00102	0.00103	0.00102
	(!A_N * !B * !C * !X)	-0.00153	-0.00154	-0.00153

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00117	0.00119	0.00117
	(A_N * B * C * !X)	-0.00176	-0.00178	-0.00176
	(A_N * !C * !X)	0.00120	0.00121	0.00120
	(A_N * !C * !X)	-0.00177	-0.00177	-0.00177
	(A_N * !B * C * !X)	0.00117	0.00118	0.00117
	(A_N * !B * C * !X)	-0.00177	-0.00177	-0.00177
	(!A_N * B * !C * !X)	0.00118	0.00120	0.00119
	(!A_N * B * !C * !X)	-0.00178	-0.00179	-0.00178
	(!A_N * !B * C * !X)	0.00116	0.00117	0.00116
	(!A_N * !B * C * !X)	-0.00178	-0.00179	-0.00178
	(!A_N * !B * !C * !X)	0.00119	0.00120	0.00118
	(!A_N * !B * !C * !X)	-0.00178	-0.00179	-0.00178
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00212	0.00211	0.00211
	(A_N * B * C * !X)	-0.00334	-0.00333	-0.00333
	(A_N * !C * !X)	0.00213	0.00216	0.00214
	(A_N * !C * !X)	-0.00333	-0.00335	-0.00333
	(A_N * !B * C * !X)	0.00213	0.00213	0.00212
	(A_N * !B * C * !X)	-0.00334	-0.00334	-0.00333
	(!A_N * B * !C * !X)	0.00210	0.00211	0.00210
	(!A_N * B * !C * !X)	-0.00337	-0.00338	-0.00337
	(!A_N * !B * C * !X)	0.00209	0.00210	0.00208
	(!A_N * !B * C * !X)	-0.00338	-0.00339	-0.00337
	(!A_N * !B * !C * !X)	0.00210	0.00213	0.00211
	(!A_N * !B * !C * !X)	-0.00337	-0.00339	-0.00337

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)**	-0.00092	-0.00100	-0.00099
	(A_N * B * C * !X)	0.00153	0.00155	0.00154
	(A_N * !C * !X)	-0.00099	-0.00103	-0.00102
	(A_N * !C * !X)	0.00155	0.00155	0.00154
	(A_N * !B * C * !X)	-0.00093	-0.00100	-0.00099
	(A_N * !B * C * !X)	0.00153	0.00154	0.00154
	(!A_N * B * !C * !X)	-0.00099	-0.00103	-0.00102
	(!A_N * B * !C * !X)	0.00155	0.00155	0.00154
	(!A_N * !B * C * !X)	-0.00093	-0.00100	-0.00099
	(!A_N * !B * C * !X)	0.00153	0.00155	0.00154
	(!A_N * !B * !C * !X)	-0.00099	-0.00103	-0.00102
	(!A_N * !B * !C * !X)	0.00154	0.00155	0.00154
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00110	-0.00119	-0.00117
	(A_N * B * C * !X)	0.00177	0.00178	0.00177
	(A_N * !C * !X)	-0.00117	-0.00121	-0.00120
	(A_N * !C * !X)	0.00177	0.00180	0.00177
	(A_N * !B * C * !X)	-0.00110	-0.00118	-0.00117
	(A_N * !B * C * !X)	0.00177	0.00178	0.00177
	(!A_N * B * !C * !X)	-0.00114	-0.00120	-0.00119
	(!A_N * B * !C * !X)	0.00179	0.00181	0.00179
	(!A_N * !B * C * !X)	-0.00109	-0.00117	-0.00116
	(!A_N * !B * C * !X)	0.00179	0.00180	0.00179
	(!A_N * !B * !C * !X)	-0.00115	-0.00120	-0.00118
	(!A_N * !B * !C * !X)	0.00179	0.00181	0.00179

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00196	-0.00211	-0.00211
	(A_N * B * C * !X)	0.00334	0.00337	0.00334
	(A_N * !C * !X)	-0.00208	-0.00216	-0.00214
	(A_N * !C * !X)	0.00334	0.00337	0.00334
	(A_N * !B * C * !X)	-0.00198	-0.00213	-0.00212
	(A_N * !B * C * !X)	0.00334	0.00337	0.00334
	(!A_N * B * !C * !X)	-0.00201	-0.00211	-0.00210
	(!A_N * B * !C * !X)	0.00338	0.00341	0.00338
	(!A_N * !B * C * !X)	-0.00193	-0.00210	-0.00208
	(!A_N * !B * C * !X)	0.00339	0.00341	0.00338
	(!A_N * !B * !C * !X)	-0.00204	-0.00213	-0.00211
	(!A_N * !B * !C * !X)	0.00338	0.00341	0.00338

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00264	0.00261	0.00252	0.00254	0.74525
sky130_fd_sc_hs__and4_2	0.00288	0.00295	0.00280	0.00276	1.35235
sky130_fd_sc_hs__and4_4	0.00498	0.00514	0.00561	0.00503	2.84331

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.08442	0.62796
sky130_fd_sc_hs__and4_2	0.00000	0.09390	0.37094
sky130_fd_sc_hs__and4_4	0.00000	0.18488	0.74225

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)	0.17597	0.91484	7.72042
	B->X (RR)	0.19105	0.92774	7.75969
	C->X (RR)	0.20021	0.91943	7.70790
	D->X (RR)	0.20961	0.90979	7.59913
sky130_fd_sc_hs__and4_2	A->X (RR)	0.18740	0.85609	7.71342
	B->X (RR)	0.20478	0.86335	7.73797
	C->X (RR)	0.21551	0.85204	7.67055
	D->X (RR)	0.22292	0.83691	7.53210
sky130_fd_sc_hs__and4_4	A->X (RR)	0.19636	0.78339	7.89832
	B->X (RR)	0.21660	0.79629	7.93506
	C->X (RR)	0.23642	0.79212	7.85124
	D->X (RR)	0.23883	0.77344	7.76567

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.13217	0.64711	4.09716
	B->X (FF)	0.14619	0.67781	4.19110
	C->X (FF)	0.15768	0.70279	4.28729
	D->X (FF)	0.17006	0.72944	4.37929
sky130_fd_sc_hs__and4_2	A->X (FF)	0.14088	0.64570	4.09004
	B->X (FF)	0.15807	0.67740	4.19983
	C->X (FF)	0.17018	0.70129	4.29400
	D->X (FF)	0.18709	0.73083	4.40747
sky130_fd_sc_hs__and4_4	A->X (FF)	0.13848	0.60922	4.30751
	B->X (FF)	0.14580	0.62621	4.36189
	C->X (FF)	0.15942	0.65266	4.46383
	D->X (FF)	0.16541	0.66819	4.54409

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00776	0.00782	0.01652
	A	0.00400	0.00406	0.01287
	B	0.00839	0.00836	0.01579
	B	0.00403	0.00400	0.01154
	C	0.00910	0.00904	0.01633
	C	0.00404	0.00398	0.01139
	D	0.00991	0.00977	0.01564
	D	0.00404	0.00389	0.00988
sky130_fd_sc_hs__and4_2	A	0.01064	0.01082	0.01927
	A	0.00642	0.00662	0.01535
	B	0.01151	0.01158	0.01870
	B	0.00654	0.00661	0.01401
	C	0.01227	0.01233	0.01919
	C	0.00655	0.00662	0.01375
	D	0.01320	0.01320	0.01804
	D	0.00657	0.00657	0.01145
sky130_fd_sc_hs__and4_4	A	0.01981	0.02028	0.03660
	A	0.01257	0.01304	0.02976
	B	0.02155	0.02192	0.03571
	B	0.01256	0.01294	0.02710
	C	0.02364	0.02384	0.03614
	C	0.01262	0.01283	0.02559
	D	0.02443	0.02470	0.03762
	D	0.01258	0.01285	0.02628

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00290	0.00335	0.01271
	A	0.00666	0.00708	0.01620
	B	0.00334	0.00383	0.01284
	B	0.00766	0.00813	0.01698
	C	0.00366	0.00416	0.01335
	C	0.00861	0.00909	0.01805
	D	0.00408	0.00450	0.01324
	D	0.00975	0.01016	0.01878
sky130_fd_sc_hs__and4_2	A	0.00480	0.00551	0.01468
	A	0.00900	0.00971	0.01888
	B	0.00532	0.00600	0.01542
	B	0.01024	0.01089	0.01988
	C	0.00588	0.00660	0.01597
	C	0.01145	0.01216	0.02118
	D	0.00631	0.00691	0.01529
	D	0.01269	0.01327	0.02157
sky130_fd_sc_hs__and4_4	A	0.00954	0.01127	0.02965
	A	0.01677	0.01823	0.03614
	B	0.01010	0.01171	0.02976
	B	0.01901	0.02054	0.03792
	C	0.01097	0.01236	0.03124
	C	0.02171	0.02307	0.04019
	D	0.01233	0.01432	0.03264
	D	0.02372	0.02537	0.04281

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)	0.00046	0.00047	0.00041
	(B * C * !D * !X)	-0.00161	-0.00163	-0.00174
	(B * !C * !X)	0.00043	0.00043	0.00040
	(B * !C * !X)	-0.00168	-0.00169	-0.00175
	(!B * !X)	0.00043	0.00043	0.00041
	(!B * !X)	-0.00172	-0.00173	-0.00175
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00057	0.00057	0.00050
	(B * C * !D * !X)	-0.00184	-0.00185	-0.00199
	(B * !C * !X)	0.00054	0.00054	0.00049
	(B * !C * !X)	-0.00191	-0.00193	-0.00200
	(!B * !X)	0.00052	0.00052	0.00050
	(!B * !X)	-0.00198	-0.00199	-0.00201
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00083	0.00082	0.00069
	(B * C * !D * !X)	-0.00341	-0.00343	-0.00368
	(B * !C * !X)	0.00079	0.00079	0.00069
	(B * !C * !X)	-0.00353	-0.00355	-0.00371
	(!B * !X)	0.00074	0.00074	0.00070
	(!B * !X)	-0.00367	-0.00369	-0.00373

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)	-0.00039	-0.00040	-0.00039
	(B * C * !D * !X)	0.00175	0.00177	0.00176
	(B * !C * !X)	-0.00039	-0.00040	-0.00039
	(B * !C * !X)	0.00175	0.00177	0.00176
	(!B * !X)	-0.00041	-0.00040	-0.00040
	(!B * !X)	0.00177	0.00177	0.00176
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00047	-0.00048	-0.00047
	(B * C * !D * !X)	0.00201	0.00203	0.00202
	(B * !C * !X)	-0.00048	-0.00048	-0.00047
	(B * !C * !X)	0.00201	0.00203	0.00202
	(!B * !X)	-0.00048	-0.00049	-0.00048
	(!B * !X)	0.00201	0.00203	0.00202
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00065	-0.00065	-0.00064
	(B * C * !D * !X)	0.00374	0.00376	0.00374
	(B * !C * !X)	-0.00065	-0.00065	-0.00064
	(B * !C * !X)	0.00374	0.00376	0.00374
	(!B * !X)	-0.00067	-0.00068	-0.00067
	(!B * !X)	0.00374	0.00376	0.00374

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)**	0.00048	0.00049	0.00048
	(A * C * !D * !X)	-0.00144	-0.00145	-0.00143
	(A * !C * !X)	0.00049	0.00049	0.00049
	(A * !C * !X)	-0.00144	-0.00145	-0.00143
	(!A * C * D * !X)	0.00103	0.00104	0.00103
	(!A * C * D * !X)	-0.00144	-0.00145	-0.00144
	(!A * C * !D * !X)	0.00061	0.00061	0.00060
	(!A * C * !D * !X)	-0.00144	-0.00145	-0.00144
	(!A * !C * !X)	0.00058	0.00059	0.00058
	(!A * !C * !X)	-0.00145	-0.00145	-0.00145
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00058	0.00058	0.00057
	(A * C * !D * !X)	-0.00173	-0.00174	-0.00172
	(A * !C * !X)	0.00060	0.00060	0.00059
	(A * !C * !X)	-0.00173	-0.00174	-0.00172
	(!A * C * D * !X)	0.00121	0.00121	0.00121
	(!A * C * D * !X)	-0.00173	-0.00173	-0.00173
	(!A * C * !D * !X)	0.00072	0.00073	0.00072
	(!A * C * !D * !X)	-0.00173	-0.00174	-0.00173
	(!A * !C * !X)	0.00072	0.00072	0.00072
	(!A * !C * !X)	-0.00174	-0.00174	-0.00173
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00119	0.00120	0.00119
	(A * C * !D * !X)	-0.00327	-0.00329	-0.00326
	(A * !C * !X)	0.00125	0.00125	0.00124
	(A * !C * !X)	-0.00329	-0.00329	-0.00327
	(!A * C * D * !X)	0.00231	0.00233	0.00232
	(!A * C * D * !X)	-0.00326	-0.00328	-0.00326
	(!A * C * !D * !X)	0.00144	0.00144	0.00144
	(!A * C * !D * !X)	-0.00328	-0.00329	-0.00329
	(!A * !C * !X)	0.00147	0.00148	0.00147
	(!A * !C * !X)	-0.00330	-0.00331	-0.00331

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)	-0.00046	-0.00045	-0.00046
	(A * C * !D * !X)	0.00149	0.00148	0.00145
	(A * !C * !X)	-0.00046	-0.00046	-0.00047
	(A * !C * !X)	0.00147	0.00148	0.00145
	(!A * C * D * !X)	-0.00093	-0.00103	-0.00103
	(!A * C * D * !X)	0.00155	0.00146	0.00145
	(!A * C * !D * !X)	-0.00061	-0.00061	-0.00060
	(!A * C * !D * !X)	0.00155	0.00151	0.00146
	(!A * !C * !X)	-0.00058	-0.00059	-0.00058
	(!A * !C * !X)	0.00152	0.00153	0.00147
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00053	-0.00054	-0.00055
	(A * C * !D * !X)	0.00176	0.00178	0.00175
	(A * !C * !X)	-0.00056	-0.00055	-0.00056
	(A * !C * !X)	0.00179	0.00178	0.00175
	(!A * C * D * !X)	-0.00110	-0.00121	-0.00121
	(!A * C * D * !X)	0.00185	0.00175	0.00174
	(!A * C * !D * !X)	-0.00072	-0.00073	-0.00072
	(!A * C * !D * !X)	0.00185	0.00181	0.00175
	(!A * !C * !X)	-0.00072	-0.00072	-0.00072
	(!A * !C * !X)	0.00183	0.00184	0.00176

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00114	-0.00116	-0.00116
	(A * C * !D * !X)	0.00336	0.00342	0.00332
	(A * !C * !X)	-0.00116	-0.00119	-0.00119
	(A * !C * !X)	0.00337	0.00342	0.00332
	(!A * C * D * !X)	-0.00210	-0.00232	-0.00232
	(!A * C * D * !X)	0.00345	0.00332	0.00328
	(!A * C * !D * !X)	-0.00144	-0.00144	-0.00144
	(!A * C * !D * !X)	0.00349	0.00341	0.00332
	(!A * !C * !X)	-0.00147	-0.00148	-0.00147
	(!A * !C * !X)	0.00350	0.00349	0.00337

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)**	0.00057	0.00057	0.00057
	(A * B * !D * !X)	-0.00137	-0.00137	-0.00136
	(A * !B * D * !X)	0.00108	0.00109	0.00108
	(A * !B * D * !X)	-0.00140	-0.00141	-0.00140
	(A * !B * !D * !X)	0.00066	0.00067	0.00066
	(A * !B * !D * !X)	-0.00140	-0.00140	-0.00140
	(!A * B * D * !X)	0.00104	0.00105	0.00104
	(!A * B * D * !X)	-0.00140	-0.00140	-0.00140
	(!A * B * !D * !X)	0.00065	0.00065	0.00065
	(!A * B * !D * !X)	-0.00139	-0.00140	-0.00140
	(!A * !B * D * !X)	0.00106	0.00108	0.00107
	(!A * !B * D * !X)	-0.00139	-0.00141	-0.00140
	(!A * !B * !D * !X)	0.00067	0.00067	0.00067
	(!A * !B * !D * !X)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00062	0.00062	0.00062
	(A * B * !D * !X)	-0.00160	-0.00161	-0.00159
	(A * !B * D * !X)	0.00122	0.00123	0.00122
	(A * !B * D * !X)	-0.00164	-0.00165	-0.00164
	(A * !B * !D * !X)	0.00076	0.00076	0.00075
	(A * !B * !D * !X)	-0.00164	-0.00165	-0.00164
	(!A * B * D * !X)	0.00118	0.00119	0.00118
	(!A * B * D * !X)	-0.00163	-0.00164	-0.00163
	(!A * B * !D * !X)	0.00073	0.00073	0.00072
	(!A * B * !D * !X)	-0.00164	-0.00164	-0.00164
	(!A * !B * D * !X)	0.00121	0.00122	0.00121
	(!A * !B * D * !X)	-0.00164	-0.00165	-0.00164
	(!A * !B * !D * !X)	0.00076	0.00076	0.00076
	(!A * !B * !D * !X)	-0.00164	-0.00164	-0.00164
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00154	0.00155	0.00155
	(A * B * !D * !X)	-0.00334	-0.00336	-0.00333
	(A * !B * D * !X)	0.00258	0.00262	0.00260
	(A * !B * D * !X)	-0.00338	-0.00340	-0.00339
	(A * !B * !D * !X)	0.00177	0.00178	0.00177
	(A * !B * !D * !X)	-0.00340	-0.00341	-0.00340
	(!A * B * D * !X)	0.00254	0.00256	0.00254
	(!A * B * D * !X)	-0.00338	-0.00340	-0.00338
	(!A * B * !D * !X)	0.00172	0.00174	0.00173
	(!A * B * !D * !X)	-0.00339	-0.00340	-0.00340
	(!A * !B * D * !X)	0.00258	0.00262	0.00260
	(!A * !B * D * !X)	-0.00338	-0.00340	-0.00339
	(!A * !B * !D * !X)	0.00179	0.00179	0.00179
	(!A * !B * !D * !X)	-0.00340	-0.00340	-0.00340

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)	-0.00054	-0.00053	-0.00053
	(A * B * !D * !X)	0.00143	0.00142	0.00141
	(A * !B * D * !X)	-0.00103	-0.00109	-0.00108
	(A * !B * D * !X)	0.00141	0.00142	0.00140
	(A * !B * !D * !X)	-0.00066	-0.00067	-0.00066
	(A * !B * !D * !X)	0.00148	0.00146	0.00142
	(!A * B * D * !X)	-0.00095	-0.00105	-0.00104
	(!A * B * D * !X)	0.00141	0.00142	0.00140
	(!A * B * !D * !X)	-0.00065	-0.00065	-0.00065
	(!A * B * !D * !X)	0.00144	0.00145	0.00141
	(!A * !B * D * !X)	-0.00105	-0.00108	-0.00107
	(!A * !B * D * !X)	0.00141	0.00142	0.00140
	(!A * !B * !D * !X)	-0.00067	-0.00067	-0.00067
	(!A * !B * !D * !X)	0.00142	0.00141	0.00141
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00059	-0.00058	-0.00058
	(A * B * !D * !X)	0.00166	0.00166	0.00165
	(A * !B * D * !X)	-0.00116	-0.00123	-0.00122
	(A * !B * D * !X)	0.00165	0.00166	0.00164
	(A * !B * !D * !X)	-0.00076	-0.00076	-0.00075
	(A * !B * !D * !X)	0.00170	0.00171	0.00166
	(!A * B * D * !X)	-0.00107	-0.00119	-0.00118
	(!A * B * D * !X)	0.00165	0.00166	0.00164
	(!A * B * !D * !X)	-0.00073	-0.00073	-0.00072
	(!A * B * !D * !X)	0.00167	0.00169	0.00165
	(!A * !B * D * !X)	-0.00117	-0.00122	-0.00121
	(!A * !B * D * !X)	0.00165	0.00166	0.00164
	(!A * !B * !D * !X)	-0.00076	-0.00076	-0.00076
	(!A * !B * !D * !X)	0.00166	0.00165	0.00165

sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	-0.00148	-0.00149	-0.00150
	(A * B * !D * !X)	0.00340	0.00342	0.00341
	(A * !B * D * !X)	-0.00247	-0.00261	-0.00260
	(A * !B * D * !X)	0.00339	0.00341	0.00340
	(A * !B * !D * !X)	-0.00177	-0.00178	-0.00177
	(A * !B * !D * !X)	0.00352	0.00353	0.00344
	(!A * B * D * !X)	-0.00235	-0.00256	-0.00254
	(!A * B * D * !X)	0.00343	0.00341	0.00339
	(!A * B * !D * !X)	-0.00172	-0.00174	-0.00173
	(!A * B * !D * !X)	0.00346	0.00349	0.00342
	(!A * !B * D * !X)	-0.00249	-0.00261	-0.00260
	(!A * !B * D * !X)	0.00339	0.00341	0.00340
	(!A * !B * !D * !X)	-0.00179	-0.00179	-0.00179
	(!A * !B * !D * !X)	0.00342	0.00343	0.00342

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)**	0.00105	0.00106	0.00105
	(A * B * !C * !X)	-0.00154	-0.00154	-0.00154
	(A * !B * C * !X)	0.00102	0.00103	0.00102
	(A * !B * C * !X)	-0.00154	-0.00154	-0.00154
	(A * !B * !C * !X)	0.00105	0.00106	0.00105
	(A * !B * !C * !X)	-0.00154	-0.00154	-0.00154
	(!A * B * C * !X)	0.00101	0.00102	0.00101
	(!A * B * C * !X)	-0.00153	-0.00155	-0.00154
	(!A * !C * !X)	0.00105	0.00105	0.00105
	(!A * !C * !X)	-0.00154	-0.00154	-0.00154
	(!A * !B * C * !X)	0.00102	0.00102	0.00102
	(!A * !B * C * !X)	-0.00154	-0.00154	-0.00154

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00125	0.00126	0.00124
	(A * B * !C * !X)	-0.00169	-0.00170	-0.00169
	(A * !B * C * !X)	0.00121	0.00122	0.00121
	(A * !B * C * !X)	-0.00168	-0.00170	-0.00169
	(A * !B * !C * !X)	0.00124	0.00125	0.00124
	(A * !B * !C * !X)	-0.00169	-0.00170	-0.00169
	(!A * B * C * !X)	0.00120	0.00121	0.00120
	(!A * B * C * !X)	-0.00168	-0.00170	-0.00169
	(!A * !C * !X)	0.00124	0.00125	0.00124
	(!A * !C * !X)	-0.00169	-0.00170	-0.00169
	(!A * !B * C * !X)	0.00121	0.00122	0.00121
	(!A * !B * C * !X)	-0.00168	-0.00170	-0.00169
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00203	0.00204	0.00204
	(A * B * !C * !X)	-0.00330	-0.00332	-0.00331
	(A * !B * C * !X)	0.00200	0.00202	0.00200
	(A * !B * C * !X)	-0.00332	-0.00333	-0.00331
	(A * !B * !C * !X)	0.00203	0.00206	0.00204
	(A * !B * !C * !X)	-0.00330	-0.00333	-0.00331
	(!A * B * C * !X)	0.00197	0.00197	0.00197
	(!A * B * C * !X)	-0.00331	-0.00330	-0.00331
	(!A * !C * !X)	0.00202	0.00205	0.00203
	(!A * !C * !X)	-0.00330	-0.00333	-0.00331
	(!A * !B * C * !X)	0.00200	0.00202	0.00200
	(!A * !B * C * !X)	-0.00332	-0.00333	-0.00331

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)**	-0.00102	-0.00106	-0.00105
	(A * B * !C * !X)	0.00155	0.00156	0.00154
	(A * !B * C * !X)	-0.00096	-0.00103	-0.00102
	(A * !B * C * !X)	0.00154	0.00155	0.00154
	(A * !B * !C * !X)	-0.00102	-0.00106	-0.00105
	(A * !B * !C * !X)	0.00155	0.00155	0.00154
	(!A * B * C * !X)	-0.00093	-0.00102	-0.00101
	(!A * B * C * !X)	0.00153	0.00155	0.00154
	(!A * !C * !X)	-0.00102	-0.00105	-0.00105
	(!A * !C * !X)	0.00155	0.00155	0.00154
	(!A * !B * C * !X)	-0.00096	-0.00102	-0.00102
	(!A * !B * C * !X)	0.00154	0.00155	0.00154
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00121	-0.00125	-0.00124
	(A * B * !C * !X)	0.00170	0.00171	0.00169
	(A * !B * C * !X)	-0.00113	-0.00122	-0.00121
	(A * !B * C * !X)	0.00168	0.00170	0.00169
	(A * !B * !C * !X)	-0.00121	-0.00125	-0.00124
	(A * !B * !C * !X)	0.00170	0.00171	0.00169
	(!A * B * C * !X)	-0.00112	-0.00121	-0.00120
	(!A * B * C * !X)	0.00170	0.00170	0.00169
	(!A * !C * !X)	-0.00121	-0.00125	-0.00124
	(!A * !C * !X)	0.00170	0.00171	0.00169
	(!A * !B * C * !X)	-0.00114	-0.00122	-0.00121
	(!A * !B * C * !X)	0.00168	0.00170	0.00169

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00196	-0.00204	-0.00204
	(A * B * !C * !X)	0.00333	0.00335	0.00332
	(A * !B * C * !X)	-0.00186	-0.00202	-0.00200
	(A * !B * C * !X)	0.00332	0.00335	0.00332
	(A * !B * !C * !X)	-0.00198	-0.00206	-0.00204
	(A * !B * !C * !X)	0.00333	0.00335	0.00332
	(!A * B * C * !X)	-0.00181	-0.00197	-0.00197
	(!A * B * C * !X)	0.00332	0.00335	0.00332
	(!A * !C * !X)	-0.00196	-0.00205	-0.00203
	(!A * !C * !X)	0.00332	0.00335	0.00332
	(!A * !B * C * !X)	-0.00186	-0.00202	-0.00200
	(!A * !B * C * !X)	0.00332	0.00335	0.00332

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00253	0.74090
sky130_fd_sc_hs__buf_16	0.01679	11.54810
sky130_fd_sc_hs__buf_2	0.00275	1.42218
sky130_fd_sc_hs__buf_4	0.00379	2.88163
sky130_fd_sc_hs__buf_8	0.00859	5.55200
sky130_fd_sc_hs__bufbuf_16	0.00307	11.47832
sky130_fd_sc_hs__bufbuf_8	0.00237	5.58323

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.11906	0.18757
sky130_fd_sc_hs__buf_16	0.00000	0.71855	0.76050
sky130_fd_sc_hs__buf_2	0.00000	0.12333	0.15018
sky130_fd_sc_hs__buf_4	0.00000	0.29714	0.44206
sky130_fd_sc_hs__buf_8	0.00000	0.36123	0.38254
sky130_fd_sc_hs__bufbuf_16	0.00000	0.85291	0.90340
sky130_fd_sc_hs__bufbuf_8	0.00000	0.47983	0.57042

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)**	0.08886	0.76852	7.33390
sky130_fd_sc_hs__buf_16	**A->X (RR)**	0.08754	0.46207	7.37627
sky130_fd_sc_hs__buf_2	**A->X (RR)**	0.09015	0.68129	7.30155
sky130_fd_sc_hs__buf_4	**A->X (RR)**	0.10755	0.64752	7.73212
sky130_fd_sc_hs__buf_8	**A->X (RR)**	0.08801	0.51896	7.31648
sky130_fd_sc_hs__bufbuf_16	**A->X (RR)**	0.27054	0.66147	7.57333
sky130_fd_sc_hs__bufbuf_8	**A->X (RR)**	0.29345	0.69859	7.42676

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	**A->X (FF)**	0.11063	0.59245	3.90894
sky130_fd_sc_hs__buf_16	**A->X (FF)**	0.13536	0.55725	4.44033
sky130_fd_sc_hs__buf_2	**A->X (FF)**	0.13018	0.62437	4.16370
sky130_fd_sc_hs__buf_4	**A->X (FF)**	0.12885	0.58127	4.13972
sky130_fd_sc_hs__buf_8	**A->X (FF)**	0.13745	0.58979	4.52221
sky130_fd_sc_hs__bufbuf_16	**A->X (FF)**	0.33946	0.77186	4.54940
sky130_fd_sc_hs__bufbuf_8	**A->X (FF)**	0.29731	0.68186	4.08902

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00606	0.00614	0.01377
	A	0.00282	0.00291	0.01060
sky130_fd_sc_hs__buf_16	A	0.06120	0.06412	0.12059
	A	0.03969	0.04284	0.09982
sky130_fd_sc_hs__buf_2	A	0.00895	0.00923	0.01662
	A	0.00544	0.00574	0.01329
sky130_fd_sc_hs__buf_4	A	0.01453	0.01518	0.02949
	A	0.00968	0.01036	0.02520
sky130_fd_sc_hs__buf_8	A	0.03112	0.03249	0.05967
	A	0.02014	0.02155	0.04929
sky130_fd_sc_hs__bufbuf_16	A	0.07306	0.07773	0.08927
	A	0.06915	0.07385	0.08766
sky130_fd_sc_hs__bufbuf_8	A	0.03647	0.03869	0.04816
	A	0.03343	0.03573	0.04549

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	**A**	0.00287	0.00350	0.01238
	A	0.00611	0.00670	0.01543
sky130_fd_sc_hs__buf_16	**A**	0.03816	0.04371	0.10254
	A	0.05962	0.06510	0.12388
sky130_fd_sc_hs__buf_2	**A**	0.00483	0.00565	0.01468
	A	0.00835	0.00914	0.01787
sky130_fd_sc_hs__buf_4	**A**	0.00988	0.01172	0.02790
	A	0.01471	0.01648	0.03199
sky130_fd_sc_hs__buf_8	**A**	0.01902	0.02216	0.05047
	A	0.03000	0.03295	0.06127
sky130_fd_sc_hs__bufbuf_16	**A**	0.06755	0.07317	0.09240
	A	0.07147	0.07729	0.08942
sky130_fd_sc_hs__bufbuf_8	**A**	0.03196	0.03550	0.04704
	A	0.03500	0.03824	0.04811

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00271	0.75239
sky130_fd_sc_hs__clkbuf_16	0.00921	11.71161
sky130_fd_sc_hs__clkbuf_2	0.00272	1.34371
sky130_fd_sc_hs__clkbuf_4	0.00251	2.88678
sky130_fd_sc_hs__clkbuf_8	0.00471	5.58654

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkbuf_1	0.00000	0.04426	0.04426
sky130_fd_sc_hs__clkbuf_16	0.00000	0.40964	0.50511
sky130_fd_sc_hs__clkbuf_2	0.00000	0.06313	0.07044
sky130_fd_sc_hs__clkbuf_4	0.00000	0.10417	0.12738
sky130_fd_sc_hs__clkbuf_8	0.00000	0.20490	0.25260

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)**	0.09140	0.78244	7.47686
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.11867	0.57425	7.92907
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.09924	0.71473	7.39647
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.12627	0.70990	7.89885
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.11874	0.62412	7.73252

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.10205	0.70734	5.79770
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.15758	0.65414	6.54579
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.12096	0.68841	5.62419
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.16070	0.74497	6.41439
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.15349	0.68324	6.31787

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00584	0.00584	0.01241
	A	0.00238	0.00239	0.00900
sky130_fd_sc_hs__clkbuf_16	A	0.04667	0.04852	0.07569
	A	0.03490	0.03703	0.06553
sky130_fd_sc_hs__clkbuf_2	A	0.00794	0.00798	0.01358
	A	0.00457	0.00462	0.01031
sky130_fd_sc_hs__clkbuf_4	A	0.01242	0.01278	0.01893
	A	0.00922	0.00961	0.01617
sky130_fd_sc_hs__clkbuf_8	A	0.02370	0.02462	0.03777
	A	0.01769	0.01872	0.03294

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00231	0.00276	0.01083
	A	0.00577	0.00621	0.01385
sky130_fd_sc_hs__clkbuf_16	A	0.02892	0.03326	0.06661
	A	0.04068	0.04492	0.07593
sky130_fd_sc_hs__clkbuf_2	A	0.00357	0.00411	0.01153
	A	0.00695	0.00746	0.01445
sky130_fd_sc_hs__clkbuf_4	A	0.00741	0.00871	0.01617
	A	0.01061	0.01189	0.01901
sky130_fd_sc_hs__clkbuf_8	A	0.01439	0.01686	0.03232
	A	0.02041	0.02273	0.03777

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00258	0.76285
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00261	0.76516
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00263	0.76284
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00257	0.75541
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00260	0.75533
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00263	0.75703

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.08904	0.10329
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.05006	0.07049
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.05008	0.07049
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.18004	0.19410
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.06299	0.08368
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.06265	0.08373

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)**	0.15380	0.89451	7.83436
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.16892	0.92150	7.89835
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.19130	0.96869	8.00682
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.27703	1.01497	7.89712
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.38293	1.13343	8.04490
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.58934	1.36935	8.40580

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.14735	0.68311	5.37682
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.21061	0.77127	5.59476
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.31660	0.92227	5.84678
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.27225	0.80614	5.44679
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.43460	0.99586	5.75453
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.73656	1.34425	6.23977

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00484	0.00521	0.01363
	A	0.00813	0.00849	0.01708
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00511	0.00535	0.01336
	A	0.00844	0.00870	0.01682
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00561	0.00565	0.01321
	A	0.00897	0.00902	0.01668
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01056	0.01080	0.01913
	A	0.01383	0.01408	0.02256
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01137	0.01149	0.01932
	A	0.01469	0.01482	0.02273
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01323	0.01315	0.02049
	A	0.01658	0.01652	0.02458

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00789	0.00798	0.01620
	A	0.00459	0.00468	0.01277
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00828	0.00838	0.01659
	A	0.00495	0.00506	0.01277
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00955	0.00965	0.01734
	A	0.00619	0.00629	0.01369
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01344	0.01346	0.02146
	A	0.01017	0.01018	0.01806
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01439	0.01437	0.02238
	A	0.01107	0.01105	0.01860
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.01731	0.01733	0.02450
	A	0.01395	0.01396	0.02114

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00331	1.09056
sky130_fd_sc_hs__clkinv_16	0.04955	16.60127
sky130_fd_sc_hs__clkinv_2	0.00637	2.07339
sky130_fd_sc_hs__clkinv_4	0.01263	4.10045
sky130_fd_sc_hs__clkinv_8	0.02527	7.86123

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkinv_1	0.00000	0.15473	0.29459
sky130_fd_sc_hs__clkinv_16	0.00000	0.44156	0.68270
sky130_fd_sc_hs__clkinv_2	0.00000	0.05734	0.08757
sky130_fd_sc_hs__clkinv_4	0.00000	0.11129	0.17063
sky130_fd_sc_hs__clkinv_8	0.00000	0.22445	0.34125

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)**	0.03474	0.83187	10.81810
sky130_fd_sc_hs__clkinv_16	**A->Y (FR)**	0.02582	0.51641	10.99190
sky130_fd_sc_hs__clkinv_2	**A->Y (FR)**	0.03274	0.75516	11.12240
sky130_fd_sc_hs__clkinv_4	**A->Y (FR)**	0.02905	0.66979	11.07790
sky130_fd_sc_hs__clkinv_8	**A->Y (FR)**	0.02926	0.58897	10.93220

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	**A->Y (RF)**	0.03822	0.84805	11.13710
sky130_fd_sc_hs__clkinv_16	**A->Y (RF)**	0.02810	0.49793	11.08240
sky130_fd_sc_hs__clkinv_2	**A->Y (RF)**	0.03426	0.73162	10.79040
sky130_fd_sc_hs__clkinv_4	**A->Y (RF)**	0.03052	0.64392	10.84980
sky130_fd_sc_hs__clkinv_8	**A->Y (RF)**	0.03088	0.56278	10.72570

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00015	0.00010	0.00156
	A	0.00407	0.00411	0.00588
sky130_fd_sc_hs__clkinv_16	A	-0.00954	-0.00244	0.01039
	A	0.05352	0.06105	0.07412
sky130_fd_sc_hs__clkinv_2	A	-0.00065	-0.00007	0.00166
	A	0.00745	0.00774	0.00978
sky130_fd_sc_hs__clkinv_4	A	-0.00164	-0.00064	0.00346
	A	0.01442	0.01554	0.01971
sky130_fd_sc_hs__clkinv_8	A	-0.00307	-0.00056	0.00890
	A	0.02910	0.03164	0.04153

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00306	0.00306	0.00386
	A	-0.00115	-0.00100	-0.00039
sky130_fd_sc_hs__clkinv_16	A	0.04268	0.04511	0.05776
	A	-0.02039	-0.01837	-0.00576
sky130_fd_sc_hs__clkinv_2	A	0.00612	0.00643	0.00784
	A	-0.00197	-0.00172	-0.00038
sky130_fd_sc_hs__clkinv_4	A	0.01103	0.01167	0.01491
	A	-0.00502	-0.00447	-0.00138
sky130_fd_sc_hs__clkinv_8	A	0.02185	0.02307	0.03083
	A	-0.01028	-0.00932	-0.00191

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00156	0.75029
sky130_fd_sc_hs__dlymetal6s4s_1	0.00155	0.75650
sky130_fd_sc_hs__dlymetal6s6s_1	0.00155	0.74917

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.12807	0.13235
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.12807	0.13235
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.12807	0.13235

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)**	0.10388	0.78179	7.07474
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.21048	0.88856	7.15882
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.30550	0.97981	7.18316

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.17609	0.78435	4.99541
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.35414	0.94956	5.04436
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.52296	1.12082	5.18874

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01539	0.01514	0.02048
	A	0.01341	0.01316	0.01854
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01540	0.01517	0.02168
	A	0.01342	0.01320	0.01976
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01544	0.01535	0.01856
	A	0.01345	0.01337	0.01663

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01275	0.01273	0.01632
	A	0.01473	0.01471	0.01820
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01278	0.01276	0.01734
	A	0.01476	0.01475	0.01930
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01280	0.01293	0.01624
	A	0.01478	0.01491	0.01821

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00170	0.00172	0.00546	0.00307	0.75348	0.70926
sky130_fd_sc_hs__dfbbn_2	0.00170	0.00174	0.00544	0.00307	1.46571	1.43307

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfbbn_1	0.00000	0.65202	1.12729
sky130_fd_sc_hs__dfbbn_2	0.00000	0.68028	1.11596

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)	0.64199	1.46069	8.81729
	SET_B->Q (FR)	0.29739	1.15219	8.70538
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.73162	1.42183	8.85049
	SET_B->Q (FR)	0.34741	1.09926	8.82987

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)	0.64784	1.17943	4.78764
	RESET_B->Q (FF)	0.40657	0.98022	4.76429
	SET_B->Q (RF)	0.24082	0.67051	3.62026
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.70973	1.19257	4.75806
	RESET_B->Q (FF)	0.46757	0.99489	4.76395
	SET_B->Q (RF)	0.29984	0.69837	3.74503

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)	0.58613	1.43563	8.76846
	RESET_B->Q_N (FR)	0.34662	1.24344	8.76520
	SET_B->Q_N (RR)	0.18086	0.93856	7.77244
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.59600	1.33531	8.73896
	RESET_B->Q_N (FR)	0.35575	1.13997	8.75974
	SET_B->Q_N (RR)	0.18867	0.84906	7.86277

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)	0.53142	1.14505	4.69631
	SET_B->Q_N (FF)	0.20270	0.83205	4.80459
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.58414	1.18169	4.74738
	SET_B->Q_N (FF)	0.22686	0.84147	4.95910

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)	0.02177	0.06966	0.90573
	setup	CLK_N (F)	0.16410	0.09323	-0.82324
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.02452	0.07309	0.91504
	setup	CLK_N (F)	0.15598	0.07830	-0.83872

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)	-0.27025	-0.37477	-1.65457
	setup	CLK_N (F)	0.31578	0.40677	1.68926
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.27195	-0.37467	-1.65288
	setup	CLK_N (F)	0.31234	0.40455	1.68824

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)	0.02177	0.06966	0.90573
	setup	CLK_N (F)	0.16410	0.09323	-0.82324
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.02452	0.07309	0.91504
	setup	CLK_N (F)	0.15598	0.07830	-0.83872

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)	-0.27025	-0.37477	-1.65457
	setup	CLK_N (F)	0.31578	0.40677	1.68926
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.27195	-0.37467	-1.65288
	setup	CLK_N (F)	0.31234	0.40455	1.68824

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)	0.15739	0.08632	-0.75172
	removal	CLK_N (F)	0.05904	0.10838	0.91260
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.14742	0.07559	-0.76334
	removal	CLK_N (F)	0.05591	0.10716	0.91431

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)	0.15739	0.08632	-0.75172
	removal	CLK_N (F)	0.05904	0.10838	0.91260
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.14742	0.07559	-0.76334
	removal	CLK_N (F)	0.05591	0.10716	0.91431

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 ()	0.37919	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.33052	0.82031	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.39744	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.32747	0.82031	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)	-0.04099	-0.12615	-0.26375
	removal	CLK_N (F)	0.06267	0.14722	0.98426
	hold	RESET_B (R)	-0.09746	-0.16118	-0.62074
	setup	RESET_B (R)	0.22029	0.25115	0.85536
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.04490	-0.12768	0.06743
	removal	CLK_N (F)	0.06470	0.14722	0.98723
	hold	RESET_B (R)	-0.13343	-0.20144	-0.79450
	setup	RESET_B (R)	0.23390	0.28278	1.00641

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)	-0.04099	-0.12615	-0.26375
	removal	CLK_N (F)	0.06267	0.14722	0.98426
	hold	RESET_B (R)	-0.09746	-0.16118	-0.62074
	hold	RESET_B (R)	-0.10007	-0.16199	-0.62408
	setup	RESET_B (R)	0.22029	0.25115	0.84789
	setup	RESET_B (R)	0.16726	0.21712	0.85536
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.04490	-0.12768	0.06743
	removal	CLK_N (F)	0.06470	0.14722	0.98723
	hold	RESET_B (R)	-0.14089	-0.21191	-0.82067
	hold	RESET_B (R)	-0.13343	-0.20144	-0.79450
	setup	RESET_B (R)	0.23390	0.28278	1.00641
	setup	RESET_B (R)	0.16259	0.24855	0.99555

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 ()	0.22099	0.82031	16.50020
	min_pulse_width	SET_B ()	0.20274	0.82031	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.26359	0.82031	16.50020
	min_pulse_width	SET_B ()	0.23925	0.82031	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 ()	0.28792	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.27575	0.82031	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.27880	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.27575	0.82031	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 ()	0.28488	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.33964	0.82031	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.32747	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.35485	0.82031	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	0.01165	0.01197	0.01721
	CLK_N	0.01359	0.01390	0.01899
	SET_B	0.01218	0.01239	0.02188
	SET_B	0.01573	0.01594	0.02522
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01426	0.01477	0.02055
	CLK_N	0.01623	0.01674	0.02197
	SET_B	0.01465	0.01514	0.02453
	SET_B	0.01820	0.01867	0.02799

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01299	0.01334	0.01840
	CLK_N	0.01477	0.01512	0.02000
	RESET_B	0.01556	0.01576	0.01896
	RESET_B	0.01656	0.01678	0.01973
	SET_B	0.01623	0.01605	0.02267
	SET_B	0.01265	0.01249	0.01900
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01552	0.01619	0.02139
	CLK_N	0.01728	0.01794	0.02292
	RESET_B	0.01813	0.01863	0.02170
	RESET_B	0.01912	0.01966	0.02267
	SET_B	0.01877	0.01895	0.02547
	SET_B	0.01521	0.01534	0.02169

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01301	0.01336	0.01866
	CLK_N	0.01479	0.01514	0.02020
	RESET_B	0.01558	0.01578	0.01885
	RESET_B	0.01658	0.01679	0.01984
	SET_B	0.01624	0.01611	0.02290
	SET_B	0.01267	0.01250	0.01915
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01554	0.01621	0.02135
	CLK_N	0.01730	0.01796	0.02310
	RESET_B	0.01814	0.01866	0.02194
	RESET_B	0.01914	0.01967	0.02293
	SET_B	0.01879	0.01892	0.02588
	SET_B	0.01522	0.01536	0.02192

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01163	0.01195	0.01709
	CLK_N	0.01358	0.01389	0.01884
	SET_B	0.01214	0.01234	0.02166
	SET_B	0.01568	0.01591	0.02502
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01424	0.01476	0.02010
	CLK_N	0.01621	0.01672	0.02172
	SET_B	0.01461	0.01509	0.02460
	SET_B	0.01816	0.01863	0.02773

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)	0.00896	0.00876	0.01141
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00722	0.00702	0.00967
	(CLK_N * !SET_B * Q * !Q_N)	0.00585	0.00579	0.00818
	(CLK_N * !SET_B * Q * !Q_N)	0.00365	0.00358	0.00599
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00494	0.00488	0.00724
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00277	0.00270	0.00507
	!CLK_N	0.00307	0.00300	0.00573
	!CLK_N	0.00090	0.00082	0.00356
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00899	0.00879	0.01143
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00724	0.00703	0.00968
	(CLK_N * !SET_B * Q * !Q_N)	0.00587	0.00579	0.00820
	(CLK_N * !SET_B * Q * !Q_N)	0.00367	0.00360	0.00601
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00492	0.00485	0.00722
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00274	0.00267	0.00505
	!CLK_N	0.00307	0.00298	0.00573
	!CLK_N	0.00089	0.00081	0.00355

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)	0.00882	0.00871	0.01139
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01056	0.01044	0.01313
	(CLK_N * !SET_B * Q * !Q_N)	0.00255	0.00251	0.00485
	(CLK_N * !SET_B * Q * !Q_N)	0.00476	0.00471	0.00706
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00323	0.00319	0.00561
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00541	0.00536	0.00778
	!CLK_N	0.00138	0.00138	0.00404
	!CLK_N	0.00356	0.00355	0.00621
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00879	0.00868	0.01137
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01055	0.01043	0.01312
	(CLK_N * !SET_B * Q * !Q_N)	0.00249	0.00244	0.00480
	(CLK_N * !SET_B * Q * !Q_N)	0.00470	0.00466	0.00700
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00321	0.00316	0.00559
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00539	0.00534	0.00776
	!CLK_N	0.00135	0.00135	0.00402
	!CLK_N	0.00353	0.00353	0.00619

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)	0.01015	0.00996	0.01564
	(CLK_N * D * SET_B * !Q * Q_N)	0.00799	0.00781	0.01348
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00608	0.00605	0.01175
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00350	0.00346	0.00916
	(!SET_B * Q * !Q_N)	0.00607	0.00603	0.01189
	(!SET_B * Q * !Q_N)	0.00343	0.00339	0.00926
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01018	0.00999	0.01568
	(CLK_N * D * SET_B * !Q * Q_N)	0.00798	0.00779	0.01348
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00607	0.00603	0.01175
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00345	0.00341	0.00913
	(!SET_B * Q * !Q_N)	0.00608	0.00603	0.01191
	(!SET_B * Q * !Q_N)	0.00341	0.00336	0.00925

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)	0.00895	0.00903	0.01532
	(CLK_N * D * SET_B * !Q * Q_N)	0.01111	0.01119	0.01747
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00292	0.00303	0.00915
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00551	0.00562	0.01174
	(!SET_B * Q * !Q_N)	0.00205	0.00219	0.00840
	(!SET_B * Q * !Q_N)	0.00471	0.00486	0.01105
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00899	0.00907	0.01536
	(CLK_N * D * SET_B * !Q * Q_N)	0.01119	0.01127	0.01755
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00294	0.00305	0.00918
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00556	0.00567	0.01180
	(!SET_B * Q * !Q_N)	0.00206	0.00220	0.00841
	(!SET_B * Q * !Q_N)	0.00474	0.00489	0.01109

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)	0.00278	0.00281	0.00279
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00340	-0.00342	-0.00341
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00925	0.00900	0.01580
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00249	0.00222	0.00907
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00276	0.00278	0.00276
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00339	-0.00340	-0.00339
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00924	0.00900	0.01582
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00255	0.00229	0.00913

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)	-0.00272	-0.00279	-0.00278
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00348	0.00346	0.00343
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00110	0.00121	0.00958
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00782	0.00797	0.01635
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00270	-0.00276	-0.00276
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00348	0.00344	0.00341
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00105	0.00116	0.00955
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00773	0.00787	0.01625

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)**	0.01715	0.01701	0.02653
	(D * RESET_B * SET_B * !Q * Q_N)	0.01386	0.01372	0.02324
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01099	0.01080	0.02006
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00727	0.00708	0.01633
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01311	0.01296	0.02243
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00939	0.00923	0.01871
	(!D * SET_B * !Q * Q_N)	0.01047	0.01027	0.01959
	(!D * SET_B * !Q * Q_N)	0.00674	0.00653	0.01588
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01811	0.01781	0.02692
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01395	0.01366	0.02277
	(!D * !SET_B * Q * !Q_N)	0.01166	0.01138	0.02067
	(!D * !SET_B * Q * !Q_N)	0.00796	0.00768	0.01697

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01719	0.01705	0.02656
	(D * RESET_B * SET_B * !Q * Q_N)	0.01389	0.01375	0.02327
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01098	0.01080	0.02004
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00726	0.00707	0.01632
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01312	0.01297	0.02243
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00940	0.00924	0.01871
	(!D * SET_B * !Q * Q_N)	0.01048	0.01028	0.01961
	(!D * SET_B * !Q * Q_N)	0.00675	0.00654	0.01589
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01812	0.01782	0.02693
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01397	0.01367	0.02279
	(!D * !SET_B * Q * !Q_N)	0.01162	0.01134	0.02062
	(!D * !SET_B * Q * !Q_N)	0.00792	0.00764	0.01693

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)	0.00819	0.00834	0.01839
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01191	0.01206	0.02210
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01160	0.01171	0.02142
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01533	0.01544	0.02514
	(!D * SET_B * !Q * Q_N)	0.00896	0.00909	0.01909
	(!D * SET_B * !Q * Q_N)	0.01269	0.01280	0.02281
	(!D * !SET_B * Q * !Q_N)	0.01133	0.01140	0.02141
	(!D * !SET_B * Q * !Q_N)	0.01504	0.01510	0.02510
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00819	0.00834	0.01839
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01192	0.01207	0.02211
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01157	0.01168	0.02139
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01530	0.01541	0.02511
	(!D * SET_B * !Q * Q_N)	0.00895	0.00907	0.01907
	(!D * SET_B * !Q * Q_N)	0.01267	0.01279	0.02279
	(!D * !SET_B * Q * !Q_N)	0.01137	0.01143	0.02144
	(!D * !SET_B * Q * !Q_N)	0.01508	0.01513	0.02514

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00148	0.00188	0.00630	0.00304	0.75475	0.70627

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	0.64660	1.12040

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)	0.61805	1.31858	7.80378
	SET_B->Q (FR)	0.27604	1.12833	8.64319

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.47635	0.88833	3.71840
	RESET_B->Q (FF)	0.39301	0.96095	4.73430
	SET_B->Q (RF)	0.24374	0.66136	3.60641

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)	0.41783	1.14264	7.67759
	RESET_B->Q_N (FR)	0.33471	1.22509	8.71636
	SET_B->Q_N (RR)	0.18552	0.92986	7.73622

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)	0.51068	0.99797	3.63937
	SET_B->Q_N (FF)	0.18645	0.80040	4.68853

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)	-0.05722	-0.10910	-0.28652
	setup	CLK (R)	0.12697	0.14863	0.34170

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)	-0.18291	-0.29443	-2.05930
	setup	CLK (R)	0.30396	0.38787	2.20919

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)	-0.05722	-0.10910	-0.28652
	setup	CLK (R)	0.12697	0.14863	0.34170

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)	-0.18291	-0.29443	-2.05930
	setup	CLK (R)	0.30396	0.38787	2.20919

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)	0.13586	0.14453	0.26380
	removal	CLK (R)	-0.05380	-0.07387	-0.12692

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)	0.13586	0.14453	0.26380
	removal	CLK (R)	-0.05380	-0.07387	-0.12692

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 ()	0.33052	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.33964	0.82031	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)	0.03124	0.00400	1.53616
	removal	CLK (R)	0.09501	0.12506	0.19823
	hold	RESET_B (R)	-0.10311	-0.16996	-0.65363
	setup	RESET_B (R)	0.19509	0.24297	0.89333

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)	0.03124	0.00400	1.53616
	removal	CLK (R)	0.09501	0.12506	0.19823
	hold	RESET_B (R)	-0.10411	-0.17160	-0.65660
	hold	RESET_B (R)	-0.10311	-0.16996	-0.65363
	setup	RESET_B (R)	0.19001	0.23605	0.89333
	setup	RESET_B (R)	0.19509	0.24297	0.89111

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 ()	0.18449	0.82031	16.50020
	min_pulse_width	SET_B ()	0.19666	0.82031	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 ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.20578	0.82031	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 ()	0.26663	0.82031	16.50020
	min_pulse_width	CLK ()	0.41874	0.82031	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	0.01377	0.01400	0.01928
	CLK	0.01191	0.01212	0.01711
	SET_B	0.01214	0.01229	0.02187
	SET_B	0.01601	0.01618	0.02559

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01401	0.01414	0.01901
	CLK	0.01196	0.01209	0.01687
	RESET_B	0.01430	0.01452	0.01765
	RESET_B	0.01532	0.01555	0.01847
	SET_B	0.01542	0.01516	0.02180
	SET_B	0.01153	0.01128	0.01783

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01403	0.01416	0.01935
	CLK	0.01198	0.01211	0.01710
	RESET_B	0.01431	0.01454	0.01766
	RESET_B	0.01534	0.01556	0.01868
	SET_B	0.01544	0.01523	0.02207
	SET_B	0.01155	0.01129	0.01801

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01375	0.01398	0.01874
	CLK	0.01189	0.01210	0.01684
	SET_B	0.01209	0.01224	0.02164
	SET_B	0.01595	0.01610	0.02533

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00202	0.00204	0.00511
	CLK	0.00012	0.00013	0.00322
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00845	0.00830	0.01113
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00677	0.00661	0.00944
	(!CLK * !SET_B * Q * !Q_N)	0.00496	0.00495	0.00751
	(!CLK * !SET_B * Q * !Q_N)	0.00284	0.00282	0.00540
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00395	0.00394	0.00647
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00184	0.00183	0.00436

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00003	0.00009	0.00307
	CLK	0.00186	0.00198	0.00497
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00662	0.00658	0.00943
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00830	0.00826	0.01112
	(!CLK * !SET_B * Q * !Q_N)	0.00168	0.00173	0.00417
	(!CLK * !SET_B * Q * !Q_N)	0.00381	0.00386	0.00630
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00242	0.00248	0.00501
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00453	0.00458	0.00711

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)	0.00557	0.00551	0.01134
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00313	0.00306	0.00889
	(!SET_B * Q * !Q_N)	0.00596	0.00590	0.01190
	(!SET_B * Q * !Q_N)	0.00347	0.00340	0.00940
	(!CLK * D * SET_B * !Q * Q_N)	0.01020	0.00996	0.01573
	(!CLK * D * SET_B * !Q * Q_N)	0.00818	0.00794	0.01371

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)	0.00282	0.00290	0.00910
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00527	0.00535	0.01154
	(!SET_B * Q * !Q_N)	0.00155	0.00169	0.00796
	(!SET_B * Q * !Q_N)	0.00406	0.00420	0.01046
	(!CLK * D * SET_B * !Q * Q_N)	0.00764	0.00765	0.01403
	(!CLK * D * SET_B * !Q * Q_N)	0.00965	0.00967	0.01605

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)	0.00280	0.00284	0.00281
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00423	-0.00426	-0.00424
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00771	0.00744	0.01442
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00013	-0.00017	0.00683

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)	-0.00273	-0.00282	-0.00280
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00428	0.00431	0.00426
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00191	0.00194	0.01039
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00947	0.00955	0.01798

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)	0.01258	0.01237	0.02161
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00866	0.00844	0.01769
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01521	0.01488	0.02423
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01150	0.01116	0.02052
	(!D * SET_B * !Q * Q_N)	0.01286	0.01262	0.02194
	(!D * SET_B * !Q * Q_N)	0.00893	0.00871	0.01802
	(!D * !SET_B * Q * !Q_N)	0.01590	0.01572	0.02511
	(!D * !SET_B * Q * !Q_N)	0.01176	0.01158	0.02097

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)	0.01309	0.01324	0.02316
	(D * RESET_B * SET_B * !Q * Q_N)	0.01721	0.01735	0.02730
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00656	0.00673	0.01678
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01046	0.01066	0.02069
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00831	0.00852	0.01854
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01201	0.01223	0.02225
	(!D * SET_B * !Q * Q_N)	0.00651	0.00678	0.01664
	(!D * SET_B * !Q * Q_N)	0.01042	0.01070	0.02054
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01378	0.01403	0.02456
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01749	0.01774	0.02827
	(!D * !SET_B * Q * !Q_N)	0.00879	0.00905	0.01954
	(!D * !SET_B * Q * !Q_N)	0.01292	0.01320	0.02368

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00176	0.00543	0.00310	0.76291	0.74976
sky130_fd_sc_hs__dfrbp_2	0.00161	0.00516	0.00310	1.51458	1.49755

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.31705	0.51470
sky130_fd_sc_hs__dfrbp_2	0.00000	0.37229	0.50675

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)	0.38973	1.08669	7.63717
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.48002	1.06534	8.08821

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.35369	0.76471	3.48417
	RESET_B->Q (FF)	0.51701	1.13805	5.54457
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.39879	0.77087	3.58651
	RESET_B->Q (FF)	0.59923	1.19026	5.79973

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)	0.29420	1.02138	7.53587
	RESET_B->Q_N (FR)	0.45689	1.38849	9.58689
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.28250	0.90367	7.49545
	RESET_B->Q_N (FR)	0.48355	1.31991	9.70014

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)	0.29794	0.79222	3.53527
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.32509	0.81363	3.66615

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)	-0.09278	-0.18708	-0.68437
	setup	CLK (R)	0.21270	0.26832	0.78694
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08651	-0.18538	-0.71434
	setup	CLK (R)	0.22992	0.28034	0.85591

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)	-0.09871	-0.24130	-2.17361
	setup	CLK (R)	0.32946	0.42393	2.49302
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.13920	-0.28858	-2.40167
	setup	CLK (R)	0.36087	0.45734	2.60776

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)	-0.09278	-0.18708	-0.68437
	setup	CLK (R)	0.21270	0.26832	0.78694
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08651	-0.18538	-0.71434
	setup	CLK (R)	0.22992	0.28034	0.85591

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)	-0.09871	-0.24130	-2.17361
	setup	CLK (R)	0.32946	0.42393	2.49302
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.13920	-0.28858	-2.40167
	setup	CLK (R)	0.36087	0.45734	2.60776

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)	0.22750	0.26119	0.93217
	removal	CLK (R)	-0.16042	-0.22085	-0.88278
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.24284	0.27215	0.98047
	removal	CLK (R)	-0.17413	-0.23691	-0.93934

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)	0.22750	0.26119	0.93217
	removal	CLK (R)	-0.16042	-0.22085	-0.88278
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.24284	0.27215	0.98047
	removal	CLK (R)	-0.17413	-0.23691	-0.93934

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 ()	0.26054	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.20883	0.82031	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.28184	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.22404	0.82031	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 ()	0.22099	0.82031	16.50020
	min_pulse_width	CLK ()	0.13277	0.82031	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.30922	0.82031	16.50020
	min_pulse_width	CLK ()	0.16015	0.82031	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 ()	0.29401	0.82031	16.50020
	min_pulse_width	CLK ()	0.39136	0.82031	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.31226	0.82031	16.50020
	min_pulse_width	CLK ()	0.39744	0.82031	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	0.01287	0.01298	0.01810
	CLK	0.01090	0.01102	0.01590
sky130_fd_sc_hs__dfrbp_2	CLK	0.01433	0.01472	0.02003
	CLK	0.01239	0.01280	0.01782

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01314	0.01335	0.01829
	CLK	0.01113	0.01133	0.01619
	RESET_B	0.01007	0.01010	0.01388
	RESET_B	0.01376	0.01377	0.01739
sky130_fd_sc_hs__dfrbp_2	CLK	0.01480	0.01543	0.02033
	CLK	0.01286	0.01348	0.01839
	RESET_B	0.01280	0.01325	0.01733
	RESET_B	0.01623	0.01667	0.02030

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01314	0.01335	0.01861
	CLK	0.01113	0.01134	0.01644
	RESET_B	0.01008	0.01010	0.01431
	RESET_B	0.01377	0.01378	0.01753
sky130_fd_sc_hs__dfrbp_2	CLK	0.01481	0.01545	0.02109
	CLK	0.01288	0.01350	0.01879
	RESET_B	0.01282	0.01326	0.01782
	RESET_B	0.01625	0.01668	0.02050

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01285	0.01298	0.01768
	CLK	0.01089	0.01101	0.01565
sky130_fd_sc_hs__dfrbp_2	CLK	0.01433	0.01472	0.01978
	CLK	0.01239	0.01278	0.01757

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00324	0.00315	0.00587
	(CLK * RESET_B)	0.00076	0.00066	0.00339
	(CLK * !RESET_B)	0.00036	0.00036	0.00035
	(CLK * !RESET_B)	-0.00108	-0.00109	-0.00110
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00943	0.00937	0.01220
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00683	0.00677	0.00959
	(!CLK * !RESET_B)	0.00036	0.00036	0.00035
	(!CLK * !RESET_B)	-0.00108	-0.00108	-0.00110
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00375	0.00367	0.00628
	(CLK * RESET_B)	0.00159	0.00149	0.00412
	(CLK * !RESET_B)	0.00041	0.00041	0.00040
	(CLK * !RESET_B)	-0.00092	-0.00093	-0.00094
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01163	0.01159	0.01439
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00960	0.00955	0.01235
	(!CLK * !RESET_B)	0.00041	0.00041	0.00040
	(!CLK * !RESET_B)	-0.00092	-0.00093	-0.00094

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00055	0.00047	0.00319
	(CLK * RESET_B)	0.00304	0.00296	0.00567
	(CLK * !RESET_B)	-0.00034	-0.00034	-0.00034
	(CLK * !RESET_B)	0.00110	0.00112	0.00110
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00586	0.00576	0.00929
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00847	0.00836	0.01189
	(!CLK * !RESET_B)	-0.00034	-0.00034	-0.00034
	(!CLK * !RESET_B)	0.00111	0.00111	0.00110
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00086	0.00078	0.00339
	(CLK * RESET_B)	0.00302	0.00294	0.00556
	(CLK * !RESET_B)	-0.00039	-0.00039	-0.00038
	(CLK * !RESET_B)	0.00096	0.00096	0.00095
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00715	0.00702	0.01037
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00920	0.00905	0.01240
	(!CLK * !RESET_B)	-0.00039	-0.00039	-0.00038
	(!CLK * !RESET_B)	0.00095	0.00095	0.00095

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)	0.00599	0.00583	0.00816
	(CLK * D * !Q * Q_N)	-0.00122	-0.00140	0.00095
	(CLK * !D * !Q * Q_N)	0.00279	0.00281	0.00279
	(CLK * !D * !Q * Q_N)	-0.00325	-0.00327	-0.00325
	(!CLK * D * !Q * Q_N)	0.01246	0.01201	0.01551
	(!CLK * D * !Q * Q_N)	0.00515	0.00468	0.00819
	(!CLK * !D * !Q * Q_N)	0.00272	0.00275	0.00272
	(!CLK * !D * !Q * Q_N)	-0.00332	-0.00334	-0.00332
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00670	0.00660	0.00882
	(CLK * D * !Q * Q_N)	-0.00017	-0.00031	0.00196
	(CLK * !D * !Q * Q_N)	0.00305	0.00308	0.00305
	(CLK * !D * !Q * Q_N)	-0.00286	-0.00288	-0.00286
	(!CLK * D * !Q * Q_N)	0.01486	0.01441	0.01790
	(!CLK * D * !Q * Q_N)	0.00813	0.00767	0.01118
	(!CLK * !D * !Q * Q_N)	0.00301	0.00304	0.00301
	(!CLK * !D * !Q * Q_N)	-0.00291	-0.00292	-0.00291

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)	-0.00143	-0.00154	0.00100
	(CLK * D * !Q * Q_N)	0.00577	0.00567	0.00821
	(CLK * !D * !Q * Q_N)	-0.00271	-0.00279	-0.00279
	(CLK * !D * !Q * Q_N)	0.00332	0.00329	0.00327
	(!CLK * D * !Q * Q_N)	0.00460	0.00416	0.00846
	(!CLK * D * !Q * Q_N)	0.01191	0.01150	0.01579
	(!CLK * !D * !Q * Q_N)	-0.00264	-0.00273	-0.00272
	(!CLK * !D * !Q * Q_N)	0.00338	0.00335	0.00334
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00144	-0.00154	0.00097
	(CLK * D * !Q * Q_N)	0.00543	0.00536	0.00786
	(CLK * !D * !Q * Q_N)	-0.00299	-0.00305	-0.00305
	(CLK * !D * !Q * Q_N)	0.00296	0.00289	0.00288
	(!CLK * D * !Q * Q_N)	0.00573	0.00526	0.00938
	(!CLK * D * !Q * Q_N)	0.01244	0.01198	0.01613
	(!CLK * !D * !Q * Q_N)	-0.00295	-0.00301	-0.00301
	(!CLK * !D * !Q * Q_N)	0.00300	0.00294	0.00292

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)	0.01228	0.01204	0.02119
	(D * RESET_B * Q * !Q_N)	0.00830	0.00805	0.01722
	(D * !RESET_B * !Q * Q_N)	0.01252	0.01232	0.02143
	(D * !RESET_B * !Q * Q_N)	0.00854	0.00833	0.01746
	(!D * !Q * Q_N)	0.01252	0.01232	0.02144
	(!D * !Q * Q_N)	0.00854	0.00831	0.01745
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01122	0.01103	0.02025
	(D * RESET_B * Q * !Q_N)	0.00732	0.00715	0.01636
	(D * !RESET_B * !Q * Q_N)	0.01118	0.01099	0.02022
	(D * !RESET_B * !Q * Q_N)	0.00728	0.00710	0.01633
	(!D * !Q * Q_N)	0.01118	0.01098	0.02019
	(!D * !Q * Q_N)	0.00728	0.00709	0.01631

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)	0.00668	0.00684	0.01673
	(D * RESET_B * Q * !Q_N)	0.01066	0.01084	0.02072
	(D * RESET_B * !Q * Q_N)	0.01230	0.01238	0.02254
	(D * RESET_B * !Q * Q_N)	0.01618	0.01624	0.02641
	(D * !RESET_B * !Q * Q_N)	0.00626	0.00642	0.01637
	(D * !RESET_B * !Q * Q_N)	0.01025	0.01040	0.02035
	(!D * RESET_B * Q * !Q_N)	0.01274	0.01299	0.02318
	(!D * RESET_B * Q * !Q_N)	0.01684	0.01708	0.02728
	(!D * !Q * Q_N)	0.00626	0.00642	0.01637
	(!D * !Q * Q_N)	0.01025	0.01039	0.02036
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00674	0.00702	0.01686
	(D * RESET_B * Q * !Q_N)	0.01063	0.01092	0.02075
	(D * RESET_B * !Q * Q_N)	0.01501	0.01507	0.02513
	(D * RESET_B * !Q * Q_N)	0.01901	0.01906	0.02913
	(D * !RESET_B * !Q * Q_N)	0.00670	0.00690	0.01687
	(D * !RESET_B * !Q * Q_N)	0.01059	0.01079	0.02076
	(!D * RESET_B * Q * !Q_N)	0.01396	0.01436	0.02446
	(!D * RESET_B * Q * !Q_N)	0.01772	0.01811	0.02821
	(!D * !Q * Q_N)	0.00670	0.00689	0.01687
	(!D * !Q * Q_N)	0.01058	0.01078	0.02076

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00173	0.00507	0.00297	0.73675

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.28199	0.48588

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)	0.41650	1.24920	8.58184

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)	0.32797	0.86117	4.41486
	RESET_B->Q (FF)	0.47528	1.09144	5.39875

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)	0.03389	0.07163	0.80129
	setup	CLK_N (F)	0.11776	0.06500	-0.58611

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)	-0.12270	-0.22745	-1.39956
	setup	CLK_N (F)	0.39693	0.46663	1.67548

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)	0.03389	0.07163	0.80129
	setup	CLK_N (F)	0.11776	0.06500	-0.58611

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)	-0.12270	-0.22745	-1.39956
	setup	CLK_N (F)	0.39693	0.46663	1.67548

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)	0.13036	0.05600	-0.52770
	removal	CLK_N (F)	-0.05786	-0.00036	0.57279

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)	0.13036	0.05600	-0.52770
	removal	CLK_N (F)	-0.05786	-0.00036	0.57279

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 ()	0.19666	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.26054	0.82031	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 ()	0.21795	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.38832	0.82031	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 ()	0.23316	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.20578	0.82031	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	0.01981	0.02042	0.03107
	CLK_N	0.02356	0.02415	0.03483

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01846	0.01871	0.02883
	CLK_N	0.02212	0.02235	0.03233
	RESET_B	0.01792	0.01768	0.02518
	RESET_B	0.02480	0.02451	0.03182

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)	0.00932	0.00927	0.01211
	(CLK_N * RESET_B)	0.00704	0.00698	0.00983
	(CLK_N * !RESET_B)	0.00036	0.00037	0.00035
	(CLK_N * !RESET_B)	-0.00106	-0.00107	-0.00109
	(!CLK_N * RESET_B)	0.00316	0.00306	0.00579
	(!CLK_N * RESET_B)	0.00081	0.00071	0.00344
	(!CLK_N * !RESET_B)	0.00037	0.00037	0.00035
	(!CLK_N * !RESET_B)	-0.00107	-0.00107	-0.00109

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)	0.00678	0.00668	0.01021
	(CLK_N * RESET_B)	0.00907	0.00896	0.01250
	(CLK_N * !RESET_B)	-0.00034	-0.00034	-0.00034
	(CLK_N * !RESET_B)	0.00109	0.00110	0.00109
	(!CLK_N * RESET_B)	0.00063	0.00055	0.00327
	(!CLK_N * RESET_B)	0.00299	0.00291	0.00562
	(!CLK_N * !RESET_B)	-0.00035	-0.00035	-0.00034
	(!CLK_N * !RESET_B)	0.00110	0.00111	0.00109

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)	0.01231	0.01193	0.01549
	(CLK_N * D * !Q)	0.00555	0.00512	0.00870
	(CLK_N * !D * !Q)	0.00294	0.00296	0.00294
	(CLK_N * !D * !Q)	-0.00290	-0.00291	-0.00289
	(!CLK_N * D * !Q)	0.00572	0.00561	0.00794
	(!CLK_N * D * !Q)	-0.00115	-0.00130	0.00105
	(!CLK_N * !D * !Q)	0.00288	0.00289	0.00287
	(!CLK_N * !D * !Q)	-0.00297	-0.00297	-0.00296

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)	0.00543	0.00506	0.00932
	(CLK_N * D * !Q)	0.01219	0.01186	0.01613
	(CLK_N * !D * !Q)	-0.00288	-0.00294	-0.00294
	(CLK_N * !D * !Q)	0.00297	0.00291	0.00290
	(!CLK_N * D * !Q)	-0.00126	-0.00133	0.00121
	(!CLK_N * D * !Q)	0.00560	0.00553	0.00809
	(!CLK_N * !D * !Q)	-0.00280	-0.00289	-0.00287
	(!CLK_N * !D * !Q)	0.00304	0.00301	0.00298

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)	0.01158	0.01126	0.02060
	(D * RESET_B * Q)	0.00788	0.00755	0.01690
	(D * RESET_B * !Q)	0.01789	0.01762	0.02712
	(D * RESET_B * !Q)	0.01426	0.01398	0.02350
	(D * !RESET_B * !Q)	0.01141	0.01111	0.02041
	(D * !RESET_B * !Q)	0.00771	0.00740	0.01672
	(!D * RESET_B * Q)	0.01750	0.01704	0.02633
	(!D * RESET_B * Q)	0.01373	0.01327	0.02257
	(!D * !Q)	0.01141	0.01111	0.02041
	(!D * !Q)	0.00770	0.00739	0.01671

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)	0.00828	0.00849	0.01833
	(D * RESET_B * Q)	0.01198	0.01220	0.02203
	(D * !RESET_B * !Q)	0.00830	0.00852	0.01836
	(D * !RESET_B * !Q)	0.01200	0.01222	0.02205
	(!D * !Q)	0.00829	0.00851	0.01835
	(!D * !Q)	0.01199	0.01219	0.02204

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00174	0.00536	0.00311	0.76994
sky130_fd_sc_hs__dfrtp_2	0.00174	0.00526	0.00310	1.47999
sky130_fd_sc_hs__dfrtp_4	0.00175	0.00549	0.00310	2.95242

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtp_1	0.00000	0.28125	0.48243
sky130_fd_sc_hs__dfrtp_2	0.00000	0.32307	0.51829
sky130_fd_sc_hs__dfrtp_4	0.00000	0.43646	0.73682

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)**	0.32249	1.02702	7.59641
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RR)**	0.31886	0.90180	7.43727
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RR)**	0.41585	0.92393	7.66166

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	**CLK->Q (RF)**	0.33542	0.74644	3.49268
	RESET_B->Q (FF)	0.48569	1.10778	5.54099
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RF)**	0.37278	0.75370	3.44936
	RESET_B->Q (FF)	0.52108	1.11147	5.50028
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RF)**	0.37690	0.72964	3.62447
	RESET_B->Q (FF)	0.53939	1.09842	5.69215

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)	-0.10106	-0.19676	-0.71655
	setup	CLK (R)	0.23722	0.28565	0.89578
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.10199	-0.19497	-0.70718
	setup	CLK (R)	0.23273	0.28167	0.88913
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.10152	-0.19378	-0.69143
	setup	CLK (R)	0.24410	0.29050	0.85183

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)	-0.09253	-0.23649	-2.01679
	setup	CLK (R)	0.32164	0.41816	2.48955
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.08464	-0.22926	-2.01601
	setup	CLK (R)	0.31906	0.41869	2.48423
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.10411	-0.24394	-2.14390
	setup	CLK (R)	0.34537	0.43681	2.51675

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)	-0.10106	-0.19676	-0.71655
	setup	CLK (R)	0.23722	0.28565	0.89578
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.10199	-0.19497	-0.70718
	setup	CLK (R)	0.23273	0.28167	0.88913
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.10152	-0.19378	-0.69143
	setup	CLK (R)	0.24410	0.29050	0.85183

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)	-0.09253	-0.23649	-2.01679
	setup	CLK (R)	0.32164	0.41816	2.48955
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.08464	-0.22926	-2.01601
	setup	CLK (R)	0.31906	0.41869	2.48423
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.10411	-0.24394	-2.14390
	setup	CLK (R)	0.34537	0.43681	2.51675

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)	0.25214	0.27915	1.00127
	removal	CLK (R)	-0.16456	-0.22357	-0.89366
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.24811	0.27587	0.99175
	removal	CLK (R)	-0.16085	-0.22080	-0.88752
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.26065	0.28018	0.97383
	removal	CLK (R)	-0.17371	-0.22845	-0.88315

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)	0.25214	0.27915	1.00127
	removal	CLK (R)	-0.16456	-0.22357	-0.89366
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.24811	0.27587	0.99175
	removal	CLK (R)	-0.16085	-0.22080	-0.88752
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.26065	0.28018	0.97383
	removal	CLK (R)	-0.17371	-0.22845	-0.88315

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 ()	0.25750	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.19666	0.82031	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.26054	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.20274	0.82031	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.27271	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.20578	0.82031	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 ()	0.15711	0.82031	16.50020
	min_pulse_width	CLK ()	0.12364	0.82031	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.12973	0.82031	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.22404	0.82031	16.50020
	min_pulse_width	CLK ()	0.13581	0.82031	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 ()	0.32139	0.82031	16.50020
	min_pulse_width	CLK ()	0.38832	0.82031	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.31835	0.82031	16.50020
	min_pulse_width	CLK ()	0.38832	0.82031	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.34268	0.82031	16.50020
	min_pulse_width	CLK ()	0.41570	0.82031	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	0.02308	0.02313	0.03275
	CLK	0.01916	0.01920	0.02897
sky130_fd_sc_hs__dfrtp_2	CLK	0.02554	0.02584	0.03555
	CLK	0.02164	0.02193	0.03186
sky130_fd_sc_hs__dfrtp_4	CLK	0.03228	0.03310	0.04291
	CLK	0.02823	0.02906	0.03944

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.02454	0.02482	0.03481
	CLK	0.02040	0.02066	0.03035
	RESET_B	0.01803	0.01789	0.02571
	RESET_B	0.02536	0.02520	0.03255
sky130_fd_sc_hs__dfrtp_2	CLK	0.02629	0.02690	0.03700
	CLK	0.02219	0.02280	0.03254
	RESET_B	0.01994	0.02018	0.02872
	RESET_B	0.02715	0.02737	0.03478
sky130_fd_sc_hs__dfrtp_4	CLK	0.03387	0.03523	0.04578
	CLK	0.02963	0.03096	0.04079
	RESET_B	0.02709	0.02796	0.03740
	RESET_B	0.03453	0.03537	0.04287

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00321	0.00312	0.00585
	(CLK * RESET_B)	0.00075	0.00065	0.00338
	(CLK * !RESET_B)	0.00036	0.00036	0.00034
	(CLK * !RESET_B)	-0.00106	-0.00107	-0.00108
	(!CLK * RESET_B)	0.00970	0.00965	0.01251
	(!CLK * RESET_B)	0.00710	0.00703	0.00990
	(!CLK * !RESET_B)	0.00036	0.00036	0.00034
	(!CLK * !RESET_B)	-0.00106	-0.00106	-0.00108
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00313	0.00304	0.00578
	(CLK * RESET_B)	0.00070	0.00060	0.00334
	(CLK * !RESET_B)	0.00036	0.00036	0.00034
	(CLK * !RESET_B)	-0.00106	-0.00107	-0.00108
	(!CLK * RESET_B)	0.00929	0.00924	0.01213
	(!CLK * RESET_B)	0.00673	0.00668	0.00958
	(!CLK * !RESET_B)	0.00036	0.00036	0.00034
	(!CLK * !RESET_B)	-0.00106	-0.00107	-0.00108
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00323	0.00314	0.00586
	(CLK * RESET_B)	0.00078	0.00068	0.00340
	(CLK * !RESET_B)	0.00036	0.00036	0.00035
	(CLK * !RESET_B)	-0.00107	-0.00107	-0.00108
	(!CLK * RESET_B)	0.01067	0.01061	0.01341
	(!CLK * RESET_B)	0.00807	0.00800	0.01080
	(!CLK * !RESET_B)	0.00036	0.00036	0.00035
	(!CLK * !RESET_B)	-0.00107	-0.00107	-0.00108

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00054	0.00046	0.00318
	(CLK * RESET_B)	0.00301	0.00293	0.00565
	(CLK * !RESET_B)	-0.00034	-0.00034	-0.00033
	(CLK * !RESET_B)	0.00109	0.00110	0.00108
	(!CLK * RESET_B)	0.00617	0.00607	0.00969
	(!CLK * RESET_B)	0.00879	0.00869	0.01231
	(!CLK * !RESET_B)	-0.00034	-0.00033	-0.00033
	(!CLK * !RESET_B)	0.00109	0.00109	0.00108
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00054	0.00047	0.00320
	(CLK * RESET_B)	0.00298	0.00291	0.00563
	(CLK * !RESET_B)	-0.00034	-0.00034	-0.00033
	(CLK * !RESET_B)	0.00109	0.00110	0.00109
	(!CLK * RESET_B)	0.00617	0.00608	0.00976
	(!CLK * RESET_B)	0.00873	0.00864	0.01232
	(!CLK * !RESET_B)	-0.00034	-0.00033	-0.00033
	(!CLK * !RESET_B)	0.00109	0.00109	0.00109
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00055	0.00047	0.00319
	(CLK * RESET_B)	0.00302	0.00294	0.00565
	(CLK * !RESET_B)	-0.00034	-0.00034	-0.00034
	(CLK * !RESET_B)	0.00109	0.00111	0.00109
	(!CLK * RESET_B)	0.00628	0.00617	0.00973
	(!CLK * RESET_B)	0.00889	0.00877	0.01235
	(!CLK * !RESET_B)	-0.00034	-0.00034	-0.00034
	(!CLK * !RESET_B)	0.00109	0.00110	0.00109

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)	0.00595	0.00582	0.00814
	(CLK * D * !Q)	-0.00120	-0.00141	0.00094
	(CLK * !D * !Q)	0.00279	0.00281	0.00278
	(CLK * !D * !Q)	-0.00324	-0.00325	-0.00323
	(!CLK * D * !Q)	0.01278	0.01235	0.01585
	(!CLK * D * !Q)	0.00546	0.00501	0.00852
	(!CLK * !D * !Q)	0.00268	0.00271	0.00268
	(!CLK * !D * !Q)	-0.00333	-0.00335	-0.00333
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00584	0.00569	0.00804
	(CLK * D * !Q)	-0.00124	-0.00142	0.00094
	(CLK * !D * !Q)	0.00276	0.00278	0.00276
	(CLK * !D * !Q)	-0.00319	-0.00320	-0.00319
	(!CLK * D * !Q)	0.01229	0.01189	0.01544
	(!CLK * D * !Q)	0.00511	0.00467	0.00824
	(!CLK * !D * !Q)	0.00266	0.00269	0.00267
	(!CLK * !D * !Q)	-0.00328	-0.00329	-0.00328
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00613	0.00597	0.00831
	(CLK * D * !Q)	-0.00116	-0.00133	0.00101
	(CLK * !D * !Q)	0.00294	0.00297	0.00295
	(CLK * !D * !Q)	-0.00318	-0.00320	-0.00318
	(!CLK * D * !Q)	0.01365	0.01320	0.01673
	(!CLK * D * !Q)	0.00625	0.00578	0.00930
	(!CLK * !D * !Q)	0.00270	0.00273	0.00270
	(!CLK * !D * !Q)	-0.00343	-0.00345	-0.00343

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)	-0.00144	-0.00157	0.00099
	(CLK * D * !Q)	0.00575	0.00564	0.00818
	(CLK * !D * !Q)	-0.00271	-0.00279	-0.00278
	(CLK * !D * !Q)	0.00332	0.00327	0.00325
	(!CLK * D * !Q)	0.00481	0.00438	0.00875
	(!CLK * D * !Q)	0.01214	0.01174	0.01610
	(!CLK * !D * !Q)	-0.00261	-0.00269	-0.00268
	(!CLK * !D * !Q)	0.00340	0.00336	0.00335
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00141	-0.00152	0.00103
	(CLK * D * !Q)	0.00567	0.00556	0.00813
	(CLK * !D * !Q)	-0.00268	-0.00276	-0.00276
	(CLK * !D * !Q)	0.00326	0.00322	0.00320
	(!CLK * D * !Q)	0.00482	0.00440	0.00885
	(!CLK * D * !Q)	0.01202	0.01163	0.01607
	(!CLK * !D * !Q)	-0.00259	-0.00266	-0.00267
	(!CLK * !D * !Q)	0.00334	0.00329	0.00329
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00159	-0.00171	0.00084
	(CLK * D * !Q)	0.00569	0.00560	0.00813
	(CLK * !D * !Q)	-0.00286	-0.00295	-0.00295
	(CLK * !D * !Q)	0.00326	0.00322	0.00320
	(!CLK * D * !Q)	0.00506	0.00460	0.00888
	(!CLK * D * !Q)	0.01248	0.01203	0.01633
	(!CLK * !D * !Q)	-0.00262	-0.00270	-0.00270
	(!CLK * !D * !Q)	0.00349	0.00346	0.00345

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)	0.01269	0.01248	0.02157
	(D * RESET_B * Q)	0.00866	0.00842	0.01753
	(D * !RESET_B * !Q)	0.01308	0.01287	0.02196
	(D * !RESET_B * !Q)	0.00905	0.00882	0.01793
	(!D * !Q)	0.01308	0.01286	0.02196
	(!D * !Q)	0.00905	0.00881	0.01792
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01261	0.01237	0.02149
	(D * RESET_B * Q)	0.00860	0.00835	0.01747
	(D * !RESET_B * !Q)	0.01300	0.01279	0.02187
	(D * !RESET_B * !Q)	0.00899	0.00875	0.01786
	(!D * !Q)	0.01299	0.01278	0.02188
	(!D * !Q)	0.00899	0.00875	0.01786
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01327	0.01300	0.02203
	(D * RESET_B * Q)	0.00912	0.00883	0.01786
	(D * !RESET_B * !Q)	0.01357	0.01333	0.02232
	(D * !RESET_B * !Q)	0.00941	0.00917	0.01816
	(!D * !Q)	0.01356	0.01330	0.02232
	(!D * !Q)	0.00941	0.00913	0.01816

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)**	0.00672	0.00687	0.01675
	(D * RESET_B * Q)	0.01076	0.01092	0.02078
	(D * RESET_B * !Q)	0.01267	0.01273	0.02287
	(D * RESET_B * !Q)	0.01657	0.01661	0.02675
	(D * !RESET_B * !Q)	0.00623	0.00638	0.01631
	(D * !RESET_B * !Q)	0.01028	0.01041	0.02034
	(!D * RESET_B * Q)	0.01310	0.01334	0.02353
	(!D * RESET_B * Q)	0.01729	0.01751	0.02771
	(!D * !Q)	0.00623	0.00637	0.01631
	(!D * !Q)	0.01028	0.01042	0.02034
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00674	0.00689	0.01678
	(D * RESET_B * Q)	0.01075	0.01092	0.02079
	(D * RESET_B * !Q)	0.01234	0.01241	0.02255
	(D * RESET_B * !Q)	0.01624	0.01630	0.02644
	(D * !RESET_B * !Q)	0.00625	0.00640	0.01633
	(D * !RESET_B * !Q)	0.01028	0.01042	0.02034
	(!D * RESET_B * Q)	0.01312	0.01335	0.02354
	(!D * RESET_B * Q)	0.01726	0.01748	0.02767
	(!D * !Q)	0.00625	0.00639	0.01633
	(!D * !Q)	0.01028	0.01042	0.02035
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00699	0.00715	0.01693
	(D * RESET_B * Q)	0.01115	0.01132	0.02109
	(D * RESET_B * !Q)	0.01399	0.01405	0.02400
	(D * RESET_B * !Q)	0.01800	0.01806	0.02802
	(D * !RESET_B * !Q)	0.00660	0.00674	0.01657
	(D * !RESET_B * !Q)	0.01076	0.01091	0.02073
	(!D * RESET_B * Q)	0.01339	0.01363	0.02375
	(!D * RESET_B * Q)	0.01770	0.01794	0.02806
	(!D * !Q)	0.00659	0.00673	0.01657
	(!D * !Q)	0.01075	0.01090	0.02074

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00172	0.00327	0.00307	0.73839	0.71520
sky130_fd_sc_hs__dfsbp_2	0.00172	0.00325	0.00307	1.49816	1.47128

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.31748	0.37811
sky130_fd_sc_hs__dfsbp_2	0.00000	0.33788	0.36773

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)	0.43754	1.13339	7.62572
	SET_B->Q (FR)	0.47723	1.40562	9.91168
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.52724	1.09039	7.68799
	SET_B->Q (FR)	0.58946	1.38380	10.18670

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.40403	0.80963	3.46262
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.45799	0.82242	3.56379

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)	0.34211	1.08297	7.64048
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.34477	0.96921	7.63276

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)	0.33523	0.83833	3.53647
	SET_B->Q_N (FF)	0.36169	1.11398	5.90351
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.37316	0.85825	3.66296
	SET_B->Q_N (FF)	0.41266	1.15388	6.24717

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)	-0.07718	-0.16792	-0.68326
	setup	CLK (R)	0.15380	0.21909	0.72957
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07505	-0.16461	-0.66472
	setup	CLK (R)	0.14144	0.21176	0.70649

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)	-0.09262	-0.23287	-2.09697
	setup	CLK (R)	0.35920	0.45239	2.61173
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.10324	-0.24680	-2.19013
	setup	CLK (R)	0.34828	0.44721	2.59560

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)	-0.07718	-0.16792	-0.68326
	setup	CLK (R)	0.15380	0.21909	0.72957
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07505	-0.16461	-0.66472
	setup	CLK (R)	0.14144	0.21176	0.70649

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)	-0.09262	-0.23287	-2.09697
	setup	CLK (R)	0.35920	0.45239	2.61173
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.10324	-0.24680	-2.19013
	setup	CLK (R)	0.34828	0.44721	2.59560

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)	-0.15213	-0.21654	-0.75898
	removal	CLK (R)	0.18860	0.24743	0.80134
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.15233	-0.21647	-0.75057
	removal	CLK (R)	0.18888	0.24949	0.79093

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)	-0.15213	-0.21654	-0.75898
	removal	CLK (R)	0.18860	0.24743	0.80134
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.15233	-0.21647	-0.75057
	removal	CLK (R)	0.18888	0.24949	0.79093

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 ()	0.35181	0.82031	16.50020
	min_pulse_width	SET_B ()	0.37116	0.85297	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.38223	0.82031	16.50020
	min_pulse_width	SET_B ()	0.46749	0.94276	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 ()	0.26359	0.82031	16.50020
	min_pulse_width	CLK ()	0.16319	0.82031	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.34268	0.82031	16.50020
	min_pulse_width	CLK ()	0.19362	0.82031	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 ()	0.26359	0.82031	16.50020
	min_pulse_width	CLK ()	0.45525	0.82031	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.25750	0.82031	16.50020
	min_pulse_width	CLK ()	0.44308	0.82031	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	0.01324	0.01335	0.01843
	CLK	0.01128	0.01140	0.01626
	SET_B	0.01242	0.01247	0.01514
	SET_B	0.01425	0.01430	0.01633
sky130_fd_sc_hs__dfsbp_2	CLK	0.01560	0.01589	0.02141
	CLK	0.01363	0.01392	0.01896
	SET_B	0.01447	0.01490	0.01841
	SET_B	0.01626	0.01670	0.01897

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01391	0.01407	0.01864
	CLK	0.01205	0.01221	0.01679
sky130_fd_sc_hs__dfsbp_2	CLK	0.01624	0.01672	0.02139
	CLK	0.01434	0.01483	0.01948

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01393	0.01409	0.01914
	CLK	0.01207	0.01222	0.01710
sky130_fd_sc_hs__dfsbp_2	CLK	0.01625	0.01674	0.02225
	CLK	0.01436	0.01484	0.01991

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01322	0.01333	0.01802
	CLK	0.01127	0.01138	0.01600
	SET_B	0.01240	0.01244	0.01449
	SET_B	0.01423	0.01428	0.01617
sky130_fd_sc_hs__dfsbp_2	CLK	0.01559	0.01589	0.02074
	CLK	0.01361	0.01391	0.01861
	SET_B	0.01445	0.01488	0.01695
	SET_B	0.01624	0.01668	0.01870

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00289	0.00282	0.00571
	CLK	0.00070	0.00062	0.00351
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00870	0.00859	0.01090
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00628	0.00617	0.00847
	(!CLK * !SET_B * Q * !Q_N)	0.00685	0.00680	0.00905
	(!CLK * !SET_B * Q * !Q_N)	0.00433	0.00427	0.00653
sky130_fd_sc_hs__dfsbp_2	CLK	0.00288	0.00281	0.00571
	CLK	0.00068	0.00061	0.00350
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00861	0.00851	0.01082
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00611	0.00600	0.00831
	(!CLK * !SET_B * Q * !Q_N)	0.00684	0.00678	0.00905
	(!CLK * !SET_B * Q * !Q_N)	0.00425	0.00419	0.00645

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00035	0.00037	0.00318
	CLK	0.00255	0.00258	0.00538
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00629	0.00626	0.00882
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00872	0.00868	0.01125
	(!CLK * !SET_B * Q * !Q_N)	0.00370	0.00366	0.00592
	(!CLK * !SET_B * Q * !Q_N)	0.00621	0.00619	0.00844
sky130_fd_sc_hs__dfsbp_2	CLK	0.00035	0.00037	0.00318
	CLK	0.00255	0.00258	0.00539
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00603	0.00600	0.00858
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00854	0.00851	0.01109
	(!CLK * !SET_B * Q * !Q_N)	0.00356	0.00352	0.00580
	(!CLK * !SET_B * Q * !Q_N)	0.00615	0.00612	0.00839

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)	0.00210	0.00211	0.00210
	(CLK * Q * !Q_N)	-0.00185	-0.00185	-0.00184
	(!CLK * D * Q * !Q_N)	0.00231	0.00233	0.00231
	(!CLK * D * Q * !Q_N)	-0.00164	-0.00165	-0.00164
	(!CLK * !D * Q * !Q_N)	0.00444	0.00438	0.00671
	(!CLK * !D * Q * !Q_N)	0.00035	0.00025	0.00261
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00213	0.00214	0.00213
	(CLK * Q * !Q_N)	-0.00180	-0.00180	-0.00179
	(!CLK * D * Q * !Q_N)	0.00229	0.00230	0.00229
	(!CLK * D * Q * !Q_N)	-0.00164	-0.00164	-0.00163
	(!CLK * !D * Q * !Q_N)	0.00427	0.00421	0.00656
	(!CLK * !D * Q * !Q_N)	0.00021	0.00012	0.00250

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)	-0.00207	-0.00211	-0.00210
	(CLK * Q * !Q_N)	0.00189	0.00188	0.00186
	(!CLK * D * Q * !Q_N)	-0.00227	-0.00232	-0.00231
	(!CLK * D * Q * !Q_N)	0.00169	0.00167	0.00165
	(!CLK * !D * Q * !Q_N)	-0.00013	-0.00011	0.00247
	(!CLK * !D * Q * !Q_N)	0.00397	0.00401	0.00658
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00209	-0.00214	-0.00213
	(CLK * Q * !Q_N)	0.00184	0.00182	0.00180
	(!CLK * D * Q * !Q_N)	-0.00225	-0.00229	-0.00229
	(!CLK * D * Q * !Q_N)	0.00169	0.00167	0.00165
	(!CLK * !D * Q * !Q_N)	-0.00009	-0.00006	0.00252
	(!CLK * !D * Q * !Q_N)	0.00396	0.00401	0.00659

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)	0.01308	0.01284	0.02190
	(D * Q * !Q_N)	0.00925	0.00901	0.01808
	(!D * SET_B * !Q * Q_N)	0.01277	0.01252	0.02159
	(!D * SET_B * !Q * Q_N)	0.00894	0.00869	0.01778
	(!D * !SET_B * Q * !Q_N)	0.02256	0.02241	0.03190
	(!D * !SET_B * Q * !Q_N)	0.01841	0.01828	0.02776
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01294	0.01269	0.02177
	(D * Q * !Q_N)	0.00904	0.00880	0.01789
	(!D * SET_B * !Q * Q_N)	0.01271	0.01245	0.02157
	(!D * SET_B * !Q * Q_N)	0.00882	0.00856	0.01769
	(!D * !SET_B * Q * !Q_N)	0.02224	0.02210	0.03161
	(!D * !SET_B * Q * !Q_N)	0.01797	0.01783	0.02734

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)	0.01286	0.01297	0.02293
	(D * SET_B * !Q * Q_N)	0.01645	0.01657	0.02653
	(D * Q * !Q_N)	0.00739	0.00766	0.01740
	(D * Q * !Q_N)	0.01121	0.01149	0.02122
	(!D * SET_B * Q * !Q_N)	0.01458	0.01496	0.02512
	(!D * SET_B * Q * !Q_N)	0.01862	0.01899	0.02916
	(!D * SET_B * !Q * Q_N)	0.00755	0.00774	0.01762
	(!D * SET_B * !Q * Q_N)	0.01136	0.01157	0.02144
	(!D * !SET_B * Q * !Q_N)	0.01197	0.01235	0.02251
	(!D * !SET_B * Q * !Q_N)	0.01610	0.01649	0.02666
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01265	0.01275	0.02274
	(D * SET_B * !Q * Q_N)	0.01622	0.01633	0.02632
	(D * Q * !Q_N)	0.00728	0.00755	0.01731
	(D * Q * !Q_N)	0.01116	0.01144	0.02118
	(!D * SET_B * Q * !Q_N)	0.01418	0.01456	0.02474
	(!D * SET_B * Q * !Q_N)	0.01836	0.01873	0.02892
	(!D * SET_B * !Q * Q_N)	0.00737	0.00756	0.01746
	(!D * SET_B * !Q * Q_N)	0.01124	0.01145	0.02134
	(!D * !SET_B * Q * !Q_N)	0.01169	0.01206	0.02224
	(!D * !SET_B * Q * !Q_N)	0.01595	0.01632	0.02651

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00171	0.00335	0.00305	0.75540
sky130_fd_sc_hs__dfstp_2	0.00172	0.00312	0.00307	1.49641
sky130_fd_sc_hs__dfstp_4	0.00171	0.00316	0.00308	2.87614

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	0.28397	0.34726
sky130_fd_sc_hs__dfstp_2	0.00000	0.27571	0.31234
sky130_fd_sc_hs__dfstp_4	0.00000	0.48851	0.60225

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)	0.35382	1.04949	7.51283
	SET_B->Q (FR)	0.38511	1.30880	9.55548
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.36960	0.95206	7.55335
	SET_B->Q (FR)	0.40597	1.21899	9.65388
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.43575	0.93789	7.64884
	SET_B->Q (FR)	0.47386	1.20781	9.84504

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.37343	0.77858	3.49323
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.39649	0.76756	3.52041
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.41144	0.75127	3.51181

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)	-0.07669	-0.16483	-0.67129
	setup	CLK (R)	0.14934	0.21491	0.73332
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.07875	-0.16876	-0.68669
	setup	CLK (R)	0.15355	0.21841	0.74211
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07421	-0.16492	-0.66619
	setup	CLK (R)	0.14155	0.20841	0.70407

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)	-0.08194	-0.22475	-1.95459
	setup	CLK (R)	0.34538	0.44175	2.59193
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08387	-0.22860	-2.00996
	setup	CLK (R)	0.35184	0.44521	2.60499
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.09143	-0.23653	-2.09639
	setup	CLK (R)	0.34230	0.43804	2.58258

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)	-0.07669	-0.16483	-0.67129
	setup	CLK (R)	0.14934	0.21491	0.73332
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.07875	-0.16876	-0.68669
	setup	CLK (R)	0.15355	0.21841	0.74211
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07421	-0.16492	-0.66619
	setup	CLK (R)	0.14155	0.20841	0.70407

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)	-0.08194	-0.22475	-1.95459
	setup	CLK (R)	0.34538	0.44175	2.59193
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08387	-0.22860	-2.00996
	setup	CLK (R)	0.35184	0.44521	2.60499
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.09143	-0.23653	-2.09639
	setup	CLK (R)	0.34230	0.43804	2.58258

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)	-0.14815	-0.22000	-0.76269
	removal	CLK (R)	0.18539	0.24362	0.83283
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.15272	-0.21988	-0.76575
	removal	CLK (R)	0.18572	0.24478	0.81781
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.15171	-0.21259	-0.75056
	removal	CLK (R)	0.18190	0.24100	0.77908

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)	-0.14815	-0.22000	-0.76269
	removal	CLK (R)	0.18539	0.24362	0.83283
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.15272	-0.21988	-0.76575
	removal	CLK (R)	0.18572	0.24478	0.81781
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.15171	-0.21259	-0.75056
	removal	CLK (R)	0.18190	0.24100	0.77908

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 ()	0.31226	0.82031	16.50020
	min_pulse_width	SET_B ()	0.28184	0.82031	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.32443	0.82031	16.50020
	min_pulse_width	SET_B ()	0.30009	0.82031	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.33660	0.82031	16.50020
	min_pulse_width	SET_B ()	0.34120	0.82439	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 ()	0.18753	0.82031	16.50020
	min_pulse_width	CLK ()	0.14494	0.82031	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.20274	0.82031	16.50020
	min_pulse_width	CLK ()	0.15407	0.82031	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.24838	0.82031	16.50020
	min_pulse_width	CLK ()	0.16015	0.82031	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 ()	0.26359	0.82031	16.50020
	min_pulse_width	CLK ()	0.44004	0.82031	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.26359	0.82031	16.50020
	min_pulse_width	CLK ()	0.44308	0.82031	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.25750	0.82031	16.50020
	min_pulse_width	CLK ()	0.43395	0.82031	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	0.02285	0.02270	0.03226
	CLK	0.01909	0.01893	0.02861
	SET_B	0.02115	0.02079	0.02472
	SET_B	0.02508	0.02471	0.02876
sky130_fd_sc_hs__dfstp_2	CLK	0.02587	0.02604	0.03566
	CLK	0.02195	0.02212	0.03196
	SET_B	0.02426	0.02424	0.02813
	SET_B	0.02785	0.02781	0.03191
sky130_fd_sc_hs__dfstp_4	CLK	0.03211	0.03276	0.04259
	CLK	0.02815	0.02882	0.03920
	SET_B	0.03017	0.03084	0.03500
	SET_B	0.03379	0.03444	0.03899

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.02486	0.02488	0.03438
	CLK	0.02094	0.02096	0.03017
sky130_fd_sc_hs__dfstp_2	CLK	0.02733	0.02775	0.03766
	CLK	0.02351	0.02394	0.03320
sky130_fd_sc_hs__dfstp_4	CLK	0.03369	0.03498	0.04528
	CLK	0.02987	0.03114	0.04057

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00290	0.00283	0.00571
	CLK	0.00071	0.00063	0.00351
	(!CLK * SET_B)	0.00860	0.00850	0.01081
	(!CLK * SET_B)	0.00619	0.00608	0.00840
	(!CLK * !SET_B * Q)	0.00680	0.00674	0.00902
	(!CLK * !SET_B * Q)	0.00428	0.00422	0.00649
sky130_fd_sc_hs__dfstp_2	CLK	0.00292	0.00285	0.00573
	CLK	0.00072	0.00064	0.00352
	(!CLK * SET_B)	0.00860	0.00850	0.01081
	(!CLK * SET_B)	0.00618	0.00607	0.00839
	(!CLK * !SET_B * Q)	0.00680	0.00675	0.00900
	(!CLK * !SET_B * Q)	0.00426	0.00420	0.00645
sky130_fd_sc_hs__dfstp_4	CLK	0.00291	0.00285	0.00572
	CLK	0.00073	0.00065	0.00353
	(!CLK * SET_B)	0.00857	0.00847	0.01078
	(!CLK * SET_B)	0.00613	0.00602	0.00835
	(!CLK * !SET_B * Q)	0.00673	0.00667	0.00895
	(!CLK * !SET_B * Q)	0.00420	0.00414	0.00641

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00044	0.00046	0.00325
	CLK	0.00263	0.00265	0.00545
	(!CLK * SET_B)	0.00605	0.00602	0.00860
	(!CLK * SET_B)	0.00846	0.00843	0.01101
	(!CLK * !SET_B * Q)	0.00357	0.00354	0.00581
	(!CLK * !SET_B * Q)	0.00611	0.00608	0.00835
sky130_fd_sc_hs__dfstp_2	CLK	0.00043	0.00044	0.00324
	CLK	0.00263	0.00265	0.00544
	(!CLK * SET_B)	0.00625	0.00622	0.00877
	(!CLK * SET_B)	0.00867	0.00865	0.01120
	(!CLK * !SET_B * Q)	0.00378	0.00375	0.00600
	(!CLK * !SET_B * Q)	0.00633	0.00629	0.00855
sky130_fd_sc_hs__dfstp_4	CLK	0.00045	0.00047	0.00326
	CLK	0.00264	0.00266	0.00545
	(!CLK * SET_B)	0.00597	0.00594	0.00847
	(!CLK * SET_B)	0.00840	0.00838	0.01091
	(!CLK * !SET_B * Q)	0.00356	0.00353	0.00580
	(!CLK * !SET_B * Q)	0.00610	0.00607	0.00834

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00201	0.00202	0.00201
	(CLK * Q)	-0.00202	-0.00201	-0.00201
	(!CLK * D * Q)	0.00218	0.00219	0.00218
	(!CLK * D * Q)	-0.00184	-0.00184	-0.00184
	(!CLK * !D * Q)	0.00423	0.00414	0.00651
	(!CLK * !D * Q)	0.00005	-0.00004	0.00232
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00197	0.00199	0.00197
	(CLK * Q)	-0.00186	-0.00186	-0.00185
	(!CLK * D * Q)	0.00214	0.00216	0.00214
	(!CLK * D * Q)	-0.00169	-0.00170	-0.00168
	(!CLK * !D * Q)	0.00419	0.00411	0.00646
	(!CLK * !D * Q)	0.00021	0.00011	0.00247
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00209	0.00209	0.00208
	(CLK * Q)	-0.00181	-0.00181	-0.00180
	(!CLK * D * Q)	0.00223	0.00224	0.00223
	(!CLK * D * Q)	-0.00165	-0.00166	-0.00165
	(!CLK * !D * Q)	0.00421	0.00416	0.00650
	(!CLK * !D * Q)	0.00019	0.00009	0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00196	-0.00202	-0.00201
	(CLK * Q)	0.00204	0.00204	0.00202
	(!CLK * D * Q)	-0.00213	-0.00219	-0.00218
	(!CLK * D * Q)	0.00188	0.00187	0.00185
	(!CLK * !D * Q)	-0.00002	-0.00000	0.00258
	(!CLK * !D * Q)	0.00417	0.00420	0.00678
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00194	-0.00198	-0.00197
	(CLK * Q)	0.00190	0.00188	0.00186
	(!CLK * D * Q)	-0.00210	-0.00214	-0.00214
	(!CLK * D * Q)	0.00174	0.00171	0.00169
	(!CLK * !D * Q)	0.00005	0.00006	0.00264
	(!CLK * !D * Q)	0.00405	0.00408	0.00665
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00203	-0.00208	-0.00208
	(CLK * Q)	0.00184	0.00184	0.00182
	(!CLK * D * Q)	-0.00218	-0.00224	-0.00223
	(!CLK * D * Q)	0.00170	0.00169	0.00167
	(!CLK * !D * Q)	0.00002	0.00004	0.00261
	(!CLK * !D * Q)	0.00405	0.00410	0.00667

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01294	0.01267	0.02176
	(D * Q)	0.00909	0.00883	0.01791
	(!D * SET_B * !Q)	0.01275	0.01249	0.02157
	(!D * SET_B * !Q)	0.00890	0.00864	0.01773
	(!D * !SET_B * Q)	0.02202	0.02188	0.03142
	(!D * !SET_B * Q)	0.01784	0.01770	0.02724
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01312	0.01286	0.02193
	(D * Q)	0.00923	0.00898	0.01805
	(!D * SET_B * !Q)	0.01281	0.01254	0.02163
	(!D * SET_B * !Q)	0.00892	0.00866	0.01776
	(!D * !SET_B * Q)	0.02231	0.02214	0.03162
	(!D * !SET_B * Q)	0.01809	0.01793	0.02742
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01297	0.01273	0.02179
	(D * Q)	0.00907	0.00882	0.01789
	(!D * SET_B * !Q)	0.01281	0.01255	0.02163
	(!D * SET_B * !Q)	0.00890	0.00864	0.01773
	(!D * !SET_B * Q)	0.02192	0.02178	0.03127
	(!D * !SET_B * Q)	0.01768	0.01753	0.02704

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)**	0.01280	0.01290	0.02288
	(D * SET_B * !Q)	0.01643	0.01653	0.02652
	(D * Q)	0.00742	0.00767	0.01743
	(D * Q)	0.01126	0.01152	0.02127
	(!D * SET_B * Q)	0.01419	0.01454	0.02474
	(!D * SET_B * Q)	0.01825	0.01860	0.02879
	(!D * SET_B * !Q)	0.00746	0.00765	0.01753
	(!D * SET_B * !Q)	0.01130	0.01150	0.02138
	(!D * !SET_B * Q)	0.01171	0.01207	0.02225
	(!D * !SET_B * Q)	0.01588	0.01623	0.02643
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01272	0.01282	0.02280
	(D * SET_B * !Q)	0.01638	0.01648	0.02646
	(D * Q)	0.00730	0.00756	0.01731
	(D * Q)	0.01117	0.01144	0.02119
	(!D * SET_B * Q)	0.01431	0.01468	0.02486
	(!D * SET_B * Q)	0.01840	0.01876	0.02895
	(!D * SET_B * !Q)	0.00746	0.00765	0.01754
	(!D * SET_B * !Q)	0.01133	0.01153	0.02141
	(!D * !SET_B * Q)	0.01184	0.01221	0.02238
	(!D * !SET_B * Q)	0.01605	0.01641	0.02660
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01268	0.01278	0.02276
	(D * SET_B * !Q)	0.01633	0.01643	0.02642
	(D * Q)	0.00735	0.00760	0.01736
	(D * Q)	0.01124	0.01151	0.02126
	(!D * SET_B * Q)	0.01400	0.01436	0.02455
	(!D * SET_B * Q)	0.01813	0.01850	0.02869
	(!D * SET_B * !Q)	0.00736	0.00755	0.01744
	(!D * SET_B * !Q)	0.01126	0.01146	0.02134
	(!D * !SET_B * Q)	0.01159	0.01196	0.02213
	(!D * !SET_B * Q)	0.01583	0.01620	0.02639

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00175	0.00307	0.74171	0.73746
sky130_fd_sc_hs__dfxbp_2	0.00170	0.00308	1.36553	1.47990

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.44155	0.59935
sky130_fd_sc_hs__dfxbp_2	0.00000	0.57691	0.88007

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)	0.33118	1.03814	7.54775
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.39214	0.99992	7.58420

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.37236	0.80678	3.55628
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.36662	0.74734	3.29072

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)	0.43913	1.14411	7.61619
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.46094	1.04325	7.58885

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)	0.39214	0.79620	3.46702
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.49090	0.85867	3.63220

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)	-0.03303	-0.08585	-0.25525
	setup	CLK (R)	0.12892	0.16031	0.44576
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.03005	-0.07420	-0.20889
	setup	CLK (R)	0.11095	0.14311	0.36793

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)	-0.06717	-0.19107	-1.76830
	setup	CLK (R)	0.25019	0.34492	2.18962
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.06332	-0.18244	-1.79833
	setup	CLK (R)	0.24574	0.33697	2.14779

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 ()	0.15711	0.82031	16.50020
	min_pulse_width	CLK ()	0.13277	0.82031	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.20883	0.82031	16.50020
	min_pulse_width	CLK ()	0.13277	0.82031	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** ()	0.25750	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.35485	0.82031	16.50020
sky130_fd_sc_hs__dfxbp_2	**min_pulse_width**	**CLK** ()	0.24229	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.35485	0.82031	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	0.01287	0.01284	0.01770
	CLK	0.01105	0.01101	0.01587
sky130_fd_sc_hs__dfxbp_2	CLK	0.01575	0.01611	0.02139
	CLK	0.01391	0.01428	0.01929

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01322	0.01339	0.01836
	CLK	0.01140	0.01158	0.01646
sky130_fd_sc_hs__dfxbp_2	CLK	0.01640	0.01695	0.02186
	CLK	0.01455	0.01509	0.01997

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01323	0.01342	0.01879
	CLK	0.01141	0.01159	0.01674
sky130_fd_sc_hs__dfxbp_2	CLK	0.01641	0.01698	0.02259
	CLK	0.01456	0.01512	0.02037

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01286	0.01283	0.01752
	CLK	0.01104	0.01101	0.01566
sky130_fd_sc_hs__dfxbp_2	CLK	0.01574	0.01609	0.02083
	CLK	0.01390	0.01428	0.01886

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00212	0.00211	0.00514
	CLK	-0.00012	-0.00014	0.00291
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00778	0.00771	0.01075
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00554	0.00546	0.00851
sky130_fd_sc_hs__dfxbp_2	CLK	0.00198	0.00199	0.00504
	CLK	-0.00020	-0.00020	0.00286
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00766	0.00759	0.01067
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00549	0.00542	0.00849

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00005	0.00003	0.00301
	CLK	0.00218	0.00228	0.00524
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00456	0.00459	0.00785
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00680	0.00682	0.01009
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00006	0.00004	0.00303
	CLK	0.00211	0.00221	0.00521
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00422	0.00425	0.00755
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00640	0.00642	0.00972

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)	0.01169	0.01145	0.02066
	(D * Q * !Q_N)	0.00805	0.00779	0.01702
	(!D * !Q * Q_N)	0.01181	0.01157	0.02080
	(!D * !Q * Q_N)	0.00817	0.00791	0.01715
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01176	0.01151	0.02068
	(D * Q * !Q_N)	0.00807	0.00779	0.01698
	(!D * !Q * Q_N)	0.01177	0.01151	0.02069
	(!D * !Q * Q_N)	0.00807	0.00779	0.01700

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)	0.00853	0.00873	0.01856
	(D * Q * !Q_N)	0.01217	0.01237	0.02220
	(D * !Q * Q_N)	0.01374	0.01374	0.02395
	(D * !Q * Q_N)	0.01738	0.01739	0.02760
	(!D * Q * !Q_N)	0.01426	0.01457	0.02484
	(!D * Q * !Q_N)	0.01790	0.01820	0.02849
	(!D * !Q * Q_N)	0.00823	0.00837	0.01831
	(!D * !Q * Q_N)	0.01187	0.01203	0.02196
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00851	0.00872	0.01851
	(D * Q * !Q_N)	0.01220	0.01242	0.02221
	(D * !Q * Q_N)	0.01387	0.01395	0.02401
	(D * !Q * Q_N)	0.01756	0.01765	0.02771
	(!D * Q * !Q_N)	0.01380	0.01412	0.02436
	(!D * Q * !Q_N)	0.01749	0.01780	0.02806
	(!D * !Q * Q_N)	0.00835	0.00847	0.01838
	(!D * !Q * Q_N)	0.01203	0.01218	0.02206

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00171	0.00307	0.74347
sky130_fd_sc_hs__dfxtp_2	0.00175	0.00307	1.49469
sky130_fd_sc_hs__dfxtp_4	0.00174	0.00308	2.84327

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.34891	0.60370
sky130_fd_sc_hs__dfxtp_2	0.00000	0.34283	0.56464
sky130_fd_sc_hs__dfxtp_4	0.00000	0.51564	0.85621

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)**	0.30042	1.00864	7.52803
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.32036	0.91138	7.53799
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.38221	0.89327	7.60581

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.35553	0.78270	3.54219
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.36692	0.75766	3.56751
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.38127	0.73868	3.58163

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)	-0.03295	-0.08176	-0.24877
	setup	CLK (R)	0.13317	0.16040	0.44794
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03480	-0.07729	-0.23254
	setup	CLK (R)	0.12978	0.15479	0.42792
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03364	-0.07487	-0.21424
	setup	CLK (R)	0.12018	0.14930	0.39918

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)	-0.07122	-0.19789	-1.78726
	setup	CLK (R)	0.25973	0.35634	2.21387
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.06202	-0.18423	-1.73920
	setup	CLK (R)	0.24437	0.34040	2.15423
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.06310	-0.18102	-1.75953
	setup	CLK (R)	0.24392	0.33697	2.13792

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 ()	0.14190	0.82031	16.50020
	min_pulse_width	CLK ()	0.12669	0.82031	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.15407	0.82031	16.50020
	min_pulse_width	CLK ()	0.12973	0.82031	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.19970	0.82031	16.50020
	min_pulse_width	CLK ()	0.13886	0.82031	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** ()	0.26359	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.36398	0.82031	16.50020
sky130_fd_sc_hs__dfxtp_2	**min_pulse_width**	**CLK** ()	0.25750	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.35485	0.82031	16.50020
sky130_fd_sc_hs__dfxtp_4	**min_pulse_width**	**CLK** ()	0.25446	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.35790	0.82031	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	0.01992	0.01970	0.02937
	CLK	0.01624	0.01602	0.02570
sky130_fd_sc_hs__dfxtp_2	CLK	0.02259	0.02261	0.03232
	CLK	0.01889	0.01891	0.02863
sky130_fd_sc_hs__dfxtp_4	CLK	0.02845	0.02897	0.03877
	CLK	0.02478	0.02532	0.03568

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.02073	0.02086	0.03081
	CLK	0.01704	0.01717	0.02695
sky130_fd_sc_hs__dfxtp_2	CLK	0.02303	0.02356	0.03413
	CLK	0.01932	0.01986	0.02972
sky130_fd_sc_hs__dfxtp_4	CLK	0.02933	0.03072	0.04136
	CLK	0.02567	0.02704	0.03707

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00195	0.00194	0.00494
	CLK	-0.00024	-0.00026	0.00277
	!CLK	0.00764	0.00756	0.01059
	!CLK	0.00545	0.00537	0.00840
sky130_fd_sc_hs__dfxtp_2	CLK	0.00208	0.00208	0.00512
	CLK	-0.00016	-0.00018	0.00288
	!CLK	0.00756	0.00749	0.01054
	!CLK	0.00532	0.00524	0.00830
sky130_fd_sc_hs__dfxtp_4	CLK	0.00196	0.00197	0.00502
	CLK	-0.00027	-0.00028	0.00279
	!CLK	0.00755	0.00749	0.01056
	!CLK	0.00533	0.00525	0.00833

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00029	0.00037	0.00330
	CLK	0.00248	0.00256	0.00548
	!CLK	0.00491	0.00493	0.00816
	!CLK	0.00709	0.00711	0.01035
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00010	-0.00001	0.00298
	CLK	0.00214	0.00224	0.00522
	!CLK	0.00463	0.00465	0.00794
	!CLK	0.00687	0.00689	0.01018
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00004	0.00004	0.00304
	CLK	0.00217	0.00228	0.00527
	!CLK	0.00456	0.00459	0.00787
	!CLK	0.00679	0.00681	0.01009

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01173	0.01147	0.02062
	(D * Q)	0.00804	0.00776	0.01693
	(!D * !Q)	0.01202	0.01176	0.02092
	(!D * !Q)	0.00834	0.00806	0.01724
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01177	0.01151	0.02069
	(D * Q)	0.00807	0.00778	0.01698
	(!D * !Q)	0.01197	0.01171	0.02090
	(!D * !Q)	0.00827	0.00799	0.01719
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01170	0.01145	0.02059
	(D * Q)	0.00803	0.00776	0.01693
	(!D * !Q)	0.01190	0.01166	0.02081
	(!D * !Q)	0.00824	0.00797	0.01715

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00885	0.00909	0.01886
	(D * Q)	0.01253	0.01278	0.02255
	(D * !Q)	0.01399	0.01412	0.02414
	(D * !Q)	0.01766	0.01779	0.02784
	(!D * Q)	0.01452	0.01486	0.02509
	(!D * Q)	0.01820	0.01854	0.02879
	(!D * !Q)	0.00839	0.00863	0.01843
	(!D * !Q)	0.01207	0.01233	0.02211
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00868	0.00891	0.01870
	(D * Q)	0.01238	0.01263	0.02241
	(D * !Q)	0.01367	0.01371	0.02386
	(D * !Q)	0.01737	0.01742	0.02758
	(!D * Q)	0.01444	0.01477	0.02502
	(!D * Q)	0.01814	0.01847	0.02873
	(!D * !Q)	0.00831	0.00855	0.01837
	(!D * !Q)	0.01201	0.01227	0.02208
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00901	0.00923	0.01900
	(D * Q)	0.01268	0.01291	0.02267
	(D * !Q)	0.01404	0.01416	0.02419
	(D * !Q)	0.01770	0.01782	0.02787
	(!D * Q)	0.01476	0.01508	0.02532
	(!D * Q)	0.01842	0.01874	0.02899
	(!D * !Q)	0.00863	0.00885	0.01865
	(!D * !Q)	0.01229	0.01253	0.02232

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00267	0.00458	0.76813
sky130_fd_sc_hs__dlclkp_2	0.00267	0.00495	1.50169
sky130_fd_sc_hs__dlclkp_4	0.00265	0.00518	2.98429

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.41433	0.63759
sky130_fd_sc_hs__dlclkp_2	0.00000	0.39518	0.52728
sky130_fd_sc_hs__dlclkp_4	0.00000	0.42803	0.51012

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)**	0.11638	0.79083	7.44644
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.12066	0.69498	7.38021
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.16501	0.71005	7.81174

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.12929	0.64138	4.21244
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.14239	0.65448	4.43885
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.19599	0.73584	4.89911

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)	-0.05739	-0.12246	-0.63922
	setup	CLK (R)	0.20721	0.24988	1.28138
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.05707	-0.11985	-0.63190
	setup	CLK (R)	0.21618	0.25049	1.27724
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.05863	-0.11985	-0.61707
	setup	CLK (R)	0.21268	0.22827	1.12576

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)	-0.09034	-0.14840	-1.15222
	setup	CLK (R)	0.17527	0.24779	1.31292
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.08635	-0.14556	-1.13810
	setup	CLK (R)	0.16791	0.23075	1.22822
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.08697	-0.14495	-1.13272
	setup	CLK (R)	0.13227	0.17914	1.21923

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 ()	0.08410	0.82031	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.09322	0.82031	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.13581	0.82031	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** ()	0.30009	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.26663	0.82031	16.50020
sky130_fd_sc_hs__dlclkp_2	**min_pulse_width**	**CLK** ()	0.31835	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.26967	0.82031	16.50020
sky130_fd_sc_hs__dlclkp_4	**min_pulse_width**	**CLK** ()	0.31226	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.26359	0.82031	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	0.01461	0.01468	0.03444
	CLK	0.00875	0.00880	0.02866
sky130_fd_sc_hs__dlclkp_2	CLK	0.01760	0.01786	0.03725
	CLK	0.01128	0.01154	0.03102
sky130_fd_sc_hs__dlclkp_4	CLK	0.02310	0.02364	0.04159
	CLK	0.01661	0.01715	0.03559

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01628	0.01739	0.03801
	CLK	0.02223	0.02332	0.04377
sky130_fd_sc_hs__dlclkp_2	CLK	0.01898	0.02042	0.04184
	CLK	0.02539	0.02676	0.04719
sky130_fd_sc_hs__dlclkp_4	CLK	0.02465	0.02630	0.04741
	CLK	0.03111	0.03273	0.05218

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00159	0.00137	0.00134
	CLK	-0.00144	-0.00167	-0.00168
	(!CLK * !GCLK)	0.01051	0.01028	0.01607
	(!CLK * !GCLK)	0.00727	0.00703	0.01283
sky130_fd_sc_hs__dlclkp_2	CLK	0.00118	0.00119	0.00118
	CLK	-0.00184	-0.00185	-0.00185
	(!CLK * !GCLK)	0.01063	0.01040	0.01617
	(!CLK * !GCLK)	0.00741	0.00717	0.01295
sky130_fd_sc_hs__dlclkp_4	CLK	0.00115	0.00114	0.00115
	CLK	-0.00183	-0.00183	-0.00184
	(!CLK * !GCLK)	0.01040	0.01018	0.01593
	(!CLK * !GCLK)	0.00735	0.00711	0.01286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00131	-0.00133	-0.00133
	CLK	0.00169	0.00170	0.00170
	(!CLK * !GCLK)	0.00714	0.00690	0.01299
	(!CLK * !GCLK)	0.01040	0.01016	0.01623
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00110	-0.00117	-0.00118
	CLK	0.00191	0.00187	0.00185
	(!CLK * !GCLK)	0.00746	0.00724	0.01331
	(!CLK * !GCLK)	0.01069	0.01048	0.01652
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00107	-0.00113	-0.00114
	CLK	0.00190	0.00187	0.00185
	(!CLK * !GCLK)	0.00799	0.00775	0.01382
	(!CLK * !GCLK)	0.01107	0.01083	0.01689

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00905	0.00900	0.02004
	(!GATE * !GCLK)	0.00346	0.00338	0.01443
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00954	0.00944	0.02041
	(!GATE * !GCLK)	0.00351	0.00340	0.01437
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00948	0.00938	0.02028
	(!GATE * !GCLK)	0.00324	0.00312	0.01402

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01250	0.01282	0.02535
	(GATE * !GCLK)	0.01809	0.01839	0.03093
	(!GATE * !GCLK)	0.00434	0.00475	0.01631
	(!GATE * !GCLK)	0.00995	0.01038	0.02194
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01284	0.01315	0.02576
	(GATE * !GCLK)	0.01889	0.01921	0.03182
	(!GATE * !GCLK)	0.00453	0.00489	0.01646
	(!GATE * !GCLK)	0.01057	0.01095	0.02252
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01249	0.01275	0.02527
	(GATE * !GCLK)	0.01888	0.01913	0.03166
	(!GATE * !GCLK)	0.00428	0.00459	0.01609
	(!GATE * !GCLK)	0.01054	0.01086	0.02237

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00237	0.00263	0.00294	0.74497	0.75483
sky130_fd_sc_hs__dlrbn_2	0.00238	0.00263	0.00304	1.34363	1.47837

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	0.52809	0.67208
sky130_fd_sc_hs__dlrbn_2	0.00000	0.54452	0.66095

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)	0.42251	1.10853	7.60456
	GATE_N->Q (-R)	0.49992	1.31206	8.57880
	RESET_B->Q (RR)	0.14809	0.85653	7.52492
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.43164	1.02173	7.45477
	GATE_N->Q (-R)	0.51328	1.23063	8.44850
	RESET_B->Q (RR)	0.15898	0.79052	7.49822

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.33440	0.82456	4.04906
	GATE_N->Q (-F)	0.36101	0.90105	4.45074
	RESET_B->Q (FF)	0.15599	0.72762	4.49354
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.36613	0.82405	3.86815
	GATE_N->Q (-F)	0.39344	0.90118	4.26887
	RESET_B->Q (FF)	0.18272	0.74431	4.49546

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)	0.40835	1.17311	8.18463
	GATE_N->Q_N (-R)	0.43507	1.24937	8.58499
	RESET_B->Q_N (FR)	0.23195	1.06380	8.42870
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.47152	1.12287	8.38458
	GATE_N->Q_N (-R)	0.49925	1.19956	8.78606
	RESET_B->Q_N (FR)	0.29100	1.03710	8.80752

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)	0.48435	0.86520	3.56842
	GATE_N->Q_N (-F)	0.56165	1.06862	4.54295
	RESET_B->Q_N (RF)	0.20945	0.60847	3.36101
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.54711	0.90403	3.81598
	GATE_N->Q_N (-F)	0.62892	1.11349	4.81157
	RESET_B->Q_N (RF)	0.27328	0.67073	3.76916

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 ()**	0.17840	0.82031	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.22404	0.82031	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	0.01084	0.01100	0.01579
	D	0.00926	0.00943	0.01401
	GATE_N	0.01111	0.01147	0.01732
	GATE_N	0.01262	0.01297	0.01876
	RESET_B	0.00716	0.00726	0.01059
	RESET_B	0.00528	0.00535	0.00868
sky130_fd_sc_hs__dlrbn_2	D	0.01306	0.01357	0.01825
	D	0.01150	0.01202	0.01662
	GATE_N	0.01334	0.01406	0.02000
	GATE_N	0.01484	0.01556	0.02139
	RESET_B	0.00958	0.00997	0.01323
	RESET_B	0.00766	0.00806	0.01109

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00851	0.00892	0.01357
	D	0.01008	0.01049	0.01512
	GATE_N	0.01024	0.01061	0.01648
	GATE_N	0.01194	0.01231	0.01818
	RESET_B	0.00745	0.00761	0.01150
	RESET_B	0.00921	0.00936	0.01321
sky130_fd_sc_hs__dlrbn_2	D	0.01095	0.01177	0.01659
	D	0.01250	0.01332	0.01801
	GATE_N	0.01267	0.01343	0.01950
	GATE_N	0.01435	0.01509	0.02103
	RESET_B	0.00979	0.01019	0.01408
	RESET_B	0.01160	0.01199	0.01581

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00852	0.00893	0.01381
	D	0.01009	0.01051	0.01528
	GATE_N	0.01025	0.01063	0.01664
	GATE_N	0.01195	0.01232	0.01834
	RESET_B	0.00746	0.00763	0.01171
	RESET_B	0.00922	0.00938	0.01338
sky130_fd_sc_hs__dlrbn_2	D	0.01096	0.01178	0.01662
	D	0.01251	0.01335	0.01815
	GATE_N	0.01268	0.01347	0.02042
	GATE_N	0.01436	0.01514	0.02128
	RESET_B	0.00981	0.01020	0.01483
	RESET_B	0.01161	0.01200	0.01607

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01082	0.01099	0.01544
	D	0.00925	0.00941	0.01378
	GATE_N	0.01110	0.01146	0.01722
	GATE_N	0.01261	0.01295	0.01860
	RESET_B	0.00715	0.00718	0.01049
	RESET_B	0.00527	0.00531	0.00857
sky130_fd_sc_hs__dlrbn_2	D	0.01305	0.01357	0.01811
	D	0.01149	0.01203	0.01639
	GATE_N	0.01333	0.01405	0.01974
	GATE_N	0.01484	0.01555	0.02117
	RESET_B	0.00957	0.00998	0.01275
	RESET_B	0.00765	0.00806	0.01083

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)	0.00475	0.00470	0.01355
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00179	0.00173	0.01060
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00885	0.00873	0.01759
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00607	0.00595	0.01480
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)	0.00471	0.00466	0.01349
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00179	0.00172	0.01055
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00837	0.00825	0.01707
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00561	0.00548	0.01430

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)	0.00138	0.00176	0.01122
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00434	0.00472	0.01417
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00661	0.00685	0.01634
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00940	0.00965	0.01914
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)	0.00131	0.00169	0.01109
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00425	0.00463	0.01402
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00677	0.00701	0.01645
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00954	0.00979	0.01923

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)	0.00834	0.00822	0.01907
	(D * RESET_B * Q * !Q_N)	0.00514	0.00501	0.01586
	(D * !RESET_B * !Q * Q_N)	0.01308	0.01293	0.02365
	(D * !RESET_B * !Q * Q_N)	0.00972	0.00955	0.02027
	(!D * !Q * Q_N)	0.00878	0.00869	0.01957
	(!D * !Q * Q_N)	0.00558	0.00547	0.01635
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00837	0.00822	0.01902
	(D * RESET_B * Q * !Q_N)	0.00517	0.00503	0.01583
	(D * !RESET_B * !Q * Q_N)	0.01325	0.01306	0.02373
	(D * !RESET_B * !Q * Q_N)	0.00989	0.00970	0.02038
	(!D * !Q * Q_N)	0.00871	0.00858	0.01943
	(!D * !Q * Q_N)	0.00553	0.00540	0.01623

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)	0.00649	0.00675	0.01835
	(D * RESET_B * Q * !Q_N)	0.00971	0.00997	0.02156
	(D * !RESET_B * !Q * Q_N)	0.00930	0.00956	0.02102
	(D * !RESET_B * !Q * Q_N)	0.01269	0.01295	0.02441
	(!D * !Q * Q_N)	0.00583	0.00612	0.01775
	(!D * !Q * Q_N)	0.00905	0.00932	0.02096
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00640	0.00666	0.01818
	(D * RESET_B * Q * !Q_N)	0.00959	0.00985	0.02137
	(D * !RESET_B * !Q * Q_N)	0.00886	0.00911	0.02049
	(D * !RESET_B * !Q * Q_N)	0.01222	0.01247	0.02385
	(!D * !Q * Q_N)	0.00584	0.00611	0.01767
	(!D * !Q * Q_N)	0.00902	0.00931	0.02086

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)	0.00134	0.00136	0.00135
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00189	-0.00191	-0.00190
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00143	0.00144	0.00143
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00191	-0.00192	-0.00192

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)	-0.00127	-0.00133	-0.00134
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00199	0.00195	0.00192
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00135	-0.00143	-0.00142
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00201	0.00197	0.00194

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00220	0.00253	0.00303	0.74533	0.74412
sky130_fd_sc_hs__dlrbp_2	0.00221	0.00252	0.00303	1.48268	1.50945

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	0.52814	0.67307
sky130_fd_sc_hs__dlrbp_2	0.00000	0.54418	0.66077

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)	0.40993	1.09144	7.58720
	GATE->Q (-R)	0.36365	1.04663	7.47330
	RESET_B->Q (RR)	0.15057	0.86335	7.56714
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.42333	0.99508	7.54414
	GATE->Q (-R)	0.37378	0.94612	7.41749
	RESET_B->Q (RR)	0.15904	0.77929	7.64885

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.33122	0.81581	4.03277
	GATE->Q (-F)	0.35409	0.75192	3.29966
	RESET_B->Q (FF)	0.15866	0.73399	4.51724
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.36341	0.82790	4.14661
	GATE->Q (-F)	0.38526	0.76064	3.40428
	RESET_B->Q (FF)	0.17746	0.74684	4.77772

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)	0.40797	1.17114	8.19835
	GATE->Q_N (-R)	0.43102	1.10658	7.46729
	RESET_B->Q_N (FR)	0.23756	1.07661	8.48076
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.46682	1.10216	8.23391
	GATE->Q_N (-R)	0.48902	1.03508	7.49264
	RESET_B->Q_N (FR)	0.28072	1.01641	8.65352

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)	0.47346	0.84537	3.47914
	GATE->Q_N (-F)	0.42716	0.80188	3.36592
	RESET_B->Q_N (RF)	0.21376	0.61220	3.33072
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.52906	0.86381	3.61885
	GATE->Q_N (-F)	0.47968	0.81475	3.49285
	RESET_B->Q_N (RF)	0.26378	0.64462	3.61614

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 ()**	0.17840	0.82031	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.21491	0.82031	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	0.01028	0.01044	0.01522
	D	0.00880	0.00896	0.01354
	GATE	0.01177	0.01187	0.01755
	GATE	0.01009	0.01019	0.01585
	RESET_B	0.00720	0.00724	0.01073
	RESET_B	0.00526	0.00528	0.00866
sky130_fd_sc_hs__dlrbp_2	D	0.01284	0.01336	0.01798
	D	0.01136	0.01191	0.01647
	GATE	0.01429	0.01474	0.02061
	GATE	0.01261	0.01307	0.01884
	RESET_B	0.00966	0.01013	0.01390
	RESET_B	0.00773	0.00815	0.01155

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00882	0.00925	0.01387
	D	0.01030	0.01073	0.01534
	GATE	0.01202	0.01232	0.01787
	GATE	0.01057	0.01088	0.01634
	RESET_B	0.00756	0.00769	0.01178
	RESET_B	0.00937	0.00950	0.01338
sky130_fd_sc_hs__dlrbp_2	D	0.01125	0.01206	0.01697
	D	0.01273	0.01354	0.01825
	GATE	0.01444	0.01511	0.02095
	GATE	0.01297	0.01366	0.01928
	RESET_B	0.00994	0.01038	0.01483
	RESET_B	0.01175	0.01218	0.01624

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00883	0.00926	0.01410
	D	0.01031	0.01074	0.01549
	GATE	0.01203	0.01233	0.01810
	GATE	0.01059	0.01088	0.01654
	RESET_B	0.00757	0.00770	0.01187
	RESET_B	0.00938	0.00951	0.01354
sky130_fd_sc_hs__dlrbp_2	D	0.01126	0.01207	0.01704
	D	0.01274	0.01356	0.01838
	GATE	0.01445	0.01514	0.02097
	GATE	0.01298	0.01367	0.01940
	RESET_B	0.00994	0.01040	0.01491
	RESET_B	0.01176	0.01220	0.01641

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01026	0.01044	0.01486
	D	0.00878	0.00896	0.01332
	GATE	0.01176	0.01184	0.01738
	GATE	0.01008	0.01017	0.01567
	RESET_B	0.00719	0.00723	0.01056
	RESET_B	0.00526	0.00528	0.00853
sky130_fd_sc_hs__dlrbp_2	D	0.01283	0.01337	0.01781
	D	0.01135	0.01189	0.01627
	GATE	0.01427	0.01473	0.02041
	GATE	0.01260	0.01306	0.01859
	RESET_B	0.00966	0.01012	0.01332
	RESET_B	0.00772	0.00814	0.01132

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)	0.00767	0.00759	0.01647
	(GATE * !RESET_B * !Q * Q_N)	0.00512	0.00503	0.01392
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00459	0.00457	0.01347
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00187	0.00183	0.01074
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00774	0.00766	0.01653
	(GATE * !RESET_B * !Q * Q_N)	0.00519	0.00509	0.01396
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00460	0.00457	0.01345
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00184	0.00181	0.01069

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)	0.00689	0.00716	0.01662
	(GATE * !RESET_B * !Q * Q_N)	0.00944	0.00972	0.01918
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00108	0.00148	0.01093
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00381	0.00423	0.01367
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00696	0.00723	0.01670
	(GATE * !RESET_B * !Q * Q_N)	0.00953	0.00980	0.01927
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00116	0.00156	0.01100
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00391	0.00433	0.01376

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)	0.00878	0.00866	0.01949
	(D * RESET_B * Q * !Q_N)	0.00565	0.00554	0.01638
	(D * !RESET_B * !Q * Q_N)	0.01031	0.01008	0.02120
	(D * !RESET_B * !Q * Q_N)	0.00737	0.00714	0.01826
	(!D * !Q * Q_N)	0.00867	0.00858	0.01939
	(!D * !Q * Q_N)	0.00555	0.00546	0.01627
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00877	0.00865	0.01950
	(D * RESET_B * Q * !Q_N)	0.00564	0.00553	0.01637
	(D * !RESET_B * !Q * Q_N)	0.01029	0.01005	0.02119
	(D * !RESET_B * !Q * Q_N)	0.00734	0.00711	0.01826
	(!D * !Q * Q_N)	0.00863	0.00855	0.01936
	(!D * !Q * Q_N)	0.00549	0.00540	0.01623

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)	0.00526	0.00563	0.01707
	(D * RESET_B * Q * !Q_N)	0.00838	0.00874	0.02019
	(D * !RESET_B * !Q * Q_N)	0.00904	0.00921	0.02124
	(D * !RESET_B * !Q * Q_N)	0.01198	0.01215	0.02419
	(!D * !Q * Q_N)	0.00519	0.00553	0.01704
	(!D * !Q * Q_N)	0.00830	0.00865	0.02016
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00522	0.00553	0.01702
	(D * RESET_B * Q * !Q_N)	0.00835	0.00867	0.02015
	(D * !RESET_B * !Q * Q_N)	0.00897	0.00914	0.02117
	(D * !RESET_B * !Q * Q_N)	0.01191	0.01208	0.02410
	(!D * !Q * Q_N)	0.00519	0.00549	0.01704
	(!D * !Q * Q_N)	0.00832	0.00862	0.02018

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)	0.00137	0.00138	0.00137
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00194	-0.00195	-0.00194
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00138	0.00139	0.00139
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00193	-0.00194	-0.00194

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)	-0.00129	-0.00136	-0.00136
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00203	0.00199	0.00196
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00131	-0.00138	-0.00138
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00203	0.00199	0.00196

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00219	0.00255	0.00288	0.75527
sky130_fd_sc_hs__dlrtn_2	0.00221	0.00253	0.00299	1.48540
sky130_fd_sc_hs__dlrtn_4	0.00221	0.00254	0.00480	2.83558

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtn_1	0.00000	0.40904	0.56316
sky130_fd_sc_hs__dlrtn_2	0.00000	0.41022	0.51142
sky130_fd_sc_hs__dlrtn_4	0.00000	0.64985	1.11267

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)	0.39033	1.06561	7.52703
	GATE_N->Q (-R)	0.45359	1.24867	8.44625
	RESET_B->Q (RR)	0.13024	0.81300	7.38053
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.40568	0.97542	7.56891
	GATE_N->Q (-R)	0.46887	1.15797	8.48734
	RESET_B->Q (RR)	0.13879	0.73537	7.51868
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.44626	0.93249	7.59339
	GATE_N->Q (-R)	0.51064	1.11866	8.51518
	RESET_B->Q (RR)	0.14634	0.65990	7.56664

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.30862	0.78752	4.04025
	GATE_N->Q (-F)	0.32562	0.85045	4.39379
	RESET_B->Q (FF)	0.13752	0.67865	4.32962
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.32722	0.76997	4.01219
	GATE_N->Q (-F)	0.34360	0.83200	4.36688
	RESET_B->Q (FF)	0.15465	0.68720	4.49988
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.34690	0.76184	4.09637
	GATE_N->Q (-F)	0.36859	0.83383	4.48153
	RESET_B->Q (FF)	0.16403	0.65864	4.48502

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** ()	0.15711	0.82031	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B** ()	0.19057	0.82031	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B** ()	0.21491	0.82031	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	0.01518	0.01531	0.02433
	D	0.01225	0.01239	0.02152
	GATE_N	0.01558	0.01621	0.02765
	GATE_N	0.01850	0.01913	0.03059
	RESET_B	0.00906	0.00896	0.01641
	RESET_B	0.00539	0.00529	0.01278
sky130_fd_sc_hs__dlrtn_2	D	0.01748	0.01793	0.02702
	D	0.01458	0.01504	0.02413
	GATE_N	0.01792	0.01894	0.03046
	GATE_N	0.02085	0.02186	0.03347
	RESET_B	0.01130	0.01144	0.01774
	RESET_B	0.00749	0.00764	0.01397
sky130_fd_sc_hs__dlrtn_4	D	0.02501	0.02611	0.03559
	D	0.02192	0.02304	0.03307
	GATE_N	0.02551	0.02715	0.03905
	GATE_N	0.02826	0.02989	0.04200
	RESET_B	0.01978	0.02038	0.03500
	RESET_B	0.01366	0.01428	0.02889

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01232	0.01291	0.02255
	D	0.01524	0.01582	0.02521
	GATE_N	0.01469	0.01535	0.02767
	GATE_N	0.01805	0.01870	0.03050
	RESET_B	0.00969	0.00994	0.01835
	RESET_B	0.01313	0.01334	0.02170
sky130_fd_sc_hs__dlrtn_2	D	0.01475	0.01581	0.02566
	D	0.01765	0.01869	0.02813
	GATE_N	0.01721	0.01820	0.03043
	GATE_N	0.02049	0.02147	0.03340
	RESET_B	0.01204	0.01252	0.02126
	RESET_B	0.01561	0.01606	0.02361
sky130_fd_sc_hs__dlrtn_4	D	0.02092	0.02277	0.03248
	D	0.02401	0.02584	0.03544
	GATE_N	0.02345	0.02529	0.03913
	GATE_N	0.02692	0.02884	0.04078
	RESET_B	0.01872	0.01999	0.03809
	RESET_B	0.02455	0.02569	0.04245

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)	0.00444	0.00443	0.01330
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00174	0.00171	0.01060
	(!GATE_N * !RESET_B * !Q)	0.00753	0.00744	0.01632
	(!GATE_N * !RESET_B * !Q)	0.00500	0.00492	0.01379
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00448	0.00446	0.01333
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00175	0.00171	0.01060
	(!GATE_N * !RESET_B * !Q)	0.00756	0.00747	0.01634
	(!GATE_N * !RESET_B * !Q)	0.00501	0.00492	0.01379
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00447	0.00444	0.01334
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00175	0.00172	0.01062
	(!GATE_N * !RESET_B * !Q)	0.00796	0.00788	0.01674
	(!GATE_N * !RESET_B * !Q)	0.00544	0.00535	0.01421

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)	0.00143	0.00182	0.01129
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00413	0.00454	0.01400
	(!GATE_N * !RESET_B * !Q)	0.00724	0.00751	0.01699
	(!GATE_N * !RESET_B * !Q)	0.00978	0.01004	0.01953
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00141	0.00180	0.01127
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00414	0.00455	0.01400
	(!GATE_N * !RESET_B * !Q)	0.00731	0.00757	0.01706
	(!GATE_N * !RESET_B * !Q)	0.00987	0.01013	0.01961
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00137	0.00177	0.01125
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00409	0.00451	0.01397
	(!GATE_N * !RESET_B * !Q)	0.00837	0.00864	0.01813
	(!GATE_N * !RESET_B * !Q)	0.01092	0.01120	0.02068

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)	0.00819	0.00809	0.01907
	(D * RESET_B * Q)	0.00504	0.00493	0.01591
	(D * !RESET_B * !Q)	0.01292	0.01278	0.02366
	(D * !RESET_B * !Q)	0.00960	0.00946	0.02035
	(!D * !Q)	0.00811	0.00804	0.01906
	(!D * !Q)	0.00497	0.00490	0.01591
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00817	0.00807	0.01905
	(D * RESET_B * Q)	0.00505	0.00495	0.01593
	(D * !RESET_B * !Q)	0.01298	0.01286	0.02374
	(D * !RESET_B * !Q)	0.00970	0.00956	0.02045
	(!D * !Q)	0.00807	0.00801	0.01902
	(!D * !Q)	0.00495	0.00488	0.01590
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00823	0.00813	0.01908
	(D * RESET_B * Q)	0.00511	0.00499	0.01596
	(D * !RESET_B * !Q)	0.01408	0.01397	0.02483
	(D * !RESET_B * !Q)	0.01078	0.01065	0.02153
	(!D * !Q)	0.00809	0.00802	0.01901
	(!D * !Q)	0.00496	0.00489	0.01589

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)	0.00550	0.00584	0.01743
	(D * RESET_B * Q)	0.00864	0.00899	0.02058
	(D * !RESET_B * !Q)	0.00782	0.00811	0.01964
	(D * !RESET_B * !Q)	0.01114	0.01144	0.02296
	(!D * !Q)	0.00535	0.00569	0.01731
	(!D * !Q)	0.00849	0.00883	0.02046
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00557	0.00591	0.01750
	(D * RESET_B * Q)	0.00868	0.00903	0.02062
	(D * !RESET_B * !Q)	0.00790	0.00820	0.01973
	(D * !RESET_B * !Q)	0.01120	0.01150	0.02303
	(!D * !Q)	0.00544	0.00578	0.01741
	(!D * !Q)	0.00855	0.00890	0.02053
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00562	0.00595	0.01751
	(D * RESET_B * Q)	0.00874	0.00908	0.02064
	(D * !RESET_B * !Q)	0.00835	0.00865	0.02018
	(D * !RESET_B * !Q)	0.01167	0.01199	0.02350
	(!D * !Q)	0.00552	0.00585	0.01747
	(!D * !Q)	0.00864	0.00898	0.02059

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)	0.00136	0.00137	0.00136
	(D * GATE_N * !Q) + (!D * !Q)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00139	0.00141	0.00140
	(D * GATE_N * !Q) + (!D * !Q)	-0.00191	-0.00192	-0.00191
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00233	0.00234	0.00232
	(D * GATE_N * !Q) + (!D * !Q)	-0.00291	-0.00292	-0.00290

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)	-0.00128	-0.00135	-0.00136
	(D * GATE_N * !Q) + (!D * !Q)	0.00185	0.00182	0.00179
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00132	-0.00139	-0.00139
	(D * GATE_N * !Q) + (!D * !Q)	0.00200	0.00197	0.00193
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00218	-0.00231	-0.00232
	(D * GATE_N * !Q) + (!D * !Q)	0.00302	0.00297	0.00293

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00236	0.00257	0.00293	0.75843
sky130_fd_sc_hs__dlrtp_2	0.00233	0.00252	0.00305	1.48624
sky130_fd_sc_hs__dlrtp_4	0.00231	0.00251	0.00459	2.84377

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	0.40962	0.56529
sky130_fd_sc_hs__dlrtp_2	0.00000	0.41049	0.51082
sky130_fd_sc_hs__dlrtp_4	0.00000	0.64950	1.11280

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)	0.38711	1.06043	7.53729
	GATE->Q (-R)	0.34053	1.01609	7.42300
	RESET_B->Q (RR)	0.13052	0.81380	7.40430
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.40556	0.97116	7.53606
	GATE->Q (-R)	0.35800	0.92285	7.41118
	RESET_B->Q (RR)	0.13854	0.73362	7.50045
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.44438	0.92937	7.57921
	GATE->Q (-R)	0.40108	0.88701	7.48030
	RESET_B->Q (RR)	0.14607	0.65983	7.56474

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.31740	0.80446	4.16202
	GATE->Q (-F)	0.33991	0.74005	3.43417
	RESET_B->Q (FF)	0.13750	0.68344	4.41515
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.33915	0.78861	4.10877
	GATE->Q (-F)	0.35806	0.71671	3.36079
	RESET_B->Q (FF)	0.15119	0.68414	4.54264
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.35589	0.77332	4.12398
	GATE->Q (-F)	0.37326	0.70243	3.37652
	RESET_B->Q (FF)	0.16290	0.65792	4.49099

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** ()	0.15407	0.82031	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B** ()	0.18449	0.82031	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B** ()	0.21491	0.82031	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	0.01527	0.01530	0.02424
	D	0.01205	0.01208	0.02103
	GATE	0.01842	0.01829	0.02932
	GATE	0.01500	0.01487	0.02600
	RESET_B	0.00873	0.00857	0.01591
	RESET_B	0.00500	0.00483	0.01220
sky130_fd_sc_hs__dlrtp_2	D	0.01798	0.01840	0.02740
	D	0.01476	0.01518	0.02420
	GATE	0.02088	0.02111	0.03247
	GATE	0.01748	0.01773	0.02918
	RESET_B	0.01133	0.01144	0.01801
	RESET_B	0.00745	0.00755	0.01419
sky130_fd_sc_hs__dlrtp_4	D	0.02529	0.02634	0.03578
	D	0.02200	0.02306	0.03309
	GATE	0.02815	0.02907	0.04050
	GATE	0.02469	0.02563	0.03748
	RESET_B	0.01957	0.02021	0.03518
	RESET_B	0.01372	0.01438	0.02933

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01199	0.01270	0.02237
	D	0.01522	0.01592	0.02519
	GATE	0.01874	0.01907	0.03030
	GATE	0.01575	0.01606	0.02703
	RESET_B	0.00966	0.00987	0.01860
	RESET_B	0.01315	0.01331	0.02169
sky130_fd_sc_hs__dlrtp_2	D	0.01423	0.01540	0.02466
	D	0.01745	0.01861	0.02788
	GATE	0.02066	0.02143	0.03328
	GATE	0.01773	0.01852	0.02969
	RESET_B	0.01178	0.01225	0.02046
	RESET_B	0.01542	0.01588	0.02357
sky130_fd_sc_hs__dlrtp_4	D	0.02069	0.02264	0.03327
	D	0.02398	0.02590	0.03532
	GATE	0.02691	0.02853	0.04094
	GATE	0.02405	0.02566	0.03695
	RESET_B	0.01869	0.01998	0.03768
	RESET_B	0.02427	0.02550	0.04239

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)	0.00798	0.00787	0.01671
	(GATE * !RESET_B * !Q)	0.00518	0.00506	0.01390
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00482	0.00477	0.01362
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00181	0.00175	0.01061
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00809	0.00797	0.01679
	(GATE * !RESET_B * !Q)	0.00529	0.00516	0.01398
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00485	0.00479	0.01362
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00186	0.00179	0.01063
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00835	0.00823	0.01702
	(GATE * !RESET_B * !Q)	0.00556	0.00543	0.01421
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00483	0.00477	0.01359
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00184	0.00178	0.01061

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)	0.00676	0.00701	0.01644
	(GATE * !RESET_B * !Q)	0.00958	0.00983	0.01926
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00106	0.00144	0.01086
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00407	0.00447	0.01387
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00695	0.00719	0.01663
	(GATE * !RESET_B * !Q)	0.00977	0.01002	0.01945
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00112	0.00149	0.01090
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00411	0.00449	0.01389
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00796	0.00820	0.01761
	(GATE * !RESET_B * !Q)	0.01078	0.01103	0.02044
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00108	0.00145	0.01085
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00406	0.00445	0.01383

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)	0.00917	0.00908	0.01996
	(D * RESET_B * Q)	0.00597	0.00585	0.01675
	(D * !RESET_B * !Q)	0.01078	0.01055	0.02178
	(D * !RESET_B * !Q)	0.00778	0.00754	0.01877
	(!D * !Q)	0.00896	0.00887	0.01973
	(!D * !Q)	0.00575	0.00565	0.01652
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00895	0.00884	0.01965
	(D * RESET_B * Q)	0.00579	0.00567	0.01649
	(D * !RESET_B * !Q)	0.01063	0.01037	0.02163
	(D * !RESET_B * !Q)	0.00764	0.00739	0.01865
	(!D * !Q)	0.00871	0.00862	0.01951
	(!D * !Q)	0.00554	0.00545	0.01635
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00882	0.00872	0.01950
	(D * RESET_B * Q)	0.00566	0.00555	0.01636
	(D * !RESET_B * !Q)	0.01087	0.01062	0.02177
	(D * !RESET_B * !Q)	0.00789	0.00764	0.01879
	(!D * !Q)	0.00862	0.00854	0.01929
	(!D * !Q)	0.00547	0.00538	0.01613

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)	0.00522	0.00552	0.01699
	(D * RESET_B * Q)	0.00843	0.00874	0.02019
	(D * !RESET_B * !Q)	0.00900	0.00914	0.02117
	(D * !RESET_B * !Q)	0.01201	0.01215	0.02419
	(!D * !Q)	0.00527	0.00555	0.01709
	(!D * !Q)	0.00847	0.00876	0.02030
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00525	0.00556	0.01704
	(D * RESET_B * Q)	0.00841	0.00873	0.02019
	(D * !RESET_B * !Q)	0.00918	0.00935	0.02138
	(D * !RESET_B * !Q)	0.01217	0.01233	0.02436
	(!D * !Q)	0.00533	0.00562	0.01716
	(!D * !Q)	0.00848	0.00879	0.02032
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00519	0.00555	0.01697
	(D * RESET_B * Q)	0.00834	0.00871	0.02013
	(D * !RESET_B * !Q)	0.01023	0.01035	0.02229
	(D * !RESET_B * !Q)	0.01322	0.01333	0.02528
	(!D * !Q)	0.00520	0.00553	0.01702
	(!D * !Q)	0.00835	0.00869	0.02018

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)	0.00135	0.00137	0.00136
	(D * !GATE * !Q) + (!D * !Q)	-0.00181	-0.00183	-0.00182
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00137	0.00139	0.00137
	(D * !GATE * !Q) + (!D * !Q)	-0.00195	-0.00196	-0.00195
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00226	0.00227	0.00226
	(D * !GATE * !Q) + (!D * !Q)	-0.00278	-0.00279	-0.00278

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)	-0.00128	-0.00136	-0.00136
	(D * !GATE * !Q) + (!D * !Q)	0.00190	0.00187	0.00184
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00130	-0.00136	-0.00137
	(D * !GATE * !Q) + (!D * !Q)	0.00204	0.00200	0.00197
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00212	-0.00225	-0.00226
	(D * !GATE * !Q) + (!D * !Q)	0.00289	0.00284	0.00280

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00234	0.00257	0.74290	0.75312
sky130_fd_sc_hs__dlxbn_2	0.00222	0.00255	1.35324	1.48069

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	0.50035	0.67319
sky130_fd_sc_hs__dlxbn_2	0.00000	0.53604	0.66218

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)	0.38512	1.07054	7.56444
	GATE_N->Q (-R)	0.45034	1.25582	8.48854
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.39412	0.97433	7.44682
	GATE_N->Q (-R)	0.45869	1.15904	8.37171

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.32972	0.82184	4.12507
	GATE_N->Q (-F)	0.34805	0.88651	4.48378
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.34811	0.79878	3.87333
	GATE_N->Q (-F)	0.36742	0.86441	4.23401

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)	0.40617	1.19916	8.59903
	GATE_N->Q_N (-R)	0.42466	1.26361	8.95885
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.45069	1.09908	8.37825
	GATE_N->Q_N (-R)	0.47044	1.16452	8.73832

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)	0.44654	0.83167	3.62962
	GATE_N->Q_N (-F)	0.51176	1.01741	4.55525
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.49885	0.85649	3.76403
	GATE_N->Q_N (-F)	0.56349	1.04130	4.68608

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01029	0.01061	0.01538
	D	0.00884	0.00917	0.01377
	GATE_N	0.01044	0.01103	0.01692
	GATE_N	0.01203	0.01261	0.01838
sky130_fd_sc_hs__dlxbn_2	D	0.01271	0.01341	0.01839
	D	0.01133	0.01204	0.01679
	GATE_N	0.01289	0.01386	0.02211
	GATE_N	0.01447	0.01543	0.02161

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00891	0.00949	0.01409
	D	0.01036	0.01093	0.01553
	GATE_N	0.01027	0.01079	0.01678
	GATE_N	0.01186	0.01239	0.01823
sky130_fd_sc_hs__dlxbn_2	D	0.01127	0.01215	0.01704
	D	0.01265	0.01353	0.01828
	GATE_N	0.01260	0.01350	0.01964
	GATE_N	0.01418	0.01508	0.02098

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00893	0.00950	0.01438
	D	0.01037	0.01094	0.01569
	GATE_N	0.01029	0.01081	0.01714
	GATE_N	0.01188	0.01240	0.01838
sky130_fd_sc_hs__dlxbn_2	D	0.01128	0.01217	0.01704
	D	0.01266	0.01355	0.01840
	GATE_N	0.01261	0.01352	0.01994
	GATE_N	0.01419	0.01509	0.02114

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01027	0.01061	0.01511
	D	0.00883	0.00916	0.01354
	GATE_N	0.01043	0.01097	0.01682
	GATE_N	0.01202	0.01261	0.01825
sky130_fd_sc_hs__dlxbn_2	D	0.01270	0.01340	0.01789
	D	0.01132	0.01203	0.01644
	GATE_N	0.01288	0.01385	0.01983
	GATE_N	0.01446	0.01543	0.02110

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)	0.00469	0.00465	0.01353
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00181	0.00176	0.01064
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00460	0.00458	0.01346
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00184	0.00181	0.01070

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)	0.00124	0.00162	0.01109
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00412	0.00452	0.01397
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00128	0.00168	0.01115
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00404	0.00445	0.01391

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)	0.00850	0.00838	0.01932
	(D * Q * !Q_N)	0.00531	0.00518	0.01614
	(!D * !Q * Q_N)	0.00834	0.00826	0.01924
	(!D * !Q * Q_N)	0.00516	0.00506	0.01606
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00846	0.00834	0.01931
	(D * Q * !Q_N)	0.00529	0.00516	0.01614
	(!D * !Q * Q_N)	0.00831	0.00822	0.01911
	(!D * !Q * Q_N)	0.00514	0.00504	0.01594

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)	0.00562	0.00592	0.01748
	(D * Q * !Q_N)	0.00879	0.00911	0.02067
	(!D * !Q * Q_N)	0.00553	0.00582	0.01745
	(!D * !Q * Q_N)	0.00871	0.00901	0.02062
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00558	0.00589	0.01745
	(D * Q * !Q_N)	0.00874	0.00905	0.02062
	(!D * !Q * Q_N)	0.00550	0.00581	0.01741
	(!D * !Q * Q_N)	0.00866	0.00898	0.02058

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00232	0.00259	0.74265	0.75344

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.49900	0.67202

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)	0.37672	1.05984	7.53972
	GATE->Q (-R)	0.32955	1.01234	7.41183

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.33721	0.83295	4.14176
	GATE->Q (-F)	0.35165	0.75637	3.38347

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)	0.41438	1.20850	8.61807
	GATE->Q_N (-R)	0.42898	1.13204	7.86006

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)	0.43834	0.82255	3.61036
	GATE->Q_N (-F)	0.39114	0.77462	3.48461

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01027	0.01062	0.01533
	D	0.00884	0.00918	0.01374
	GATE	0.01165	0.01190	0.01778
	GATE	0.01005	0.01031	0.01604

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00877	0.00927	0.01393
	D	0.01020	0.01070	0.01535
	GATE	0.01190	0.01226	0.01783
	GATE	0.01030	0.01067	0.01622

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00878	0.00928	0.01416
	D	0.01021	0.01071	0.01550
	GATE	0.01191	0.01228	0.01815
	GATE	0.01032	0.01068	0.01636

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01026	0.01058	0.01503
	D	0.00883	0.00915	0.01353
	GATE	0.01164	0.01189	0.01742
	GATE	0.01004	0.01029	0.01578

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)	0.00480	0.00475	0.01359
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00193	0.00188	0.01073

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)	0.00112	0.00150	0.01092
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00398	0.00438	0.01378

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)	0.00866	0.00857	0.01941
	(D * Q * !Q_N)	0.00549	0.00537	0.01622
	(!D * !Q * Q_N)	0.00861	0.00851	0.01933
	(!D * !Q * Q_N)	0.00541	0.00534	0.01614

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)	0.00513	0.00545	0.01693
	(D * Q * !Q_N)	0.00832	0.00864	0.02011
	(!D * !Q * Q_N)	0.00502	0.00538	0.01686
	(!D * !Q * Q_N)	0.00820	0.00857	0.02005

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00232	0.00261	0.75383
sky130_fd_sc_hs__dlxtn_2	0.00238	0.00260	1.44811
sky130_fd_sc_hs__dlxtn_4	0.00237	0.00259	2.85460

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.40420	0.49104
sky130_fd_sc_hs__dlxtn_2	0.00000	0.41141	0.51031
sky130_fd_sc_hs__dlxtn_4	0.00000	0.62796	0.81940

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)	0.36217	1.03886	7.50753
	GATE_N->Q (-R)	0.42854	1.22757	8.44210
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.36574	0.92416	7.38048
	GATE_N->Q (-R)	0.42940	1.10716	8.30011
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.41048	0.88853	7.58133
	GATE_N->Q (-R)	0.47255	1.07104	8.49503

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.30263	0.78164	4.02473
	GATE_N->Q (-F)	0.32445	0.85154	4.39601
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.32157	0.76375	3.97111
	GATE_N->Q (-F)	0.34089	0.82975	4.33478
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.34573	0.76467	4.17049
	GATE_N->Q (-F)	0.36915	0.83736	4.56149

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01459	0.01479	0.02379
	D	0.01161	0.01181	0.02092
	GATE_N	0.01482	0.01556	0.02697
	GATE_N	0.01806	0.01882	0.03024
sky130_fd_sc_hs__dlxtn_2	D	0.01714	0.01765	0.02667
	D	0.01410	0.01462	0.02388
	GATE_N	0.01732	0.01839	0.02989
	GATE_N	0.02055	0.02161	0.03314
sky130_fd_sc_hs__dlxtn_4	D	0.02438	0.02532	0.03450
	D	0.02135	0.02229	0.03206
	GATE_N	0.02443	0.02608	0.03773
	GATE_N	0.02766	0.02930	0.04111

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01216	0.01283	0.02213
	D	0.01514	0.01580	0.02509
	GATE_N	0.01476	0.01540	0.02760
	GATE_N	0.01800	0.01865	0.03045
sky130_fd_sc_hs__dlxtn_2	D	0.01432	0.01536	0.02511
	D	0.01736	0.01838	0.02772
	GATE_N	0.01689	0.01792	0.03040
	GATE_N	0.02012	0.02114	0.03296
sky130_fd_sc_hs__dlxtn_4	D	0.02080	0.02261	0.03332
	D	0.02383	0.02563	0.03514
	GATE_N	0.02340	0.02512	0.03836
	GATE_N	0.02663	0.02843	0.04047

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00470	0.00465	0.01344
	GATE_N	0.00172	0.00165	0.01047
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00471	0.00466	0.01346
	GATE_N	0.00168	0.00161	0.01042
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00473	0.00467	0.01346
	GATE_N	0.00170	0.00162	0.01043

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00150	0.00187	0.01129
	GATE_N	0.00448	0.00485	0.01427
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00149	0.00184	0.01128
	GATE_N	0.00452	0.00489	0.01431
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00151	0.00187	0.01129
	GATE_N	0.00454	0.00491	0.01432

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00881	0.00869	0.01965
	(D * Q)	0.00556	0.00543	0.01639
	(!D * !Q)	0.00864	0.00855	0.01944
	(!D * !Q)	0.00538	0.00528	0.01618
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00861	0.00850	0.01951
	(D * Q)	0.00537	0.00525	0.01627
	(!D * !Q)	0.00840	0.00833	0.01926
	(!D * !Q)	0.00517	0.00508	0.01603
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00868	0.00856	0.01954
	(D * Q)	0.00544	0.00531	0.01630
	(!D * !Q)	0.00847	0.00838	0.01930
	(!D * !Q)	0.00523	0.00513	0.01606

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00562	0.00589	0.01745
	(D * Q)	0.00887	0.00914	0.02071
	(!D * !Q)	0.00557	0.00585	0.01744
	(!D * !Q)	0.00881	0.00910	0.02070
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00556	0.00584	0.01741
	(D * Q)	0.00879	0.00909	0.02065
	(!D * !Q)	0.00554	0.00586	0.01744
	(!D * !Q)	0.00877	0.00910	0.02068
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00561	0.00588	0.01743
	(D * Q)	0.00883	0.00913	0.02067
	(!D * !Q)	0.00559	0.00587	0.01746
	(!D * !Q)	0.00882	0.00911	0.02070

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00228	0.00265	0.74044

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.38334	0.48682

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)	0.42044	1.09495	7.57588
	GATE->Q (-R)	0.34107	1.01809	7.44242

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.32345	0.80473	4.10740
	GATE->Q (-F)	0.33873	0.73655	3.37570

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01586	0.01603	0.02504
	D	0.01278	0.01297	0.02211
	GATE	0.01898	0.01896	0.02817
	GATE	0.01560	0.01557	0.02489

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01376	0.01434	0.02386
	D	0.01684	0.01740	0.02686
	GATE	0.02004	0.02034	0.03129
	GATE	0.01695	0.01727	0.02796

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00442	0.00444	0.01346
	!GATE	0.00151	0.00152	0.01054

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00129	0.00157	0.01101
	!GATE	0.00420	0.00448	0.01393

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00941	0.00933	0.02032
	(D * Q)	0.00617	0.00609	0.01708
	(!D * !Q)	0.00900	0.00893	0.01989
	(!D * !Q)	0.00577	0.00570	0.01665

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00453	0.00481	0.01646
	(D * Q)	0.00776	0.00805	0.01970
	(!D * !Q)	0.00486	0.00519	0.01682
	(!D * !Q)	0.00808	0.00843	0.02005

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00176	0.75260
sky130_fd_sc_hs__dlygate4sd2_1	0.00178	0.75350
sky130_fd_sc_hs__dlygate4sd3_1	0.00180	0.75270

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.06203	0.06365
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.05561	0.05729
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.05525	0.05733

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)**	0.24271	0.91674	7.17107
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.31302	0.99578	7.31778
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.50064	1.20824	7.66180

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.32774	0.91660	5.01530
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.40125	1.00886	5.14928
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.57021	1.22656	5.54788

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01113	0.01098	0.01371
	A	0.00888	0.00874	0.01154
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01149	0.01134	0.01398
	A	0.00922	0.00907	0.01179
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01289	0.01275	0.01520
	A	0.01060	0.01046	0.01305

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00842	0.00843	0.01119
	A	0.01067	0.01067	0.01343
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00882	0.00884	0.01135
	A	0.01109	0.01110	0.01361
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01056	0.01044	0.01316
	A	0.01286	0.01274	0.01487

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00237	0.00449	0.37598
sky130_fd_sc_hs__ebufn_2	0.00261	0.00598	0.65028
sky130_fd_sc_hs__ebufn_4	0.00289	0.00926	1.31193
sky130_fd_sc_hs__ebufn_8	0.00558	0.01547	2.33107

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	0.20609	0.30830
sky130_fd_sc_hs__ebufn_2	0.00000	0.15327	0.18970
sky130_fd_sc_hs__ebufn_4	0.00000	0.12832	0.21675
sky130_fd_sc_hs__ebufn_8	0.00000	0.21893	0.39099

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)	0.12498	0.97698	7.57776
	TE_B->Z (RR)	0.04192	0.42572	4.68870
	TE_B->Z (FR)	0.09684	1.10549	10.70530
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.11281	0.85154	7.49997
	TE_B->Z (RR)	0.04480	0.42661	4.68958
	TE_B->Z (FR)	0.09222	0.95840	10.51840
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.12398	0.77524	7.75465
	TE_B->Z (RR)	0.05566	0.42890	4.69183
	TE_B->Z (FR)	0.08646	0.82100	10.56790
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.12805	0.68211	7.58621
	TE_B->Z (RR)	0.08842	0.43396	4.69674
	TE_B->Z (FR)	0.09383	0.71883	10.26470

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.12782	0.62967	3.58708
	TE_B->Z (RF)	0.04160	0.42573	4.68874
	TE_B->Z (FF)	0.10212	0.55520	3.38939
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.14318	0.64488	3.73798
	TE_B->Z (RF)	0.04455	0.42662	4.68962
	TE_B->Z (FF)	0.10781	0.53893	3.43762
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.19574	0.73326	4.34710
	TE_B->Z (RF)	0.05540	0.42893	4.69189
	TE_B->Z (FF)	0.13125	0.58567	3.87403
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.18880	0.69150	4.37706
	TE_B->Z (RF)	0.08767	0.43406	4.69694
	TE_B->Z (FF)	0.18577	0.67094	4.30767

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00630	0.00650	0.01561
	A	0.00320	0.00339	0.01255
	TE_B	0.00294	0.00342	0.01320
	TE_B	0.00858	0.00908	0.01890
sky130_fd_sc_hs__ebufn_2	A	0.00907	0.00955	0.01951
	A	0.00571	0.00619	0.01618
	TE_B	0.00558	0.00604	0.01667
	TE_B	0.01308	0.01359	0.02427
sky130_fd_sc_hs__ebufn_4	A	0.01458	0.01551	0.02469
	A	0.01086	0.01178	0.02115
	TE_B	0.01113	0.01141	0.02138
	TE_B	0.02284	0.02317	0.03321
sky130_fd_sc_hs__ebufn_8	A	0.02825	0.03018	0.04912
	A	0.02098	0.02294	0.04188
	TE_B	0.02271	0.02279	0.03215
	TE_B	0.04236	0.04247	0.05199

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00307	0.00371	0.01327
	A	0.00616	0.00679	0.01625
	TE_B	0.00321	0.00373	0.01344
	TE_B	0.00877	0.00927	0.01898
sky130_fd_sc_hs__ebufn_2	A	0.00536	0.00637	0.01668
	A	0.00873	0.00966	0.01986
	TE_B	0.00615	0.00669	0.01722
	TE_B	0.01339	0.01390	0.02444
sky130_fd_sc_hs__ebufn_4	A	0.01002	0.01151	0.02193
	A	0.01375	0.01520	0.02495
	TE_B	0.01209	0.01252	0.02274
	TE_B	0.02336	0.02371	0.03362
sky130_fd_sc_hs__ebufn_8	A	0.01979	0.02313	0.04342
	A	0.02704	0.03035	0.04974
	TE_B	0.02451	0.02481	0.03449
	TE_B	0.04330	0.04352	0.05279

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00409	0.00414	0.01327
	(TE_B * Z)	0.00095	0.00099	0.01013
	(TE_B * !Z)	0.00398	0.00402	0.01310
	(TE_B * !Z)	0.00085	0.00089	0.00998
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00574	0.00576	0.01568
	(TE_B * Z)	0.00226	0.00227	0.01220
	(TE_B * !Z)	0.00543	0.00542	0.01525
	(TE_B * !Z)	0.00197	0.00196	0.01180
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00852	0.00844	0.01734
	(TE_B * Z)	0.00464	0.00455	0.01346
	(TE_B * !Z)	0.00798	0.00786	0.01662
	(TE_B * !Z)	0.00413	0.00400	0.01278
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01582	0.01572	0.03392
	(TE_B * Z)	0.00826	0.00815	0.02637
	(TE_B * !Z)	0.01471	0.01457	0.03247
	(TE_B * !Z)	0.00722	0.00706	0.02500

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00065	0.00110	0.01062
	(TE_B * Z)	0.00382	0.00427	0.01380
	(TE_B * !Z)	0.00070	0.00118	0.01075
	(TE_B * !Z)	0.00384	0.00432	0.01388
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00130	0.00164	0.01181
	(TE_B * Z)	0.00484	0.00520	0.01536
	(TE_B * !Z)	0.00152	0.00190	0.01221
	(TE_B * !Z)	0.00496	0.00536	0.01567
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00239	0.00259	0.01191
	(TE_B * Z)	0.00639	0.00661	0.01594
	(TE_B * !Z)	0.00280	0.00304	0.01256
	(TE_B * !Z)	0.00662	0.00686	0.01638
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00407	0.00484	0.02352
	(TE_B * Z)	0.01186	0.01267	0.03136
	(TE_B * !Z)	0.00491	0.00575	0.02483
	(TE_B * !Z)	0.01234	0.01321	0.03227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00342	0.00338	0.01251
	(A * Z)	-0.00213	-0.00222	0.00694
	(!A * !Z)	0.00347	0.00335	0.01255
	(!A * !Z)	-0.00208	-0.00224	0.00699
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00387	0.00356	0.01361
	(A * Z)	-0.00335	-0.00373	0.00634
	(!A * !Z)	0.00401	0.00364	0.01371
	(!A * !Z)	-0.00320	-0.00362	0.00644
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00495	0.00412	0.01314
	(A * Z)	-0.00627	-0.00720	0.00185
	(!A * !Z)	0.00506	0.00415	0.01327
	(!A * !Z)	-0.00614	-0.00710	0.00200
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00689	0.00543	0.01312
	(A * Z)	-0.01185	-0.01344	-0.00573
	(!A * !Z)	0.00687	0.00538	0.01323
	(!A * !Z)	-0.01181	-0.01343	-0.00560

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00085	0.00139	0.01109
	(A * Z)	0.00642	0.00699	0.01666
	(!A * !Z)	0.00085	0.00138	0.01105
	(!A * !Z)	0.00639	0.00696	0.01662
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00195	0.00245	0.01303
	(A * Z)	0.00919	0.00975	0.02028
	(!A * !Z)	0.00191	0.00242	0.01297
	(!A * !Z)	0.00917	0.00969	0.02022
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00403	0.00432	0.01429
	(A * Z)	0.01527	0.01561	0.02559
	(!A * !Z)	0.00408	0.00448	0.01427
	(!A * !Z)	0.01527	0.01577	0.02554
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00825	0.00846	0.01777
	(A * Z)	0.02701	0.02736	0.03662
	(!A * !Z)	0.00850	0.00866	0.01794
	(!A * !Z)	0.02720	0.02749	0.03671

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00180	0.00359	0.00303	0.75520	0.76376

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.50517	0.73815

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)	0.31125	1.02421	7.49507

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.30318	0.79042	3.61534

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)	0.43848	1.12894	7.68437

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)	0.42307	0.84964	3.59337

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)	-0.16094	-0.26797	-0.97948
	setup	CLK (R)	0.20905	0.29921	1.00789

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)	-0.62166	-0.72293	-3.26156
	setup	CLK (R)	0.80781	0.86136	3.45985

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)	-0.16094	-0.26797	-0.97948
	setup	CLK (R)	0.20905	0.29921	1.00789

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)	-0.62166	-0.72293	-3.26156
	setup	CLK (R)	0.80781	0.86136	3.45985

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)	-0.00581	0.00846	0.26075
	setup	CLK (R)	0.86027	0.84551	0.97172

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)	-0.26247	-0.38526	-1.53323
	setup	CLK (R)	0.69422	0.76875	3.05319

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)	-0.00581	0.00846	0.26075
	hold	CLK (R)	-0.28919	-0.33737	-0.51556
	setup	CLK (R)	0.21010	0.26872	0.94813
	setup	CLK (R)	0.86027	0.84551	0.97172

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)	-0.64516	-0.73655	-3.02606
	hold	CLK (R)	-0.26247	-0.38526	-1.53323
	setup	CLK (R)	0.69422	0.76875	3.05319
	setup	CLK (R)	0.28521	0.39975	1.54553

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 ()	0.13581	0.82031	16.50020
	min_pulse_width	CLK ()	0.23621	0.82031	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 ()	0.25750	0.82031	16.50020
	min_pulse_width	CLK ()	0.52217	0.82031	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	0.01396	0.01410	0.01922
	CLK	0.01212	0.01226	0.01721

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01375	0.01378	0.01853
	CLK	0.01178	0.01181	0.01651

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01377	0.01381	0.01902
	CLK	0.01180	0.01184	0.01680

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01394	0.01407	0.01880
	CLK	0.01211	0.01223	0.01694

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00511	0.00498	0.00716
	(CLK * DE)	0.00268	0.00255	0.00474
	(CLK * !DE)	0.00097	0.00098	0.00097
	(CLK * !DE)	-0.00057	-0.00057	-0.00057
	(!CLK * DE * Q * !Q_N)	0.01164	0.01154	0.01394
	(!CLK * DE * Q * !Q_N)	0.00921	0.00912	0.01152
	(!CLK * DE * !Q * Q_N)	0.01112	0.01103	0.01345
	(!CLK * DE * !Q * Q_N)	0.00867	0.00859	0.01101
	(!CLK * !DE)	0.00097	0.00098	0.00097
	(!CLK * !DE)	-0.00057	-0.00058	-0.00057

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00198	0.00182	0.00402
	(CLK * DE)	0.00444	0.00427	0.00647
	(CLK * !DE)	-0.00032	-0.00032	-0.00032
	(CLK * !DE)	0.00124	0.00124	0.00124
	(!CLK * DE * Q * !Q_N)	0.00878	0.00860	0.01183
	(!CLK * DE * Q * !Q_N)	0.01120	0.01102	0.01425
	(!CLK * DE * !Q * Q_N)	0.00925	0.00906	0.01239
	(!CLK * DE * !Q * Q_N)	0.01170	0.01152	0.01484
	(!CLK * !DE)	-0.00032	-0.00032	-0.00032
	(!CLK * !DE)	0.00125	0.00124	0.00124

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00812	0.00798	0.01629
	CLK	0.00259	0.00242	0.01075
	(!CLK * D * Q * !Q_N)	0.00448	0.00445	0.01089
	(!CLK * D * Q * !Q_N)	-0.00007	-0.00013	0.00633
	(!CLK * D * !Q * Q_N)	0.01458	0.01444	0.02292
	(!CLK * D * !Q * Q_N)	0.00905	0.00890	0.01738
	(!CLK * !D * Q * !Q_N)	0.01426	0.01416	0.02057
	(!CLK * !D * Q * !Q_N)	0.01060	0.01050	0.01692
	(!CLK * !D * !Q * Q_N)	0.00448	0.00445	0.01092
	(!CLK * !D * !Q * Q_N)	-0.00002	-0.00009	0.00640

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00280	0.00292	0.01152
	CLK	0.00834	0.00847	0.01704
	(!CLK * D * Q * !Q_N)	-0.00001	0.00022	0.00696
	(!CLK * D * Q * !Q_N)	0.00456	0.00478	0.01151
	(!CLK * D * !Q * Q_N)	0.01001	0.01007	0.01946
	(!CLK * D * !Q * Q_N)	0.01554	0.01563	0.02497
	(!CLK * !D * Q * !Q_N)	0.01146	0.01165	0.01824
	(!CLK * !D * Q * !Q_N)	0.01510	0.01530	0.02191
	(!CLK * !D * !Q * Q_N)	-0.00003	0.00015	0.00691
	(!CLK * !D * !Q * Q_N)	0.00448	0.00468	0.01145

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)	0.01318	0.01291	0.02222
	(D * Q * !Q_N)	0.00937	0.00908	0.01841
	(D * !DE * !Q * Q_N)	0.01295	0.01264	0.02201
	(D * !DE * !Q * Q_N)	0.00914	0.00881	0.01820
	(!D * !Q * Q_N)	0.01295	0.01264	0.02201
	(!D * !Q * Q_N)	0.00915	0.00881	0.01820
	(!D * !DE * Q * !Q_N)	0.01317	0.01291	0.02221
	(!D * !DE * Q * !Q_N)	0.00937	0.00908	0.01840

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)	0.00665	0.00672	0.01677
	(D * Q * !Q_N)	0.01046	0.01055	0.02059
	(D * DE * !Q * Q_N)	0.01340	0.01336	0.02343
	(D * DE * !Q * Q_N)	0.01722	0.01717	0.02725
	(D * !DE * !Q * Q_N)	0.00702	0.00709	0.01703
	(D * !DE * !Q * Q_N)	0.01084	0.01092	0.02085
	(!D * DE * Q * !Q_N)	0.01483	0.01495	0.02526
	(!D * DE * Q * !Q_N)	0.01865	0.01877	0.02908
	(!D * !Q * Q_N)	0.00702	0.00710	0.01703
	(!D * !Q * Q_N)	0.01084	0.01092	0.02085
	(!D * !DE * Q * !Q_N)	0.00664	0.00672	0.01677
	(!D * !DE * Q * !Q_N)	0.01046	0.01054	0.02058

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00183	0.00345	0.00297	0.76347

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.56446	0.91320

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)	0.29400	1.00450	7.53396

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.27468	0.74059	3.51301

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)	-0.15479	-0.26479	-0.97462
	setup	CLK (R)	0.20453	0.29651	1.00744

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)	-0.61262	-0.71496	-3.24591
	setup	CLK (R)	0.80296	0.86143	3.48923

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)	-0.00910	0.00439	0.25390
	setup	CLK (R)	0.85351	0.83805	1.04070

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)	-0.26082	-0.38275	-1.54696
	setup	CLK (R)	0.68600	0.76222	3.04377

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)	-0.00910	0.00439	0.25390
	hold	CLK (R)	-0.28580	-0.32656	-0.50195
	setup	CLK (R)	0.20383	0.26725	0.94784
	setup	CLK (R)	0.85351	0.83805	1.04070

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)	-0.63863	-0.73604	-3.01443
	hold	CLK (R)	-0.26082	-0.38275	-1.54696
	setup	CLK (R)	0.68600	0.76222	3.04377
	setup	CLK (R)	0.28355	0.39883	1.55553

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 ()	0.12669	0.82031	16.50020
	min_pulse_width	CLK ()	0.20578	0.82031	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 ()	0.25142	0.82031	16.50020
	min_pulse_width	CLK ()	0.53434	0.82031	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	0.02350	0.02360	0.03347
	CLK	0.01987	0.01998	0.02996

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.02267	0.02266	0.03258
	CLK	0.01881	0.01880	0.02840

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00494	0.00480	0.00700
	(CLK * DE)	0.00248	0.00235	0.00456
	(CLK * !DE)	0.00098	0.00099	0.00098
	(CLK * !DE)	-0.00058	-0.00059	-0.00058
	(!CLK * DE * Q)	0.01143	0.01133	0.01375
	(!CLK * DE * Q)	0.00898	0.00889	0.01131
	(!CLK * DE * !Q)	0.01091	0.01082	0.01316
	(!CLK * DE * !Q)	0.00843	0.00835	0.01069
	(!CLK * !DE)	0.00098	0.00099	0.00098
	(!CLK * !DE)	-0.00059	-0.00059	-0.00058

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00190	0.00175	0.00395
	(CLK * DE)	0.00438	0.00422	0.00642
	(CLK * !DE)	-0.00031	-0.00031	-0.00030
	(CLK * !DE)	0.00128	0.00128	0.00127
	(!CLK * DE * Q)	0.00839	0.00821	0.01147
	(!CLK * DE * Q)	0.01084	0.01065	0.01391
	(!CLK * DE * !Q)	0.00890	0.00871	0.01206
	(!CLK * DE * !Q)	0.01138	0.01119	0.01453
	(!CLK * !DE)	-0.00031	-0.00031	-0.00030
	(!CLK * !DE)	0.00128	0.00128	0.00127

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00785	0.00773	0.01608
	CLK	0.00249	0.00235	0.01071
	(!CLK * D * Q)	0.00435	0.00429	0.01080
	(!CLK * D * Q)	-0.00004	-0.00011	0.00641
	(!CLK * D * !Q)	0.01424	0.01412	0.02262
	(!CLK * D * !Q)	0.00887	0.00874	0.01725
	(!CLK * !D * Q)	0.01376	0.01368	0.02010
	(!CLK * !D * Q)	0.01030	0.01019	0.01663
	(!CLK * !D * !Q)	0.00437	0.00434	0.01085
	(!CLK * !D * !Q)	0.00003	-0.00003	0.00650

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00274	0.00286	0.01148
	CLK	0.00810	0.00824	0.01684
	(!CLK * D * Q)	0.00003	0.00025	0.00700
	(!CLK * D * Q)	0.00440	0.00464	0.01138
	(!CLK * D * !Q)	0.00968	0.00975	0.01916
	(!CLK * D * !Q)	0.01505	0.01514	0.02452
	(!CLK * !D * Q)	0.01126	0.01146	0.01807
	(!CLK * !D * Q)	0.01472	0.01493	0.02155
	(!CLK * !D * !Q)	-0.00001	0.00017	0.00695
	(!CLK * !D * !Q)	0.00432	0.00454	0.01131

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01266	0.01245	0.02179
	(D * Q)	0.00893	0.00869	0.01804
	(D * !DE * !Q)	0.01282	0.01258	0.02199
	(D * !DE * !Q)	0.00909	0.00882	0.01825
	(!D * !Q)	0.01282	0.01258	0.02199
	(!D * !Q)	0.00909	0.00883	0.01825
	(!D * !DE * Q)	0.01266	0.01245	0.02179
	(!D * !DE * Q)	0.00893	0.00869	0.01804

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00666	0.00688	0.01681
	(D * Q)	0.01040	0.01063	0.02056
	(D * DE * !Q)	0.01296	0.01296	0.02304
	(D * DE * !Q)	0.01671	0.01669	0.02678
	(D * !DE * !Q)	0.00663	0.00672	0.01667
	(D * !DE * !Q)	0.01038	0.01047	0.02042
	(!D * DE * Q)	0.01451	0.01481	0.02495
	(!D * DE * Q)	0.01825	0.01855	0.02869
	(!D * !Q)	0.00663	0.00672	0.01667
	(!D * !Q)	0.01038	0.01047	0.02041
	(!D * !DE * Q)	0.00666	0.00688	0.01681
	(!D * !DE * Q)	0.01040	0.01063	0.02055

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00294	0.00330	0.37632
sky130_fd_sc_hs__einvn_2	0.00553	0.00504	0.69010
sky130_fd_sc_hs__einvn_4	0.01104	0.00920	1.33153
sky130_fd_sc_hs__einvn_8	0.02210	0.01542	2.43386

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvn_1	0.00000	0.21749	0.30459
sky130_fd_sc_hs__einvn_2	0.00000	0.23185	0.31315
sky130_fd_sc_hs__einvn_4	0.00000	0.09370	0.18594
sky130_fd_sc_hs__einvn_8	0.00000	0.15301	0.33420

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)	0.08205	1.10541	11.01070
	TE_B->Z (RR)	0.04258	0.42532	4.68832
	TE_B->Z (FR)	0.09421	1.10585	10.71170
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.05570	0.92993	10.81770
	TE_B->Z (RR)	0.05429	0.42729	4.69029
	TE_B->Z (FR)	0.08228	0.93701	10.51000
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.05154	0.80606	10.78270
	TE_B->Z (RR)	0.05665	0.42892	4.69189
	TE_B->Z (FR)	0.07785	0.80116	10.36340
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.05292	0.71498	10.67570
	TE_B->Z (RR)	0.08677	0.43627	4.69902
	TE_B->Z (FR)	0.08720	0.70295	10.12960

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.03611	0.57657	5.82970
	TE_B->Z (RF)	0.04209	0.42533	4.68833
	TE_B->Z (FF)	0.10310	0.57841	3.49285
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.02904	0.50534	5.83936
	TE_B->Z (RF)	0.05363	0.42734	4.69033
	TE_B->Z (FF)	0.11882	0.59034	3.71209
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.02801	0.44342	5.85779
	TE_B->Z (RF)	0.05613	0.42899	4.69196
	TE_B->Z (FF)	0.12069	0.55988	3.80808
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.03024	0.40878	6.03856
	TE_B->Z (RF)	0.08561	0.43645	4.69929
	TE_B->Z (FF)	0.16803	0.63780	4.26961

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00032	-0.00014	0.00171
	A	0.00333	0.00350	0.00537
	TE_B	0.00196	0.00227	0.00928
	TE_B	0.00743	0.00775	0.01480
sky130_fd_sc_hs__einvn_2	A	-0.00158	-0.00112	0.00273
	A	0.00547	0.00595	0.00984
	TE_B	0.00293	0.00321	0.01012
	TE_B	0.01190	0.01221	0.01918
sky130_fd_sc_hs__einvn_4	A	-0.00316	-0.00203	0.00561
	A	0.01091	0.01207	0.01980
	TE_B	0.00596	0.00628	0.01642
	TE_B	0.02281	0.02319	0.03341
sky130_fd_sc_hs__einvn_8	A	-0.00599	-0.00380	0.01190
	A	0.02227	0.02447	0.04034
	TE_B	0.01232	0.01249	0.02210
	TE_B	0.04232	0.04253	0.05207

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00334	0.00342	0.00501
	A	-0.00029	-0.00022	0.00089
	TE_B	0.00357	0.00391	0.01069
	TE_B	0.00651	0.00684	0.01360
sky130_fd_sc_hs__einvn_2	A	0.00545	0.00583	0.00889
	A	-0.00158	-0.00125	0.00105
	TE_B	0.00595	0.00629	0.01306
	TE_B	0.01000	0.01029	0.01709
sky130_fd_sc_hs__einvn_4	A	0.01099	0.01165	0.01738
	A	-0.00304	-0.00241	0.00232
	TE_B	0.01220	0.01256	0.02258
	TE_B	0.01902	0.01934	0.02935
sky130_fd_sc_hs__einvn_8	A	0.02190	0.02268	0.03298
	A	-0.00621	-0.00550	0.00479
	TE_B	0.02457	0.02479	0.03535
	TE_B	0.03421	0.03437	0.04396

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00075	0.00076	0.00075
	(TE_B * Z)	-0.00125	-0.00125	-0.00124
	(TE_B * !Z)	0.00083	0.00082	0.00082
	(TE_B * !Z)	-0.00112	-0.00111	-0.00111
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00143	0.00144	0.00137
	(TE_B * Z)	-0.00242	-0.00243	-0.00242
	(TE_B * !Z)	0.00165	0.00166	0.00164
	(TE_B * !Z)	-0.00203	-0.00204	-0.00202
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00262	0.00263	0.00252
	(TE_B * Z)	-0.00483	-0.00483	-0.00480
	(TE_B * !Z)	0.00302	0.00302	0.00300
	(TE_B * !Z)	-0.00415	-0.00414	-0.00412
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00506	0.00507	0.00485
	(TE_B * Z)	-0.00954	-0.00958	-0.00948
	(TE_B * !Z)	0.00591	0.00590	0.00587
	(TE_B * !Z)	-0.00825	-0.00822	-0.00815

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00073	-0.00073	-0.00072
	(TE_B * Z)	0.00125	0.00125	0.00124
	(TE_B * !Z)	-0.00083	-0.00082	-0.00082
	(TE_B * !Z)	0.00113	0.00114	0.00112
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00134	-0.00135	-0.00134
	(TE_B * Z)	0.00242	0.00243	0.00242
	(TE_B * !Z)	-0.00165	-0.00166	-0.00164
	(TE_B * !Z)	0.00213	0.00212	0.00203
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00249	-0.00248	-0.00247
	(TE_B * Z)	0.00483	0.00483	0.00480
	(TE_B * !Z)	-0.00302	-0.00302	-0.00300
	(TE_B * !Z)	0.00430	0.00426	0.00412
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00483	-0.00485	-0.00479
	(TE_B * Z)	0.00954	0.00958	0.00948
	(TE_B * !Z)	-0.00591	-0.00590	-0.00587
	(TE_B * !Z)	0.00842	0.00844	0.00815

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00247	0.00241	0.00904
	(A * !Z)	-0.00160	-0.00175	0.00491
	(!A * Z)	0.00234	0.00231	0.00900
	(!A * Z)	-0.00160	-0.00176	0.00492
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00299	0.00265	0.00901
	(A * !Z)	-0.00330	-0.00376	0.00263
	(!A * Z)	0.00269	0.00254	0.00890
	(!A * Z)	-0.00328	-0.00367	0.00267
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00511	0.00439	0.01355
	(A * !Z)	-0.00621	-0.00724	0.00202
	(!A * Z)	0.00447	0.00414	0.01333
	(!A * Z)	-0.00621	-0.00710	0.00208
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00639	0.00509	0.01308
	(A * !Z)	-0.01222	-0.01419	-0.00605
	(!A * Z)	0.00516	0.00455	0.01269
	(!A * Z)	-0.01227	-0.01384	-0.00585

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00121	0.00159	0.00853
	(A * !Z)	0.00533	0.00573	0.01267
	(!A * Z)	0.00125	0.00167	0.00860
	(!A * Z)	0.00529	0.00572	0.01262
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00200	0.00226	0.00908
	(A * !Z)	0.00841	0.00871	0.01548
	(!A * Z)	0.00215	0.00243	0.00926
	(!A * Z)	0.00829	0.00858	0.01542
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00397	0.00442	0.01427
	(A * !Z)	0.01552	0.01606	0.02585
	(!A * Z)	0.00426	0.00459	0.01463
	(!A * Z)	0.01528	0.01568	0.02571
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00832	0.00851	0.01795
	(A * !Z)	0.02749	0.02782	0.03723
	(!A * Z)	0.00879	0.00898	0.01852
	(!A * Z)	0.02688	0.02718	0.03672

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00293	0.00277	0.34330
sky130_fd_sc_hs__einvp_2	0.00546	0.00435	0.70296
sky130_fd_sc_hs__einvp_4	0.01104	0.00795	1.33869
sky130_fd_sc_hs__einvp_8	0.02212	0.01245	2.40994

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvp_1	0.00000	0.03604	0.08042
sky130_fd_sc_hs__einvp_2	0.00000	0.13818	0.36825
sky130_fd_sc_hs__einvp_4	0.00000	0.09684	0.17882
sky130_fd_sc_hs__einvp_8	0.00000	0.15576	0.32679

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)	0.08643	1.11224	10.79340
	TE->Z (FR)	0.15347	0.52790	4.68818
	TE->Z (RR)	0.12980	0.97015	7.02298
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.05471	0.92558	10.82540
	TE->Z (FR)	0.13467	0.45759	4.68927
	TE->Z (RR)	0.12928	0.83318	7.40802
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.05173	0.80547	10.79540
	TE->Z (FR)	0.15107	0.48822	4.69115
	TE->Z (RR)	0.12781	0.71830	7.37066
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.05309	0.71630	10.68350
	TE->Z (FR)	0.25113	0.63394	4.69685
	TE->Z (RR)	0.15922	0.70962	7.54674

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.03644	0.56057	5.54726
	TE->Z (FF)	0.15610	0.52488	4.68814
	TE->Z (RF)	0.03668	0.51336	4.99047
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.02857	0.49777	5.77322
	TE->Z (FF)	0.13600	0.45588	4.68921
	TE->Z (RF)	0.03315	0.45597	5.15630
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.02837	0.44647	5.90541
	TE->Z (FF)	0.15359	0.48633	4.69095
	TE->Z (RF)	0.03430	0.39765	5.09966
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.03053	0.41530	6.12500
	TE->Z (FF)	0.25459	0.63772	4.69640
	TE->Z (RF)	0.04012	0.34955	4.98499

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00048	-0.00028	0.00194
	A	0.00323	0.00343	0.00567
	TE	0.00602	0.00597	0.00867
	TE	0.00405	0.00397	0.00669
sky130_fd_sc_hs__einvp_2	A	-0.00155	-0.00102	0.00279
	A	0.00540	0.00595	0.00980
	TE	0.00956	0.00958	0.01605
	TE	0.00693	0.00695	0.01345
sky130_fd_sc_hs__einvp_4	A	-0.00298	-0.00198	0.00579
	A	0.01108	0.01212	0.01997
	TE	0.01829	0.01822	0.02756
	TE	0.01414	0.01404	0.02348
sky130_fd_sc_hs__einvp_8	A	-0.00591	-0.00380	0.01143
	A	0.02226	0.02448	0.03989
	TE	0.03221	0.03202	0.04044
	TE	0.02830	0.02812	0.03676

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00343	0.00351	0.00477
	A	-0.00026	-0.00018	0.00097
	TE	0.00761	0.00759	0.01054
	TE	0.00290	0.00282	0.00564
sky130_fd_sc_hs__einvp_2	A	0.00549	0.00585	0.00882
	A	-0.00144	-0.00112	0.00118
	TE	0.01226	0.01230	0.01888
	TE	0.00455	0.00454	0.01096
sky130_fd_sc_hs__einvp_4	A	0.01084	0.01155	0.01739
	A	-0.00318	-0.00254	0.00219
	TE	0.02366	0.02362	0.03283
	TE	0.00905	0.00893	0.01822
sky130_fd_sc_hs__einvp_8	A	0.02179	0.02263	0.03265
	A	-0.00632	-0.00557	0.00448
	TE	0.04289	0.04273	0.05221
	TE	0.01793	0.01775	0.02607

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00065	0.00065	0.00065
	(!TE * Z)	-0.00126	-0.00126	-0.00125
	(!TE * !Z)	0.00073	0.00073	0.00072
	(!TE * !Z)	-0.00114	-0.00113	-0.00112
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00121	0.00121	0.00116
	(!TE * Z)	-0.00257	-0.00258	-0.00255
	(!TE * !Z)	0.00140	0.00140	0.00140
	(!TE * !Z)	-0.00214	-0.00214	-0.00213
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00231	0.00232	0.00222
	(!TE * Z)	-0.00507	-0.00511	-0.00505
	(!TE * !Z)	0.00273	0.00275	0.00272
	(!TE * !Z)	-0.00427	-0.00430	-0.00424
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00451	0.00453	0.00436
	(!TE * Z)	-0.00982	-0.00980	-0.00976
	(!TE * !Z)	0.00535	0.00534	0.00531
	(!TE * !Z)	-0.00830	-0.00827	-0.00822

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00065	-0.00064	-0.00064
	(!TE * Z)	0.00126	0.00126	0.00125
	(!TE * !Z)	-0.00073	-0.00073	-0.00072
	(!TE * !Z)	0.00114	0.00115	0.00113
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00116	-0.00116	-0.00115
	(!TE * Z)	0.00257	0.00258	0.00255
	(!TE * !Z)	-0.00139	-0.00140	-0.00140
	(!TE * !Z)	0.00226	0.00225	0.00215
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00223	-0.00224	-0.00221
	(!TE * Z)	0.00507	0.00511	0.00505
	(!TE * !Z)	-0.00273	-0.00275	-0.00272
	(!TE * !Z)	0.00447	0.00446	0.00427
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00441	-0.00438	-0.00436
	(!TE * Z)	0.00982	0.00980	0.00976
	(!TE * !Z)	-0.00535	-0.00534	-0.00531
	(!TE * !Z)	0.00857	0.00856	0.00824

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00532	0.00528	0.00809
	(A * !Z)	0.00207	0.00200	0.00484
	(!A * Z)	0.00528	0.00523	0.00804
	(!A * Z)	0.00194	0.00187	0.00468
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00833	0.00839	0.01479
	(A * !Z)	0.00327	0.00329	0.00971
	(!A * Z)	0.00835	0.00837	0.01474
	(!A * Z)	0.00303	0.00302	0.00941
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01591	0.01589	0.02513
	(A * !Z)	0.00672	0.00673	0.01591
	(!A * Z)	0.01589	0.01590	0.02500
	(!A * Z)	0.00623	0.00617	0.01529
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.02744	0.02732	0.03566
	(A * !Z)	0.01351	0.01333	0.02174
	(!A * Z)	0.02757	0.02742	0.03567
	(!A * Z)	0.01268	0.01247	0.02072

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00090	-0.00105	0.00158
	(A * !Z)	0.00230	0.00221	0.00483
	(!A * Z)	-0.00097	-0.00107	0.00159
	(!A * Z)	0.00236	0.00226	0.00490
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00241	-0.00252	0.00399
	(A * !Z)	0.00257	0.00256	0.00904
	(!A * Z)	-0.00262	-0.00258	0.00393
	(!A * Z)	0.00268	0.00271	0.00915
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00444	-0.00483	0.00450
	(A * !Z)	0.00452	0.00435	0.01364
	(!A * Z)	-0.00479	-0.00497	0.00441
	(!A * Z)	0.00479	0.00468	0.01388
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00841	-0.00924	-0.00088
	(A * !Z)	0.00511	0.00473	0.01308
	(!A * Z)	-0.00896	-0.00954	-0.00107
	(!A * Z)	0.00568	0.00534	0.01351

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00301	0.00728	0.00529	0.34320	0.75510

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	1.03646	1.17482

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)	0.27788	1.10839	5.78653
	B->COUT (RR)	0.25556	0.98713	5.45380
	CIN->COUT (FR)	0.12146	0.96574	8.87611

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.38165	1.04020	4.63523
	B->COUT (FF)	0.31457	0.92468	4.29304
	CIN->COUT (RF)	0.06981	0.59111	5.34227

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)	-	0.46300	1.34680	9.23074
	B->SUM (-R)	-	0.41750	1.26243	8.91605
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.15704	0.90491	7.73344
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.24490	1.03981	8.29043

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)	-	0.50073	1.12651	5.10355
	B->SUM (-F)	-	0.40434	0.99009	4.71213
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.24670	0.89475	5.03752
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.24237	0.66970	3.39149

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01415	0.01422	0.01857
	A	0.01235	0.01241	0.01678
	B	0.01488	0.01526	0.02570
	B	0.01044	0.01082	0.02171
	CIN	0.00597	0.00633	0.01298
	CIN	0.00935	0.00971	0.01638

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01206	0.01229	0.01728
	A	0.01386	0.01407	0.01908
	B	0.01063	0.01128	0.02334
	B	0.01521	0.01587	0.02793
	CIN	0.00977	0.00984	0.01605
	CIN	0.00638	0.00646	0.01264

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02745	0.02749	0.03662
	A	-	0.02385	0.02388	0.03309
	B	-	0.02748	0.02966	0.05330
	B	-	0.01862	0.02082	0.04449
	CIN	(A * B) + (!A * !B)	0.00896	0.00987	0.03099
	CIN	(A * B) + (!A * !B)	0.01573	0.01666	0.03776
	CIN	(A * !B) + (!A * B)	0.00978	0.00990	0.01611
	CIN	(A * !B) + (!A * B)	0.00639	0.00653	0.01271

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02283	0.02325	0.03350
	A	-	0.02643	0.02686	0.03706
	B	-	0.01918	0.02149	0.04751
	B	-	0.02841	0.03078	0.05580
	CIN	(A * B) + (!A * !B)	0.01703	0.01726	0.03824
	CIN	(A * B) + (!A * !B)	0.01027	0.01050	0.03117
	CIN	(A * !B) + (!A * B)	0.00597	0.00633	0.01193
	CIN	(A * !B) + (!A * B)	0.00935	0.00973	0.01523

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00299	0.00932	0.00532	0.34370	0.73739

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	1.03280	1.16641

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)	0.37549	1.22436	6.65144
	B->COUT_N (FR)	0.26959	1.09039	8.99092
	CI->COUT_N (FR)	0.11263	0.95255	8.78630

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)	0.31444	0.79867	3.26447
	B->COUT_N (RF)	0.21390	0.69932	5.48756
	CI->COUT_N (RF)	0.06652	0.57993	5.34689

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)	-	0.41424	1.29936	8.97100
	B->SUM (-R)	-	0.33883	1.17448	8.54606
	CI->SUM (RR)	(A * B) + (!A * !B)	0.15023	0.89229	7.61799
	CI->SUM (FR)	(A * !B) + (!A * B)	0.24078	1.04242	8.29116

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)	-	0.46365	1.07851	4.93962
	B->SUM (-F)	-	0.35482	0.90398	4.42649
	CI->SUM (FF)	(A * B) + (!A * !B)	0.24006	0.86340	4.89684
	CI->SUM (RF)	(A * !B) + (!A * B)	0.25607	0.67462	3.36060

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	0.01125	0.01126	0.01624
	A	0.01310	0.01311	0.01820
	B	0.00835	0.00932	0.02678
	B	0.01416	0.01514	0.03281
	CI	0.00593	0.00619	0.01296
	CI	0.00933	0.00958	0.01640

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01303	0.01271	0.01689
	A	0.01119	0.01084	0.01504
	B	0.01380	0.01419	0.02943
	B	0.00799	0.00836	0.02350
	CI	0.00983	0.00985	0.01652
	CI	0.00643	0.00640	0.01309

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02426	0.02425	0.03352
	A	-	0.02056	0.02056	0.02993
	B	-	0.02744	0.03352	0.06738
	B	-	0.01580	0.02186	0.05568
	CI	(A * B) + (!A * !B)	0.01685	0.01705	0.03737
	CI	(A * B) + (!A * !B)	0.01005	0.01025	0.03068
	CI	(A * !B) + (!A * B)	0.00593	0.00616	0.01253
	CI	(A * !B) + (!A * B)	0.00933	0.00958	0.01593

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02174	0.02234	0.03281
	A	-	0.02543	0.02610	0.03641
	B	-	0.01723	0.02349	0.05961
	B	-	0.02891	0.03518	0.07103
	CI	(A * B) + (!A * !B)	0.01012	0.01107	0.03199
	CI	(A * B) + (!A * !B)	0.01693	0.01784	0.03862
	CI	(A * !B) + (!A * B)	0.00983	0.00981	0.01638
	CI	(A * !B) + (!A * B)	0.00643	0.00642	0.01286

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00500	0.00734	0.00263	0.68336	0.73763
sky130_fd_sc_hs__fah_2	0.00504	0.00833	0.00277	1.35829	1.45008
sky130_fd_sc_hs__fah_4	0.00496	0.00758	0.00266	2.54894	2.85908

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	1.03811	1.17999
sky130_fd_sc_hs__fah_2	0.00000	1.09849	1.23676
sky130_fd_sc_hs__fah_4	0.00000	1.22308	1.36441

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)	0.43251	1.16708	7.81108
	B->COUT (RR)	0.35095	1.15087	7.94447
	CI->COUT (RR)	0.20278	1.03120	8.21775
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.44998	1.05272	7.52468
	B->COUT (RR)	0.34401	1.01028	7.91874
	CI->COUT (RR)	0.19197	0.87864	7.88148
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.44150	0.98130	7.79271
	B->COUT (RR)	0.36879	0.96766	8.12369
	CI->COUT (RR)	0.23367	0.87460	8.41533

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.42822	0.95453	4.23100
	B->COUT (FF)	0.40759	1.00355	5.05361
	CI->COUT (FF)	0.30742	0.96245	5.07745
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.47273	0.99437	4.22081
	B->COUT (FF)	0.45042	1.02377	5.17778
	CI->COUT (FF)	0.31522	0.95052	4.97439
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.54431	1.08249	4.39625
	B->COUT (FF)	0.49548	1.08093	5.52894
	CI->COUT (FF)	0.38235	1.02369	5.42954

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)	-	0.43976	1.32962	9.16444
	B->SUM (-R)	-	0.39572	1.26145	9.00761
	CI->SUM (RR)	(A * B) + (!A * !B)	0.20122	0.98323	7.91346
	CI->SUM (FR)	(A * !B) + (!A * B)	0.38489	1.29850	9.21191
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.44002	1.19460	8.79926
	B->SUM (-R)	-	0.42173	1.16152	8.77717
	CI->SUM (RR)	(A * B) + (!A * !B)	0.19215	0.87345	7.94484
	CI->SUM (FR)	(A * !B) + (!A * B)	0.37809	1.15412	8.87057
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.47209	1.15619	9.13329
	B->SUM (-R)	-	0.43216	1.10504	9.04996
	CI->SUM (RR)	(A * B) + (!A * !B)	0.24644	0.87801	8.20095
	CI->SUM (FR)	(A * !B) + (!A * B)	0.47465	1.22202	9.54237

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)	-	0.43524	0.97813	4.36650
	B->SUM (-F)	-	0.42838	1.04164	7.28281
	CI->SUM (FF)	(A * B) + (!A * !B)	0.29930	0.96126	5.07975
	CI->SUM (RF)	(A * !B) + (!A * B)	0.37449	0.93065	4.21503
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.48889	1.01278	4.37798
	B->SUM (-F)	-	0.46116	1.04149	4.93501
	CI->SUM (FF)	(A * B) + (!A * !B)	0.32255	0.95176	5.11148
	CI->SUM (RF)	(A * !B) + (!A * B)	0.35344	0.85818	3.98001
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.54618	1.09995	4.60761
	B->SUM (-F)	-	0.51962	1.13061	7.39772
	CI->SUM (FF)	(A * B) + (!A * !B)	0.38994	1.03575	5.55901
	CI->SUM (RF)	(A * !B) + (!A * B)	0.51475	1.07935	4.72004

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01790	0.01797	0.02831
	A	0.01478	0.01487	0.02515
	B	0.01526	0.01595	0.02738
	B	0.01158	0.01193	0.02288
	CI	0.01118	0.01134	0.01560
	CI	0.00968	0.00985	0.01404
sky130_fd_sc_hs__fah_2	A	0.02018	0.02047	0.03055
	A	0.01690	0.01723	0.02721
	B	0.01830	0.01903	0.03022
	B	0.01323	0.01397	0.02491
	CI	0.01192	0.01219	0.01657
	CI	0.01016	0.01045	0.01471
sky130_fd_sc_hs__fah_4	A	0.02404	0.02423	0.03572
	A	0.02095	0.02115	0.03214
	B	0.02266	0.02320	0.03523
	B	0.01810	0.01866	0.03021
	CI	0.01855	0.01871	0.02324
	CI	0.01700	0.01721	0.02158

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01482	0.01541	0.02649
	A	0.01781	0.01839	0.02938
	B	0.01229	0.01313	0.02512
	B	0.01675	0.01757	0.02944
	CI	0.00932	0.00960	0.01426
	CI	0.01081	0.01110	0.01574
sky130_fd_sc_hs__fah_2	A	0.01684	0.01761	0.02835
	A	0.02011	0.02088	0.03143
	B	0.01275	0.01374	0.02557
	B	0.01783	0.01885	0.03060
	CI	0.01026	0.01076	0.01589
	CI	0.01202	0.01253	0.01725
sky130_fd_sc_hs__fah_4	A	0.02068	0.02140	0.03271
	A	0.02371	0.02444	0.03543
	B	0.01826	0.01930	0.03197
	B	0.02285	0.02385	0.03646
	CI	0.01640	0.01664	0.02174
	CI	0.01796	0.01819	0.02304

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.03151	0.03110	0.05012
	A	-	0.02517	0.02475	0.04380
	B	-	0.02763	0.03040	0.05704
	B	-	0.01862	0.02139	0.04811
	CI	(A * B) + (!A * !B)	0.01541	0.01518	0.02284
	CI	(A * B) + (!A * !B)	0.01206	0.01183	0.01958
	CI	(A * !B) + (!A * B)	0.00932	0.00962	0.01509
	CI	(A * !B) + (!A * B)	0.01082	0.01111	0.01596
sky130_fd_sc_hs__fah_2	A	-	0.03368	0.03337	0.05235
	A	-	0.02710	0.02681	0.04606
	B	-	0.03035	0.03363	0.05930
	B	-	0.02021	0.02349	0.04938
	CI	(A * B) + (!A * !B)	0.01592	0.01634	0.02526
	CI	(A * B) + (!A * !B)	0.01239	0.01280	0.02173
	CI	(A * !B) + (!A * B)	0.01026	0.01078	0.01618
	CI	(A * !B) + (!A * B)	0.01203	0.01255	0.01744
sky130_fd_sc_hs__fah_4	A	-	0.03588	0.03610	0.05625
	A	-	0.02953	0.02977	0.04993
	B	-	0.03359	0.03813	0.07011
	B	-	0.02418	0.02867	0.06099
	CI	(A * B) + (!A * !B)	0.02278	0.02309	0.03097
	CI	(A * B) + (!A * !B)	0.01940	0.01970	0.02770
	CI	(A * !B) + (!A * B)	0.01642	0.01659	0.02327
	CI	(A * !B) + (!A * B)	0.01797	0.01820	0.02332

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02313	0.02402	0.04400
	A	-	0.02975	0.03060	0.05042
	B	-	0.01997	0.02322	0.18700
	B	-	0.02926	0.03261	0.19613
	CI	(A * B) + (!A * !B)	0.01104	0.01108	0.02063
	CI	(A * B) + (!A * !B)	0.01440	0.01453	0.02390
	CI	(A * !B) + (!A * B)	0.01117	0.01133	0.01540
	CI	(A * !B) + (!A * B)	0.00968	0.00985	0.01380
sky130_fd_sc_hs__fah_2	A	-	0.02608	0.02698	0.04720
	A	-	0.03263	0.03352	0.05329
	B	-	0.02006	0.02361	0.05393
	B	-	0.03021	0.03376	0.06354
	CI	(A * B) + (!A * !B)	0.01273	0.01314	0.02384
	CI	(A * B) + (!A * !B)	0.01627	0.01670	0.02676
	CI	(A * !B) + (!A * B)	0.01191	0.01221	0.01636
	CI	(A * !B) + (!A * B)	0.01015	0.01045	0.01445
sky130_fd_sc_hs__fah_4	A	-	0.02900	0.02954	0.05154
	A	-	0.03545	0.03635	0.05661
	B	-	0.02758	0.03314	0.19305
	B	-	0.03712	0.04275	0.20110
	CI	(A * B) + (!A * !B)	0.01872	0.01812	0.02971
	CI	(A * B) + (!A * !B)	0.02211	0.02171	0.03158
	CI	(A * !B) + (!A * B)	0.01854	0.01873	0.02323
	CI	(A * !B) + (!A * B)	0.01699	0.01724	0.02123

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.01048	0.01025	0.00746	0.76201	0.76057
sky130_fd_sc_hs__fa_2	0.01114	0.01063	0.00796	1.36022	1.43292
sky130_fd_sc_hs__fa_4	0.01111	0.01087	0.00782	2.87189	2.87801

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.24312	0.29714
sky130_fd_sc_hs__fa_2	0.00000	0.30362	0.35696
sky130_fd_sc_hs__fa_4	0.00000	0.43459	0.48650

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)	0.17605	0.92797	7.75197
	B->COUT (RR)	0.19034	0.95995	7.78513
	CIN->COUT (RR)	0.16043	0.92714	7.76823
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.18006	0.82974	7.66223
	B->COUT (RR)	0.18467	0.86157	7.71161
	CIN->COUT (RR)	0.16787	0.84929	7.71320
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.23364	0.82707	8.03155
	B->COUT (RR)	0.21392	0.84916	8.09453
	CIN->COUT (RR)	0.20914	0.84744	8.09315

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.34307	0.93921	5.05864
	B->COUT (FF)	0.35182	0.95897	5.06295
	CIN->COUT (FF)	0.26941	0.91233	5.02875
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.40581	0.98565	5.14827
	B->COUT (FF)	0.40759	1.00043	5.19455
	CIN->COUT (FF)	0.36488	0.96837	5.13389
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.54359	1.14036	5.77587
	B->COUT (FF)	0.50629	1.10434	5.81971
	CIN->COUT (FF)	0.49570	1.10475	5.83197

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.48789	1.29207	8.89888
	B->SUM (-R)	0.49366	1.30906	8.88483
	CIN->SUM (-R)	0.45045	1.26542	8.72533
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.61164	1.31164	9.18634
	B->SUM (-R)	0.61031	1.32291	9.19954
	CIN->SUM (-R)	0.58064	1.29135	9.10596
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.87969	1.48968	9.72138
	B->SUM (-R)	0.81702	1.44451	9.73708
	CIN->SUM (-R)	0.82924	1.44879	9.72322

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.40022	0.95247	4.87744
	B->SUM (-F)	0.38618	0.96348	5.04986
	CIN->SUM (-F)	0.33098	0.91252	4.93440
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.50435	1.05131	5.10334
	B->SUM (-F)	0.50442	1.07622	5.33167
	CIN->SUM (-F)	0.45273	1.02459	5.24955
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.68673	1.24271	5.71510
	B->SUM (-F)	0.63654	1.22326	5.96277
	CIN->SUM (-F)	0.60754	1.18661	5.93608

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01047	0.01046	0.01354
	A	0.00388	0.00384	0.00659
	B	0.01021	0.01013	0.01372
	B	0.00400	0.00392	0.00720
	CIN	0.00876	0.00875	0.01322
	CIN	0.00475	0.00474	0.00895
sky130_fd_sc_hs__fa_2	A	0.01342	0.01330	0.01660
	A	0.00621	0.00610	0.00896
	B	0.01308	0.01292	0.01674
	B	0.00649	0.00637	0.00977
	CIN	0.01179	0.01161	0.01624
	CIN	0.00726	0.00714	0.01140
sky130_fd_sc_hs__fa_4	A	0.01907	0.01898	0.02299
	A	0.01153	0.01172	0.01455
	B	0.01917	0.01910	0.02318
	B	0.01288	0.01283	0.01618
	CIN	0.01739	0.01740	0.02239
	CIN	0.01314	0.01316	0.01736

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00416	0.00427	0.00706
	A	0.01074	0.01081	0.01355
	B	0.00482	0.00486	0.00906
	B	0.01110	0.01115	0.01528
	CIN	0.00561	0.00573	0.01013
	CIN	0.00965	0.00976	0.01397
sky130_fd_sc_hs__fa_2	A	0.00650	0.00646	0.00937
	A	0.01370	0.01372	0.01655
	B	0.00723	0.00718	0.01161
	B	0.01387	0.01387	0.01818
	CIN	0.00805	0.00807	0.01240
	CIN	0.01261	0.01264	0.01690
sky130_fd_sc_hs__fa_4	A	0.01265	0.01251	0.01582
	A	0.02014	0.02004	0.02296
	B	0.01327	0.01293	0.01842
	B	0.01961	0.01937	0.02375
	CIN	0.01442	0.01411	0.01930
	CIN	0.01872	0.01838	0.02264

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01510	0.01506	0.01932
	A	0.01078	0.01085	0.01370
	B	0.01339	0.01309	0.01813
	B	0.01114	0.01117	0.01543
	CIN	0.01187	0.01139	0.01728
	CIN	0.00967	0.00979	0.01415
sky130_fd_sc_hs__fa_2	A	0.01812	0.01846	0.02316
	A	0.01374	0.01375	0.01682
	B	0.01668	0.01675	0.02208
	B	0.01390	0.01391	0.01850
	CIN	0.01521	0.01507	0.02129
	CIN	0.01264	0.01266	0.01713
sky130_fd_sc_hs__fa_4	A	0.02340	0.02406	0.02843
	A	0.02044	0.02028	0.02311
	B	0.02257	0.02258	0.02749
	B	0.01964	0.01941	0.02397
	CIN	0.02042	0.02032	0.02613
	CIN	0.01873	0.01849	0.02289

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01044	0.01042	0.01306
	A	0.01483	0.01493	0.01984
	B	0.01017	0.01011	0.01336
	B	0.01538	0.01547	0.02036
	CIN	0.00875	0.00874	0.01281
	CIN	0.01222	0.01223	0.01943
sky130_fd_sc_hs__fa_2	A	0.01338	0.01328	0.01617
	A	0.01774	0.01804	0.02343
	B	0.01304	0.01285	0.01603
	B	0.01791	0.01798	0.02312
	CIN	0.01178	0.01164	0.01554
	CIN	0.01541	0.01530	0.02285
sky130_fd_sc_hs__fa_4	A	0.01868	0.01886	0.02195
	A	0.02501	0.02495	0.03030
	B	0.01911	0.01907	0.02267
	B	0.02409	0.02279	0.02776
	CIN	0.01217	0.01042	0.01931
	CIN	0.02164	0.02044	0.02765

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00499	0.00475	0.73815	0.70227
sky130_fd_sc_hs__ha_2	0.00509	0.00528	1.36267	1.39206
sky130_fd_sc_hs__ha_4	0.00958	0.00874	2.58171	2.83805

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ha_1	0.00000	0.29026	0.40330
sky130_fd_sc_hs__ha_2	0.00000	0.27685	0.31763
sky130_fd_sc_hs__ha_4	0.00000	0.69916	0.93011

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)	0.13776	0.85318	7.52661
	B->COUT (RR)	0.13186	0.86135	7.57193
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.14675	0.78160	7.60385
	B->COUT (RR)	0.14180	0.79903	7.63844
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.16534	0.71095	7.61013
	B->COUT (RR)	0.14703	0.71574	7.64219

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.16378	0.72966	4.41133
	B->COUT (FF)	0.14779	0.69716	4.31786
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.18672	0.74630	4.52519
	B->COUT (FF)	0.17375	0.72096	4.44110
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.20941	0.72196	4.46459
	B->COUT (FF)	0.18280	0.68188	4.36218

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	0.13971	0.86116	7.47055
	A->SUM (FR)	B	0.26615	1.10334	8.38569
	B->SUM (RR)	!A	0.12103	0.82327	7.37778
	B->SUM (FR)	A	0.26742	1.08837	8.28144
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.14904	0.76052	7.39253
	A->SUM (FR)	B	0.33621	1.07454	8.53855
	B->SUM (RR)	!A	0.13478	0.73374	7.31858
	B->SUM (FR)	A	0.33491	1.06091	8.44322
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.16328	0.70626	7.70368
	A->SUM (FR)	B	0.36671	1.00969	8.68934
	B->SUM (RR)	!A	0.14374	0.66831	7.60361
	B->SUM (FR)	A	0.35459	0.98861	8.57770

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	0.22865	0.75284	4.37054
	A->SUM (RF)	B	0.21217	0.61401	3.26932
	B->SUM (FF)	!A	0.20451	0.73856	4.30208
	B->SUM (RF)	A	0.20668	0.62065	3.28758
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.30790	0.84490	4.80559
	A->SUM (RF)	B	0.26382	0.65111	3.49395
	B->SUM (FF)	!A	0.28425	0.84108	4.77827
	B->SUM (RF)	A	0.25963	0.66755	3.52486
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.30545	0.80453	4.88418
	A->SUM (RF)	B	0.30335	0.66801	3.72182
	B->SUM (FF)	!A	0.27462	0.79031	4.84585
	B->SUM (RF)	A	0.28525	0.67179	3.74532

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00720	0.00730	0.01105
	A	0.00358	0.00363	0.00728
	B	0.00681	0.00691	0.01179
	B	0.00393	0.00401	0.00899
sky130_fd_sc_hs__ha_2	A	0.00989	0.01023	0.01471
	A	0.00621	0.00649	0.01071
	B	0.00965	0.00998	0.01512
	B	0.00645	0.00678	0.01169
sky130_fd_sc_hs__ha_4	A	0.01841	0.01953	0.02748
	A	0.01173	0.01271	0.02016
	B	0.01738	0.01827	0.02862
	B	0.01226	0.01315	0.02302

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00381	0.00416	0.00901
	A	0.00742	0.00777	0.01251
	B	0.00459	0.00479	0.00963
	B	0.00742	0.00760	0.01244
sky130_fd_sc_hs__ha_2	A	0.00692	0.00738	0.01237
	A	0.01059	0.01105	0.01602
	B	0.00739	0.00762	0.01248
	B	0.01054	0.01076	0.01558
sky130_fd_sc_hs__ha_4	A	0.01254	0.01352	0.02345
	A	0.01920	0.02018	0.02986
	B	0.01400	0.01499	0.02473
	B	0.01895	0.01984	0.02966

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	0.00382	0.00416	0.01066
	A	B	0.00743	0.00777	0.01282
	A	!B	0.01061	0.01070	0.01616
	A	!B	0.00359	0.00368	0.00917
	B	A	0.00461	0.00480	0.00983
	B	A	0.00743	0.00761	0.01262
	B	!A	0.00803	0.00804	0.01548
	B	!A	0.00260	0.00263	0.01009
sky130_fd_sc_hs__ha_2	A	B	0.00693	0.00740	0.01278
	A	B	0.01061	0.01107	0.01626
	A	!B	0.01365	0.01395	0.01930
	A	!B	0.00663	0.00695	0.01239
	B	A	0.00741	0.00764	0.01276
	B	A	0.01055	0.01078	0.01579
	B	!A	0.01155	0.01183	0.01880
	B	!A	0.00560	0.00588	0.01310
sky130_fd_sc_hs__ha_4	A	B	0.01255	0.01361	0.02426
	A	B	0.01923	0.02027	0.03031
	A	!B	0.02728	0.02780	0.03810
	A	!B	0.01289	0.01343	0.02419
	B	A	0.01403	0.01505	0.02505
	B	A	0.01897	0.01990	0.03000
	B	!A	0.02195	0.02246	0.03599
	B	!A	0.01103	0.01155	0.02555

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	0.00720	0.00728	0.01076
	A	B	0.00358	0.00363	0.00713
	A	!B	0.00225	0.00239	0.00814
	A	!B	0.00915	0.00929	0.01504
	B	A	0.00681	0.00691	0.01165
	B	A	0.00393	0.00402	0.00884
	B	!A	0.00317	0.00376	0.01241
	B	!A	0.00871	0.00928	0.01768
sky130_fd_sc_hs__ha_2	A	B	0.00989	0.01024	0.01421
	A	B	0.00622	0.00650	0.01044
	A	!B	0.00475	0.00500	0.01083
	A	!B	0.01162	0.01189	0.01773
	B	A	0.00965	0.01002	0.01458
	B	A	0.00646	0.00673	0.01134
	B	!A	0.00528	0.00594	0.01492
	B	!A	0.01136	0.01202	0.02058
sky130_fd_sc_hs__ha_4	A	B	0.01841	0.01947	0.02721
	A	B	0.01174	0.01272	0.01980
	A	!B	0.00940	0.00994	0.02142
	A	!B	0.02354	0.02416	0.03495
	B	A	0.01738	0.01835	0.02765
	B	A	0.01226	0.01316	0.02243
	B	!A	0.01141	0.01258	0.02930
	B	!A	0.02271	0.02395	0.04022

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00858	11.57622
sky130_fd_sc_hs__bufinv_8	0.00295	5.02706
sky130_fd_sc_hs__inv_1	0.00298	0.73873
sky130_fd_sc_hs__inv_16	0.04529	11.31216
sky130_fd_sc_hs__inv_2	0.00550	1.44357
sky130_fd_sc_hs__inv_4	0.01109	2.76360
sky130_fd_sc_hs__inv_8	0.02196	5.49420

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.81834	0.87277
sky130_fd_sc_hs__bufinv_8	0.00000	0.39620	0.42149
sky130_fd_sc_hs__inv_1	0.00000	0.03458	0.03847
sky130_fd_sc_hs__inv_16	0.00000	0.52249	0.58988
sky130_fd_sc_hs__inv_2	0.00000	0.06530	0.07373
sky130_fd_sc_hs__inv_4	0.00000	0.13072	0.14769
sky130_fd_sc_hs__inv_8	0.00000	0.26122	0.29494

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)**	0.20449	0.68548	8.32479
sky130_fd_sc_hs__bufinv_8	**A->Y (FR)**	0.26435	0.85364	8.56604
sky130_fd_sc_hs__inv_1	**A->Y (FR)**	0.04544	0.93815	11.16120
sky130_fd_sc_hs__inv_16	**A->Y (FR)**	0.03095	0.56832	11.11400
sky130_fd_sc_hs__inv_2	**A->Y (FR)**	0.03494	0.81103	11.05540
sky130_fd_sc_hs__inv_4	**A->Y (FR)**	0.03289	0.72040	11.05350
sky130_fd_sc_hs__inv_8	**A->Y (FR)**	0.03187	0.64056	11.06050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	**A->Y (RF)**	0.18592	0.45998	3.26610
sky130_fd_sc_hs__bufinv_8	**A->Y (RF)**	0.21913	0.55612	3.27492
sky130_fd_sc_hs__inv_1	**A->Y (RF)**	0.02581	0.56267	6.62041
sky130_fd_sc_hs__inv_16	**A->Y (RF)**	0.02034	0.32510	6.60538
sky130_fd_sc_hs__inv_2	**A->Y (RF)**	0.02175	0.48319	6.54384
sky130_fd_sc_hs__inv_4	**A->Y (RF)**	0.02093	0.42769	6.58816
sky130_fd_sc_hs__inv_8	**A->Y (RF)**	0.02078	0.37498	6.59649

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.05896	0.06364	0.09705
	A	0.06994	0.07477	0.10799
sky130_fd_sc_hs__bufinv_8	A	0.03077	0.03276	0.04408
	A	0.03451	0.03652	0.04781
sky130_fd_sc_hs__inv_1	A	-0.00060	-0.00033	0.00107
	A	0.00320	0.00346	0.00499
sky130_fd_sc_hs__inv_16	A	-0.01351	-0.00686	0.01591
	A	0.04410	0.05106	0.06735
sky130_fd_sc_hs__inv_2	A	-0.00160	-0.00107	0.00193
	A	0.00539	0.00598	0.00899
sky130_fd_sc_hs__inv_4	A	-0.00317	-0.00139	0.00399
	A	0.01094	0.01284	0.01825
sky130_fd_sc_hs__inv_8	A	-0.00631	-0.00326	0.00952
	A	0.02164	0.02472	0.03776

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	**A**	0.06901	0.07386	0.10963
	A	0.05802	0.06283	0.09433
sky130_fd_sc_hs__bufinv_8	**A**	0.03329	0.03531	0.04596
	A	0.02955	0.03150	0.04110
sky130_fd_sc_hs__inv_1	**A**	0.00334	0.00344	0.00494
	A	-0.00046	-0.00040	0.00049
sky130_fd_sc_hs__inv_16	**A**	0.04333	0.04572	0.07500
	A	-0.01435	-0.01219	0.00385
sky130_fd_sc_hs__inv_2	**A**	0.00535	0.00577	0.00841
	A	-0.00166	-0.00134	0.00043
sky130_fd_sc_hs__inv_4	**A**	0.01079	0.01147	0.01852
	A	-0.00331	-0.00273	0.00100
sky130_fd_sc_hs__inv_8	**A**	0.02108	0.02243	0.03757
	A	-0.00687	-0.00572	0.00274

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00546	0.00514	0.00534	0.76408
sky130_fd_sc_hs__maj3_2	0.00581	0.00554	0.00568	1.48844
sky130_fd_sc_hs__maj3_4	0.01064	0.01008	0.01048	2.86430

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__maj3_1	0.00000	0.11481	0.19331
sky130_fd_sc_hs__maj3_2	0.00000	0.14545	0.22860
sky130_fd_sc_hs__maj3_4	0.00000	0.28892	0.45352

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)	0.16500	0.90437	7.71637
	B->X (RR)	0.15572	0.90308	7.66602
	C->X (RR)	0.16837	0.93152	7.74041
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.17155	0.80048	7.61310
	B->X (RR)	0.15013	0.79844	7.57815
	C->X (RR)	0.16528	0.82415	7.65152
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.16654	0.71752	7.72935
	B->X (RR)	0.15454	0.72740	7.70094
	C->X (RR)	0.16338	0.74158	7.75402

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.26974	0.86421	4.90016
	B->X (FF)	0.23445	0.85460	4.83204
	C->X (FF)	0.28827	0.87353	4.86370
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.36555	0.92064	5.05213
	B->X (FF)	0.29130	0.89367	5.01820
	C->X (FF)	0.35785	0.92864	5.07017
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.30436	0.83779	5.01915
	B->X (FF)	0.25675	0.81028	4.96789
	C->X (FF)	0.32271	0.85211	5.00048

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01414	0.01395	0.01865
	A	0.00416	0.00396	0.00875
	B	0.01190	0.01124	0.01865
	B	0.00408	0.00343	0.01090
	C	0.01375	0.01332	0.01927
	C	0.00495	0.00450	0.01054
sky130_fd_sc_hs__maj3_2	A	0.01697	0.01700	0.02186
	A	0.00627	0.00630	0.01145
	B	0.01505	0.01485	0.02229
	B	0.00660	0.00641	0.01402
	C	0.01693	0.01676	0.02278
	C	0.00753	0.00736	0.01363
sky130_fd_sc_hs__maj3_4	A	0.03163	0.03153	0.04138
	A	0.01262	0.01251	0.02286
	B	0.02734	0.02707	0.04184
	B	0.01233	0.01203	0.02722
	C	0.03135	0.03096	0.04265
	C	0.01432	0.01390	0.02601

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00261	0.00263	0.00789
	A	0.01242	0.01244	0.01767
	B	0.00347	0.00337	0.01173
	B	0.01080	0.01083	0.01894
	C	0.00382	0.00377	0.01184
	C	0.01234	0.01233	0.02040
sky130_fd_sc_hs__maj3_2	A	0.00556	0.00552	0.01183
	A	0.01617	0.01631	0.02189
	B	0.00533	0.00539	0.01395
	B	0.01372	0.01390	0.02239
	C	0.00631	0.00616	0.01475
	C	0.01564	0.01565	0.02397
sky130_fd_sc_hs__maj3_4	A	0.01044	0.01071	0.02139
	A	0.02912	0.02953	0.04005
	B	0.01093	0.01112	0.02751
	B	0.02565	0.02603	0.04238
	C	0.01194	0.01203	0.02834
	C	0.02852	0.02881	0.04454

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00344	0.00301	0.00295
	(B * C * X)	-0.00258	-0.00304	-0.00308
	(!B * !C * !X)	0.00264	0.00265	0.00264
	(!B * !C * !X)	-0.00331	-0.00332	-0.00331
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00334	0.00293	0.00287
	(B * C * X)	-0.00302	-0.00349	-0.00351
	(!B * !C * !X)	0.00244	0.00246	0.00245
	(!B * !C * !X)	-0.00383	-0.00384	-0.00383
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00620	0.00536	0.00525
	(B * C * X)	-0.00523	-0.00620	-0.00625
	(!B * !C * !X)	0.00463	0.00466	0.00464
	(!B * !C * !X)	-0.00673	-0.00675	-0.00673

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00293	-0.00295	-0.00292
	(B * C * X)	0.00306	0.00310	0.00308
	(!B * !C * !X)	-0.00249	-0.00264	-0.00264
	(!B * !C * !X)	0.00343	0.00335	0.00333
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00284	-0.00286	-0.00284
	(B * C * X)	0.00348	0.00353	0.00351
	(!B * !C * !X)	-0.00228	-0.00245	-0.00245
	(!B * !C * !X)	0.00396	0.00391	0.00385
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00520	-0.00522	-0.00520
	(B * C * X)	0.00621	0.00626	0.00625
	(!B * !C * !X)	-0.00436	-0.00464	-0.00464
	(!B * !C * !X)	0.00692	0.00682	0.00676

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00247	0.00250	0.00247
	(A * C * X)	-0.00157	-0.00158	-0.00155
	(!A * !C * !X)	0.00069	0.00070	0.00067
	(!A * !C * !X)	-0.00365	-0.00368	-0.00373
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00292	0.00295	0.00293
	(A * C * X)	-0.00151	-0.00151	-0.00150
	(!A * !C * !X)	0.00087	0.00086	0.00082
	(!A * !C * !X)	-0.00374	-0.00374	-0.00380
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00485	0.00490	0.00487
	(A * C * X)	-0.00311	-0.00315	-0.00312
	(!A * !C * !X)	0.00161	0.00163	0.00151
	(!A * !C * !X)	-0.00709	-0.00714	-0.00730

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00237	-0.00239	-0.00246
	(A * C * X)	0.00163	0.00165	0.00158
	(!A * !C * !X)	-0.00066	-0.00066	-0.00064
	(!A * !C * !X)	0.00375	0.00378	0.00374
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00282	-0.00284	-0.00292
	(A * C * X)	0.00159	0.00160	0.00152
	(!A * !C * !X)	-0.00079	-0.00080	-0.00079
	(!A * !C * !X)	0.00380	0.00382	0.00381
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00463	-0.00467	-0.00484
	(A * C * X)	0.00333	0.00335	0.00318
	(!A * !C * !X)	-0.00148	-0.00147	-0.00145
	(!A * !C * !X)	0.00734	0.00735	0.00732

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00280	0.00256	0.00254
	(A * B * X)	-0.00210	-0.00232	-0.00234
	(!A * !B * !X)	0.00136	0.00137	0.00135
	(!A * !B * !X)	-0.00364	-0.00366	-0.00368
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00320	0.00296	0.00295
	(A * B * X)	-0.00206	-0.00228	-0.00231
	(!A * !B * !X)	0.00168	0.00168	0.00166
	(!A * !B * !X)	-0.00361	-0.00362	-0.00364
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00553	0.00513	0.00505
	(A * B * X)	-0.00414	-0.00464	-0.00465
	(!A * !B * !X)	0.00306	0.00309	0.00302
	(!A * !B * !X)	-0.00694	-0.00697	-0.00702

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00248	-0.00250	-0.00252
	(A * B * X)	0.00238	0.00240	0.00235
	(!A * !B * !X)	-0.00126	-0.00135	-0.00135
	(!A * !B * !X)	0.00374	0.00373	0.00369
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00289	-0.00291	-0.00293
	(A * B * X)	0.00234	0.00236	0.00232
	(!A * !B * !X)	-0.00156	-0.00166	-0.00166
	(!A * !B * !X)	0.00370	0.00369	0.00365
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00492	-0.00494	-0.00502
	(A * B * X)	0.00472	0.00475	0.00468
	(!A * !B * !X)	-0.00286	-0.00301	-0.00302
	(!A * !B * !X)	0.00712	0.00712	0.00705

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00297	0.00282	0.00517	0.34539
sky130_fd_sc_hs__mux2i_2	0.00559	0.00589	0.00844	0.60663
sky130_fd_sc_hs__mux2i_4	0.01106	0.01104	0.01475	1.09891

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.13564	0.22145
sky130_fd_sc_hs__mux2i_2	0.00000	0.16064	0.22264
sky130_fd_sc_hs__mux2i_4	0.00000	0.36435	0.57931

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)	-	0.14273	1.16218	10.81640
	A1->Y (FR)	-	0.12752	1.14735	10.80860
	S->Y (RR)	(A0 * !A1)	0.20419	1.05678	7.40430
	S->Y (FR)	(!A0 * A1)	0.16454	1.17147	10.48580
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.15357	1.03080	10.78220
	A1->Y (FR)	-	0.14249	1.00062	10.46990
	S->Y (RR)	(A0 * !A1)	0.21698	0.92643	7.07970
	S->Y (FR)	(!A0 * A1)	0.17255	1.02562	10.28390
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.13881	0.89086	10.48850
	A1->Y (FR)	-	0.13751	0.90322	10.70700
	S->Y (RR)	(A0 * !A1)	0.24072	0.90195	7.73094
	S->Y (FR)	(!A0 * A1)	0.16031	0.87526	9.91806

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)	-	0.05255	0.59649	5.66125
	A1->Y (RF)	-	0.05426	0.61534	5.85155
	S->Y (FF)	(A0 * !A1)	0.14806	0.63285	3.39051
	S->Y (RF)	(!A0 * A1)	0.06228	0.56181	5.17512
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.06209	0.56978	5.89989
	A1->Y (RF)	-	0.05990	0.55754	5.79653
	S->Y (FF)	(A0 * !A1)	0.17869	0.66908	3.77876
	S->Y (RF)	(!A0 * A1)	0.06554	0.48838	4.92192
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.05648	0.49619	5.72632
	A1->Y (RF)	-	0.06270	0.52659	6.06230
	S->Y (FF)	(A0 * !A1)	0.18246	0.62522	3.53025
	S->Y (RF)	(!A0 * A1)	0.06762	0.43376	4.84387

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	-	0.00131	0.00134	0.00323
	A0	-	0.00629	0.00632	0.00822
	A1	-	0.00092	0.00098	0.00285
	A1	-	0.00554	0.00560	0.00748
	S	(A0 * !A1)	0.00856	0.00851	0.01755
	S	(A0 * !A1)	0.00451	0.00444	0.01348
	S	(!A0 * A1)	0.00204	0.00229	0.01290
	S	(!A0 * A1)	0.01114	0.01143	0.02205
sky130_fd_sc_hs__mux2i_2	A0	-	0.00270	0.00270	0.00645
	A0	-	0.01237	0.01213	0.01615
	A1	-	0.00245	0.00249	0.00630
	A1	-	0.01210	0.01212	0.01599
	S	(A0 * !A1)	0.01462	0.01444	0.02328
	S	(A0 * !A1)	0.00946	0.00931	0.01811
	S	(!A0 * A1)	0.00462	0.00459	0.01683
	S	(!A0 * A1)	0.02025	0.02020	0.03248
sky130_fd_sc_hs__mux2i_4	A0	-	0.00325	0.00308	0.01108
	A0	-	0.02245	0.02226	0.03036
	A1	-	0.00328	0.00320	0.01060
	A1	-	0.02162	0.02155	0.02903
	S	(A0 * !A1)	0.02504	0.02476	0.03952
	S	(A0 * !A1)	0.01702	0.01682	0.03156
	S	(!A0 * A1)	0.00735	0.00735	0.02815
	S	(!A0 * A1)	0.03577	0.03576	0.05660

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00649	0.00652	0.00775
	A0	-	0.00153	0.00153	0.00263
	A1	-	0.00630	0.00631	0.00784
	A1	-	0.00142	0.00143	0.00251
	S	(A0 * !A1)	0.00550	0.00581	0.01526
	S	(A0 * !A1)	0.00956	0.00986	0.01931
	S	(!A0 * A1)	0.01189	0.01173	0.02183
	S	(!A0 * A1)	0.00274	0.00256	0.01245
sky130_fd_sc_hs__mux2i_2	A0	-	0.01330	0.01323	0.01577
	A0	-	0.00375	0.00368	0.00589
	A1	-	0.01287	0.01283	0.01570
	A1	-	0.00280	0.00271	0.00500
	S	(A0 * !A1)	0.01166	0.01180	0.02116
	S	(A0 * !A1)	0.01669	0.01685	0.02625
	S	(!A0 * A1)	0.02131	0.02092	0.03276
	S	(!A0 * A1)	0.00560	0.00516	0.01667
sky130_fd_sc_hs__mux2i_4	A0	-	0.02465	0.02456	0.02937
	A0	-	0.00558	0.00548	0.01011
	A1	-	0.02455	0.02444	0.02889
	A1	-	0.00517	0.00501	0.00955
	S	(A0 * !A1)	0.02195	0.02219	0.03849
	S	(A0 * !A1)	0.02968	0.02993	0.04624
	S	(!A0 * A1)	0.03949	0.03858	0.05719
	S	(!A0 * A1)	0.01090	0.00996	0.02868

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00159	0.00160	0.00160
	(A1 * S * !Y)	-0.00090	-0.00091	-0.00090
	(!A1 * S * Y)	0.00072	0.00071	0.00067
	(!A1 * S * Y)	-0.00197	-0.00204	-0.00205
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00291	0.00289	0.00290
	(A1 * S * !Y)	-0.00168	-0.00166	-0.00167
	(!A1 * S * Y)	0.00109	0.00109	0.00101
	(!A1 * S * Y)	-0.00389	-0.00399	-0.00403
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00564	0.00566	0.00566
	(A1 * S * !Y)	-0.00342	-0.00343	-0.00342
	(!A1 * S * Y)	0.00208	0.00207	0.00194
	(!A1 * S * Y)	-0.00783	-0.00799	-0.00809

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00149	-0.00151	-0.00160
	(A1 * S * !Y)	0.00100	0.00099	0.00093
	(!A1 * S * Y)	-0.00067	-0.00067	-0.00067
	(!A1 * S * Y)	0.00206	0.00205	0.00205
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00273	-0.00280	-0.00290
	(A1 * S * !Y)	0.00177	0.00178	0.00170
	(!A1 * S * Y)	-0.00097	-0.00098	-0.00097
	(!A1 * S * Y)	0.00402	0.00404	0.00403
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00535	-0.00546	-0.00566
	(A1 * S * !Y)	0.00369	0.00368	0.00349
	(!A1 * S * Y)	-0.00188	-0.00190	-0.00186
	(!A1 * S * Y)	0.00812	0.00817	0.00809

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00144	0.00146	0.00144
	(A0 * !S * !Y)	-0.00091	-0.00093	-0.00091
	(!A0 * !S * Y)	0.00059	0.00059	0.00054
	(!A0 * !S * Y)	-0.00197	-0.00201	-0.00206
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00298	0.00301	0.00299
	(A0 * !S * !Y)	-0.00184	-0.00186	-0.00184
	(!A0 * !S * Y)	0.00118	0.00118	0.00111
	(!A0 * !S * Y)	-0.00401	-0.00407	-0.00415
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00552	0.00556	0.00554
	(A0 * !S * !Y)	-0.00345	-0.00347	-0.00344
	(!A0 * !S * Y)	0.00189	0.00190	0.00176
	(!A0 * !S * Y)	-0.00790	-0.00805	-0.00820

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00128	-0.00135	-0.00144
	(A0 * !S * !Y)	0.00104	0.00101	0.00093
	(!A0 * !S * Y)	-0.00053	-0.00053	-0.00052
	(!A0 * !S * Y)	0.00207	0.00207	0.00206
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00275	-0.00288	-0.00299
	(A0 * !S * !Y)	0.00200	0.00201	0.00189
	(!A0 * !S * Y)	-0.00107	-0.00108	-0.00107
	(!A0 * !S * Y)	0.00414	0.00417	0.00415
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00510	-0.00535	-0.00554
	(A0 * !S * !Y)	0.00372	0.00374	0.00352
	(!A0 * !S * Y)	-0.00169	-0.00170	-0.00169
	(!A0 * !S * Y)	0.00818	0.00822	0.00820

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00632	0.00634	0.01513
	(A0 * A1 * !Y)	-0.00008	-0.00013	0.00868
	(!A0 * !A1 * Y)	0.00637	0.00630	0.01516
	(!A0 * !A1 * Y)	-0.00008	-0.00019	0.00870
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01013	0.00957	0.01909
	(A0 * A1 * !Y)	0.00005	-0.00059	0.00893
	(!A0 * !A1 * Y)	0.00972	0.00953	0.01901
	(!A0 * !A1 * Y)	-0.00040	-0.00058	0.00895
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01787	0.01690	0.03142
	(A0 * A1 * !Y)	0.00033	-0.00084	0.01371
	(!A0 * !A1 * Y)	0.01720	0.01692	0.03128
	(!A0 * !A1 * Y)	-0.00043	-0.00067	0.01378

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	0.00008	0.00951
	(A0 * A1 * !Y)	0.00624	0.00656	0.01597
	(!A0 * !A1 * Y)	-0.00031	-0.00000	0.00951
	(!A0 * !A1 * Y)	0.00612	0.00650	0.01596
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00029	-0.00012	0.00978
	(A0 * A1 * !Y)	0.00982	0.01000	0.01982
	(!A0 * !A1 * Y)	-0.00032	-0.00024	0.00971
	(!A0 * !A1 * Y)	0.00970	0.00986	0.01985
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00001	0.00031	0.01630
	(A0 * A1 * !Y)	0.01768	0.01783	0.03390
	(!A0 * !A1 * Y)	-0.00018	-0.00008	0.01621
	(!A0 * !A1 * Y)	0.01728	0.01757	0.03387

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00285	0.00332	0.00477	0.76147
sky130_fd_sc_hs__mux2_2	0.00265	0.00298	0.00558	1.35225
sky130_fd_sc_hs__mux2_4	0.00507	0.00510	0.00849	2.58120

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2_1	0.00000	0.19667	0.29911
sky130_fd_sc_hs__mux2_2	0.00000	0.22868	0.33641
sky130_fd_sc_hs__mux2_4	0.00000	0.34888	0.44787

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)	-	0.12677	0.84108	7.43783
	A1->X (RR)	-	0.12512	0.83918	7.44708
	S->X (RR)	(!A0 * A1)	0.13026	0.83173	7.41145
	S->X (FR)	(A0 * !A1)	0.23795	1.01281	8.10137
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.14673	0.79875	7.49003
	A1->X (RR)	-	0.13800	0.78374	7.47610
	S->X (RR)	(!A0 * A1)	0.14680	0.76981	7.43493
	S->X (FR)	(A0 * !A1)	0.25225	0.92516	7.95276
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.17729	0.77098	7.69482
	A1->X (RR)	-	0.18615	0.78456	7.73583
	S->X (RR)	(!A0 * A1)	0.19084	0.74210	7.61699
	S->X (FR)	(A0 * !A1)	0.31503	0.96016	8.33358

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)	-	0.21081	0.81075	4.78757
	A1->X (FF)	-	0.20898	0.81081	4.82344
	S->X (FF)	(!A0 * A1)	0.26694	0.82565	4.81499
	S->X (RF)	(A0 * !A1)	0.31330	0.74235	3.60834
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.26443	0.85121	4.76807
	A1->X (FF)	-	0.27004	0.86440	4.81672
	S->X (FF)	(!A0 * A1)	0.32603	0.85993	4.70335
	S->X (RF)	(A0 * !A1)	0.38360	0.78125	3.34113
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.30031	0.84840	4.72755
	A1->X (FF)	-	0.30189	0.85475	4.74314
	S->X (FF)	(!A0 * A1)	0.35263	0.84391	4.60767
	S->X (RF)	(A0 * !A1)	0.40320	0.79272	3.32555

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	-	0.00922	0.00916	0.01722
	A0	-	0.00440	0.00435	0.01244
	A1	-	0.00960	0.00962	0.01711
	A1	-	0.00438	0.00441	0.01194
	S	(A0 * !A1)	0.00864	0.00882	0.01823
	S	(A0 * !A1)	0.01187	0.01207	0.02156
	S	(!A0 * A1)	0.01486	0.01486	0.02930
	S	(!A0 * A1)	0.00620	0.00621	0.02069
sky130_fd_sc_hs__mux2_2	A0	-	0.01195	0.01230	0.02001
	A0	-	0.00719	0.00756	0.01532
	A1	-	0.01243	0.01271	0.02043
	A1	-	0.00746	0.00776	0.01554
	S	(A0 * !A1)	0.01107	0.01197	0.02119
	S	(A0 * !A1)	0.01502	0.01592	0.02535
	S	(!A0 * A1)	0.01789	0.01797	0.03022
	S	(!A0 * A1)	0.00854	0.00864	0.02096
sky130_fd_sc_hs__mux2_4	A0	-	0.02248	0.02291	0.03580
	A0	-	0.01380	0.01426	0.02767
	A1	-	0.02270	0.02301	0.03703
	A1	-	0.01388	0.01422	0.02876
	S	(A0 * !A1)	0.02077	0.02198	0.03219
	S	(A0 * !A1)	0.02642	0.02765	0.03792
	S	(!A0 * A1)	0.03164	0.03159	0.04856
	S	(!A0 * A1)	0.01667	0.01662	0.03412

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00390	0.00428	0.01288
	A0	-	0.00878	0.00918	0.01744
	A1	-	0.00452	0.00476	0.01364
	A1	-	0.00961	0.00982	0.01839
	S	(A0 * !A1)	0.01248	0.01245	0.02134
	S	(A0 * !A1)	0.00921	0.00915	0.01783
	S	(!A0 * A1)	0.00482	0.00532	0.02079
	S	(!A0 * A1)	0.01341	0.01393	0.02911
sky130_fd_sc_hs__mux2_2	A0	-	0.00539	0.00595	0.01522
	A0	-	0.01016	0.01070	0.01919
	A1	-	0.00672	0.00708	0.01598
	A1	-	0.01153	0.01196	0.02023
	S	(A0 * !A1)	0.01436	0.01470	0.02328
	S	(A0 * !A1)	0.01037	0.01071	0.01903
	S	(!A0 * A1)	0.00662	0.00700	0.02198
	S	(!A0 * A1)	0.01593	0.01640	0.03072
sky130_fd_sc_hs__mux2_4	A0	-	0.01263	0.01349	0.02950
	A0	-	0.02132	0.02217	0.03713
	A1	-	0.01302	0.01383	0.03032
	A1	-	0.02187	0.02270	0.03803
	S	(A0 * !A1)	0.02630	0.02698	0.03640
	S	(A0 * !A1)	0.02056	0.02121	0.03053
	S	(!A0 * A1)	0.01533	0.01530	0.03485
	S	(!A0 * A1)	0.03021	0.03015	0.04954

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00150	0.00150	0.00150
	(A1 * S * X)	-0.00076	-0.00076	-0.00075
	(!A1 * S * !X)	0.00061	0.00061	0.00056
	(!A1 * S * !X)	-0.00178	-0.00181	-0.00186
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00142	0.00143	0.00142
	(A1 * S * X)	-0.00080	-0.00082	-0.00081
	(!A1 * S * !X)	0.00068	0.00068	0.00062
	(!A1 * S * !X)	-0.00167	-0.00171	-0.00178
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00254	0.00255	0.00254
	(A1 * S * X)	-0.00159	-0.00161	-0.00159
	(!A1 * S * !X)	0.00102	0.00102	0.00094
	(!A1 * S * !X)	-0.00354	-0.00361	-0.00365

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00140	-0.00144	-0.00150
	(A1 * S * X)	0.00083	0.00084	0.00078
	(!A1 * S * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * S * !X)	0.00186	0.00186	0.00186
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00129	-0.00134	-0.00142
	(A1 * S * X)	0.00091	0.00091	0.00084
	(!A1 * S * !X)	-0.00060	-0.00060	-0.00059
	(!A1 * S * !X)	0.00178	0.00178	0.00178
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00239	-0.00243	-0.00254
	(A1 * S * X)	0.00173	0.00172	0.00163
	(!A1 * S * !X)	-0.00092	-0.00094	-0.00092
	(!A1 * S * !X)	0.00365	0.00368	0.00365

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00165	0.00167	0.00165
	(A0 * !S * X)	-0.00090	-0.00091	-0.00089
	(!A0 * !S * !X)	0.00054	0.00054	0.00052
	(!A0 * !S * !X)	-0.00212	-0.00214	-0.00216
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00152	0.00152	0.00153
	(A0 * !S * X)	-0.00077	-0.00078	-0.00078
	(!A0 * !S * !X)	0.00049	0.00049	0.00047
	(!A0 * !S * !X)	-0.00192	-0.00194	-0.00197
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00253	0.00254	0.00253
	(A0 * !S * X)	-0.00161	-0.00161	-0.00160
	(!A0 * !S * !X)	0.00084	0.00084	0.00078
	(!A0 * !S * !X)	-0.00369	-0.00372	-0.00379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00158	-0.00161	-0.00165
	(A0 * !S * X)	0.00096	0.00096	0.00091
	(!A0 * !S * !X)	-0.00051	-0.00051	-0.00050
	(!A0 * !S * !X)	0.00216	0.00216	0.00216
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00143	-0.00146	-0.00153
	(A0 * !S * X)	0.00088	0.00087	0.00081
	(!A0 * !S * !X)	-0.00046	-0.00046	-0.00045
	(!A0 * !S * !X)	0.00198	0.00198	0.00197
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00233	-0.00244	-0.00253
	(A0 * !S * X)	0.00173	0.00172	0.00163
	(!A0 * !S * !X)	-0.00076	-0.00078	-0.00076
	(!A0 * !S * !X)	0.00379	0.00383	0.00379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00644	0.00620	0.01499
	(A0 * A1 * X)	0.00061	0.00033	0.00913
	(!A0 * !A1 * !X)	0.00645	0.00642	0.01514
	(!A0 * !A1 * !X)	0.00062	0.00060	0.00933
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00652	0.00629	0.01517
	(A0 * A1 * X)	-0.00002	-0.00029	0.00859
	(!A0 * !A1 * !X)	0.00615	0.00609	0.01491
	(!A0 * !A1 * !X)	-0.00038	-0.00043	0.00839
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01027	0.00981	0.01922
	(A0 * A1 * X)	0.00022	-0.00033	0.00915
	(!A0 * !A1 * !X)	0.01013	0.00992	0.01928
	(!A0 * !A1 * !X)	0.00007	-0.00019	0.00921

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00013	0.00050	0.00974
	(A0 * A1 * X)	0.00597	0.00637	0.01559
	(!A0 * !A1 * !X)	-0.00014	0.00021	0.00950
	(!A0 * !A1 * !X)	0.00567	0.00605	0.01535
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00040	-0.00008	0.00925
	(A0 * A1 * X)	0.00616	0.00649	0.01580
	(!A0 * !A1 * !X)	-0.00025	0.00005	0.00941
	(!A0 * !A1 * !X)	0.00627	0.00659	0.01597
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00012	-0.00008	0.00971
	(A0 * A1 * X)	0.00995	0.01000	0.01979
	(!A0 * !A1 * !X)	-0.00043	-0.00036	0.00957
	(!A0 * !A1 * !X)	0.00959	0.00974	0.01965

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00248	0.00260	0.00258	0.00285	0.00869	0.00556	0.73415
sky130_fd_sc_hs__mux4_2	0.00281	0.00266	0.00277	0.00270	0.00982	0.00575	1.47742
sky130_fd_sc_hs__mux4_4	0.00494	0.00476	0.00494	0.00495	0.01380	0.00859	2.87212

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.34974	0.49512
sky130_fd_sc_hs__mux4_2	0.00000	0.38104	0.52710
sky130_fd_sc_hs__mux4_4	0.00000	0.59537	0.82881

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)	0.22924	0.98745	7.82076
	A1->X (RR)	0.22991	0.98935	7.82088
	A2->X (RR)	0.23384	0.99790	7.86635
	A3->X (RR)	0.22927	0.99139	7.84861
	S0->X (-R)	0.35437	1.19476	8.47816
	S1->X (-R)	0.20038	0.97867	8.00730
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.24437	0.89842	7.85372
	A1->X (RR)	0.23493	0.89336	7.85429
	A2->X (RR)	0.22838	0.87821	7.80923
	A3->X (RR)	0.21869	0.87024	7.80015
	S0->X (-R)	0.34492	1.07895	8.44146
	S1->X (-R)	0.21195	0.89477	8.02725
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.27189	0.84764	8.07040
	A1->X (RR)	0.27352	0.85209	8.07622
	A2->X (RR)	0.27483	0.85400	8.07399
	A3->X (RR)	0.26272	0.84767	8.07108
	S0->X (-R)	0.44842	1.15318	9.01307
	S1->X (-R)	0.25039	0.91330	8.48174

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.40376	1.01784	5.02976
	A1->X (FF)	0.42162	1.03584	5.07543
	A2->X (FF)	0.44120	1.06261	5.13904
	A3->X (FF)	0.44243	1.06119	5.13304
	S0->X (-F)	0.40525	1.04134	5.09571
	S1->X (-F)	0.19901	0.77557	4.47809
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.51834	1.14106	5.51933
	A1->X (FF)	0.51369	1.13673	5.49586
	A2->X (FF)	0.50557	1.12131	5.45976
	A3->X (FF)	0.49305	1.10763	5.42299
	S0->X (-F)	0.48262	1.12169	5.51480
	S1->X (-F)	0.26537	0.85904	4.89752
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.50052	1.06970	5.45041
	A1->X (FF)	0.49522	1.06530	5.43502
	A2->X (FF)	0.53470	1.10288	5.49350
	A3->X (FF)	0.51782	1.08729	5.47549
	S0->X (-F)	0.49043	1.09515	5.59362
	S1->X (-F)	0.28789	0.85871	5.08198

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01460	0.01470	0.01961
	A0	0.00891	0.00904	0.01405
	A1	0.01325	0.01332	0.01813
	A1	0.00768	0.00775	0.01267
	A2	0.01319	0.01330	0.01815
	A2	0.00772	0.00783	0.01279
	A3	0.01221	0.01227	0.01712
	A3	0.00659	0.00665	0.01161
	S0	0.02335	0.02354	0.04969
	S0	0.02427	0.02486	0.04391
	S1	0.01094	0.01114	0.02793
	S1	0.01122	0.01270	0.02982
sky130_fd_sc_hs__mux4_2	A0	0.01781	0.01810	0.02303
	A0	0.01148	0.01177	0.01695
	A1	0.01664	0.01696	0.02194
	A1	0.01042	0.01073	0.01599
	A2	0.01563	0.01595	0.02088
	A2	0.00970	0.01001	0.01523
	A3	0.01474	0.01508	0.02017
	A3	0.00896	0.00930	0.01466
	S0	0.02772	0.02783	0.05486
	S0	0.02615	0.02700	0.04662
	S1	0.01338	0.01380	0.03069
	S1	0.01399	0.01576	0.03285

sky130_fd_sc_hs__mux4_4	**A0**	0.03292	0.03343	0.04307
	A0	0.02177	0.02227	0.03216
	A1	0.03030	0.03079	0.04045
	A1	0.01951	0.01998	0.02988
	A2	0.03026	0.03076	0.04038
	A2	0.01947	0.01996	0.02982
	A3	0.02856	0.02905	0.03868
	A3	0.01782	0.01831	0.02817
	S0	0.04678	0.04703	0.08722
	S0	0.04361	0.04497	0.07183
	S1	0.02390	0.02432	0.04671
	S1	0.02511	0.02794	0.05060

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00483	0.00488	0.01029
	A0	0.01051	0.01064	0.01588
	A1	0.00629	0.00633	0.01199
	A1	0.01183	0.01192	0.01714
	A2	0.00721	0.00729	0.01292
	A2	0.01269	0.01275	0.01795
	A3	0.00821	0.00823	0.01390
	A3	0.01379	0.01380	0.01904
	S0	0.02195	0.02174	0.04022
	S0	0.02165	0.02252	0.04995
	S1	0.01087	0.01190	0.02814
	S1	0.00980	0.01067	0.02843

sky130_fd_sc_hs__mux4_2	**A0**	0.00924	0.00895	0.01509
	A0	0.01555	0.01535	0.02081
	A1	0.01037	0.01011	0.01729
	A1	0.01656	0.01639	0.02173
	A2	0.01012	0.00986	0.01677
	A2	0.01605	0.01588	0.02136
	A3	0.01090	0.01073	0.01716
	A3	0.01664	0.01650	0.02193
	S0	0.02603	0.02548	0.04470
	S0	0.02546	0.02601	0.05401
	S1	0.01425	0.01513	0.03151
	S1	0.01341	0.01420	0.03207
sky130_fd_sc_hs__mux4_4	**A0**	0.01678	0.01633	0.02858
	A0	0.02794	0.02745	0.03792
	A1	0.01969	0.01930	0.03205
	A1	0.03043	0.03002	0.04032
	A2	0.01954	0.01873	0.03067
	A2	0.03034	0.02972	0.04012
	A3	0.02173	0.02111	0.03287
	A3	0.03235	0.03179	0.04210
	S0	0.02054	0.02102	0.06457
	S0	0.04173	0.04227	0.08465
	S1	0.02577	0.02712	0.04761
	S1	0.02336	0.02389	0.04756

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)**	0.00768	0.00752	0.01303
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00316	0.00299	0.00854
	(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)	0.00142	0.00122	0.00120
	(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)	-0.00134	-0.00156	-0.00157
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00851	0.00833	0.01400
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00338	0.00319	0.00888
	(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)	0.00158	0.00136	0.00133
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00129	-0.00152	-0.00155
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01435	0.01405	0.02505
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00551	0.00519	0.01623
	(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)	0.00276	0.00231	0.00224
	(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)	-0.00272	-0.00321	-0.00325

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)	0.00137	0.00127	0.00708
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00588	0.00578	0.01158
	(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)	-0.00118	-0.00120	-0.00119
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00157	0.00158	0.00157
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00219	0.00203	0.00804
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00732	0.00718	0.01316
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00130	-0.00133	-0.00132
	(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)	0.00154	0.00156	0.00155

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00305	0.00285	0.01443
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01191	0.01168	0.02323
	(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)	-0.00219	-0.00223	-0.00224
	(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)	0.00324	0.00326	0.00325

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)**	0.00634	0.00617	0.01165
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00198	0.00179	0.00729
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00133	0.00111	0.00108
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00147	-0.00171	-0.00173

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00735	0.00719	0.01287
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00235	0.00219	0.00788
	(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)	0.00137	0.00120	0.00118
	(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	-0.00165	-0.00166
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01177	0.01146	0.02247
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00334	0.00301	0.01407
	(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)	0.00264	0.00219	0.00213
	(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)	-0.00266	-0.00317	-0.00321

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)**	0.00281	0.00268	0.00842
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00718	0.00707	0.01276
	(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)	-0.00105	-0.00108	-0.00108
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00173	0.00175	0.00174
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00331	0.00318	0.00917
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00832	0.00820	0.01414
	(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)	-0.00115	-0.00118	-0.00118
	(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)	0.00166	0.00169	0.00167
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00589	0.00572	0.01721
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01434	0.01417	0.02559
	(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)	-0.00208	-0.00214	-0.00213
	(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)	0.00320	0.00320	0.00321

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)	0.00152	0.00128	0.00127
	(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)	-0.00127	-0.00150	-0.00153
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00789	0.00773	0.01313
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00337	0.00320	0.00861
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)	0.00171	0.00149	0.00146
	(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)	-0.00127	-0.00152	-0.00154
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00807	0.00788	0.01354
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00316	0.00297	0.00865

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)**	0.00285	0.00239	0.00234
	(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)	-0.00257	-0.00305	-0.00310
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01453	0.01421	0.02515
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00556	0.00523	0.01621

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)**	-0.00125	-0.00126	-0.00126
	(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)	0.00153	0.00153	0.00153
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00217	0.00207	0.00775
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00670	0.00661	0.01227

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)**	-0.00143	-0.00146	-0.00145
	(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)	0.00154	0.00155	0.00154
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00228	0.00212	0.00811
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00718	0.00703	0.01300
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)**	-0.00229	-0.00233	-0.00233
	(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)	0.00308	0.00310	0.00310
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00298	0.00277	0.01426
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01193	0.01175	0.02322

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)**	0.00693	0.00671	0.01216
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00228	0.00205	0.00750
	(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)	0.00166	0.00144	0.00141
	(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)	-0.00143	-0.00166	-0.00168
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00719	0.00704	0.01274
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00247	0.00230	0.00803
	(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)	0.00147	0.00127	0.00126
	(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)	-0.00137	-0.00160	-0.00161
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01281	0.01245	0.02339
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00401	0.00363	0.01461
	(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)	0.00274	0.00230	0.00225
	(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)	-0.00261	-0.00309	-0.00312

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)	0.00314	0.00298	0.00870
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00780	0.00765	0.01334
	(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)	-0.00138	-0.00141	-0.00141
	(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	0.00170	0.00169
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00304	0.00292	0.00895
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00778	0.00764	0.01365
	(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)	-0.00123	-0.00126	-0.00126
	(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)	0.00162	0.00163	0.00162

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00520	0.00496	0.01642
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01404	0.01380	0.02516
	(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)	-0.00218	-0.00226	-0.00225
	(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)	0.00311	0.00313	0.00313

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)**	0.00838	0.00827	0.01777
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00096	-0.00113	0.00840
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01273	0.01249	0.02207
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00470	0.00442	0.01410
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01216	0.01201	0.03011
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00130	0.00110	0.01922
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00877	0.00869	0.01820
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00077	-0.00090	0.00861
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01198	0.01198	0.02161
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00390	0.00385	0.01355
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01189	0.01190	0.02161
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00359	0.00356	0.01332
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01173	0.01173	0.02991
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00087	0.00081	0.01901
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01257	0.01255	0.03081
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00153	0.00146	0.01971
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01259	0.01234	0.02197
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00432	0.00403	0.01371
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01300	0.01298	0.03096
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00190	0.00182	0.01979

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00934	0.00918	0.01881
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00007	-0.00005	0.00954
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01348	0.01302	0.02273
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00580	0.00530	0.01507
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01309	0.01294	0.03151
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00217	0.00199	0.02058
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00931	0.00934	0.01886
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00004	-0.00007	0.00946
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01397	0.01339	0.02290
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00657	0.00596	0.01556
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01360	0.01302	0.02263
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00613	0.00549	0.01517
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01317	0.01297	0.03165
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00194	0.00169	0.02041
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01347	0.01322	0.03199
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00216	0.00193	0.02069
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01288	0.01241	0.02219
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00509	0.00458	0.01443
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01402	0.01385	0.03251
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00301	0.00280	0.02147

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01316	0.01310	0.02170
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00016	-0.00028	0.00835
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02060	0.01971	0.02857
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00997	0.00902	0.01805
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01982	0.01970	0.04467
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00351	0.00333	0.02835
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01340	0.01334	0.02203
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00019	-0.00029	0.00837
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02088	0.02041	0.02926
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00980	0.00934	0.01831
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02038	0.01993	0.02890
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00900	0.00852	0.01764
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01905	0.01899	0.04458
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00305	0.00288	0.02851
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02001	0.01994	0.04565
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00375	0.00362	0.02927
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02054	0.01959	0.02864
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00952	0.00857	0.01764
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02135	0.02114	0.04629
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00463	0.00437	0.02951

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)**	0.00067	0.00088	0.01092
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01002	0.01025	0.02030
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00627	0.00657	0.01691
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01429	0.01464	0.02481
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00258	0.00306	0.02196
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01345	0.01395	0.03286
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00046	0.00064	0.01061
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01000	0.01022	0.02021
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00594	0.00631	0.01664
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01402	0.01443	0.02464
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00619	0.00656	0.01678
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01451	0.01489	0.02501
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00178	0.00228	0.02132
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01265	0.01318	0.03222
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00110	0.00158	0.02055
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01215	0.01269	0.03164
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00661	0.00685	0.01711
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01491	0.01518	0.02528
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00191	0.00236	0.02122
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01302	0.01351	0.03237

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00076	-0.00047	0.00969
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00847	0.00875	0.01897
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00487	0.00517	0.01559
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01261	0.01287	0.02313
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00129	0.00178	0.02120
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01219	0.01272	0.03215
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00060	-0.00039	0.00974
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00873	0.00901	0.01913
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00542	0.00572	0.01611
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01283	0.01311	0.02335
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00593	0.00618	0.01646
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01346	0.01371	0.02382
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00083	0.00131	0.02079
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01203	0.01252	0.03205
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00066	0.00104	0.02051
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01198	0.01238	0.03185
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00562	0.00588	0.01620
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01347	0.01373	0.02385
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00049	0.00097	0.02029
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01151	0.01204	0.03134

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00104	-0.00081	0.00860
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01220	0.01246	0.02196
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00975	0.00980	0.01979
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02035	0.02045	0.03020
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00165	0.00230	0.02852
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01790	0.01860	0.04485
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00096	-0.00076	0.00859
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01264	0.01289	0.02222
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00883	0.00916	0.01900
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01989	0.02024	0.02997
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00975	0.01003	0.01966
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02119	0.02147	0.03097
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00138	0.00223	0.02911
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01737	0.01828	0.04517
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00073	0.00155	0.02833
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01707	0.01794	0.04469
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01027	0.01026	0.01977
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02137	0.02135	0.03069
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00044	0.00107	0.02719
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01721	0.01785	0.04393

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)	0.00555	0.00572	0.01610
	(A1 * A3 * S0 * X)	-0.00036	-0.00024	0.01016
	(A0 * A2 * !S0 * X)	0.00555	0.00572	0.01610
	(A0 * A2 * !S0 * X)	-0.00036	-0.00024	0.01016
	(!A1 * !A3 * S0 * !X)	0.00585	0.00597	0.01644
	(!A1 * !A3 * S0 * !X)	-0.00033	-0.00021	0.01025
	(!A0 * !A2 * !S0 * !X)	0.00585	0.00597	0.01644
	(!A0 * !A2 * !S0 * !X)	-0.00033	-0.00021	0.01025
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00587	0.00600	0.01632
	(A1 * A3 * S0 * X)	-0.00031	-0.00020	0.01013
	(A0 * A2 * !S0 * X)	0.00587	0.00600	0.01632
	(A0 * A2 * !S0 * X)	-0.00031	-0.00021	0.01013
	(!A1 * !A3 * S0 * !X)	0.00595	0.00611	0.01649
	(!A1 * !A3 * S0 * !X)	-0.00040	-0.00027	0.01013
	(!A0 * !A2 * !S0 * !X)	0.00595	0.00611	0.01649
	(!A0 * !A2 * !S0 * !X)	-0.00040	-0.00027	0.01013
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00850	0.00842	0.01799
	(A1 * A3 * S0 * X)	-0.00025	-0.00039	0.00921
	(A0 * A2 * !S0 * X)	0.00850	0.00842	0.01799
	(A0 * A2 * !S0 * X)	-0.00025	-0.00039	0.00921
	(!A1 * !A3 * S0 * !X)	0.00868	0.00872	0.01824
	(!A1 * !A3 * S0 * !X)	-0.00056	-0.00058	0.00900
	(!A0 * !A2 * !S0 * !X)	0.00868	0.00871	0.01824
	(!A0 * !A2 * !S0 * !X)	-0.00056	-0.00058	0.00900

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)	-0.00064	-0.00009	0.01062
	(A1 * A3 * S0 * X)	0.00529	0.00585	0.01655
	(A0 * A2 * !S0 * X)	-0.00064	-0.00009	0.01062
	(A0 * A2 * !S0 * X)	0.00529	0.00585	0.01655
	(!A1 * !A3 * S0 * !X)	-0.00068	-0.00022	0.01041
	(!A1 * !A3 * S0 * !X)	0.00550	0.00598	0.01660
	(!A0 * !A2 * !S0 * !X)	-0.00068	-0.00023	0.01041
	(!A0 * !A2 * !S0 * !X)	0.00549	0.00599	0.01660
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00067	-0.00014	0.01051
	(A1 * A3 * S0 * X)	0.00550	0.00607	0.01671
	(A0 * A2 * !S0 * X)	-0.00067	-0.00014	0.01051
	(A0 * A2 * !S0 * X)	0.00550	0.00607	0.01671
	(!A1 * !A3 * S0 * !X)	-0.00059	-0.00014	0.01045
	(!A1 * !A3 * S0 * !X)	0.00575	0.00623	0.01681
	(!A0 * !A2 * !S0 * !X)	-0.00059	-0.00014	0.01045
	(!A0 * !A2 * !S0 * !X)	0.00575	0.00623	0.01681
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00102	-0.00070	0.00939
	(A1 * A3 * S0 * X)	0.00773	0.00807	0.01816
	(A0 * A2 * !S0 * X)	-0.00102	-0.00070	0.00939
	(A0 * A2 * !S0 * X)	0.00773	0.00808	0.01816
	(!A1 * !A3 * S0 * !X)	-0.00071	-0.00046	0.00942
	(!A1 * !A3 * S0 * !X)	0.00854	0.00884	0.01870
	(!A0 * !A2 * !S0 * !X)	-0.00071	-0.00046	0.00942
	(!A0 * !A2 * !S0 * !X)	0.00854	0.00884	0.01870

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00239	0.00290	0.70952
sky130_fd_sc_hs__nand2b_2	0.00271	0.00552	1.32314
sky130_fd_sc_hs__nand2b_4	0.00401	0.00831	1.49847

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.11997	0.18840
sky130_fd_sc_hs__nand2b_2	0.00000	0.12781	0.15334
sky130_fd_sc_hs__nand2b_4	0.00000	0.27746	0.44282

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)	0.09840	0.79363	7.44438
	B->Y (FR)	0.06191	0.94925	11.03290
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.09430	0.67250	6.96431
	B->Y (FR)	0.05737	0.84133	10.99590
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.11543	0.70709	7.45171
	B->Y (FR)	0.07836	0.85849	11.20840

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)	0.12774	0.72914	5.54092
	B->Y (RF)	0.04586	0.65814	7.57609
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.13761	0.71510	5.83136
	B->Y (RF)	0.04571	0.57353	7.52184
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.10954	0.53390	3.76209
	B->Y (RF)	0.03995	0.41827	5.48191

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	0.00659	0.00674	0.01591
	A_N	0.00349	0.00365	0.01284
	B	0.00034	0.00049	0.00183
	B	0.00392	0.00377	0.00543
sky130_fd_sc_hs__nand2b_2	A_N	0.00877	0.00920	0.01774
	A_N	0.00552	0.00598	0.01452
	B	0.00037	0.00067	0.00337
	B	0.00735	0.00767	0.01040
sky130_fd_sc_hs__nand2b_4	A_N	0.01164	0.01238	0.02771
	A_N	0.00694	0.00769	0.02309
	B	0.00033	0.00079	0.00517
	B	0.01087	0.01126	0.01298

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00340	0.00414	0.01363
	A_N	0.00649	0.00723	0.01642
	B	0.00449	0.00448	0.00512
	B	0.00090	0.00086	0.00153
sky130_fd_sc_hs__nand2b_2	A_N	0.00585	0.00665	0.01735
	A_N	0.00909	0.00987	0.01967
	B	0.00865	0.00866	0.00997
	B	0.00160	0.00155	0.00293
sky130_fd_sc_hs__nand2b_4	A_N	0.01002	0.01129	0.02805
	A_N	0.01473	0.01597	0.03273
	B	0.01499	0.01492	0.01750
	B	0.00438	0.00432	0.00640

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00525	0.00526	0.01436
	(!B * Y)	0.00196	0.00197	0.01107
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00743	0.00742	0.01720
	(!B * Y)	0.00376	0.00373	0.01352
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00907	0.00907	0.02523
	(!B * Y)	0.00367	0.00364	0.01983

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00019	0.00057	0.01008
	(!B * Y)	0.00348	0.00387	0.01337
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00082	0.00109	0.01113
	(!B * Y)	0.00452	0.00480	0.01482
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00140	0.00201	0.01906
	(!B * Y)	0.00687	0.00751	0.02452

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00151	0.00154	0.00152
	(A_N * Y)	-0.00173	-0.00175	-0.00173
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00262	0.00263	0.00262
	(A_N * Y)	-0.00358	-0.00359	-0.00357
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00527	0.00532	0.00527
	(A_N * Y)	-0.00374	-0.00375	-0.00373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00144	-0.00152	-0.00152
	(A_N * Y)	0.00180	0.00178	0.00175
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00248	-0.00263	-0.00262
	(A_N * Y)	0.00368	0.00363	0.00358
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00493	-0.00526	-0.00527
	(A_N * Y)	0.00402	0.00383	0.00376

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00291	0.00282	0.73387
sky130_fd_sc_hs__nand2_2	0.00559	0.00553	1.43406
sky130_fd_sc_hs__nand2_4	0.00837	0.00812	1.45888
sky130_fd_sc_hs__nand2_8	0.01605	0.01605	2.76150

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2_1	0.00000	0.03543	0.05688
sky130_fd_sc_hs__nand2_2	0.00000	0.07009	0.11375
sky130_fd_sc_hs__nand2_4	0.00000	0.11257	0.14840
sky130_fd_sc_hs__nand2_8	0.00000	0.21976	0.29494

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)	0.04819	0.93829	11.10570
	B->Y (FR)	0.05945	0.94995	11.11800
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.04162	0.81997	11.09140
	B->Y (FR)	0.05646	0.83270	11.06240
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.05976	0.83928	11.20250
	B->Y (FR)	0.08928	0.86770	11.18500
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.04734	0.73311	10.97310
	B->Y (FR)	0.07466	0.74887	10.72090

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.03657	0.71037	8.32975
	B->Y (RF)	0.04206	0.66237	7.73237
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.03402	0.64369	8.69938
	B->Y (RF)	0.04339	0.59816	8.07184
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.03093	0.47158	6.29166
	B->Y (RF)	0.03913	0.42314	5.49701
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.02690	0.42024	6.49063
	B->Y (RF)	0.03530	0.36009	5.41770

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00038	-0.00015	0.00113
	A	0.00340	0.00364	0.00450
	B	0.00009	0.00025	0.00154
	B	0.00466	0.00484	0.00570
sky130_fd_sc_hs__nand2_2	A	-0.00124	-0.00070	0.00186
	A	0.00610	0.00664	0.00837
	B	0.00046	0.00074	0.00325
	B	0.00954	0.00981	0.01143
sky130_fd_sc_hs__nand2_4	A	-0.00230	-0.00186	0.00282
	A	0.00861	0.00885	0.01127
	B	0.00077	0.00106	0.00551
	B	0.01508	0.01538	0.01731
sky130_fd_sc_hs__nand2_8	A	-0.00533	-0.00400	0.00663
	A	0.01589	0.01733	0.02799
	B	0.00042	0.00102	0.01016
	B	0.02870	0.02906	0.03861

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00350	0.00353	0.00452
	A	-0.00027	-0.00026	0.00055
	B	0.00439	0.00438	0.00514
	B	-0.00022	-0.00025	0.00040
sky130_fd_sc_hs__nand2_2	A	0.00686	0.00710	0.00873
	A	-0.00044	-0.00027	0.00130
	B	0.00884	0.00880	0.01029
	B	-0.00034	-0.00040	0.00090
sky130_fd_sc_hs__nand2_4	A	0.01273	0.01274	0.01767
	A	0.00181	0.00181	0.00444
	B	0.01651	0.01638	0.01856
	B	0.00197	0.00182	0.00393
sky130_fd_sc_hs__nand2_8	A	0.02006	0.02079	0.02947
	A	-0.00113	-0.00049	0.00510
	B	0.02803	0.02793	0.03345
	B	-0.00072	-0.00089	0.00362

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00050	0.00050	0.00048
	(!B * Y)	-0.00207	-0.00209	-0.00211
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00096	0.00096	0.00089
	(!B * Y)	-0.00402	-0.00405	-0.00413
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00188	0.00188	0.00176
	(!B * Y)	-0.00475	-0.00478	-0.00495
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00371	0.00367	0.00348
	(!B * Y)	-0.00916	-0.00913	-0.00956

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00048	-0.00047	-0.00047
	(!B * Y)	0.00212	0.00213	0.00211
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00086	-0.00087	-0.00086
	(!B * Y)	0.00413	0.00418	0.00415
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00169	-0.00172	-0.00169
	(!B * Y)	0.00495	0.00504	0.00496
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00336	-0.00341	-0.00335
	(!B * Y)	0.00956	0.00973	0.00958

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00128	0.00129	0.00128
	(!A * Y)	-0.00181	-0.00183	-0.00182
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00247	0.00250	0.00248
	(!A * Y)	-0.00356	-0.00358	-0.00356
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00489	0.00496	0.00491
	(!A * Y)	-0.00370	-0.00373	-0.00370
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.00975	0.00982	0.00982
	(!A * Y)	-0.00740	-0.00743	-0.00741

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	**(!A * Y)**	-0.00120	-0.00128	-0.00128
	(!A * Y)	0.00188	0.00185	0.00183
sky130_fd_sc_hs__nand2_2	**(!A * Y)**	-0.00230	-0.00249	-0.00248
	(!A * Y)	0.00368	0.00363	0.00358
sky130_fd_sc_hs__nand2_4	**(!A * Y)**	-0.00455	-0.00495	-0.00491
	(!A * Y)	0.00397	0.00379	0.00373
sky130_fd_sc_hs__nand2_8	**(!A * Y)**	-0.00916	-0.00982	-0.00982
	(!A * Y)	0.00799	0.00759	0.00746

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00224	0.00292	0.00284	0.72912
sky130_fd_sc_hs__nand3b_2	0.00268	0.00556	0.00553	1.40485
sky130_fd_sc_hs__nand3b_4	0.00381	0.00789	0.00796	1.35025

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3b_1	0.00000	0.11550	0.18857
sky130_fd_sc_hs__nand3b_2	0.00000	0.11860	0.21048
sky130_fd_sc_hs__nand3b_4	0.00000	0.26261	0.44220

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)	0.10210	0.77605	7.25897
	B->Y (FR)	0.07106	0.96574	11.19670
	C->Y (FR)	0.07867	0.96502	11.09950
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.10082	0.67405	7.09393
	B->Y (FR)	0.06179	0.83177	10.94430
	C->Y (FR)	0.07131	0.84666	11.02630
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.12320	0.72028	7.25724
	B->Y (FR)	0.08454	0.84709	10.72950
	C->Y (FR)	0.11192	0.89299	10.99040

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)	0.14261	0.88700	7.58450
	B->Y (RF)	0.07033	0.83428	9.63175
	C->Y (RF)	0.07589	0.79189	9.06312
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.15917	0.87837	8.46935
	B->Y (RF)	0.07006	0.75647	10.21250
	C->Y (RF)	0.07539	0.70242	9.47747
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.13222	0.68993	6.06717
	B->Y (RF)	0.07042	0.63161	8.15637
	C->Y (RF)	0.07687	0.53107	6.78067

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	0.00640	0.00655	0.01571
	A_N	0.00369	0.00384	0.01308
	B	0.00063	0.00073	0.00192
	B	0.00430	0.00414	0.00429
	C	0.00105	0.00115	0.00233
	C	0.00533	0.00516	0.00619
sky130_fd_sc_hs__nand3b_2	A_N	0.00910	0.00949	0.01927
	A_N	0.00605	0.00645	0.01623
	B	0.00089	0.00104	0.00341
	B	0.00828	0.00817	0.01082
	C	0.00179	0.00199	0.00427
	C	0.01078	0.01068	0.01330
sky130_fd_sc_hs__nand3b_4	A_N	0.01202	0.01296	0.02893
	A_N	0.00737	0.00832	0.02444
	B	0.00115	0.00096	0.00516
	B	0.01143	0.01120	0.01555
	C	0.00279	0.00287	0.00697
	C	0.01667	0.01676	0.02083

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00440	0.00496	0.01453
	A_N	0.00713	0.00768	0.01720
	B	0.00541	0.00535	0.00592
	B	0.00173	0.00165	0.00223
	C	0.00623	0.00616	0.00681
	C	0.00187	0.00179	0.00237
sky130_fd_sc_hs__nand3b_2	A_N	0.00784	0.00869	0.01855
	A_N	0.01088	0.01174	0.02156
	B	0.01023	0.00999	0.01128
	B	0.00283	0.00268	0.00382
	C	0.01202	0.01190	0.01315
	C	0.00284	0.00267	0.00388
sky130_fd_sc_hs__nand3b_4	A_N	0.01071	0.01177	0.02854
	A_N	0.01537	0.01640	0.03312
	B	0.01508	0.01500	0.01683
	B	0.00474	0.00459	0.00629
	C	0.01967	0.01961	0.02211
	C	0.00535	0.00519	0.00707

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)	0.00500	0.00504	0.01418
	(B * !C * Y)	0.00192	0.00196	0.01110
	(!B * Y)	0.00498	0.00502	0.01417
	(!B * Y)	0.00192	0.00196	0.01111
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00772	0.00771	0.01746
	(B * !C * Y)	0.00381	0.00379	0.01355
	(!B * Y)	0.00761	0.00759	0.01736
	(!B * Y)	0.00381	0.00379	0.01355
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00916	0.00920	0.02513
	(B * !C * Y)	0.00362	0.00362	0.01958
	(!B * Y)	0.00898	0.00902	0.02498
	(!B * Y)	0.00357	0.00358	0.01956

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)	0.00033	0.00074	0.01027
	(B * !C * Y)	0.00349	0.00390	0.01342
	(!B * Y)	0.00034	0.00074	0.01029
	(!B * Y)	0.00341	0.00382	0.01335
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00077	0.00103	0.01102
	(B * !C * Y)	0.00483	0.00510	0.01506
	(!B * Y)	0.00087	0.00114	0.01114
	(!B * Y)	0.00469	0.00497	0.01496
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00152	0.00215	0.01893
	(B * !C * Y)	0.00742	0.00807	0.02475
	(!B * Y)	0.00165	0.00230	0.01913
	(!B * Y)	0.00712	0.00778	0.02460

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)	0.00142	0.00143	0.00142
	(A_N * C * Y)	-0.00178	-0.00179	-0.00178
	(A_N * !C * Y)	0.00096	0.00096	0.00096
	(A_N * !C * Y)	-0.00179	-0.00179	-0.00178
	(!A_N * !C * Y)	0.00054	0.00054	0.00055
	(!A_N * !C * Y)	-0.00205	-0.00206	-0.00205
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00263	0.00265	0.00263
	(A_N * C * Y)	-0.00366	-0.00367	-0.00366
	(A_N * !C * Y)	0.00177	0.00177	0.00176
	(A_N * !C * Y)	-0.00368	-0.00369	-0.00367
	(!A_N * !C * Y)	0.00117	0.00117	0.00119
	(!A_N * !C * Y)	-0.00390	-0.00392	-0.00388
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00533	0.00532	0.00533
	(A_N * C * Y)	-0.00357	-0.00356	-0.00355
	(A_N * !C * Y)	0.00317	0.00320	0.00317
	(A_N * !C * Y)	-0.00392	-0.00394	-0.00392
	(!A_N * !C * Y)	0.00216	0.00218	0.00224
	(!A_N * !C * Y)	-0.00419	-0.00423	-0.00419

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)	-0.00132	-0.00142	-0.00142
	(A_N * C * Y)	0.00186	0.00182	0.00179
	(A_N * !C * Y)	-0.00096	-0.00096	-0.00096
	(A_N * !C * Y)	0.00187	0.00189	0.00181
	(!A_N * !C * Y)	-0.00051	-0.00051	-0.00052
	(!A_N * !C * Y)	0.00209	0.00210	0.00207
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00246	-0.00264	-0.00263
	(A_N * C * Y)	0.00383	0.00372	0.00367
	(A_N * !C * Y)	-0.00177	-0.00177	-0.00176
	(A_N * !C * Y)	0.00386	0.00389	0.00373
	(!A_N * !C * Y)	-0.00108	-0.00110	-0.00113
	(!A_N * !C * Y)	0.00397	0.00401	0.00394
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00473	-0.00532	-0.00533
	(A_N * C * Y)	0.00413	0.00364	0.00359
	(A_N * !C * Y)	-0.00317	-0.00320	-0.00317
	(A_N * !C * Y)	0.00433	0.00432	0.00403
	(!A_N * !C * Y)	-0.00207	-0.00209	-0.00215
	(!A_N * !C * Y)	0.00433	0.00437	0.00426

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)	0.00122	0.00124	0.00122
	(A_N * B * Y)	-0.00176	-0.00177	-0.00176
	(A_N * !B * Y)	0.00123	0.00124	0.00123
	(A_N * !B * Y)	-0.00175	-0.00177	-0.00176
	(!A_N * !B * Y)	0.00118	0.00119	0.00119
	(!A_N * !B * Y)	-0.00180	-0.00181	-0.00181
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00265	0.00265	0.00265
	(A_N * B * Y)	-0.00354	-0.00354	-0.00353
	(A_N * !B * Y)	0.00267	0.00268	0.00266
	(A_N * !B * Y)	-0.00354	-0.00356	-0.00354
	(!A_N * !B * Y)	0.00237	0.00239	0.00236
	(!A_N * !B * Y)	-0.00384	-0.00386	-0.00383
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00506	0.00508	0.00505
	(A_N * B * Y)	-0.00363	-0.00364	-0.00362
	(A_N * !B * Y)	0.00504	0.00510	0.00505
	(A_N * !B * Y)	-0.00367	-0.00370	-0.00366
	(!A_N * !B * Y)	0.00469	0.00471	0.00468
	(!A_N * !B * Y)	-0.00408	-0.00409	-0.00404

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)	-0.00116	-0.00123	-0.00122
	(A_N * B * Y)	0.00177	0.00177	0.00177
	(A_N * !B * Y)	-0.00120	-0.00124	-0.00123
	(A_N * !B * Y)	0.00176	0.00179	0.00177
	(!A_N * !B * Y)	-0.00114	-0.00119	-0.00119
	(!A_N * !B * Y)	0.00183	0.00184	0.00182
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00252	-0.00265	-0.00265
	(A_N * B * Y)	0.00354	0.00357	0.00355
	(A_N * !B * Y)	-0.00258	-0.00268	-0.00266
	(A_N * !B * Y)	0.00354	0.00359	0.00355
	(!A_N * !B * Y)	-0.00227	-0.00239	-0.00236
	(!A_N * !B * Y)	0.00386	0.00388	0.00384
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00482	-0.00508	-0.00505
	(A_N * B * Y)	0.00369	0.00367	0.00362
	(A_N * !B * Y)	-0.00484	-0.00510	-0.00505
	(A_N * !B * Y)	0.00373	0.00371	0.00366
	(!A_N * !B * Y)	-0.00442	-0.00471	-0.00468
	(!A_N * !B * Y)	0.00416	0.00411	0.00404

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00295	0.00299	0.00291	0.73570
sky130_fd_sc_hs__nand3_2	0.00555	0.00599	0.00550	1.23679
sky130_fd_sc_hs__nand3_4	0.00812	0.00801	0.00804	1.44646

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	0.03085	0.08757
sky130_fd_sc_hs__nand3_2	0.00000	0.06000	0.17064
sky130_fd_sc_hs__nand3_4	0.00000	0.09569	0.17231

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)	0.05821	0.94818	11.12930
	B->Y (FR)	0.07137	0.96094	11.12900
	C->Y (FR)	0.07933	0.96845	11.15580
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.05179	0.84622	11.06650
	B->Y (FR)	0.06318	0.81193	10.28570
	C->Y (FR)	0.07326	0.82419	10.32340
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.05829	0.83549	11.15760
	B->Y (FR)	0.08811	0.86102	11.09370
	C->Y (FR)	0.10584	0.87622	10.99760

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.05615	0.85356	10.11910
	B->Y (RF)	0.06851	0.83647	9.70501
	C->Y (RF)	0.07312	0.79456	9.13595
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.04556	0.72108	9.50092
	B->Y (RF)	0.06249	0.70311	9.10791
	C->Y (RF)	0.06971	0.66281	8.52121
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.03531	0.55425	7.45465
	B->Y (RF)	0.05108	0.52439	6.86906
	C->Y (RF)	0.05687	0.47521	6.13376

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00027	-0.00008	0.00114
	A	0.00375	0.00394	0.00476
	B	0.00041	0.00050	0.00167
	B	0.00521	0.00531	0.00607
	C	0.00074	0.00083	0.00200
	C	0.00640	0.00622	0.00718
sky130_fd_sc_hs__nand3_2	A	-0.00112	-0.00067	0.00187
	A	0.00650	0.00694	0.00951
	B	0.00064	0.00078	0.00343
	B	0.01021	0.01038	0.01318
	C	0.00192	0.00210	0.00479
	C	0.01295	0.01288	0.01590
sky130_fd_sc_hs__nand3_4	A	-0.00232	-0.00170	0.00255
	A	0.00875	0.00912	0.01348
	B	0.00086	0.00080	0.00507
	B	0.01527	0.01519	0.01945
	C	0.00273	0.00297	0.00699
	C	0.02070	0.02093	0.02491

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00484	0.00477	0.00561
	A	0.00083	0.00088	0.00157
	B	0.00573	0.00566	0.00623
	B	0.00088	0.00081	0.00138
	C	0.00661	0.00655	0.00719
	C	0.00084	0.00076	0.00134
sky130_fd_sc_hs__nand3_2	A	0.00823	0.00833	0.00989
	A	0.00064	0.00069	0.00227
	B	0.01023	0.01008	0.01149
	B	0.00055	0.00037	0.00167
	C	0.01193	0.01176	0.01324
	C	0.00062	0.00044	0.00180
sky130_fd_sc_hs__nand3_4	A	0.01226	0.01226	0.01473
	A	0.00124	0.00124	0.00370
	B	0.01601	0.01585	0.01773
	B	0.00138	0.00123	0.00312
	C	0.01973	0.01966	0.02253
	C	0.00120	0.00102	0.00291

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00049	0.00049	0.00045
	(B * !C * Y)	-0.00201	-0.00201	-0.00210
	(!B * Y)	0.00049	0.00049	0.00047
	(!B * Y)	-0.00207	-0.00208	-0.00211
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00098	0.00098	0.00086
	(B * !C * Y)	-0.00374	-0.00375	-0.00397
	(!B * Y)	0.00099	0.00099	0.00092
	(!B * Y)	-0.00388	-0.00391	-0.00399
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00182	0.00181	0.00161
	(B * !C * Y)	-0.00437	-0.00438	-0.00479
	(!B * Y)	0.00183	0.00183	0.00171
	(!B * Y)	-0.00464	-0.00468	-0.00484

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00044	-0.00044	-0.00044
	(B * !C * Y)	0.00211	0.00213	0.00212
	(!B * Y)	-0.00045	-0.00046	-0.00045
	(!B * Y)	0.00211	0.00213	0.00212
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00084	-0.00084	-0.00083
	(B * !C * Y)	0.00402	0.00403	0.00400
	(!B * Y)	-0.00090	-0.00089	-0.00089
	(!B * Y)	0.00401	0.00403	0.00400
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00160	-0.00161	-0.00158
	(B * !C * Y)	0.00486	0.00492	0.00485
	(!B * Y)	-0.00165	-0.00167	-0.00164
	(!B * Y)	0.00484	0.00493	0.00485

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00061	0.00061	0.00062
	(A * !C * Y)	-0.00182	-0.00182	-0.00180
	(!A * C * Y)	0.00125	0.00126	0.00125
	(!A * C * Y)	-0.00182	-0.00183	-0.00181
	(!A * !C * Y)	0.00075	0.00075	0.00074
	(!A * !C * Y)	-0.00182	-0.00183	-0.00182
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00121	0.00123	0.00124
	(A * !C * Y)	-0.00378	-0.00382	-0.00377
	(!A * C * Y)	0.00246	0.00249	0.00247
	(!A * C * Y)	-0.00377	-0.00380	-0.00377
	(!A * !C * Y)	0.00155	0.00157	0.00155
	(!A * !C * Y)	-0.00380	-0.00383	-0.00381
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00222	0.00223	0.00225
	(A * !C * Y)	-0.00374	-0.00375	-0.00369
	(!A * C * Y)	0.00486	0.00493	0.00489
	(!A * C * Y)	-0.00372	-0.00375	-0.00372
	(!A * !C * Y)	0.00278	0.00279	0.00277
	(!A * !C * Y)	-0.00378	-0.00379	-0.00377

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00057	-0.00058	-0.00059
	(A * !C * Y)	0.00186	0.00187	0.00183
	(!A * C * Y)	-0.00114	-0.00126	-0.00125
	(!A * C * Y)	0.00189	0.00185	0.00182
	(!A * !C * Y)	-0.00075	-0.00075	-0.00074
	(!A * !C * Y)	0.00191	0.00192	0.00185
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00115	-0.00115	-0.00118
	(A * !C * Y)	0.00391	0.00391	0.00383
	(!A * C * Y)	-0.00225	-0.00249	-0.00247
	(!A * C * Y)	0.00390	0.00384	0.00379
	(!A * !C * Y)	-0.00155	-0.00157	-0.00155
	(!A * !C * Y)	0.00403	0.00402	0.00387
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00209	-0.00208	-0.00214
	(A * !C * Y)	0.00396	0.00395	0.00380
	(!A * C * Y)	-0.00443	-0.00490	-0.00489
	(!A * C * Y)	0.00412	0.00377	0.00375
	(!A * !C * Y)	-0.00278	-0.00279	-0.00277
	(!A * !C * Y)	0.00413	0.00417	0.00387

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00131	0.00133	0.00132
	(A * !B * Y)	-0.00182	-0.00184	-0.00183
	(!A * B * Y)	0.00129	0.00131	0.00130
	(!A * B * Y)	-0.00182	-0.00184	-0.00183
	(!A * !B * Y)	0.00131	0.00133	0.00132
	(!A * !B * Y)	-0.00182	-0.00184	-0.00183
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00243	0.00245	0.00243
	(A * !B * Y)	-0.00360	-0.00362	-0.00360
	(!A * B * Y)	0.00238	0.00239	0.00238
	(!A * B * Y)	-0.00360	-0.00360	-0.00359
	(!A * !B * Y)	0.00243	0.00245	0.00243
	(!A * !B * Y)	-0.00360	-0.00362	-0.00360
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00494	0.00496	0.00493
	(A * !B * Y)	-0.00378	-0.00379	-0.00378
	(!A * B * Y)	0.00479	0.00485	0.00480
	(!A * B * Y)	-0.00377	-0.00379	-0.00377
	(!A * !B * Y)	0.00493	0.00491	0.00491
	(!A * !B * Y)	-0.00378	-0.00378	-0.00378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00128	-0.00133	-0.00132
	(A * !B * Y)	0.00183	0.00185	0.00184
	(!A * B * Y)	-0.00122	-0.00131	-0.00130
	(!A * B * Y)	0.00184	0.00184	0.00183
	(!A * !B * Y)	-0.00128	-0.00133	-0.00132
	(!A * !B * Y)	0.00182	0.00185	0.00184
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00233	-0.00245	-0.00243
	(A * !B * Y)	0.00360	0.00365	0.00361
	(!A * B * Y)	-0.00221	-0.00239	-0.00238
	(!A * B * Y)	0.00361	0.00364	0.00361
	(!A * !B * Y)	-0.00234	-0.00245	-0.00243
	(!A * !B * Y)	0.00360	0.00365	0.00361
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00472	-0.00496	-0.00493
	(A * !B * Y)	0.00378	0.00383	0.00379
	(!A * B * Y)	-0.00448	-0.00485	-0.00480
	(!A * B * Y)	0.00381	0.00382	0.00379
	(!A * !B * Y)	-0.00475	-0.00491	-0.00491
	(!A * !B * Y)	0.00378	0.00383	0.00379

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00227	0.00220	0.00298	0.00301	0.59632
sky130_fd_sc_hs__nand4bb_2	0.00262	0.00259	0.00563	0.00556	1.02344
sky130_fd_sc_hs__nand4bb_4	0.00370	0.00381	0.01097	0.01100	1.82767

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4bb_1	0.00000	0.19248	0.30977
sky130_fd_sc_hs__nand4bb_2	0.00000	0.16579	0.30681
sky130_fd_sc_hs__nand4bb_4	0.00000	0.42772	0.63219

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)	0.11539	0.75589	6.38096
	B_N->Y (RR)	0.13131	0.77182	6.37807
	C->Y (FR)	0.09203	0.93430	10.02460
	D->Y (FR)	0.10179	0.94586	10.04550
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.10738	0.62245	5.47585
	B_N->Y (RR)	0.12455	0.62841	5.27890
	C->Y (FR)	0.07579	0.78373	9.20221
	D->Y (FR)	0.08504	0.79789	9.25346
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.13026	0.59782	5.32089
	B_N->Y (RR)	0.15125	0.62294	5.39758
	C->Y (FR)	0.07316	0.70316	8.94867
	D->Y (FR)	0.08176	0.71765	8.99327

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)	0.16757	0.99641	8.24388
	B_N->Y (FF)	0.18957	1.02218	8.27478
	C->Y (RF)	0.11903	0.92703	9.78413
	D->Y (RF)	0.12726	0.90462	9.34587
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.18069	0.94403	8.46622
	B_N->Y (FF)	0.21940	0.99009	8.53339
	C->Y (RF)	0.11753	0.79425	9.51760
	D->Y (RF)	0.12485	0.77656	9.08814
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.18301	0.83876	8.16191
	B_N->Y (FF)	0.21411	0.87523	8.20653
	C->Y (RF)	0.11960	0.68769	9.33746
	D->Y (RF)	0.12635	0.66361	8.82923

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	0.00655	0.00668	0.01589
	A_N	0.00420	0.00432	0.01371
	B_N	0.00717	0.00723	0.01639
	B_N	0.00488	0.00495	0.01430
	C	0.00119	0.00120	0.00252
	C	0.00519	0.00520	0.00657
	D	0.00172	0.00175	0.00305
	D	0.00642	0.00646	0.00780
sky130_fd_sc_hs__nand4bb_2	A_N	0.00936	0.00972	0.01955
	A_N	0.00680	0.00718	0.01749
	B_N	0.01161	0.01170	0.02138
	B_N	0.00913	0.00924	0.01906
	C	0.00201	0.00205	0.00481
	C	0.00933	0.00937	0.01221
	D	0.00334	0.00347	0.00608
	D	0.01227	0.01244	0.01506
sky130_fd_sc_hs__nand4bb_4	A_N	0.01568	0.01631	0.03155
	A_N	0.01232	0.01305	0.02883
	B_N	0.01922	0.01933	0.03456
	B_N	0.01577	0.01588	0.03144
	C	0.00329	0.00334	0.01038
	C	0.01777	0.01786	0.02483
	D	0.00550	0.00592	0.01247
	D	0.02322	0.02373	0.03014

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00552	0.00608	0.01571
	A_N	0.00788	0.00845	0.01806
	B_N	0.00673	0.00723	0.01690
	B_N	0.00902	0.00951	0.01918
	C	0.00776	0.00764	0.00820
	C	0.00376	0.00363	0.00422
	D	0.00867	0.00853	0.00919
	D	0.00388	0.00374	0.00435
sky130_fd_sc_hs__nand4bb_2	A_N	0.00927	0.00987	0.02018
	A_N	0.01184	0.01243	0.02271
	B_N	0.01153	0.01213	0.02239
	B_N	0.01402	0.01463	0.02483
	C	0.01365	0.01340	0.01470
	C	0.00629	0.00602	0.00729
	D	0.01545	0.01522	0.01658
	D	0.00628	0.00599	0.00727
sky130_fd_sc_hs__nand4bb_4	A_N	0.01859	0.01965	0.03687
	A_N	0.02194	0.02299	0.04010
	B_N	0.02239	0.02353	0.04041
	B_N	0.02585	0.02700	0.04379
	C	0.02683	0.02616	0.02995
	C	0.01227	0.01162	0.01515
	D	0.03050	0.02985	0.03367
	D	0.01227	0.01160	0.01522

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)	0.00471	0.00479	0.01389
	(B_N * Y)	0.00175	0.00183	0.01094
	(!B_N * C * !D * Y)	0.00513	0.00522	0.01431
	(!B_N * C * !D * Y)	0.00217	0.00224	0.01135
	(!B_N * !C * Y)	0.00513	0.00522	0.01431
	(!B_N * !C * Y)	0.00217	0.00224	0.01135
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00715	0.00715	0.01688
	(B_N * Y)	0.00387	0.00386	0.01360
	(!B_N * C * !D * Y)	0.00766	0.00765	0.01738
	(!B_N * C * !D * Y)	0.00435	0.00435	0.01408
	(!B_N * !C * Y)	0.00765	0.00765	0.01737
	(!B_N * !C * Y)	0.00436	0.00435	0.01408
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01183	0.01177	0.02697
	(B_N * Y)	0.00709	0.00701	0.02222
	(!B_N * C * !D * Y)	0.01252	0.01245	0.02764
	(!B_N * C * !D * Y)	0.00771	0.00764	0.02286
	(!B_N * !C * Y)	0.01250	0.01244	0.02763
	(!B_N * !C * Y)	0.00772	0.00765	0.02286

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)	0.00050	0.00101	0.01042
	(B_N * Y)	0.00346	0.00396	0.01338
	(!B_N * C * !D * Y)	0.00013	0.00064	0.01002
	(!B_N * C * !D * Y)	0.00320	0.00369	0.01307
	(!B_N * !C * Y)	0.00010	0.00061	0.01001
	(!B_N * !C * Y)	0.00309	0.00359	0.01299
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00124	0.00152	0.01147
	(B_N * Y)	0.00452	0.00481	0.01475
	(!B_N * C * !D * Y)	0.00083	0.00111	0.01101
	(!B_N * C * !D * Y)	0.00432	0.00461	0.01446
	(!B_N * !C * Y)	0.00077	0.00105	0.01098
	(!B_N * !C * Y)	0.00410	0.00439	0.01430
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00239	0.00291	0.01925
	(B_N * Y)	0.00714	0.00765	0.02400
	(!B_N * C * !D * Y)	0.00191	0.00241	0.01867
	(!B_N * C * !D * Y)	0.00712	0.00764	0.02380
	(!B_N * !C * Y)	0.00180	0.00231	0.01862
	(!B_N * !C * Y)	0.00667	0.00720	0.02347

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)	0.00468	0.00464	0.01354
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00180	0.00176	0.01066
	(!C * Y)	0.00475	0.00481	0.01379
	(!C * Y)	0.00180	0.00184	0.01083
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00697	0.00681	0.01619
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00376	0.00360	0.01298
	(!C * Y)	0.00716	0.00714	0.01664
	(!C * Y)	0.00381	0.00379	0.01328
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01173	0.01141	0.02587
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00686	0.00654	0.02102
	(!C * Y)	0.01222	0.01207	0.02683
	(!C * Y)	0.00704	0.00690	0.02163

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)	0.00117	0.00158	0.01106
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00404	0.00446	0.01395
	(!C * Y)	0.00073	0.00115	0.01065
	(!C * Y)	0.00366	0.00411	0.01359
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00261	0.00290	0.01279
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00582	0.00611	0.01600
	(!C * Y)	0.00178	0.00207	0.01200
	(!C * Y)	0.00513	0.00542	0.01534
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00476	0.00529	0.02156
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00965	0.01016	0.02643
	(!C * Y)	0.00307	0.00359	0.01991
	(!C * Y)	0.00823	0.00875	0.02506

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)**	0.00136	0.00137	0.00136
	(A_N * B_N * D * Y)	-0.00187	-0.00187	-0.00186
	(A_N * B_N * !D * Y)	0.00095	0.00095	0.00094
	(A_N * B_N * !D * Y)	-0.00187	-0.00188	-0.00187
	(A_N * !B_N * D * Y)	0.00116	0.00117	0.00116
	(A_N * !B_N * D * Y)	-0.00207	-0.00208	-0.00205
	(A_N * !B_N * !D * Y)	0.00073	0.00073	0.00073
	(A_N * !B_N * !D * Y)	-0.00221	-0.00221	-0.00221
	(!A_N * B_N * D * Y)	0.00136	0.00137	0.00136
	(!A_N * B_N * D * Y)	-0.00187	-0.00187	-0.00186
	(!A_N * B_N * !D * Y)	0.00094	0.00094	0.00093
	(!A_N * B_N * !D * Y)	-0.00188	-0.00188	-0.00187
	(!A_N * !B_N * !D * Y)	0.00059	0.00058	0.00059
	(!A_N * !B_N * !D * Y)	-0.00206	-0.00205	-0.00206
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00256	0.00259	0.00257
	(A_N * B_N * D * Y)	-0.00365	-0.00367	-0.00365
	(A_N * B_N * !D * Y)	0.00166	0.00168	0.00167
	(A_N * B_N * !D * Y)	-0.00364	-0.00367	-0.00366
	(A_N * !B_N * D * Y)	0.00247	0.00248	0.00247
	(A_N * !B_N * D * Y)	-0.00378	-0.00379	-0.00374
	(A_N * !B_N * !D * Y)	0.00160	0.00160	0.00159
	(A_N * !B_N * !D * Y)	-0.00405	-0.00405	-0.00404
	(!A_N * B_N * D * Y)	0.00257	0.00259	0.00257
	(!A_N * B_N * D * Y)	-0.00366	-0.00367	-0.00365
	(!A_N * B_N * !D * Y)	0.00167	0.00167	0.00165
	(!A_N * B_N * !D * Y)	-0.00367	-0.00368	-0.00366
	(!A_N * !B_N * !D * Y)	0.00127	0.00126	0.00128
	(!A_N * !B_N * !D * Y)	-0.00373	-0.00372	-0.00373

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00511	0.00516	0.00512
	(A_N * B_N * D * Y)	-0.00716	-0.00720	-0.00717
	(A_N * B_N * !D * Y)	0.00329	0.00333	0.00330
	(A_N * B_N * !D * Y)	-0.00714	-0.00721	-0.00718
	(A_N * !B_N * D * Y)	0.00487	0.00491	0.00488
	(A_N * !B_N * D * Y)	-0.00748	-0.00751	-0.00741
	(A_N * !B_N * !D * Y)	0.00304	0.00306	0.00303
	(A_N * !B_N * !D * Y)	-0.00802	-0.00806	-0.00802
	(!A_N * B_N * D * Y)	0.00511	0.00517	0.00513
	(!A_N * B_N * D * Y)	-0.00716	-0.00721	-0.00717
	(!A_N * B_N * !D * Y)	0.00328	0.00329	0.00326
	(!A_N * B_N * !D * Y)	-0.00721	-0.00723	-0.00719
	(!A_N * !B_N * !D * Y)	0.00239	0.00241	0.00245
	(!A_N * !B_N * !D * Y)	-0.00736	-0.00741	-0.00741

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)**	-0.00134	-0.00136	-0.00136
	(A_N * B_N * D * Y)	0.00188	0.00189	0.00187
	(A_N * B_N * !D * Y)	-0.00095	-0.00095	-0.00094
	(A_N * B_N * !D * Y)	0.00188	0.00189	0.00188
	(A_N * !B_N * D * Y)	-0.00107	-0.00117	-0.00116
	(A_N * !B_N * D * Y)	0.00214	0.00209	0.00205
	(A_N * !B_N * !D * Y)	-0.00073	-0.00073	-0.00073
	(A_N * !B_N * !D * Y)	0.00224	0.00228	0.00225
	(!A_N * B_N * D * Y)	-0.00133	-0.00137	-0.00136
	(!A_N * B_N * D * Y)	0.00190	0.00189	0.00187
	(!A_N * B_N * !D * Y)	-0.00094	-0.00094	-0.00093
	(!A_N * B_N * !D * Y)	0.00194	0.00195	0.00190
	(!A_N * !B_N * !D * Y)	-0.00054	-0.00055	-0.00055
	(!A_N * !B_N * !D * Y)	0.00209	0.00210	0.00209
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00254	-0.00259	-0.00257
	(A_N * B_N * D * Y)	0.00369	0.00371	0.00367
	(A_N * B_N * !D * Y)	-0.00166	-0.00168	-0.00167
	(A_N * B_N * !D * Y)	0.00367	0.00369	0.00367
	(A_N * !B_N * D * Y)	-0.00230	-0.00248	-0.00247
	(A_N * !B_N * D * Y)	0.00393	0.00381	0.00374
	(A_N * !B_N * !D * Y)	-0.00160	-0.00160	-0.00159
	(A_N * !B_N * !D * Y)	0.00409	0.00418	0.00412
	(!A_N * B_N * D * Y)	-0.00251	-0.00259	-0.00257
	(!A_N * B_N * D * Y)	0.00372	0.00371	0.00367
	(!A_N * B_N * !D * Y)	-0.00167	-0.00167	-0.00165
	(!A_N * B_N * !D * Y)	0.00376	0.00377	0.00370
	(!A_N * !B_N * !D * Y)	-0.00119	-0.00118	-0.00118
	(!A_N * !B_N * !D * Y)	0.00384	0.00384	0.00381

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00505	-0.00514	-0.00512
	(A_N * B_N * D * Y)	0.00723	0.00722	0.00720
	(A_N * B_N * !D * Y)	-0.00329	-0.00333	-0.00330
	(A_N * B_N * !D * Y)	0.00722	0.00725	0.00721
	(A_N * !B_N * D * Y)	-0.00451	-0.00491	-0.00488
	(A_N * !B_N * D * Y)	0.00783	0.00755	0.00741
	(A_N * !B_N * !D * Y)	-0.00304	-0.00306	-0.00303
	(A_N * !B_N * !D * Y)	0.00820	0.00835	0.00819
	(!A_N * B_N * D * Y)	-0.00498	-0.00514	-0.00513
	(!A_N * B_N * D * Y)	0.00733	0.00722	0.00720
	(!A_N * B_N * !D * Y)	-0.00328	-0.00329	-0.00326
	(!A_N * B_N * !D * Y)	0.00747	0.00750	0.00729
	(!A_N * !B_N * !D * Y)	-0.00227	-0.00228	-0.00228
	(!A_N * !B_N * !D * Y)	0.00756	0.00761	0.00755

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)	0.00117	0.00119	0.00118
	(A_N * B_N * C * Y)	-0.00195	-0.00196	-0.00195
	(A_N * !C * Y)	0.00119	0.00120	0.00119
	(A_N * !C * Y)	-0.00195	-0.00196	-0.00195
	(A_N * !B_N * C * Y)	0.00115	0.00117	0.00116
	(A_N * !B_N * C * Y)	-0.00199	-0.00201	-0.00199
	(!A_N * B_N * C * Y)	0.00118	0.00118	0.00118
	(!A_N * B_N * C * Y)	-0.00195	-0.00196	-0.00195
	(!A_N * B_N * !C * Y)	0.00120	0.00121	0.00120
	(!A_N * B_N * !C * Y)	-0.00195	-0.00196	-0.00195
	(!A_N * !B_N * !C * Y)	0.00119	0.00119	0.00119
	(!A_N * !B_N * !C * Y)	-0.00196	-0.00195	-0.00195

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00246	0.00248	0.00246
	(A_N * B_N * C * Y)	-0.00358	-0.00359	-0.00358
	(A_N * !C * Y)	0.00250	0.00251	0.00249
	(A_N * !C * Y)	-0.00357	-0.00359	-0.00358
	(A_N * !B_N * C * Y)	0.00242	0.00246	0.00243
	(A_N * !B_N * C * Y)	-0.00367	-0.00370	-0.00365
	(!A_N * B_N * C * Y)	0.00246	0.00248	0.00246
	(!A_N * B_N * C * Y)	-0.00357	-0.00359	-0.00358
	(!A_N * B_N * !C * Y)	0.00249	0.00249	0.00249
	(!A_N * B_N * !C * Y)	-0.00358	-0.00357	-0.00358
	(!A_N * !B_N * !C * Y)	0.00250	0.00252	0.00249
	(!A_N * !B_N * !C * Y)	-0.00358	-0.00360	-0.00358
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00491	0.00495	0.00490
	(A_N * B_N * C * Y)	-0.00713	-0.00716	-0.00713
	(A_N * !C * Y)	0.00494	0.00500	0.00497
	(A_N * !C * Y)	-0.00710	-0.00715	-0.00713
	(A_N * !B_N * C * Y)	0.00482	0.00488	0.00483
	(A_N * !B_N * C * Y)	-0.00733	-0.00737	-0.00727
	(!A_N * B_N * C * Y)	0.00490	0.00493	0.00490
	(!A_N * B_N * C * Y)	-0.00713	-0.00715	-0.00713
	(!A_N * B_N * !C * Y)	0.00493	0.00501	0.00496
	(!A_N * B_N * !C * Y)	-0.00710	-0.00716	-0.00713
	(!A_N * !B_N * !C * Y)	0.00497	0.00494	0.00496
	(!A_N * !B_N * !C * Y)	-0.00715	-0.00711	-0.00713

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)**	-0.00111	-0.00119	-0.00118
	(A_N * B_N * C * Y)	0.00196	0.00197	0.00196
	(A_N * !C * Y)	-0.00115	-0.00120	-0.00119
	(A_N * !C * Y)	0.00195	0.00198	0.00196
	(A_N * !B_N * C * Y)	-0.00108	-0.00117	-0.00116
	(A_N * !B_N * C * Y)	0.00202	0.00201	0.00199
	(!A_N * B_N * C * Y)	-0.00112	-0.00118	-0.00118
	(!A_N * B_N * C * Y)	0.00196	0.00197	0.00196
	(!A_N * B_N * !C * Y)	-0.00116	-0.00120	-0.00120
	(!A_N * B_N * !C * Y)	0.00195	0.00198	0.00196
	(!A_N * !B_N * !C * Y)	-0.00115	-0.00119	-0.00119
	(!A_N * !B_N * !C * Y)	0.00197	0.00198	0.00196
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00232	-0.00248	-0.00246
	(A_N * B_N * C * Y)	0.00359	0.00362	0.00359
	(A_N * !C * Y)	-0.00241	-0.00251	-0.00249
	(A_N * !C * Y)	0.00357	0.00363	0.00359
	(A_N * !B_N * C * Y)	-0.00227	-0.00246	-0.00243
	(A_N * !B_N * C * Y)	0.00375	0.00370	0.00365
	(!A_N * B_N * C * Y)	-0.00233	-0.00248	-0.00246
	(!A_N * B_N * C * Y)	0.00359	0.00362	0.00359
	(!A_N * B_N * !C * Y)	-0.00241	-0.00249	-0.00249
	(!A_N * B_N * !C * Y)	0.00358	0.00363	0.00359
	(!A_N * !B_N * !C * Y)	-0.00238	-0.00252	-0.00249
	(!A_N * !B_N * !C * Y)	0.00361	0.00363	0.00359

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00463	-0.00495	-0.00490
	(A_N * B_N * C * Y)	0.00715	0.00722	0.00715
	(A_N * !C * Y)	-0.00481	-0.00500	-0.00497
	(A_N * !C * Y)	0.00713	0.00723	0.00716
	(A_N * !B_N * C * Y)	-0.00452	-0.00488	-0.00483
	(A_N * !B_N * C * Y)	0.00748	0.00737	0.00727
	(!A_N * B_N * C * Y)	-0.00464	-0.00493	-0.00490
	(!A_N * B_N * C * Y)	0.00716	0.00722	0.00715
	(!A_N * B_N * !C * Y)	-0.00481	-0.00501	-0.00496
	(!A_N * B_N * !C * Y)	0.00713	0.00723	0.00715
	(!A_N * !B_N * !C * Y)	-0.00475	-0.00494	-0.00496
	(!A_N * !B_N * !C * Y)	0.00721	0.00724	0.00715

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00223	0.00293	0.00293	0.00284	0.60676
sky130_fd_sc_hs__nand4b_2	0.00282	0.00578	0.00562	0.00562	1.03307
sky130_fd_sc_hs__nand4b_4	0.00395	0.00810	0.00825	0.00792	1.44312

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4b_1	0.00000	0.11008	0.18857
sky130_fd_sc_hs__nand4b_2	0.00000	0.10669	0.26709
sky130_fd_sc_hs__nand4b_4	0.00000	0.24592	0.44206

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)	0.10691	0.72229	6.04186
	B->Y (FR)	0.07450	0.92015	10.10520
	C->Y (FR)	0.08569	0.93239	10.11590
	D->Y (FR)	0.09012	0.93078	10.02640
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.10591	0.60461	5.22831
	B->Y (FR)	0.06645	0.77203	9.22442
	C->Y (FR)	0.07785	0.79030	9.32066
	D->Y (FR)	0.08543	0.80059	9.29876
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.13003	0.71389	7.26525
	B->Y (FR)	0.09229	0.86101	10.98650
	C->Y (FR)	0.11538	0.88562	11.01400
	D->Y (FR)	0.13493	0.91554	11.11190

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)	0.16143	0.99947	8.31526
	B->Y (RF)	0.09222	0.94286	10.30680
	C->Y (RF)	0.10486	0.91632	9.83892
	D->Y (RF)	0.10936	0.88877	9.40183
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.17218	0.93136	8.44029
	B->Y (RF)	0.09659	0.82845	10.19190
	C->Y (RF)	0.10960	0.78898	9.53166
	D->Y (RF)	0.11757	0.77169	9.10900
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.13395	0.69719	6.42143
	B->Y (RF)	0.07922	0.64610	8.43416
	C->Y (RF)	0.09298	0.60975	7.79265
	D->Y (RF)	0.09955	0.58505	7.27507

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	0.00645	0.00660	0.01562
	A_N	0.00396	0.00411	0.01318
	B	0.00065	0.00072	0.00204
	B	0.00452	0.00461	0.00601
	C	0.00123	0.00125	0.00255
	C	0.00573	0.00576	0.00713
	D	0.00163	0.00170	0.00297
	D	0.00683	0.00692	0.00823
sky130_fd_sc_hs__nand4b_2	A_N	0.00940	0.00973	0.01859
	A_N	0.00694	0.00728	0.01629
	B	0.00062	0.00071	0.00353
	B	0.00861	0.00869	0.01160
	C	0.00189	0.00195	0.00468
	C	0.01129	0.01135	0.01409
	D	0.00314	0.00319	0.00588
	D	0.01419	0.01429	0.01699
sky130_fd_sc_hs__nand4b_4	A_N	0.01200	0.01271	0.02803
	A_N	0.00835	0.00907	0.02454
	B	0.00090	0.00076	0.00472
	B	0.01200	0.01186	0.01587
	C	0.00300	0.00265	0.00656
	C	0.01745	0.01711	0.02101
	D	0.00522	0.00501	0.00889
	D	0.02273	0.02252	0.02573

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00502	0.00567	0.01492
	A_N	0.00751	0.00816	0.01741
	B	0.00585	0.00575	0.00636
	B	0.00196	0.00186	0.00245
	C	0.00669	0.00659	0.00716
	C	0.00211	0.00200	0.00258
	D	0.00748	0.00730	0.00801
	D	0.00210	0.00199	0.00258
sky130_fd_sc_hs__nand4b_2	A_N	0.00905	0.00968	0.01976
	A_N	0.01152	0.01215	0.02220
	B	0.01177	0.01153	0.01285
	B	0.00374	0.00348	0.00475
	C	0.01346	0.01322	0.01453
	C	0.00388	0.00360	0.00490
	D	0.01533	0.01508	0.01646
	D	0.00384	0.00356	0.00485
sky130_fd_sc_hs__nand4b_4	A_N	0.01364	0.01468	0.03212
	A_N	0.01729	0.01832	0.03529
	B	0.01816	0.01796	0.01969
	B	0.00696	0.00674	0.00845
	C	0.02184	0.02161	0.02372
	C	0.00702	0.00676	0.00844
	D	0.02532	0.02510	0.02692
	D	0.00708	0.00684	0.00851

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)	0.00507	0.00510	0.01413
	(B * C * !D * Y)	0.00199	0.00201	0.01106
	(B * !C * Y)	0.00506	0.00509	0.01413
	(B * !C * Y)	0.00199	0.00201	0.01106
	(!B * Y)	0.00503	0.00507	0.01411
	(!B * Y)	0.00199	0.00201	0.01107
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00769	0.00766	0.01748
	(B * C * !D * Y)	0.00383	0.00379	0.01363
	(B * !C * Y)	0.00768	0.00765	0.01748
	(B * !C * Y)	0.00383	0.00379	0.01363
	(!B * Y)	0.00764	0.00761	0.01744
	(!B * Y)	0.00384	0.00379	0.01363
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00907	0.00907	0.02526
	(B * C * !D * Y)	0.00363	0.00362	0.01983
	(B * !C * Y)	0.00906	0.00906	0.02525
	(B * !C * Y)	0.00363	0.00362	0.01983
	(!B * Y)	0.00898	0.00898	0.02517
	(!B * Y)	0.00365	0.00363	0.01984

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)	0.00055	0.00094	0.01039
	(B * C * !D * Y)	0.00376	0.00415	0.01357
	(B * !C * Y)	0.00054	0.00092	0.01039
	(B * !C * Y)	0.00369	0.00408	0.01352
	(!B * Y)	0.00054	0.00093	0.01040
	(!B * Y)	0.00360	0.00398	0.01346
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00071	0.00095	0.01096
	(B * C * !D * Y)	0.00483	0.00508	0.01502
	(B * !C * Y)	0.00065	0.00089	0.01094
	(B * !C * Y)	0.00464	0.00490	0.01490
	(!B * Y)	0.00061	0.00086	0.01094
	(!B * Y)	0.00443	0.00470	0.01476
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00144	0.00205	0.01899
	(B * C * !D * Y)	0.00742	0.00806	0.02485
	(B * !C * Y)	0.00133	0.00195	0.01894
	(B * !C * Y)	0.00707	0.00772	0.02462
	(!B * Y)	0.00130	0.00191	0.01896
	(!B * Y)	0.00667	0.00733	0.02434

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)**	0.00140	0.00141	0.00140
	(A_N * C * D * Y)	-0.00179	-0.00180	-0.00179
	(A_N * C * !D * Y)	0.00094	0.00094	0.00094
	(A_N * C * !D * Y)	-0.00179	-0.00178	-0.00179
	(A_N * !C * Y)	0.00097	0.00098	0.00097
	(A_N * !C * Y)	-0.00180	-0.00180	-0.00179
	(!A_N * C * !D * Y)	0.00053	0.00053	0.00054
	(!A_N * C * !D * Y)	-0.00201	-0.00202	-0.00203
	(!A_N * !C * Y)	0.00057	0.00057	0.00057
	(!A_N * !C * Y)	-0.00204	-0.00205	-0.00204
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00256	0.00259	0.00258
	(A_N * C * D * Y)	-0.00376	-0.00379	-0.00377
	(A_N * C * !D * Y)	0.00169	0.00170	0.00169
	(A_N * C * !D * Y)	-0.00378	-0.00380	-0.00379
	(A_N * !C * Y)	0.00175	0.00177	0.00175
	(A_N * !C * Y)	-0.00380	-0.00383	-0.00380
	(!A_N * C * !D * Y)	0.00112	0.00112	0.00114
	(!A_N * C * !D * Y)	-0.00391	-0.00390	-0.00399
	(!A_N * !C * Y)	0.00119	0.00120	0.00120
	(!A_N * !C * Y)	-0.00398	-0.00402	-0.00401
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00493	0.00493	0.00494
	(A_N * C * D * Y)	-0.00391	-0.00390	-0.00389
	(A_N * C * !D * Y)	0.00307	0.00308	0.00307
	(A_N * C * !D * Y)	-0.00393	-0.00394	-0.00393
	(A_N * !C * Y)	0.00318	0.00319	0.00316
	(A_N * !C * Y)	-0.00397	-0.00398	-0.00395
	(!A_N * C * !D * Y)	0.00212	0.00213	0.00215
	(!A_N * C * !D * Y)	-0.00408	-0.00410	-0.00421
	(!A_N * !C * Y)	0.00224	0.00225	0.00224
	(!A_N * !C * Y)	-0.00423	-0.00425	-0.00425

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)	-0.00129	-0.00139	-0.00140
	(A_N * C * D * Y)	0.00190	0.00181	0.00180
	(A_N * C * !D * Y)	-0.00094	-0.00094	-0.00094
	(A_N * C * !D * Y)	0.00189	0.00187	0.00181
	(A_N * !C * Y)	-0.00097	-0.00098	-0.00097
	(A_N * !C * Y)	0.00189	0.00190	0.00182
	(!A_N * C * !D * Y)	-0.00051	-0.00052	-0.00053
	(!A_N * C * !D * Y)	0.00208	0.00209	0.00206
	(!A_N * !C * Y)	-0.00052	-0.00053	-0.00054
	(!A_N * !C * Y)	0.00208	0.00209	0.00206
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00235	-0.00257	-0.00258
	(A_N * C * D * Y)	0.00400	0.00381	0.00378
	(A_N * C * !D * Y)	-0.00169	-0.00170	-0.00169
	(A_N * C * !D * Y)	0.00400	0.00392	0.00381
	(A_N * !C * Y)	-0.00175	-0.00177	-0.00175
	(A_N * !C * Y)	0.00402	0.00402	0.00386
	(!A_N * C * !D * Y)	-0.00106	-0.00108	-0.00110
	(!A_N * C * !D * Y)	0.00408	0.00413	0.00406
	(!A_N * !C * Y)	-0.00109	-0.00111	-0.00114
	(!A_N * !C * Y)	0.00408	0.00413	0.00406

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00445	-0.00492	-0.00494
	(A_N * C * D * Y)	0.00438	0.00397	0.00392
	(A_N * C * !D * Y)	-0.00307	-0.00308	-0.00307
	(A_N * C * !D * Y)	0.00437	0.00419	0.00398
	(A_N * !C * Y)	-0.00318	-0.00319	-0.00316
	(A_N * !C * Y)	0.00436	0.00435	0.00406
	(!A_N * C * !D * Y)	-0.00201	-0.00202	-0.00207
	(!A_N * C * !D * Y)	0.00442	0.00444	0.00433
	(!A_N * !C * Y)	-0.00207	-0.00208	-0.00213
	(!A_N * !C * Y)	0.00442	0.00444	0.00434

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)**	0.00120	0.00121	0.00121
	(A_N * B * D * Y)	-0.00178	-0.00179	-0.00179
	(A_N * B * !D * Y)	0.00076	0.00077	0.00077
	(A_N * B * !D * Y)	-0.00178	-0.00179	-0.00179
	(A_N * !B * D * Y)	0.00122	0.00123	0.00122
	(A_N * !B * D * Y)	-0.00179	-0.00179	-0.00179
	(A_N * !B * !D * Y)	0.00074	0.00074	0.00073
	(A_N * !B * !D * Y)	-0.00179	-0.00180	-0.00179
	(!A_N * B * !D * Y)	0.00056	0.00056	0.00056
	(!A_N * B * !D * Y)	-0.00183	-0.00184	-0.00182
	(!A_N * !B * D * Y)	0.00118	0.00118	0.00118
	(!A_N * !B * D * Y)	-0.00184	-0.00184	-0.00183
	(!A_N * !B * !D * Y)	0.00068	0.00068	0.00067
	(!A_N * !B * !D * Y)	-0.00185	-0.00185	-0.00184

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00244	0.00245	0.00245
	(A_N * B * D * Y)	-0.00363	-0.00364	-0.00363
	(A_N * B * !D * Y)	0.00155	0.00157	0.00156
	(A_N * B * !D * Y)	-0.00364	-0.00366	-0.00365
	(A_N * !B * D * Y)	0.00247	0.00250	0.00247
	(A_N * !B * D * Y)	-0.00363	-0.00365	-0.00363
	(A_N * !B * !D * Y)	0.00154	0.00154	0.00153
	(A_N * !B * !D * Y)	-0.00365	-0.00365	-0.00364
	(!A_N * B * !D * Y)	0.00124	0.00124	0.00126
	(!A_N * B * !D * Y)	-0.00361	-0.00360	-0.00357
	(!A_N * !B * D * Y)	0.00247	0.00250	0.00248
	(!A_N * !B * D * Y)	-0.00363	-0.00365	-0.00363
	(!A_N * !B * !D * Y)	0.00151	0.00152	0.00150
	(!A_N * !B * !D * Y)	-0.00365	-0.00367	-0.00364
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00491	0.00495	0.00492
	(A_N * B * D * Y)	-0.00388	-0.00390	-0.00388
	(A_N * B * !D * Y)	0.00301	0.00303	0.00301
	(A_N * B * !D * Y)	-0.00391	-0.00392	-0.00391
	(A_N * !B * D * Y)	0.00497	0.00501	0.00498
	(A_N * !B * D * Y)	-0.00388	-0.00390	-0.00388
	(A_N * !B * !D * Y)	0.00293	0.00293	0.00291
	(A_N * !B * !D * Y)	-0.00390	-0.00390	-0.00389
	(!A_N * B * !D * Y)	0.00240	0.00241	0.00244
	(!A_N * B * !D * Y)	-0.00381	-0.00382	-0.00378
	(!A_N * !B * D * Y)	0.00499	0.00504	0.00499
	(!A_N * !B * D * Y)	-0.00389	-0.00391	-0.00388
	(!A_N * !B * !D * Y)	0.00288	0.00289	0.00287
	(!A_N * !B * !D * Y)	-0.00391	-0.00392	-0.00390

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)	-0.00111	-0.00121	-0.00121
	(A_N * B * D * Y)	0.00180	0.00182	0.00180
	(A_N * B * !D * Y)	-0.00076	-0.00077	-0.00077
	(A_N * B * !D * Y)	0.00182	0.00184	0.00180
	(A_N * !B * D * Y)	-0.00119	-0.00123	-0.00122
	(A_N * !B * D * Y)	0.00180	0.00182	0.00180
	(A_N * !B * !D * Y)	-0.00074	-0.00074	-0.00073
	(A_N * !B * !D * Y)	0.00180	0.00181	0.00180
	(!A_N * B * !D * Y)	-0.00053	-0.00053	-0.00053
	(!A_N * B * !D * Y)	0.00186	0.00187	0.00185
	(!A_N * !B * D * Y)	-0.00111	-0.00118	-0.00118
	(!A_N * !B * D * Y)	0.00185	0.00186	0.00184
	(!A_N * !B * !D * Y)	-0.00068	-0.00068	-0.00067
	(!A_N * !B * !D * Y)	0.00190	0.00192	0.00187
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00226	-0.00245	-0.00245
	(A_N * B * D * Y)	0.00367	0.00369	0.00365
	(A_N * B * !D * Y)	-0.00155	-0.00157	-0.00156
	(A_N * B * !D * Y)	0.00370	0.00375	0.00367
	(A_N * !B * D * Y)	-0.00240	-0.00250	-0.00247
	(A_N * !B * D * Y)	0.00366	0.00369	0.00364
	(A_N * !B * !D * Y)	-0.00154	-0.00154	-0.00153
	(A_N * !B * !D * Y)	0.00365	0.00367	0.00365
	(!A_N * B * !D * Y)	-0.00117	-0.00116	-0.00116
	(!A_N * B * !D * Y)	0.00371	0.00370	0.00366
	(!A_N * !B * D * Y)	-0.00236	-0.00250	-0.00248
	(!A_N * !B * D * Y)	0.00370	0.00369	0.00364
	(!A_N * !B * !D * Y)	-0.00151	-0.00152	-0.00150
	(!A_N * !B * !D * Y)	0.00375	0.00377	0.00368

sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	-0.00453	-0.00495	-0.00492
	(A_N * B * D * Y)	0.00399	0.00395	0.00390
	(A_N * B * !D * Y)	-0.00301	-0.00303	-0.00301
	(A_N * B * !D * Y)	0.00407	0.00412	0.00396
	(A_N * !B * D * Y)	-0.00484	-0.00501	-0.00498
	(A_N * !B * D * Y)	0.00392	0.00391	0.00390
	(A_N * !B * !D * Y)	-0.00293	-0.00293	-0.00291
	(A_N * !B * !D * Y)	0.00391	0.00393	0.00391
	(!A_N * B * !D * Y)	-0.00227	-0.00227	-0.00227
	(!A_N * B * !D * Y)	0.00399	0.00400	0.00393
	(!A_N * !B * D * Y)	-0.00474	-0.00502	-0.00499
	(!A_N * !B * D * Y)	0.00403	0.00392	0.00390
	(!A_N * !B * !D * Y)	-0.00288	-0.00289	-0.00287
	(!A_N * !B * !D * Y)	0.00419	0.00420	0.00399

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)**	0.00120	0.00122	0.00121
	(A_N * B * C * Y)	-0.00175	-0.00176	-0.00175
	(A_N * !C * Y)	0.00122	0.00124	0.00123
	(A_N * !C * Y)	-0.00175	-0.00176	-0.00175
	(A_N * !B * C * Y)	0.00121	0.00120	0.00121
	(A_N * !B * C * Y)	-0.00175	-0.00175	-0.00175
	(!A_N * B * !C * Y)	0.00118	0.00120	0.00119
	(!A_N * B * !C * Y)	-0.00180	-0.00181	-0.00180
	(!A_N * !B * C * Y)	0.00116	0.00117	0.00116
	(!A_N * !B * C * Y)	-0.00180	-0.00181	-0.00180
	(!A_N * !B * !C * Y)	0.00118	0.00119	0.00118
	(!A_N * !B * !C * Y)	-0.00180	-0.00181	-0.00180

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00243	0.00246	0.00243
	(A_N * B * C * Y)	-0.00361	-0.00364	-0.00361
	(A_N * !C * Y)	0.00250	0.00252	0.00249
	(A_N * !C * Y)	-0.00361	-0.00363	-0.00361
	(A_N * !B * C * Y)	0.00243	0.00246	0.00244
	(A_N * !B * C * Y)	-0.00361	-0.00363	-0.00361
	(!A_N * B * !C * Y)	0.00250	0.00252	0.00249
	(!A_N * B * !C * Y)	-0.00361	-0.00363	-0.00361
	(!A_N * !B * C * Y)	0.00243	0.00244	0.00244
	(!A_N * !B * C * Y)	-0.00361	-0.00362	-0.00361
	(!A_N * !B * !C * Y)	0.00249	0.00252	0.00249
	(!A_N * !B * !C * Y)	-0.00361	-0.00363	-0.00361
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00481	0.00487	0.00482
	(A_N * B * C * Y)	-0.00360	-0.00363	-0.00360
	(A_N * !C * Y)	0.00494	0.00498	0.00493
	(A_N * !C * Y)	-0.00361	-0.00362	-0.00360
	(A_N * !B * C * Y)	0.00481	0.00485	0.00481
	(A_N * !B * C * Y)	-0.00360	-0.00362	-0.00360
	(!A_N * B * !C * Y)	0.00494	0.00499	0.00493
	(!A_N * B * !C * Y)	-0.00361	-0.00363	-0.00360
	(!A_N * !B * C * Y)	0.00481	0.00484	0.00481
	(!A_N * !B * C * Y)	-0.00360	-0.00361	-0.00360
	(!A_N * !B * !C * Y)	0.00493	0.00494	0.00492
	(!A_N * !B * !C * Y)	-0.00361	-0.00361	-0.00361

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)**	-0.00113	-0.00122	-0.00121
	(A_N * B * C * Y)	0.00175	0.00177	0.00176
	(A_N * !C * Y)	-0.00119	-0.00124	-0.00123
	(A_N * !C * Y)	0.00175	0.00178	0.00176
	(A_N * !B * C * Y)	-0.00113	-0.00120	-0.00121
	(A_N * !B * C * Y)	0.00175	0.00177	0.00176
	(!A_N * B * !C * Y)	-0.00114	-0.00119	-0.00119
	(!A_N * B * !C * Y)	0.00180	0.00182	0.00181
	(!A_N * !B * C * Y)	-0.00108	-0.00117	-0.00116
	(!A_N * !B * C * Y)	0.00180	0.00182	0.00181
	(!A_N * !B * !C * Y)	-0.00115	-0.00119	-0.00118
	(!A_N * !B * !C * Y)	0.00180	0.00182	0.00181
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00226	-0.00246	-0.00243
	(A_N * B * C * Y)	0.00363	0.00366	0.00362
	(A_N * !C * Y)	-0.00240	-0.00252	-0.00249
	(A_N * !C * Y)	0.00361	0.00366	0.00362
	(A_N * !B * C * Y)	-0.00227	-0.00246	-0.00244
	(A_N * !B * C * Y)	0.00362	0.00366	0.00362
	(!A_N * B * !C * Y)	-0.00238	-0.00252	-0.00249
	(!A_N * B * !C * Y)	0.00361	0.00366	0.00362
	(!A_N * !B * C * Y)	-0.00226	-0.00244	-0.00244
	(!A_N * !B * C * Y)	0.00363	0.00366	0.00362
	(!A_N * !B * !C * Y)	-0.00240	-0.00252	-0.00249
	(!A_N * !B * !C * Y)	0.00361	0.00366	0.00362

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00446	-0.00487	-0.00482
	(A_N * B * C * Y)	0.00361	0.00366	0.00362
	(A_N * !C * Y)	-0.00476	-0.00498	-0.00493
	(A_N * !C * Y)	0.00363	0.00366	0.00362
	(A_N * !B * C * Y)	-0.00445	-0.00485	-0.00481
	(A_N * !B * C * Y)	0.00360	0.00366	0.00362
	(!A_N * B * !C * Y)	-0.00473	-0.00499	-0.00493
	(!A_N * B * !C * Y)	0.00363	0.00366	0.00362
	(!A_N * !B * C * Y)	-0.00445	-0.00484	-0.00481
	(!A_N * !B * C * Y)	0.00360	0.00366	0.00362
	(!A_N * !B * !C * Y)	-0.00476	-0.00494	-0.00492
	(!A_N * !B * !C * Y)	0.00363	0.00366	0.00362

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00286	0.00301	0.00297	0.00297	0.60507
sky130_fd_sc_hs__nand4_2	0.00560	0.00564	0.00569	0.00553	1.03473
sky130_fd_sc_hs__nand4_4	0.00825	0.00804	0.00805	0.00825	1.41255

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4_1	0.00000	0.02503	0.11391
sky130_fd_sc_hs__nand4_2	0.00000	0.04837	0.22770
sky130_fd_sc_hs__nand4_4	0.00000	0.08048	0.23169

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)	0.06164	0.89427	9.95700
	B->Y (FR)	0.07793	0.92224	10.09710
	C->Y (FR)	0.08842	0.93429	10.11050
	D->Y (FR)	0.09372	0.93372	10.01310
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.05174	0.75828	9.28650
	B->Y (FR)	0.06692	0.77232	9.24308
	C->Y (FR)	0.07682	0.78575	9.26589
	D->Y (FR)	0.08435	0.79867	9.31607
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.06667	0.82838	10.85010
	B->Y (FR)	0.09601	0.85480	10.82280
	C->Y (FR)	0.12101	0.89430	11.03490
	D->Y (FR)	0.13944	0.91842	11.05120

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.07138	0.94103	10.50080
	B->Y (RF)	0.09227	0.93548	10.19830
	C->Y (RF)	0.10374	0.90831	9.72175
	D->Y (RF)	0.10951	0.88197	9.27812
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.06404	0.82918	10.53030
	B->Y (RF)	0.09079	0.82881	10.23880
	C->Y (RF)	0.10405	0.78985	9.58852
	D->Y (RF)	0.11125	0.76989	9.14992
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.04826	0.65089	8.69171
	B->Y (RF)	0.07311	0.64013	8.30798
	C->Y (RF)	0.08704	0.60274	7.66076
	D->Y (RF)	0.09412	0.57817	7.14444

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00009	0.00009	0.00138
	A	0.00423	0.00441	0.00575
	B	0.00064	0.00068	0.00199
	B	0.00575	0.00580	0.00718
	C	0.00125	0.00126	0.00257
	C	0.00708	0.00708	0.00847
	D	0.00162	0.00166	0.00294
	D	0.00827	0.00832	0.00963
sky130_fd_sc_hs__nand4_2	A	-0.00101	-0.00056	0.00221
	A	0.00703	0.00711	0.01029
	B	0.00078	0.00091	0.00366
	B	0.01056	0.01065	0.01347
	C	0.00179	0.00182	0.00458
	C	0.01329	0.01333	0.01609
	D	0.00314	0.00329	0.00587
	D	0.01615	0.01635	0.01890
sky130_fd_sc_hs__nand4_4	A	-0.00197	-0.00135	0.00254
	A	0.00962	0.01000	0.01421
	B	0.00113	0.00093	0.00499
	B	0.01602	0.01566	0.01995
	C	0.00326	0.00293	0.00694
	C	0.02142	0.02110	0.02506
	D	0.00554	0.00551	0.00924
	D	0.02723	0.02722	0.03084

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00528	0.00524	0.00604
	A	0.00098	0.00092	0.00170
	B	0.00620	0.00609	0.00671
	B	0.00104	0.00093	0.00151
	C	0.00700	0.00688	0.00748
	C	0.00104	0.00093	0.00152
	D	0.00788	0.00775	0.00841
	D	0.00102	0.00090	0.00149
sky130_fd_sc_hs__nand4_2	A	0.00967	0.00963	0.01134
	A	0.00164	0.00159	0.00327
	B	0.01159	0.01136	0.01264
	B	0.00172	0.00146	0.00273
	C	0.01351	0.01326	0.01455
	C	0.00171	0.00144	0.00271
	D	0.01524	0.01499	0.01635
	D	0.00167	0.00140	0.00267
sky130_fd_sc_hs__nand4_4	A	0.01492	0.01487	0.01725
	A	0.00336	0.00322	0.00554
	B	0.01858	0.01835	0.02005
	B	0.00346	0.00322	0.00493
	C	0.02220	0.02196	0.02393
	C	0.00349	0.00322	0.00489
	D	0.02595	0.02574	0.02739
	D	0.00330	0.00304	0.00470

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)	0.00056	0.00056	0.00049
	(B * C * !D * Y)	-0.00189	-0.00190	-0.00204
	(B * !C * Y)	0.00055	0.00054	0.00049
	(B * !C * Y)	-0.00195	-0.00195	-0.00205
	(!B * Y)	0.00053	0.00053	0.00051
	(!B * Y)	-0.00202	-0.00203	-0.00206
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00103	0.00104	0.00086
	(B * C * !D * Y)	-0.00368	-0.00374	-0.00407
	(B * !C * Y)	0.00096	0.00096	0.00085
	(B * !C * Y)	-0.00389	-0.00390	-0.00411
	(!B * Y)	0.00098	0.00098	0.00090
	(!B * Y)	-0.00403	-0.00405	-0.00413
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00202	0.00202	0.00170
	(B * C * !D * Y)	-0.00411	-0.00415	-0.00478
	(B * !C * Y)	0.00187	0.00186	0.00167
	(B * !C * Y)	-0.00444	-0.00445	-0.00485
	(!B * Y)	0.00188	0.00188	0.00176
	(!B * Y)	-0.00471	-0.00475	-0.00490

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)	-0.00048	-0.00048	-0.00048
	(B * C * !D * Y)	0.00206	0.00208	0.00206
	(B * !C * Y)	-0.00048	-0.00048	-0.00048
	(B * !C * Y)	0.00206	0.00208	0.00206
	(!B * Y)	-0.00049	-0.00049	-0.00049
	(!B * Y)	0.00206	0.00208	0.00206
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00082	-0.00083	-0.00083
	(B * C * !D * Y)	0.00412	0.00417	0.00415
	(B * !C * Y)	-0.00083	-0.00084	-0.00084
	(B * !C * Y)	0.00412	0.00417	0.00415
	(!B * Y)	-0.00087	-0.00087	-0.00087
	(!B * Y)	0.00416	0.00418	0.00415
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00163	-0.00166	-0.00164
	(B * C * !D * Y)	0.00490	0.00498	0.00491
	(B * !C * Y)	-0.00164	-0.00167	-0.00164
	(B * !C * Y)	0.00490	0.00498	0.00491
	(!B * Y)	-0.00170	-0.00173	-0.00170
	(!B * Y)	0.00490	0.00499	0.00491

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)**	0.00054	0.00055	0.00056
	(A * C * !D * Y)	-0.00188	-0.00189	-0.00187
	(A * !C * Y)	0.00058	0.00058	0.00058
	(A * !C * Y)	-0.00188	-0.00189	-0.00187
	(!A * C * D * Y)	0.00118	0.00120	0.00119
	(!A * C * D * Y)	-0.00187	-0.00189	-0.00188
	(!A * C * !D * Y)	0.00071	0.00071	0.00071
	(!A * C * !D * Y)	-0.00188	-0.00188	-0.00188
	(!A * !C * Y)	0.00073	0.00073	0.00073
	(!A * !C * Y)	-0.00189	-0.00190	-0.00189
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00114	0.00115	0.00118
	(A * C * !D * Y)	-0.00361	-0.00362	-0.00359
	(A * !C * Y)	0.00116	0.00117	0.00119
	(A * !C * Y)	-0.00362	-0.00363	-0.00359
	(!A * C * D * Y)	0.00248	0.00251	0.00249
	(!A * C * D * Y)	-0.00361	-0.00363	-0.00361
	(!A * C * !D * Y)	0.00149	0.00151	0.00149
	(!A * C * !D * Y)	-0.00362	-0.00365	-0.00362
	(!A * !C * Y)	0.00147	0.00148	0.00146
	(!A * !C * Y)	-0.00364	-0.00365	-0.00363
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00220	0.00222	0.00225
	(A * C * !D * Y)	-0.00375	-0.00377	-0.00372
	(A * !C * Y)	0.00226	0.00228	0.00229
	(A * !C * Y)	-0.00376	-0.00377	-0.00372
	(!A * C * D * Y)	0.00490	0.00495	0.00492
	(!A * C * D * Y)	-0.00376	-0.00377	-0.00375
	(!A * C * !D * Y)	0.00284	0.00287	0.00284
	(!A * C * !D * Y)	-0.00377	-0.00381	-0.00378
	(!A * !C * Y)	0.00281	0.00282	0.00280
	(!A * !C * Y)	-0.00380	-0.00382	-0.00380

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)	-0.00053	-0.00053	-0.00054
	(A * C * !D * Y)	0.00192	0.00194	0.00190
	(A * !C * Y)	-0.00054	-0.00054	-0.00056
	(A * !C * Y)	0.00192	0.00194	0.00190
	(!A * C * D * Y)	-0.00108	-0.00119	-0.00119
	(!A * C * D * Y)	0.00198	0.00190	0.00188
	(!A * C * !D * Y)	-0.00071	-0.00071	-0.00071
	(!A * C * !D * Y)	0.00198	0.00195	0.00190
	(!A * !C * Y)	-0.00073	-0.00073	-0.00073
	(!A * !C * Y)	0.00198	0.00199	0.00192
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00108	-0.00108	-0.00110
	(A * C * !D * Y)	0.00374	0.00373	0.00365
	(A * !C * Y)	-0.00110	-0.00110	-0.00113
	(A * !C * Y)	0.00374	0.00373	0.00365
	(!A * C * D * Y)	-0.00222	-0.00250	-0.00249
	(!A * C * D * Y)	0.00384	0.00365	0.00362
	(!A * C * !D * Y)	-0.00149	-0.00151	-0.00149
	(!A * C * !D * Y)	0.00382	0.00376	0.00365
	(!A * !C * Y)	-0.00147	-0.00148	-0.00146
	(!A * !C * Y)	0.00382	0.00384	0.00369

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00209	-0.00208	-0.00213
	(A * C * !D * Y)	0.00399	0.00397	0.00383
	(A * !C * Y)	-0.00214	-0.00213	-0.00219
	(A * !C * Y)	0.00399	0.00397	0.00383
	(!A * C * D * Y)	-0.00435	-0.00493	-0.00492
	(!A * C * D * Y)	0.00426	0.00383	0.00378
	(!A * C * !D * Y)	-0.00284	-0.00287	-0.00284
	(!A * C * !D * Y)	0.00422	0.00405	0.00383
	(!A * !C * Y)	-0.00281	-0.00282	-0.00280
	(!A * !C * Y)	0.00416	0.00419	0.00390

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)**	0.00056	0.00056	0.00057
	(A * B * !D * Y)	-0.00183	-0.00184	-0.00183
	(A * !B * D * Y)	0.00118	0.00118	0.00118
	(A * !B * D * Y)	-0.00186	-0.00185	-0.00185
	(A * !B * !D * Y)	0.00069	0.00069	0.00068
	(A * !B * !D * Y)	-0.00186	-0.00187	-0.00186
	(!A * B * D * Y)	0.00114	0.00115	0.00115
	(!A * B * D * Y)	-0.00185	-0.00186	-0.00185
	(!A * B * !D * Y)	0.00069	0.00069	0.00069
	(!A * B * !D * Y)	-0.00186	-0.00186	-0.00186
	(!A * !B * D * Y)	0.00118	0.00118	0.00118
	(!A * !B * D * Y)	-0.00186	-0.00186	-0.00185
	(!A * !B * !D * Y)	0.00069	0.00070	0.00069
	(!A * !B * !D * Y)	-0.00185	-0.00187	-0.00186

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00128	0.00128	0.00126
	(A * B * !D * Y)	-0.00353	-0.00353	-0.00349
	(A * !B * D * Y)	0.00248	0.00250	0.00248
	(A * !B * D * Y)	-0.00362	-0.00363	-0.00361
	(A * !B * !D * Y)	0.00146	0.00149	0.00147
	(A * !B * !D * Y)	-0.00359	-0.00363	-0.00361
	(!A * B * D * Y)	0.00241	0.00243	0.00242
	(!A * B * D * Y)	-0.00360	-0.00362	-0.00361
	(!A * B * !D * Y)	0.00150	0.00152	0.00151
	(!A * B * !D * Y)	-0.00360	-0.00364	-0.00362
	(!A * !B * D * Y)	0.00247	0.00247	0.00247
	(!A * !B * D * Y)	-0.00362	-0.00361	-0.00361
	(!A * !B * !D * Y)	0.00149	0.00151	0.00149
	(!A * !B * !D * Y)	-0.00361	-0.00363	-0.00361
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00234	0.00236	0.00235
	(A * B * !D * Y)	-0.00354	-0.00355	-0.00350
	(A * !B * D * Y)	0.00480	0.00485	0.00481
	(A * !B * D * Y)	-0.00372	-0.00374	-0.00372
	(A * !B * !D * Y)	0.00277	0.00278	0.00276
	(A * !B * !D * Y)	-0.00373	-0.00375	-0.00373
	(!A * B * D * Y)	0.00465	0.00472	0.00468
	(!A * B * D * Y)	-0.00370	-0.00373	-0.00372
	(!A * B * !D * Y)	0.00277	0.00280	0.00278
	(!A * B * !D * Y)	-0.00372	-0.00375	-0.00374
	(!A * !B * D * Y)	0.00479	0.00485	0.00480
	(!A * !B * D * Y)	-0.00372	-0.00374	-0.00372
	(!A * !B * !D * Y)	0.00281	0.00282	0.00280
	(!A * !B * !D * Y)	-0.00373	-0.00374	-0.00373

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)	-0.00053	-0.00054	-0.00054
	(A * B * !D * Y)	0.00186	0.00187	0.00186
	(A * !B * D * Y)	-0.00113	-0.00118	-0.00118
	(A * !B * D * Y)	0.00186	0.00188	0.00186
	(A * !B * !D * Y)	-0.00069	-0.00069	-0.00068
	(A * !B * !D * Y)	0.00191	0.00192	0.00189
	(!A * B * D * Y)	-0.00104	-0.00115	-0.00115
	(!A * B * D * Y)	0.00186	0.00188	0.00186
	(!A * B * !D * Y)	-0.00069	-0.00069	-0.00069
	(!A * B * !D * Y)	0.00189	0.00190	0.00187
	(!A * !B * D * Y)	-0.00114	-0.00118	-0.00118
	(!A * !B * D * Y)	0.00186	0.00188	0.00186
	(!A * !B * !D * Y)	-0.00069	-0.00070	-0.00069
	(!A * !B * !D * Y)	0.00186	0.00187	0.00187
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00116	-0.00115	-0.00115
	(A * B * !D * Y)	0.00368	0.00367	0.00364
	(A * !B * D * Y)	-0.00237	-0.00250	-0.00248
	(A * !B * D * Y)	0.00364	0.00363	0.00362
	(A * !B * !D * Y)	-0.00146	-0.00149	-0.00147
	(A * !B * !D * Y)	0.00372	0.00372	0.00365
	(!A * B * D * Y)	-0.00219	-0.00243	-0.00242
	(!A * B * D * Y)	0.00367	0.00367	0.00362
	(!A * B * !D * Y)	-0.00150	-0.00152	-0.00151
	(!A * B * !D * Y)	0.00368	0.00372	0.00364
	(!A * !B * D * Y)	-0.00239	-0.00247	-0.00247
	(!A * !B * D * Y)	0.00364	0.00363	0.00362
	(!A * !B * !D * Y)	-0.00149	-0.00151	-0.00149
	(!A * !B * !D * Y)	0.00363	0.00364	0.00362

sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	-0.00215	-0.00216	-0.00215
	(A * B * !D * Y)	0.00379	0.00380	0.00376
	(A * !B * D * Y)	-0.00455	-0.00485	-0.00481
	(A * !B * D * Y)	0.00376	0.00375	0.00373
	(A * !B * !D * Y)	-0.00277	-0.00278	-0.00276
	(A * !B * !D * Y)	0.00402	0.00397	0.00381
	(!A * B * D * Y)	-0.00420	-0.00472	-0.00468
	(!A * B * D * Y)	0.00382	0.00378	0.00373
	(!A * B * !D * Y)	-0.00277	-0.00280	-0.00278
	(!A * B * !D * Y)	0.00385	0.00393	0.00377
	(!A * !B * D * Y)	-0.00462	-0.00485	-0.00480
	(!A * !B * D * Y)	0.00375	0.00375	0.00373
	(!A * !B * !D * Y)	-0.00281	-0.00282	-0.00280
	(!A * !B * !D * Y)	0.00378	0.00376	0.00374

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)**	0.00118	0.00119	0.00119
	(A * B * !C * Y)	-0.00191	-0.00192	-0.00192
	(A * !B * C * Y)	0.00116	0.00117	0.00116
	(A * !B * C * Y)	-0.00192	-0.00193	-0.00192
	(A * !B * !C * Y)	0.00118	0.00119	0.00119
	(A * !B * !C * Y)	-0.00191	-0.00192	-0.00192
	(!A * B * C * Y)	0.00115	0.00117	0.00115
	(!A * B * C * Y)	-0.00191	-0.00193	-0.00192
	(!A * !C * Y)	0.00118	0.00118	0.00119
	(!A * !C * Y)	-0.00191	-0.00192	-0.00192
	(!A * !B * C * Y)	0.00116	0.00117	0.00116
	(!A * !B * C * Y)	-0.00192	-0.00193	-0.00192

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00251	0.00253	0.00251
	(A * B * !C * Y)	-0.00357	-0.00359	-0.00357
	(A * !B * C * Y)	0.00242	0.00244	0.00242
	(A * !B * C * Y)	-0.00357	-0.00359	-0.00357
	(A * !B * !C * Y)	0.00251	0.00251	0.00250
	(A * !B * !C * Y)	-0.00357	-0.00358	-0.00357
	(!A * B * C * Y)	0.00239	0.00243	0.00240
	(!A * B * C * Y)	-0.00356	-0.00359	-0.00357
	(!A * !C * Y)	0.00251	0.00253	0.00250
	(!A * !C * Y)	-0.00357	-0.00359	-0.00357
	(!A * !B * C * Y)	0.00242	0.00244	0.00242
	(!A * !B * C * Y)	-0.00357	-0.00358	-0.00357
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00502	0.00509	0.00504
	(A * B * !C * Y)	-0.00378	-0.00381	-0.00379
	(A * !B * C * Y)	0.00486	0.00491	0.00486
	(A * !B * C * Y)	-0.00379	-0.00381	-0.00379
	(A * !B * !C * Y)	0.00502	0.00507	0.00502
	(A * !B * !C * Y)	-0.00379	-0.00381	-0.00379
	(!A * B * C * Y)	0.00484	0.00483	0.00482
	(!A * B * C * Y)	-0.00380	-0.00379	-0.00379
	(!A * !C * Y)	0.00502	0.00507	0.00502
	(!A * !C * Y)	-0.00379	-0.00381	-0.00379
	(!A * !B * C * Y)	0.00486	0.00484	0.00486
	(!A * !B * C * Y)	-0.00379	-0.00378	-0.00379

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)**	-0.00114	-0.00119	-0.00119
	(A * B * !C * Y)	0.00192	0.00195	0.00192
	(A * !B * C * Y)	-0.00109	-0.00117	-0.00116
	(A * !B * C * Y)	0.00192	0.00193	0.00193
	(A * !B * !C * Y)	-0.00115	-0.00119	-0.00119
	(A * !B * !C * Y)	0.00191	0.00195	0.00192
	(!A * B * C * Y)	-0.00107	-0.00117	-0.00115
	(!A * B * C * Y)	0.00191	0.00193	0.00192
	(!A * !C * Y)	-0.00115	-0.00118	-0.00119
	(!A * !C * Y)	0.00191	0.00195	0.00192
	(!A * !B * C * Y)	-0.00109	-0.00117	-0.00116
	(!A * !B * C * Y)	0.00192	0.00193	0.00193
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00239	-0.00253	-0.00251
	(A * B * !C * Y)	0.00357	0.00362	0.00358
	(A * !B * C * Y)	-0.00225	-0.00244	-0.00242
	(A * !B * C * Y)	0.00358	0.00361	0.00358
	(A * !B * !C * Y)	-0.00242	-0.00251	-0.00250
	(A * !B * !C * Y)	0.00357	0.00362	0.00358
	(!A * B * C * Y)	-0.00222	-0.00243	-0.00240
	(!A * B * C * Y)	0.00358	0.00361	0.00358
	(!A * !C * Y)	-0.00241	-0.00253	-0.00250
	(!A * !C * Y)	0.00357	0.00362	0.00358
	(!A * !B * C * Y)	-0.00225	-0.00244	-0.00242
	(!A * !B * C * Y)	0.00358	0.00361	0.00358

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00480	-0.00509	-0.00504
	(A * B * !C * Y)	0.00380	0.00384	0.00380
	(A * !B * C * Y)	-0.00453	-0.00491	-0.00486
	(A * !B * C * Y)	0.00380	0.00384	0.00380
	(A * !B * !C * Y)	-0.00485	-0.00507	-0.00502
	(A * !B * !C * Y)	0.00379	0.00384	0.00380
	(!A * B * C * Y)	-0.00446	-0.00483	-0.00482
	(!A * B * C * Y)	0.00381	0.00383	0.00380
	(!A * !C * Y)	-0.00485	-0.00507	-0.00502
	(!A * !C * Y)	0.00379	0.00384	0.00380
	(!A * !B * C * Y)	-0.00453	-0.00484	-0.00486
	(!A * !B * C * Y)	0.00380	0.00384	0.00380

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00286	0.00227	0.37037
sky130_fd_sc_hs__nor2b_2	0.00563	0.00267	0.68856
sky130_fd_sc_hs__nor2b_4	0.00939	0.00386	1.35774

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.11668	0.22326
sky130_fd_sc_hs__nor2b_2	0.00000	0.12054	0.22439
sky130_fd_sc_hs__nor2b_4	0.00000	0.25213	0.44206

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)	0.11193	1.11401	10.64050
	B_N->Y (RR)	0.13093	0.97285	7.46606
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.10661	0.96052	10.55370
	B_N->Y (RR)	0.11654	0.82998	7.42809
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.08405	0.80388	10.41090
	B_N->Y (RR)	0.11404	0.72711	7.63590

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.03137	0.47146	4.66315
	B_N->Y (FF)	0.11456	0.53092	2.65330
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.02819	0.41477	4.55770
	B_N->Y (FF)	0.12626	0.55107	2.79090
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.04078	0.51919	6.49928
	B_N->Y (FF)	0.13169	0.58988	3.86195

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00094	0.00087	0.00199
	A	0.00454	0.00448	0.00562
	B_N	0.00638	0.00647	0.01517
	B_N	0.00351	0.00360	0.01231
sky130_fd_sc_hs__nor2b_2	A	0.00196	0.00185	0.00409
	A	0.00915	0.00907	0.01136
	B_N	0.00938	0.00958	0.01959
	B_N	0.00649	0.00669	0.01674
sky130_fd_sc_hs__nor2b_4	A	0.00334	0.00328	0.00571
	A	0.01529	0.01524	0.01773
	B_N	0.01414	0.01450	0.02995
	B_N	0.00986	0.01022	0.02589

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00435	0.00435	0.00576
	A	0.00078	0.00076	0.00200
	B_N	0.00346	0.00403	0.01347
	B_N	0.00634	0.00688	0.01634
sky130_fd_sc_hs__nor2b_2	A	0.00845	0.00834	0.01105
	A	0.00130	0.00114	0.00372
	B_N	0.00578	0.00660	0.01642
	B_N	0.00868	0.00945	0.01931
sky130_fd_sc_hs__nor2b_4	A	0.01337	0.01306	0.01740
	A	0.00152	0.00113	0.00422
	B_N	0.00851	0.01024	0.02694
	B_N	0.01279	0.01440	0.03115

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00154	0.00131	0.00130
	(!B_N * !Y)	-0.00175	-0.00197	-0.00198
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00314	0.00269	0.00266
	(!B_N * !Y)	-0.00314	-0.00364	-0.00366
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00419	0.00328	0.00323
	(!B_N * !Y)	-0.00633	-0.00729	-0.00732

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00129	-0.00130	-0.00129
	(!B_N * !Y)	0.00197	0.00200	0.00199
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00264	-0.00264	-0.00264
	(!B_N * !Y)	0.00363	0.00364	0.00366
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00321	-0.00322	-0.00320
	(!B_N * !Y)	0.00729	0.00735	0.00732

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00385	0.00386	0.01292
	(A * !Y)	0.00073	0.00073	0.00980
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00511	0.00506	0.01480
	(A * !Y)	0.00155	0.00150	0.01126
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00792	0.00783	0.02350
	(A * !Y)	0.00259	0.00249	0.01817

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00135	0.00187	0.01142
	(A * !Y)	0.00446	0.00500	0.01455
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00268	0.00306	0.01342
	(A * !Y)	0.00621	0.00660	0.01696
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00327	0.00397	0.02108
	(A * !Y)	0.00857	0.00930	0.02641

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00287	0.00295	0.37059
sky130_fd_sc_hs__nor2_2	0.00460	0.00440	0.68481
sky130_fd_sc_hs__nor2_4	0.00881	0.00879	1.31742
sky130_fd_sc_hs__nor2_8	0.01722	0.01736	2.48112

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.03196	0.07373
sky130_fd_sc_hs__nor2_2	0.00000	0.04400	0.07373
sky130_fd_sc_hs__nor2_4	0.00000	0.08772	0.15246
sky130_fd_sc_hs__nor2_8	0.00000	0.17208	0.29961

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)	0.10834	1.11215	10.64390
	B->Y (FR)	0.08581	1.10684	10.91370
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.08621	0.94266	10.50450
	B->Y (FR)	0.05344	0.92419	10.76590
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.08606	0.81522	10.43080
	B->Y (FR)	0.05349	0.80439	10.76440
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.08349	0.70693	10.31600
	B->Y (FR)	0.05696	0.71905	10.79270

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.03174	0.47151	4.66213
	B->Y (RF)	0.02781	0.46013	4.64445
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.04172	0.57913	6.41069
	B->Y (RF)	0.03099	0.55616	6.38899
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.04127	0.51220	6.33345
	B->Y (RF)	0.03016	0.48364	6.27043
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.03905	0.45128	6.17829
	B->Y (RF)	0.03767	0.42945	6.16201

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00034	-0.00041	0.00070
	A	0.00449	0.00444	0.00558
	B	-0.00045	-0.00035	0.00177
	B	0.00350	0.00359	0.00573
sky130_fd_sc_hs__nor2_2	A	-0.00070	-0.00075	0.00041
	A	0.00740	0.00739	0.00859
	B	-0.00056	-0.00024	0.00215
	B	0.00525	0.00558	0.00802
sky130_fd_sc_hs__nor2_4	A	0.00034	0.00020	0.00265
	A	0.01609	0.01600	0.01851
	B	-0.00013	0.00067	0.00534
	B	0.01161	0.01242	0.01719
sky130_fd_sc_hs__nor2_8	A	-0.00015	-0.00035	0.00481
	A	0.03087	0.03074	0.03604
	B	-0.00131	0.00031	0.01023
	B	0.02193	0.02362	0.03368

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00550	0.00549	0.00681
	A	0.00070	0.00066	0.00190
	B	0.00378	0.00389	0.00514
	B	-0.00015	-0.00008	0.00116
sky130_fd_sc_hs__nor2_2	A	0.00937	0.00914	0.01066
	A	0.00136	0.00111	0.00266
	B	0.00443	0.00471	0.00624
	B	-0.00137	-0.00116	0.00044
sky130_fd_sc_hs__nor2_4	A	0.01786	0.01739	0.02056
	A	0.00231	0.00182	0.00499
	B	0.00881	0.00916	0.01298
	B	-0.00290	-0.00259	0.00080
sky130_fd_sc_hs__nor2_8	A	0.03410	0.03314	0.04136
	A	0.00344	0.00241	0.00924
	B	0.01743	0.01811	0.02592
	B	-0.00583	-0.00522	0.00209

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00163	0.00141	0.00140
	(B * !Y)	-0.00151	-0.00174	-0.00175
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00224	0.00177	0.00175
	(B * !Y)	-0.00295	-0.00350	-0.00350
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00391	0.00288	0.00283
	(B * !Y)	-0.00590	-0.00703	-0.00705
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00747	0.00558	0.00545
	(B * !Y)	-0.01179	-0.01399	-0.01402

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00139	-0.00140	-0.00139
	(B * !Y)	0.00174	0.00176	0.00175
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00174	-0.00175	-0.00173
	(B * !Y)	0.00349	0.00351	0.00350
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00280	-0.00281	-0.00279
	(B * !Y)	0.00702	0.00707	0.00705
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00541	-0.00544	-0.00538
	(B * !Y)	0.01396	0.01412	0.01402

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00159	0.00159	0.00159
	(A * !Y)	-0.00084	-0.00084	-0.00084
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00175	0.00176	0.00176
	(A * !Y)	-0.00169	-0.00171	-0.00170
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00353	0.00356	0.00354
	(A * !Y)	-0.00334	-0.00338	-0.00336
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00697	0.00700	0.00698
	(A * !Y)	-0.00667	-0.00668	-0.00666

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	**(A * !Y)**	-0.00154	-0.00154	-0.00158
	(A * !Y)	0.00089	0.00088	0.00085
sky130_fd_sc_hs__nor2_2	**(A * !Y)**	-0.00159	-0.00161	-0.00174
	(A * !Y)	0.00185	0.00185	0.00174
sky130_fd_sc_hs__nor2_4	**(A * !Y)**	-0.00325	-0.00328	-0.00352
	(A * !Y)	0.00363	0.00363	0.00343
sky130_fd_sc_hs__nor2_8	**(A * !Y)**	-0.00645	-0.00651	-0.00695
	(A * !Y)	0.00715	0.00716	0.00680

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00282	0.00293	0.00221	0.24261
sky130_fd_sc_hs__nor3b_2	0.00552	0.00551	0.00266	0.44958
sky130_fd_sc_hs__nor3b_4	0.01108	0.01101	0.00378	0.81930

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3b_1	0.00000	0.10986	0.26153
sky130_fd_sc_hs__nor3b_2	0.00000	0.10688	0.29792
sky130_fd_sc_hs__nor3b_4	0.00000	0.26360	0.73753

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)	0.21255	1.30150	10.14850
	B->Y (FR)	0.19290	1.30478	10.65530
	C_N->Y (RR)	0.17729	1.14504	7.58163
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.19898	1.10906	9.96907
	B->Y (FR)	0.17625	1.11452	10.57940
	C_N->Y (RR)	0.14705	0.95854	7.52226
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.20043	0.96521	9.81379
	B->Y (FR)	0.17848	0.97323	10.47140
	C_N->Y (RR)	0.17595	0.90381	7.89003

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.03317	0.43419	3.75680
	B->Y (RF)	0.03530	0.43483	3.80175
	C_N->Y (FF)	0.11809	0.50049	2.18295
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.02796	0.37893	3.60426
	B->Y (RF)	0.02921	0.36706	3.57394
	C_N->Y (FF)	0.12848	0.52404	2.32408
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.02731	0.34130	3.53742
	B->Y (RF)	0.02872	0.32892	3.51161
	C_N->Y (FF)	0.14291	0.52638	2.23238

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00174	0.00163	0.00270
	A	0.00627	0.00616	0.00722
	B	0.00159	0.00147	0.00274
	B	0.00540	0.00528	0.00656
	C_N	0.00685	0.00689	0.01564
	C_N	0.00438	0.00444	0.01320
sky130_fd_sc_hs__nor3b_2	A	0.00275	0.00256	0.00465
	A	0.01226	0.01208	0.01417
	B	0.00275	0.00257	0.00509
	B	0.01026	0.01009	0.01264
	C_N	0.01013	0.01025	0.02029
	C_N	0.00774	0.00786	0.01792
sky130_fd_sc_hs__nor3b_4	A	0.00517	0.00479	0.00932
	A	0.02426	0.02390	0.02829
	B	0.00534	0.00491	0.01019
	B	0.02050	0.02013	0.02544
	C_N	0.01825	0.01848	0.03375
	C_N	0.01534	0.01559	0.03093

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00621	0.00613	0.00761
	A	0.00175	0.00164	0.00313
	B	0.00470	0.00464	0.00614
	B	0.00091	0.00084	0.00233
	C_N	0.00371	0.00427	0.01372
	C_N	0.00618	0.00672	0.01617
sky130_fd_sc_hs__nor3b_2	A	0.01255	0.01232	0.01532
	A	0.00321	0.00294	0.00600
	B	0.00895	0.00877	0.01182
	B	0.00147	0.00126	0.00434
	C_N	0.00641	0.00713	0.01705
	C_N	0.00880	0.00951	0.01942
sky130_fd_sc_hs__nor3b_4	A	0.02469	0.02412	0.03035
	A	0.00593	0.00530	0.01156
	B	0.01764	0.01724	0.02350
	B	0.00252	0.00206	0.00833
	C_N	0.01373	0.01503	0.03190
	C_N	0.01664	0.01792	0.03479

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)	0.00138	0.00131	0.00131
	(B * C_N * !Y)	-0.00160	-0.00171	-0.00171
	(B * !C_N * !Y)	0.00126	0.00125	0.00125
	(B * !C_N * !Y)	-0.00173	-0.00176	-0.00176
	(!B * !C_N * !Y)	0.00127	0.00127	0.00125
	(!B * !C_N * !Y)	-0.00159	-0.00172	-0.00170
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00276	0.00265	0.00264
	(B * C_N * !Y)	-0.00335	-0.00354	-0.00352
	(B * !C_N * !Y)	0.00265	0.00264	0.00264
	(B * !C_N * !Y)	-0.00345	-0.00354	-0.00352
	(!B * !C_N * !Y)	0.00269	0.00265	0.00264
	(!B * !C_N * !Y)	-0.00322	-0.00345	-0.00342
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00589	0.00567	0.00562
	(B * C_N * !Y)	-0.00640	-0.00682	-0.00677
	(B * !C_N * !Y)	0.00526	0.00528	0.00524
	(B * !C_N * !Y)	-0.00702	-0.00722	-0.00716
	(!B * !C_N * !Y)	0.00533	0.00526	0.00524
	(!B * !C_N * !Y)	-0.00656	-0.00702	-0.00696

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)	-0.00130	-0.00131	-0.00130
	(B * C_N * !Y)	0.00171	0.00172	0.00171
	(B * !C_N * !Y)	-0.00125	-0.00125	-0.00125
	(B * !C_N * !Y)	0.00175	0.00177	0.00176
	(!B * !C_N * !Y)	-0.00125	-0.00125	-0.00125
	(!B * !C_N * !Y)	0.00170	0.00172	0.00170
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00262	-0.00264	-0.00263
	(B * C_N * !Y)	0.00350	0.00355	0.00352
	(B * !C_N * !Y)	-0.00263	-0.00264	-0.00263
	(B * !C_N * !Y)	0.00352	0.00355	0.00352
	(!B * !C_N * !Y)	-0.00263	-0.00265	-0.00263
	(!B * !C_N * !Y)	0.00342	0.00345	0.00342
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00562	-0.00566	-0.00562
	(B * C_N * !Y)	0.00677	0.00684	0.00677
	(B * !C_N * !Y)	-0.00524	-0.00527	-0.00524
	(B * !C_N * !Y)	0.00715	0.00722	0.00716
	(!B * !C_N * !Y)	-0.00523	-0.00525	-0.00522
	(!B * !C_N * !Y)	0.00696	0.00702	0.00696

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)	0.00153	0.00154	0.00153
	(A * C_N * !Y)	-0.00092	-0.00092	-0.00092
	(A * !C_N * !Y)	0.00142	0.00144	0.00135
	(A * !C_N * !Y)	-0.00139	-0.00140	-0.00139
	(!A * !C_N * !Y)	0.00162	0.00133	0.00131
	(!A * !C_N * !Y)	-0.00161	-0.00191	-0.00191
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00272	0.00274	0.00272
	(A * C_N * !Y)	-0.00193	-0.00194	-0.00194
	(A * !C_N * !Y)	0.00290	0.00295	0.00276
	(A * !C_N * !Y)	-0.00258	-0.00260	-0.00258
	(!A * !C_N * !Y)	0.00326	0.00265	0.00261
	(!A * !C_N * !Y)	-0.00300	-0.00362	-0.00363
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00555	0.00557	0.00552
	(A * C_N * !Y)	-0.00381	-0.00383	-0.00385
	(A * !C_N * !Y)	0.00588	0.00589	0.00551
	(A * !C_N * !Y)	-0.00512	-0.00514	-0.00511
	(!A * !C_N * !Y)	0.00664	0.00534	0.00526
	(!A * !C_N * !Y)	-0.00591	-0.00725	-0.00725

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)	-0.00151	-0.00151	-0.00151
	(A * C_N * !Y)	0.00095	0.00095	0.00095
	(A * !C_N * !Y)	-0.00130	-0.00131	-0.00130
	(A * !C_N * !Y)	0.00139	0.00140	0.00139
	(!A * !C_N * !Y)	-0.00130	-0.00130	-0.00129
	(!A * !C_N * !Y)	0.00191	0.00193	0.00192
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00268	-0.00267	-0.00267
	(A * C_N * !Y)	0.00199	0.00199	0.00201
	(A * !C_N * !Y)	-0.00264	-0.00265	-0.00264
	(A * !C_N * !Y)	0.00258	0.00260	0.00258
	(!A * !C_N * !Y)	-0.00260	-0.00260	-0.00259
	(!A * !C_N * !Y)	0.00361	0.00362	0.00363
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00544	-0.00546	-0.00543
	(A * C_N * !Y)	0.00390	0.00393	0.00398
	(A * !C_N * !Y)	-0.00528	-0.00530	-0.00528
	(A * !C_N * !Y)	0.00512	0.00514	0.00511
	(!A * !C_N * !Y)	-0.00521	-0.00524	-0.00520
	(!A * !C_N * !Y)	0.00723	0.00730	0.00726

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00379	0.00380	0.01285
	(B * !Y)	0.00080	0.00080	0.00986
	(A * !B * !Y)	0.00388	0.00389	0.01291
	(A * !B * !Y)	0.00083	0.00083	0.00987
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00507	0.00503	0.01480
	(B * !Y)	0.00157	0.00152	0.01129
	(A * !B * !Y)	0.00528	0.00524	0.01494
	(A * !B * !Y)	0.00165	0.00160	0.01134
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00823	0.00807	0.02289
	(B * !Y)	0.00293	0.00275	0.01758
	(A * !B * !Y)	0.00862	0.00845	0.02315
	(A * !B * !Y)	0.00306	0.00288	0.01763

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00139	0.00185	0.01146
	(B * !Y)	0.00438	0.00483	0.01445
	(A * !B * !Y)	0.00139	0.00185	0.01146
	(A * !B * !Y)	0.00439	0.00484	0.01446
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00265	0.00303	0.01341
	(B * !Y)	0.00613	0.00653	0.01689
	(A * !B * !Y)	0.00265	0.00303	0.01340
	(A * !B * !Y)	0.00615	0.00654	0.01690
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00628	0.00688	0.02363
	(B * !Y)	0.01156	0.01217	0.02892
	(A * !B * !Y)	0.00629	0.00689	0.02363
	(A * !B * !Y)	0.01160	0.01221	0.02895

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00291	0.00314	0.00299	0.24415
sky130_fd_sc_hs__nor3_2	0.00456	0.00477	0.00446	0.46940
sky130_fd_sc_hs__nor3_4	0.00993	0.00980	0.00948	0.81505

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	0.02531	0.11220
sky130_fd_sc_hs__nor3_2	0.00000	0.03548	0.11260
sky130_fd_sc_hs__nor3_4	0.00000	0.06876	0.22126

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)	0.21601	1.30192	10.14750
	B->Y (FR)	0.19899	1.30908	10.65720
	C->Y (FR)	0.14151	1.25490	10.73830
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.16798	1.08244	10.07710
	B->Y (FR)	0.14571	1.08145	10.56200
	C->Y (FR)	0.07479	1.01165	10.62780
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.18057	0.95286	9.74562
	B->Y (FR)	0.15055	0.94054	10.26820
	C->Y (FR)	0.07961	0.88102	10.40960

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.03434	0.43552	3.76714
	B->Y (RF)	0.03693	0.43568	3.80176
	C->Y (RF)	0.03165	0.42008	3.78977
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.04717	0.54468	5.33015
	B->Y (RF)	0.04712	0.52722	5.28573
	C->Y (RF)	0.03429	0.50323	5.25887
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.04085	0.48024	5.00462
	B->Y (RF)	0.04439	0.46654	5.02381
	C->Y (RF)	0.04078	0.44308	4.99349

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00023	0.00010	0.00117
	A	0.00649	0.00637	0.00743
	B	0.00028	0.00013	0.00141
	B	0.00562	0.00548	0.00677
	C	0.00020	0.00030	0.00271
	C	0.00461	0.00473	0.00715
sky130_fd_sc_hs__nor3_2	A	0.00012	0.00002	0.00110
	A	0.01035	0.01027	0.01134
	B	0.00037	0.00027	0.00158
	B	0.00874	0.00866	0.01000
	C	0.00031	0.00056	0.00342
	C	0.00643	0.00668	0.00958
sky130_fd_sc_hs__nor3_4	A	-0.00009	-0.00034	0.00196
	A	0.02171	0.02151	0.02376
	B	-0.00005	-0.00033	0.00281
	B	0.01734	0.01706	0.02024
	C	-0.00068	-0.00003	0.00628
	C	0.01303	0.01366	0.02004

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00793	0.00784	0.00929
	A	0.00175	0.00164	0.00311
	B	0.00628	0.00620	0.00768
	B	0.00098	0.00087	0.00235
	C	0.00430	0.00442	0.00588
	C	-0.00011	-0.00001	0.00143
sky130_fd_sc_hs__nor3_2	A	0.01339	0.01323	0.01509
	A	0.00337	0.00311	0.00485
	B	0.00986	0.00969	0.01141
	B	0.00160	0.00142	0.00317
	C	0.00486	0.00512	0.00721
	C	-0.00125	-0.00104	0.00085
sky130_fd_sc_hs__nor3_4	A	0.02836	0.02742	0.03116
	A	0.00700	0.00599	0.00973
	B	0.02020	0.01964	0.02413
	B	0.00300	0.00235	0.00642
	C	0.01110	0.01144	0.01589
	C	-0.00260	-0.00225	0.00210

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00144	0.00143	0.00143
	(B * C * !Y)	-0.00169	-0.00174	-0.00173
	(B * !C * !Y)	0.00149	0.00143	0.00144
	(B * !C * !Y)	-0.00163	-0.00173	-0.00173
	(!B * C * !Y)	0.00146	0.00145	0.00143
	(!B * C * !Y)	-0.00154	-0.00168	-0.00167
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00168	0.00168	0.00167
	(B * C * !Y)	-0.00332	-0.00343	-0.00341
	(B * !C * !Y)	0.00175	0.00168	0.00167
	(B * !C * !Y)	-0.00322	-0.00342	-0.00340
	(!B * C * !Y)	0.00173	0.00169	0.00167
	(!B * C * !Y)	-0.00302	-0.00329	-0.00327
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00321	0.00323	0.00320
	(B * C * !Y)	-0.00706	-0.00727	-0.00722
	(B * !C * !Y)	0.00358	0.00323	0.00320
	(B * !C * !Y)	-0.00665	-0.00729	-0.00723
	(!B * C * !Y)	0.00339	0.00323	0.00320
	(!B * C * !Y)	-0.00634	-0.00696	-0.00694

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00143	-0.00143	-0.00143
	(B * C * !Y)	0.00172	0.00174	0.00173
	(B * !C * !Y)	-0.00143	-0.00143	-0.00143
	(B * !C * !Y)	0.00173	0.00174	0.00173
	(!B * C * !Y)	-0.00143	-0.00144	-0.00143
	(!B * C * !Y)	0.00166	0.00168	0.00167
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00167	-0.00168	-0.00167
	(B * C * !Y)	0.00339	0.00343	0.00341
	(B * !C * !Y)	-0.00167	-0.00168	-0.00167
	(B * !C * !Y)	0.00339	0.00343	0.00340
	(!B * C * !Y)	-0.00167	-0.00168	-0.00167
	(!B * C * !Y)	0.00326	0.00329	0.00327
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00319	-0.00321	-0.00320
	(B * C * !Y)	0.00718	0.00727	0.00722
	(B * !C * !Y)	-0.00319	-0.00322	-0.00320
	(B * !C * !Y)	0.00718	0.00729	0.00723
	(!B * C * !Y)	-0.00318	-0.00319	-0.00318
	(!B * C * !Y)	0.00692	0.00696	0.00694

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00160	0.00162	0.00153
	(A * C * !Y)	-0.00113	-0.00114	-0.00113
	(A * !C * !Y)	0.00149	0.00150	0.00148
	(A * !C * !Y)	-0.00090	-0.00090	-0.00091
	(!A * C * !Y)	0.00180	0.00150	0.00148
	(!A * C * !Y)	-0.00136	-0.00168	-0.00168
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00178	0.00180	0.00160
	(A * C * !Y)	-0.00250	-0.00251	-0.00250
	(A * !C * !Y)	0.00154	0.00155	0.00149
	(A * !C * !Y)	-0.00195	-0.00197	-0.00200
	(!A * C * !Y)	0.00216	0.00150	0.00146
	(!A * C * !Y)	-0.00288	-0.00361	-0.00360
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00403	0.00405	0.00367
	(A * C * !Y)	-0.00473	-0.00475	-0.00472
	(A * !C * !Y)	0.00351	0.00349	0.00344
	(A * !C * !Y)	-0.00370	-0.00368	-0.00369
	(!A * C * !Y)	0.00465	0.00349	0.00344
	(!A * C * !Y)	-0.00551	-0.00681	-0.00681

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00148	-0.00148	-0.00148
	(A * C * !Y)	0.00113	0.00114	0.00113
	(A * !C * !Y)	-0.00147	-0.00147	-0.00146
	(A * !C * !Y)	0.00093	0.00093	0.00093
	(!A * C * !Y)	-0.00147	-0.00148	-0.00146
	(!A * C * !Y)	0.00168	0.00169	0.00168
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00148	-0.00149	-0.00149
	(A * C * !Y)	0.00250	0.00251	0.00250
	(A * !C * !Y)	-0.00145	-0.00145	-0.00142
	(A * !C * !Y)	0.00206	0.00206	0.00207
	(!A * C * !Y)	-0.00145	-0.00145	-0.00144
	(!A * C * !Y)	0.00358	0.00361	0.00360
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00344	-0.00346	-0.00344
	(A * C * !Y)	0.00473	0.00475	0.00472
	(A * !C * !Y)	-0.00338	-0.00339	-0.00334
	(A * !C * !Y)	0.00377	0.00379	0.00382
	(!A * C * !Y)	-0.00340	-0.00341	-0.00339
	(!A * C * !Y)	0.00678	0.00681	0.00681

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00156	0.00156	0.00156
	(B * !Y)	-0.00084	-0.00084	-0.00084
	(A * !B * !Y)	0.00156	0.00157	0.00156
	(A * !B * !Y)	-0.00084	-0.00084	-0.00083
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00174	0.00174	0.00174
	(B * !Y)	-0.00169	-0.00169	-0.00168
	(A * !B * !Y)	0.00174	0.00175	0.00174
	(A * !B * !Y)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00390	0.00392	0.00391
	(B * !Y)	-0.00345	-0.00346	-0.00346
	(A * !B * !Y)	0.00390	0.00392	0.00391
	(A * !B * !Y)	-0.00342	-0.00344	-0.00344

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00151	-0.00152	-0.00156
	(B * !Y)	0.00089	0.00089	0.00086
	(A * !B * !Y)	-0.00143	-0.00143	-0.00154
	(A * !B * !Y)	0.00093	0.00093	0.00085
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00157	-0.00158	-0.00173
	(B * !Y)	0.00184	0.00183	0.00172
	(A * !B * !Y)	-0.00139	-0.00140	-0.00169
	(A * !B * !Y)	0.00193	0.00192	0.00172
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00362	-0.00365	-0.00390
	(B * !Y)	0.00371	0.00372	0.00353
	(A * !B * !Y)	-0.00320	-0.00323	-0.00382
	(A * !B * !Y)	0.00390	0.00391	0.00352

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00295	0.00302	0.00235	0.00231	0.17869
sky130_fd_sc_hs__nor4bb_2	0.00552	0.00577	0.00275	0.00262	0.32303
sky130_fd_sc_hs__nor4bb_4	0.01090	0.01158	0.00383	0.00373	0.62299

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4bb_1	0.00000	0.18763	0.44647
sky130_fd_sc_hs__nor4bb_2	0.00000	0.15343	0.44793
sky130_fd_sc_hs__nor4bb_4	0.00000	0.40269	1.18069

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)	0.35146	1.51899	9.80906
	B->Y (FR)	0.33356	1.50592	10.18760
	C_N->Y (RR)	0.33032	1.40675	7.74345
	D_N->Y (RR)	0.21532	1.27768	7.57655
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.34460	1.33654	9.71033
	B->Y (FR)	0.31932	1.30351	10.06370
	C_N->Y (RR)	0.31167	1.22344	7.76055
	D_N->Y (RR)	0.18484	1.08380	7.59125
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.34365	1.16583	9.68746
	B->Y (FR)	0.31938	1.14482	10.07700
	C_N->Y (RR)	0.31381	1.10042	8.06268
	D_N->Y (RR)	0.19711	0.97745	7.92991

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.03476	0.41555	3.22512
	B->Y (RF)	0.03593	0.40824	3.18981
	C_N->Y (FF)	0.14470	0.52107	2.01826
	D_N->Y (FF)	0.12220	0.48325	1.91328
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.02933	0.36263	3.05110
	B->Y (RF)	0.03078	0.35698	3.04787
	C_N->Y (FF)	0.15035	0.53602	2.18908
	D_N->Y (FF)	0.13050	0.51148	2.13778
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.03020	0.34321	3.15218
	B->Y (RF)	0.03101	0.32981	3.06751
	C_N->Y (FF)	0.15644	0.52061	2.01491
	D_N->Y (FF)	0.14457	0.51020	2.00542

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00321	0.00306	0.00400
	A	0.00808	0.00794	0.00886
	B	0.00318	0.00302	0.00412
	B	0.00721	0.00706	0.00815
	C_N	0.00912	0.00907	0.01767
	C_N	0.00658	0.00653	0.01514
	D_N	0.00745	0.00746	0.01661
	D_N	0.00517	0.00518	0.01434
sky130_fd_sc_hs__nor4bb_2	A	0.00598	0.00573	0.00745
	A	0.01556	0.01533	0.01704
	B	0.00594	0.00567	0.00784
	B	0.01372	0.01344	0.01562
	C_N	0.01367	0.01368	0.02357
	C_N	0.01133	0.01133	0.02125
	D_N	0.01129	0.01134	0.02146
	D_N	0.00920	0.00924	0.01941
sky130_fd_sc_hs__nor4bb_4	A	0.01227	0.01173	0.01549
	A	0.03087	0.03033	0.03408
	B	0.01205	0.01151	0.01599
	B	0.02755	0.02702	0.03146
	C_N	0.02500	0.02493	0.04006
	C_N	0.02226	0.02217	0.03734
	D_N	0.02015	0.02030	0.03593
	D_N	0.01756	0.01771	0.03340

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00747	0.00732	0.00891
	A	0.00268	0.00252	0.00413
	B	0.00593	0.00580	0.00742
	B	0.00192	0.00177	0.00339
	C_N	0.00555	0.00591	0.01519
	C_N	0.00809	0.00843	0.01772
	D_N	0.00393	0.00446	0.01384
	D_N	0.00621	0.00673	0.01610
sky130_fd_sc_hs__nor4bb_2	A	0.01503	0.01460	0.01779
	A	0.00564	0.00519	0.00845
	B	0.01101	0.01082	0.01411
	B	0.00328	0.00306	0.00635
	C_N	0.01004	0.01039	0.02045
	C_N	0.01238	0.01272	0.02278
	D_N	0.00675	0.00747	0.01782
	D_N	0.00884	0.00955	0.01990
sky130_fd_sc_hs__nor4bb_4	A	0.02879	0.02793	0.03463
	A	0.01060	0.00976	0.01650
	B	0.02224	0.02167	0.02849
	B	0.00692	0.00625	0.01313
	C_N	0.01837	0.01894	0.03515
	C_N	0.02112	0.02168	0.03788
	D_N	0.01386	0.01505	0.03219
	D_N	0.01643	0.01763	0.03475

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)**	0.00152	0.00148	0.00148
	(B * C_N * D_N * !Y)	-0.00164	-0.00171	-0.00171
	(B * !D_N * !Y)	0.00151	0.00148	0.00148
	(B * !D_N * !Y)	-0.00165	-0.00171	-0.00171
	(B * !C_N * D_N * !Y)	0.00137	0.00137	0.00137
	(B * !C_N * D_N * !Y)	-0.00179	-0.00182	-0.00182
	(!B * C_N * !D_N * !Y)	0.00158	0.00154	0.00150
	(!B * C_N * !D_N * !Y)	-0.00153	-0.00163	-0.00162
	(!B * !C_N * D_N * !Y)	0.00137	0.00139	0.00137
	(!B * !C_N * D_N * !Y)	-0.00167	-0.00178	-0.00176
	(!B * !C_N * !D_N * !Y)	0.00137	0.00139	0.00137
	(!B * !C_N * !D_N * !Y)	-0.00166	-0.00178	-0.00176
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00269	0.00263	0.00262
	(B * C_N * D_N * !Y)	-0.00334	-0.00354	-0.00351
	(B * !D_N * !Y)	0.00267	0.00263	0.00262
	(B * !D_N * !Y)	-0.00337	-0.00354	-0.00351
	(B * !C_N * D_N * !Y)	0.00261	0.00263	0.00261
	(B * !C_N * D_N * !Y)	-0.00341	-0.00354	-0.00351
	(!B * C_N * !D_N * !Y)	0.00284	0.00274	0.00267
	(!B * C_N * !D_N * !Y)	-0.00313	-0.00335	-0.00333
	(!B * !C_N * D_N * !Y)	0.00262	0.00262	0.00261
	(!B * !C_N * D_N * !Y)	-0.00319	-0.00342	-0.00339
	(!B * !C_N * !D_N * !Y)	0.00261	0.00262	0.00261
	(!B * !C_N * !D_N * !Y)	-0.00318	-0.00342	-0.00339

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00529	0.00513	0.00510
	(B * C_N * D_N * !Y)	-0.00651	-0.00679	-0.00681
	(B * !D_N * !Y)	0.00527	0.00514	0.00511
	(B * !D_N * !Y)	-0.00658	-0.00684	-0.00680
	(B * !C_N * D_N * !Y)	0.00512	0.00511	0.00509
	(B * !C_N * D_N * !Y)	-0.00669	-0.00686	-0.00682
	(!B * C_N * !D_N * !Y)	0.00557	0.00529	0.00519
	(!B * C_N * !D_N * !Y)	-0.00605	-0.00648	-0.00643
	(!B * !C_N * D_N * !Y)	0.00513	0.00512	0.00509
	(!B * !C_N * D_N * !Y)	-0.00621	-0.00663	-0.00657
	(!B * !C_N * !D_N * !Y)	0.00511	0.00511	0.00508
	(!B * !C_N * !D_N * !Y)	-0.00620	-0.00663	-0.00656

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)**	-0.00147	-0.00148	-0.00147
	(B * C_N * D_N * !Y)	0.00171	0.00172	0.00171
	(B * !D_N * !Y)	-0.00148	-0.00148	-0.00147
	(B * !D_N * !Y)	0.00172	0.00172	0.00171
	(B * !C_N * D_N * !Y)	-0.00137	-0.00137	-0.00136
	(B * !C_N * D_N * !Y)	0.00182	0.00183	0.00182
	(!B * C_N * !D_N * !Y)	-0.00153	-0.00154	-0.00150
	(!B * C_N * !D_N * !Y)	0.00162	0.00163	0.00162
	(!B * !C_N * D_N * !Y)	-0.00136	-0.00137	-0.00136
	(!B * !C_N * D_N * !Y)	0.00176	0.00178	0.00176
	(!B * !C_N * !D_N * !Y)	-0.00136	-0.00137	-0.00137
	(!B * !C_N * !D_N * !Y)	0.00176	0.00178	0.00176

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00260	-0.00262	-0.00261
	(B * C_N * D_N * !Y)	0.00350	0.00354	0.00351
	(B * !D_N * !Y)	-0.00260	-0.00263	-0.00261
	(B * !D_N * !Y)	0.00350	0.00354	0.00351
	(B * !C_N * D_N * !Y)	-0.00260	-0.00262	-0.00261
	(B * !C_N * D_N * !Y)	0.00350	0.00355	0.00351
	(!B * C_N * !D_N * !Y)	-0.00274	-0.00274	-0.00267
	(!B * C_N * !D_N * !Y)	0.00332	0.00335	0.00333
	(!B * !C_N * D_N * !Y)	-0.00260	-0.00262	-0.00261
	(!B * !C_N * D_N * !Y)	0.00338	0.00342	0.00339
	(!B * !C_N * !D_N * !Y)	-0.00260	-0.00262	-0.00261
	(!B * !C_N * !D_N * !Y)	0.00338	0.00342	0.00339
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00507	-0.00506	-0.00507
	(B * C_N * D_N * !Y)	0.00679	0.00679	0.00681
	(B * !D_N * !Y)	-0.00508	-0.00511	-0.00509
	(B * !D_N * !Y)	0.00677	0.00684	0.00680
	(B * !C_N * D_N * !Y)	-0.00506	-0.00509	-0.00507
	(B * !C_N * D_N * !Y)	0.00679	0.00686	0.00682
	(!B * C_N * !D_N * !Y)	-0.00533	-0.00529	-0.00519
	(!B * C_N * !D_N * !Y)	0.00643	0.00648	0.00643
	(!B * !C_N * D_N * !Y)	-0.00507	-0.00510	-0.00507
	(!B * !C_N * D_N * !Y)	0.00655	0.00663	0.00657
	(!B * !C_N * !D_N * !Y)	-0.00506	-0.00510	-0.00507
	(!B * !C_N * !D_N * !Y)	0.00655	0.00663	0.00656

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)**	0.00158	0.00159	0.00159
	(A * C_N * D_N * !Y)	-0.00091	-0.00092	-0.00092
	(A * C_N * !D_N * !Y)	0.00182	0.00191	0.00186
	(A * C_N * !D_N * !Y)	-0.00116	-0.00117	-0.00117
	(A * !C_N * D_N * !Y)	0.00152	0.00154	0.00147
	(A * !C_N * D_N * !Y)	-0.00135	-0.00135	-0.00135
	(A * !C_N * !D_N * !Y)	0.00145	0.00146	0.00144
	(A * !C_N * !D_N * !Y)	-0.00137	-0.00138	-0.00136
	(!A * C_N * !D_N * !Y)	0.00180	0.00164	0.00160
	(!A * C_N * !D_N * !Y)	-0.00149	-0.00162	-0.00161
	(!A * !C_N * D_N * !Y)	0.00154	0.00144	0.00142
	(!A * !C_N * D_N * !Y)	-0.00172	-0.00185	-0.00184
	(!A * !C_N * !D_N * !Y)	0.00144	0.00144	0.00142
	(!A * !C_N * !D_N * !Y)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00282	0.00284	0.00283
	(A * C_N * D_N * !Y)	-0.00201	-0.00202	-0.00202
	(A * C_N * !D_N * !Y)	0.00326	0.00345	0.00337
	(A * C_N * !D_N * !Y)	-0.00254	-0.00257	-0.00255
	(A * !C_N * D_N * !Y)	0.00302	0.00299	0.00283
	(A * !C_N * D_N * !Y)	-0.00265	-0.00267	-0.00266
	(A * !C_N * !D_N * !Y)	0.00276	0.00277	0.00274
	(A * !C_N * !D_N * !Y)	-0.00272	-0.00271	-0.00270
	(!A * C_N * !D_N * !Y)	0.00318	0.00294	0.00285
	(!A * C_N * !D_N * !Y)	-0.00322	-0.00346	-0.00344
	(!A * !C_N * D_N * !Y)	0.00294	0.00276	0.00273
	(!A * !C_N * D_N * !Y)	-0.00348	-0.00371	-0.00369
	(!A * !C_N * !D_N * !Y)	0.00274	0.00275	0.00273
	(!A * !C_N * !D_N * !Y)	-0.00366	-0.00371	-0.00368

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00546	0.00557	0.00548
	(A * C_N * D_N * !Y)	-0.00397	-0.00405	-0.00400
	(A * C_N * !D_N * !Y)	0.00646	0.00672	0.00660
	(A * C_N * !D_N * !Y)	-0.00497	-0.00499	-0.00496
	(A * !C_N * D_N * !Y)	0.00577	0.00585	0.00546
	(A * !C_N * D_N * !Y)	-0.00531	-0.00535	-0.00530
	(A * !C_N * !D_N * !Y)	0.00531	0.00537	0.00526
	(A * !C_N * !D_N * !Y)	-0.00540	-0.00544	-0.00539
	(!A * C_N * !D_N * !Y)	0.00634	0.00572	0.00551
	(!A * C_N * !D_N * !Y)	-0.00623	-0.00680	-0.00676
	(!A * !C_N * D_N * !Y)	0.00580	0.00531	0.00525
	(!A * !C_N * D_N * !Y)	-0.00667	-0.00732	-0.00730
	(!A * !C_N * !D_N * !Y)	0.00522	0.00530	0.00524
	(!A * !C_N * !D_N * !Y)	-0.00721	-0.00732	-0.00729

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)**	-0.00154	-0.00154	-0.00154
	(A * C_N * D_N * !Y)	0.00097	0.00097	0.00098
	(A * C_N * !D_N * !Y)	-0.00177	-0.00178	-0.00178
	(A * C_N * !D_N * !Y)	0.00116	0.00117	0.00117
	(A * !C_N * D_N * !Y)	-0.00142	-0.00143	-0.00142
	(A * !C_N * D_N * !Y)	0.00135	0.00135	0.00135
	(A * !C_N * !D_N * !Y)	-0.00143	-0.00144	-0.00143
	(A * !C_N * !D_N * !Y)	0.00137	0.00138	0.00136
	(!A * C_N * !D_N * !Y)	-0.00165	-0.00164	-0.00160
	(!A * C_N * !D_N * !Y)	0.00160	0.00162	0.00161
	(!A * !C_N * D_N * !Y)	-0.00142	-0.00143	-0.00142
	(!A * !C_N * D_N * !Y)	0.00185	0.00186	0.00184
	(!A * !C_N * !D_N * !Y)	-0.00143	-0.00143	-0.00142
	(!A * !C_N * !D_N * !Y)	0.00184	0.00186	0.00184
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00268	-0.00269	-0.00270
	(A * C_N * D_N * !Y)	0.00216	0.00216	0.00217
	(A * C_N * !D_N * !Y)	-0.00319	-0.00322	-0.00320
	(A * C_N * !D_N * !Y)	0.00254	0.00257	0.00255
	(A * !C_N * D_N * !Y)	-0.00272	-0.00274	-0.00273
	(A * !C_N * D_N * !Y)	0.00265	0.00267	0.00266
	(A * !C_N * !D_N * !Y)	-0.00273	-0.00273	-0.00272
	(A * !C_N * !D_N * !Y)	0.00272	0.00271	0.00270
	(!A * C_N * !D_N * !Y)	-0.00299	-0.00294	-0.00285
	(!A * C_N * !D_N * !Y)	0.00344	0.00346	0.00344
	(!A * !C_N * D_N * !Y)	-0.00272	-0.00273	-0.00271
	(!A * !C_N * D_N * !Y)	0.00369	0.00371	0.00369
	(!A * !C_N * !D_N * !Y)	-0.00271	-0.00273	-0.00272
	(!A * !C_N * !D_N * !Y)	0.00367	0.00371	0.00368

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	-0.00528	-0.00533	-0.00527
	(A * C_N * D_N * !Y)	0.00418	0.00424	0.00425
	(A * C_N * !D_N * !Y)	-0.00625	-0.00629	-0.00626
	(A * C_N * !D_N * !Y)	0.00497	0.00499	0.00496
	(A * !C_N * D_N * !Y)	-0.00525	-0.00528	-0.00524
	(A * !C_N * D_N * !Y)	0.00531	0.00535	0.00530
	(A * !C_N * !D_N * !Y)	-0.00523	-0.00526	-0.00523
	(A * !C_N * !D_N * !Y)	0.00540	0.00544	0.00539
	(!A * C_N * !D_N * !Y)	-0.00582	-0.00572	-0.00551
	(!A * C_N * !D_N * !Y)	0.00675	0.00680	0.00676
	(!A * !C_N * D_N * !Y)	-0.00523	-0.00524	-0.00523
	(!A * !C_N * D_N * !Y)	0.00729	0.00732	0.00730
	(!A * !C_N * !D_N * !Y)	-0.00522	-0.00524	-0.00523
	(!A * !C_N * !D_N * !Y)	0.00728	0.00732	0.00729

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4bb_1	**(B * !Y)**	0.00434	0.00430	0.01310
	(B * !Y)	0.00110	0.00105	0.00986
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00443	0.00438	0.01314
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00111	0.00105	0.00983
sky130_fd_sc_hs__nor4bb_2	**(B * !Y)**	0.00509	0.00506	0.01477
	(B * !Y)	0.00155	0.00151	0.01123
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00531	0.00528	0.01488
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00160	0.00155	0.01119
sky130_fd_sc_hs__nor4bb_4	**(B * !Y)**	0.00818	0.00803	0.02308
	(B * !Y)	0.00311	0.00295	0.01803
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00846	0.00830	0.02325
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00309	0.00291	0.01794

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00179	0.00217	0.01163
	(B * !Y)	0.00502	0.00541	0.01487
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00179	0.00218	0.01163
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00503	0.00542	0.01488
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00313	0.00348	0.01378
	(B * !Y)	0.00666	0.00702	0.01730
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00314	0.00349	0.01378
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00669	0.00704	0.01732
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00563	0.00626	0.02302
	(B * !Y)	0.01065	0.01128	0.02803
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00565	0.00627	0.02303
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01070	0.01132	0.02807

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)	0.00387	0.00385	0.01284
	(B * C_N * !Y)	0.00091	0.00088	0.00987
	(A * !B * C_N * !Y)	0.00399	0.00396	0.01292
	(A * !B * C_N * !Y)	0.00097	0.00094	0.00991
	(!C_N * !Y)	0.00411	0.00408	0.01310
	(!C_N * !Y)	0.00115	0.00113	0.01014
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00495	0.00494	0.01464
	(B * C_N * !Y)	0.00168	0.00166	0.01138
	(A * !B * C_N * !Y)	0.00527	0.00526	0.01488
	(A * !B * C_N * !Y)	0.00186	0.00184	0.01150
	(!C_N * !Y)	0.00520	0.00519	0.01493
	(!C_N * !Y)	0.00195	0.00194	0.01170
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00769	0.00755	0.02235
	(B * C_N * !Y)	0.00286	0.00271	0.01754
	(A * !B * C_N * !Y)	0.00821	0.00806	0.02271
	(A * !B * C_N * !Y)	0.00317	0.00300	0.01774
	(!C_N * !Y)	0.00808	0.00794	0.02285
	(!C_N * !Y)	0.00332	0.00317	0.01809

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)	0.00158	0.00202	0.01163
	(B * C_N * !Y)	0.00454	0.00499	0.01458
	(A * !B * C_N * !Y)	0.00158	0.00202	0.01163
	(A * !B * C_N * !Y)	0.00454	0.00499	0.01458
	(!C_N * !Y)	0.00128	0.00180	0.01132
	(!C_N * !Y)	0.00424	0.00477	0.01429
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00289	0.00327	0.01364
	(B * C_N * !Y)	0.00614	0.00653	0.01690
	(A * !B * C_N * !Y)	0.00289	0.00327	0.01364
	(A * !B * C_N * !Y)	0.00614	0.00653	0.01690
	(!C_N * !Y)	0.00252	0.00290	0.01328
	(!C_N * !Y)	0.00577	0.00616	0.01653
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00659	0.00724	0.02406
	(B * C_N * !Y)	0.01137	0.01200	0.02883
	(A * !B * C_N * !Y)	0.00659	0.00724	0.02407
	(A * !B * C_N * !Y)	0.01137	0.01201	0.02883
	(!C_N * !Y)	0.00590	0.00656	0.02337
	(!C_N * !Y)	0.01067	0.01133	0.02813

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00285	0.00295	0.00294	0.00225	0.17913
sky130_fd_sc_hs__nor4b_2	0.00562	0.00569	0.00572	0.00266	0.31996
sky130_fd_sc_hs__nor4b_4	0.01104	0.01109	0.01126	0.00402	0.62398

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4b_1	0.00000	0.10322	0.29657
sky130_fd_sc_hs__nor4b_2	0.00000	0.09503	0.37252
sky130_fd_sc_hs__nor4b_4	0.00000	0.23780	0.88531

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)	0.33795	1.50592	9.80773
	B->Y (FR)	0.31836	1.49141	10.18710
	C->Y (FR)	0.26492	1.45577	10.57880
	D_N->Y (RR)	0.22133	1.28393	7.59354
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.34672	1.33299	9.63688
	B->Y (FR)	0.32088	1.30129	9.99287
	C->Y (FR)	0.26489	1.27019	10.51900
	D_N->Y (RR)	0.18857	1.08187	7.51324
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.34026	1.17089	9.74711
	B->Y (FR)	0.31498	1.14313	10.13780
	C->Y (FR)	0.25583	1.10707	10.66690
	D_N->Y (RR)	0.20334	0.98936	8.05437

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.03509	0.42015	3.27177
	B->Y (RF)	0.03691	0.41523	3.25482
	C->Y (RF)	0.03704	0.40484	3.23366
	D_N->Y (FF)	0.12219	0.48669	1.95373
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.02960	0.36177	3.03207
	B->Y (RF)	0.03107	0.35639	3.02967
	C->Y (RF)	0.03388	0.35078	3.04016
	D_N->Y (FF)	0.13385	0.51352	2.11493
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.02956	0.33485	3.08408
	B->Y (RF)	0.03029	0.32648	3.05162
	C->Y (RF)	0.03087	0.30779	2.97073
	D_N->Y (FF)	0.14139	0.50272	1.98216

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00190	0.00176	0.00268
	A	0.00763	0.00750	0.00841
	B	0.00189	0.00174	0.00284
	B	0.00674	0.00660	0.00769
	C	0.00171	0.00157	0.00296
	C	0.00582	0.00568	0.00708
	D_N	0.00715	0.00718	0.01598
	D_N	0.00488	0.00490	0.01373
sky130_fd_sc_hs__nor4b_2	A	0.00357	0.00330	0.00505
	A	0.01585	0.01560	0.01736
	B	0.00360	0.00331	0.00552
	B	0.01391	0.01361	0.01584
	C	0.00350	0.00321	0.00599
	C	0.01197	0.01169	0.01448
	D_N	0.01100	0.01103	0.02106
	D_N	0.00940	0.00941	0.01946
sky130_fd_sc_hs__nor4b_4	A	0.00698	0.00644	0.01009
	A	0.03124	0.03071	0.03434
	B	0.00701	0.00641	0.01091
	B	0.02736	0.02681	0.03128
	C	0.00674	0.00621	0.01182
	C	0.02355	0.02300	0.02863
	D_N	0.01942	0.01940	0.03498
	D_N	0.01800	0.01796	0.03358

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00843	0.00829	0.00985
	A	0.00282	0.00266	0.00426
	B	0.00683	0.00672	0.00830
	B	0.00204	0.00190	0.00351
	C	0.00513	0.00513	0.00675
	C	0.00103	0.00103	0.00264
	D_N	0.00416	0.00470	0.01418
	D_N	0.00643	0.00696	0.01644
sky130_fd_sc_hs__nor4b_2	A	0.01752	0.01709	0.02024
	A	0.00555	0.00509	0.00835
	B	0.01354	0.01330	0.01655
	B	0.00337	0.00311	0.00640
	C	0.00995	0.00986	0.01318
	C	0.00151	0.00139	0.00473
	D_N	0.00740	0.00809	0.01806
	D_N	0.00900	0.00969	0.01966
sky130_fd_sc_hs__nor4b_4	A	0.03408	0.03320	0.03947
	A	0.01045	0.00956	0.01599
	B	0.02650	0.02587	0.03240
	B	0.00640	0.00573	0.01235
	C	0.01915	0.01894	0.02565
	C	0.00249	0.00223	0.00896
	D_N	0.01482	0.01598	0.03266
	D_N	0.01625	0.01741	0.03406

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)**	0.00133	0.00132	0.00132
	(B * C * D_N * !Y)	-0.00166	-0.00171	-0.00170
	(B * !D_N * !Y)	0.00127	0.00127	0.00127
	(B * !D_N * !Y)	-0.00172	-0.00176	-0.00176
	(B * !C * D_N * !Y)	0.00133	0.00132	0.00132
	(B * !C * D_N * !Y)	-0.00164	-0.00171	-0.00171
	(!B * C * D_N * !Y)	0.00132	0.00134	0.00132
	(!B * C * D_N * !Y)	-0.00152	-0.00165	-0.00164
	(!B * C * !D_N * !Y)	0.00127	0.00128	0.00127
	(!B * C * !D_N * !Y)	-0.00158	-0.00170	-0.00169
	(!B * !C * !D_N * !Y)	0.00127	0.00128	0.00127
	(!B * !C * !D_N * !Y)	-0.00157	-0.00168	-0.00167
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00266	0.00268	0.00266
	(B * C * D_N * !Y)	-0.00343	-0.00357	-0.00354
	(B * !D_N * !Y)	0.00266	0.00268	0.00266
	(B * !D_N * !Y)	-0.00344	-0.00358	-0.00354
	(B * !C * D_N * !Y)	0.00268	0.00268	0.00266
	(B * !C * D_N * !Y)	-0.00337	-0.00357	-0.00354
	(!B * C * D_N * !Y)	0.00267	0.00268	0.00266
	(!B * C * D_N * !Y)	-0.00317	-0.00343	-0.00340
	(!B * C * !D_N * !Y)	0.00266	0.00268	0.00266
	(!B * C * !D_N * !Y)	-0.00317	-0.00343	-0.00340
	(!B * !C * !D_N * !Y)	0.00268	0.00270	0.00266
	(!B * !C * !D_N * !Y)	-0.00316	-0.00338	-0.00336

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00521	0.00523	0.00520
	(B * C * D_N * !Y)	-0.00679	-0.00704	-0.00699
	(B * !D_N * !Y)	0.00520	0.00523	0.00520
	(B * !D_N * !Y)	-0.00679	-0.00705	-0.00699
	(B * !C * D_N * !Y)	0.00525	0.00523	0.00520
	(B * !C * D_N * !Y)	-0.00668	-0.00704	-0.00699
	(!B * C * D_N * !Y)	0.00522	0.00522	0.00520
	(!B * C * D_N * !Y)	-0.00627	-0.00677	-0.00671
	(!B * C * !D_N * !Y)	0.00520	0.00522	0.00520
	(!B * C * !D_N * !Y)	-0.00627	-0.00677	-0.00671
	(!B * !C * !D_N * !Y)	0.00524	0.00527	0.00520
	(!B * !C * !D_N * !Y)	-0.00625	-0.00668	-0.00663

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)**	-0.00132	-0.00132	-0.00132
	(B * C * D_N * !Y)	0.00171	0.00172	0.00170
	(B * !D_N * !Y)	-0.00126	-0.00127	-0.00126
	(B * !D_N * !Y)	0.00176	0.00177	0.00176
	(B * !C * D_N * !Y)	-0.00132	-0.00132	-0.00132
	(B * !C * D_N * !Y)	0.00171	0.00172	0.00171
	(!B * C * D_N * !Y)	-0.00131	-0.00132	-0.00132
	(!B * C * D_N * !Y)	0.00163	0.00165	0.00164
	(!B * C * !D_N * !Y)	-0.00126	-0.00127	-0.00127
	(!B * C * !D_N * !Y)	0.00168	0.00170	0.00169
	(!B * !C * !D_N * !Y)	-0.00126	-0.00127	-0.00126
	(!B * !C * !D_N * !Y)	0.00167	0.00168	0.00167

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00265	-0.00267	-0.00266
	(B * C * D_N * !Y)	0.00354	0.00357	0.00354
	(B * !D_N * !Y)	-0.00265	-0.00267	-0.00266
	(B * !D_N * !Y)	0.00353	0.00358	0.00354
	(B * !C * D_N * !Y)	-0.00265	-0.00267	-0.00266
	(B * !C * D_N * !Y)	0.00354	0.00357	0.00354
	(!B * C * D_N * !Y)	-0.00265	-0.00267	-0.00266
	(!B * C * D_N * !Y)	0.00339	0.00343	0.00340
	(!B * C * !D_N * !Y)	-0.00265	-0.00267	-0.00266
	(!B * C * !D_N * !Y)	0.00339	0.00343	0.00340
	(!B * !C * !D_N * !Y)	-0.00266	-0.00267	-0.00266
	(!B * !C * !D_N * !Y)	0.00335	0.00338	0.00336
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00518	-0.00521	-0.00519
	(B * C * D_N * !Y)	0.00698	0.00704	0.00699
	(B * !D_N * !Y)	-0.00519	-0.00522	-0.00519
	(B * !D_N * !Y)	0.00698	0.00705	0.00699
	(B * !C * D_N * !Y)	-0.00518	-0.00521	-0.00519
	(B * !C * D_N * !Y)	0.00698	0.00706	0.00699
	(!B * C * D_N * !Y)	-0.00518	-0.00521	-0.00519
	(!B * C * D_N * !Y)	0.00670	0.00677	0.00671
	(!B * C * !D_N * !Y)	-0.00519	-0.00522	-0.00519
	(!B * C * !D_N * !Y)	0.00670	0.00677	0.00671
	(!B * !C * !D_N * !Y)	-0.00519	-0.00522	-0.00519
	(!B * !C * !D_N * !Y)	0.00663	0.00668	0.00663

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)**	0.00146	0.00147	0.00140
	(A * C * D_N * !Y)	-0.00115	-0.00116	-0.00115
	(A * C * !D_N * !Y)	0.00133	0.00134	0.00132
	(A * C * !D_N * !Y)	-0.00124	-0.00124	-0.00123
	(A * !C * D_N * !Y)	0.00137	0.00136	0.00136
	(A * !C * D_N * !Y)	-0.00093	-0.00093	-0.00092
	(A * !C * !D_N * !Y)	0.00132	0.00137	0.00131
	(A * !C * !D_N * !Y)	-0.00121	-0.00122	-0.00122
	(!A * C * D_N * !Y)	0.00150	0.00137	0.00135
	(!A * C * D_N * !Y)	-0.00153	-0.00170	-0.00169
	(!A * C * !D_N * !Y)	0.00131	0.00132	0.00130
	(!A * C * !D_N * !Y)	-0.00171	-0.00174	-0.00173
	(!A * !C * !D_N * !Y)	0.00134	0.00131	0.00130
	(!A * !C * !D_N * !Y)	-0.00152	-0.00165	-0.00166
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00301	0.00297	0.00281
	(A * C * D_N * !Y)	-0.00250	-0.00252	-0.00250
	(A * C * !D_N * !Y)	0.00275	0.00276	0.00272
	(A * C * !D_N * !Y)	-0.00256	-0.00256	-0.00254
	(A * !C * D_N * !Y)	0.00271	0.00273	0.00272
	(A * !C * D_N * !Y)	-0.00198	-0.00199	-0.00199
	(A * !C * !D_N * !Y)	0.00276	0.00288	0.00277
	(A * !C * !D_N * !Y)	-0.00251	-0.00253	-0.00251
	(!A * C * D_N * !Y)	0.00294	0.00274	0.00271
	(!A * C * D_N * !Y)	-0.00332	-0.00357	-0.00355
	(!A * C * !D_N * !Y)	0.00275	0.00274	0.00271
	(!A * C * !D_N * !Y)	-0.00350	-0.00357	-0.00354
	(!A * !C * !D_N * !Y)	0.00278	0.00274	0.00271
	(!A * !C * !D_N * !Y)	-0.00317	-0.00342	-0.00340

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00583	0.00581	0.00548
	(A * C * D_N * !Y)	-0.00489	-0.00492	-0.00490
	(A * C * !D_N * !Y)	0.00539	0.00541	0.00533
	(A * C * !D_N * !Y)	-0.00494	-0.00500	-0.00497
	(A * !C * D_N * !Y)	0.00530	0.00533	0.00530
	(A * !C * D_N * !Y)	-0.00390	-0.00392	-0.00391
	(A * !C * !D_N * !Y)	0.00538	0.00562	0.00539
	(A * !C * !D_N * !Y)	-0.00490	-0.00489	-0.00489
	(!A * C * D_N * !Y)	0.00583	0.00535	0.00529
	(!A * C * D_N * !Y)	-0.00648	-0.00709	-0.00704
	(!A * C * !D_N * !Y)	0.00536	0.00535	0.00529
	(!A * C * !D_N * !Y)	-0.00693	-0.00702	-0.00702
	(!A * !C * !D_N * !Y)	0.00545	0.00535	0.00529
	(!A * !C * !D_N * !Y)	-0.00623	-0.00672	-0.00672

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)**	-0.00135	-0.00136	-0.00136
	(A * C * D_N * !Y)	0.00115	0.00116	0.00115
	(A * C * !D_N * !Y)	-0.00130	-0.00130	-0.00130
	(A * C * !D_N * !Y)	0.00124	0.00124	0.00123
	(A * !C * D_N * !Y)	-0.00131	-0.00131	-0.00130
	(A * !C * D_N * !Y)	0.00097	0.00098	0.00098
	(A * !C * !D_N * !Y)	-0.00130	-0.00130	-0.00130
	(A * !C * !D_N * !Y)	0.00121	0.00122	0.00122
	(!A * C * D_N * !Y)	-0.00135	-0.00135	-0.00135
	(!A * C * D_N * !Y)	0.00168	0.00170	0.00169
	(!A * C * !D_N * !Y)	-0.00130	-0.00131	-0.00130
	(!A * C * !D_N * !Y)	0.00173	0.00174	0.00173
	(!A * !C * !D_N * !Y)	-0.00130	-0.00129	-0.00129
	(!A * !C * !D_N * !Y)	0.00167	0.00165	0.00166
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00271	-0.00272	-0.00271
	(A * C * D_N * !Y)	0.00250	0.00252	0.00250
	(A * C * !D_N * !Y)	-0.00272	-0.00272	-0.00271
	(A * C * !D_N * !Y)	0.00256	0.00256	0.00254
	(A * !C * D_N * !Y)	-0.00258	-0.00259	-0.00258
	(A * !C * D_N * !Y)	0.00213	0.00213	0.00214
	(A * !C * !D_N * !Y)	-0.00273	-0.00274	-0.00273
	(A * !C * !D_N * !Y)	0.00251	0.00253	0.00251
	(!A * C * D_N * !Y)	-0.00271	-0.00272	-0.00270
	(!A * C * D_N * !Y)	0.00355	0.00357	0.00355
	(!A * C * !D_N * !Y)	-0.00270	-0.00272	-0.00270
	(!A * C * !D_N * !Y)	0.00353	0.00357	0.00354
	(!A * !C * !D_N * !Y)	-0.00271	-0.00272	-0.00271
	(!A * !C * !D_N * !Y)	0.00339	0.00342	0.00340

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00528	-0.00530	-0.00529
	(A * C * D_N * !Y)	0.00489	0.00492	0.00490
	(A * C * !D_N * !Y)	-0.00526	-0.00530	-0.00528
	(A * C * !D_N * !Y)	0.00494	0.00500	0.00497
	(A * !C * D_N * !Y)	-0.00507	-0.00508	-0.00504
	(A * !C * D_N * !Y)	0.00415	0.00417	0.00419
	(A * !C * !D_N * !Y)	-0.00531	-0.00531	-0.00532
	(A * !C * !D_N * !Y)	0.00490	0.00489	0.00489
	(!A * C * D_N * !Y)	-0.00527	-0.00530	-0.00527
	(!A * C * D_N * !Y)	0.00701	0.00709	0.00704
	(!A * C * !D_N * !Y)	-0.00527	-0.00528	-0.00528
	(!A * C * !D_N * !Y)	0.00700	0.00702	0.00702
	(!A * !C * !D_N * !Y)	-0.00528	-0.00529	-0.00528
	(!A * !C * !D_N * !Y)	0.00671	0.00672	0.00672

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)	0.00154	0.00155	0.00154
	(B * D_N * !Y)	-0.00091	-0.00092	-0.00092
	(B * !D_N * !Y)	0.00143	0.00144	0.00136
	(B * !D_N * !Y)	-0.00141	-0.00142	-0.00142
	(A * !B * D_N * !Y)	0.00155	0.00155	0.00154
	(A * !B * D_N * !Y)	-0.00091	-0.00091	-0.00091
	(A * !B * !D_N * !Y)	0.00152	0.00141	0.00132
	(A * !B * !D_N * !Y)	-0.00133	-0.00141	-0.00140
	(!A * !B * !D_N * !Y)	0.00163	0.00133	0.00131
	(!A * !B * !D_N * !Y)	-0.00162	-0.00192	-0.00192

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00293	0.00294	0.00292
	(B * D_N * !Y)	-0.00188	-0.00189	-0.00189
	(B * !D_N * !Y)	0.00307	0.00310	0.00291
	(B * !D_N * !Y)	-0.00261	-0.00263	-0.00261
	(A * !B * D_N * !Y)	0.00292	0.00295	0.00292
	(A * !B * D_N * !Y)	-0.00185	-0.00187	-0.00187
	(A * !B * !D_N * !Y)	0.00323	0.00296	0.00280
	(A * !B * !D_N * !Y)	-0.00244	-0.00259	-0.00259
	(!A * !B * !D_N * !Y)	0.00342	0.00280	0.00275
	(!A * !B * !D_N * !Y)	-0.00295	-0.00360	-0.00360
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00581	0.00579	0.00574
	(B * D_N * !Y)	-0.00378	-0.00375	-0.00375
	(B * !D_N * !Y)	0.00622	0.00624	0.00585
	(B * !D_N * !Y)	-0.00499	-0.00503	-0.00498
	(A * !B * D_N * !Y)	0.00577	0.00581	0.00575
	(A * !B * D_N * !Y)	-0.00369	-0.00371	-0.00372
	(A * !B * !D_N * !Y)	0.00656	0.00589	0.00565
	(A * !B * !D_N * !Y)	-0.00463	-0.00497	-0.00494
	(!A * !B * !D_N * !Y)	0.00691	0.00561	0.00556
	(!A * !B * !D_N * !Y)	-0.00560	-0.00697	-0.00702

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)**	-0.00152	-0.00152	-0.00152
	(B * D_N * !Y)	0.00095	0.00095	0.00095
	(B * !D_N * !Y)	-0.00130	-0.00131	-0.00130
	(B * !D_N * !Y)	0.00141	0.00142	0.00142
	(A * !B * D_N * !Y)	-0.00145	-0.00146	-0.00151
	(A * !B * D_N * !Y)	0.00096	0.00096	0.00093
	(A * !B * !D_N * !Y)	-0.00130	-0.00130	-0.00130
	(A * !B * !D_N * !Y)	0.00141	0.00141	0.00140
	(!A * !B * !D_N * !Y)	-0.00129	-0.00130	-0.00129
	(!A * !B * !D_N * !Y)	0.00192	0.00193	0.00193
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00288	-0.00288	-0.00287
	(B * D_N * !Y)	0.00195	0.00195	0.00196
	(B * !D_N * !Y)	-0.00278	-0.00280	-0.00278
	(B * !D_N * !Y)	0.00261	0.00263	0.00261
	(A * !B * D_N * !Y)	-0.00267	-0.00270	-0.00286
	(A * !B * D_N * !Y)	0.00199	0.00200	0.00192
	(A * !B * !D_N * !Y)	-0.00277	-0.00277	-0.00277
	(A * !B * !D_N * !Y)	0.00259	0.00259	0.00259
	(!A * !B * !D_N * !Y)	-0.00274	-0.00274	-0.00273
	(!A * !B * !D_N * !Y)	0.00359	0.00360	0.00360
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00562	-0.00566	-0.00566
	(B * D_N * !Y)	0.00384	0.00388	0.00389
	(B * !D_N * !Y)	-0.00561	-0.00564	-0.00561
	(B * !D_N * !Y)	0.00499	0.00503	0.00498
	(A * !B * D_N * !Y)	-0.00528	-0.00533	-0.00562
	(A * !B * D_N * !Y)	0.00394	0.00395	0.00380
	(A * !B * !D_N * !Y)	-0.00559	-0.00561	-0.00559
	(A * !B * !D_N * !Y)	0.00495	0.00497	0.00494
	(!A * !B * !D_N * !Y)	-0.00553	-0.00555	-0.00551
	(!A * !B * !D_N * !Y)	0.00699	0.00702	0.00702

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00391	0.00391	0.01292
	(C * !Y)	0.00082	0.00082	0.00982
	(B * !C * !Y)	0.00401	0.00401	0.01299
	(B * !C * !Y)	0.00085	0.00085	0.00983
	(A * !B * !C * !Y)	0.00413	0.00412	0.01307
	(A * !B * !C * !Y)	0.00091	0.00091	0.00987
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00512	0.00508	0.01483
	(C * !Y)	0.00155	0.00150	0.01126
	(B * !C * !Y)	0.00534	0.00529	0.01498
	(B * !C * !Y)	0.00165	0.00160	0.01132
	(A * !B * !C * !Y)	0.00565	0.00560	0.01520
	(A * !B * !C * !Y)	0.00183	0.00177	0.01144
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00790	0.00773	0.02281
	(C * !Y)	0.00262	0.00241	0.01752
	(B * !C * !Y)	0.00833	0.00815	0.02311
	(B * !C * !Y)	0.00283	0.00261	0.01763
	(A * !B * !C * !Y)	0.00892	0.00872	0.02352
	(A * !B * !C * !Y)	0.00316	0.00293	0.01785

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00134	0.00188	0.01138
	(C * !Y)	0.00444	0.00498	0.01449
	(B * !C * !Y)	0.00134	0.00188	0.01138
	(B * !C * !Y)	0.00445	0.00499	0.01449
	(A * !B * !C * !Y)	0.00134	0.00187	0.01138
	(A * !B * !C * !Y)	0.00445	0.00499	0.01449
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00265	0.00302	0.01339
	(C * !Y)	0.00620	0.00659	0.01695
	(B * !C * !Y)	0.00265	0.00302	0.01339
	(B * !C * !Y)	0.00621	0.00660	0.01696
	(A * !B * !C * !Y)	0.00265	0.00302	0.01339
	(A * !B * !C * !Y)	0.00621	0.00660	0.01696
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00549	0.00609	0.02300
	(C * !Y)	0.01074	0.01138	0.02827
	(B * !C * !Y)	0.00549	0.00609	0.02299
	(B * !C * !Y)	0.01076	0.01140	0.02829
	(A * !B * !C * !Y)	0.00549	0.00610	0.02299
	(A * !B * !C * !Y)	0.01077	0.01141	0.02830

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00279	0.00296	0.00295	0.00299	0.17846
sky130_fd_sc_hs__nor4_2	0.00438	0.00499	0.00495	0.00465	0.33755
sky130_fd_sc_hs__nor4_4	0.00866	0.00903	0.00882	0.00899	0.61923

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	0.01906	0.14747
sky130_fd_sc_hs__nor4_2	0.00000	0.02584	0.14769
sky130_fd_sc_hs__nor4_4	0.00000	0.05272	0.30764

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)	0.33032	1.49249	9.73637
	B->Y (FR)	0.31284	1.48004	10.11850
	C->Y (FR)	0.25930	1.44394	10.51050
	D->Y (FR)	0.17170	1.35645	10.48040
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.27514	1.26106	9.71950
	B->Y (FR)	0.25089	1.23948	10.06790
	C->Y (FR)	0.18600	1.18562	10.45020
	D->Y (FR)	0.09036	1.08226	10.36890
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.30051	1.12313	9.50960
	B->Y (FR)	0.27714	1.09919	9.90599
	C->Y (FR)	0.21704	1.06062	10.38450
	D->Y (FR)	0.11006	0.95741	10.36900

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.03373	0.41253	3.21012
	B->Y (RF)	0.03673	0.41449	3.24838
	C->Y (RF)	0.03737	0.40490	3.23373
	D->Y (RF)	0.03223	0.38732	3.19600
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.04543	0.51679	4.54116
	B->Y (RF)	0.05114	0.51903	4.59462
	C->Y (RF)	0.05046	0.49998	4.55907
	D->Y (RF)	0.03815	0.46585	4.44208
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.04706	0.46777	4.35112
	B->Y (RF)	0.05057	0.45829	4.34818
	C->Y (RF)	0.05150	0.44508	4.36971
	D->Y (RF)	0.03847	0.41355	4.32539

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00044	0.00031	0.00124
	A	0.00761	0.00748	0.00842
	B	0.00054	0.00040	0.00149
	B	0.00677	0.00663	0.00772
	C	0.00055	0.00039	0.00179
	C	0.00581	0.00568	0.00708
	D	0.00045	0.00054	0.00315
	D	0.00493	0.00500	0.00763
sky130_fd_sc_hs__nor4_2	A	0.00050	0.00038	0.00129
	A	0.01275	0.01263	0.01357
	B	0.00021	0.00008	0.00119
	B	0.01115	0.01103	0.01214
	C	0.00045	0.00028	0.00185
	C	0.00918	0.00902	0.01059
	D	0.00018	0.00028	0.00363
	D	0.00695	0.00692	0.01044
sky130_fd_sc_hs__nor4_4	A	0.00371	0.00342	0.00536
	A	0.02869	0.02845	0.03040
	B	0.00382	0.00346	0.00587
	B	0.02504	0.02473	0.02712
	C	0.00388	0.00356	0.00672
	C	0.02110	0.02074	0.02393
	D	0.00362	0.00373	0.01047
	D	0.01700	0.01713	0.02389

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00972	0.00959	0.01116
	A	0.00271	0.00256	0.00419
	B	0.00807	0.00795	0.00953
	B	0.00193	0.00179	0.00341
	C	0.00617	0.00615	0.00777
	C	0.00093	0.00091	0.00254
	D	0.00424	0.00441	0.00600
	D	-0.00022	-0.00006	0.00153
sky130_fd_sc_hs__nor4_2	A	0.01721	0.01687	0.01876
	A	0.00530	0.00494	0.00683
	B	0.01417	0.01382	0.01573
	B	0.00346	0.00308	0.00507
	C	0.00972	0.00958	0.01171
	C	0.00107	0.00091	0.00298
	D	0.00551	0.00574	0.00807
	D	-0.00127	-0.00106	0.00111
sky130_fd_sc_hs__nor4_4	A	0.03463	0.03372	0.03779
	A	0.01040	0.00951	0.01357
	B	0.02712	0.02646	0.03076
	B	0.00631	0.00558	0.00973
	C	0.01954	0.01918	0.02344
	C	0.00251	0.00213	0.00642
	D	0.01087	0.01128	0.01583
	D	-0.00247	-0.00214	0.00225

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00137	0.00136	0.00136
	(B * D * !Y)	-0.00171	-0.00175	-0.00174
	(B * C * !D * !Y)	0.00137	0.00136	0.00136
	(B * C * !D * !Y)	-0.00171	-0.00175	-0.00174
	(B * !C * !D * !Y)	0.00136	0.00136	0.00136
	(B * !C * !D * !Y)	-0.00168	-0.00175	-0.00174
	(!B * C * D * !Y)	0.00136	0.00136	0.00136
	(!B * C * D * !Y)	-0.00157	-0.00169	-0.00168
	(!B * C * !D * !Y)	0.00136	0.00136	0.00136
	(!B * C * !D * !Y)	-0.00157	-0.00169	-0.00168
	(!B * !C * D * !Y)	0.00136	0.00137	0.00136
	(!B * !C * D * !Y)	-0.00155	-0.00166	-0.00165
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00137	0.00136	0.00136
	(B * D * !Y)	-0.00331	-0.00342	-0.00340
	(B * C * !D * !Y)	0.00137	0.00136	0.00136
	(B * C * !D * !Y)	-0.00331	-0.00342	-0.00340
	(B * !C * !D * !Y)	0.00137	0.00136	0.00136
	(B * !C * !D * !Y)	-0.00324	-0.00341	-0.00340
	(!B * C * D * !Y)	0.00137	0.00137	0.00136
	(!B * C * D * !Y)	-0.00302	-0.00327	-0.00325
	(!B * C * !D * !Y)	0.00137	0.00137	0.00136
	(!B * C * !D * !Y)	-0.00302	-0.00327	-0.00324
	(!B * !C * D * !Y)	0.00137	0.00136	0.00136
	(!B * !C * D * !Y)	-0.00298	-0.00321	-0.00318

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00283	0.00284	0.00283
	(B * D * !Y)	-0.00675	-0.00699	-0.00693
	(B * C * !D * !Y)	0.00283	0.00284	0.00283
	(B * C * !D * !Y)	-0.00674	-0.00699	-0.00693
	(B * !C * !D * !Y)	0.00284	0.00284	0.00283
	(B * !C * !D * !Y)	-0.00662	-0.00698	-0.00694
	(!B * C * D * !Y)	0.00283	0.00284	0.00282
	(!B * C * D * !Y)	-0.00622	-0.00672	-0.00665
	(!B * C * !D * !Y)	0.00283	0.00284	0.00283
	(!B * C * !D * !Y)	-0.00621	-0.00672	-0.00665
	(!B * !C * D * !Y)	0.00285	0.00283	0.00283
	(!B * !C * D * !Y)	-0.00613	-0.00659	-0.00654

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00136	-0.00136	-0.00136
	(B * D * !Y)	0.00174	0.00176	0.00174
	(B * C * !D * !Y)	-0.00136	-0.00136	-0.00136
	(B * C * !D * !Y)	0.00174	0.00176	0.00174
	(B * !C * !D * !Y)	-0.00136	-0.00136	-0.00136
	(B * !C * !D * !Y)	0.00174	0.00175	0.00174
	(!B * C * D * !Y)	-0.00135	-0.00136	-0.00136
	(!B * C * D * !Y)	0.00167	0.00169	0.00168
	(!B * C * !D * !Y)	-0.00135	-0.00136	-0.00136
	(!B * C * !D * !Y)	0.00167	0.00169	0.00168
	(!B * !C * D * !Y)	-0.00135	-0.00136	-0.00135
	(!B * !C * D * !Y)	0.00164	0.00166	0.00165

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00135	-0.00136	-0.00135
	(B * D * !Y)	0.00339	0.00342	0.00340
	(B * C * !D * !Y)	-0.00135	-0.00136	-0.00135
	(B * C * !D * !Y)	0.00339	0.00342	0.00340
	(B * !C * !D * !Y)	-0.00135	-0.00136	-0.00135
	(B * !C * !D * !Y)	0.00339	0.00342	0.00340
	(!B * C * D * !Y)	-0.00135	-0.00137	-0.00136
	(!B * C * D * !Y)	0.00323	0.00327	0.00325
	(!B * C * !D * !Y)	-0.00136	-0.00136	-0.00136
	(!B * C * !D * !Y)	0.00323	0.00327	0.00324
	(!B * !C * D * !Y)	-0.00135	-0.00136	-0.00135
	(!B * !C * D * !Y)	0.00317	0.00321	0.00318
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00282	-0.00284	-0.00282
	(B * D * !Y)	0.00691	0.00700	0.00693
	(B * C * !D * !Y)	-0.00282	-0.00284	-0.00282
	(B * C * !D * !Y)	0.00691	0.00700	0.00693
	(B * !C * !D * !Y)	-0.00282	-0.00284	-0.00282
	(B * !C * !D * !Y)	0.00692	0.00700	0.00694
	(!B * C * D * !Y)	-0.00281	-0.00284	-0.00282
	(!B * C * D * !Y)	0.00663	0.00672	0.00665
	(!B * C * !D * !Y)	-0.00281	-0.00284	-0.00282
	(!B * C * !D * !Y)	0.00662	0.00672	0.00665
	(!B * !C * D * !Y)	-0.00281	-0.00283	-0.00282
	(!B * !C * D * !Y)	0.00651	0.00659	0.00654

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)**	0.00134	0.00135	0.00132
	(A * C * D * !Y)	-0.00125	-0.00124	-0.00124
	(A * C * !D * !Y)	0.00140	0.00142	0.00134
	(A * C * !D * !Y)	-0.00122	-0.00122	-0.00122
	(A * !C * D * !Y)	0.00133	0.00138	0.00132
	(A * !C * D * !Y)	-0.00120	-0.00121	-0.00120
	(A * !C * !D * !Y)	0.00132	0.00131	0.00131
	(A * !C * !D * !Y)	-0.00099	-0.00099	-0.00098
	(!A * C * D * !Y)	0.00131	0.00132	0.00131
	(!A * C * D * !Y)	-0.00171	-0.00175	-0.00174
	(!A * C * !D * !Y)	0.00142	0.00132	0.00131
	(!A * C * !D * !Y)	-0.00159	-0.00176	-0.00174
	(!A * !C * D * !Y)	0.00135	0.00132	0.00131
	(!A * !C * D * !Y)	-0.00149	-0.00167	-0.00166
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00177	0.00178	0.00173
	(A * C * D * !Y)	-0.00253	-0.00256	-0.00254
	(A * C * !D * !Y)	0.00198	0.00198	0.00181
	(A * C * !D * !Y)	-0.00251	-0.00252	-0.00250
	(A * !C * D * !Y)	0.00176	0.00185	0.00174
	(A * !C * D * !Y)	-0.00245	-0.00246	-0.00244
	(A * !C * !D * !Y)	0.00170	0.00171	0.00170
	(A * !C * !D * !Y)	-0.00200	-0.00200	-0.00199
	(!A * C * D * !Y)	0.00171	0.00172	0.00170
	(!A * C * D * !Y)	-0.00343	-0.00354	-0.00353
	(!A * C * !D * !Y)	0.00194	0.00172	0.00170
	(!A * C * !D * !Y)	-0.00318	-0.00354	-0.00353
	(!A * !C * D * !Y)	0.00181	0.00171	0.00169
	(!A * !C * D * !Y)	-0.00302	-0.00335	-0.00335

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00303	0.00304	0.00296
	(A * C * D * !Y)	-0.00504	-0.00503	-0.00501
	(A * C * !D * !Y)	0.00345	0.00344	0.00311
	(A * C * !D * !Y)	-0.00496	-0.00495	-0.00493
	(A * !C * D * !Y)	0.00302	0.00321	0.00301
	(A * !C * D * !Y)	-0.00484	-0.00490	-0.00485
	(A * !C * !D * !Y)	0.00291	0.00293	0.00292
	(A * !C * !D * !Y)	-0.00396	-0.00399	-0.00397
	(!A * C * D * !Y)	0.00294	0.00295	0.00292
	(!A * C * D * !Y)	-0.00692	-0.00716	-0.00710
	(!A * C * !D * !Y)	0.00334	0.00295	0.00292
	(!A * C * !D * !Y)	-0.00647	-0.00716	-0.00711
	(!A * !C * D * !Y)	0.00313	0.00295	0.00292
	(!A * !C * D * !Y)	-0.00621	-0.00672	-0.00674

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)**	-0.00131	-0.00131	-0.00131
	(A * C * D * !Y)	0.00125	0.00124	0.00124
	(A * C * !D * !Y)	-0.00130	-0.00131	-0.00131
	(A * C * !D * !Y)	0.00122	0.00122	0.00122
	(A * !C * D * !Y)	-0.00130	-0.00131	-0.00130
	(A * !C * D * !Y)	0.00120	0.00121	0.00120
	(A * !C * !D * !Y)	-0.00125	-0.00126	-0.00125
	(A * !C * !D * !Y)	0.00102	0.00103	0.00104
	(!A * C * D * !Y)	-0.00130	-0.00131	-0.00131
	(!A * C * D * !Y)	0.00174	0.00175	0.00174
	(!A * C * !D * !Y)	-0.00130	-0.00131	-0.00131
	(!A * C * !D * !Y)	0.00174	0.00176	0.00174
	(!A * !C * D * !Y)	-0.00130	-0.00131	-0.00130
	(!A * !C * D * !Y)	0.00166	0.00167	0.00166
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00171	-0.00172	-0.00171
	(A * C * D * !Y)	0.00253	0.00256	0.00254
	(A * C * !D * !Y)	-0.00171	-0.00172	-0.00171
	(A * C * !D * !Y)	0.00251	0.00252	0.00250
	(A * !C * D * !Y)	-0.00170	-0.00171	-0.00170
	(A * !C * D * !Y)	0.00245	0.00246	0.00244
	(A * !C * !D * !Y)	-0.00159	-0.00159	-0.00156
	(A * !C * !D * !Y)	0.00210	0.00211	0.00212
	(!A * C * D * !Y)	-0.00170	-0.00171	-0.00170
	(!A * C * D * !Y)	0.00352	0.00354	0.00353
	(!A * C * !D * !Y)	-0.00170	-0.00170	-0.00170
	(!A * C * !D * !Y)	0.00352	0.00354	0.00353
	(!A * !C * D * !Y)	-0.00169	-0.00169	-0.00168
	(!A * !C * D * !Y)	0.00336	0.00335	0.00335

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00292	-0.00292	-0.00291
	(A * C * D * !Y)	0.00504	0.00503	0.00501
	(A * C * !D * !Y)	-0.00292	-0.00292	-0.00291
	(A * C * !D * !Y)	0.00496	0.00495	0.00493
	(A * !C * D * !Y)	-0.00293	-0.00296	-0.00294
	(A * !C * D * !Y)	0.00484	0.00490	0.00485
	(A * !C * !D * !Y)	-0.00267	-0.00268	-0.00263
	(A * !C * !D * !Y)	0.00419	0.00420	0.00424
	(!A * C * D * !Y)	-0.00293	-0.00293	-0.00291
	(!A * C * D * !Y)	0.00715	0.00716	0.00710
	(!A * C * !D * !Y)	-0.00293	-0.00293	-0.00291
	(!A * C * !D * !Y)	0.00715	0.00716	0.00711
	(!A * !C * D * !Y)	-0.00292	-0.00291	-0.00290
	(!A * !C * D * !Y)	0.00674	0.00672	0.00674

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00146	0.00147	0.00138
	(B * D * !Y)	-0.00118	-0.00119	-0.00118
	(B * !D * !Y)	0.00134	0.00134	0.00133
	(B * !D * !Y)	-0.00093	-0.00093	-0.00093
	(A * !B * D * !Y)	0.00155	0.00143	0.00134
	(A * !B * D * !Y)	-0.00109	-0.00117	-0.00117
	(A * !B * !D * !Y)	0.00135	0.00135	0.00133
	(A * !B * !D * !Y)	-0.00092	-0.00092	-0.00093
	(!A * !B * D * !Y)	0.00166	0.00135	0.00133
	(!A * !B * D * !Y)	-0.00138	-0.00170	-0.00170

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00206	0.00201	0.00183
	(B * D * !Y)	-0.00239	-0.00240	-0.00239
	(B * !D * !Y)	0.00171	0.00171	0.00168
	(B * !D * !Y)	-0.00188	-0.00188	-0.00189
	(A * !B * D * !Y)	0.00217	0.00188	0.00172
	(A * !B * D * !Y)	-0.00221	-0.00238	-0.00238
	(A * !B * !D * !Y)	0.00172	0.00172	0.00169
	(A * !B * !D * !Y)	-0.00187	-0.00187	-0.00188
	(!A * !B * D * !Y)	0.00232	0.00171	0.00167
	(!A * !B * D * !Y)	-0.00284	-0.00347	-0.00347
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00340	0.00344	0.00306
	(B * D * !Y)	-0.00480	-0.00484	-0.00482
	(B * !D * !Y)	0.00289	0.00287	0.00281
	(B * !D * !Y)	-0.00385	-0.00383	-0.00386
	(A * !B * D * !Y)	0.00385	0.00322	0.00288
	(A * !B * D * !Y)	-0.00441	-0.00485	-0.00480
	(A * !B * !D * !Y)	0.00291	0.00290	0.00282
	(A * !B * !D * !Y)	-0.00379	-0.00379	-0.00382
	(!A * !B * D * !Y)	0.00424	0.00287	0.00279
	(!A * !B * D * !Y)	-0.00555	-0.00700	-0.00699

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00132	-0.00133	-0.00132
	(B * D * !Y)	0.00118	0.00119	0.00118
	(B * !D * !Y)	-0.00132	-0.00132	-0.00130
	(B * !D * !Y)	0.00096	0.00096	0.00096
	(A * !B * D * !Y)	-0.00132	-0.00132	-0.00132
	(A * !B * D * !Y)	0.00117	0.00117	0.00117
	(A * !B * !D * !Y)	-0.00127	-0.00127	-0.00131
	(A * !B * !D * !Y)	0.00097	0.00096	0.00094
	(!A * !B * D * !Y)	-0.00131	-0.00132	-0.00131
	(!A * !B * D * !Y)	0.00170	0.00171	0.00170
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00169	-0.00170	-0.00169
	(B * D * !Y)	0.00239	0.00240	0.00239
	(B * !D * !Y)	-0.00166	-0.00166	-0.00164
	(B * !D * !Y)	0.00195	0.00194	0.00195
	(A * !B * D * !Y)	-0.00168	-0.00168	-0.00167
	(A * !B * D * !Y)	0.00238	0.00238	0.00238
	(A * !B * !D * !Y)	-0.00150	-0.00153	-0.00164
	(A * !B * !D * !Y)	0.00199	0.00200	0.00192
	(!A * !B * D * !Y)	-0.00165	-0.00166	-0.00164
	(!A * !B * D * !Y)	0.00346	0.00349	0.00347
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00282	-0.00284	-0.00283
	(B * D * !Y)	0.00480	0.00484	0.00482
	(B * !D * !Y)	-0.00277	-0.00276	-0.00271
	(B * !D * !Y)	0.00396	0.00395	0.00398
	(A * !B * D * !Y)	-0.00281	-0.00283	-0.00281
	(A * !B * D * !Y)	0.00481	0.00485	0.00480
	(A * !B * !D * !Y)	-0.00257	-0.00260	-0.00271
	(A * !B * !D * !Y)	0.00398	0.00397	0.00391
	(!A * !B * D * !Y)	-0.00277	-0.00278	-0.00274
	(!A * !B * D * !Y)	0.00697	0.00701	0.00699

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00154	0.00155	0.00154
	(C * !Y)	-0.00085	-0.00085	-0.00085
	(B * !C * !Y)	0.00154	0.00155	0.00154
	(B * !C * !Y)	-0.00085	-0.00085	-0.00085
	(A * !B * !C * !Y)	0.00154	0.00155	0.00154
	(A * !B * !C * !Y)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00187	0.00191	0.00188
	(C * !Y)	-0.00168	-0.00171	-0.00169
	(B * !C * !Y)	0.00188	0.00191	0.00188
	(B * !C * !Y)	-0.00167	-0.00170	-0.00167
	(A * !B * !C * !Y)	0.00188	0.00191	0.00188
	(A * !B * !C * !Y)	-0.00167	-0.00170	-0.00167
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00355	0.00356	0.00355
	(C * !Y)	-0.00338	-0.00338	-0.00336
	(B * !C * !Y)	0.00355	0.00356	0.00355
	(B * !C * !Y)	-0.00336	-0.00336	-0.00335
	(A * !B * !C * !Y)	0.00354	0.00357	0.00355
	(A * !B * !C * !Y)	-0.00335	-0.00337	-0.00335

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00149	-0.00149	-0.00154
	(C * !Y)	0.00091	0.00091	0.00087
	(B * !C * !Y)	-0.00140	-0.00140	-0.00152
	(B * !C * !Y)	0.00096	0.00095	0.00087
	(A * !B * !C * !Y)	-0.00128	-0.00129	-0.00149
	(A * !B * !C * !Y)	0.00103	0.00102	0.00088
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00177	-0.00178	-0.00187
	(C * !Y)	0.00180	0.00181	0.00172
	(B * !C * !Y)	-0.00154	-0.00156	-0.00183
	(B * !C * !Y)	0.00192	0.00192	0.00172
	(A * !B * !C * !Y)	-0.00128	-0.00130	-0.00177
	(A * !B * !C * !Y)	0.00207	0.00207	0.00175
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00328	-0.00329	-0.00353
	(C * !Y)	0.00364	0.00361	0.00344
	(B * !C * !Y)	-0.00289	-0.00291	-0.00345
	(B * !C * !Y)	0.00384	0.00381	0.00344
	(A * !B * !C * !Y)	-0.00231	-0.00234	-0.00330
	(A * !B * !C * !Y)	0.00417	0.00415	0.00352

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00282	0.00294	0.00285	0.00302	0.00295	0.36468
sky130_fd_sc_hs__o2111ai_2	0.00547	0.00552	0.00571	0.00557	0.00555	0.68144
sky130_fd_sc_hs__o2111ai_4	0.01090	0.01104	0.00821	0.00828	0.00820	1.19345

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	0.03115	0.11383
sky130_fd_sc_hs__o2111ai_2	0.00000	0.05820	0.22750
sky130_fd_sc_hs__o2111ai_4	0.00000	0.09877	0.29162

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)	0.21899	1.22927	10.66230
	A2->Y (FR)	0.19816	1.21309	10.92700
	B1->Y (FR)	0.08674	0.80616	7.83933
	C1->Y (FR)	0.07692	0.79452	7.83300
	D1->Y (FR)	0.06426	0.78045	7.81465
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.21672	1.08347	10.62420
	A2->Y (FR)	0.18580	1.06440	10.90200
	B1->Y (FR)	0.07991	0.72056	7.68389
	C1->Y (FR)	0.06902	0.70518	7.66445
	D1->Y (FR)	0.05248	0.68637	7.62996
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.22081	0.95998	10.30600
	A2->Y (FR)	0.18547	0.94074	10.64240
	B1->Y (FR)	0.13969	0.89681	10.43100
	C1->Y (FR)	0.10929	0.84293	10.07120
	D1->Y (FR)	0.08079	0.83320	10.35920

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.13828	0.78324	6.64760
	A2->Y (RF)	0.11455	0.74654	6.52421
	B1->Y (RF)	0.12961	0.80440	7.14677
	C1->Y (RF)	0.11761	0.82931	7.61838
	D1->Y (RF)	0.09946	0.83640	7.93188
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.14667	0.71389	6.82971
	A2->Y (RF)	0.11570	0.67048	6.70810
	B1->Y (RF)	0.13694	0.73272	7.32131
	C1->Y (RF)	0.12219	0.77007	7.97809
	D1->Y (RF)	0.09404	0.76677	8.27352
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.13809	0.59917	6.33426
	A2->Y (RF)	0.11360	0.57355	6.44547
	B1->Y (RF)	0.09657	0.59495	7.04787
	C1->Y (RF)	0.08232	0.62889	7.67198
	D1->Y (RF)	0.05433	0.63159	8.03496

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00226	0.00211	0.00301
	A1	0.00992	0.00979	0.01068
	A2	0.00229	0.00228	0.00393
	A2	0.00899	0.00886	0.01061
	B1	0.00127	0.00137	0.00329
	B1	0.00787	0.00794	0.00977
	C1	0.00067	0.00075	0.00268
	C1	0.00657	0.00667	0.00850
	D1	0.00018	0.00035	0.00224
	D1	0.00527	0.00544	0.00727
sky130_fd_sc_hs__o2111ai_2	A1	0.00364	0.00333	0.00500
	A1	0.01902	0.01872	0.02035
	A2	0.00368	0.00363	0.00683
	A2	0.01700	0.01695	0.02012
	B1	0.00168	0.00185	0.00565
	B1	0.01523	0.01526	0.01895
	C1	0.00065	0.00078	0.00461
	C1	0.01240	0.01258	0.01620
	D1	-0.00122	-0.00082	0.00305
	D1	0.00885	0.00925	0.01303

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00647	0.00577	0.00938
	A1	0.03654	0.03588	0.03935
	A2	0.00634	0.00646	0.01274
	A2	0.03274	0.03285	0.03908
	B1	0.00296	0.00275	0.00732
	B1	0.02584	0.02548	0.03010
	C1	0.00097	0.00072	0.00546
	C1	0.02059	0.02013	0.02504
	D1	-0.00210	-0.00170	0.00290
	D1	0.01398	0.01423	0.01909

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.00984	0.00970	0.01060
	A1	0.00195	0.00180	0.00251
	A2	0.00806	0.00795	0.00866
	A2	0.00112	0.00100	0.00172
	B1	0.00874	0.00858	0.00945
	B1	0.00207	0.00191	0.00268
	C1	0.00798	0.00783	0.00863
	C1	0.00206	0.00191	0.00272
	D1	0.00706	0.00696	0.00807
	D1	0.00201	0.00191	0.00299

sky130_fd_sc_hs__o2111ai_2	**A1**	0.02028	0.01990	0.02163
	A1	0.00446	0.00404	0.00545
	A2	0.01584	0.01579	0.01737
	A2	0.00200	0.00176	0.00324
	B1	0.01815	0.01780	0.01934
	B1	0.00446	0.00410	0.00566
	C1	0.01630	0.01596	0.01754
	C1	0.00452	0.00419	0.00577
	D1	0.01437	0.01422	0.01638
	D1	0.00442	0.00426	0.00639
sky130_fd_sc_hs__o2111ai_4	**A1**	0.03896	0.03797	0.04115
	A1	0.00799	0.00701	0.01008
	A2	0.03003	0.02947	0.03301
	A2	0.00263	0.00201	0.00537
	B1	0.03336	0.03307	0.03505
	B1	0.01020	0.00986	0.01160
	C1	0.02990	0.02966	0.03138
	C1	0.01025	0.00995	0.01175
	D1	0.02609	0.02610	0.02872
	D1	0.01017	0.01014	0.01240

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)**	0.00160	0.00137	0.00136
	(A2 * B1 * C1 * D1 * !Y)	-0.00151	-0.00174	-0.00176
	(A2 * B1 * C1 * !D1 * Y)	0.00136	0.00136	0.00136
	(A2 * B1 * C1 * !D1 * Y)	-0.00173	-0.00175	-0.00175
	(A2 * B1 * !C1 * Y)	0.00136	0.00136	0.00136
	(A2 * B1 * !C1 * Y)	-0.00173	-0.00175	-0.00175
	(A2 * !B1 * Y)	0.00136	0.00136	0.00136
	(A2 * !B1 * Y)	-0.00173	-0.00175	-0.00175
	(!A2 * B1 * C1 * !D1 * Y)	0.00124	0.00126	0.00124
	(!A2 * B1 * C1 * !D1 * Y)	-0.00178	-0.00179	-0.00178
	(!A2 * B1 * !C1 * D1 * Y)	0.00126	0.00126	0.00126
	(!A2 * B1 * !C1 * D1 * Y)	-0.00178	-0.00178	-0.00178
	(!A2 * B1 * !C1 * !D1 * Y)	0.00126	0.00126	0.00126
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00178	-0.00178	-0.00178
	(!A2 * !B1 * C1 * D1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * C1 * D1 * Y)	-0.00178	-0.00178	-0.00178
	(!A2 * !B1 * !D1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * !D1 * Y)	-0.00178	-0.00178	-0.00178
	(!A2 * !B1 * !C1 * D1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00178	-0.00178	-0.00178

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00313	0.00267	0.00264
	(A2 * B1 * C1 * D1 * !Y)	-0.00298	-0.00353	-0.00352
	(A2 * B1 * C1 * !D1 * Y)	0.00263	0.00264	0.00263
	(A2 * B1 * C1 * !D1 * Y)	-0.00345	-0.00353	-0.00352
	(A2 * B1 * !C1 * Y)	0.00263	0.00264	0.00263
	(A2 * B1 * !C1 * Y)	-0.00345	-0.00353	-0.00352
	(A2 * !B1 * Y)	0.00263	0.00264	0.00263
	(A2 * !B1 * Y)	-0.00345	-0.00353	-0.00352
	(!A2 * B1 * C1 * !D1 * Y)	0.00240	0.00239	0.00240
	(!A2 * B1 * C1 * !D1 * Y)	-0.00359	-0.00358	-0.00359
	(!A2 * B1 * !C1 * D1 * Y)	0.00243	0.00243	0.00243
	(!A2 * B1 * !C1 * D1 * Y)	-0.00360	-0.00360	-0.00359
	(!A2 * B1 * !C1 * !D1 * Y)	0.00243	0.00244	0.00243
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00360	-0.00360	-0.00359
	(!A2 * !B1 * C1 * D1 * Y)	0.00246	0.00249	0.00247
	(!A2 * !B1 * C1 * D1 * Y)	-0.00359	-0.00361	-0.00359
	(!A2 * !B1 * !D1 * Y)	0.00246	0.00249	0.00247
	(!A2 * !B1 * !D1 * Y)	-0.00359	-0.00361	-0.00359
	(!A2 * !B1 * !C1 * D1 * Y)	0.00246	0.00249	0.00247
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00359	-0.00361	-0.00359

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00627	0.00540	0.00536
	(A2 * B1 * C1 * D1 * !Y)	-0.00584	-0.00685	-0.00685
	(A2 * B1 * C1 * !D1 * Y)	0.00515	0.00517	0.00515
	(A2 * B1 * C1 * !D1 * Y)	-0.00690	-0.00709	-0.00706
	(A2 * B1 * !C1 * Y)	0.00515	0.00517	0.00515
	(A2 * B1 * !C1 * Y)	-0.00690	-0.00709	-0.00706
	(A2 * !B1 * Y)	0.00515	0.00517	0.00515
	(A2 * !B1 * Y)	-0.00690	-0.00709	-0.00706
	(!A2 * B1 * C1 * !D1 * Y)	0.00468	0.00467	0.00466
	(!A2 * B1 * C1 * !D1 * Y)	-0.00718	-0.00717	-0.00716
	(!A2 * B1 * !C1 * D1 * Y)	0.00472	0.00473	0.00471
	(!A2 * B1 * !C1 * D1 * Y)	-0.00717	-0.00718	-0.00716
	(!A2 * B1 * !C1 * !D1 * Y)	0.00473	0.00474	0.00471
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00717	-0.00718	-0.00716
	(!A2 * !B1 * C1 * D1 * Y)	0.00480	0.00485	0.00481
	(!A2 * !B1 * C1 * D1 * Y)	-0.00715	-0.00720	-0.00716
	(!A2 * !B1 * !D1 * Y)	0.00479	0.00485	0.00480
	(!A2 * !B1 * !D1 * Y)	-0.00715	-0.00720	-0.00716
	(!A2 * !B1 * !C1 * D1 * Y)	0.00479	0.00485	0.00480
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00715	-0.00720	-0.00716

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)**	-0.00135	-0.00136	-0.00135
	(A2 * B1 * C1 * D1 * !Y)	0.00174	0.00176	0.00176
	(A2 * B1 * C1 * !D1 * Y)	-0.00135	-0.00136	-0.00136
	(A2 * B1 * C1 * !D1 * Y)	0.00175	0.00176	0.00175
	(A2 * B1 * !C1 * Y)	-0.00136	-0.00136	-0.00136
	(A2 * B1 * !C1 * Y)	0.00175	0.00176	0.00175
	(A2 * !B1 * Y)	-0.00136	-0.00136	-0.00136
	(A2 * !B1 * Y)	0.00175	0.00176	0.00175
	(!A2 * B1 * C1 * !D1 * Y)	-0.00115	-0.00126	-0.00124
	(!A2 * B1 * C1 * !D1 * Y)	0.00178	0.00179	0.00178
	(!A2 * B1 * !C1 * D1 * Y)	-0.00117	-0.00126	-0.00126
	(!A2 * B1 * !C1 * D1 * Y)	0.00178	0.00180	0.00178
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00117	-0.00126	-0.00126
	(!A2 * B1 * !C1 * !D1 * Y)	0.00178	0.00180	0.00178
	(!A2 * !B1 * C1 * D1 * Y)	-0.00122	-0.00129	-0.00128
	(!A2 * !B1 * C1 * D1 * Y)	0.00179	0.00180	0.00178
	(!A2 * !B1 * !D1 * Y)	-0.00123	-0.00129	-0.00128
	(!A2 * !B1 * !D1 * Y)	0.00178	0.00180	0.00178
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00123	-0.00129	-0.00128
	(!A2 * !B1 * !C1 * D1 * Y)	0.00178	0.00180	0.00178

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00262	-0.00263	-0.00262
	(A2 * B1 * C1 * D1 * !Y)	0.00351	0.00353	0.00352
	(A2 * B1 * C1 * !D1 * Y)	-0.00262	-0.00263	-0.00262
	(A2 * B1 * C1 * !D1 * Y)	0.00350	0.00353	0.00352
	(A2 * B1 * !C1 * Y)	-0.00262	-0.00263	-0.00262
	(A2 * B1 * !C1 * Y)	0.00350	0.00353	0.00352
	(A2 * !B1 * Y)	-0.00262	-0.00263	-0.00262
	(A2 * !B1 * Y)	0.00350	0.00353	0.00352
	(!A2 * B1 * C1 * !D1 * Y)	-0.00221	-0.00239	-0.00240
	(!A2 * B1 * C1 * !D1 * Y)	0.00360	0.00364	0.00360
	(!A2 * B1 * !C1 * D1 * Y)	-0.00224	-0.00243	-0.00243
	(!A2 * B1 * !C1 * D1 * Y)	0.00360	0.00364	0.00360
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00225	-0.00244	-0.00243
	(!A2 * B1 * !C1 * !D1 * Y)	0.00360	0.00364	0.00360
	(!A2 * !B1 * C1 * D1 * Y)	-0.00234	-0.00249	-0.00247
	(!A2 * !B1 * C1 * D1 * Y)	0.00359	0.00364	0.00360
	(!A2 * !B1 * !D1 * Y)	-0.00234	-0.00249	-0.00247
	(!A2 * !B1 * !D1 * Y)	0.00359	0.00364	0.00360
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00234	-0.00249	-0.00247
	(!A2 * !B1 * !C1 * D1 * Y)	0.00359	0.00364	0.00360

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00533	-0.00537	-0.00534
	(A2 * B1 * C1 * D1 * !Y)	0.00681	0.00689	0.00685
	(A2 * B1 * C1 * !D1 * Y)	-0.00512	-0.00517	-0.00514
	(A2 * B1 * C1 * !D1 * Y)	0.00703	0.00712	0.00706
	(A2 * B1 * !C1 * Y)	-0.00513	-0.00517	-0.00514
	(A2 * B1 * !C1 * Y)	0.00704	0.00712	0.00706
	(A2 * !B1 * Y)	-0.00511	-0.00517	-0.00514
	(A2 * !B1 * Y)	0.00701	0.00712	0.00706
	(!A2 * B1 * C1 * !D1 * Y)	-0.00429	-0.00467	-0.00466
	(!A2 * B1 * C1 * !D1 * Y)	0.00718	0.00723	0.00719
	(!A2 * B1 * !C1 * D1 * Y)	-0.00436	-0.00473	-0.00471
	(!A2 * B1 * !C1 * D1 * Y)	0.00717	0.00724	0.00718
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00436	-0.00474	-0.00471
	(!A2 * B1 * !C1 * !D1 * Y)	0.00717	0.00724	0.00718
	(!A2 * !B1 * C1 * D1 * Y)	-0.00456	-0.00485	-0.00481
	(!A2 * !B1 * C1 * D1 * Y)	0.00715	0.00725	0.00719
	(!A2 * !B1 * !D1 * Y)	-0.00457	-0.00485	-0.00480
	(!A2 * !B1 * !D1 * Y)	0.00715	0.00725	0.00718
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00457	-0.00485	-0.00480
	(!A2 * !B1 * !C1 * D1 * Y)	0.00715	0.00725	0.00719

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)**	0.00149	0.00149	0.00148
	(A1 * B1 * C1 * D1 * !Y)	-0.00084	-0.00084	-0.00083
	(A1 * B1 * C1 * !D1 * Y)	0.00132	0.00134	0.00133
	(A1 * B1 * C1 * !D1 * Y)	-0.00170	-0.00173	-0.00172
	(A1 * B1 * !C1 * D1 * Y)	0.00132	0.00134	0.00133
	(A1 * B1 * !C1 * D1 * Y)	-0.00170	-0.00173	-0.00172
	(A1 * B1 * !C1 * !D1 * Y)	0.00132	0.00134	0.00133
	(A1 * B1 * !C1 * !D1 * Y)	-0.00170	-0.00173	-0.00172
	(A1 * !B1 * C1 * D1 * Y)	0.00132	0.00134	0.00133
	(A1 * !B1 * C1 * D1 * Y)	-0.00170	-0.00174	-0.00172
	(A1 * !B1 * !D1 * Y)	0.00133	0.00134	0.00133
	(A1 * !B1 * !D1 * Y)	-0.00170	-0.00173	-0.00172
	(A1 * !B1 * !C1 * D1 * Y)	0.00133	0.00134	0.00133
	(A1 * !B1 * !C1 * D1 * Y)	-0.00170	-0.00173	-0.00172
	(!A1 * B1 * C1 * !D1 * Y)	0.00121	0.00121	0.00121
	(!A1 * B1 * C1 * !D1 * Y)	-0.00175	-0.00176	-0.00176
	(!A1 * B1 * !C1 * D1 * Y)	0.00122	0.00123	0.00122
	(!A1 * B1 * !C1 * D1 * Y)	-0.00175	-0.00176	-0.00176
	(!A1 * B1 * !C1 * !D1 * Y)	0.00122	0.00123	0.00122
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00176	-0.00176	-0.00176
	(!A1 * !B1 * C1 * D1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !B1 * C1 * D1 * Y)	-0.00176	-0.00177	-0.00176
	(!A1 * !B1 * !D1 * Y)	0.00125	0.00125	0.00124
	(!A1 * !B1 * !D1 * Y)	-0.00176	-0.00176	-0.00176
	(!A1 * !B1 * !C1 * D1 * Y)	0.00125	0.00125	0.00124
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00176	-0.00176	-0.00176

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00288	0.00290	0.00289
	(A1 * B1 * C1 * D1 * !Y)	-0.00169	-0.00171	-0.00170
	(A1 * B1 * C1 * !D1 * Y)	0.00260	0.00260	0.00258
	(A1 * B1 * C1 * !D1 * Y)	-0.00343	-0.00348	-0.00347
	(A1 * B1 * !C1 * D1 * Y)	0.00260	0.00260	0.00258
	(A1 * B1 * !C1 * D1 * Y)	-0.00343	-0.00348	-0.00347
	(A1 * B1 * !C1 * !D1 * Y)	0.00256	0.00260	0.00257
	(A1 * B1 * !C1 * !D1 * Y)	-0.00339	-0.00349	-0.00347
	(A1 * !B1 * C1 * D1 * Y)	0.00260	0.00260	0.00258
	(A1 * !B1 * C1 * D1 * Y)	-0.00343	-0.00348	-0.00347
	(A1 * !B1 * !D1 * Y)	0.00256	0.00260	0.00257
	(A1 * !B1 * !D1 * Y)	-0.00339	-0.00349	-0.00347
	(A1 * !B1 * !C1 * D1 * Y)	0.00256	0.00260	0.00257
	(A1 * !B1 * !C1 * D1 * Y)	-0.00339	-0.00349	-0.00347
	(!A1 * B1 * C1 * !D1 * Y)	0.00234	0.00236	0.00235
	(!A1 * B1 * C1 * !D1 * Y)	-0.00355	-0.00356	-0.00355
	(!A1 * B1 * !C1 * D1 * Y)	0.00236	0.00239	0.00237
	(!A1 * B1 * !C1 * D1 * Y)	-0.00355	-0.00357	-0.00355
	(!A1 * B1 * !C1 * !D1 * Y)	0.00236	0.00238	0.00237
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00355	-0.00356	-0.00355
	(!A1 * !B1 * C1 * D1 * Y)	0.00241	0.00243	0.00241
	(!A1 * !B1 * C1 * D1 * Y)	-0.00354	-0.00357	-0.00355
	(!A1 * !B1 * !D1 * Y)	0.00242	0.00243	0.00241
	(!A1 * !B1 * !D1 * Y)	-0.00354	-0.00357	-0.00355
	(!A1 * !B1 * !C1 * D1 * Y)	0.00242	0.00243	0.00241
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00354	-0.00357	-0.00355

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00595	0.00599	0.00595
	(A1 * B1 * C1 * D1 * !Y)	-0.00340	-0.00342	-0.00340
	(A1 * B1 * C1 * !D1 * Y)	0.00528	0.00529	0.00524
	(A1 * B1 * C1 * !D1 * Y)	-0.00694	-0.00698	-0.00700
	(A1 * B1 * !C1 * D1 * Y)	0.00520	0.00529	0.00524
	(A1 * B1 * !C1 * D1 * Y)	-0.00685	-0.00702	-0.00700
	(A1 * B1 * !C1 * !D1 * Y)	0.00528	0.00529	0.00524
	(A1 * B1 * !C1 * !D1 * Y)	-0.00694	-0.00703	-0.00702
	(A1 * !B1 * C1 * D1 * Y)	0.00520	0.00529	0.00524
	(A1 * !B1 * C1 * D1 * Y)	-0.00685	-0.00699	-0.00700
	(A1 * !B1 * !D1 * Y)	0.00529	0.00529	0.00524
	(A1 * !B1 * !D1 * Y)	-0.00694	-0.00704	-0.00702
	(A1 * !B1 * !C1 * D1 * Y)	0.00529	0.00529	0.00524
	(A1 * !B1 * !C1 * D1 * Y)	-0.00694	-0.00704	-0.00702
	(!A1 * B1 * C1 * !D1 * Y)	0.00473	0.00476	0.00474
	(!A1 * B1 * C1 * !D1 * Y)	-0.00715	-0.00718	-0.00716
	(!A1 * B1 * !C1 * D1 * Y)	0.00481	0.00484	0.00481
	(!A1 * B1 * !C1 * D1 * Y)	-0.00716	-0.00718	-0.00716
	(!A1 * B1 * !C1 * !D1 * Y)	0.00478	0.00482	0.00478
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00716	-0.00720	-0.00716
	(!A1 * !B1 * C1 * D1 * Y)	0.00487	0.00493	0.00489
	(!A1 * !B1 * C1 * D1 * Y)	-0.00716	-0.00720	-0.00716
	(!A1 * !B1 * !D1 * Y)	0.00487	0.00493	0.00488
	(!A1 * !B1 * !D1 * Y)	-0.00715	-0.00720	-0.00716
	(!A1 * !B1 * !C1 * D1 * Y)	0.00487	0.00493	0.00488
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00715	-0.00720	-0.00716

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)**	-0.00143	-0.00144	-0.00148
	(A1 * B1 * C1 * D1 * !Y)	0.00089	0.00088	0.00085
	(A1 * B1 * C1 * !D1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * B1 * C1 * !D1 * Y)	0.00171	0.00173	0.00172
	(A1 * B1 * !C1 * D1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * B1 * !C1 * D1 * Y)	0.00171	0.00173	0.00172
	(A1 * B1 * !C1 * !D1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * B1 * !C1 * !D1 * Y)	0.00172	0.00173	0.00172
	(A1 * !B1 * C1 * D1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * !B1 * C1 * D1 * Y)	0.00171	0.00174	0.00172
	(A1 * !B1 * !D1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * !B1 * !D1 * Y)	0.00172	0.00173	0.00172
	(A1 * !B1 * !C1 * D1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * !B1 * !C1 * D1 * Y)	0.00172	0.00173	0.00172
	(!A1 * B1 * C1 * !D1 * Y)	-0.00111	-0.00121	-0.00121
	(!A1 * B1 * C1 * !D1 * Y)	0.00176	0.00177	0.00176
	(!A1 * B1 * !C1 * D1 * Y)	-0.00114	-0.00123	-0.00122
	(!A1 * B1 * !C1 * D1 * Y)	0.00175	0.00177	0.00176
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00114	-0.00123	-0.00122
	(!A1 * B1 * !C1 * !D1 * Y)	0.00176	0.00177	0.00176
	(!A1 * !B1 * C1 * D1 * Y)	-0.00119	-0.00126	-0.00125
	(!A1 * !B1 * C1 * D1 * Y)	0.00176	0.00178	0.00176
	(!A1 * !B1 * !D1 * Y)	-0.00119	-0.00125	-0.00124
	(!A1 * !B1 * !D1 * Y)	0.00176	0.00178	0.00176
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00119	-0.00125	-0.00124
	(!A1 * !B1 * !C1 * D1 * Y)	0.00176	0.00178	0.00176

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00273	-0.00275	-0.00287
	(A1 * B1 * C1 * D1 * !Y)	0.00186	0.00186	0.00174
	(A1 * B1 * C1 * !D1 * Y)	-0.00256	-0.00258	-0.00257
	(A1 * B1 * C1 * !D1 * Y)	0.00345	0.00348	0.00347
	(A1 * B1 * !C1 * D1 * Y)	-0.00258	-0.00257	-0.00257
	(A1 * B1 * !C1 * D1 * Y)	0.00348	0.00348	0.00347
	(A1 * B1 * !C1 * !D1 * Y)	-0.00256	-0.00258	-0.00257
	(A1 * B1 * !C1 * !D1 * Y)	0.00348	0.00349	0.00347
	(A1 * !B1 * C1 * D1 * Y)	-0.00256	-0.00257	-0.00257
	(A1 * !B1 * C1 * D1 * Y)	0.00346	0.00348	0.00347
	(A1 * !B1 * !D1 * Y)	-0.00255	-0.00258	-0.00257
	(A1 * !B1 * !D1 * Y)	0.00345	0.00349	0.00347
	(A1 * !B1 * !C1 * D1 * Y)	-0.00256	-0.00258	-0.00257
	(A1 * !B1 * !C1 * D1 * Y)	0.00345	0.00349	0.00347
	(!A1 * B1 * C1 * !D1 * Y)	-0.00216	-0.00236	-0.00235
	(!A1 * B1 * C1 * !D1 * Y)	0.00356	0.00359	0.00356
	(!A1 * B1 * !C1 * D1 * Y)	-0.00219	-0.00239	-0.00237
	(!A1 * B1 * !C1 * D1 * Y)	0.00355	0.00359	0.00356
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00219	-0.00238	-0.00237
	(!A1 * B1 * !C1 * !D1 * Y)	0.00355	0.00359	0.00356
	(!A1 * !B1 * C1 * D1 * Y)	-0.00228	-0.00243	-0.00241
	(!A1 * !B1 * C1 * D1 * Y)	0.00354	0.00359	0.00356
	(!A1 * !B1 * !D1 * Y)	-0.00228	-0.00243	-0.00241
	(!A1 * !B1 * !D1 * Y)	0.00354	0.00359	0.00356
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00229	-0.00243	-0.00241
	(!A1 * !B1 * !C1 * D1 * Y)	0.00354	0.00359	0.00356

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00562	-0.00565	-0.00593
	(A1 * B1 * C1 * D1 * !Y)	0.00375	0.00374	0.00349
	(A1 * B1 * C1 * !D1 * Y)	-0.00523	-0.00522	-0.00522
	(A1 * B1 * C1 * !D1 * Y)	0.00701	0.00698	0.00700
	(A1 * B1 * !C1 * D1 * Y)	-0.00520	-0.00524	-0.00522
	(A1 * B1 * !C1 * D1 * Y)	0.00701	0.00702	0.00700
	(A1 * B1 * !C1 * !D1 * Y)	-0.00523	-0.00523	-0.00522
	(A1 * B1 * !C1 * !D1 * Y)	0.00703	0.00703	0.00702
	(A1 * !B1 * C1 * D1 * Y)	-0.00520	-0.00522	-0.00522
	(A1 * !B1 * C1 * D1 * Y)	0.00697	0.00699	0.00700
	(A1 * !B1 * !D1 * Y)	-0.00522	-0.00524	-0.00522
	(A1 * !B1 * !D1 * Y)	0.00701	0.00704	0.00702
	(A1 * !B1 * !C1 * D1 * Y)	-0.00522	-0.00524	-0.00522
	(A1 * !B1 * !C1 * D1 * Y)	0.00701	0.00704	0.00702
	(!A1 * B1 * C1 * !D1 * Y)	-0.00437	-0.00476	-0.00474
	(!A1 * B1 * C1 * !D1 * Y)	0.00717	0.00723	0.00718
	(!A1 * B1 * !C1 * D1 * Y)	-0.00444	-0.00484	-0.00481
	(!A1 * B1 * !C1 * D1 * Y)	0.00716	0.00723	0.00718
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00444	-0.00482	-0.00478
	(!A1 * B1 * !C1 * !D1 * Y)	0.00716	0.00723	0.00718
	(!A1 * !B1 * C1 * D1 * Y)	-0.00467	-0.00493	-0.00489
	(!A1 * !B1 * C1 * D1 * Y)	0.00720	0.00724	0.00718
	(!A1 * !B1 * !D1 * Y)	-0.00468	-0.00493	-0.00488
	(!A1 * !B1 * !D1 * Y)	0.00720	0.00724	0.00718
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00468	-0.00493	-0.00488
	(!A1 * !B1 * !C1 * D1 * Y)	0.00720	0.00724	0.00718

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)**	0.00117	0.00119	0.00118
	(A2 * C1 * !D1 * Y)	-0.00177	-0.00178	-0.00177
	(A2 * !C1 * D1 * Y)	0.00122	0.00123	0.00122
	(A2 * !C1 * D1 * Y)	-0.00177	-0.00179	-0.00178
	(A2 * !C1 * !D1 * Y)	0.00122	0.00123	0.00121
	(A2 * !C1 * !D1 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * C1 * !D1 * Y)	0.00117	0.00119	0.00118
	(A1 * !A2 * C1 * !D1 * Y)	-0.00177	-0.00178	-0.00177
	(A1 * !A2 * !C1 * D1 * Y)	0.00122	0.00123	0.00122
	(A1 * !A2 * !C1 * D1 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !C1 * !D1 * Y)	0.00121	0.00122	0.00121
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00178	-0.00178	-0.00178
	(!A1 * !A2 * C1 * D1 * Y)	0.00063	0.00062	0.00062
	(!A1 * !A2 * C1 * D1 * Y)	-0.00173	-0.00173	-0.00172
	(!A1 * !A2 * C1 * !D1 * Y)	0.00074	0.00074	0.00073
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00178	-0.00178	-0.00177
	(!A1 * !A2 * !C1 * D1 * Y)	0.00077	0.00078	0.00077
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00177	-0.00179	-0.00178
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00078	0.00078	0.00078
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00177	-0.00179	-0.00178

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00251	0.00252	0.00251
	(A2 * C1 * !D1 * Y)	-0.00367	-0.00368	-0.00367
	(A2 * !C1 * D1 * Y)	0.00256	0.00260	0.00257
	(A2 * !C1 * D1 * Y)	-0.00366	-0.00369	-0.00367
	(A2 * !C1 * !D1 * Y)	0.00256	0.00260	0.00257
	(A2 * !C1 * !D1 * Y)	-0.00366	-0.00369	-0.00367
	(A1 * !A2 * C1 * !D1 * Y)	0.00251	0.00252	0.00251
	(A1 * !A2 * C1 * !D1 * Y)	-0.00367	-0.00368	-0.00367
	(A1 * !A2 * !C1 * D1 * Y)	0.00256	0.00260	0.00257
	(A1 * !A2 * !C1 * D1 * Y)	-0.00366	-0.00369	-0.00367
	(A1 * !A2 * !C1 * !D1 * Y)	0.00256	0.00259	0.00257
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00366	-0.00369	-0.00367
	(!A1 * !A2 * C1 * D1 * Y)	0.00131	0.00132	0.00133
	(!A1 * !A2 * C1 * D1 * Y)	-0.00356	-0.00358	-0.00354
	(!A1 * !A2 * C1 * !D1 * Y)	0.00157	0.00158	0.00157
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00367	-0.00368	-0.00367
	(!A1 * !A2 * !C1 * D1 * Y)	0.00160	0.00161	0.00160
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00367	-0.00369	-0.00367
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00161	0.00163	0.00161
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00366	-0.00369	-0.00367

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00481	0.00486	0.00482
	(A2 * C1 * !D1 * Y)	-0.00381	-0.00383	-0.00381
	(A2 * !C1 * D1 * Y)	0.00495	0.00496	0.00494
	(A2 * !C1 * D1 * Y)	-0.00382	-0.00383	-0.00382
	(A2 * !C1 * !D1 * Y)	0.00494	0.00494	0.00493
	(A2 * !C1 * !D1 * Y)	-0.00382	-0.00382	-0.00382
	(A1 * !A2 * C1 * !D1 * Y)	0.00479	0.00484	0.00481
	(A1 * !A2 * C1 * !D1 * Y)	-0.00381	-0.00383	-0.00381
	(A1 * !A2 * !C1 * D1 * Y)	0.00493	0.00495	0.00494
	(A1 * !A2 * !C1 * D1 * Y)	-0.00381	-0.00382	-0.00382
	(A1 * !A2 * !C1 * !D1 * Y)	0.00491	0.00495	0.00493
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00381	-0.00383	-0.00382
	(!A1 * !A2 * C1 * D1 * Y)	0.00243	0.00243	0.00245
	(!A1 * !A2 * C1 * D1 * Y)	-0.00362	-0.00363	-0.00358
	(!A1 * !A2 * C1 * !D1 * Y)	0.00289	0.00291	0.00289
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00383	-0.00386	-0.00383
	(!A1 * !A2 * !C1 * D1 * Y)	0.00295	0.00299	0.00296
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00381	-0.00384	-0.00382
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00298	0.00301	0.00299
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00381	-0.00384	-0.00382

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)**	-0.00108	-0.00119	-0.00118
	(A2 * C1 * !D1 * Y)	0.00178	0.00180	0.00178
	(A2 * !C1 * D1 * Y)	-0.00116	-0.00123	-0.00122
	(A2 * !C1 * D1 * Y)	0.00177	0.00180	0.00178
	(A2 * !C1 * !D1 * Y)	-0.00118	-0.00123	-0.00121
	(A2 * !C1 * !D1 * Y)	0.00179	0.00180	0.00178
	(A1 * !A2 * C1 * !D1 * Y)	-0.00106	-0.00119	-0.00118
	(A1 * !A2 * C1 * !D1 * Y)	0.00178	0.00180	0.00178
	(A1 * !A2 * !C1 * D1 * Y)	-0.00116	-0.00123	-0.00122
	(A1 * !A2 * !C1 * D1 * Y)	0.00179	0.00180	0.00178
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00117	-0.00122	-0.00121
	(A1 * !A2 * !C1 * !D1 * Y)	0.00179	0.00180	0.00178
	(!A1 * !A2 * C1 * D1 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * C1 * D1 * Y)	0.00179	0.00180	0.00179
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00074	-0.00074	-0.00073
	(!A1 * !A2 * C1 * !D1 * Y)	0.00179	0.00181	0.00178
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * !C1 * D1 * Y)	0.00181	0.00181	0.00179
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00179	0.00179	0.00178

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00233	-0.00252	-0.00251
	(A2 * C1 * !D1 * Y)	0.00369	0.00372	0.00368
	(A2 * !C1 * D1 * Y)	-0.00246	-0.00260	-0.00257
	(A2 * !C1 * D1 * Y)	0.00366	0.00372	0.00368
	(A2 * !C1 * !D1 * Y)	-0.00248	-0.00260	-0.00257
	(A2 * !C1 * !D1 * Y)	0.00366	0.00372	0.00368
	(A1 * !A2 * C1 * !D1 * Y)	-0.00229	-0.00252	-0.00251
	(A1 * !A2 * C1 * !D1 * Y)	0.00369	0.00372	0.00368
	(A1 * !A2 * !C1 * D1 * Y)	-0.00246	-0.00259	-0.00257
	(A1 * !A2 * !C1 * D1 * Y)	0.00369	0.00369	0.00368
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00248	-0.00259	-0.00257
	(A1 * !A2 * !C1 * !D1 * Y)	0.00369	0.00369	0.00368
	(!A1 * !A2 * C1 * D1 * Y)	-0.00121	-0.00123	-0.00122
	(!A1 * !A2 * C1 * D1 * Y)	0.00368	0.00372	0.00369
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00157	-0.00158	-0.00157
	(!A1 * !A2 * C1 * !D1 * Y)	0.00371	0.00375	0.00369
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00160	-0.00161	-0.00160
	(!A1 * !A2 * !C1 * D1 * Y)	0.00373	0.00372	0.00369
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00161	-0.00163	-0.00161
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00367	0.00370	0.00368

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00441	-0.00486	-0.00482
	(A2 * C1 * !D1 * Y)	0.00388	0.00387	0.00383
	(A2 * !C1 * D1 * Y)	-0.00472	-0.00496	-0.00494
	(A2 * !C1 * D1 * Y)	0.00383	0.00387	0.00383
	(A2 * !C1 * !D1 * Y)	-0.00477	-0.00494	-0.00493
	(A2 * !C1 * !D1 * Y)	0.00383	0.00387	0.00383
	(A1 * !A2 * C1 * !D1 * Y)	-0.00436	-0.00484	-0.00481
	(A1 * !A2 * C1 * !D1 * Y)	0.00389	0.00383	0.00383
	(A1 * !A2 * !C1 * D1 * Y)	-0.00467	-0.00495	-0.00494
	(A1 * !A2 * !C1 * D1 * Y)	0.00382	0.00384	0.00383
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00474	-0.00495	-0.00493
	(A1 * !A2 * !C1 * !D1 * Y)	0.00381	0.00384	0.00383
	(!A1 * !A2 * C1 * D1 * Y)	-0.00222	-0.00225	-0.00225
	(!A1 * !A2 * C1 * D1 * Y)	0.00386	0.00390	0.00385
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00289	-0.00291	-0.00289
	(!A1 * !A2 * C1 * !D1 * Y)	0.00391	0.00398	0.00386
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00295	-0.00299	-0.00296
	(!A1 * !A2 * !C1 * D1 * Y)	0.00395	0.00393	0.00385
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00298	-0.00301	-0.00299
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00382	0.00386	0.00383

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)**	0.00125	0.00126	0.00125
	(A2 * B1 * !D1 * Y)	-0.00183	-0.00184	-0.00183
	(A2 * !B1 * D1 * Y)	0.00062	0.00062	0.00062
	(A2 * !B1 * D1 * Y)	-0.00183	-0.00184	-0.00182
	(A2 * !B1 * !D1 * Y)	0.00075	0.00075	0.00074
	(A2 * !B1 * !D1 * Y)	-0.00184	-0.00184	-0.00183
	(A1 * !A2 * B1 * !D1 * Y)	0.00125	0.00126	0.00125
	(A1 * !A2 * B1 * !D1 * Y)	-0.00183	-0.00184	-0.00183
	(!A2 * !B1 * D1 * Y)	0.00062	0.00062	0.00062
	(!A2 * !B1 * D1 * Y)	-0.00183	-0.00184	-0.00182
	(!A2 * !B1 * !D1 * Y)	0.00075	0.00075	0.00074
	(!A2 * !B1 * !D1 * Y)	-0.00184	-0.00184	-0.00183
	(!A1 * !A2 * B1 * D1 * Y)	0.00061	0.00061	0.00059
	(!A1 * !A2 * B1 * D1 * Y)	-0.00183	-0.00184	-0.00182
	(!A1 * !A2 * B1 * !D1 * Y)	0.00076	0.00076	0.00076
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00183	-0.00183	-0.00183

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00245	0.00247	0.00245
	(A2 * B1 * !D1 * Y)	-0.00358	-0.00360	-0.00358
	(A2 * !B1 * D1 * Y)	0.00123	0.00124	0.00124
	(A2 * !B1 * D1 * Y)	-0.00358	-0.00360	-0.00355
	(A2 * !B1 * !D1 * Y)	0.00155	0.00155	0.00154
	(A2 * !B1 * !D1 * Y)	-0.00360	-0.00361	-0.00359
	(A1 * !A2 * B1 * !D1 * Y)	0.00245	0.00246	0.00245
	(A1 * !A2 * B1 * !D1 * Y)	-0.00358	-0.00360	-0.00358
	(!A2 * !B1 * D1 * Y)	0.00123	0.00124	0.00124
	(!A2 * !B1 * D1 * Y)	-0.00358	-0.00360	-0.00355
	(!A2 * !B1 * !D1 * Y)	0.00155	0.00155	0.00154
	(!A2 * !B1 * !D1 * Y)	-0.00360	-0.00361	-0.00359
	(!A1 * !A2 * B1 * D1 * Y)	0.00117	0.00117	0.00118
	(!A1 * !A2 * B1 * D1 * Y)	-0.00358	-0.00359	-0.00355
	(!A1 * !A2 * B1 * !D1 * Y)	0.00152	0.00153	0.00152
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00358	-0.00359	-0.00358

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00485	0.00489	0.00489
	(A2 * B1 * !D1 * Y)	-0.00374	-0.00376	-0.00375
	(A2 * !B1 * D1 * Y)	0.00232	0.00233	0.00232
	(A2 * !B1 * D1 * Y)	-0.00376	-0.00377	-0.00372
	(A2 * !B1 * !D1 * Y)	0.00286	0.00287	0.00284
	(A2 * !B1 * !D1 * Y)	-0.00381	-0.00382	-0.00380
	(A1 * !A2 * B1 * !D1 * Y)	0.00487	0.00489	0.00488
	(A1 * !A2 * B1 * !D1 * Y)	-0.00376	-0.00376	-0.00375
	(!A2 * !B1 * D1 * Y)	0.00232	0.00232	0.00232
	(!A2 * !B1 * D1 * Y)	-0.00376	-0.00377	-0.00372
	(!A2 * !B1 * !D1 * Y)	0.00286	0.00287	0.00284
	(!A2 * !B1 * !D1 * Y)	-0.00381	-0.00382	-0.00380
	(!A1 * !A2 * B1 * D1 * Y)	0.00223	0.00224	0.00225
	(!A1 * !A2 * B1 * D1 * Y)	-0.00376	-0.00377	-0.00372
	(!A1 * !A2 * B1 * !D1 * Y)	0.00288	0.00290	0.00288
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00378	-0.00380	-0.00378

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)**	-0.00114	-0.00125	-0.00125
	(A2 * B1 * !D1 * Y)	0.00194	0.00184	0.00184
	(A2 * !B1 * D1 * Y)	-0.00058	-0.00058	-0.00059
	(A2 * !B1 * D1 * Y)	0.00187	0.00188	0.00184
	(A2 * !B1 * !D1 * Y)	-0.00075	-0.00075	-0.00074
	(A2 * !B1 * !D1 * Y)	0.00193	0.00193	0.00186
	(A1 * !A2 * B1 * !D1 * Y)	-0.00113	-0.00125	-0.00125
	(A1 * !A2 * B1 * !D1 * Y)	0.00195	0.00185	0.00184
	(!A2 * !B1 * D1 * Y)	-0.00058	-0.00058	-0.00059
	(!A2 * !B1 * D1 * Y)	0.00187	0.00188	0.00184
	(!A2 * !B1 * !D1 * Y)	-0.00075	-0.00075	-0.00074
	(!A2 * !B1 * !D1 * Y)	0.00193	0.00193	0.00186
	(!A1 * !A2 * B1 * D1 * Y)	-0.00055	-0.00056	-0.00057
	(!A1 * !A2 * B1 * D1 * Y)	0.00187	0.00188	0.00184
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * B1 * !D1 * Y)	0.00195	0.00190	0.00184

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00219	-0.00246	-0.00245
	(A2 * B1 * !D1 * Y)	0.00381	0.00362	0.00359
	(A2 * !B1 * D1 * Y)	-0.00114	-0.00114	-0.00118
	(A2 * !B1 * D1 * Y)	0.00371	0.00371	0.00362
	(A2 * !B1 * !D1 * Y)	-0.00155	-0.00155	-0.00154
	(A2 * !B1 * !D1 * Y)	0.00380	0.00381	0.00365
	(A1 * !A2 * B1 * !D1 * Y)	-0.00218	-0.00246	-0.00245
	(A1 * !A2 * B1 * !D1 * Y)	0.00382	0.00362	0.00359
	(!A2 * !B1 * D1 * Y)	-0.00114	-0.00114	-0.00118
	(!A2 * !B1 * D1 * Y)	0.00370	0.00371	0.00362
	(!A2 * !B1 * !D1 * Y)	-0.00155	-0.00155	-0.00154
	(!A2 * !B1 * !D1 * Y)	0.00380	0.00381	0.00365
	(!A1 * !A2 * B1 * D1 * Y)	-0.00111	-0.00110	-0.00114
	(!A1 * !A2 * B1 * D1 * Y)	0.00372	0.00371	0.00362
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00151	-0.00153	-0.00152
	(!A1 * !A2 * B1 * !D1 * Y)	0.00380	0.00371	0.00361

sky130_fd_sc_hs__o2111ai_4	(A2 * B1 * !D1 * Y)	-0.00431	-0.00489	-0.00489
	(A2 * B1 * !D1 * Y)	0.00428	0.00383	0.00378
	(A2 * !B1 * D1 * Y)	-0.00213	-0.00215	-0.00221
	(A2 * !B1 * D1 * Y)	0.00398	0.00400	0.00383
	(A2 * !B1 * !D1 * Y)	-0.00286	-0.00287	-0.00284
	(A2 * !B1 * !D1 * Y)	0.00421	0.00421	0.00390
	(A1 * !A2 * B1 * !D1 * Y)	-0.00429	-0.00489	-0.00488
	(A1 * !A2 * B1 * !D1 * Y)	0.00430	0.00383	0.00378
	(!A2 * !B1 * D1 * Y)	-0.00213	-0.00215	-0.00221
	(!A2 * !B1 * D1 * Y)	0.00398	0.00400	0.00383
	(!A2 * !B1 * !D1 * Y)	-0.00286	-0.00287	-0.00284
	(!A2 * !B1 * !D1 * Y)	0.00421	0.00421	0.00390
	(!A1 * !A2 * B1 * D1 * Y)	-0.00208	-0.00209	-0.00215
	(!A1 * !A2 * B1 * D1 * Y)	0.00399	0.00400	0.00383
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00287	-0.00290	-0.00288
	(!A1 * !A2 * B1 * !D1 * Y)	0.00430	0.00405	0.00382

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	(A2 * !C1 * Y)	0.00046	0.00046	0.00044
	(A2 * !C1 * Y)	-0.00208	-0.00209	-0.00211
	(A2 * !B1 * C1 * Y)	0.00048	0.00048	0.00044
	(A2 * !B1 * C1 * Y)	-0.00201	-0.00201	-0.00210
	(!A2 * !C1 * Y)	0.00046	0.00046	0.00044
	(!A2 * !C1 * Y)	-0.00208	-0.00209	-0.00211
	(!A2 * !B1 * C1 * Y)	0.00048	0.00048	0.00044
	(!A2 * !B1 * C1 * Y)	-0.00201	-0.00202	-0.00210
	(!A1 * !A2 * B1 * C1 * Y)	0.00055	0.00055	0.00046
	(!A1 * !A2 * B1 * C1 * Y)	-0.00189	-0.00190	-0.00208

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00106	0.00107	0.00100
	(A2 * !C1 * Y)	-0.00395	-0.00399	-0.00407
	(A2 * !B1 * C1 * Y)	0.00108	0.00108	0.00097
	(A2 * !B1 * C1 * Y)	-0.00381	-0.00383	-0.00405
	(!A2 * !C1 * Y)	0.00106	0.00105	0.00100
	(!A2 * !C1 * Y)	-0.00395	-0.00395	-0.00407
	(!A2 * !B1 * C1 * Y)	0.00108	0.00109	0.00097
	(!A2 * !B1 * C1 * Y)	-0.00381	-0.00383	-0.00405
	(!A1 * !A2 * B1 * C1 * Y)	0.00118	0.00117	0.00098
	(!A1 * !A2 * B1 * C1 * Y)	-0.00358	-0.00360	-0.00400
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00190	0.00190	0.00178
	(A2 * !C1 * Y)	-0.00463	-0.00467	-0.00483
	(A2 * !B1 * C1 * Y)	0.00195	0.00193	0.00173
	(A2 * !B1 * C1 * Y)	-0.00436	-0.00437	-0.00478
	(!A2 * !C1 * Y)	0.00188	0.00190	0.00178
	(!A2 * !C1 * Y)	-0.00460	-0.00466	-0.00483
	(!A2 * !B1 * C1 * Y)	0.00193	0.00194	0.00173
	(!A2 * !B1 * C1 * Y)	-0.00433	-0.00439	-0.00478
	(!A1 * !A2 * B1 * C1 * Y)	0.00214	0.00213	0.00177
	(!A1 * !A2 * B1 * C1 * Y)	-0.00392	-0.00396	-0.00468

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00043	-0.00043	-0.00043
	(A2 * !C1 * Y)	0.00211	0.00213	0.00211
	(A2 * !B1 * C1 * Y)	-0.00042	-0.00043	-0.00042
	(A2 * !B1 * C1 * Y)	0.00211	0.00213	0.00211
	(!A2 * !C1 * Y)	-0.00043	-0.00043	-0.00043
	(!A2 * !C1 * Y)	0.00211	0.00213	0.00211
	(!A2 * !B1 * C1 * Y)	-0.00043	-0.00043	-0.00042
	(!A2 * !B1 * C1 * Y)	0.00211	0.00213	0.00211
	(!A1 * !A2 * B1 * C1 * Y)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * B1 * C1 * Y)	0.00211	0.00213	0.00211
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00096	-0.00097	-0.00096
	(A2 * !C1 * Y)	0.00407	0.00412	0.00409
	(A2 * !B1 * C1 * Y)	-0.00093	-0.00094	-0.00093
	(A2 * !B1 * C1 * Y)	0.00406	0.00411	0.00408
	(!A2 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(!A2 * !C1 * Y)	0.00407	0.00411	0.00409
	(!A2 * !B1 * C1 * Y)	-0.00093	-0.00094	-0.00093
	(!A2 * !B1 * C1 * Y)	0.00406	0.00411	0.00408
	(!A1 * !A2 * B1 * C1 * Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A2 * B1 * C1 * Y)	0.00407	0.00414	0.00408
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00172	-0.00175	-0.00172
	(A2 * !C1 * Y)	0.00483	0.00491	0.00484
	(A2 * !B1 * C1 * Y)	-0.00168	-0.00171	-0.00167
	(A2 * !B1 * C1 * Y)	0.00482	0.00490	0.00483
	(!A2 * !C1 * Y)	-0.00173	-0.00173	-0.00172
	(!A2 * !C1 * Y)	0.00484	0.00487	0.00484
	(!A2 * !B1 * C1 * Y)	-0.00170	-0.00169	-0.00167
	(!A2 * !B1 * C1 * Y)	0.00486	0.00486	0.00483
	(!A1 * !A2 * B1 * C1 * Y)	-0.00169	-0.00168	-0.00167
	(!A1 * !A2 * B1 * C1 * Y)	0.00485	0.00486	0.00484

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00270	0.00276	0.00254	0.00275	0.00276	0.74075
sky130_fd_sc_hs__o2111a_2	0.00273	0.00273	0.00269	0.00279	0.00289	1.50798
sky130_fd_sc_hs__o2111a_4	0.00521	0.00560	0.00474	0.00487	0.00492	2.88256

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111a_1	0.00000	0.09633	0.55528
sky130_fd_sc_hs__o2111a_2	0.00000	0.10339	0.37149
sky130_fd_sc_hs__o2111a_4	0.00000	0.24668	1.18495

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)	0.22606	0.93796	7.56357
	A2->X (RR)	0.19985	0.90123	7.49440
	B1->X (RR)	0.21602	0.94465	7.69903
	C1->X (RR)	0.20547	0.95336	7.74944
	D1->X (RR)	0.18867	0.94161	7.67872
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.25047	0.87170	7.70284
	A2->X (RR)	0.22404	0.83656	7.63933
	B1->X (RR)	0.24182	0.88276	7.86461
	C1->X (RR)	0.23030	0.89670	7.93749
	D1->X (RR)	0.21157	0.88933	7.90084
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.27664	0.81421	7.76921
	A2->X (RR)	0.25157	0.78850	7.72615
	B1->X (RR)	0.26674	0.83193	7.96463
	C1->X (RR)	0.25452	0.85996	8.09313
	D1->X (RR)	0.22718	0.84282	8.05131

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.30885	0.87431	4.79124
	A2->X (FF)	0.28850	0.87274	4.76297
	B1->X (FF)	0.17397	0.75522	4.50745
	C1->X (FF)	0.15841	0.72650	4.41048
	D1->X (FF)	0.13520	0.68540	4.30193
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.36512	0.92608	5.15882
	A2->X (FF)	0.34455	0.92469	5.15469
	B1->X (FF)	0.17091	0.73361	4.69972
	C1->X (FF)	0.15884	0.71106	4.61390
	D1->X (FF)	0.13911	0.67560	4.50800
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.41112	0.92978	5.23740
	A2->X (FF)	0.39231	0.94430	5.33897
	B1->X (FF)	0.21930	0.76773	4.93366
	C1->X (FF)	0.20319	0.74223	4.82616
	D1->X (FF)	0.17788	0.70257	4.71049

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.01214	0.01218	0.01664
	A1	0.00460	0.00463	0.00910
	A2	0.01052	0.01044	0.01667
	A2	0.00386	0.00378	0.01004
	B1	0.01097	0.01099	0.01810
	B1	0.00487	0.00489	0.01213
	C1	0.01020	0.01022	0.01755
	C1	0.00486	0.00487	0.01232
	D1	0.00941	0.00949	0.01698
	D1	0.00484	0.00490	0.01252
sky130_fd_sc_hs__o2111a_2	A1	0.01487	0.01512	0.01939
	A1	0.00733	0.00758	0.01213
	A2	0.01320	0.01337	0.01912
	A2	0.00659	0.00677	0.01280
	B1	0.01376	0.01392	0.02041
	B1	0.00746	0.00762	0.01434
	C1	0.01294	0.01308	0.01984
	C1	0.00744	0.00758	0.01454
	D1	0.01217	0.01239	0.01997
	D1	0.00642	0.00670	0.01505

sky130_fd_sc_hs__o2111a_4	**A1**	0.03060	0.03075	0.03845
	A1	0.01525	0.01540	0.02364
	A2	0.02762	0.02772	0.03754
	A2	0.01376	0.01385	0.02418
	B1	0.02830	0.02842	0.04075
	B1	0.01581	0.01594	0.02857
	C1	0.02664	0.02676	0.03926
	C1	0.01579	0.01591	0.02862
	D1	0.02479	0.02506	0.04032
	D1	0.01571	0.01600	0.03150

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00468	0.00481	0.01073
	A1	0.01195	0.01209	0.01762
	A2	0.00474	0.00520	0.01381
	A2	0.01112	0.01159	0.01972
	B1	0.00380	0.00432	0.01418
	B1	0.00981	0.01030	0.01992
	C1	0.00339	0.00387	0.01368
	C1	0.00869	0.00917	0.01876
	D1	0.00284	0.00327	0.01331
	D1	0.00745	0.00781	0.01747

sky130_fd_sc_hs__o2111a_2	**A1**	0.00706	0.00721	0.01280
	A1	0.01434	0.01461	0.02001
	A2	0.00712	0.00743	0.01575
	A2	0.01343	0.01388	0.02200
	B1	0.00602	0.00673	0.01706
	B1	0.01220	0.01289	0.02215
	C1	0.00554	0.00625	0.01625
	C1	0.01100	0.01169	0.02089
	D1	0.00486	0.00551	0.01549
	D1	0.00965	0.01029	0.01962
sky130_fd_sc_hs__o2111a_4	**A1**	0.01389	0.01400	0.02566
	A1	0.02867	0.02876	0.03908
	A2	0.01393	0.01448	0.03136
	A2	0.02721	0.02772	0.04258
	B1	0.01191	0.01320	0.03162
	B1	0.02413	0.02538	0.04373
	C1	0.01098	0.01213	0.03119
	C1	0.02171	0.02288	0.04090
	D1	0.00920	0.01076	0.02982
	D1	0.01830	0.01982	0.03807

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)**	0.00161	0.00138	0.00137
	(A2 * B1 * C1 * D1 * X)	-0.00134	-0.00157	-0.00160
	(A2 * B1 * C1 * !D1 * !X)	0.00137	0.00138	0.00137
	(A2 * B1 * C1 * !D1 * !X)	-0.00158	-0.00160	-0.00159
	(A2 * B1 * !C1 * !X)	0.00137	0.00138	0.00137
	(A2 * B1 * !C1 * !X)	-0.00158	-0.00160	-0.00159
	(A2 * !B1 * !X)	0.00137	0.00138	0.00137
	(A2 * !B1 * !X)	-0.00158	-0.00160	-0.00159
	(!A2 * B1 * C1 * !D1 * !X)	0.00125	0.00126	0.00124
	(!A2 * B1 * C1 * !D1 * !X)	-0.00162	-0.00163	-0.00162
	(!A2 * B1 * !C1 * D1 * !X)	0.00126	0.00126	0.00126
	(!A2 * B1 * !C1 * D1 * !X)	-0.00162	-0.00162	-0.00162
	(!A2 * B1 * !C1 * !D1 * !X)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * C1 * D1 * !X)	0.00128	0.00129	0.00129
	(!A2 * !B1 * C1 * D1 * !X)	-0.00161	-0.00162	-0.00162
	(!A2 * !B1 * !D1 * !X)	0.00128	0.00129	0.00129
	(!A2 * !B1 * !D1 * !X)	-0.00161	-0.00162	-0.00162
	(!A2 * !B1 * !C1 * D1 * !X)	0.00128	0.00129	0.00129
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00161	-0.00162	-0.00162

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00166	0.00143	0.00142
	(A2 * B1 * C1 * D1 * X)	-0.00133	-0.00156	-0.00159
	(A2 * B1 * C1 * !D1 * !X)	0.00142	0.00141	0.00142
	(A2 * B1 * C1 * !D1 * !X)	-0.00156	-0.00158	-0.00158
	(A2 * B1 * !C1 * !X)	0.00142	0.00141	0.00142
	(A2 * B1 * !C1 * !X)	-0.00156	-0.00158	-0.00158
	(A2 * !B1 * !X)	0.00142	0.00141	0.00142
	(A2 * !B1 * !X)	-0.00156	-0.00158	-0.00158
	(!A2 * B1 * C1 * !D1 * !X)	0.00131	0.00132	0.00131
	(!A2 * B1 * C1 * !D1 * !X)	-0.00160	-0.00161	-0.00160
	(!A2 * B1 * !C1 * D1 * !X)	0.00132	0.00132	0.00132
	(!A2 * B1 * !C1 * D1 * !X)	-0.00160	-0.00161	-0.00160
	(!A2 * B1 * !C1 * !D1 * !X)	0.00132	0.00132	0.00132
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00160	-0.00161	-0.00160
	(!A2 * !B1 * C1 * D1 * !X)	0.00134	0.00135	0.00134
	(!A2 * !B1 * C1 * D1 * !X)	-0.00160	-0.00161	-0.00160
	(!A2 * !B1 * !D1 * !X)	0.00134	0.00135	0.00134
	(!A2 * !B1 * !D1 * !X)	-0.00160	-0.00161	-0.00160
	(!A2 * !B1 * !C1 * D1 * !X)	0.00134	0.00135	0.00134
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00160	-0.00161	-0.00160

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00324	0.00278	0.00274
	(A2 * B1 * C1 * D1 * X)	-0.00260	-0.00309	-0.00313
	(A2 * B1 * C1 * !D1 * !X)	0.00253	0.00254	0.00253
	(A2 * B1 * C1 * !D1 * !X)	-0.00327	-0.00332	-0.00331
	(A2 * B1 * !C1 * !X)	0.00253	0.00254	0.00253
	(A2 * B1 * !C1 * !X)	-0.00327	-0.00332	-0.00331
	(A2 * !B1 * !X)	0.00253	0.00254	0.00253
	(A2 * !B1 * !X)	-0.00327	-0.00332	-0.00331
	(!A2 * B1 * C1 * !D1 * !X)	0.00233	0.00235	0.00232
	(!A2 * B1 * C1 * !D1 * !X)	-0.00337	-0.00339	-0.00337
	(!A2 * B1 * !C1 * D1 * !X)	0.00234	0.00235	0.00234
	(!A2 * B1 * !C1 * D1 * !X)	-0.00337	-0.00337	-0.00337
	(!A2 * B1 * !C1 * !D1 * !X)	0.00234	0.00234	0.00234
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00337	-0.00337	-0.00337
	(!A2 * !B1 * C1 * D1 * !X)	0.00238	0.00240	0.00239
	(!A2 * !B1 * C1 * D1 * !X)	-0.00336	-0.00338	-0.00337
	(!A2 * !B1 * !D1 * !X)	0.00238	0.00240	0.00239
	(!A2 * !B1 * !D1 * !X)	-0.00336	-0.00338	-0.00337
	(!A2 * !B1 * !C1 * D1 * !X)	0.00238	0.00240	0.00239
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00336	-0.00338	-0.00337

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)**	-0.00135	-0.00136	-0.00135
	(A2 * B1 * C1 * D1 * X)	0.00160	0.00162	0.00161
	(A2 * B1 * C1 * !D1 * !X)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * C1 * !D1 * !X)	0.00159	0.00160	0.00159
	(A2 * B1 * !C1 * !X)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * !C1 * !X)	0.00158	0.00160	0.00159
	(A2 * !B1 * !X)	-0.00136	-0.00137	-0.00136
	(A2 * !B1 * !X)	0.00158	0.00160	0.00159
	(!A2 * B1 * C1 * !D1 * !X)	-0.00115	-0.00126	-0.00124
	(!A2 * B1 * C1 * !D1 * !X)	0.00162	0.00163	0.00162
	(!A2 * B1 * !C1 * D1 * !X)	-0.00117	-0.00126	-0.00126
	(!A2 * B1 * !C1 * D1 * !X)	0.00162	0.00163	0.00162
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00117	-0.00127	-0.00126
	(!A2 * B1 * !C1 * !D1 * !X)	0.00162	0.00163	0.00162
	(!A2 * !B1 * C1 * D1 * !X)	-0.00123	-0.00129	-0.00129
	(!A2 * !B1 * C1 * D1 * !X)	0.00163	0.00164	0.00162
	(!A2 * !B1 * !D1 * !X)	-0.00124	-0.00129	-0.00129
	(!A2 * !B1 * !D1 * !X)	0.00163	0.00164	0.00162
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00124	-0.00129	-0.00129
	(!A2 * !B1 * !C1 * D1 * !X)	0.00163	0.00164	0.00162

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00140	-0.00141	-0.00140
	(A2 * B1 * C1 * D1 * X)	0.00158	0.00160	0.00159
	(A2 * B1 * C1 * !D1 * !X)	-0.00141	-0.00141	-0.00141
	(A2 * B1 * C1 * !D1 * !X)	0.00157	0.00159	0.00158
	(A2 * B1 * !C1 * !X)	-0.00141	-0.00141	-0.00141
	(A2 * B1 * !C1 * !X)	0.00158	0.00159	0.00158
	(A2 * !B1 * !X)	-0.00141	-0.00141	-0.00141
	(A2 * !B1 * !X)	0.00158	0.00159	0.00158
	(!A2 * B1 * C1 * !D1 * !X)	-0.00121	-0.00132	-0.00131
	(!A2 * B1 * C1 * !D1 * !X)	0.00160	0.00162	0.00161
	(!A2 * B1 * !C1 * D1 * !X)	-0.00123	-0.00132	-0.00132
	(!A2 * B1 * !C1 * D1 * !X)	0.00160	0.00162	0.00161
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00123	-0.00132	-0.00132
	(!A2 * B1 * !C1 * !D1 * !X)	0.00160	0.00162	0.00161
	(!A2 * !B1 * C1 * D1 * !X)	-0.00129	-0.00135	-0.00134
	(!A2 * !B1 * C1 * D1 * !X)	0.00161	0.00162	0.00161
	(!A2 * !B1 * !D1 * !X)	-0.00129	-0.00135	-0.00134
	(!A2 * !B1 * !D1 * !X)	0.00161	0.00162	0.00161
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00129	-0.00135	-0.00134
	(!A2 * !B1 * !C1 * D1 * !X)	0.00161	0.00162	0.00161

sky130_fd_sc_hs__o2111a_4	(A2 * B1 * C1 * D1 * X)	-0.00270	-0.00272	-0.00270
	(A2 * B1 * C1 * D1 * X)	0.00311	0.00316	0.00314
	(A2 * B1 * C1 * !D1 * !X)	-0.00253	-0.00253	-0.00252
	(A2 * B1 * C1 * !D1 * !X)	0.00332	0.00332	0.00331
	(A2 * B1 * !C1 * !X)	-0.00253	-0.00253	-0.00252
	(A2 * B1 * !C1 * !X)	0.00332	0.00332	0.00331
	(A2 * !B1 * !X)	-0.00253	-0.00253	-0.00252
	(A2 * !B1 * !X)	0.00332	0.00332	0.00331
	(!A2 * B1 * C1 * !D1 * !X)	-0.00216	-0.00235	-0.00232
	(!A2 * B1 * C1 * !D1 * !X)	0.00338	0.00340	0.00338
	(!A2 * B1 * !C1 * D1 * !X)	-0.00218	-0.00235	-0.00234
	(!A2 * B1 * !C1 * D1 * !X)	0.00338	0.00341	0.00338
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00218	-0.00234	-0.00234
	(!A2 * B1 * !C1 * !D1 * !X)	0.00338	0.00341	0.00338
	(!A2 * !B1 * C1 * D1 * !X)	-0.00227	-0.00240	-0.00239
	(!A2 * !B1 * C1 * D1 * !X)	0.00337	0.00341	0.00338
	(!A2 * !B1 * !D1 * !X)	-0.00227	-0.00240	-0.00239
	(!A2 * !B1 * !D1 * !X)	0.00337	0.00341	0.00338
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00227	-0.00240	-0.00239
	(!A2 * !B1 * !C1 * D1 * !X)	0.00337	0.00341	0.00338

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)**	0.00144	0.00144	0.00143
	(A1 * B1 * C1 * D1 * X)	-0.00079	-0.00079	-0.00078
	(A1 * B1 * C1 * !D1 * !X)	0.00129	0.00131	0.00130
	(A1 * B1 * C1 * !D1 * !X)	-0.00154	-0.00157	-0.00156
	(A1 * B1 * !C1 * D1 * !X)	0.00129	0.00131	0.00130
	(A1 * B1 * !C1 * D1 * !X)	-0.00154	-0.00157	-0.00156
	(A1 * B1 * !C1 * !D1 * !X)	0.00129	0.00131	0.00130
	(A1 * B1 * !C1 * !D1 * !X)	-0.00154	-0.00157	-0.00156
	(A1 * !B1 * C1 * D1 * !X)	0.00129	0.00131	0.00130
	(A1 * !B1 * C1 * D1 * !X)	-0.00154	-0.00157	-0.00156
	(A1 * !B1 * !D1 * !X)	0.00129	0.00131	0.00130
	(A1 * !B1 * !D1 * !X)	-0.00154	-0.00157	-0.00156
	(A1 * !B1 * !C1 * D1 * !X)	0.00129	0.00131	0.00130
	(A1 * !B1 * !C1 * D1 * !X)	-0.00154	-0.00157	-0.00156
	(!A1 * B1 * C1 * !D1 * !X)	0.00117	0.00118	0.00118
	(!A1 * B1 * C1 * !D1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * B1 * !C1 * D1 * !X)	0.00119	0.00120	0.00119
	(!A1 * B1 * !C1 * D1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * B1 * !C1 * !D1 * !X)	0.00119	0.00120	0.00119
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * !B1 * C1 * D1 * !X)	0.00123	0.00123	0.00122
	(!A1 * !B1 * C1 * D1 * !X)	-0.00160	-0.00160	-0.00159
	(!A1 * !B1 * !D1 * !X)	0.00123	0.00123	0.00122
	(!A1 * !B1 * !D1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * !B1 * !C1 * D1 * !X)	0.00123	0.00123	0.00122
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00159	-0.00160	-0.00159

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00144	0.00143	0.00143
	(A1 * B1 * C1 * D1 * X)	-0.00077	-0.00076	-0.00076
	(A1 * B1 * C1 * !D1 * !X)	0.00130	0.00132	0.00131
	(A1 * B1 * C1 * !D1 * !X)	-0.00152	-0.00154	-0.00153
	(A1 * B1 * !C1 * D1 * !X)	0.00130	0.00132	0.00131
	(A1 * B1 * !C1 * D1 * !X)	-0.00152	-0.00154	-0.00153
	(A1 * B1 * !C1 * !D1 * !X)	0.00130	0.00132	0.00131
	(A1 * B1 * !C1 * !D1 * !X)	-0.00152	-0.00154	-0.00153
	(A1 * !B1 * C1 * D1 * !X)	0.00130	0.00132	0.00131
	(A1 * !B1 * C1 * D1 * !X)	-0.00152	-0.00154	-0.00153
	(A1 * !B1 * !D1 * !X)	0.00131	0.00132	0.00131
	(A1 * !B1 * !D1 * !X)	-0.00152	-0.00154	-0.00153
	(A1 * !B1 * !C1 * D1 * !X)	0.00131	0.00132	0.00131
	(A1 * !B1 * !C1 * D1 * !X)	-0.00152	-0.00154	-0.00153
	(!A1 * B1 * C1 * !D1 * !X)	0.00119	0.00119	0.00120
	(!A1 * B1 * C1 * !D1 * !X)	-0.00156	-0.00156	-0.00156
	(!A1 * B1 * !C1 * D1 * !X)	0.00121	0.00121	0.00121
	(!A1 * B1 * !C1 * D1 * !X)	-0.00156	-0.00157	-0.00156
	(!A1 * B1 * !C1 * !D1 * !X)	0.00121	0.00121	0.00121
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00156	-0.00157	-0.00156
	(!A1 * !B1 * C1 * D1 * !X)	0.00124	0.00124	0.00123
	(!A1 * !B1 * C1 * D1 * !X)	-0.00157	-0.00157	-0.00156
	(!A1 * !B1 * !D1 * !X)	0.00124	0.00124	0.00123
	(!A1 * !B1 * !D1 * !X)	-0.00157	-0.00157	-0.00156
	(!A1 * !B1 * !C1 * D1 * !X)	0.00124	0.00125	0.00123
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00157	-0.00157	-0.00156

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00316	0.00315	0.00314
	(A1 * B1 * C1 * D1 * X)	-0.00157	-0.00156	-0.00156
	(A1 * B1 * C1 * !D1 * !X)	0.00265	0.00269	0.00266
	(A1 * B1 * C1 * !D1 * !X)	-0.00328	-0.00334	-0.00332
	(A1 * B1 * !C1 * D1 * !X)	0.00265	0.00269	0.00266
	(A1 * B1 * !C1 * D1 * !X)	-0.00328	-0.00334	-0.00332
	(A1 * B1 * !C1 * !D1 * !X)	0.00265	0.00269	0.00266
	(A1 * B1 * !C1 * !D1 * !X)	-0.00328	-0.00334	-0.00332
	(A1 * !B1 * C1 * D1 * !X)	0.00265	0.00269	0.00266
	(A1 * !B1 * C1 * D1 * !X)	-0.00328	-0.00334	-0.00332
	(A1 * !B1 * !D1 * !X)	0.00265	0.00269	0.00266
	(A1 * !B1 * !D1 * !X)	-0.00328	-0.00335	-0.00332
	(A1 * !B1 * !C1 * D1 * !X)	0.00265	0.00269	0.00266
	(A1 * !B1 * !C1 * D1 * !X)	-0.00328	-0.00335	-0.00332
	(!A1 * B1 * C1 * !D1 * !X)	0.00240	0.00241	0.00240
	(!A1 * B1 * C1 * !D1 * !X)	-0.00339	-0.00339	-0.00339
	(!A1 * B1 * !C1 * D1 * !X)	0.00242	0.00245	0.00243
	(!A1 * B1 * !C1 * D1 * !X)	-0.00339	-0.00341	-0.00339
	(!A1 * B1 * !C1 * !D1 * !X)	0.00242	0.00244	0.00242
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00339	-0.00341	-0.00339
	(!A1 * !B1 * C1 * D1 * !X)	0.00246	0.00251	0.00248
	(!A1 * !B1 * C1 * D1 * !X)	-0.00337	-0.00341	-0.00339
	(!A1 * !B1 * !D1 * !X)	0.00246	0.00251	0.00248
	(!A1 * !B1 * !D1 * !X)	-0.00338	-0.00341	-0.00339
	(!A1 * !B1 * !C1 * D1 * !X)	0.00246	0.00250	0.00248
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00338	-0.00341	-0.00339

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)**	-0.00138	-0.00138	-0.00142
	(A1 * B1 * C1 * D1 * X)	0.00084	0.00083	0.00080
	(A1 * B1 * C1 * !D1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * B1 * C1 * !D1 * !X)	0.00156	0.00157	0.00156
	(A1 * B1 * !C1 * D1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * B1 * !C1 * D1 * !X)	0.00156	0.00157	0.00156
	(A1 * B1 * !C1 * !D1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * B1 * !C1 * !D1 * !X)	0.00156	0.00157	0.00156
	(A1 * !B1 * C1 * D1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * !B1 * C1 * D1 * !X)	0.00156	0.00157	0.00156
	(A1 * !B1 * !D1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * !B1 * !D1 * !X)	0.00156	0.00157	0.00156
	(A1 * !B1 * !C1 * D1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * !B1 * !C1 * D1 * !X)	0.00156	0.00157	0.00156
	(!A1 * B1 * C1 * !D1 * !X)	-0.00108	-0.00118	-0.00118
	(!A1 * B1 * C1 * !D1 * !X)	0.00159	0.00160	0.00160
	(!A1 * B1 * !C1 * D1 * !X)	-0.00111	-0.00120	-0.00119
	(!A1 * B1 * !C1 * D1 * !X)	0.00159	0.00161	0.00160
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00111	-0.00120	-0.00119
	(!A1 * B1 * !C1 * !D1 * !X)	0.00159	0.00161	0.00160
	(!A1 * !B1 * C1 * D1 * !X)	-0.00117	-0.00123	-0.00122
	(!A1 * !B1 * C1 * D1 * !X)	0.00160	0.00161	0.00160
	(!A1 * !B1 * !D1 * !X)	-0.00116	-0.00123	-0.00122
	(!A1 * !B1 * !D1 * !X)	0.00159	0.00161	0.00160
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00116	-0.00123	-0.00122
	(!A1 * !B1 * !C1 * D1 * !X)	0.00159	0.00161	0.00160

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00138	-0.00138	-0.00142
	(A1 * B1 * C1 * D1 * X)	0.00081	0.00081	0.00078
	(A1 * B1 * C1 * !D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * C1 * !D1 * !X)	0.00153	0.00154	0.00153
	(A1 * B1 * !C1 * D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * !C1 * D1 * !X)	0.00153	0.00154	0.00153
	(A1 * B1 * !C1 * !D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * !C1 * !D1 * !X)	0.00153	0.00154	0.00153
	(A1 * !B1 * C1 * D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * C1 * D1 * !X)	0.00153	0.00154	0.00153
	(A1 * !B1 * !D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * !D1 * !X)	0.00153	0.00154	0.00153
	(A1 * !B1 * !C1 * D1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * !C1 * D1 * !X)	0.00153	0.00154	0.00153
	(!A1 * B1 * C1 * !D1 * !X)	-0.00110	-0.00119	-0.00120
	(!A1 * B1 * C1 * !D1 * !X)	0.00156	0.00157	0.00157
	(!A1 * B1 * !C1 * D1 * !X)	-0.00112	-0.00121	-0.00121
	(!A1 * B1 * !C1 * D1 * !X)	0.00156	0.00158	0.00157
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00112	-0.00121	-0.00121
	(!A1 * B1 * !C1 * !D1 * !X)	0.00156	0.00158	0.00157
	(!A1 * !B1 * C1 * D1 * !X)	-0.00118	-0.00124	-0.00123
	(!A1 * !B1 * C1 * D1 * !X)	0.00157	0.00158	0.00157
	(!A1 * !B1 * !D1 * !X)	-0.00118	-0.00124	-0.00123
	(!A1 * !B1 * !D1 * !X)	0.00157	0.00158	0.00157
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00118	-0.00125	-0.00123
	(!A1 * !B1 * !C1 * D1 * !X)	0.00157	0.00158	0.00157

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00301	-0.00302	-0.00311
	(A1 * B1 * C1 * D1 * X)	0.00168	0.00167	0.00160
	(A1 * B1 * C1 * !D1 * !X)	-0.00265	-0.00267	-0.00265
	(A1 * B1 * C1 * !D1 * !X)	0.00331	0.00334	0.00332
	(A1 * B1 * !C1 * D1 * !X)	-0.00264	-0.00267	-0.00265
	(A1 * B1 * !C1 * D1 * !X)	0.00331	0.00334	0.00332
	(A1 * B1 * !C1 * !D1 * !X)	-0.00264	-0.00267	-0.00265
	(A1 * B1 * !C1 * !D1 * !X)	0.00331	0.00334	0.00332
	(A1 * !B1 * C1 * D1 * !X)	-0.00264	-0.00267	-0.00265
	(A1 * !B1 * C1 * D1 * !X)	0.00330	0.00334	0.00332
	(A1 * !B1 * !D1 * !X)	-0.00265	-0.00267	-0.00265
	(A1 * !B1 * !D1 * !X)	0.00332	0.00335	0.00332
	(A1 * !B1 * !C1 * D1 * !X)	-0.00265	-0.00267	-0.00265
	(A1 * !B1 * !C1 * D1 * !X)	0.00332	0.00335	0.00332
	(!A1 * B1 * C1 * !D1 * !X)	-0.00221	-0.00241	-0.00240
	(!A1 * B1 * C1 * !D1 * !X)	0.00340	0.00342	0.00340
	(!A1 * B1 * !C1 * D1 * !X)	-0.00223	-0.00245	-0.00243
	(!A1 * B1 * !C1 * D1 * !X)	0.00340	0.00342	0.00340
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00224	-0.00244	-0.00242
	(!A1 * B1 * !C1 * !D1 * !X)	0.00340	0.00342	0.00340
	(!A1 * !B1 * C1 * D1 * !X)	-0.00234	-0.00251	-0.00248
	(!A1 * !B1 * C1 * D1 * !X)	0.00339	0.00342	0.00340
	(!A1 * !B1 * !D1 * !X)	-0.00236	-0.00251	-0.00248
	(!A1 * !B1 * !D1 * !X)	0.00339	0.00343	0.00340
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00236	-0.00250	-0.00248
	(!A1 * !B1 * !C1 * D1 * !X)	0.00339	0.00343	0.00340

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)**	0.00115	0.00116	0.00115
	(A2 * C1 * !D1 * !X)	-0.00138	-0.00138	-0.00138
	(A2 * !C1 * D1 * !X)	0.00119	0.00120	0.00119
	(A2 * !C1 * D1 * !X)	-0.00138	-0.00138	-0.00138
	(A2 * !C1 * !D1 * !X)	0.00119	0.00120	0.00119
	(A2 * !C1 * !D1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * C1 * !D1 * !X)	0.00114	0.00116	0.00115
	(A1 * !A2 * C1 * !D1 * !X)	-0.00138	-0.00138	-0.00138
	(A1 * !A2 * !C1 * D1 * !X)	0.00119	0.00119	0.00119
	(A1 * !A2 * !C1 * D1 * !X)	-0.00138	-0.00138	-0.00138
	(A1 * !A2 * !C1 * !D1 * !X)	0.00118	0.00120	0.00119
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00138	-0.00139	-0.00138
	(!A1 * !A2 * C1 * D1 * !X)	0.00061	0.00061	0.00060
	(!A1 * !A2 * C1 * D1 * !X)	-0.00134	-0.00134	-0.00133
	(!A1 * !A2 * C1 * !D1 * !X)	0.00071	0.00071	0.00071
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00138	-0.00138	-0.00138
	(!A1 * !A2 * !C1 * D1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00138	-0.00139	-0.00138
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00118	0.00119	0.00119
	(A2 * C1 * !D1 * !X)	-0.00159	-0.00160	-0.00159
	(A2 * !C1 * D1 * !X)	0.00122	0.00123	0.00122
	(A2 * !C1 * D1 * !X)	-0.00160	-0.00160	-0.00160
	(A2 * !C1 * !D1 * !X)	0.00122	0.00122	0.00122
	(A2 * !C1 * !D1 * !X)	-0.00160	-0.00160	-0.00160
	(A1 * !A2 * C1 * !D1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * C1 * !D1 * !X)	-0.00159	-0.00160	-0.00159
	(A1 * !A2 * !C1 * D1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !C1 * D1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * !C1 * !D1 * !X)	0.00122	0.00122	0.00122
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * !A2 * C1 * D1 * !X)	0.00065	0.00064	0.00064
	(!A1 * !A2 * C1 * D1 * !X)	-0.00155	-0.00155	-0.00154
	(!A1 * !A2 * C1 * !D1 * !X)	0.00076	0.00077	0.00076
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * !A2 * !C1 * D1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00160	-0.00161	-0.00160
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00079	0.00079	0.00078
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00160	-0.00161	-0.00160

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00233	0.00235	0.00234
	(A2 * C1 * !D1 * !X)	-0.00271	-0.00273	-0.00272
	(A2 * !C1 * D1 * !X)	0.00240	0.00242	0.00240
	(A2 * !C1 * D1 * !X)	-0.00272	-0.00274	-0.00272
	(A2 * !C1 * !D1 * !X)	0.00239	0.00240	0.00239
	(A2 * !C1 * !D1 * !X)	-0.00272	-0.00273	-0.00272
	(A1 * !A2 * C1 * !D1 * !X)	0.00233	0.00235	0.00234
	(A1 * !A2 * C1 * !D1 * !X)	-0.00271	-0.00273	-0.00272
	(A1 * !A2 * !C1 * D1 * !X)	0.00238	0.00241	0.00239
	(A1 * !A2 * !C1 * D1 * !X)	-0.00272	-0.00273	-0.00272
	(A1 * !A2 * !C1 * !D1 * !X)	0.00238	0.00241	0.00239
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00271	-0.00273	-0.00272
	(!A1 * !A2 * C1 * D1 * !X)	0.00119	0.00120	0.00120
	(!A1 * !A2 * C1 * D1 * !X)	-0.00262	-0.00263	-0.00260
	(!A1 * !A2 * C1 * !D1 * !X)	0.00146	0.00146	0.00145
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00274	-0.00275	-0.00273
	(!A1 * !A2 * !C1 * D1 * !X)	0.00143	0.00145	0.00144
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00272	-0.00275	-0.00273
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00145	0.00147	0.00145
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00272	-0.00275	-0.00273

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)**	-0.00105	-0.00116	-0.00115
	(A2 * C1 * !D1 * !X)	0.00139	0.00140	0.00138
	(A2 * !C1 * D1 * !X)	-0.00113	-0.00120	-0.00119
	(A2 * !C1 * D1 * !X)	0.00138	0.00140	0.00138
	(A2 * !C1 * !D1 * !X)	-0.00115	-0.00120	-0.00119
	(A2 * !C1 * !D1 * !X)	0.00138	0.00140	0.00138
	(A1 * !A2 * C1 * !D1 * !X)	-0.00103	-0.00116	-0.00115
	(A1 * !A2 * C1 * !D1 * !X)	0.00140	0.00140	0.00138
	(A1 * !A2 * !C1 * D1 * !X)	-0.00112	-0.00119	-0.00119
	(A1 * !A2 * !C1 * D1 * !X)	0.00138	0.00140	0.00138
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00114	-0.00120	-0.00119
	(A1 * !A2 * !C1 * !D1 * !X)	0.00138	0.00140	0.00138
	(!A1 * !A2 * C1 * D1 * !X)	-0.00055	-0.00054	-0.00055
	(!A1 * !A2 * C1 * D1 * !X)	0.00142	0.00141	0.00139
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00071	-0.00071	-0.00071
	(!A1 * !A2 * C1 * !D1 * !X)	0.00142	0.00142	0.00139
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * !A2 * !C1 * D1 * !X)	0.00144	0.00142	0.00139
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00138	0.00139	0.00138

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00109	-0.00119	-0.00119
	(A2 * C1 * !D1 * !X)	0.00160	0.00162	0.00160
	(A2 * !C1 * D1 * !X)	-0.00117	-0.00123	-0.00122
	(A2 * !C1 * D1 * !X)	0.00161	0.00162	0.00160
	(A2 * !C1 * !D1 * !X)	-0.00119	-0.00122	-0.00122
	(A2 * !C1 * !D1 * !X)	0.00161	0.00162	0.00160
	(A1 * !A2 * C1 * !D1 * !X)	-0.00107	-0.00119	-0.00118
	(A1 * !A2 * C1 * !D1 * !X)	0.00160	0.00162	0.00160
	(A1 * !A2 * !C1 * D1 * !X)	-0.00117	-0.00123	-0.00122
	(A1 * !A2 * !C1 * D1 * !X)	0.00161	0.00162	0.00160
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00118	-0.00122	-0.00122
	(A1 * !A2 * !C1 * !D1 * !X)	0.00161	0.00162	0.00160
	(!A1 * !A2 * C1 * D1 * !X)	-0.00059	-0.00058	-0.00058
	(!A1 * !A2 * C1 * D1 * !X)	0.00163	0.00162	0.00161
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * !A2 * C1 * !D1 * !X)	0.00163	0.00163	0.00160
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A2 * !C1 * D1 * !X)	0.00163	0.00162	0.00161
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00161	0.00161	0.00160

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00216	-0.00235	-0.00234
	(A2 * C1 * !D1 * !X)	0.00274	0.00276	0.00273
	(A2 * !C1 * D1 * !X)	-0.00229	-0.00242	-0.00240
	(A2 * !C1 * D1 * !X)	0.00272	0.00276	0.00273
	(A2 * !C1 * !D1 * !X)	-0.00230	-0.00240	-0.00239
	(A2 * !C1 * !D1 * !X)	0.00272	0.00276	0.00273
	(A1 * !A2 * C1 * !D1 * !X)	-0.00212	-0.00235	-0.00234
	(A1 * !A2 * C1 * !D1 * !X)	0.00275	0.00276	0.00273
	(A1 * !A2 * !C1 * D1 * !X)	-0.00228	-0.00241	-0.00239
	(A1 * !A2 * !C1 * D1 * !X)	0.00274	0.00273	0.00273
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00229	-0.00241	-0.00239
	(A1 * !A2 * !C1 * !D1 * !X)	0.00271	0.00273	0.00273
	(!A1 * !A2 * C1 * D1 * !X)	-0.00108	-0.00109	-0.00108
	(!A1 * !A2 * C1 * D1 * !X)	0.00275	0.00277	0.00275
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00146	-0.00146	-0.00145
	(!A1 * !A2 * C1 * !D1 * !X)	0.00277	0.00280	0.00275
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00143	-0.00145	-0.00144
	(!A1 * !A2 * !C1 * D1 * !X)	0.00279	0.00277	0.00274
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00145	-0.00147	-0.00145
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00275	0.00275	0.00274

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)**	0.00119	0.00120	0.00119
	(A2 * B1 * !D1 * !X)	-0.00146	-0.00145	-0.00145
	(A2 * !B1 * D1 * !X)	0.00055	0.00055	0.00055
	(A2 * !B1 * D1 * !X)	-0.00145	-0.00146	-0.00144
	(A2 * !B1 * !D1 * !X)	0.00066	0.00066	0.00066
	(A2 * !B1 * !D1 * !X)	-0.00146	-0.00146	-0.00146
	(A1 * !A2 * B1 * !D1 * !X)	0.00119	0.00120	0.00119
	(A1 * !A2 * B1 * !D1 * !X)	-0.00146	-0.00146	-0.00145
	(!A2 * !B1 * D1 * !X)	0.00055	0.00055	0.00055
	(!A2 * !B1 * D1 * !X)	-0.00145	-0.00146	-0.00144
	(!A2 * !B1 * !D1 * !X)	0.00066	0.00066	0.00066
	(!A2 * !B1 * !D1 * !X)	-0.00146	-0.00146	-0.00146
	(!A1 * !A2 * B1 * D1 * !X)	0.00056	0.00057	0.00055
	(!A1 * !A2 * B1 * D1 * !X)	-0.00145	-0.00146	-0.00144
	(!A1 * !A2 * B1 * !D1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00145	-0.00146	-0.00145

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00120	0.00121	0.00120
	(A2 * B1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(A2 * !B1 * D1 * !X)	0.00058	0.00058	0.00059
	(A2 * !B1 * D1 * !X)	-0.00164	-0.00165	-0.00163
	(A2 * !B1 * !D1 * !X)	0.00072	0.00073	0.00072
	(A2 * !B1 * !D1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * B1 * !D1 * !X)	0.00119	0.00121	0.00120
	(A1 * !A2 * B1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * D1 * !X)	0.00058	0.00058	0.00059
	(!A2 * !B1 * D1 * !X)	-0.00164	-0.00165	-0.00163
	(!A2 * !B1 * !D1 * !X)	0.00072	0.00073	0.00072
	(!A2 * !B1 * !D1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * !A2 * B1 * D1 * !X)	0.00058	0.00058	0.00058
	(!A1 * !A2 * B1 * D1 * !X)	-0.00164	-0.00165	-0.00163
	(!A1 * !A2 * B1 * !D1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00165	-0.00165	-0.00164

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00247	0.00249	0.00247
	(A2 * B1 * !D1 * !X)	-0.00279	-0.00279	-0.00278
	(A2 * !B1 * D1 * !X)	0.00120	0.00120	0.00121
	(A2 * !B1 * D1 * !X)	-0.00278	-0.00279	-0.00275
	(A2 * !B1 * !D1 * !X)	0.00151	0.00151	0.00150
	(A2 * !B1 * !D1 * !X)	-0.00280	-0.00281	-0.00280
	(A1 * !A2 * B1 * !D1 * !X)	0.00246	0.00248	0.00247
	(A1 * !A2 * B1 * !D1 * !X)	-0.00279	-0.00279	-0.00278
	(!A2 * !B1 * D1 * !X)	0.00120	0.00120	0.00121
	(!A2 * !B1 * D1 * !X)	-0.00278	-0.00279	-0.00275
	(!A2 * !B1 * !D1 * !X)	0.00151	0.00151	0.00150
	(!A2 * !B1 * !D1 * !X)	-0.00280	-0.00281	-0.00280
	(!A1 * !A2 * B1 * D1 * !X)	0.00115	0.00115	0.00118
	(!A1 * !A2 * B1 * D1 * !X)	-0.00277	-0.00278	-0.00275
	(!A1 * !A2 * B1 * !D1 * !X)	0.00152	0.00152	0.00152
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00280	-0.00279	-0.00279

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)**	-0.00107	-0.00119	-0.00119
	(A2 * B1 * !D1 * !X)	0.00155	0.00147	0.00146
	(A2 * !B1 * D1 * !X)	-0.00051	-0.00052	-0.00053
	(A2 * !B1 * D1 * !X)	0.00149	0.00150	0.00147
	(A2 * !B1 * !D1 * !X)	-0.00066	-0.00066	-0.00066
	(A2 * !B1 * !D1 * !X)	0.00155	0.00155	0.00148
	(A1 * !A2 * B1 * !D1 * !X)	-0.00107	-0.00119	-0.00119
	(A1 * !A2 * B1 * !D1 * !X)	0.00158	0.00148	0.00146
	(!A2 * !B1 * D1 * !X)	-0.00051	-0.00052	-0.00053
	(!A2 * !B1 * D1 * !X)	0.00149	0.00150	0.00146
	(!A2 * !B1 * !D1 * !X)	-0.00066	-0.00066	-0.00066
	(!A2 * !B1 * !D1 * !X)	0.00155	0.00155	0.00148
	(!A1 * !A2 * B1 * D1 * !X)	-0.00050	-0.00051	-0.00051
	(!A1 * !A2 * B1 * D1 * !X)	0.00149	0.00150	0.00147
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * B1 * !D1 * !X)	0.00158	0.00152	0.00147

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00109	-0.00120	-0.00120
	(A2 * B1 * !D1 * !X)	0.00174	0.00165	0.00165
	(A2 * !B1 * D1 * !X)	-0.00055	-0.00055	-0.00056
	(A2 * !B1 * D1 * !X)	0.00171	0.00170	0.00166
	(A2 * !B1 * !D1 * !X)	-0.00072	-0.00073	-0.00072
	(A2 * !B1 * !D1 * !X)	0.00176	0.00175	0.00167
	(A1 * !A2 * B1 * !D1 * !X)	-0.00109	-0.00120	-0.00120
	(A1 * !A2 * B1 * !D1 * !X)	0.00175	0.00166	0.00165
	(!A2 * !B1 * D1 * !X)	-0.00055	-0.00055	-0.00056
	(!A2 * !B1 * D1 * !X)	0.00171	0.00170	0.00166
	(!A2 * !B1 * !D1 * !X)	-0.00072	-0.00073	-0.00072
	(!A2 * !B1 * !D1 * !X)	0.00176	0.00175	0.00167
	(!A1 * !A2 * B1 * D1 * !X)	-0.00053	-0.00054	-0.00054
	(!A1 * !A2 * B1 * D1 * !X)	0.00169	0.00170	0.00166
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * B1 * !D1 * !X)	0.00175	0.00170	0.00166

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00222	-0.00248	-0.00247
	(A2 * B1 * !D1 * !X)	0.00298	0.00281	0.00279
	(A2 * !B1 * D1 * !X)	-0.00111	-0.00112	-0.00115
	(A2 * !B1 * D1 * !X)	0.00287	0.00289	0.00282
	(A2 * !B1 * !D1 * !X)	-0.00151	-0.00151	-0.00150
	(A2 * !B1 * !D1 * !X)	0.00298	0.00300	0.00285
	(A1 * !A2 * B1 * !D1 * !X)	-0.00220	-0.00248	-0.00247
	(A1 * !A2 * B1 * !D1 * !X)	0.00300	0.00281	0.00279
	(!A2 * !B1 * D1 * !X)	-0.00111	-0.00112	-0.00115
	(!A2 * !B1 * D1 * !X)	0.00287	0.00289	0.00282
	(!A2 * !B1 * !D1 * !X)	-0.00151	-0.00151	-0.00150
	(!A2 * !B1 * !D1 * !X)	0.00298	0.00300	0.00285
	(!A1 * !A2 * B1 * D1 * !X)	-0.00107	-0.00109	-0.00111
	(!A1 * !A2 * B1 * D1 * !X)	0.00288	0.00290	0.00282
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00152	-0.00152	-0.00152
	(!A1 * !A2 * B1 * !D1 * !X)	0.00299	0.00291	0.00281

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00047	0.00048	0.00046
	(A2 * !C1 * !X)	-0.00172	-0.00173	-0.00175
	(A2 * !B1 * C1 * !X)	0.00048	0.00048	0.00045
	(A2 * !B1 * C1 * !X)	-0.00166	-0.00167	-0.00174
	(!A2 * !C1 * !X)	0.00048	0.00048	0.00046
	(!A2 * !C1 * !X)	-0.00172	-0.00173	-0.00175
	(!A2 * !B1 * C1 * !X)	0.00048	0.00048	0.00045
	(!A2 * !B1 * C1 * !X)	-0.00166	-0.00167	-0.00174
	(!A1 * !A2 * B1 * C1 * !X)	0.00055	0.00055	0.00047
	(!A1 * !A2 * B1 * C1 * !X)	-0.00154	-0.00156	-0.00172

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00050	0.00050	0.00048
	(A2 * !C1 * !X)	-0.00194	-0.00195	-0.00198
	(A2 * !B1 * C1 * !X)	0.00051	0.00051	0.00046
	(A2 * !B1 * C1 * !X)	-0.00188	-0.00189	-0.00198
	(!A2 * !C1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !C1 * !X)	-0.00194	-0.00195	-0.00198
	(!A2 * !B1 * C1 * !X)	0.00051	0.00051	0.00046
	(!A2 * !B1 * C1 * !X)	-0.00188	-0.00189	-0.00198
	(!A1 * !A2 * B1 * C1 * !X)	0.00058	0.00058	0.00048
	(!A1 * !A2 * B1 * C1 * !X)	-0.00176	-0.00177	-0.00195
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00104	0.00106	0.00098
	(A2 * !C1 * !X)	-0.00316	-0.00320	-0.00330
	(A2 * !B1 * C1 * !X)	0.00104	0.00104	0.00092
	(A2 * !B1 * C1 * !X)	-0.00303	-0.00305	-0.00327
	(!A2 * !C1 * !X)	0.00105	0.00106	0.00098
	(!A2 * !C1 * !X)	-0.00317	-0.00320	-0.00330
	(!A2 * !B1 * C1 * !X)	0.00104	0.00105	0.00092
	(!A2 * !B1 * C1 * !X)	-0.00303	-0.00307	-0.00327
	(!A1 * !A2 * B1 * C1 * !X)	0.00114	0.00115	0.00094
	(!A1 * !A2 * B1 * C1 * !X)	-0.00281	-0.00285	-0.00323

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00044	-0.00045	-0.00044
	(A2 * !C1 * !X)	0.00175	0.00177	0.00175
	(A2 * !B1 * C1 * !X)	-0.00044	-0.00044	-0.00043
	(A2 * !B1 * C1 * !X)	0.00175	0.00177	0.00175
	(!A2 * !C1 * !X)	-0.00044	-0.00045	-0.00044
	(!A2 * !C1 * !X)	0.00175	0.00176	0.00175
	(!A2 * !B1 * C1 * !X)	-0.00044	-0.00044	-0.00043
	(!A2 * !B1 * C1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !A2 * B1 * C1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * C1 * !X)	0.00175	0.00176	0.00175
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00047	-0.00047	-0.00046
	(A2 * !C1 * !X)	0.00200	0.00200	0.00199
	(A2 * !B1 * C1 * !X)	-0.00046	-0.00045	-0.00045
	(A2 * !B1 * C1 * !X)	0.00200	0.00200	0.00199
	(!A2 * !C1 * !X)	-0.00047	-0.00046	-0.00046
	(!A2 * !C1 * !X)	0.00201	0.00200	0.00199
	(!A2 * !B1 * C1 * !X)	-0.00046	-0.00045	-0.00045
	(!A2 * !B1 * C1 * !X)	0.00200	0.00200	0.00199
	(!A1 * !A2 * B1 * C1 * !X)	-0.00046	-0.00045	-0.00045
	(!A1 * !A2 * B1 * C1 * !X)	0.00200	0.00200	0.00199
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00093	-0.00095	-0.00094
	(A2 * !C1 * !X)	0.00329	0.00333	0.00331
	(A2 * !B1 * C1 * !X)	-0.00090	-0.00092	-0.00091
	(A2 * !B1 * C1 * !X)	0.00329	0.00333	0.00331
	(!A2 * !C1 * !X)	-0.00093	-0.00095	-0.00094
	(!A2 * !C1 * !X)	0.00329	0.00333	0.00331
	(!A2 * !B1 * C1 * !X)	-0.00090	-0.00092	-0.00091
	(!A2 * !B1 * C1 * !X)	0.00329	0.00332	0.00331
	(!A1 * !A2 * B1 * C1 * !X)	-0.00090	-0.00091	-0.00091
	(!A1 * !A2 * B1 * C1 * !X)	0.00329	0.00332	0.00331

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00282	0.00294	0.00299	0.00292	0.36365
sky130_fd_sc_hs__o211ai_2	0.00550	0.00564	0.00564	0.00551	0.67557
sky130_fd_sc_hs__o211ai_4	0.01085	0.01114	0.00791	0.00814	1.29143

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.03921	0.08845
sky130_fd_sc_hs__o211ai_2	0.00000	0.07269	0.17062
sky130_fd_sc_hs__o211ai_4	0.00000	0.12203	0.26252

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)	0.19811	1.20178	10.61810
	A2->Y (FR)	0.17697	1.19030	10.88620
	B1->Y (FR)	0.07885	0.80171	7.88699
	C1->Y (FR)	0.06436	0.78594	7.87045
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.18191	1.04040	10.52880
	A2->Y (FR)	0.15167	1.01930	10.80770
	B1->Y (FR)	0.06472	0.69956	7.63137
	C1->Y (FR)	0.04697	0.67737	7.57624
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.16984	0.90371	10.45020
	A2->Y (FR)	0.14114	0.89463	10.81180
	B1->Y (FR)	0.09542	0.84852	10.53990
	C1->Y (FR)	0.06211	0.81359	10.40710

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.10158	0.66899	5.91033
	A2->Y (RF)	0.08396	0.63885	5.80433
	B1->Y (RF)	0.09349	0.70973	6.56221
	C1->Y (RF)	0.07898	0.72635	6.98335
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.09440	0.57713	5.78382
	A2->Y (RF)	0.07572	0.55134	5.75737
	B1->Y (RF)	0.08659	0.63455	6.60859
	C1->Y (RF)	0.06705	0.65181	7.03405
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.09281	0.52076	5.97574
	A2->Y (RF)	0.06964	0.48216	5.81800
	B1->Y (RF)	0.07751	0.56543	6.75770
	C1->Y (RF)	0.06017	0.60006	7.37762

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00176	0.00162	0.00259
	A1	0.00847	0.00835	0.00928
	A2	0.00178	0.00181	0.00356
	A2	0.00755	0.00759	0.00933
	B1	0.00077	0.00090	0.00296
	B1	0.00653	0.00663	0.00859
	C1	0.00013	0.00029	0.00234
	C1	0.00503	0.00520	0.00716
sky130_fd_sc_hs__o211ai_2	A1	0.00218	0.00194	0.00377
	A1	0.01573	0.01548	0.01736
	A2	0.00220	0.00233	0.00579
	A2	0.01373	0.01382	0.01732
	B1	0.00068	0.00098	0.00512
	B1	0.01223	0.01241	0.01648
	C1	-0.00124	-0.00080	0.00348
	C1	0.00848	0.00894	0.01303
sky130_fd_sc_hs__o211ai_4	A1	0.00418	0.00360	0.00733
	A1	0.03059	0.03002	0.03374
	A2	0.00417	0.00442	0.01098
	A2	0.02663	0.02689	0.03345
	B1	0.00076	0.00089	0.00552
	B1	0.01954	0.01912	0.02411
	C1	-0.00247	-0.00213	0.00278
	C1	0.01289	0.01329	0.01816

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00886	0.00871	0.00960
	A1	0.00202	0.00188	0.00266
	A2	0.00710	0.00700	0.00780
	A2	0.00118	0.00107	0.00186
	B1	0.00785	0.00771	0.00869
	B1	0.00211	0.00195	0.00282
	C1	0.00693	0.00693	0.00808
	C1	0.00209	0.00208	0.00313
sky130_fd_sc_hs__o211ai_2	A1	0.01726	0.01691	0.01864
	A1	0.00345	0.00304	0.00470
	A2	0.01281	0.01260	0.01452
	A2	0.00094	0.00075	0.00248
	B1	0.01497	0.01465	0.01649
	B1	0.00345	0.00314	0.00492
	C1	0.01296	0.01290	0.01538
	C1	0.00337	0.00325	0.00557
sky130_fd_sc_hs__o211ai_4	A1	0.03158	0.03079	0.03474
	A1	0.00470	0.00382	0.00716
	A2	0.02293	0.02262	0.02620
	A2	-0.00020	-0.00066	0.00298
	B1	0.02572	0.02554	0.02757
	B1	0.00705	0.00682	0.00866
	C1	0.02212	0.02202	0.02478
	C1	0.00698	0.00683	0.00928

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)**	0.00160	0.00137	0.00136
	(A2 * B1 * C1 * !Y)	-0.00150	-0.00173	-0.00175
	(A2 * B1 * !C1 * Y)	0.00137	0.00136	0.00136
	(A2 * B1 * !C1 * Y)	-0.00171	-0.00174	-0.00173
	(A2 * !B1 * Y)	0.00137	0.00136	0.00136
	(A2 * !B1 * Y)	-0.00171	-0.00174	-0.00173
	(!A2 * B1 * !C1 * Y)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * Y)	-0.00177	-0.00177	-0.00176
	(!A2 * !B1 * C1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * C1 * Y)	-0.00177	-0.00177	-0.00177
	(!A2 * !B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(!A2 * !B1 * !C1 * Y)	-0.00177	-0.00177	-0.00177
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00319	0.00270	0.00267
	(A2 * B1 * C1 * !Y)	-0.00297	-0.00354	-0.00354
	(A2 * B1 * !C1 * Y)	0.00266	0.00268	0.00267
	(A2 * B1 * !C1 * Y)	-0.00346	-0.00357	-0.00354
	(A2 * !B1 * Y)	0.00266	0.00268	0.00267
	(A2 * !B1 * Y)	-0.00347	-0.00357	-0.00354
	(!A2 * B1 * !C1 * Y)	0.00247	0.00248	0.00247
	(!A2 * B1 * !C1 * Y)	-0.00363	-0.00363	-0.00362
	(!A2 * !B1 * C1 * Y)	0.00250	0.00253	0.00250
	(!A2 * !B1 * C1 * Y)	-0.00362	-0.00364	-0.00362
	(!A2 * !B1 * !C1 * Y)	0.00250	0.00252	0.00250
	(!A2 * !B1 * !C1 * Y)	-0.00362	-0.00364	-0.00362

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00627	0.00529	0.00523
	(A2 * B1 * C1 * !Y)	-0.00592	-0.00704	-0.00705
	(A2 * B1 * !C1 * Y)	0.00523	0.00526	0.00523
	(A2 * B1 * !C1 * Y)	-0.00690	-0.00708	-0.00702
	(A2 * !B1 * Y)	0.00523	0.00526	0.00523
	(A2 * !B1 * Y)	-0.00690	-0.00708	-0.00702
	(!A2 * B1 * !C1 * Y)	0.00479	0.00481	0.00478
	(!A2 * B1 * !C1 * Y)	-0.00719	-0.00720	-0.00718
	(!A2 * !B1 * C1 * Y)	0.00486	0.00491	0.00487
	(!A2 * !B1 * C1 * Y)	-0.00717	-0.00721	-0.00718
	(!A2 * !B1 * !C1 * Y)	0.00485	0.00490	0.00487
	(!A2 * !B1 * !C1 * Y)	-0.00717	-0.00720	-0.00718

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)**	-0.00136	-0.00136	-0.00135
	(A2 * B1 * C1 * !Y)	0.00175	0.00175	0.00175
	(A2 * B1 * !C1 * Y)	-0.00136	-0.00136	-0.00136
	(A2 * B1 * !C1 * Y)	0.00173	0.00175	0.00173
	(A2 * !B1 * Y)	-0.00136	-0.00136	-0.00136
	(A2 * !B1 * Y)	0.00172	0.00175	0.00173
	(!A2 * B1 * !C1 * Y)	-0.00118	-0.00127	-0.00126
	(!A2 * B1 * !C1 * Y)	0.00177	0.00178	0.00177
	(!A2 * !B1 * C1 * Y)	-0.00124	-0.00129	-0.00128
	(!A2 * !B1 * C1 * Y)	0.00178	0.00179	0.00177
	(!A2 * !B1 * !C1 * Y)	-0.00124	-0.00129	-0.00128
	(!A2 * !B1 * !C1 * Y)	0.00178	0.00179	0.00177

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00266	-0.00267	-0.00265
	(A2 * B1 * C1 * !Y)	0.00353	0.00356	0.00354
	(A2 * B1 * !C1 * Y)	-0.00265	-0.00267	-0.00266
	(A2 * B1 * !C1 * Y)	0.00353	0.00357	0.00354
	(A2 * !B1 * Y)	-0.00266	-0.00267	-0.00266
	(A2 * !B1 * Y)	0.00354	0.00357	0.00354
	(!A2 * B1 * !C1 * Y)	-0.00232	-0.00248	-0.00247
	(!A2 * B1 * !C1 * Y)	0.00363	0.00366	0.00363
	(!A2 * !B1 * C1 * Y)	-0.00240	-0.00253	-0.00250
	(!A2 * !B1 * C1 * Y)	0.00364	0.00367	0.00363
	(!A2 * !B1 * !C1 * Y)	-0.00241	-0.00252	-0.00250
	(!A2 * !B1 * !C1 * Y)	0.00364	0.00366	0.00363
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00519	-0.00521	-0.00518
	(A2 * B1 * C1 * !Y)	0.00703	0.00708	0.00705
	(A2 * B1 * !C1 * Y)	-0.00521	-0.00524	-0.00521
	(A2 * B1 * !C1 * Y)	0.00701	0.00708	0.00702
	(A2 * !B1 * Y)	-0.00521	-0.00524	-0.00521
	(A2 * !B1 * Y)	0.00701	0.00708	0.00702
	(!A2 * B1 * !C1 * Y)	-0.00444	-0.00481	-0.00478
	(!A2 * B1 * !C1 * Y)	0.00721	0.00727	0.00720
	(!A2 * !B1 * C1 * Y)	-0.00463	-0.00491	-0.00487
	(!A2 * !B1 * C1 * Y)	0.00719	0.00728	0.00720
	(!A2 * !B1 * !C1 * Y)	-0.00465	-0.00490	-0.00487
	(!A2 * !B1 * !C1 * Y)	0.00719	0.00728	0.00720

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)**	0.00148	0.00148	0.00147
	(A1 * B1 * C1 * !Y)	-0.00087	-0.00087	-0.00086
	(A1 * B1 * !C1 * Y)	0.00133	0.00135	0.00133
	(A1 * B1 * !C1 * Y)	-0.00172	-0.00175	-0.00174
	(A1 * !B1 * C1 * Y)	0.00133	0.00135	0.00133
	(A1 * !B1 * C1 * Y)	-0.00172	-0.00175	-0.00174
	(A1 * !B1 * !C1 * Y)	0.00133	0.00134	0.00133
	(A1 * !B1 * !C1 * Y)	-0.00172	-0.00175	-0.00174
	(!A1 * B1 * !C1 * Y)	0.00122	0.00123	0.00123
	(!A1 * B1 * !C1 * Y)	-0.00178	-0.00178	-0.00178
	(!A1 * !B1 * C1 * Y)	0.00126	0.00126	0.00125
	(!A1 * !B1 * C1 * Y)	-0.00179	-0.00179	-0.00178
	(!A1 * !B1 * !C1 * Y)	0.00126	0.00125	0.00125
	(!A1 * !B1 * !C1 * Y)	-0.00179	-0.00178	-0.00178
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00303	0.00305	0.00304
	(A1 * B1 * C1 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * B1 * !C1 * Y)	0.00268	0.00270	0.00268
	(A1 * B1 * !C1 * Y)	-0.00343	-0.00350	-0.00350
	(A1 * !B1 * C1 * Y)	0.00268	0.00270	0.00268
	(A1 * !B1 * C1 * Y)	-0.00344	-0.00351	-0.00350
	(A1 * !B1 * !C1 * Y)	0.00270	0.00270	0.00267
	(A1 * !B1 * !C1 * Y)	-0.00345	-0.00352	-0.00350
	(!A1 * B1 * !C1 * Y)	0.00247	0.00247	0.00246
	(!A1 * B1 * !C1 * Y)	-0.00359	-0.00359	-0.00358
	(!A1 * !B1 * C1 * Y)	0.00249	0.00249	0.00250
	(!A1 * !B1 * C1 * Y)	-0.00358	-0.00358	-0.00358
	(!A1 * !B1 * !C1 * Y)	0.00249	0.00249	0.00249
	(!A1 * !B1 * !C1 * Y)	-0.00358	-0.00358	-0.00358

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00592	0.00597	0.00594
	(A1 * B1 * C1 * !Y)	-0.00340	-0.00343	-0.00341
	(A1 * B1 * !C1 * Y)	0.00522	0.00528	0.00523
	(A1 * B1 * !C1 * Y)	-0.00691	-0.00703	-0.00700
	(A1 * !B1 * C1 * Y)	0.00526	0.00528	0.00523
	(A1 * !B1 * C1 * Y)	-0.00695	-0.00703	-0.00700
	(A1 * !B1 * !C1 * Y)	0.00524	0.00528	0.00522
	(A1 * !B1 * !C1 * Y)	-0.00693	-0.00705	-0.00702
	(!A1 * B1 * !C1 * Y)	0.00475	0.00480	0.00478
	(!A1 * B1 * !C1 * Y)	-0.00718	-0.00722	-0.00720
	(!A1 * !B1 * C1 * Y)	0.00486	0.00493	0.00488
	(!A1 * !B1 * C1 * Y)	-0.00719	-0.00724	-0.00720
	(!A1 * !B1 * !C1 * Y)	0.00484	0.00490	0.00486
	(!A1 * !B1 * !C1 * Y)	-0.00717	-0.00724	-0.00720

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)**	-0.00143	-0.00143	-0.00147
	(A1 * B1 * C1 * !Y)	0.00092	0.00091	0.00088
	(A1 * B1 * !C1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * B1 * !C1 * Y)	0.00174	0.00175	0.00174
	(A1 * !B1 * C1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * !B1 * C1 * Y)	0.00173	0.00175	0.00174
	(A1 * !B1 * !C1 * Y)	-0.00133	-0.00134	-0.00133
	(A1 * !B1 * !C1 * Y)	0.00173	0.00175	0.00174
	(!A1 * B1 * !C1 * Y)	-0.00114	-0.00123	-0.00123
	(!A1 * B1 * !C1 * Y)	0.00178	0.00179	0.00178
	(!A1 * !B1 * C1 * Y)	-0.00120	-0.00126	-0.00125
	(!A1 * !B1 * C1 * Y)	0.00179	0.00180	0.00178
	(!A1 * !B1 * !C1 * Y)	-0.00121	-0.00125	-0.00125
	(!A1 * !B1 * !C1 * Y)	0.00179	0.00180	0.00178
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00287	-0.00289	-0.00302
	(A1 * B1 * C1 * !Y)	0.00184	0.00184	0.00173
	(A1 * B1 * !C1 * Y)	-0.00267	-0.00267	-0.00267
	(A1 * B1 * !C1 * Y)	0.00350	0.00350	0.00350
	(A1 * !B1 * C1 * Y)	-0.00267	-0.00268	-0.00267
	(A1 * !B1 * C1 * Y)	0.00349	0.00351	0.00350
	(A1 * !B1 * !C1 * Y)	-0.00267	-0.00268	-0.00267
	(A1 * !B1 * !C1 * Y)	0.00350	0.00352	0.00350
	(!A1 * B1 * !C1 * Y)	-0.00230	-0.00247	-0.00246
	(!A1 * B1 * !C1 * Y)	0.00359	0.00361	0.00359
	(!A1 * !B1 * C1 * Y)	-0.00240	-0.00249	-0.00250
	(!A1 * !B1 * C1 * Y)	0.00360	0.00362	0.00359
	(!A1 * !B1 * !C1 * Y)	-0.00241	-0.00249	-0.00249
	(!A1 * !B1 * !C1 * Y)	0.00360	0.00362	0.00359

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00565	-0.00568	-0.00591
	(A1 * B1 * C1 * !Y)	0.00369	0.00369	0.00348
	(A1 * B1 * !C1 * Y)	-0.00522	-0.00523	-0.00521
	(A1 * B1 * !C1 * Y)	0.00701	0.00703	0.00700
	(A1 * !B1 * C1 * Y)	-0.00521	-0.00523	-0.00521
	(A1 * !B1 * C1 * Y)	0.00699	0.00703	0.00700
	(A1 * !B1 * !C1 * Y)	-0.00521	-0.00523	-0.00521
	(A1 * !B1 * !C1 * Y)	0.00701	0.00705	0.00702
	(!A1 * B1 * !C1 * Y)	-0.00442	-0.00480	-0.00478
	(!A1 * B1 * !C1 * Y)	0.00723	0.00727	0.00722
	(!A1 * !B1 * C1 * Y)	-0.00461	-0.00493	-0.00488
	(!A1 * !B1 * C1 * Y)	0.00719	0.00728	0.00722
	(!A1 * !B1 * !C1 * Y)	-0.00462	-0.00490	-0.00486
	(!A1 * !B1 * !C1 * Y)	0.00717	0.00728	0.00722

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00123	0.00123	0.00123
	(A2 * !C1 * Y)	-0.00185	-0.00185	-0.00185
	(A1 * !A2 * !C1 * Y)	0.00123	0.00123	0.00123
	(A1 * !A2 * !C1 * Y)	-0.00185	-0.00185	-0.00185
	(!A1 * !A2 * C1 * Y)	0.00062	0.00062	0.00062
	(!A1 * !A2 * C1 * Y)	-0.00186	-0.00186	-0.00184
	(!A1 * !A2 * !C1 * Y)	0.00079	0.00080	0.00079
	(!A1 * !A2 * !C1 * Y)	-0.00185	-0.00187	-0.00185
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00247	0.00249	0.00247
	(A2 * !C1 * Y)	-0.00364	-0.00366	-0.00364
	(A1 * !A2 * !C1 * Y)	0.00246	0.00249	0.00247
	(A1 * !A2 * !C1 * Y)	-0.00364	-0.00366	-0.00364
	(!A1 * !A2 * C1 * Y)	0.00117	0.00118	0.00120
	(!A1 * !A2 * C1 * Y)	-0.00365	-0.00366	-0.00361
	(!A1 * !A2 * !C1 * Y)	0.00153	0.00153	0.00152
	(!A1 * !A2 * !C1 * Y)	-0.00367	-0.00368	-0.00366
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00488	0.00493	0.00489
	(A2 * !C1 * Y)	-0.00365	-0.00366	-0.00364
	(A1 * !A2 * !C1 * Y)	0.00486	0.00491	0.00488
	(A1 * !A2 * !C1 * Y)	-0.00364	-0.00366	-0.00364
	(!A1 * !A2 * C1 * Y)	0.00228	0.00229	0.00231
	(!A1 * !A2 * C1 * Y)	-0.00364	-0.00365	-0.00360
	(!A1 * !A2 * !C1 * Y)	0.00295	0.00295	0.00293
	(!A1 * !A2 * !C1 * Y)	-0.00368	-0.00368	-0.00367

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00113	-0.00123	-0.00123
	(A2 * !C1 * Y)	0.00192	0.00188	0.00186
	(A1 * !A2 * !C1 * Y)	-0.00113	-0.00123	-0.00123
	(A1 * !A2 * !C1 * Y)	0.00195	0.00188	0.00186
	(!A1 * !A2 * C1 * Y)	-0.00057	-0.00057	-0.00059
	(!A1 * !A2 * C1 * Y)	0.00190	0.00191	0.00187
	(!A1 * !A2 * !C1 * Y)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * !C1 * Y)	0.00197	0.00196	0.00189
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00225	-0.00249	-0.00247
	(A2 * !C1 * Y)	0.00377	0.00370	0.00365
	(A1 * !A2 * !C1 * Y)	-0.00223	-0.00247	-0.00247
	(A1 * !A2 * !C1 * Y)	0.00383	0.00366	0.00365
	(!A1 * !A2 * C1 * Y)	-0.00108	-0.00109	-0.00113
	(!A1 * !A2 * C1 * Y)	0.00376	0.00378	0.00369
	(!A1 * !A2 * !C1 * Y)	-0.00153	-0.00153	-0.00152
	(!A1 * !A2 * !C1 * Y)	0.00387	0.00386	0.00371
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00446	-0.00493	-0.00489
	(A2 * !C1 * Y)	0.00393	0.00372	0.00366
	(A1 * !A2 * !C1 * Y)	-0.00440	-0.00489	-0.00488
	(A1 * !A2 * !C1 * Y)	0.00404	0.00369	0.00366
	(!A1 * !A2 * C1 * Y)	-0.00211	-0.00212	-0.00219
	(!A1 * !A2 * C1 * Y)	0.00387	0.00387	0.00372
	(!A1 * !A2 * !C1 * Y)	-0.00295	-0.00295	-0.00293
	(!A1 * !A2 * !C1 * Y)	0.00410	0.00405	0.00378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00049	0.00049	0.00046
	(A2 * !B1 * Y)	-0.00205	-0.00206	-0.00209
	(!A2 * !B1 * Y)	0.00049	0.00049	0.00046
	(!A2 * !B1 * Y)	-0.00205	-0.00206	-0.00209
	(!A1 * !A2 * B1 * Y)	0.00053	0.00053	0.00046
	(!A1 * !A2 * B1 * Y)	-0.00194	-0.00196	-0.00207
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00103	0.00104	0.00096
	(A2 * !B1 * Y)	-0.00395	-0.00400	-0.00408
	(!A2 * !B1 * Y)	0.00103	0.00103	0.00096
	(!A2 * !B1 * Y)	-0.00395	-0.00395	-0.00408
	(!A1 * !A2 * B1 * Y)	0.00106	0.00106	0.00092
	(!A1 * !A2 * B1 * Y)	-0.00376	-0.00378	-0.00405
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00197	0.00197	0.00184
	(A2 * !B1 * Y)	-0.00454	-0.00457	-0.00474
	(!A2 * !B1 * Y)	0.00196	0.00197	0.00184
	(!A2 * !B1 * Y)	-0.00452	-0.00457	-0.00474
	(!A1 * !A2 * B1 * Y)	0.00202	0.00204	0.00176
	(!A1 * !A2 * B1 * Y)	-0.00411	-0.00417	-0.00467

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00045	-0.00045	-0.00045
	(A2 * !B1 * Y)	0.00209	0.00211	0.00209
	(!A2 * !B1 * Y)	-0.00045	-0.00045	-0.00045
	(!A2 * !B1 * Y)	0.00209	0.00211	0.00209
	(!A1 * !A2 * B1 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * Y)	0.00209	0.00211	0.00209
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00092	-0.00093	-0.00092
	(A2 * !B1 * Y)	0.00407	0.00413	0.00410
	(!A2 * !B1 * Y)	-0.00093	-0.00093	-0.00092
	(!A2 * !B1 * Y)	0.00411	0.00413	0.00410
	(!A1 * !A2 * B1 * Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !A2 * B1 * Y)	0.00408	0.00416	0.00410
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00180	-0.00181	-0.00178
	(A2 * !B1 * Y)	0.00478	0.00483	0.00475
	(!A2 * !B1 * Y)	-0.00180	-0.00179	-0.00178
	(!A2 * !B1 * Y)	0.00478	0.00478	0.00475
	(!A1 * !A2 * B1 * Y)	-0.00171	-0.00173	-0.00171
	(!A1 * !A2 * B1 * Y)	0.00473	0.00478	0.00475

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00270	0.00290	0.00268	0.00264	0.77399
sky130_fd_sc_hs__o211a_2	0.00287	0.00286	0.00286	0.00279	1.51276
sky130_fd_sc_hs__o211a_4	0.00520	0.00497	0.00508	0.00451	2.83900

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	0.09110	0.26344
sky130_fd_sc_hs__o211a_2	0.00000	0.11841	0.29870
sky130_fd_sc_hs__o211a_4	0.00000	0.28878	0.88540

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)	0.20028	0.91485	7.60456
	A2->X (RR)	0.17660	0.88044	7.52596
	B1->X (RR)	0.18940	0.92525	7.75954
	C1->X (RR)	0.17592	0.92240	7.73590
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.20108	0.81259	7.62749
	A2->X (RR)	0.17549	0.77859	7.55176
	B1->X (RR)	0.19179	0.83718	7.81158
	C1->X (RR)	0.17851	0.83897	7.79925
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.20129	0.73749	7.68928
	A2->X (RR)	0.18328	0.70587	7.61543
	B1->X (RR)	0.18976	0.75226	7.81718
	C1->X (RR)	0.17457	0.74905	7.79722

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.28485	0.84691	4.79357
	A2->X (FF)	0.26365	0.84533	4.74919
	B1->X (FF)	0.13300	0.68781	4.38339
	C1->X (FF)	0.12016	0.66096	4.31048
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.33565	0.88532	5.05598
	A2->X (FF)	0.31282	0.88474	5.04442
	B1->X (FF)	0.15753	0.70938	4.63202
	C1->X (FF)	0.14266	0.68239	4.55129
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.30895	0.81090	4.88526
	A2->X (FF)	0.28370	0.80295	4.84382
	B1->X (FF)	0.16455	0.67773	4.58088
	C1->X (FF)	0.16091	0.66907	4.55939

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01123	0.01125	0.01568
	A1	0.00477	0.00477	0.00935
	A2	0.00995	0.00987	0.01584
	A2	0.00405	0.00398	0.00996
	B1	0.01024	0.01021	0.01734
	B1	0.00483	0.00479	0.01206
	C1	0.00948	0.00956	0.01804
	C1	0.00387	0.00402	0.01336
sky130_fd_sc_hs__o211a_2	A1	0.01385	0.01410	0.01863
	A1	0.00701	0.00727	0.01208
	A2	0.01216	0.01237	0.01821
	A2	0.00621	0.00642	0.01227
	B1	0.01281	0.01300	0.02017
	B1	0.00710	0.00730	0.01473
	C1	0.01196	0.01223	0.02073
	C1	0.00708	0.00735	0.01610
sky130_fd_sc_hs__o211a_4	A1	0.02568	0.02621	0.03562
	A1	0.01332	0.01387	0.02380
	A2	0.02201	0.02240	0.03495
	A2	0.01164	0.01205	0.02512
	B1	0.02390	0.02435	0.03758
	B1	0.01383	0.01428	0.02800
	C1	0.02189	0.02241	0.03897
	C1	0.01390	0.01444	0.03150

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00446	0.00450	0.01016
	A1	0.01079	0.01084	0.01612
	A2	0.00414	0.00446	0.01238
	A2	0.00987	0.01019	0.01806
	B1	0.00353	0.00401	0.01366
	B1	0.00894	0.00937	0.01850
	C1	0.00310	0.00357	0.01346
	C1	0.00780	0.00819	0.01770
sky130_fd_sc_hs__o211a_2	A1	0.00640	0.00643	0.01278
	A1	0.01308	0.01326	0.01880
	A2	0.00642	0.00688	0.01600
	A2	0.01219	0.01274	0.02085
	B1	0.00546	0.00625	0.01682
	B1	0.01119	0.01192	0.02145
	C1	0.00503	0.00576	0.01580
	C1	0.00993	0.01065	0.02035
sky130_fd_sc_hs__o211a_4	A1	0.01208	0.01273	0.02366
	A1	0.02414	0.02486	0.03564
	A2	0.01243	0.01348	0.02967
	A2	0.02247	0.02350	0.03959
	B1	0.00999	0.01174	0.03169
	B1	0.02000	0.02157	0.04002
	C1	0.00963	0.01147	0.03127
	C1	0.01764	0.01920	0.03820

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)**	0.00154	0.00134	0.00131
	(A2 * B1 * C1 * X)	-0.00134	-0.00158	-0.00159
	(A2 * B1 * !C1 * !X)	0.00116	0.00115	0.00115
	(A2 * B1 * !C1 * !X)	-0.00171	-0.00173	-0.00173
	(A2 * !B1 * !X)	0.00116	0.00115	0.00115
	(A2 * !B1 * !X)	-0.00171	-0.00173	-0.00173
	(!A2 * B1 * !C1 * !X)	0.00107	0.00108	0.00107
	(!A2 * B1 * !C1 * !X)	-0.00176	-0.00177	-0.00176
	(!A2 * !B1 * C1 * !X)	0.00110	0.00110	0.00109
	(!A2 * !B1 * C1 * !X)	-0.00177	-0.00177	-0.00176
	(!A2 * !B1 * !C1 * !X)	0.00110	0.00110	0.00109
	(!A2 * !B1 * !C1 * !X)	-0.00177	-0.00177	-0.00177
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00171	0.00151	0.00147
	(A2 * B1 * C1 * X)	-0.00130	-0.00154	-0.00155
	(A2 * B1 * !C1 * !X)	0.00127	0.00129	0.00127
	(A2 * B1 * !C1 * !X)	-0.00172	-0.00175	-0.00174
	(A2 * !B1 * !X)	0.00127	0.00129	0.00127
	(A2 * !B1 * !X)	-0.00172	-0.00175	-0.00174
	(!A2 * B1 * !C1 * !X)	0.00118	0.00118	0.00117
	(!A2 * B1 * !C1 * !X)	-0.00177	-0.00177	-0.00177
	(!A2 * !B1 * C1 * !X)	0.00120	0.00120	0.00120
	(!A2 * !B1 * C1 * !X)	-0.00177	-0.00178	-0.00178
	(!A2 * !B1 * !C1 * !X)	0.00120	0.00120	0.00120
	(!A2 * !B1 * !C1 * !X)	-0.00177	-0.00178	-0.00178

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00306	0.00264	0.00259
	(A2 * B1 * C1 * X)	-0.00265	-0.00314	-0.00318
	(A2 * B1 * !C1 * !X)	0.00255	0.00257	0.00255
	(A2 * B1 * !C1 * !X)	-0.00313	-0.00320	-0.00318
	(A2 * !B1 * !X)	0.00255	0.00257	0.00255
	(A2 * !B1 * !X)	-0.00313	-0.00320	-0.00318
	(!A2 * B1 * !C1 * !X)	0.00238	0.00239	0.00238
	(!A2 * B1 * !C1 * !X)	-0.00324	-0.00326	-0.00324
	(!A2 * !B1 * C1 * !X)	0.00242	0.00242	0.00243
	(!A2 * !B1 * C1 * !X)	-0.00325	-0.00324	-0.00325
	(!A2 * !B1 * !C1 * !X)	0.00243	0.00243	0.00243
	(!A2 * !B1 * !C1 * !X)	-0.00325	-0.00325	-0.00325

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)**	-0.00129	-0.00130	-0.00129
	(A2 * B1 * C1 * X)	0.00158	0.00160	0.00160
	(A2 * B1 * !C1 * !X)	-0.00115	-0.00115	-0.00115
	(A2 * B1 * !C1 * !X)	0.00173	0.00174	0.00173
	(A2 * !B1 * !X)	-0.00115	-0.00115	-0.00115
	(A2 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A2 * B1 * !C1 * !X)	-0.00099	-0.00108	-0.00107
	(!A2 * B1 * !C1 * !X)	0.00177	0.00178	0.00177
	(!A2 * !B1 * C1 * !X)	-0.00104	-0.00110	-0.00109
	(!A2 * !B1 * C1 * !X)	0.00178	0.00178	0.00177
	(!A2 * !B1 * !C1 * !X)	-0.00104	-0.00110	-0.00109
	(!A2 * !B1 * !C1 * !X)	0.00178	0.00178	0.00177

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00146	-0.00146	-0.00146
	(A2 * B1 * C1 * X)	0.00156	0.00156	0.00155
	(A2 * B1 * !C1 * !X)	-0.00127	-0.00127	-0.00127
	(A2 * B1 * !C1 * !X)	0.00174	0.00175	0.00174
	(A2 * !B1 * !X)	-0.00126	-0.00127	-0.00127
	(A2 * !B1 * !X)	0.00173	0.00175	0.00174
	(!A2 * B1 * !C1 * !X)	-0.00109	-0.00118	-0.00117
	(!A2 * B1 * !C1 * !X)	0.00178	0.00179	0.00177
	(!A2 * !B1 * C1 * !X)	-0.00114	-0.00120	-0.00120
	(!A2 * !B1 * C1 * !X)	0.00177	0.00179	0.00178
	(!A2 * !B1 * !C1 * !X)	-0.00114	-0.00120	-0.00120
	(!A2 * !B1 * !C1 * !X)	0.00177	0.00179	0.00178
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00255	-0.00256	-0.00255
	(A2 * B1 * C1 * X)	0.00315	0.00317	0.00318
	(A2 * B1 * !C1 * !X)	-0.00254	-0.00255	-0.00254
	(A2 * B1 * !C1 * !X)	0.00317	0.00320	0.00318
	(A2 * !B1 * !X)	-0.00254	-0.00255	-0.00254
	(A2 * !B1 * !X)	0.00317	0.00320	0.00318
	(!A2 * B1 * !C1 * !X)	-0.00224	-0.00239	-0.00238
	(!A2 * B1 * !C1 * !X)	0.00327	0.00327	0.00326
	(!A2 * !B1 * C1 * !X)	-0.00233	-0.00242	-0.00243
	(!A2 * !B1 * C1 * !X)	0.00326	0.00327	0.00326
	(!A2 * !B1 * !C1 * !X)	-0.00233	-0.00243	-0.00243
	(!A2 * !B1 * !C1 * !X)	0.00326	0.00327	0.00326

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)**	0.00168	0.00169	0.00168
	(A1 * B1 * C1 * X)	-0.00077	-0.00078	-0.00077
	(A1 * B1 * !C1 * !X)	0.00151	0.00152	0.00150
	(A1 * B1 * !C1 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * !B1 * C1 * !X)	0.00151	0.00152	0.00150
	(A1 * !B1 * C1 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * !B1 * !C1 * !X)	0.00151	0.00152	0.00150
	(A1 * !B1 * !C1 * !X)	-0.00158	-0.00160	-0.00159
	(!A1 * B1 * !C1 * !X)	0.00141	0.00141	0.00141
	(!A1 * B1 * !C1 * !X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * C1 * !X)	0.00143	0.00145	0.00143
	(!A1 * !B1 * C1 * !X)	-0.00162	-0.00164	-0.00163
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00143	0.00143
	(!A1 * !B1 * !C1 * !X)	-0.00162	-0.00163	-0.00163
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00150	0.00150	0.00149
	(A1 * B1 * C1 * X)	-0.00078	-0.00077	-0.00077
	(A1 * B1 * !C1 * !X)	0.00124	0.00127	0.00125
	(A1 * B1 * !C1 * !X)	-0.00163	-0.00166	-0.00165
	(A1 * !B1 * C1 * !X)	0.00125	0.00127	0.00125
	(A1 * !B1 * C1 * !X)	-0.00163	-0.00166	-0.00165
	(A1 * !B1 * !C1 * !X)	0.00125	0.00126	0.00125
	(A1 * !B1 * !C1 * !X)	-0.00164	-0.00166	-0.00166
	(!A1 * B1 * !C1 * !X)	0.00115	0.00116	0.00116
	(!A1 * B1 * !C1 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * !B1 * C1 * !X)	0.00119	0.00119	0.00118
	(!A1 * !B1 * C1 * !X)	-0.00170	-0.00170	-0.00169
	(!A1 * !B1 * !C1 * !X)	0.00119	0.00119	0.00118
	(!A1 * !B1 * !C1 * !X)	-0.00170	-0.00170	-0.00169

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00250	0.00252	0.00251
	(A1 * B1 * C1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * B1 * !C1 * !X)	0.00218	0.00221	0.00218
	(A1 * B1 * !C1 * !X)	-0.00315	-0.00319	-0.00318
	(A1 * !B1 * C1 * !X)	0.00218	0.00221	0.00218
	(A1 * !B1 * C1 * !X)	-0.00315	-0.00320	-0.00318
	(A1 * !B1 * !C1 * !X)	0.00218	0.00220	0.00218
	(A1 * !B1 * !C1 * !X)	-0.00315	-0.00320	-0.00319
	(!A1 * B1 * !C1 * !X)	0.00200	0.00202	0.00200
	(!A1 * B1 * !C1 * !X)	-0.00326	-0.00327	-0.00326
	(!A1 * !B1 * C1 * !X)	0.00206	0.00206	0.00205
	(!A1 * !B1 * C1 * !X)	-0.00327	-0.00327	-0.00326
	(!A1 * !B1 * !C1 * !X)	0.00204	0.00206	0.00205
	(!A1 * !B1 * !C1 * !X)	-0.00325	-0.00327	-0.00326

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)**	-0.00163	-0.00164	-0.00167
	(A1 * B1 * C1 * X)	0.00082	0.00082	0.00079
	(A1 * B1 * !C1 * !X)	-0.00149	-0.00151	-0.00150
	(A1 * B1 * !C1 * !X)	0.00158	0.00160	0.00159
	(A1 * !B1 * C1 * !X)	-0.00149	-0.00151	-0.00150
	(A1 * !B1 * C1 * !X)	0.00158	0.00160	0.00159
	(A1 * !B1 * !C1 * !X)	-0.00149	-0.00151	-0.00150
	(A1 * !B1 * !C1 * !X)	0.00158	0.00160	0.00159
	(!A1 * B1 * !C1 * !X)	-0.00133	-0.00141	-0.00141
	(!A1 * B1 * !C1 * !X)	0.00163	0.00164	0.00163
	(!A1 * !B1 * C1 * !X)	-0.00138	-0.00145	-0.00143
	(!A1 * !B1 * C1 * !X)	0.00163	0.00164	0.00163
	(!A1 * !B1 * !C1 * !X)	-0.00137	-0.00143	-0.00143
	(!A1 * !B1 * !C1 * !X)	0.00163	0.00165	0.00163
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00144	-0.00144	-0.00149
	(A1 * B1 * C1 * X)	0.00082	0.00082	0.00079
	(A1 * B1 * !C1 * !X)	-0.00124	-0.00126	-0.00125
	(A1 * B1 * !C1 * !X)	0.00165	0.00166	0.00165
	(A1 * !B1 * C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !B1 * C1 * !X)	0.00165	0.00166	0.00165
	(A1 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !B1 * !C1 * !X)	0.00165	0.00166	0.00166
	(!A1 * B1 * !C1 * !X)	-0.00107	-0.00116	-0.00116
	(!A1 * B1 * !C1 * !X)	0.00169	0.00170	0.00169
	(!A1 * !B1 * C1 * !X)	-0.00113	-0.00119	-0.00118
	(!A1 * !B1 * C1 * !X)	0.00170	0.00171	0.00169
	(!A1 * !B1 * !C1 * !X)	-0.00113	-0.00119	-0.00118
	(!A1 * !B1 * !C1 * !X)	0.00170	0.00171	0.00169

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00239	-0.00240	-0.00249
	(A1 * B1 * C1 * X)	0.00169	0.00169	0.00161
	(A1 * B1 * !C1 * !X)	-0.00217	-0.00219	-0.00217
	(A1 * B1 * !C1 * !X)	0.00317	0.00319	0.00318
	(A1 * !B1 * C1 * !X)	-0.00217	-0.00219	-0.00217
	(A1 * !B1 * C1 * !X)	0.00318	0.00320	0.00318
	(A1 * !B1 * !C1 * !X)	-0.00217	-0.00219	-0.00217
	(A1 * !B1 * !C1 * !X)	0.00318	0.00320	0.00319
	(!A1 * B1 * !C1 * !X)	-0.00186	-0.00202	-0.00200
	(!A1 * B1 * !C1 * !X)	0.00327	0.00328	0.00327
	(!A1 * !B1 * C1 * !X)	-0.00195	-0.00206	-0.00205
	(!A1 * !B1 * C1 * !X)	0.00327	0.00329	0.00327
	(!A1 * !B1 * !C1 * !X)	-0.00196	-0.00206	-0.00205
	(!A1 * !B1 * !C1 * !X)	0.00327	0.00329	0.00327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00100	0.00101	0.00100
	(A2 * !C1 * !X)	-0.00180	-0.00180	-0.00179
	(A1 * !A2 * !C1 * !X)	0.00100	0.00101	0.00100
	(A1 * !A2 * !C1 * !X)	-0.00180	-0.00180	-0.00179
	(!A1 * !A2 * C1 * !X)	0.00050	0.00051	0.00049
	(!A1 * !A2 * C1 * !X)	-0.00181	-0.00182	-0.00180
	(!A1 * !A2 * !C1 * !X)	0.00066	0.00065	0.00065
	(!A1 * !A2 * !C1 * !X)	-0.00182	-0.00182	-0.00181
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00118	0.00119	0.00118
	(A2 * !C1 * !X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * !C1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * !C1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * C1 * !X)	0.00057	0.00058	0.00056
	(!A1 * !A2 * C1 * !X)	-0.00172	-0.00173	-0.00171
	(!A1 * !A2 * !C1 * !X)	0.00072	0.00073	0.00072
	(!A1 * !A2 * !C1 * !X)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00251	0.00254	0.00252
	(A2 * !C1 * !X)	-0.00287	-0.00288	-0.00287
	(A1 * !A2 * !C1 * !X)	0.00251	0.00254	0.00252
	(A1 * !A2 * !C1 * !X)	-0.00287	-0.00288	-0.00287
	(!A1 * !A2 * C1 * !X)	0.00147	0.00147	0.00145
	(!A1 * !A2 * C1 * !X)	-0.00287	-0.00288	-0.00287
	(!A1 * !A2 * !C1 * !X)	0.00173	0.00175	0.00173
	(!A1 * !A2 * !C1 * !X)	-0.00290	-0.00291	-0.00290

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00092	-0.00101	-0.00100
	(A2 * !C1 * !X)	0.00188	0.00183	0.00180
	(A1 * !A2 * !C1 * !X)	-0.00091	-0.00101	-0.00100
	(A1 * !A2 * !C1 * !X)	0.00189	0.00183	0.00180
	(!A1 * !A2 * C1 * !X)	-0.00045	-0.00045	-0.00046
	(!A1 * !A2 * C1 * !X)	0.00184	0.00185	0.00182
	(!A1 * !A2 * !C1 * !X)	-0.00066	-0.00065	-0.00065
	(!A1 * !A2 * !C1 * !X)	0.00193	0.00189	0.00184
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00108	-0.00118	-0.00118
	(A2 * !C1 * !X)	0.00179	0.00173	0.00171
	(A1 * !A2 * !C1 * !X)	-0.00106	-0.00118	-0.00118
	(A1 * !A2 * !C1 * !X)	0.00180	0.00173	0.00171
	(!A1 * !A2 * C1 * !X)	-0.00053	-0.00052	-0.00053
	(!A1 * !A2 * C1 * !X)	0.00177	0.00176	0.00173
	(!A1 * !A2 * !C1 * !X)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * !C1 * !X)	0.00185	0.00183	0.00176
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00237	-0.00252	-0.00252
	(A2 * !C1 * !X)	0.00301	0.00291	0.00288
	(A1 * !A2 * !C1 * !X)	-0.00235	-0.00252	-0.00252
	(A1 * !A2 * !C1 * !X)	0.00303	0.00291	0.00288
	(!A1 * !A2 * C1 * !X)	-0.00136	-0.00136	-0.00139
	(!A1 * !A2 * C1 * !X)	0.00297	0.00296	0.00291
	(!A1 * !A2 * !C1 * !X)	-0.00173	-0.00175	-0.00173
	(!A1 * !A2 * !C1 * !X)	0.00310	0.00306	0.00295

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00040	0.00040	0.00038
	(A2 * !B1 * !X)	-0.00193	-0.00194	-0.00197
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00038
	(!A2 * !B1 * !X)	-0.00193	-0.00194	-0.00197
	(!A1 * !A2 * B1 * !X)	0.00046	0.00046	0.00039
	(!A1 * !A2 * B1 * !X)	-0.00183	-0.00184	-0.00195
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00050	0.00050	0.00048
	(A2 * !B1 * !X)	-0.00187	-0.00188	-0.00190
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !B1 * !X)	-0.00187	-0.00188	-0.00190
	(!A1 * !A2 * B1 * !X)	0.00055	0.00055	0.00049
	(!A1 * !A2 * B1 * !X)	-0.00178	-0.00179	-0.00190
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00075	0.00075	0.00070
	(A2 * !B1 * !X)	-0.00312	-0.00314	-0.00319
	(!A2 * !B1 * !X)	0.00074	0.00074	0.00070
	(!A2 * !B1 * !X)	-0.00312	-0.00314	-0.00319
	(!A1 * !A2 * B1 * !X)	0.00084	0.00084	0.00071
	(!A1 * !A2 * B1 * !X)	-0.00292	-0.00294	-0.00315

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(A2 * !B1 * !X)	0.00196	0.00198	0.00197
	(!A2 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !X)	0.00197	0.00198	0.00197
	(!A1 * !A2 * B1 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * !A2 * B1 * !X)	0.00196	0.00198	0.00197
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00048	-0.00047	-0.00046
	(A2 * !B1 * !X)	0.00192	0.00192	0.00191
	(!A2 * !B1 * !X)	-0.00048	-0.00047	-0.00046
	(!A2 * !B1 * !X)	0.00192	0.00192	0.00191
	(!A1 * !A2 * B1 * !X)	-0.00046	-0.00046	-0.00045
	(!A1 * !A2 * B1 * !X)	0.00190	0.00192	0.00191
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00067	-0.00068	-0.00067
	(A2 * !B1 * !X)	0.00319	0.00322	0.00320
	(!A2 * !B1 * !X)	-0.00067	-0.00068	-0.00067
	(!A2 * !B1 * !X)	0.00319	0.00321	0.00320
	(!A1 * !A2 * B1 * !X)	-0.00066	-0.00066	-0.00065
	(!A1 * !A2 * B1 * !X)	0.00319	0.00321	0.00320

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00295	0.00304	0.00296	0.36745
sky130_fd_sc_hs__o21ai_2	0.00598	0.00556	0.00550	0.70713
sky130_fd_sc_hs__o21ai_4	0.01066	0.01100	0.00805	1.28931

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ai_1	0.00000	0.04204	0.06721
sky130_fd_sc_hs__o21ai_2	0.00000	0.08140	0.13096
sky130_fd_sc_hs__o21ai_4	0.00000	0.14141	0.25789

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)	0.15887	1.16233	10.64590
	A2->Y (FR)	0.13676	1.14750	10.91200
	B1->Y (FR)	0.05507	0.77278	7.82829
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.13867	0.98779	10.57410
	A2->Y (FR)	0.10949	0.97467	10.82630
	B1->Y (FR)	0.04145	0.68527	7.80157
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.13454	0.86530	10.47030
	A2->Y (FR)	0.10646	0.86549	10.90850
	B1->Y (FR)	0.05822	0.83586	10.86080

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.06364	0.56805	5.31331
	A2->Y (RF)	0.05246	0.54635	5.24252
	B1->Y (RF)	0.05365	0.62007	6.00437
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.05333	0.48938	5.21361
	A2->Y (RF)	0.04475	0.47491	5.23826
	B1->Y (RF)	0.03276	0.52122	5.97288
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.05159	0.43315	5.13930
	A2->Y (RF)	0.04216	0.41270	5.12520
	B1->Y (RF)	0.02733	0.44635	5.86541

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00077	0.00063	0.00164
	A1	0.00681	0.00668	0.00771
	A2	0.00082	0.00088	0.00273
	A2	0.00585	0.00580	0.00777
	B1	-0.00020	0.00003	0.00224
	B1	0.00482	0.00501	0.00711
sky130_fd_sc_hs__o21ai_2	A1	0.00097	0.00070	0.00273
	A1	0.01255	0.01227	0.01435
	A2	0.00098	0.00102	0.00488
	A2	0.01032	0.01038	0.01425
	B1	-0.00148	-0.00095	0.00358
	B1	0.00778	0.00828	0.01269
sky130_fd_sc_hs__o21ai_4	A1	0.00153	0.00103	0.00520
	A1	0.02397	0.02347	0.02771
	A2	0.00128	0.00192	0.00917
	A2	0.01995	0.02058	0.02786
	B1	-0.00276	-0.00200	0.00315
	B1	0.01213	0.01276	0.01779

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00725	0.00711	0.00831
	A1	0.00116	0.00102	0.00191
	A2	0.00542	0.00536	0.00629
	A2	0.00031	0.00023	0.00113
	B1	0.00607	0.00597	0.00758
	B1	0.00009	0.00005	0.00139
sky130_fd_sc_hs__o21ai_2	A1	0.01352	0.01316	0.01499
	A1	0.00185	0.00150	0.00331
	A2	0.00926	0.00916	0.01166
	A2	-0.00026	-0.00035	0.00152
	B1	0.01092	0.01094	0.01417
	B1	0.00180	0.00172	0.00430
sky130_fd_sc_hs__o21ai_4	A1	0.02561	0.02491	0.02866
	A1	0.00300	0.00231	0.00613
	A2	0.01732	0.01718	0.02153
	A2	-0.00167	-0.00185	0.00222
	B1	0.01991	0.02011	0.02311
	B1	0.00533	0.00548	0.00794

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00174	0.00151	0.00150
	(A2 * B1 * !Y)	-0.00147	-0.00171	-0.00172
	(A2 * !B1 * Y)	0.00139	0.00139	0.00139
	(A2 * !B1 * Y)	-0.00181	-0.00183	-0.00183
	(!A2 * !B1 * Y)	0.00131	0.00132	0.00131
	(!A2 * !B1 * Y)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00331	0.00284	0.00281
	(A2 * B1 * !Y)	-0.00296	-0.00348	-0.00349
	(A2 * !B1 * Y)	0.00266	0.00266	0.00265
	(A2 * !B1 * Y)	-0.00358	-0.00365	-0.00363
	(!A2 * !B1 * Y)	0.00250	0.00250	0.00250
	(!A2 * !B1 * Y)	-0.00370	-0.00370	-0.00369
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00614	0.00520	0.00514
	(A2 * B1 * !Y)	-0.00588	-0.00695	-0.00695
	(A2 * !B1 * Y)	0.00513	0.00516	0.00513
	(A2 * !B1 * Y)	-0.00682	-0.00700	-0.00695
	(!A2 * !B1 * Y)	0.00481	0.00487	0.00483
	(!A2 * !B1 * Y)	-0.00709	-0.00713	-0.00710

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00150	-0.00150	-0.00149
	(A2 * B1 * !Y)	0.00172	0.00173	0.00172
	(A2 * !B1 * Y)	-0.00139	-0.00139	-0.00139
	(A2 * !B1 * Y)	0.00183	0.00184	0.00183
	(!A2 * !B1 * Y)	-0.00124	-0.00132	-0.00131
	(!A2 * !B1 * Y)	0.00190	0.00189	0.00187
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00280	-0.00281	-0.00279
	(A2 * B1 * !Y)	0.00349	0.00352	0.00349
	(A2 * !B1 * Y)	-0.00265	-0.00266	-0.00264
	(A2 * !B1 * Y)	0.00364	0.00367	0.00363
	(!A2 * !B1 * Y)	-0.00235	-0.00250	-0.00250
	(!A2 * !B1 * Y)	0.00375	0.00375	0.00371
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00512	-0.00514	-0.00511
	(A2 * B1 * !Y)	0.00693	0.00698	0.00695
	(A2 * !B1 * Y)	-0.00512	-0.00515	-0.00512
	(A2 * !B1 * Y)	0.00694	0.00703	0.00695
	(!A2 * !B1 * Y)	-0.00452	-0.00487	-0.00483
	(!A2 * !B1 * Y)	0.00722	0.00721	0.00713

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00154	0.00156	0.00155
	(A1 * B1 * !Y)	-0.00083	-0.00084	-0.00083
	(A1 * !B1 * Y)	0.00128	0.00127	0.00126
	(A1 * !B1 * Y)	-0.00185	-0.00187	-0.00186
	(!A1 * !B1 * Y)	0.00119	0.00120	0.00119
	(!A1 * !B1 * Y)	-0.00190	-0.00191	-0.00190
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00281	0.00283	0.00282
	(A1 * B1 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * !B1 * Y)	0.00260	0.00260	0.00257
	(A1 * !B1 * Y)	-0.00336	-0.00341	-0.00338
	(!A1 * !B1 * Y)	0.00241	0.00244	0.00242
	(!A1 * !B1 * Y)	-0.00345	-0.00348	-0.00346
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00594	0.00598	0.00595
	(A1 * B1 * !Y)	-0.00340	-0.00342	-0.00339
	(A1 * !B1 * Y)	0.00524	0.00527	0.00521
	(A1 * !B1 * Y)	-0.00696	-0.00704	-0.00700
	(!A1 * !B1 * Y)	0.00486	0.00493	0.00489
	(!A1 * !B1 * Y)	-0.00719	-0.00725	-0.00721

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00151	-0.00151	-0.00155
	(A1 * B1 * !Y)	0.00088	0.00088	0.00085
	(A1 * !B1 * Y)	-0.00126	-0.00127	-0.00126
	(A1 * !B1 * Y)	0.00185	0.00187	0.00186
	(!A1 * !B1 * Y)	-0.00113	-0.00120	-0.00119
	(!A1 * !B1 * Y)	0.00192	0.00192	0.00190
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00270	-0.00271	-0.00281
	(A1 * B1 * !Y)	0.00180	0.00180	0.00171
	(A1 * !B1 * Y)	-0.00256	-0.00258	-0.00257
	(A1 * !B1 * Y)	0.00337	0.00341	0.00338
	(!A1 * !B1 * Y)	-0.00229	-0.00244	-0.00242
	(!A1 * !B1 * Y)	0.00352	0.00351	0.00348
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00564	-0.00569	-0.00592
	(A1 * B1 * !Y)	0.00364	0.00367	0.00347
	(A1 * !B1 * Y)	-0.00519	-0.00522	-0.00519
	(A1 * !B1 * Y)	0.00699	0.00704	0.00700
	(!A1 * !B1 * Y)	-0.00458	-0.00493	-0.00489
	(!A1 * !B1 * Y)	0.00734	0.00731	0.00724

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00053	0.00053	0.00049
	(!A1 * !A2 * Y)	-0.00209	-0.00210	-0.00216
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00108	0.00107	0.00099
	(!A1 * !A2 * Y)	-0.00386	-0.00385	-0.00401
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00189	0.00190	0.00174
	(!A1 * !A2 * Y)	-0.00438	-0.00443	-0.00468

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * Y)	0.00217	0.00220	0.00217
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00095	-0.00096	-0.00095
	(!A1 * !A2 * Y)	0.00402	0.00410	0.00404
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00167	-0.00169	-0.00167
	(!A1 * !A2 * Y)	0.00469	0.00478	0.00471

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00252	0.00255	0.00250	0.75780
sky130_fd_sc_hs__o21a_2	0.00275	0.00272	0.00282	1.50666
sky130_fd_sc_hs__o21a_4	0.00525	0.00488	0.00464	2.87834

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21a_1	0.00000	0.12867	0.26049
sky130_fd_sc_hs__o21a_2	0.00000	0.13073	0.22272
sky130_fd_sc_hs__o21a_4	0.00000	0.31446	0.59091

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)	0.13352	0.83781	7.42854
	A2->X (RR)	0.11725	0.80141	7.34096
	B1->X (RR)	0.12383	0.83554	7.45071
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.13832	0.74905	7.57971
	A2->X (RR)	0.12403	0.72187	7.50838
	B1->X (RR)	0.12871	0.75641	7.62880
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.14441	0.67368	7.58118
	A2->X (RR)	0.13091	0.64292	7.50267
	B1->X (RR)	0.13015	0.67477	7.59995

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.22664	0.75530	4.48790
	A2->X (FF)	0.20303	0.74148	4.41863
	B1->X (FF)	0.11742	0.64713	4.25725
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.29224	0.82159	4.85587
	A2->X (FF)	0.27094	0.82182	4.83102
	B1->X (FF)	0.13017	0.65126	4.43746
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.27836	0.76809	4.78403
	A2->X (FF)	0.25063	0.75586	4.73263
	B1->X (FF)	0.14358	0.64110	4.51752

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00901	0.00908	0.01453
	A1	0.00388	0.00395	0.00943
	A2	0.00726	0.00726	0.01469
	A2	0.00302	0.00302	0.01051
	B1	0.00810	0.00824	0.01673
	B1	0.00311	0.00332	0.01278
sky130_fd_sc_hs__o21a_2	A1	0.01189	0.01224	0.01769
	A1	0.00629	0.00665	0.01239
	A2	0.01020	0.01049	0.01767
	A2	0.00557	0.00588	0.01309
	B1	0.01079	0.01112	0.01955
	B1	0.00546	0.00593	0.01503
sky130_fd_sc_hs__o21a_4	A1	0.02297	0.02356	0.03417
	A1	0.01246	0.01308	0.02421
	A2	0.01918	0.01969	0.03359
	A2	0.01070	0.01128	0.02525
	B1	0.02062	0.02133	0.03740
	B1	0.01285	0.01360	0.03018

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00361	0.00383	0.01001
	A1	0.00868	0.00886	0.01461
	A2	0.00365	0.00430	0.01283
	A2	0.00780	0.00846	0.01674
	B1	0.00280	0.00337	0.01403
	B1	0.00683	0.00733	0.01742
sky130_fd_sc_hs__o21a_2	A1	0.00605	0.00637	0.01265
	A1	0.01155	0.01191	0.01783
	A2	0.00610	0.00671	0.01633
	A2	0.01063	0.01127	0.02000
	B1	0.00503	0.00584	0.01612
	B1	0.00945	0.01020	0.02017
sky130_fd_sc_hs__o21a_4	A1	0.01099	0.01179	0.02436
	A1	0.02136	0.02215	0.03345
	A2	0.01134	0.01246	0.03066
	A2	0.01964	0.02089	0.03754
	B1	0.00946	0.01109	0.03157
	B1	0.01729	0.01880	0.03823

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00142	0.00122	0.00119
	(A2 * B1 * X)	-0.00136	-0.00161	-0.00161
	(A2 * !B1 * !X)	0.00119	0.00121	0.00119
	(A2 * !B1 * !X)	-0.00158	-0.00161	-0.00160
	(!A2 * !B1 * !X)	0.00111	0.00113	0.00112
	(!A2 * !B1 * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00168	0.00145	0.00143
	(A2 * B1 * X)	-0.00133	-0.00156	-0.00159
	(A2 * !B1 * !X)	0.00144	0.00143	0.00144
	(A2 * !B1 * !X)	-0.00156	-0.00158	-0.00158
	(!A2 * !B1 * !X)	0.00135	0.00137	0.00136
	(!A2 * !B1 * !X)	-0.00159	-0.00161	-0.00160
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00311	0.00269	0.00264
	(A2 * B1 * X)	-0.00259	-0.00307	-0.00311
	(A2 * !B1 * !X)	0.00257	0.00259	0.00257
	(A2 * !B1 * !X)	-0.00310	-0.00316	-0.00315
	(!A2 * !B1 * !X)	0.00243	0.00245	0.00245
	(!A2 * !B1 * !X)	-0.00320	-0.00321	-0.00321

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00118	-0.00118	-0.00117
	(A2 * B1 * X)	0.00161	0.00162	0.00162
	(A2 * !B1 * !X)	-0.00119	-0.00119	-0.00119
	(A2 * !B1 * !X)	0.00161	0.00161	0.00160
	(!A2 * !B1 * !X)	-0.00106	-0.00113	-0.00112
	(!A2 * !B1 * !X)	0.00167	0.00166	0.00163
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00142	-0.00142	-0.00142
	(A2 * B1 * X)	0.00158	0.00159	0.00159
	(A2 * !B1 * !X)	-0.00143	-0.00143	-0.00143
	(A2 * !B1 * !X)	0.00158	0.00159	0.00158
	(!A2 * !B1 * !X)	-0.00128	-0.00137	-0.00136
	(!A2 * !B1 * !X)	0.00164	0.00162	0.00161
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00261	-0.00263	-0.00261
	(A2 * B1 * X)	0.00308	0.00311	0.00311
	(A2 * !B1 * !X)	-0.00255	-0.00257	-0.00257
	(A2 * !B1 * !X)	0.00313	0.00316	0.00315
	(!A2 * !B1 * !X)	-0.00232	-0.00245	-0.00245
	(!A2 * !B1 * !X)	0.00327	0.00324	0.00322

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00123	0.00123	0.00123
	(A1 * B1 * X)	-0.00082	-0.00081	-0.00081
	(A1 * !B1 * !X)	0.00114	0.00114	0.00113
	(A1 * !B1 * !X)	-0.00154	-0.00156	-0.00155
	(!A1 * !B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * !B1 * !X)	-0.00158	-0.00159	-0.00158
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00143	0.00142	0.00142
	(A1 * B1 * X)	-0.00077	-0.00077	-0.00076
	(A1 * !B1 * !X)	0.00129	0.00131	0.00129
	(A1 * !B1 * !X)	-0.00152	-0.00154	-0.00154
	(!A1 * !B1 * !X)	0.00123	0.00123	0.00122
	(!A1 * !B1 * !X)	-0.00157	-0.00157	-0.00157
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00245	0.00246	0.00245
	(A1 * B1 * X)	-0.00154	-0.00155	-0.00154
	(A1 * !B1 * !X)	0.00215	0.00218	0.00216
	(A1 * !B1 * !X)	-0.00308	-0.00314	-0.00312
	(!A1 * !B1 * !X)	0.00204	0.00205	0.00203
	(!A1 * !B1 * !X)	-0.00321	-0.00321	-0.00319

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00118	-0.00117	-0.00122
	(A1 * B1 * X)	0.00087	0.00086	0.00083
	(A1 * !B1 * !X)	-0.00112	-0.00114	-0.00113
	(A1 * !B1 * !X)	0.00155	0.00156	0.00155
	(!A1 * !B1 * !X)	-0.00101	-0.00107	-0.00106
	(!A1 * !B1 * !X)	0.00162	0.00161	0.00159
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00137	-0.00138	-0.00141
	(A1 * B1 * X)	0.00081	0.00081	0.00078
	(A1 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !B1 * !X)	0.00153	0.00154	0.00154
	(!A1 * !B1 * !X)	-0.00116	-0.00123	-0.00122
	(!A1 * !B1 * !X)	0.00159	0.00159	0.00157
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00233	-0.00234	-0.00243
	(A1 * B1 * X)	0.00166	0.00166	0.00158
	(A1 * !B1 * !X)	-0.00215	-0.00217	-0.00215
	(A1 * !B1 * !X)	0.00312	0.00314	0.00312
	(!A1 * !B1 * !X)	-0.00191	-0.00205	-0.00203
	(!A1 * !B1 * !X)	0.00325	0.00323	0.00321

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00049	0.00049	0.00045
	(!A1 * !A2 * !X)	-0.00163	-0.00164	-0.00169
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00054	0.00054	0.00049
	(!A1 * !A2 * !X)	-0.00186	-0.00188	-0.00195
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00083	0.00083	0.00075
	(!A1 * !A2 * !X)	-0.00315	-0.00317	-0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * !X)	0.00170	0.00171	0.00170
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !X)	0.00195	0.00196	0.00196
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00071	-0.00072	-0.00071
	(!A1 * !A2 * !X)	0.00330	0.00332	0.00331

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00282	0.00311	0.00240	0.36584
sky130_fd_sc_hs__o21bai_2	0.00594	0.00550	0.00268	0.71053
sky130_fd_sc_hs__o21bai_4	0.01077	0.01094	0.00367	1.31493

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21bai_1	0.00000	0.12548	0.18754
sky130_fd_sc_hs__o21bai_2	0.00000	0.13919	0.17041
sky130_fd_sc_hs__o21bai_4	0.00000	0.31009	0.44245

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)	0.14887	1.15213	10.61170
	A2->Y (FR)	0.12888	1.14323	10.88360
	B1_N->Y (RR)	0.09600	0.58641	3.81847
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.13601	0.98514	10.56890
	A2->Y (FR)	0.10786	0.97288	10.82500
	B1_N->Y (RR)	0.09492	0.54208	3.90043
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.13712	0.86934	10.50770
	A2->Y (FR)	0.10778	0.86189	10.87370
	B1_N->Y (RR)	0.12587	0.72848	7.36673

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.06393	0.56722	5.31781
	A2->Y (RF)	0.05309	0.54728	5.25924
	B1_N->Y (FF)	0.13850	0.64010	3.62237
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.05932	0.49227	5.23500
	A2->Y (RF)	0.04954	0.47886	5.26108
	B1_N->Y (FF)	0.13800	0.63890	3.92588
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.06776	0.44893	5.29651
	A2->Y (RF)	0.05070	0.42126	5.19573
	B1_N->Y (FF)	0.13677	0.56392	3.76522

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00071	0.00060	0.00162
	A1	0.00546	0.00536	0.00637
	A2	0.00070	0.00078	0.00263
	A2	0.00468	0.00476	0.00662
	B1_N	0.00622	0.00633	0.01463
	B1_N	0.00434	0.00448	0.01280
sky130_fd_sc_hs__o21bai_2	A1	0.00093	0.00068	0.00271
	A1	0.01048	0.01023	0.01231
	A2	0.00095	0.00116	0.00492
	A2	0.00815	0.00836	0.01214
	B1_N	0.00870	0.00902	0.01785
	B1_N	0.00749	0.00787	0.01669
sky130_fd_sc_hs__o21bai_4	A1	0.00173	0.00127	0.00530
	A1	0.02033	0.01985	0.02403
	A2	0.00159	0.00201	0.00950
	A2	0.01624	0.01632	0.02421
	B1_N	0.01158	0.01233	0.02861
	B1_N	0.01147	0.01223	0.02854

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00675	0.00663	0.00768
	A1	0.00199	0.00186	0.00275
	A2	0.00499	0.00495	0.00589
	A2	0.00096	0.00090	0.00180
	B1_N	0.00536	0.00588	0.01531
	B1_N	0.00732	0.00783	0.01719
sky130_fd_sc_hs__o21bai_2	A1	0.01344	0.01308	0.01488
	A1	0.00388	0.00354	0.00534
	A2	0.00924	0.00916	0.01187
	A2	0.00195	0.00187	0.00373
	B1_N	0.01039	0.01105	0.02113
	B1_N	0.01170	0.01230	0.02217
sky130_fd_sc_hs__o21bai_4	A1	0.02687	0.02619	0.03100
	A1	0.00822	0.00748	0.01123
	A2	0.01837	0.01817	0.02314
	A2	0.00353	0.00329	0.00731
	B1_N	0.02067	0.02145	0.03846
	B1_N	0.02094	0.02167	0.03876

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)	0.00136	0.00135	0.00136
	(A2 * B1_N * Y)	-0.00171	-0.00174	-0.00174
	(A2 * !B1_N * !Y)	0.00159	0.00136	0.00136
	(A2 * !B1_N * !Y)	-0.00150	-0.00173	-0.00174
	(!A2 * B1_N * Y)	0.00130	0.00131	0.00130
	(!A2 * B1_N * Y)	-0.00177	-0.00177	-0.00177
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00278	0.00279	0.00278
	(A2 * B1_N * Y)	-0.00355	-0.00362	-0.00360
	(A2 * !B1_N * !Y)	0.00332	0.00284	0.00281
	(A2 * !B1_N * !Y)	-0.00305	-0.00357	-0.00358
	(!A2 * B1_N * Y)	0.00268	0.00270	0.00268
	(!A2 * B1_N * Y)	-0.00367	-0.00368	-0.00367
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00522	0.00523	0.00520
	(A2 * B1_N * Y)	-0.00690	-0.00706	-0.00701
	(A2 * !B1_N * !Y)	0.00626	0.00527	0.00521
	(A2 * !B1_N * !Y)	-0.00593	-0.00701	-0.00703
	(!A2 * B1_N * Y)	0.00500	0.00506	0.00501
	(!A2 * B1_N * Y)	-0.00716	-0.00720	-0.00716

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)	-0.00136	-0.00135	-0.00135
	(A2 * B1_N * Y)	0.00174	0.00175	0.00174
	(A2 * !B1_N * !Y)	-0.00135	-0.00135	-0.00134
	(A2 * !B1_N * !Y)	0.00174	0.00175	0.00174
	(!A2 * B1_N * Y)	-0.00124	-0.00131	-0.00130
	(!A2 * B1_N * Y)	0.00181	0.00180	0.00178
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00278	-0.00279	-0.00277
	(A2 * B1_N * Y)	0.00361	0.00364	0.00360
	(A2 * !B1_N * !Y)	-0.00281	-0.00282	-0.00279
	(A2 * !B1_N * !Y)	0.00358	0.00361	0.00358
	(!A2 * B1_N * Y)	-0.00256	-0.00270	-0.00268
	(!A2 * B1_N * Y)	0.00372	0.00372	0.00368
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00518	-0.00521	-0.00519
	(A2 * B1_N * Y)	0.00699	0.00706	0.00701
	(A2 * !B1_N * !Y)	-0.00519	-0.00520	-0.00517
	(A2 * !B1_N * !Y)	0.00702	0.00706	0.00703
	(!A2 * B1_N * Y)	-0.00474	-0.00504	-0.00501
	(!A2 * B1_N * Y)	0.00729	0.00728	0.00719

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)	0.00140	0.00140	0.00139
	(A1 * B1_N * Y)	-0.00186	-0.00188	-0.00187
	(A1 * !B1_N * !Y)	0.00158	0.00159	0.00158
	(A1 * !B1_N * !Y)	-0.00094	-0.00095	-0.00094
	(!A1 * B1_N * Y)	0.00134	0.00134	0.00133
	(!A1 * B1_N * Y)	-0.00192	-0.00192	-0.00191
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00256	0.00257	0.00254
	(A1 * B1_N * Y)	-0.00336	-0.00340	-0.00338
	(A1 * !B1_N * !Y)	0.00279	0.00280	0.00279
	(A1 * !B1_N * !Y)	-0.00168	-0.00168	-0.00168
	(!A1 * B1_N * Y)	0.00245	0.00247	0.00245
	(!A1 * B1_N * Y)	-0.00346	-0.00348	-0.00346
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00515	0.00516	0.00516
	(A1 * B1_N * Y)	-0.00689	-0.00703	-0.00699
	(A1 * !B1_N * !Y)	0.00585	0.00588	0.00585
	(A1 * !B1_N * !Y)	-0.00343	-0.00344	-0.00342
	(!A1 * B1_N * Y)	0.00499	0.00502	0.00497
	(!A1 * B1_N * Y)	-0.00721	-0.00722	-0.00718

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)	-0.00138	-0.00139	-0.00138
	(A1 * B1_N * Y)	0.00187	0.00188	0.00187
	(A1 * !B1_N * !Y)	-0.00152	-0.00154	-0.00158
	(A1 * !B1_N * !Y)	0.00098	0.00099	0.00096
	(!A1 * B1_N * Y)	-0.00128	-0.00134	-0.00133
	(!A1 * B1_N * Y)	0.00195	0.00194	0.00192
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00254	-0.00254	-0.00253
	(A1 * B1_N * Y)	0.00338	0.00340	0.00338
	(A1 * !B1_N * !Y)	-0.00266	-0.00269	-0.00278
	(A1 * !B1_N * !Y)	0.00178	0.00179	0.00171
	(!A1 * B1_N * Y)	-0.00233	-0.00246	-0.00245
	(!A1 * B1_N * Y)	0.00350	0.00351	0.00348
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00514	-0.00516	-0.00514
	(A1 * B1_N * Y)	0.00698	0.00703	0.00699
	(A1 * !B1_N * !Y)	-0.00555	-0.00560	-0.00582
	(A1 * !B1_N * !Y)	0.00368	0.00369	0.00349
	(!A1 * B1_N * Y)	-0.00470	-0.00500	-0.00497
	(!A1 * B1_N * Y)	0.00729	0.00728	0.00721

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)	0.00508	0.00509	0.01422
	(!A1 * !A2 * Y)	0.00188	0.00189	0.01103
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00750	0.00749	0.01729
	(!A1 * !A2 * Y)	0.00383	0.00380	0.01362
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00895	0.00899	0.02519
	(!A1 * !A2 * Y)	0.00389	0.00392	0.02014

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)	0.00029	0.00068	0.01021
	(!A1 * !A2 * Y)	0.00352	0.00392	0.01343
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00081	0.00108	0.01114
	(!A1 * !A2 * Y)	0.00454	0.00481	0.01485
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00150	0.00217	0.01920
	(!A1 * !A2 * Y)	0.00665	0.00736	0.02431

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00256	0.00271	0.00220	0.70285
sky130_fd_sc_hs__o21ba_2	0.00267	0.00279	0.00233	1.38456
sky130_fd_sc_hs__o21ba_4	0.00532	0.00507	0.00289	2.62058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.18588	0.21992
sky130_fd_sc_hs__o21ba_2	0.00000	0.21411	0.24439
sky130_fd_sc_hs__o21ba_4	0.00000	0.34897	0.62918

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)	0.14795	0.86854	7.48586
	A2->X (RR)	0.13204	0.83510	7.40429
	B1_N->X (FR)	0.22809	1.01360	8.05456
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.14600	0.74895	7.35203
	A2->X (RR)	0.12979	0.71991	7.27239
	B1_N->X (FR)	0.23146	0.90032	7.93035
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.15475	0.68471	7.49118
	A2->X (RR)	0.14205	0.65416	7.41090
	B1_N->X (FR)	0.24712	0.86850	8.27207

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.23669	0.76348	4.34661
	A2->X (FF)	0.21713	0.75775	4.29289
	B1_N->X (RF)	0.15985	0.54592	3.08446
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.28707	0.81263	4.70510
	A2->X (FF)	0.26625	0.81127	4.67310
	B1_N->X (RF)	0.17893	0.54615	3.23451
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.27757	0.76153	4.53863
	A2->X (FF)	0.25008	0.75068	4.48911
	B1_N->X (RF)	0.18878	0.52595	3.06128

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00951	0.00957	0.01496
	A1	0.00517	0.00524	0.01068
	A2	0.00796	0.00792	0.01520
	A2	0.00434	0.00431	0.01163
	B1_N	0.00863	0.00913	0.01872
	B1_N	0.01044	0.01095	0.02062
sky130_fd_sc_hs__o21ba_2	A1	0.01182	0.01217	0.01768
	A1	0.00735	0.00771	0.01336
	A2	0.01020	0.01047	0.01771
	A2	0.00647	0.00676	0.01422
	B1_N	0.01070	0.01157	0.02084
	B1_N	0.01272	0.01361	0.02310
sky130_fd_sc_hs__o21ba_4	A1	0.02291	0.02344	0.03406
	A1	0.01407	0.01522	0.02534
	A2	0.01915	0.01964	0.03356
	A2	0.01236	0.01288	0.02719
	B1_N	0.02018	0.02138	0.03178
	B1_N	0.02187	0.02310	0.03355

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00361	0.00382	0.00973
	A1	0.00790	0.00811	0.01383
	A2	0.00363	0.00426	0.01275
	A2	0.00718	0.00779	0.01605
	B1_N	0.00911	0.00923	0.01800
	B1_N	0.00731	0.00740	0.01620
sky130_fd_sc_hs__o21ba_2	A1	0.00563	0.00600	0.01228
	A1	0.01005	0.01044	0.01637
	A2	0.00566	0.00626	0.01558
	A2	0.00932	0.00995	0.01864
	B1_N	0.01150	0.01168	0.02026
	B1_N	0.00950	0.00969	0.01828
sky130_fd_sc_hs__o21ba_4	A1	0.01080	0.01150	0.02539
	A1	0.01956	0.02025	0.03146
	A2	0.01110	0.01248	0.02927
	A2	0.01778	0.01916	0.03553
	B1_N	0.01914	0.02012	0.03009
	B1_N	0.01750	0.01841	0.02830

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)	0.00118	0.00118	0.00118
	(A2 * B1_N * !X)	-0.00159	-0.00161	-0.00161
	(A2 * !B1_N * X)	0.00142	0.00119	0.00118
	(A2 * !B1_N * X)	-0.00137	-0.00160	-0.00162
	(!A2 * B1_N * !X)	0.00114	0.00114	0.00114
	(!A2 * B1_N * !X)	-0.00164	-0.00164	-0.00163
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00136	0.00137	0.00136
	(A2 * B1_N * !X)	-0.00156	-0.00159	-0.00158
	(A2 * !B1_N * X)	0.00160	0.00137	0.00136
	(A2 * !B1_N * X)	-0.00133	-0.00156	-0.00159
	(!A2 * B1_N * !X)	0.00130	0.00131	0.00131
	(!A2 * B1_N * !X)	-0.00160	-0.00161	-0.00160
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00262	0.00265	0.00263
	(A2 * B1_N * !X)	-0.00315	-0.00321	-0.00320
	(A2 * !B1_N * X)	0.00312	0.00270	0.00264
	(A2 * !B1_N * X)	-0.00269	-0.00318	-0.00321
	(!A2 * B1_N * !X)	0.00252	0.00254	0.00254
	(!A2 * B1_N * !X)	-0.00326	-0.00327	-0.00327

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)	-0.00118	-0.00118	-0.00118
	(A2 * B1_N * !X)	0.00161	0.00162	0.00161
	(A2 * !B1_N * X)	-0.00117	-0.00117	-0.00116
	(A2 * !B1_N * X)	0.00162	0.00163	0.00163
	(!A2 * B1_N * !X)	-0.00108	-0.00114	-0.00114
	(!A2 * B1_N * !X)	0.00167	0.00166	0.00164
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00135	-0.00136	-0.00135
	(A2 * B1_N * !X)	0.00158	0.00159	0.00158
	(A2 * !B1_N * X)	-0.00134	-0.00135	-0.00134
	(A2 * !B1_N * X)	0.00158	0.00159	0.00159
	(!A2 * B1_N * !X)	-0.00124	-0.00131	-0.00131
	(!A2 * B1_N * !X)	0.00164	0.00163	0.00161
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00261	-0.00263	-0.00262
	(A2 * B1_N * !X)	0.00318	0.00321	0.00320
	(A2 * !B1_N * X)	-0.00261	-0.00262	-0.00261
	(A2 * !B1_N * X)	0.00319	0.00321	0.00321
	(!A2 * B1_N * !X)	-0.00243	-0.00254	-0.00254
	(!A2 * B1_N * !X)	0.00333	0.00330	0.00328

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)	0.00125	0.00126	0.00124
	(A1 * B1_N * !X)	-0.00161	-0.00162	-0.00162
	(A1 * !B1_N * X)	0.00133	0.00132	0.00132
	(A1 * !B1_N * X)	-0.00091	-0.00090	-0.00090
	(!A1 * B1_N * !X)	0.00120	0.00121	0.00120
	(!A1 * B1_N * !X)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00138	0.00140	0.00139
	(A1 * B1_N * !X)	-0.00157	-0.00160	-0.00159
	(A1 * !B1_N * X)	0.00150	0.00150	0.00149
	(A1 * !B1_N * X)	-0.00085	-0.00084	-0.00084
	(!A1 * B1_N * !X)	0.00134	0.00135	0.00134
	(!A1 * B1_N * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00223	0.00226	0.00223
	(A1 * B1_N * !X)	-0.00317	-0.00322	-0.00320
	(A1 * !B1_N * X)	0.00251	0.00252	0.00251
	(A1 * !B1_N * X)	-0.00163	-0.00163	-0.00162
	(!A1 * B1_N * !X)	0.00211	0.00214	0.00213
	(!A1 * B1_N * !X)	-0.00328	-0.00330	-0.00329

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)	-0.00124	-0.00125	-0.00124
	(A1 * B1_N * !X)	0.00161	0.00162	0.00162
	(A1 * !B1_N * X)	-0.00127	-0.00127	-0.00131
	(A1 * !B1_N * X)	0.00094	0.00094	0.00091
	(!A1 * B1_N * !X)	-0.00115	-0.00120	-0.00120
	(!A1 * B1_N * !X)	0.00168	0.00167	0.00165
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00138	-0.00139	-0.00138
	(A1 * B1_N * !X)	0.00159	0.00160	0.00159
	(A1 * !B1_N * X)	-0.00144	-0.00144	-0.00148
	(A1 * !B1_N * X)	0.00089	0.00089	0.00086
	(!A1 * B1_N * !X)	-0.00128	-0.00135	-0.00134
	(!A1 * B1_N * !X)	0.00165	0.00164	0.00163
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00222	-0.00224	-0.00222
	(A1 * B1_N * !X)	0.00320	0.00322	0.00320
	(A1 * !B1_N * X)	-0.00239	-0.00240	-0.00250
	(A1 * !B1_N * X)	0.00175	0.00174	0.00166
	(!A1 * B1_N * !X)	-0.00200	-0.00214	-0.00213
	(!A1 * B1_N * !X)	0.00334	0.00333	0.00330

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)	0.00469	0.00474	0.01385
	(!A1 * !A2 * !X)	0.00171	0.00176	0.01087
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00510	0.00511	0.01412
	(!A1 * !A2 * !X)	0.00197	0.00198	0.01100
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00719	0.00719	0.01675
	(!A1 * !A2 * !X)	0.00328	0.00326	0.01284

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)	0.00040	0.00082	0.01028
	(!A1 * !A2 * !X)	0.00339	0.00382	0.01328
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00032	0.00071	0.01013
	(!A1 * !A2 * !X)	0.00348	0.00388	0.01327
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00055	0.00086	0.01062
	(!A1 * !A2 * !X)	0.00452	0.00483	0.01458

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00291	0.00307	0.00302	0.00295	0.00299	0.36071
sky130_fd_sc_hs__o221ai_2	0.00595	0.00547	0.00622	0.00547	0.00553	0.69561
sky130_fd_sc_hs__o221ai_4	0.01134	0.01086	0.01147	0.01083	0.01102	1.31898

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.04655	0.08796
sky130_fd_sc_hs__o221ai_2	0.00000	0.08856	0.17067
sky130_fd_sc_hs__o221ai_4	0.00000	0.17534	0.34149

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)	0.22683	1.23341	10.60770
	A2->Y (FR)	0.20421	1.22025	10.87780
	B1->Y (FR)	0.17316	1.16366	10.49020
	B2->Y (FR)	0.14923	1.15324	10.76000
	C1->Y (FR)	0.06076	0.77220	7.73839
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.20207	1.05582	10.55120
	A2->Y (FR)	0.17446	1.03874	10.80550
	B1->Y (FR)	0.15582	0.99721	10.47110
	B2->Y (FR)	0.12620	0.97785	10.72430
	C1->Y (FR)	0.04723	0.68258	7.66697
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.19054	0.91861	10.35740
	A2->Y (FR)	0.16398	0.91200	10.68940
	B1->Y (FR)	0.15290	0.87944	10.50860
	B2->Y (FR)	0.12330	0.87267	10.82660
	C1->Y (FR)	0.04707	0.61602	7.67243

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.12988	0.71043	5.95681
	A2->Y (RF)	0.11234	0.68715	5.91178
	B1->Y (RF)	0.11771	0.74515	6.62719
	B2->Y (RF)	0.09803	0.71550	6.52966
	C1->Y (RF)	0.09836	0.76477	7.16650
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.10002	0.59531	5.94050
	A2->Y (RF)	0.08369	0.57683	5.97135
	B1->Y (RF)	0.08766	0.63099	6.61422
	B2->Y (RF)	0.07121	0.62161	6.76487
	C1->Y (RF)	0.04651	0.63945	7.26665
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.10538	0.53977	6.07191
	A2->Y (RF)	0.08565	0.51402	6.07923
	B1->Y (RF)	0.09381	0.58422	6.87533
	B2->Y (RF)	0.07327	0.55903	6.90889
	C1->Y (RF)	0.04901	0.58512	7.55807

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00235	0.00218	0.00311
	A1	0.01059	0.01044	0.01135
	A2	0.00243	0.00241	0.00418
	A2	0.00971	0.00971	0.01138
	B1	0.00087	0.00069	0.00168
	B1	0.00805	0.00788	0.00884
	B2	0.00089	0.00094	0.00272
	B2	0.00700	0.00703	0.00877
	C1	-0.00035	-0.00015	0.00196
	C1	0.00586	0.00605	0.00799
sky130_fd_sc_hs__o221ai_2	A1	0.00379	0.00343	0.00532
	A1	0.01974	0.01938	0.02127
	A2	0.00384	0.00384	0.00739
	A2	0.01751	0.01743	0.02099
	B1	0.00111	0.00072	0.00270
	B1	0.01519	0.01478	0.01675
	B2	0.00122	0.00127	0.00481
	B2	0.01293	0.01269	0.01643
	C1	-0.00140	-0.00096	0.00339
	C1	0.01030	0.01074	0.01484

sky130_fd_sc_hs__o221ai_4	**A1**	0.00644	0.00575	0.00944
	A1	0.03801	0.03737	0.04096
	A2	0.00661	0.00669	0.01326
	A2	0.03385	0.03398	0.04035
	B1	0.00169	0.00093	0.00549
	B1	0.02936	0.02853	0.03310
	B2	0.00169	0.00188	0.00941
	B2	0.02514	0.02514	0.03259
	C1	-0.00262	-0.00120	0.00943
	C1	0.02068	0.02188	0.03209

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01142	0.01127	0.01216
	A1	0.00283	0.00267	0.00339
	A2	0.00950	0.00937	0.01009
	A2	0.00185	0.00172	0.00243
	B1	0.01001	0.00986	0.01061
	B1	0.00287	0.00270	0.00347
	B2	0.00818	0.00807	0.00895
	B2	0.00207	0.00195	0.00271
	C1	0.00901	0.00898	0.01000
	C1	0.00291	0.00288	0.00390

sky130_fd_sc_hs__o221ai_2	**A1**	0.02155	0.02117	0.02279
	A1	0.00495	0.00457	0.00604
	A2	0.01748	0.01725	0.01912
	A2	0.00307	0.00284	0.00436
	B1	0.01908	0.01871	0.02060
	B1	0.00502	0.00464	0.00618
	B2	0.01482	0.01464	0.01617
	B2	0.00305	0.00284	0.00443
	C1	0.01650	0.01642	0.01889
	C1	0.00500	0.00486	0.00712
sky130_fd_sc_hs__o221ai_4	**A1**	0.04266	0.04194	0.04603
	A1	0.00983	0.00906	0.01226
	A2	0.03464	0.03403	0.03806
	A2	0.00606	0.00539	0.00877
	B1	0.03753	0.03679	0.04104
	B1	0.00993	0.00916	0.01291
	B2	0.02972	0.02922	0.03357
	B2	0.00620	0.00563	0.00952
	C1	0.03271	0.03255	0.03849
	C1	0.00978	0.00967	0.01557

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)**	0.00166	0.00144	0.00144
	(A2 * B2 * C1 * !Y)	-0.00153	-0.00176	-0.00178
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00144	0.00144	0.00144
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00173	-0.00177	-0.00177
	(A2 * B1 * !B2 * C1 * !Y)	0.00166	0.00146	0.00144
	(A2 * B1 * !B2 * C1 * !Y)	-0.00153	-0.00178	-0.00178
	(A2 * !B1 * !B2 * Y)	0.00144	0.00144	0.00144
	(A2 * !B1 * !B2 * Y)	-0.00173	-0.00177	-0.00177
	(!A2 * B2 * !C1 * Y)	0.00132	0.00133	0.00132
	(!A2 * B2 * !C1 * Y)	-0.00179	-0.00181	-0.00180
	(!A2 * B1 * !B2 * !C1 * Y)	0.00133	0.00135	0.00133
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * !B2 * C1 * Y)	0.00135	0.00136	0.00135
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00134	0.00136	0.00135
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00179	-0.00181	-0.00180

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00327	0.00279	0.00276
	(A2 * B2 * C1 * !Y)	-0.00300	-0.00352	-0.00353
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00267	0.00267	0.00266
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00356	-0.00364	-0.00361
	(A2 * B1 * !B2 * C1 * !Y)	0.00327	0.00279	0.00276
	(A2 * B1 * !B2 * C1 * !Y)	-0.00300	-0.00352	-0.00353
	(A2 * !B1 * !B2 * Y)	0.00267	0.00267	0.00266
	(A2 * !B1 * !B2 * Y)	-0.00356	-0.00363	-0.00361
	(!A2 * B2 * !C1 * Y)	0.00242	0.00244	0.00242
	(!A2 * B2 * !C1 * Y)	-0.00368	-0.00371	-0.00368
	(!A2 * B1 * !B2 * !C1 * Y)	0.00245	0.00247	0.00245
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00368	-0.00371	-0.00368
	(!A2 * !B1 * !B2 * C1 * Y)	0.00248	0.00250	0.00249
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00367	-0.00369	-0.00368
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00248	0.00249	0.00249
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00367	-0.00368	-0.00368

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00647	0.00550	0.00543
	(A2 * B2 * C1 * !Y)	-0.00588	-0.00694	-0.00696
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00540	0.00542	0.00539
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00688	-0.00696	-0.00697
	(A2 * B1 * !B2 * C1 * !Y)	0.00647	0.00550	0.00543
	(A2 * B1 * !B2 * C1 * !Y)	-0.00588	-0.00694	-0.00696
	(A2 * !B1 * !B2 * Y)	0.00540	0.00542	0.00539
	(A2 * !B1 * !B2 * Y)	-0.00688	-0.00697	-0.00697
	(!A2 * B2 * !C1 * Y)	0.00488	0.00493	0.00487
	(!A2 * B2 * !C1 * Y)	-0.00714	-0.00717	-0.00712
	(!A2 * B1 * !B2 * !C1 * Y)	0.00494	0.00494	0.00493
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00714	-0.00713	-0.00712
	(!A2 * !B1 * !B2 * C1 * Y)	0.00503	0.00505	0.00503
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00712	-0.00714	-0.00713
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00502	0.00505	0.00503
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00712	-0.00714	-0.00713

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)**	-0.00143	-0.00144	-0.00143
	(A2 * B2 * C1 * !Y)	0.00177	0.00178	0.00178
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00144	-0.00144	-0.00144
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00176	0.00178	0.00177
	(A2 * B1 * !B2 * C1 * !Y)	-0.00144	-0.00144	-0.00143
	(A2 * B1 * !B2 * C1 * !Y)	0.00178	0.00178	0.00178
	(A2 * !B1 * !B2 * Y)	-0.00144	-0.00144	-0.00144
	(A2 * !B1 * !B2 * Y)	0.00176	0.00178	0.00177
	(!A2 * B2 * !C1 * Y)	-0.00123	-0.00133	-0.00132
	(!A2 * B2 * !C1 * Y)	0.00181	0.00181	0.00180
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00124	-0.00135	-0.00133
	(!A2 * B1 * !B2 * !C1 * Y)	0.00180	0.00181	0.00180
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00128	-0.00136	-0.00135
	(!A2 * !B1 * !B2 * C1 * Y)	0.00180	0.00182	0.00180
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00128	-0.00136	-0.00135
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00180	0.00182	0.00180

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00275	-0.00276	-0.00274
	(A2 * B2 * C1 * !Y)	0.00353	0.00356	0.00353
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00266	-0.00267	-0.00266
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00362	0.00365	0.00361
	(A2 * B1 * !B2 * C1 * !Y)	-0.00275	-0.00276	-0.00274
	(A2 * B1 * !B2 * C1 * !Y)	0.00353	0.00356	0.00353
	(A2 * !B1 * !B2 * Y)	-0.00266	-0.00267	-0.00266
	(A2 * !B1 * !B2 * Y)	0.00362	0.00365	0.00361
	(!A2 * B2 * !C1 * Y)	-0.00222	-0.00244	-0.00242
	(!A2 * B2 * !C1 * Y)	0.00369	0.00372	0.00369
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00228	-0.00247	-0.00245
	(!A2 * B1 * !B2 * !C1 * Y)	0.00370	0.00372	0.00369
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00236	-0.00250	-0.00249
	(!A2 * !B1 * !B2 * C1 * Y)	0.00370	0.00372	0.00370
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00237	-0.00249	-0.00249
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00370	0.00373	0.00369

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00542	-0.00543	-0.00539
	(A2 * B2 * C1 * !Y)	0.00697	0.00702	0.00696
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00537	-0.00537	-0.00537
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00697	0.00696	0.00697
	(A2 * B1 * !B2 * C1 * !Y)	-0.00540	-0.00543	-0.00539
	(A2 * B1 * !B2 * C1 * !Y)	0.00694	0.00702	0.00696
	(A2 * !B1 * !B2 * Y)	-0.00537	-0.00537	-0.00537
	(A2 * !B1 * !B2 * Y)	0.00697	0.00697	0.00697
	(!A2 * B2 * !C1 * Y)	-0.00447	-0.00493	-0.00487
	(!A2 * B2 * !C1 * Y)	0.00714	0.00721	0.00715
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00458	-0.00494	-0.00493
	(!A2 * B1 * !B2 * !C1 * Y)	0.00715	0.00720	0.00715
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00474	-0.00505	-0.00503
	(!A2 * !B1 * !B2 * C1 * Y)	0.00712	0.00721	0.00715
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00476	-0.00505	-0.00503
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00712	0.00721	0.00715

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)**	0.00153	0.00153	0.00153
	(A1 * B2 * C1 * !Y)	-0.00093	-0.00093	-0.00092
	(A1 * B2 * !C1 * Y)	0.00132	0.00132	0.00131
	(A1 * B2 * !C1 * Y)	-0.00185	-0.00188	-0.00187
	(A1 * B1 * !B2 * C1 * !Y)	0.00153	0.00153	0.00153
	(A1 * B1 * !B2 * C1 * !Y)	-0.00093	-0.00093	-0.00092
	(A1 * B1 * !B2 * !C1 * Y)	0.00131	0.00132	0.00131
	(A1 * B1 * !B2 * !C1 * Y)	-0.00184	-0.00188	-0.00187
	(A1 * !B1 * !B2 * C1 * Y)	0.00133	0.00132	0.00131
	(A1 * !B1 * !B2 * C1 * Y)	-0.00186	-0.00188	-0.00186
	(A1 * !B1 * !B2 * !C1 * Y)	0.00132	0.00132	0.00131
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00186	-0.00188	-0.00187
	(!A1 * B2 * !C1 * Y)	0.00119	0.00120	0.00120
	(!A1 * B2 * !C1 * Y)	-0.00190	-0.00191	-0.00191
	(!A1 * B1 * !B2 * !C1 * Y)	0.00120	0.00122	0.00121
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00190	-0.00191	-0.00191
	(!A1 * !B1 * !B2 * C1 * Y)	0.00122	0.00122	0.00122
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00191	-0.00190	-0.00191
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00122	0.00124	0.00122
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00191	-0.00192	-0.00191

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00277	0.00279	0.00278
	(A1 * B2 * C1 * !Y)	-0.00167	-0.00168	-0.00167
	(A1 * B2 * !C1 * Y)	0.00251	0.00255	0.00253
	(A1 * B2 * !C1 * Y)	-0.00332	-0.00339	-0.00337
	(A1 * B1 * !B2 * C1 * !Y)	0.00277	0.00279	0.00278
	(A1 * B1 * !B2 * C1 * !Y)	-0.00166	-0.00168	-0.00167
	(A1 * B1 * !B2 * !C1 * Y)	0.00252	0.00255	0.00253
	(A1 * B1 * !B2 * !C1 * Y)	-0.00333	-0.00339	-0.00337
	(A1 * !B1 * !B2 * C1 * Y)	0.00251	0.00252	0.00253
	(A1 * !B1 * !B2 * C1 * Y)	-0.00332	-0.00337	-0.00336
	(A1 * !B1 * !B2 * !C1 * Y)	0.00252	0.00255	0.00253
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00333	-0.00340	-0.00338
	(!A1 * B2 * !C1 * Y)	0.00230	0.00231	0.00230
	(!A1 * B2 * !C1 * Y)	-0.00345	-0.00347	-0.00346
	(!A1 * B1 * !B2 * !C1 * Y)	0.00232	0.00234	0.00233
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00346	-0.00347	-0.00346
	(!A1 * !B1 * !B2 * C1 * Y)	0.00237	0.00238	0.00237
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00346	-0.00347	-0.00346
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00237	0.00239	0.00237
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00346	-0.00348	-0.00346

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00560	0.00563	0.00561
	(A1 * B2 * C1 * !Y)	-0.00334	-0.00335	-0.00334
	(A1 * B2 * !C1 * Y)	0.00497	0.00498	0.00493
	(A1 * B2 * !C1 * Y)	-0.00688	-0.00695	-0.00692
	(A1 * B1 * !B2 * C1 * !Y)	0.00560	0.00564	0.00561
	(A1 * B1 * !B2 * C1 * !Y)	-0.00333	-0.00335	-0.00333
	(A1 * B1 * !B2 * !C1 * Y)	0.00492	0.00499	0.00493
	(A1 * B1 * !B2 * !C1 * Y)	-0.00682	-0.00694	-0.00692
	(A1 * !B1 * !B2 * C1 * Y)	0.00492	0.00499	0.00493
	(A1 * !B1 * !B2 * C1 * Y)	-0.00682	-0.00692	-0.00690
	(A1 * !B1 * !B2 * !C1 * Y)	0.00491	0.00498	0.00493
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00682	-0.00695	-0.00693
	(!A1 * B2 * !C1 * Y)	0.00448	0.00451	0.00449
	(!A1 * B2 * !C1 * Y)	-0.00709	-0.00711	-0.00709
	(!A1 * B1 * !B2 * !C1 * Y)	0.00453	0.00457	0.00454
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00709	-0.00712	-0.00709
	(!A1 * !B1 * !B2 * C1 * Y)	0.00463	0.00466	0.00463
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00710	-0.00712	-0.00710
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00463	0.00466	0.00462
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00710	-0.00712	-0.00710

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)**	-0.00147	-0.00147	-0.00152
	(A1 * B2 * C1 * !Y)	0.00098	0.00098	0.00094
	(A1 * B2 * !C1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * B2 * !C1 * Y)	0.00187	0.00188	0.00187
	(A1 * B1 * !B2 * C1 * !Y)	-0.00147	-0.00147	-0.00152
	(A1 * B1 * !B2 * C1 * !Y)	0.00098	0.00098	0.00094
	(A1 * B1 * !B2 * !C1 * Y)	-0.00130	-0.00131	-0.00131
	(A1 * B1 * !B2 * !C1 * Y)	0.00186	0.00188	0.00187
	(A1 * !B1 * !B2 * C1 * Y)	-0.00131	-0.00131	-0.00131
	(A1 * !B1 * !B2 * C1 * Y)	0.00187	0.00188	0.00186
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00130	-0.00131	-0.00131
	(A1 * !B1 * !B2 * !C1 * Y)	0.00186	0.00188	0.00187
	(!A1 * B2 * !C1 * Y)	-0.00111	-0.00120	-0.00120
	(!A1 * B2 * !C1 * Y)	0.00192	0.00192	0.00191
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00113	-0.00122	-0.00121
	(!A1 * B1 * !B2 * !C1 * Y)	0.00190	0.00192	0.00191
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00116	-0.00122	-0.00122
	(!A1 * !B1 * !B2 * C1 * Y)	0.00191	0.00192	0.00191
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00116	-0.00124	-0.00122
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00191	0.00192	0.00191

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00266	-0.00267	-0.00277
	(A1 * B2 * C1 * !Y)	0.00179	0.00179	0.00170
	(A1 * B2 * !C1 * Y)	-0.00251	-0.00253	-0.00252
	(A1 * B2 * !C1 * Y)	0.00338	0.00339	0.00337
	(A1 * B1 * !B2 * C1 * !Y)	-0.00266	-0.00267	-0.00277
	(A1 * B1 * !B2 * C1 * !Y)	0.00179	0.00179	0.00170
	(A1 * B1 * !B2 * !C1 * Y)	-0.00251	-0.00253	-0.00252
	(A1 * B1 * !B2 * !C1 * Y)	0.00336	0.00339	0.00337
	(A1 * !B1 * !B2 * C1 * Y)	-0.00251	-0.00252	-0.00252
	(A1 * !B1 * !B2 * C1 * Y)	0.00337	0.00337	0.00336
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00252	-0.00253	-0.00252
	(A1 * !B1 * !B2 * !C1 * Y)	0.00337	0.00340	0.00338
	(!A1 * B2 * !C1 * Y)	-0.00211	-0.00231	-0.00230
	(!A1 * B2 * !C1 * Y)	0.00346	0.00349	0.00347
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00216	-0.00234	-0.00233
	(!A1 * B1 * !B2 * !C1 * Y)	0.00346	0.00349	0.00347
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00224	-0.00238	-0.00237
	(!A1 * !B1 * !B2 * C1 * Y)	0.00347	0.00349	0.00347
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00225	-0.00239	-0.00237
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00347	0.00349	0.00347

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00537	-0.00540	-0.00559
	(A1 * B2 * C1 * !Y)	0.00357	0.00357	0.00340
	(A1 * B2 * !C1 * Y)	-0.00492	-0.00493	-0.00492
	(A1 * B2 * !C1 * Y)	0.00692	0.00695	0.00692
	(A1 * B1 * !B2 * C1 * !Y)	-0.00537	-0.00540	-0.00559
	(A1 * B1 * !B2 * C1 * !Y)	0.00358	0.00357	0.00340
	(A1 * B1 * !B2 * !C1 * Y)	-0.00491	-0.00493	-0.00492
	(A1 * B1 * !B2 * !C1 * Y)	0.00690	0.00694	0.00692
	(A1 * !B1 * !B2 * C1 * Y)	-0.00492	-0.00493	-0.00491
	(A1 * !B1 * !B2 * C1 * Y)	0.00691	0.00692	0.00690
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00491	-0.00493	-0.00492
	(A1 * !B1 * !B2 * !C1 * Y)	0.00691	0.00695	0.00693
	(!A1 * B2 * !C1 * Y)	-0.00413	-0.00451	-0.00449
	(!A1 * B2 * !C1 * Y)	0.00709	0.00715	0.00711
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00422	-0.00457	-0.00454
	(!A1 * B1 * !B2 * !C1 * Y)	0.00710	0.00715	0.00711
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00437	-0.00466	-0.00463
	(!A1 * !B1 * !B2 * C1 * Y)	0.00711	0.00716	0.00712
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00439	-0.00466	-0.00462
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00711	0.00716	0.00712

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)**	0.00174	0.00151	0.00151
	(A2 * B2 * C1 * !Y)	-0.00149	-0.00172	-0.00173
	(A2 * !B2 * !C1 * Y)	0.00131	0.00131	0.00131
	(A2 * !B2 * !C1 * Y)	-0.00190	-0.00190	-0.00189
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00137	0.00137	0.00137
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00184	-0.00187	-0.00186
	(A1 * !A2 * B2 * C1 * !Y)	0.00174	0.00151	0.00151
	(A1 * !A2 * B2 * C1 * !Y)	-0.00149	-0.00172	-0.00173
	(A1 * !A2 * !B2 * !C1 * Y)	0.00131	0.00131	0.00131
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00190	-0.00190	-0.00189
	(!A1 * !A2 * B2 * C1 * Y)	0.00065	0.00065	0.00065
	(!A1 * !A2 * B2 * C1 * Y)	-0.00184	-0.00187	-0.00187
	(!A1 * !A2 * B2 * !C1 * Y)	0.00084	0.00084	0.00084
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00185	-0.00187	-0.00187
	(!A1 * !A2 * !B2 * C1 * Y)	0.00069	0.00069	0.00070
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00189	-0.00189	-0.00187
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00089	0.00090	0.00089
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00190	-0.00191	-0.00190

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00343	0.00297	0.00295
	(A2 * B2 * C1 * !Y)	-0.00292	-0.00343	-0.00343
	(A2 * !B2 * !C1 * Y)	0.00251	0.00254	0.00252
	(A2 * !B2 * !C1 * Y)	-0.00374	-0.00377	-0.00375
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00268	0.00268	0.00268
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00364	-0.00371	-0.00369
	(A1 * !A2 * B2 * C1 * !Y)	0.00343	0.00297	0.00295
	(A1 * !A2 * B2 * C1 * !Y)	-0.00292	-0.00343	-0.00343
	(A1 * !A2 * !B2 * !C1 * Y)	0.00252	0.00253	0.00252
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00376	-0.00377	-0.00375
	(!A1 * !A2 * B2 * C1 * Y)	0.00120	0.00119	0.00119
	(!A1 * !A2 * B2 * C1 * Y)	-0.00364	-0.00371	-0.00372
	(!A1 * !A2 * B2 * !C1 * Y)	0.00155	0.00155	0.00155
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00365	-0.00371	-0.00371
	(!A1 * !A2 * !B2 * C1 * Y)	0.00126	0.00128	0.00128
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00374	-0.00377	-0.00371
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00164	0.00166	0.00165
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00376	-0.00378	-0.00376

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00655	0.00559	0.00554
	(A2 * B2 * C1 * !Y)	-0.00579	-0.00681	-0.00682
	(A2 * !B2 * !C1 * Y)	0.00486	0.00491	0.00488
	(A2 * !B2 * !C1 * Y)	-0.00727	-0.00730	-0.00727
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00520	0.00521	0.00519
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00707	-0.00719	-0.00715
	(A1 * !A2 * B2 * C1 * !Y)	0.00655	0.00559	0.00554
	(A1 * !A2 * B2 * C1 * !Y)	-0.00579	-0.00681	-0.00683
	(A1 * !A2 * !B2 * !C1 * Y)	0.00485	0.00491	0.00487
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00726	-0.00731	-0.00727
	(!A1 * !A2 * B2 * C1 * Y)	0.00224	0.00224	0.00223
	(!A1 * !A2 * B2 * C1 * Y)	-0.00707	-0.00720	-0.00719
	(!A1 * !A2 * B2 * !C1 * Y)	0.00291	0.00290	0.00289
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00707	-0.00720	-0.00717
	(!A1 * !A2 * !B2 * C1 * Y)	0.00238	0.00238	0.00239
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00727	-0.00726	-0.00720
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00309	0.00311	0.00308
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00731	-0.00734	-0.00730

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)**	-0.00150	-0.00150	-0.00150
	(A2 * B2 * C1 * !Y)	0.00173	0.00174	0.00173
	(A2 * !B2 * !C1 * Y)	-0.00123	-0.00131	-0.00131
	(A2 * !B2 * !C1 * Y)	0.00193	0.00192	0.00190
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00137	-0.00137	-0.00137
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00186	0.00187	0.00186
	(A1 * !A2 * B2 * C1 * !Y)	-0.00150	-0.00150	-0.00149
	(A1 * !A2 * B2 * C1 * !Y)	0.00173	0.00175	0.00173
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00122	-0.00131	-0.00131
	(A1 * !A2 * !B2 * !C1 * Y)	0.00193	0.00192	0.00190
	(!A1 * !A2 * B2 * C1 * Y)	-0.00063	-0.00064	-0.00064
	(!A1 * !A2 * B2 * C1 * Y)	0.00189	0.00191	0.00187
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00084	-0.00084	-0.00084
	(!A1 * !A2 * B2 * !C1 * Y)	0.00190	0.00190	0.00187
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00064	-0.00064	-0.00065
	(!A1 * !A2 * !B2 * C1 * Y)	0.00194	0.00194	0.00191
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00195	0.00195	0.00191

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00294	-0.00294	-0.00293
	(A2 * B2 * C1 * !Y)	0.00344	0.00345	0.00343
	(A2 * !B2 * !C1 * Y)	-0.00233	-0.00254	-0.00252
	(A2 * !B2 * !C1 * Y)	0.00387	0.00381	0.00377
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00268	-0.00268	-0.00267
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00370	0.00373	0.00369
	(A1 * !A2 * B2 * C1 * !Y)	-0.00294	-0.00295	-0.00293
	(A1 * !A2 * B2 * C1 * !Y)	0.00344	0.00346	0.00343
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00231	-0.00253	-0.00252
	(A1 * !A2 * !B2 * !C1 * Y)	0.00388	0.00381	0.00377
	(!A1 * !A2 * B2 * C1 * Y)	-0.00114	-0.00115	-0.00118
	(!A1 * !A2 * B2 * C1 * Y)	0.00378	0.00381	0.00372
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00155	-0.00155	-0.00155
	(!A1 * !A2 * B2 * !C1 * Y)	0.00378	0.00379	0.00371
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00116	-0.00115	-0.00119
	(!A1 * !A2 * !B2 * C1 * Y)	0.00390	0.00390	0.00380
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00164	-0.00166	-0.00165
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00391	0.00390	0.00379

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00550	-0.00552	-0.00550
	(A2 * B2 * C1 * !Y)	0.00678	0.00685	0.00682
	(A2 * !B2 * !C1 * Y)	-0.00445	-0.00491	-0.00488
	(A2 * !B2 * !C1 * Y)	0.00749	0.00730	0.00730
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00517	-0.00520	-0.00518
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00712	0.00721	0.00715
	(A1 * !A2 * B2 * C1 * !Y)	-0.00550	-0.00553	-0.00550
	(A1 * !A2 * B2 * C1 * !Y)	0.00679	0.00686	0.00683
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00440	-0.00491	-0.00487
	(A1 * !A2 * !B2 * !C1 * Y)	0.00752	0.00733	0.00730
	(!A1 * !A2 * B2 * C1 * Y)	-0.00213	-0.00215	-0.00220
	(!A1 * !A2 * B2 * C1 * Y)	0.00731	0.00737	0.00719
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00291	-0.00290	-0.00289
	(!A1 * !A2 * B2 * !C1 * Y)	0.00732	0.00735	0.00717
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00214	-0.00218	-0.00224
	(!A1 * !A2 * !B2 * C1 * Y)	0.00748	0.00756	0.00736
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00309	-0.00311	-0.00308
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00762	0.00768	0.00737

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)**	0.00150	0.00150	0.00149
	(A2 * B1 * C1 * !Y)	-0.00086	-0.00085	-0.00084
	(A2 * B1 * !C1 * Y)	0.00130	0.00132	0.00131
	(A2 * B1 * !C1 * Y)	-0.00173	-0.00176	-0.00175
	(A2 * !B1 * !C1 * Y)	0.00124	0.00124	0.00125
	(A2 * !B1 * !C1 * Y)	-0.00179	-0.00179	-0.00179
	(A1 * !A2 * B1 * C1 * !Y)	0.00150	0.00150	0.00149
	(A1 * !A2 * B1 * C1 * !Y)	-0.00086	-0.00085	-0.00084
	(A1 * !A2 * B1 * !C1 * Y)	0.00131	0.00132	0.00131
	(A1 * !A2 * B1 * !C1 * Y)	-0.00174	-0.00176	-0.00175
	(A1 * !A2 * !B1 * !C1 * Y)	0.00124	0.00125	0.00125
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00179	-0.00179	-0.00179
	(!A1 * !A2 * B1 * C1 * Y)	0.00061	0.00060	0.00060
	(!A1 * !A2 * B1 * C1 * Y)	-0.00175	-0.00178	-0.00176
	(!A1 * !A2 * B1 * !C1 * Y)	0.00078	0.00079	0.00079
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00174	-0.00178	-0.00176
	(!A1 * !A2 * !B1 * C1 * Y)	0.00064	0.00063	0.00064
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00178	-0.00178	-0.00177
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00179	-0.00181	-0.00180

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00275	0.00278	0.00276
	(A2 * B1 * C1 * !Y)	-0.00166	-0.00168	-0.00167
	(A2 * B1 * !C1 * Y)	0.00249	0.00253	0.00250
	(A2 * B1 * !C1 * Y)	-0.00332	-0.00340	-0.00338
	(A2 * !B1 * !C1 * Y)	0.00236	0.00238	0.00237
	(A2 * !B1 * !C1 * Y)	-0.00345	-0.00347	-0.00345
	(A1 * !A2 * B1 * C1 * !Y)	0.00276	0.00278	0.00276
	(A1 * !A2 * B1 * C1 * !Y)	-0.00166	-0.00168	-0.00166
	(A1 * !A2 * B1 * !C1 * Y)	0.00250	0.00253	0.00250
	(A1 * !A2 * B1 * !C1 * Y)	-0.00334	-0.00339	-0.00338
	(A1 * !A2 * !B1 * !C1 * Y)	0.00235	0.00237	0.00236
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00345	-0.00346	-0.00345
	(!A1 * !A2 * B1 * C1 * Y)	0.00106	0.00107	0.00107
	(!A1 * !A2 * B1 * C1 * Y)	-0.00332	-0.00339	-0.00338
	(!A1 * !A2 * B1 * !C1 * Y)	0.00143	0.00144	0.00143
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00334	-0.00343	-0.00339
	(!A1 * !A2 * !B1 * C1 * Y)	0.00114	0.00115	0.00116
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00342	-0.00344	-0.00341
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00152	0.00152	0.00152
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00346	-0.00346	-0.00346

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00560	0.00566	0.00563
	(A2 * B1 * C1 * !Y)	-0.00331	-0.00335	-0.00333
	(A2 * B1 * !C1 * Y)	0.00510	0.00512	0.00507
	(A2 * B1 * !C1 * Y)	-0.00677	-0.00684	-0.00679
	(A2 * !B1 * !C1 * Y)	0.00478	0.00480	0.00477
	(A2 * !B1 * !C1 * Y)	-0.00698	-0.00699	-0.00695
	(A1 * !A2 * B1 * C1 * !Y)	0.00566	0.00566	0.00563
	(A1 * !A2 * B1 * C1 * !Y)	-0.00338	-0.00336	-0.00333
	(A1 * !A2 * B1 * !C1 * Y)	0.00505	0.00512	0.00507
	(A1 * !A2 * B1 * !C1 * Y)	-0.00670	-0.00683	-0.00679
	(A1 * !A2 * !B1 * !C1 * Y)	0.00476	0.00480	0.00477
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00696	-0.00699	-0.00695
	(!A1 * !A2 * B1 * C1 * Y)	0.00218	0.00217	0.00215
	(!A1 * !A2 * B1 * C1 * Y)	-0.00677	-0.00689	-0.00681
	(!A1 * !A2 * B1 * !C1 * Y)	0.00281	0.00284	0.00282
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00670	-0.00690	-0.00683
	(!A1 * !A2 * !B1 * C1 * Y)	0.00228	0.00230	0.00231
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00691	-0.00695	-0.00688
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00299	0.00299	0.00300
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00697	-0.00697	-0.00697

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)**	-0.00145	-0.00145	-0.00149
	(A2 * B1 * C1 * !Y)	0.00089	0.00089	0.00085
	(A2 * B1 * !C1 * Y)	-0.00130	-0.00131	-0.00130
	(A2 * B1 * !C1 * Y)	0.00175	0.00176	0.00175
	(A2 * !B1 * !C1 * Y)	-0.00118	-0.00124	-0.00125
	(A2 * !B1 * !C1 * Y)	0.00182	0.00181	0.00180
	(A1 * !A2 * B1 * C1 * !Y)	-0.00145	-0.00145	-0.00149
	(A1 * !A2 * B1 * C1 * !Y)	0.00089	0.00089	0.00086
	(A1 * !A2 * B1 * !C1 * Y)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * B1 * !C1 * Y)	0.00175	0.00176	0.00175
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00116	-0.00125	-0.00125
	(A1 * !A2 * !B1 * !C1 * Y)	0.00182	0.00181	0.00180
	(!A1 * !A2 * B1 * C1 * Y)	-0.00058	-0.00059	-0.00059
	(!A1 * !A2 * B1 * C1 * Y)	0.00178	0.00179	0.00176
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00078	-0.00079	-0.00079
	(!A1 * !A2 * B1 * !C1 * Y)	0.00178	0.00179	0.00176
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00059	-0.00059	-0.00060
	(!A1 * !A2 * !B1 * C1 * Y)	0.00183	0.00183	0.00181
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00083	-0.00084	-0.00083
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00184	0.00185	0.00181

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00265	-0.00266	-0.00275
	(A2 * B1 * C1 * !Y)	0.00179	0.00179	0.00170
	(A2 * B1 * !C1 * Y)	-0.00249	-0.00251	-0.00250
	(A2 * B1 * !C1 * Y)	0.00337	0.00340	0.00338
	(A2 * !B1 * !C1 * Y)	-0.00218	-0.00238	-0.00237
	(A2 * !B1 * !C1 * Y)	0.00354	0.00350	0.00347
	(A1 * !A2 * B1 * C1 * !Y)	-0.00264	-0.00266	-0.00275
	(A1 * !A2 * B1 * C1 * !Y)	0.00179	0.00179	0.00170
	(A1 * !A2 * B1 * !C1 * Y)	-0.00250	-0.00250	-0.00250
	(A1 * !A2 * B1 * !C1 * Y)	0.00338	0.00339	0.00338
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00216	-0.00237	-0.00236
	(A1 * !A2 * !B1 * !C1 * Y)	0.00355	0.00351	0.00347
	(!A1 * !A2 * B1 * C1 * Y)	-0.00104	-0.00104	-0.00106
	(!A1 * !A2 * B1 * C1 * Y)	0.00344	0.00342	0.00338
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * !A2 * B1 * !C1 * Y)	0.00344	0.00346	0.00339
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00106	-0.00106	-0.00108
	(!A1 * !A2 * !B1 * C1 * Y)	0.00355	0.00355	0.00349
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00152	-0.00152	-0.00152
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00357	0.00358	0.00349

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00541	-0.00544	-0.00561
	(A2 * B1 * C1 * !Y)	0.00357	0.00356	0.00339
	(A2 * B1 * !C1 * Y)	-0.00508	-0.00509	-0.00506
	(A2 * B1 * !C1 * Y)	0.00682	0.00684	0.00679
	(A2 * !B1 * !C1 * Y)	-0.00437	-0.00480	-0.00477
	(A2 * !B1 * !C1 * Y)	0.00718	0.00706	0.00698
	(A1 * !A2 * B1 * C1 * !Y)	-0.00539	-0.00544	-0.00561
	(A1 * !A2 * B1 * C1 * !Y)	0.00356	0.00357	0.00339
	(A1 * !A2 * B1 * !C1 * Y)	-0.00503	-0.00508	-0.00506
	(A1 * !A2 * B1 * !C1 * Y)	0.00675	0.00683	0.00679
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00430	-0.00480	-0.00477
	(A1 * !A2 * !B1 * !C1 * Y)	0.00719	0.00700	0.00698
	(!A1 * !A2 * B1 * C1 * Y)	-0.00207	-0.00207	-0.00213
	(!A1 * !A2 * B1 * C1 * Y)	0.00692	0.00692	0.00681
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00281	-0.00284	-0.00282
	(!A1 * !A2 * B1 * !C1 * Y)	0.00693	0.00700	0.00683
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00210	-0.00210	-0.00216
	(!A1 * !A2 * !B1 * C1 * Y)	0.00717	0.00719	0.00703
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00299	-0.00299	-0.00300
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00727	0.00725	0.00704

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)	0.00060	0.00060	0.00054
	(A2 * !B1 * !B2 * Y)	-0.00210	-0.00211	-0.00218
	(!A2 * !B1 * !B2 * Y)	0.00059	0.00060	0.00054
	(!A2 * !B1 * !B2 * Y)	-0.00209	-0.00211	-0.00218
	(!A1 * !A2 * B2 * Y)	0.00065	0.00065	0.00053
	(!A1 * !A2 * B2 * Y)	-0.00192	-0.00194	-0.00215
	(!A1 * !A2 * B1 * !B2 * Y)	0.00065	0.00065	0.00054
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00193	-0.00197	-0.00215
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00109	0.00108	0.00100
	(A2 * !B1 * !B2 * Y)	-0.00391	-0.00391	-0.00408
	(!A2 * !B1 * !B2 * Y)	0.00109	0.00108	0.00100
	(!A2 * !B1 * !B2 * Y)	-0.00391	-0.00392	-0.00408
	(!A1 * !A2 * B2 * Y)	0.00119	0.00118	0.00098
	(!A1 * !A2 * B2 * Y)	-0.00360	-0.00360	-0.00403
	(!A1 * !A2 * B1 * !B2 * Y)	0.00119	0.00119	0.00099
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00365	-0.00366	-0.00403
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00188	0.00187	0.00173
	(A2 * !B1 * !B2 * Y)	-0.00797	-0.00797	-0.00826
	(!A2 * !B1 * !B2 * Y)	0.00188	0.00188	0.00173
	(!A2 * !B1 * !B2 * Y)	-0.00797	-0.00798	-0.00826
	(!A1 * !A2 * B2 * Y)	0.00208	0.00206	0.00170
	(!A1 * !A2 * B2 * Y)	-0.00737	-0.00739	-0.00816
	(!A1 * !A2 * B1 * !B2 * Y)	0.00208	0.00207	0.00174
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00748	-0.00749	-0.00817

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)	-0.00052	-0.00053	-0.00052
	(A2 * !B1 * !B2 * Y)	0.00218	0.00222	0.00219
	(!A2 * !B1 * !B2 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * !B2 * Y)	0.00218	0.00220	0.00219
	(!A1 * !A2 * B2 * Y)	-0.00050	-0.00051	-0.00050
	(!A1 * !A2 * B2 * Y)	0.00218	0.00222	0.00219
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00051	-0.00051	-0.00051
	(!A1 * !A2 * B1 * !B2 * Y)	0.00218	0.00220	0.00219
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00095	-0.00097	-0.00096
	(A2 * !B1 * !B2 * Y)	0.00408	0.00416	0.00410
	(!A2 * !B1 * !B2 * Y)	-0.00095	-0.00096	-0.00096
	(!A2 * !B1 * !B2 * Y)	0.00408	0.00413	0.00410
	(!A1 * !A2 * B2 * Y)	-0.00092	-0.00092	-0.00092
	(!A1 * !A2 * B2 * Y)	0.00408	0.00410	0.00410
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A2 * B1 * !B2 * Y)	0.00408	0.00413	0.00410
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00166	-0.00169	-0.00166
	(A2 * !B1 * !B2 * Y)	0.00826	0.00841	0.00829
	(!A2 * !B1 * !B2 * Y)	-0.00166	-0.00167	-0.00166
	(!A2 * !B1 * !B2 * Y)	0.00827	0.00834	0.00829
	(!A1 * !A2 * B2 * Y)	-0.00160	-0.00163	-0.00159
	(!A1 * !A2 * B2 * Y)	0.00826	0.00842	0.00829
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00162	-0.00163	-0.00161
	(!A1 * !A2 * B1 * !B2 * Y)	0.00826	0.00834	0.00829

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00266	0.00264	0.00259	0.00276	0.00271	0.74361
sky130_fd_sc_hs__o221a_2	0.00283	0.00278	0.00278	0.00290	0.00284	1.48665
sky130_fd_sc_hs__o221a_4	0.00530	0.00482	0.00561	0.00484	0.00492	2.86127

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.10508	0.26382
sky130_fd_sc_hs__o221a_2	0.00000	0.13291	0.29909
sky130_fd_sc_hs__o221a_4	0.00000	0.26282	0.59338

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)	0.23186	0.96941	7.76303
	A2->X (RR)	0.21430	0.94540	7.69859
	B1->X (RR)	0.21866	0.98907	7.87369
	B2->X (RR)	0.20223	0.95516	7.78620
	C1->X (RR)	0.19872	0.97563	7.88577
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.22645	0.85340	7.72303
	A2->X (RR)	0.21050	0.83245	7.66794
	B1->X (RR)	0.21385	0.87750	7.84969
	B2->X (RR)	0.20203	0.85230	7.77985
	C1->X (RR)	0.19492	0.87132	7.87770
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.23977	0.78920	7.82827
	A2->X (RR)	0.22244	0.76775	7.77714
	B1->X (RR)	0.22874	0.81437	7.95567
	B2->X (RR)	0.21018	0.78087	7.86929
	C1->X (RR)	0.20447	0.80608	7.98612

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.31124	0.90951	4.87615
	A2->X (FF)	0.28800	0.90619	4.86723
	B1->X (FF)	0.26926	0.85113	4.70302
	B2->X (FF)	0.24779	0.84799	4.67837
	C1->X (FF)	0.12440	0.68985	4.32040
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.36837	0.95015	5.17922
	A2->X (FF)	0.34274	0.94567	5.19669
	B1->X (FF)	0.31599	0.88497	5.00429
	B2->X (FF)	0.29481	0.88707	5.01459
	C1->X (FF)	0.14256	0.70086	4.57329
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.32860	0.86330	5.06795
	A2->X (FF)	0.30128	0.85563	5.05902
	B1->X (FF)	0.29586	0.81966	4.92913
	B2->X (FF)	0.26721	0.81052	4.91350
	C1->X (FF)	0.13264	0.64402	4.52444

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01344	0.01325	0.01669
	A1	0.00585	0.00566	0.00922
	A2	0.01184	0.01176	0.01636
	A2	0.00511	0.00503	0.00977
	B1	0.01215	0.01205	0.01655
	B1	0.00581	0.00575	0.01032
	B2	0.01066	0.01046	0.01641
	B2	0.00498	0.00478	0.01085
	C1	0.01140	0.01135	0.01912
	C1	0.00587	0.00582	0.01368
sky130_fd_sc_hs__o221a_2	A1	0.01636	0.01638	0.01995
	A1	0.00820	0.00822	0.01208
	A2	0.01461	0.01479	0.01951
	A2	0.00735	0.00754	0.01253
	B1	0.01493	0.01501	0.01969
	B1	0.00818	0.00827	0.01319
	B2	0.01346	0.01348	0.01947
	B2	0.00744	0.00747	0.01372
	C1	0.01403	0.01414	0.02200
	C1	0.00720	0.00743	0.01644

sky130_fd_sc_hs__o221a_4	**A1**	0.03050	0.03072	0.03847
	A1	0.01559	0.01583	0.02407
	A2	0.02663	0.02689	0.03701
	A2	0.01384	0.01411	0.02475
	B1	0.02847	0.02868	0.03792
	B1	0.01559	0.01580	0.02533
	B2	0.02448	0.02466	0.03639
	B2	0.01390	0.01410	0.02626
	C1	0.02602	0.02640	0.04164
	C1	0.01559	0.01598	0.03150

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00485	0.00477	0.00990
	A1	0.01224	0.01219	0.01708
	A2	0.00484	0.00517	0.01308
	A2	0.01135	0.01166	0.01915
	B1	0.00411	0.00416	0.00976
	B1	0.01040	0.01047	0.01569
	B2	0.00397	0.00431	0.01242
	B2	0.00959	0.00994	0.01769
	C1	0.00300	0.00350	0.01313
	C1	0.00860	0.00902	0.01809

sky130_fd_sc_hs__o221a_2	**A1**	0.00700	0.00691	0.01232
	A1	0.01491	0.01489	0.02004
	A2	0.00714	0.00727	0.01552
	A2	0.01404	0.01425	0.02211
	B1	0.00606	0.00624	0.01226
	B1	0.01275	0.01293	0.01848
	B2	0.00597	0.00636	0.01498
	B2	0.01191	0.01235	0.02056
	C1	0.00484	0.00562	0.01561
	C1	0.01067	0.01141	0.02085
sky130_fd_sc_hs__o221a_4	**A1**	0.01292	0.01314	0.02350
	A1	0.02744	0.02780	0.03794
	A2	0.01328	0.01412	0.02998
	A2	0.02567	0.02660	0.04193
	B1	0.01124	0.01167	0.02270
	B1	0.02404	0.02457	0.03521
	B2	0.01172	0.01277	0.02858
	B2	0.02220	0.02322	0.03898
	C1	0.00963	0.01116	0.03012
	C1	0.02014	0.02165	0.03991

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)**	0.00151	0.00128	0.00126
	(A2 * B2 * C1 * X)	-0.00131	-0.00154	-0.00156
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00110	0.00110	0.00110
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00170	-0.00172	-0.00172
	(A2 * B1 * !B2 * C1 * X)	0.00151	0.00128	0.00126
	(A2 * B1 * !B2 * C1 * X)	-0.00131	-0.00154	-0.00156
	(A2 * !B1 * !B2 * !X)	0.00110	0.00109	0.00110
	(A2 * !B1 * !B2 * !X)	-0.00170	-0.00172	-0.00172
	(!A2 * B2 * !C1 * !X)	0.00100	0.00101	0.00100
	(!A2 * B2 * !C1 * !X)	-0.00174	-0.00175	-0.00174
	(!A2 * B1 * !B2 * !C1 * !X)	0.00102	0.00103	0.00102
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00174	-0.00175	-0.00174
	(!A2 * !B1 * !B2 * C1 * !X)	0.00102	0.00103	0.00102
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00175	-0.00175	-0.00174
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00102	0.00102	0.00102
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00175	-0.00174	-0.00175

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00170	0.00147	0.00147
	(A2 * B2 * C1 * X)	-0.00130	-0.00153	-0.00155
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00128	0.00128	0.00128
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00171	-0.00173	-0.00173
	(A2 * B1 * !B2 * C1 * X)	0.00170	0.00147	0.00147
	(A2 * B1 * !B2 * C1 * X)	-0.00130	-0.00153	-0.00155
	(A2 * !B1 * !B2 * !X)	0.00128	0.00128	0.00128
	(A2 * !B1 * !B2 * !X)	-0.00171	-0.00173	-0.00173
	(!A2 * B2 * !C1 * !X)	0.00117	0.00118	0.00117
	(!A2 * B2 * !C1 * !X)	-0.00175	-0.00176	-0.00175
	(!A2 * B1 * !B2 * !C1 * !X)	0.00118	0.00120	0.00118
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00175	-0.00176	-0.00175
	(!A2 * !B1 * !B2 * C1 * !X)	0.00120	0.00120	0.00120
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00175	-0.00176	-0.00175
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00120	0.00120	0.00120
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00175	-0.00175	-0.00175

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00313	0.00272	0.00267
	(A2 * B2 * C1 * X)	-0.00257	-0.00305	-0.00309
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00244	0.00246	0.00245
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00323	-0.00330	-0.00328
	(A2 * B1 * !B2 * C1 * X)	0.00313	0.00272	0.00267
	(A2 * B1 * !B2 * C1 * X)	-0.00257	-0.00305	-0.00309
	(A2 * !B1 * !B2 * !X)	0.00244	0.00246	0.00245
	(A2 * !B1 * !B2 * !X)	-0.00323	-0.00330	-0.00328
	(!A2 * B2 * !C1 * !X)	0.00226	0.00228	0.00227
	(!A2 * B2 * !C1 * !X)	-0.00333	-0.00335	-0.00334
	(!A2 * B1 * !B2 * !C1 * !X)	0.00228	0.00230	0.00229
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00334	-0.00335	-0.00334
	(!A2 * !B1 * !B2 * C1 * !X)	0.00231	0.00231	0.00231
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00334	-0.00334	-0.00334
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00231	0.00233	0.00231
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00334	-0.00335	-0.00334

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)**	-0.00124	-0.00125	-0.00125
	(A2 * B2 * C1 * X)	0.00155	0.00157	0.00156
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00172	0.00173	0.00172
	(A2 * B1 * !B2 * C1 * X)	-0.00124	-0.00125	-0.00125
	(A2 * B1 * !B2 * C1 * X)	0.00155	0.00157	0.00157
	(A2 * !B1 * !B2 * !X)	-0.00109	-0.00109	-0.00109
	(A2 * !B1 * !B2 * !X)	0.00172	0.00173	0.00172
	(!A2 * B2 * !C1 * !X)	-0.00093	-0.00101	-0.00100
	(!A2 * B2 * !C1 * !X)	0.00175	0.00176	0.00175
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00094	-0.00103	-0.00102
	(!A2 * B1 * !B2 * !C1 * !X)	0.00175	0.00176	0.00175
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00096	-0.00103	-0.00102
	(!A2 * !B1 * !B2 * C1 * !X)	0.00175	0.00176	0.00175
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00096	-0.00102	-0.00102
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00175	0.00176	0.00175

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00145	-0.00146	-0.00145
	(A2 * B2 * C1 * X)	0.00155	0.00156	0.00156
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00128	-0.00128	-0.00128
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00173	0.00174	0.00173
	(A2 * B1 * !B2 * C1 * X)	-0.00145	-0.00146	-0.00145
	(A2 * B1 * !B2 * C1 * X)	0.00155	0.00156	0.00156
	(A2 * !B1 * !B2 * !X)	-0.00128	-0.00128	-0.00128
	(A2 * !B1 * !B2 * !X)	0.00173	0.00174	0.00173
	(!A2 * B2 * !C1 * !X)	-0.00108	-0.00118	-0.00117
	(!A2 * B2 * !C1 * !X)	0.00175	0.00176	0.00176
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00120	-0.00118
	(!A2 * B1 * !B2 * !C1 * !X)	0.00176	0.00177	0.00176
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00113	-0.00120	-0.00120
	(!A2 * !B1 * !B2 * C1 * !X)	0.00176	0.00177	0.00176
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00114	-0.00120	-0.00120
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00176	0.00177	0.00176

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00264	-0.00265	-0.00264
	(A2 * B2 * C1 * X)	0.00307	0.00308	0.00309
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00243	-0.00245	-0.00244
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00326	0.00330	0.00328
	(A2 * B1 * !B2 * C1 * X)	-0.00264	-0.00265	-0.00263
	(A2 * B1 * !B2 * C1 * X)	0.00307	0.00308	0.00309
	(A2 * !B1 * !B2 * !X)	-0.00243	-0.00245	-0.00244
	(A2 * !B1 * !B2 * !X)	0.00326	0.00330	0.00328
	(!A2 * B2 * !C1 * !X)	-0.00211	-0.00228	-0.00227
	(!A2 * B2 * !C1 * !X)	0.00336	0.00336	0.00335
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00215	-0.00230	-0.00229
	(!A2 * B1 * !B2 * !C1 * !X)	0.00336	0.00336	0.00335
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00220	-0.00231	-0.00231
	(!A2 * !B1 * !B2 * C1 * !X)	0.00336	0.00336	0.00335
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00220	-0.00233	-0.00231
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00336	0.00336	0.00335

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)**	0.00131	0.00130	0.00130
	(A1 * B2 * C1 * X)	-0.00079	-0.00078	-0.00078
	(A1 * B2 * !C1 * !X)	0.00113	0.00114	0.00112
	(A1 * B2 * !C1 * !X)	-0.00159	-0.00160	-0.00160
	(A1 * B1 * !B2 * C1 * X)	0.00131	0.00130	0.00130
	(A1 * B1 * !B2 * C1 * X)	-0.00079	-0.00078	-0.00078
	(A1 * B1 * !B2 * !C1 * !X)	0.00112	0.00114	0.00112
	(A1 * B1 * !B2 * !C1 * !X)	-0.00158	-0.00160	-0.00160
	(A1 * !B1 * !B2 * C1 * !X)	0.00114	0.00114	0.00112
	(A1 * !B1 * !B2 * C1 * !X)	-0.00159	-0.00160	-0.00159
	(A1 * !B1 * !B2 * !C1 * !X)	0.00113	0.00113	0.00112
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00159	-0.00161	-0.00160
	(!A1 * B2 * !C1 * !X)	0.00102	0.00103	0.00103
	(!A1 * B2 * !C1 * !X)	-0.00163	-0.00163	-0.00163
	(!A1 * B1 * !B2 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00163	-0.00163	-0.00163
	(!A1 * !B1 * !B2 * C1 * !X)	0.00104	0.00105	0.00104
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00163	-0.00164	-0.00163
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00104	0.00104	0.00104
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00163	-0.00163	-0.00163

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00149	0.00148	0.00148
	(A1 * B2 * C1 * X)	-0.00078	-0.00077	-0.00077
	(A1 * B2 * !C1 * !X)	0.00131	0.00132	0.00130
	(A1 * B2 * !C1 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * B1 * !B2 * C1 * X)	0.00149	0.00148	0.00148
	(A1 * B1 * !B2 * C1 * X)	-0.00078	-0.00077	-0.00077
	(A1 * B1 * !B2 * !C1 * !X)	0.00131	0.00131	0.00130
	(A1 * B1 * !B2 * !C1 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * !B1 * !B2 * C1 * !X)	0.00132	0.00131	0.00130
	(A1 * !B1 * !B2 * C1 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * !B1 * !B2 * !C1 * !X)	0.00131	0.00131	0.00130
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00158	-0.00160	-0.00159
	(!A1 * B2 * !C1 * !X)	0.00118	0.00119	0.00118
	(!A1 * B2 * !C1 * !X)	-0.00162	-0.00162	-0.00162
	(!A1 * B1 * !B2 * !C1 * !X)	0.00120	0.00120	0.00120
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00162	-0.00162	-0.00162
	(!A1 * !B1 * !B2 * C1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00162	-0.00162	-0.00162
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00162	-0.00162	-0.00162

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00239	0.00240	0.00240
	(A1 * B2 * C1 * X)	-0.00154	-0.00154	-0.00154
	(A1 * B2 * !C1 * !X)	0.00210	0.00213	0.00210
	(A1 * B2 * !C1 * !X)	-0.00308	-0.00312	-0.00312
	(A1 * B1 * !B2 * C1 * X)	0.00239	0.00240	0.00240
	(A1 * B1 * !B2 * C1 * X)	-0.00153	-0.00154	-0.00154
	(A1 * B1 * !B2 * !C1 * !X)	0.00210	0.00212	0.00210
	(A1 * B1 * !B2 * !C1 * !X)	-0.00308	-0.00312	-0.00312
	(A1 * !B1 * !B2 * C1 * !X)	0.00210	0.00213	0.00210
	(A1 * !B1 * !B2 * C1 * !X)	-0.00308	-0.00313	-0.00311
	(A1 * !B1 * !B2 * !C1 * !X)	0.00210	0.00212	0.00210
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00308	-0.00314	-0.00312
	(!A1 * B2 * !C1 * !X)	0.00190	0.00191	0.00191
	(!A1 * B2 * !C1 * !X)	-0.00319	-0.00319	-0.00319
	(!A1 * B1 * !B2 * !C1 * !X)	0.00193	0.00195	0.00193
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00319	-0.00320	-0.00319
	(!A1 * !B1 * !B2 * C1 * !X)	0.00195	0.00196	0.00195
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00319	-0.00319	-0.00319
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00196	0.00197	0.00195
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00320	-0.00321	-0.00319

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)**	-0.00125	-0.00125	-0.00129
	(A1 * B2 * C1 * X)	0.00082	0.00082	0.00079
	(A1 * B2 * !C1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * B2 * !C1 * !X)	0.00159	0.00160	0.00160
	(A1 * B1 * !B2 * C1 * X)	-0.00125	-0.00125	-0.00129
	(A1 * B1 * !B2 * C1 * X)	0.00082	0.00082	0.00079
	(A1 * B1 * !B2 * !C1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * B1 * !B2 * !C1 * !X)	0.00159	0.00160	0.00160
	(A1 * !B1 * !B2 * C1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * !B2 * C1 * !X)	0.00159	0.00160	0.00159
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * !B2 * !C1 * !X)	0.00160	0.00161	0.00160
	(!A1 * B2 * !C1 * !X)	-0.00095	-0.00103	-0.00103
	(!A1 * B2 * !C1 * !X)	0.00164	0.00164	0.00163
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00104	-0.00103
	(!A1 * B1 * !B2 * !C1 * !X)	0.00163	0.00164	0.00163
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00098	-0.00105	-0.00104
	(!A1 * !B1 * !B2 * C1 * !X)	0.00163	0.00164	0.00163
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00098	-0.00104	-0.00104
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00163	0.00165	0.00163

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00142	-0.00143	-0.00147
	(A1 * B2 * C1 * X)	0.00082	0.00082	0.00079
	(A1 * B2 * !C1 * !X)	-0.00129	-0.00131	-0.00130
	(A1 * B2 * !C1 * !X)	0.00158	0.00160	0.00159
	(A1 * B1 * !B2 * C1 * X)	-0.00142	-0.00143	-0.00147
	(A1 * B1 * !B2 * C1 * X)	0.00083	0.00082	0.00079
	(A1 * B1 * !B2 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * !B2 * !C1 * !X)	0.00159	0.00160	0.00159
	(A1 * !B1 * !B2 * C1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * !B2 * C1 * !X)	0.00158	0.00160	0.00159
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * !B2 * !C1 * !X)	0.00159	0.00160	0.00159
	(!A1 * B2 * !C1 * !X)	-0.00109	-0.00119	-0.00118
	(!A1 * B2 * !C1 * !X)	0.00163	0.00163	0.00162
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00111	-0.00120	-0.00120
	(!A1 * B1 * !B2 * !C1 * !X)	0.00162	0.00163	0.00162
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00115	-0.00122	-0.00121
	(!A1 * !B1 * !B2 * C1 * !X)	0.00162	0.00163	0.00162
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00115	-0.00122	-0.00121
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00162	0.00163	0.00162

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00228	-0.00229	-0.00238
	(A1 * B2 * C1 * X)	0.00165	0.00165	0.00157
	(A1 * B2 * !C1 * !X)	-0.00209	-0.00211	-0.00210
	(A1 * B2 * !C1 * !X)	0.00310	0.00312	0.00312
	(A1 * B1 * !B2 * C1 * X)	-0.00228	-0.00229	-0.00238
	(A1 * B1 * !B2 * C1 * X)	0.00166	0.00165	0.00157
	(A1 * B1 * !B2 * !C1 * !X)	-0.00209	-0.00210	-0.00210
	(A1 * B1 * !B2 * !C1 * !X)	0.00311	0.00312	0.00312
	(A1 * !B1 * !B2 * C1 * !X)	-0.00210	-0.00211	-0.00210
	(A1 * !B1 * !B2 * C1 * !X)	0.00311	0.00313	0.00311
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00208	-0.00211	-0.00210
	(A1 * !B1 * !B2 * !C1 * !X)	0.00310	0.00314	0.00312
	(!A1 * B2 * !C1 * !X)	-0.00173	-0.00191	-0.00191
	(!A1 * B2 * !C1 * !X)	0.00319	0.00321	0.00320
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00178	-0.00195	-0.00193
	(!A1 * B1 * !B2 * !C1 * !X)	0.00320	0.00321	0.00320
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00184	-0.00196	-0.00195
	(!A1 * !B1 * !B2 * C1 * !X)	0.00320	0.00322	0.00320
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00185	-0.00197	-0.00195
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00321	0.00322	0.00320

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)**	0.00141	0.00121	0.00118
	(A2 * B2 * C1 * X)	-0.00134	-0.00158	-0.00159
	(A2 * !B2 * !C1 * !X)	0.00107	0.00107	0.00107
	(A2 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00112	0.00113	0.00112
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00161	-0.00165	-0.00164
	(A1 * !A2 * B2 * C1 * X)	0.00141	0.00121	0.00118
	(A1 * !A2 * B2 * C1 * X)	-0.00134	-0.00158	-0.00159
	(A1 * !A2 * !B2 * !C1 * !X)	0.00107	0.00107	0.00107
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !A2 * B2 * C1 * !X)	0.00051	0.00052	0.00051
	(!A1 * !A2 * B2 * C1 * !X)	-0.00161	-0.00166	-0.00165
	(!A1 * !A2 * B2 * !C1 * !X)	0.00066	0.00067	0.00066
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00162	-0.00166	-0.00164
	(!A1 * !A2 * !B2 * C1 * !X)	0.00053	0.00053	0.00055
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00166	-0.00166	-0.00164
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00071	0.00071	0.00070
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00167	-0.00167	-0.00166

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00163	0.00142	0.00139
	(A2 * B2 * C1 * X)	-0.00131	-0.00155	-0.00156
	(A2 * !B2 * !C1 * !X)	0.00123	0.00123	0.00123
	(A2 * !B2 * !C1 * !X)	-0.00168	-0.00168	-0.00167
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00129	0.00131	0.00129
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00163	-0.00166	-0.00165
	(A1 * !A2 * B2 * C1 * X)	0.00163	0.00142	0.00139
	(A1 * !A2 * B2 * C1 * X)	-0.00131	-0.00155	-0.00156
	(A1 * !A2 * !B2 * !C1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A2 * B2 * C1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A2 * B2 * C1 * !X)	-0.00164	-0.00167	-0.00166
	(!A1 * !A2 * B2 * !C1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00164	-0.00167	-0.00166
	(!A1 * !A2 * !B2 * C1 * !X)	0.00060	0.00060	0.00061
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00167	-0.00167	-0.00165
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00080	0.00080	0.00079
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00169	-0.00170	-0.00169

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00341	0.00299	0.00294
	(A2 * B2 * C1 * X)	-0.00259	-0.00307	-0.00310
	(A2 * !B2 * !C1 * !X)	0.00263	0.00265	0.00263
	(A2 * !B2 * !C1 * !X)	-0.00333	-0.00334	-0.00333
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00274	0.00277	0.00275
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00322	-0.00328	-0.00327
	(A1 * !A2 * B2 * C1 * X)	0.00341	0.00299	0.00294
	(A1 * !A2 * B2 * C1 * X)	-0.00259	-0.00307	-0.00310
	(A1 * !A2 * !B2 * !C1 * !X)	0.00263	0.00266	0.00263
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00333	-0.00334	-0.00333
	(!A1 * !A2 * B2 * C1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A2 * B2 * C1 * !X)	-0.00324	-0.00331	-0.00331
	(!A1 * !A2 * B2 * !C1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00324	-0.00332	-0.00330
	(!A1 * !A2 * !B2 * C1 * !X)	0.00147	0.00148	0.00151
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00332	-0.00333	-0.00330
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00181	0.00181	0.00181
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00335	-0.00336	-0.00335

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)**	-0.00117	-0.00118	-0.00117
	(A2 * B2 * C1 * X)	0.00157	0.00160	0.00159
	(A2 * !B2 * !C1 * !X)	-0.00100	-0.00107	-0.00107
	(A2 * !B2 * !C1 * !X)	0.00169	0.00168	0.00167
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00165	0.00165	0.00164
	(A1 * !A2 * B2 * C1 * X)	-0.00117	-0.00118	-0.00117
	(A1 * !A2 * B2 * C1 * X)	0.00159	0.00160	0.00159
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00099	-0.00107	-0.00107
	(A1 * !A2 * !B2 * !C1 * !X)	0.00169	0.00169	0.00167
	(!A1 * !A2 * B2 * C1 * !X)	-0.00049	-0.00050	-0.00051
	(!A1 * !A2 * B2 * C1 * !X)	0.00167	0.00168	0.00165
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(!A1 * !A2 * B2 * !C1 * !X)	0.00166	0.00167	0.00164
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00050	-0.00051	-0.00051
	(!A1 * !A2 * !B2 * C1 * !X)	0.00169	0.00170	0.00167
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00071	-0.00071	-0.00070
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00172	0.00171	0.00168

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00137	-0.00138	-0.00137
	(A2 * B2 * C1 * X)	0.00155	0.00157	0.00156
	(A2 * !B2 * !C1 * !X)	-0.00114	-0.00123	-0.00123
	(A2 * !B2 * !C1 * !X)	0.00171	0.00170	0.00168
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00128	-0.00129	-0.00129
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00163	0.00166	0.00165
	(A1 * !A2 * B2 * C1 * X)	-0.00138	-0.00138	-0.00137
	(A1 * !A2 * B2 * C1 * X)	0.00157	0.00157	0.00156
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00113	-0.00123	-0.00122
	(A1 * !A2 * !B2 * !C1 * !X)	0.00172	0.00170	0.00168
	(!A1 * !A2 * B2 * C1 * !X)	-0.00055	-0.00056	-0.00057
	(!A1 * !A2 * B2 * C1 * !X)	0.00168	0.00170	0.00166
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * !A2 * B2 * !C1 * !X)	0.00168	0.00170	0.00166
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00056	-0.00057	-0.00058
	(!A1 * !A2 * !B2 * C1 * !X)	0.00172	0.00172	0.00169
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00080	-0.00080	-0.00079
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00176	0.00175	0.00170

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00292	-0.00293	-0.00292
	(A2 * B2 * C1 * X)	0.00307	0.00310	0.00310
	(A2 * !B2 * !C1 * !X)	-0.00249	-0.00265	-0.00263
	(A2 * !B2 * !C1 * !X)	0.00340	0.00336	0.00334
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00273	-0.00275	-0.00274
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00325	0.00328	0.00327
	(A1 * !A2 * B2 * C1 * X)	-0.00292	-0.00293	-0.00291
	(A1 * !A2 * B2 * C1 * X)	0.00307	0.00311	0.00310
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00247	-0.00265	-0.00263
	(A1 * !A2 * !B2 * !C1 * !X)	0.00342	0.00336	0.00334
	(!A1 * !A2 * B2 * C1 * !X)	-0.00138	-0.00139	-0.00142
	(!A1 * !A2 * B2 * C1 * !X)	0.00337	0.00339	0.00331
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A2 * B2 * !C1 * !X)	0.00335	0.00338	0.00330
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00142	-0.00142	-0.00145
	(!A1 * !A2 * !B2 * C1 * !X)	0.00343	0.00342	0.00337
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00181	-0.00181	-0.00181
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00346	0.00349	0.00339

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)**	0.00146	0.00146	0.00145
	(A2 * B1 * C1 * X)	-0.00081	-0.00080	-0.00079
	(A2 * B1 * !C1 * !X)	0.00125	0.00126	0.00125
	(A2 * B1 * !C1 * !X)	-0.00163	-0.00165	-0.00164
	(A2 * !B1 * !C1 * !X)	0.00119	0.00119	0.00120
	(A2 * !B1 * !C1 * !X)	-0.00167	-0.00166	-0.00167
	(A1 * !A2 * B1 * C1 * X)	0.00145	0.00146	0.00145
	(A1 * !A2 * B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * B1 * !C1 * !X)	0.00124	0.00126	0.00125
	(A1 * !A2 * B1 * !C1 * !X)	-0.00162	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	0.00119	0.00119	0.00120
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00166	-0.00166	-0.00167
	(!A1 * !A2 * B1 * C1 * !X)	0.00060	0.00060	0.00059
	(!A1 * !A2 * B1 * C1 * !X)	-0.00164	-0.00165	-0.00165
	(!A1 * !A2 * B1 * !C1 * !X)	0.00075	0.00075	0.00074
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00163	-0.00166	-0.00165
	(!A1 * !A2 * !B1 * C1 * !X)	0.00061	0.00061	0.00063
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00167	-0.00166	-0.00165
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00079	0.00079
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00168	-0.00168	-0.00167

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00159	0.00159	0.00158
	(A2 * B1 * C1 * X)	-0.00079	-0.00077	-0.00077
	(A2 * B1 * !C1 * !X)	0.00138	0.00140	0.00139
	(A2 * B1 * !C1 * !X)	-0.00159	-0.00162	-0.00161
	(A2 * !B1 * !C1 * !X)	0.00132	0.00132	0.00132
	(A2 * !B1 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * B1 * C1 * X)	0.00158	0.00159	0.00158
	(A1 * !A2 * B1 * C1 * X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * B1 * !C1 * !X)	0.00138	0.00140	0.00139
	(A1 * !A2 * B1 * !C1 * !X)	-0.00159	-0.00162	-0.00161
	(A1 * !A2 * !B1 * !C1 * !X)	0.00131	0.00133	0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * B1 * C1 * !X)	0.00062	0.00063	0.00063
	(!A1 * !A2 * B1 * C1 * !X)	-0.00160	-0.00163	-0.00162
	(!A1 * !A2 * B1 * !C1 * !X)	0.00079	0.00080	0.00080
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00160	-0.00164	-0.00163
	(!A1 * !A2 * !B1 * C1 * !X)	0.00066	0.00065	0.00067
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00164	-0.00163	-0.00162
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00086	0.00085	0.00085
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00167	-0.00167	-0.00166

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00247	0.00248	0.00248
	(A2 * B1 * C1 * X)	-0.00155	-0.00155	-0.00154
	(A2 * B1 * !C1 * !X)	0.00214	0.00217	0.00215
	(A2 * B1 * !C1 * !X)	-0.00312	-0.00317	-0.00316
	(A2 * !B1 * !C1 * !X)	0.00204	0.00207	0.00205
	(A2 * !B1 * !C1 * !X)	-0.00324	-0.00325	-0.00323
	(A1 * !A2 * B1 * C1 * X)	0.00248	0.00249	0.00248
	(A1 * !A2 * B1 * C1 * X)	-0.00155	-0.00155	-0.00154
	(A1 * !A2 * B1 * !C1 * !X)	0.00214	0.00217	0.00215
	(A1 * !A2 * B1 * !C1 * !X)	-0.00313	-0.00318	-0.00316
	(A1 * !A2 * !B1 * !C1 * !X)	0.00204	0.00206	0.00205
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00323	-0.00325	-0.00323
	(!A1 * !A2 * B1 * C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * !A2 * B1 * C1 * !X)	-0.00314	-0.00321	-0.00318
	(!A1 * !A2 * B1 * !C1 * !X)	0.00119	0.00121	0.00120
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00315	-0.00322	-0.00319
	(!A1 * !A2 * !B1 * C1 * !X)	0.00094	0.00095	0.00098
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00322	-0.00323	-0.00320
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00127	0.00129	0.00127
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00325	-0.00328	-0.00326

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)**	-0.00140	-0.00141	-0.00145
	(A2 * B1 * C1 * X)	0.00085	0.00085	0.00081
	(A2 * B1 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(A2 * B1 * !C1 * !X)	0.00163	0.00165	0.00164
	(A2 * !B1 * !C1 * !X)	-0.00113	-0.00119	-0.00120
	(A2 * !B1 * !C1 * !X)	0.00170	0.00169	0.00167
	(A1 * !A2 * B1 * C1 * X)	-0.00140	-0.00141	-0.00145
	(A1 * !A2 * B1 * C1 * X)	0.00085	0.00085	0.00081
	(A1 * !A2 * B1 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * B1 * !C1 * !X)	0.00163	0.00165	0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00111	-0.00119	-0.00120
	(A1 * !A2 * !B1 * !C1 * !X)	0.00170	0.00169	0.00167
	(!A1 * !A2 * B1 * C1 * !X)	-0.00057	-0.00058	-0.00059
	(!A1 * !A2 * B1 * C1 * !X)	0.00169	0.00170	0.00165
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00075	-0.00075	-0.00074
	(!A1 * !A2 * B1 * !C1 * !X)	0.00168	0.00168	0.00165
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00058	-0.00059	-0.00060
	(!A1 * !A2 * !B1 * C1 * !X)	0.00170	0.00171	0.00168
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00080	-0.00079	-0.00079
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00173	0.00173	0.00169

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00154	-0.00154	-0.00157
	(A2 * B1 * C1 * X)	0.00082	0.00082	0.00078
	(A2 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * !C1 * !X)	0.00160	0.00162	0.00161
	(A2 * !B1 * !C1 * !X)	-0.00123	-0.00132	-0.00132
	(A2 * !B1 * !C1 * !X)	0.00168	0.00166	0.00165
	(A1 * !A2 * B1 * C1 * X)	-0.00154	-0.00154	-0.00157
	(A1 * !A2 * B1 * C1 * X)	0.00082	0.00082	0.00079
	(A1 * !A2 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * B1 * !C1 * !X)	0.00161	0.00162	0.00161
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00122	-0.00133	-0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	0.00169	0.00167	0.00165
	(!A1 * !A2 * B1 * C1 * !X)	-0.00061	-0.00061	-0.00062
	(!A1 * !A2 * B1 * C1 * !X)	0.00167	0.00167	0.00162
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * !A2 * B1 * !C1 * !X)	0.00166	0.00167	0.00163
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00063	-0.00062	-0.00063
	(!A1 * !A2 * !B1 * C1 * !X)	0.00170	0.00169	0.00166
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00086	-0.00085	-0.00085
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00173	0.00172	0.00167

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00235	-0.00238	-0.00246
	(A2 * B1 * C1 * X)	0.00164	0.00166	0.00158
	(A2 * B1 * !C1 * !X)	-0.00214	-0.00216	-0.00214
	(A2 * B1 * !C1 * !X)	0.00317	0.00317	0.00316
	(A2 * !B1 * !C1 * !X)	-0.00192	-0.00207	-0.00205
	(A2 * !B1 * !C1 * !X)	0.00330	0.00328	0.00325
	(A1 * !A2 * B1 * C1 * X)	-0.00235	-0.00238	-0.00246
	(A1 * !A2 * B1 * C1 * X)	0.00164	0.00166	0.00158
	(A1 * !A2 * B1 * !C1 * !X)	-0.00214	-0.00216	-0.00214
	(A1 * !A2 * B1 * !C1 * !X)	0.00316	0.00318	0.00316
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00188	-0.00206	-0.00205
	(A1 * !A2 * !B1 * !C1 * !X)	0.00330	0.00328	0.00325
	(!A1 * !A2 * B1 * C1 * !X)	-0.00088	-0.00089	-0.00090
	(!A1 * !A2 * B1 * C1 * !X)	0.00324	0.00324	0.00318
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00119	-0.00121	-0.00120
	(!A1 * !A2 * B1 * !C1 * !X)	0.00324	0.00326	0.00319
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00091	-0.00090	-0.00091
	(!A1 * !A2 * !B1 * C1 * !X)	0.00331	0.00331	0.00327
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00127	-0.00129	-0.00127
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00334	0.00336	0.00328

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)	0.00052	0.00053	0.00048
	(A2 * !B1 * !B2 * !X)	-0.00189	-0.00190	-0.00196
	(!A2 * !B1 * !B2 * !X)	0.00053	0.00053	0.00048
	(!A2 * !B1 * !B2 * !X)	-0.00189	-0.00190	-0.00196
	(!A1 * !A2 * B2 * !X)	0.00054	0.00054	0.00045
	(!A1 * !A2 * B2 * !X)	-0.00176	-0.00178	-0.00194
	(!A1 * !A2 * B1 * !B2 * !X)	0.00054	0.00054	0.00045
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00178	-0.00180	-0.00195
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00061	0.00061	0.00056
	(A2 * !B1 * !B2 * !X)	-0.00190	-0.00191	-0.00198
	(!A2 * !B1 * !B2 * !X)	0.00061	0.00061	0.00056
	(!A2 * !B1 * !B2 * !X)	-0.00190	-0.00191	-0.00198
	(!A1 * !A2 * B2 * !X)	0.00064	0.00064	0.00054
	(!A1 * !A2 * B2 * !X)	-0.00175	-0.00176	-0.00195
	(!A1 * !A2 * B1 * !B2 * !X)	0.00064	0.00064	0.00055
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00177	-0.00179	-0.00195
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00090	0.00090	0.00080
	(A2 * !B1 * !B2 * !X)	-0.00359	-0.00361	-0.00373
	(!A2 * !B1 * !B2 * !X)	0.00090	0.00090	0.00080
	(!A2 * !B1 * !B2 * !X)	-0.00359	-0.00361	-0.00373
	(!A1 * !A2 * B2 * !X)	0.00093	0.00093	0.00076
	(!A1 * !A2 * B2 * !X)	-0.00334	-0.00336	-0.00368
	(!A1 * !A2 * B1 * !B2 * !X)	0.00094	0.00093	0.00077
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00339	-0.00341	-0.00369

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)	-0.00045	-0.00046	-0.00046
	(A2 * !B1 * !B2 * !X)	0.00196	0.00198	0.00197
	(!A2 * !B1 * !B2 * !X)	-0.00045	-0.00046	-0.00046
	(!A2 * !B1 * !B2 * !X)	0.00197	0.00198	0.00197
	(!A1 * !A2 * B2 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A2 * B2 * !X)	0.00199	0.00198	0.00197
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * !B2 * !X)	0.00197	0.00198	0.00197
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00053	-0.00054	-0.00054
	(A2 * !B1 * !B2 * !X)	0.00197	0.00199	0.00199
	(!A2 * !B1 * !B2 * !X)	-0.00053	-0.00054	-0.00054
	(!A2 * !B1 * !B2 * !X)	0.00197	0.00199	0.00198
	(!A1 * !A2 * B2 * !X)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * B2 * !X)	0.00198	0.00199	0.00198
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00053	-0.00053	-0.00052
	(!A1 * !A2 * B1 * !B2 * !X)	0.00198	0.00199	0.00198
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00076
	(A2 * !B1 * !B2 * !X)	0.00375	0.00376	0.00375
	(!A2 * !B1 * !B2 * !X)	-0.00076	-0.00077	-0.00076
	(!A2 * !B1 * !B2 * !X)	0.00373	0.00376	0.00375
	(!A1 * !A2 * B2 * !X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * B2 * !X)	0.00373	0.00376	0.00375
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !A2 * B1 * !B2 * !X)	0.00375	0.00376	0.00375

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00291	0.00288	0.00296	0.00303	0.36479
sky130_fd_sc_hs__o22ai_2	0.00550	0.00567	0.00565	0.00558	0.68109
sky130_fd_sc_hs__o22ai_4	0.01132	0.01083	0.01172	0.01104	1.23989

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22ai_1	0.00000	0.04708	0.07541
sky130_fd_sc_hs__o22ai_2	0.00000	0.09500	0.14843
sky130_fd_sc_hs__o22ai_4	0.00000	0.18276	0.29607

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)	0.19188	1.19268	10.63230
	A2->Y (FR)	0.16688	1.17490	10.89820
	B1->Y (FR)	0.12493	1.12317	10.56670
	B2->Y (FR)	0.10211	1.11317	10.83300
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.18719	1.04237	10.59300
	A2->Y (FR)	0.15651	1.02615	10.87130
	B1->Y (FR)	0.11707	0.96817	10.49460
	B2->Y (FR)	0.08353	0.95123	10.77190
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.17747	0.88942	10.11940
	A2->Y (FR)	0.14955	0.88775	10.49880
	B1->Y (FR)	0.11153	0.82733	10.13180
	B2->Y (FR)	0.08156	0.82271	10.46700

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.08099	0.59645	5.36592
	A2->Y (RF)	0.06880	0.57866	5.33307
	B1->Y (RF)	0.06586	0.63966	6.03631
	B2->Y (RF)	0.05472	0.61830	5.98147
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.08110	0.53725	5.34057
	A2->Y (RF)	0.06606	0.51527	5.29272
	B1->Y (RF)	0.06515	0.58151	6.06463
	B2->Y (RF)	0.04953	0.55070	5.97722
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.06178	0.44220	5.05747
	A2->Y (RF)	0.05066	0.41902	5.02165
	B1->Y (RF)	0.05914	0.50771	5.82325
	B2->Y (RF)	0.04852	0.49691	5.98402

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00173	0.00156	0.00258
	A1	0.00881	0.00867	0.00966
	A2	0.00180	0.00183	0.00374
	A2	0.00777	0.00783	0.00965
	B1	-0.00003	-0.00015	0.00091
	B1	0.00599	0.00588	0.00693
	B2	0.00000	0.00013	0.00205
	B2	0.00498	0.00512	0.00695
sky130_fd_sc_hs__o22ai_2	A1	0.00310	0.00277	0.00477
	A1	0.01720	0.01688	0.01887
	A2	0.00304	0.00292	0.00697
	A2	0.01519	0.01533	0.01896
	B1	-0.00035	-0.00056	0.00153
	B1	0.01170	0.01150	0.01357
	B2	-0.00049	-0.00015	0.00382
	B2	0.00945	0.00977	0.01358
sky130_fd_sc_hs__o22ai_4	A1	0.00481	0.00419	0.00895
	A1	0.03273	0.03209	0.03671
	A2	0.00481	0.00483	0.01360
	A2	0.02842	0.02837	0.03686
	B1	-0.00096	-0.00141	0.00351
	B1	0.02303	0.02255	0.02740
	B2	-0.00098	-0.00031	0.00841
	B2	0.01877	0.01940	0.02777

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00943	0.00928	0.01010
	A1	0.00209	0.00196	0.00278
	A2	0.00745	0.00738	0.00851
	A2	0.00118	0.00109	0.00192
	B1	0.00802	0.00793	0.00912
	B1	0.00211	0.00200	0.00313
	B2	0.00624	0.00622	0.00775
	B2	0.00132	0.00130	0.00237
sky130_fd_sc_hs__o22ai_2	A1	0.01938	0.01910	0.02115
	A1	0.00485	0.00447	0.00614
	A2	0.01518	0.01504	0.01697
	A2	0.00249	0.00229	0.00403
	B1	0.01665	0.01640	0.01869
	B1	0.00482	0.00452	0.00677
	B2	0.01216	0.01225	0.01478
	B2	0.00238	0.00241	0.00461
sky130_fd_sc_hs__o22ai_4	A1	0.03653	0.03576	0.04013
	A1	0.00776	0.00699	0.01076
	A2	0.02860	0.02809	0.03252
	A2	0.00398	0.00344	0.00738
	B1	0.03143	0.03079	0.03691
	B1	0.00787	0.00723	0.01210
	B2	0.02350	0.02350	0.02896
	B2	0.00405	0.00405	0.00890

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00165	0.00143	0.00143
	(A2 * B2 * !Y)	-0.00154	-0.00177	-0.00178
	(A2 * B1 * !B2 * !Y)	0.00165	0.00143	0.00143
	(A2 * B1 * !B2 * !Y)	-0.00154	-0.00177	-0.00178
	(A2 * !B1 * !B2 * Y)	0.00143	0.00142	0.00143
	(A2 * !B1 * !B2 * Y)	-0.00175	-0.00178	-0.00177
	(!A2 * !B1 * !B2 * Y)	0.00135	0.00136	0.00135
	(!A2 * !B1 * !B2 * Y)	-0.00180	-0.00181	-0.00180
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00314	0.00268	0.00265
	(A2 * B2 * !Y)	-0.00298	-0.00353	-0.00352
	(A2 * B1 * !B2 * !Y)	0.00314	0.00268	0.00265
	(A2 * B1 * !B2 * !Y)	-0.00298	-0.00352	-0.00352
	(A2 * !B1 * !B2 * Y)	0.00264	0.00266	0.00265
	(A2 * !B1 * !B2 * Y)	-0.00344	-0.00355	-0.00352
	(!A2 * !B1 * !B2 * Y)	0.00249	0.00252	0.00249
	(!A2 * !B1 * !B2 * Y)	-0.00360	-0.00361	-0.00359
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00638	0.00541	0.00533
	(A2 * B2 * !Y)	-0.00587	-0.00695	-0.00697
	(A2 * B1 * !B2 * !Y)	0.00638	0.00541	0.00533
	(A2 * B1 * !B2 * !Y)	-0.00587	-0.00695	-0.00697
	(A2 * !B1 * !B2 * Y)	0.00519	0.00522	0.00518
	(A2 * !B1 * !B2 * Y)	-0.00699	-0.00714	-0.00708
	(!A2 * !B1 * !B2 * Y)	0.00487	0.00488	0.00488
	(!A2 * !B1 * !B2 * Y)	-0.00724	-0.00724	-0.00724

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00142	-0.00142	-0.00142
	(A2 * B2 * !Y)	0.00178	0.00179	0.00178
	(A2 * B1 * !B2 * !Y)	-0.00142	-0.00142	-0.00142
	(A2 * B1 * !B2 * !Y)	0.00178	0.00179	0.00178
	(A2 * !B1 * !B2 * Y)	-0.00142	-0.00142	-0.00143
	(A2 * !B1 * !B2 * Y)	0.00177	0.00179	0.00177
	(!A2 * !B1 * !B2 * Y)	-0.00126	-0.00136	-0.00135
	(!A2 * !B1 * !B2 * Y)	0.00183	0.00182	0.00181
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00264	-0.00266	-0.00264
	(A2 * B2 * !Y)	0.00350	0.00355	0.00352
	(A2 * B1 * !B2 * !Y)	-0.00264	-0.00266	-0.00264
	(A2 * B1 * !B2 * !Y)	0.00351	0.00355	0.00352
	(A2 * !B1 * !B2 * Y)	-0.00264	-0.00266	-0.00264
	(A2 * !B1 * !B2 * Y)	0.00351	0.00356	0.00352
	(!A2 * !B1 * !B2 * Y)	-0.00233	-0.00252	-0.00249
	(!A2 * !B1 * !B2 * Y)	0.00365	0.00364	0.00361
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00530	-0.00532	-0.00528
	(A2 * B2 * !Y)	0.00696	0.00701	0.00697
	(A2 * B1 * !B2 * !Y)	-0.00530	-0.00532	-0.00528
	(A2 * B1 * !B2 * !Y)	0.00696	0.00701	0.00697
	(A2 * !B1 * !B2 * Y)	-0.00516	-0.00519	-0.00517
	(A2 * !B1 * !B2 * Y)	0.00706	0.00714	0.00708
	(!A2 * !B1 * !B2 * Y)	-0.00453	-0.00488	-0.00488
	(!A2 * !B1 * !B2 * Y)	0.00736	0.00735	0.00727

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00142	0.00142	0.00142
	(A1 * B2 * !Y)	-0.00086	-0.00086	-0.00086
	(A1 * B1 * !B2 * !Y)	0.00142	0.00142	0.00142
	(A1 * B1 * !B2 * !Y)	-0.00086	-0.00086	-0.00086
	(A1 * !B1 * !B2 * Y)	0.00131	0.00131	0.00130
	(A1 * !B1 * !B2 * Y)	-0.00169	-0.00171	-0.00170
	(!A1 * !B1 * !B2 * Y)	0.00122	0.00123	0.00122
	(!A1 * !B1 * !B2 * Y)	-0.00173	-0.00174	-0.00174
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00304	0.00304	0.00303
	(A1 * B2 * !Y)	-0.00171	-0.00171	-0.00170
	(A1 * B1 * !B2 * !Y)	0.00304	0.00305	0.00303
	(A1 * B1 * !B2 * !Y)	-0.00171	-0.00171	-0.00170
	(A1 * !B1 * !B2 * Y)	0.00266	0.00267	0.00264
	(A1 * !B1 * !B2 * Y)	-0.00350	-0.00354	-0.00353
	(!A1 * !B1 * !B2 * Y)	0.00248	0.00251	0.00249
	(!A1 * !B1 * !B2 * Y)	-0.00362	-0.00365	-0.00363
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00559	0.00561	0.00559
	(A1 * B2 * !Y)	-0.00332	-0.00333	-0.00331
	(A1 * B1 * !B2 * !Y)	0.00559	0.00562	0.00559
	(A1 * B1 * !B2 * !Y)	-0.00331	-0.00333	-0.00331
	(A1 * !B1 * !B2 * Y)	0.00507	0.00509	0.00510
	(A1 * !B1 * !B2 * Y)	-0.00660	-0.00670	-0.00669
	(!A1 * !B1 * !B2 * Y)	0.00481	0.00482	0.00478
	(!A1 * !B1 * !B2 * Y)	-0.00693	-0.00693	-0.00690

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00136	-0.00137	-0.00141
	(A1 * B2 * !Y)	0.00091	0.00091	0.00087
	(A1 * B1 * !B2 * !Y)	-0.00136	-0.00137	-0.00141
	(A1 * B1 * !B2 * !Y)	0.00091	0.00091	0.00087
	(A1 * !B1 * !B2 * Y)	-0.00130	-0.00130	-0.00130
	(A1 * !B1 * !B2 * Y)	0.00170	0.00171	0.00170
	(!A1 * !B1 * !B2 * Y)	-0.00115	-0.00123	-0.00122
	(!A1 * !B1 * !B2 * Y)	0.00176	0.00176	0.00174
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00287	-0.00289	-0.00302
	(A1 * B2 * !Y)	0.00185	0.00185	0.00174
	(A1 * B1 * !B2 * !Y)	-0.00287	-0.00289	-0.00302
	(A1 * B1 * !B2 * !Y)	0.00185	0.00185	0.00174
	(A1 * !B1 * !B2 * Y)	-0.00263	-0.00264	-0.00263
	(A1 * !B1 * !B2 * Y)	0.00352	0.00354	0.00353
	(!A1 * !B1 * !B2 * Y)	-0.00232	-0.00251	-0.00249
	(!A1 * !B1 * !B2 * Y)	0.00368	0.00367	0.00364
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00535	-0.00538	-0.00558
	(A1 * B2 * !Y)	0.00353	0.00353	0.00338
	(A1 * B1 * !B2 * !Y)	-0.00536	-0.00538	-0.00558
	(A1 * B1 * !B2 * !Y)	0.00354	0.00353	0.00338
	(A1 * !B1 * !B2 * Y)	-0.00507	-0.00509	-0.00508
	(A1 * !B1 * !B2 * Y)	0.00668	0.00670	0.00669
	(!A1 * !B1 * !B2 * Y)	-0.00446	-0.00482	-0.00478
	(!A1 * !B1 * !B2 * Y)	0.00702	0.00698	0.00693

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00171	0.00148	0.00148
	(A2 * B2 * !Y)	-0.00150	-0.00174	-0.00175
	(A1 * !A2 * B2 * !Y)	0.00171	0.00148	0.00148
	(A1 * !A2 * B2 * !Y)	-0.00150	-0.00174	-0.00175
	(!A1 * !A2 * B2 * Y)	0.00054	0.00054	0.00054
	(!A1 * !A2 * B2 * Y)	-0.00205	-0.00208	-0.00207
	(!A1 * !A2 * !B2 * Y)	0.00064	0.00064	0.00057
	(!A1 * !A2 * !B2 * Y)	-0.00198	-0.00200	-0.00210
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00315	0.00266	0.00263
	(A2 * B2 * !Y)	-0.00300	-0.00357	-0.00357
	(A1 * !A2 * B2 * !Y)	0.00315	0.00266	0.00263
	(A1 * !A2 * B2 * !Y)	-0.00300	-0.00357	-0.00357
	(!A1 * !A2 * B2 * Y)	0.00091	0.00091	0.00091
	(!A1 * !A2 * B2 * Y)	-0.00403	-0.00413	-0.00411
	(!A1 * !A2 * !B2 * Y)	0.00110	0.00110	0.00097
	(!A1 * !A2 * !B2 * Y)	-0.00394	-0.00398	-0.00417
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00664	0.00568	0.00563
	(A2 * B2 * !Y)	-0.00578	-0.00679	-0.00681
	(A1 * !A2 * B2 * !Y)	0.00664	0.00568	0.00563
	(A1 * !A2 * B2 * !Y)	-0.00578	-0.00679	-0.00681
	(!A1 * !A2 * B2 * Y)	0.00173	0.00173	0.00172
	(!A1 * !A2 * B2 * Y)	-0.00824	-0.00838	-0.00833
	(!A1 * !A2 * !B2 * Y)	0.00204	0.00203	0.00182
	(!A1 * !A2 * !B2 * Y)	-0.00806	-0.00808	-0.00845

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00147	-0.00147	-0.00146
	(A2 * B2 * !Y)	0.00174	0.00175	0.00175
	(A1 * !A2 * B2 * !Y)	-0.00147	-0.00147	-0.00146
	(A1 * !A2 * B2 * !Y)	0.00174	0.00176	0.00175
	(!A1 * !A2 * B2 * Y)	-0.00053	-0.00054	-0.00054
	(!A1 * !A2 * B2 * Y)	0.00207	0.00210	0.00207
	(!A1 * !A2 * !B2 * Y)	-0.00054	-0.00055	-0.00054
	(!A1 * !A2 * !B2 * Y)	0.00210	0.00212	0.00211
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00262	-0.00263	-0.00261
	(A2 * B2 * !Y)	0.00355	0.00358	0.00357
	(A1 * !A2 * B2 * !Y)	-0.00262	-0.00263	-0.00261
	(A1 * !A2 * B2 * !Y)	0.00356	0.00359	0.00357
	(!A1 * !A2 * B2 * Y)	-0.00090	-0.00091	-0.00091
	(!A1 * !A2 * B2 * Y)	0.00412	0.00415	0.00411
	(!A1 * !A2 * !B2 * Y)	-0.00093	-0.00092	-0.00092
	(!A1 * !A2 * !B2 * Y)	0.00422	0.00423	0.00420
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00561	-0.00563	-0.00559
	(A2 * B2 * !Y)	0.00680	0.00685	0.00681
	(A1 * !A2 * B2 * !Y)	-0.00561	-0.00563	-0.00559
	(A1 * !A2 * B2 * !Y)	0.00681	0.00685	0.00681
	(!A1 * !A2 * B2 * Y)	-0.00170	-0.00171	-0.00171
	(!A1 * !A2 * B2 * Y)	0.00833	0.00840	0.00833
	(!A1 * !A2 * !B2 * Y)	-0.00173	-0.00175	-0.00174
	(!A1 * !A2 * !B2 * Y)	0.00846	0.00854	0.00850

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00152	0.00153	0.00153
	(A2 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * B1 * !Y)	0.00154	0.00154	0.00153
	(A1 * !A2 * B1 * !Y)	-0.00085	-0.00084	-0.00083
	(!A1 * !A2 * B1 * Y)	0.00045	0.00045	0.00045
	(!A1 * !A2 * B1 * Y)	-0.00204	-0.00206	-0.00205
	(!A1 * !A2 * !B1 * Y)	0.00055	0.00054	0.00048
	(!A1 * !A2 * !B1 * Y)	-0.00197	-0.00197	-0.00208
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00290	0.00292	0.00291
	(A2 * B1 * !Y)	-0.00171	-0.00172	-0.00170
	(A1 * !A2 * B1 * !Y)	0.00290	0.00292	0.00291
	(A1 * !A2 * B1 * !Y)	-0.00171	-0.00172	-0.00170
	(!A1 * !A2 * B1 * Y)	0.00087	0.00087	0.00086
	(!A1 * !A2 * B1 * Y)	-0.00399	-0.00404	-0.00402
	(!A1 * !A2 * !B1 * Y)	0.00106	0.00105	0.00092
	(!A1 * !A2 * !B1 * Y)	-0.00389	-0.00390	-0.00411
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00565	0.00570	0.00566
	(A2 * B1 * !Y)	-0.00335	-0.00337	-0.00334
	(A1 * !A2 * B1 * !Y)	0.00565	0.00573	0.00566
	(A1 * !A2 * B1 * !Y)	-0.00335	-0.00339	-0.00334
	(!A1 * !A2 * B1 * Y)	0.00164	0.00161	0.00162
	(!A1 * !A2 * B1 * Y)	-0.00788	-0.00791	-0.00789
	(!A1 * !A2 * !B1 * Y)	0.00195	0.00194	0.00173
	(!A1 * !A2 * !B1 * Y)	-0.00770	-0.00772	-0.00807

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00148	-0.00149	-0.00152
	(A2 * B1 * !Y)	0.00088	0.00088	0.00084
	(A1 * !A2 * B1 * !Y)	-0.00148	-0.00149	-0.00152
	(A1 * !A2 * B1 * !Y)	0.00088	0.00088	0.00084
	(!A1 * !A2 * B1 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * B1 * Y)	0.00205	0.00206	0.00205
	(!A1 * !A2 * !B1 * Y)	-0.00046	-0.00046	-0.00045
	(!A1 * !A2 * !B1 * Y)	0.00210	0.00212	0.00210
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00273	-0.00277	-0.00289
	(A2 * B1 * !Y)	0.00184	0.00186	0.00174
	(A1 * !A2 * B1 * !Y)	-0.00275	-0.00277	-0.00289
	(A1 * !A2 * B1 * !Y)	0.00186	0.00186	0.00174
	(!A1 * !A2 * B1 * Y)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * B1 * Y)	0.00402	0.00404	0.00402
	(!A1 * !A2 * !B1 * Y)	-0.00088	-0.00089	-0.00087
	(!A1 * !A2 * !B1 * Y)	0.00415	0.00419	0.00414
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00541	-0.00547	-0.00565
	(A2 * B1 * !Y)	0.00354	0.00357	0.00340
	(A1 * !A2 * B1 * !Y)	-0.00543	-0.00548	-0.00565
	(A1 * !A2 * B1 * !Y)	0.00357	0.00358	0.00340
	(!A1 * !A2 * B1 * Y)	-0.00162	-0.00161	-0.00162
	(!A1 * !A2 * B1 * Y)	0.00793	0.00791	0.00789
	(!A1 * !A2 * !B1 * Y)	-0.00167	-0.00167	-0.00164
	(!A1 * !A2 * !B1 * Y)	0.00814	0.00821	0.00812

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00250	0.00260	0.00269	0.00287	0.77568
sky130_fd_sc_hs__o22a_2	0.00269	0.00274	0.00285	0.00283	1.50227
sky130_fd_sc_hs__o22a_4	0.00522	0.00487	0.00536	0.00508	2.84809

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	0.10653	0.18707
sky130_fd_sc_hs__o22a_2	0.00000	0.13753	0.22253
sky130_fd_sc_hs__o22a_4	0.00000	0.27528	0.44499

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)	0.15593	0.88035	7.56468
	A2->X (RR)	0.14246	0.84876	7.48737
	B1->X (RR)	0.14299	0.87803	7.52992
	B2->X (RR)	0.12852	0.84135	7.44314
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.15784	0.78066	7.59842
	A2->X (RR)	0.14453	0.75679	7.53114
	B1->X (RR)	0.14477	0.78890	7.59157
	B2->X (RR)	0.12977	0.75490	7.49639
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.16708	0.71650	7.69528
	A2->X (RR)	0.15667	0.69109	7.62392
	B1->X (RR)	0.15299	0.72312	7.68213
	B2->X (RR)	0.14384	0.70366	7.63125

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.25056	0.82652	4.75527
	A2->X (FF)	0.22912	0.82281	4.73240
	B1->X (FF)	0.20072	0.75230	4.56968
	B2->X (FF)	0.17853	0.74515	4.55109
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.31087	0.87850	5.04875
	A2->X (FF)	0.28821	0.87779	5.05227
	B1->X (FF)	0.25419	0.80214	4.84526
	B2->X (FF)	0.23025	0.80132	4.85032
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.29613	0.82318	4.96191
	A2->X (FF)	0.26877	0.81425	4.94647
	B1->X (FF)	0.25028	0.76077	4.80026
	B2->X (FF)	0.22435	0.75247	4.78389

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01118	0.01124	0.01613
	A1	0.00469	0.00490	0.00976
	A2	0.00954	0.00948	0.01611
	A2	0.00389	0.00384	0.01050
	B1	0.00998	0.01008	0.01642
	B1	0.00464	0.00475	0.01110
	B2	0.00876	0.00884	0.01667
	B2	0.00399	0.00408	0.01195
sky130_fd_sc_hs__o22a_2	A1	0.01398	0.01431	0.01930
	A1	0.00717	0.00751	0.01278
	A2	0.01225	0.01253	0.01906
	A2	0.00634	0.00667	0.01318
	B1	0.01268	0.01300	0.01934
	B1	0.00720	0.00753	0.01415
	B2	0.01101	0.01133	0.01896
	B2	0.00642	0.00675	0.01445
sky130_fd_sc_hs__o22a_4	A1	0.02772	0.02831	0.03805
	A1	0.01477	0.01539	0.02569
	A2	0.02385	0.02435	0.03705
	A2	0.01290	0.01342	0.02668
	B1	0.02546	0.02611	0.03869
	B1	0.01475	0.01543	0.02853
	B2	0.02166	0.02224	0.03705
	B2	0.01291	0.01353	0.02886

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00412	0.00422	0.01032
	A1	0.01035	0.01047	0.01610
	A2	0.00410	0.00450	0.01335
	A2	0.00949	0.01002	0.01822
	B1	0.00293	0.00298	0.00956
	B1	0.00833	0.00834	0.01449
	B2	0.00252	0.00295	0.01184
	B2	0.00729	0.00773	0.01640
sky130_fd_sc_hs__o22a_2	A1	0.00631	0.00663	0.01281
	A1	0.01301	0.01332	0.01913
	A2	0.00635	0.00706	0.01602
	A2	0.01215	0.01286	0.02129
	B1	0.00500	0.00517	0.01199
	B1	0.01051	0.01067	0.01678
	B2	0.00498	0.00556	0.01483
	B2	0.00958	0.01016	0.01890
sky130_fd_sc_hs__o22a_4	A1	0.01188	0.01245	0.02375
	A1	0.02467	0.02531	0.03641
	A2	0.01220	0.01322	0.03009
	A2	0.02294	0.02404	0.04053
	B1	0.00992	0.01052	0.02256
	B1	0.02071	0.02132	0.03289
	B2	0.01033	0.01144	0.02903
	B2	0.01909	0.02021	0.03694

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00138	0.00118	0.00115
	(A2 * B2 * X)	-0.00137	-0.00162	-0.00163
	(A2 * B1 * !B2 * X)	0.00138	0.00118	0.00115
	(A2 * B1 * !B2 * X)	-0.00137	-0.00162	-0.00163
	(A2 * !B1 * !B2 * !X)	0.00114	0.00116	0.00115
	(A2 * !B1 * !B2 * !X)	-0.00160	-0.00163	-0.00162
	(!A2 * !B1 * !B2 * !X)	0.00107	0.00108	0.00107
	(!A2 * !B1 * !B2 * !X)	-0.00165	-0.00165	-0.00164
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00160	0.00139	0.00136
	(A2 * B2 * X)	-0.00136	-0.00160	-0.00161
	(A2 * B1 * !B2 * X)	0.00160	0.00139	0.00136
	(A2 * B1 * !B2 * X)	-0.00136	-0.00160	-0.00161
	(A2 * !B1 * !B2 * !X)	0.00136	0.00138	0.00136
	(A2 * !B1 * !B2 * !X)	-0.00158	-0.00161	-0.00160
	(!A2 * !B1 * !B2 * !X)	0.00130	0.00131	0.00129
	(!A2 * !B1 * !B2 * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00305	0.00263	0.00258
	(A2 * B2 * X)	-0.00260	-0.00309	-0.00312
	(A2 * B1 * !B2 * X)	0.00305	0.00263	0.00258
	(A2 * B1 * !B2 * X)	-0.00260	-0.00309	-0.00312
	(A2 * !B1 * !B2 * !X)	0.00250	0.00253	0.00251
	(A2 * !B1 * !B2 * !X)	-0.00311	-0.00319	-0.00316
	(!A2 * !B1 * !B2 * !X)	0.00237	0.00239	0.00237
	(!A2 * !B1 * !B2 * !X)	-0.00323	-0.00324	-0.00323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00114	-0.00114	-0.00113
	(A2 * B2 * X)	0.00162	0.00163	0.00163
	(A2 * B1 * !B2 * X)	-0.00113	-0.00114	-0.00113
	(A2 * B1 * !B2 * X)	0.00161	0.00163	0.00163
	(A2 * !B1 * !B2 * !X)	-0.00114	-0.00115	-0.00114
	(A2 * !B1 * !B2 * !X)	0.00162	0.00163	0.00162
	(!A2 * !B1 * !B2 * !X)	-0.00099	-0.00108	-0.00107
	(!A2 * !B1 * !B2 * !X)	0.00168	0.00167	0.00165
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00135	-0.00135	-0.00135
	(A2 * B2 * X)	0.00161	0.00161	0.00161
	(A2 * B1 * !B2 * X)	-0.00135	-0.00135	-0.00135
	(A2 * B1 * !B2 * X)	0.00160	0.00161	0.00161
	(A2 * !B1 * !B2 * !X)	-0.00136	-0.00136	-0.00136
	(A2 * !B1 * !B2 * !X)	0.00160	0.00161	0.00160
	(!A2 * !B1 * !B2 * !X)	-0.00121	-0.00130	-0.00129
	(!A2 * !B1 * !B2 * !X)	0.00165	0.00164	0.00163
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00255	-0.00255	-0.00255
	(A2 * B2 * X)	0.00309	0.00310	0.00312
	(A2 * B1 * !B2 * X)	-0.00255	-0.00255	-0.00255
	(A2 * B1 * !B2 * X)	0.00309	0.00311	0.00312
	(A2 * !B1 * !B2 * !X)	-0.00249	-0.00251	-0.00250
	(A2 * !B1 * !B2 * !X)	0.00315	0.00319	0.00316
	(!A2 * !B1 * !B2 * !X)	-0.00223	-0.00238	-0.00237
	(!A2 * !B1 * !B2 * !X)	0.00330	0.00325	0.00324

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00129	0.00129	0.00128
	(A1 * B2 * X)	-0.00080	-0.00079	-0.00079
	(A1 * B1 * !B2 * X)	0.00129	0.00129	0.00128
	(A1 * B1 * !B2 * X)	-0.00080	-0.00079	-0.00079
	(A1 * !B1 * !B2 * !X)	0.00112	0.00112	0.00111
	(A1 * !B1 * !B2 * !X)	-0.00160	-0.00162	-0.00161
	(!A1 * !B1 * !B2 * !X)	0.00103	0.00103	0.00104
	(!A1 * !B1 * !B2 * !X)	-0.00164	-0.00164	-0.00164
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00142	0.00141	0.00141
	(A1 * B2 * X)	-0.00081	-0.00080	-0.00080
	(A1 * B1 * !B2 * X)	0.00142	0.00141	0.00141
	(A1 * B1 * !B2 * X)	-0.00081	-0.00080	-0.00080
	(A1 * !B1 * !B2 * !X)	0.00130	0.00132	0.00131
	(A1 * !B1 * !B2 * !X)	-0.00152	-0.00155	-0.00154
	(!A1 * !B1 * !B2 * !X)	0.00123	0.00123	0.00123
	(!A1 * !B1 * !B2 * !X)	-0.00157	-0.00157	-0.00157
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00241	0.00243	0.00242
	(A1 * B2 * X)	-0.00157	-0.00158	-0.00158
	(A1 * B1 * !B2 * X)	0.00242	0.00243	0.00242
	(A1 * B1 * !B2 * X)	-0.00157	-0.00158	-0.00158
	(A1 * !B1 * !B2 * !X)	0.00214	0.00216	0.00214
	(A1 * !B1 * !B2 * !X)	-0.00311	-0.00316	-0.00314
	(!A1 * !B1 * !B2 * !X)	0.00201	0.00200	0.00200
	(!A1 * !B1 * !B2 * !X)	-0.00324	-0.00323	-0.00323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00123	-0.00123	-0.00128
	(A1 * B2 * X)	0.00084	0.00084	0.00081
	(A1 * B1 * !B2 * X)	-0.00123	-0.00123	-0.00128
	(A1 * B1 * !B2 * X)	0.00084	0.00084	0.00081
	(A1 * !B1 * !B2 * !X)	-0.00110	-0.00112	-0.00111
	(A1 * !B1 * !B2 * !X)	0.00160	0.00162	0.00161
	(!A1 * !B1 * !B2 * !X)	-0.00096	-0.00103	-0.00104
	(!A1 * !B1 * !B2 * !X)	0.00167	0.00166	0.00165
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00136	-0.00136	-0.00140
	(A1 * B2 * X)	0.00085	0.00085	0.00081
	(A1 * B1 * !B2 * X)	-0.00136	-0.00136	-0.00140
	(A1 * B1 * !B2 * X)	0.00085	0.00085	0.00081
	(A1 * !B1 * !B2 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !B1 * !B2 * !X)	0.00154	0.00155	0.00154
	(!A1 * !B1 * !B2 * !X)	-0.00115	-0.00123	-0.00123
	(!A1 * !B1 * !B2 * !X)	0.00160	0.00159	0.00158
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00230	-0.00231	-0.00241
	(A1 * B2 * X)	0.00169	0.00169	0.00161
	(A1 * B1 * !B2 * X)	-0.00230	-0.00231	-0.00241
	(A1 * B1 * !B2 * X)	0.00170	0.00169	0.00161
	(A1 * !B1 * !B2 * !X)	-0.00213	-0.00215	-0.00213
	(A1 * !B1 * !B2 * !X)	0.00313	0.00316	0.00314
	(!A1 * !B1 * !B2 * !X)	-0.00185	-0.00200	-0.00200
	(!A1 * !B1 * !B2 * !X)	0.00328	0.00326	0.00324

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00146	0.00125	0.00122
	(A2 * B2 * X)	-0.00141	-0.00165	-0.00165
	(A1 * !A2 * B2 * X)	0.00146	0.00125	0.00122
	(A1 * !A2 * B2 * X)	-0.00141	-0.00165	-0.00165
	(!A1 * !A2 * B2 * !X)	0.00037	0.00037	0.00037
	(!A1 * !A2 * B2 * !X)	-0.00197	-0.00199	-0.00199
	(!A1 * !A2 * !B2 * !X)	0.00045	0.00045	0.00039
	(!A1 * !A2 * !B2 * !X)	-0.00193	-0.00194	-0.00201
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00167	0.00144	0.00143
	(A2 * B2 * X)	-0.00131	-0.00154	-0.00156
	(A1 * !A2 * B2 * X)	0.00167	0.00144	0.00143
	(A1 * !A2 * B2 * X)	-0.00131	-0.00154	-0.00156
	(!A1 * !A2 * B2 * !X)	0.00045	0.00046	0.00045
	(!A1 * !A2 * B2 * !X)	-0.00192	-0.00196	-0.00195
	(!A1 * !A2 * !B2 * !X)	0.00055	0.00055	0.00048
	(!A1 * !A2 * !B2 * !X)	-0.00186	-0.00187	-0.00197
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00318	0.00274	0.00271
	(A2 * B2 * X)	-0.00258	-0.00307	-0.00310
	(A1 * !A2 * B2 * X)	0.00318	0.00274	0.00271
	(A1 * !A2 * B2 * X)	-0.00258	-0.00307	-0.00311
	(!A1 * !A2 * B2 * !X)	0.00114	0.00115	0.00114
	(!A1 * !A2 * B2 * !X)	-0.00357	-0.00364	-0.00362
	(!A1 * !A2 * !B2 * !X)	0.00127	0.00128	0.00119
	(!A1 * !A2 * !B2 * !X)	-0.00349	-0.00352	-0.00367

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00121	-0.00122	-0.00121
	(A2 * B2 * X)	0.00165	0.00167	0.00166
	(A1 * !A2 * B2 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * B2 * X)	0.00165	0.00167	0.00166
	(!A1 * !A2 * B2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B2 * !X)	0.00199	0.00201	0.00199
	(!A1 * !A2 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * !A2 * !B2 * !X)	0.00202	0.00204	0.00203
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00142	-0.00143	-0.00142
	(A2 * B2 * X)	0.00157	0.00157	0.00156
	(A1 * !A2 * B2 * X)	-0.00141	-0.00143	-0.00142
	(A1 * !A2 * B2 * X)	0.00155	0.00158	0.00156
	(!A1 * !A2 * B2 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * B2 * !X)	0.00195	0.00196	0.00195
	(!A1 * !A2 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * !B2 * !X)	0.00197	0.00199	0.00198
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00268	-0.00270	-0.00268
	(A2 * B2 * X)	0.00308	0.00312	0.00310
	(A1 * !A2 * B2 * X)	-0.00268	-0.00269	-0.00268
	(A1 * !A2 * B2 * X)	0.00308	0.00311	0.00311
	(!A1 * !A2 * B2 * !X)	-0.00114	-0.00115	-0.00114
	(!A1 * !A2 * B2 * !X)	0.00364	0.00368	0.00362
	(!A1 * !A2 * !B2 * !X)	-0.00115	-0.00117	-0.00115
	(!A1 * !A2 * !B2 * !X)	0.00368	0.00375	0.00370

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00166	0.00167	0.00166
	(A2 * B1 * X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * B1 * X)	0.00166	0.00168	0.00166
	(A1 * !A2 * B1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * B1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !A2 * B1 * !X)	-0.00177	-0.00181	-0.00179
	(!A1 * !A2 * !B1 * !X)	0.00082	0.00082	0.00077
	(!A1 * !A2 * !B1 * !X)	-0.00172	-0.00173	-0.00182
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00145	0.00145	0.00145
	(A2 * B1 * X)	-0.00079	-0.00078	-0.00078
	(A1 * !A2 * B1 * X)	0.00146	0.00145	0.00145
	(A1 * !A2 * B1 * X)	-0.00080	-0.00078	-0.00078
	(!A1 * !A2 * B1 * !X)	0.00045	0.00044	0.00044
	(!A1 * !A2 * B1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !A2 * !B1 * !X)	0.00054	0.00053	0.00047
	(!A1 * !A2 * !B1 * !X)	-0.00176	-0.00177	-0.00187
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00255	0.00256	0.00256
	(A2 * B1 * X)	-0.00156	-0.00158	-0.00157
	(A1 * !A2 * B1 * X)	0.00255	0.00257	0.00256
	(A1 * !A2 * B1 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * !A2 * B1 * !X)	0.00071	0.00071	0.00070
	(!A1 * !A2 * B1 * !X)	-0.00367	-0.00371	-0.00367
	(!A1 * !A2 * !B1 * !X)	0.00084	0.00083	0.00074
	(!A1 * !A2 * !B1 * !X)	-0.00358	-0.00358	-0.00374

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00160	-0.00162	-0.00165
	(A2 * B1 * X)	0.00081	0.00082	0.00078
	(A1 * !A2 * B1 * X)	-0.00161	-0.00162	-0.00165
	(A1 * !A2 * B1 * X)	0.00082	0.00082	0.00078
	(!A1 * !A2 * B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !A2 * B1 * !X)	0.00181	0.00181	0.00179
	(!A1 * !A2 * !B1 * !X)	-0.00074	-0.00076	-0.00074
	(!A1 * !A2 * !B1 * !X)	0.00182	0.00185	0.00183
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00140	-0.00141	-0.00144
	(A2 * B1 * X)	0.00083	0.00083	0.00079
	(A1 * !A2 * B1 * X)	-0.00140	-0.00141	-0.00144
	(A1 * !A2 * B1 * X)	0.00083	0.00083	0.00079
	(!A1 * !A2 * B1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * !X)	0.00185	0.00185	0.00184
	(!A1 * !A2 * !B1 * !X)	-0.00044	-0.00045	-0.00044
	(!A1 * !A2 * !B1 * !X)	0.00188	0.00189	0.00188
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00245	-0.00246	-0.00255
	(A2 * B1 * X)	0.00169	0.00168	0.00160
	(A1 * !A2 * B1 * X)	-0.00245	-0.00246	-0.00255
	(A1 * !A2 * B1 * X)	0.00169	0.00169	0.00160
	(!A1 * !A2 * B1 * !X)	-0.00069	-0.00070	-0.00069
	(!A1 * !A2 * B1 * !X)	0.00370	0.00371	0.00367
	(!A1 * !A2 * !B1 * !X)	-0.00071	-0.00071	-0.00070
	(!A1 * !A2 * !B1 * !X)	0.00376	0.00377	0.00376

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00232	0.00251	0.00285	0.00301	0.36742
sky130_fd_sc_hs__o2bb2ai_2	0.00524	0.00464	0.00579	0.00541	0.73508
sky130_fd_sc_hs__o2bb2ai_4	0.01104	0.01114	0.01084	0.01114	1.31285

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.14084	0.33305
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.27865	0.66352
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.31974	0.40548

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)**	0.11669	0.60984	3.86194
	A2_N->Y (RR)	0.11205	0.60785	3.82135
	B1->Y (FR)	0.14827	1.15321	10.63380
	B2->Y (FR)	0.12687	1.13904	10.90230
sky130_fd_sc_hs__o2bb2ai_2	**A1_N->Y (RR)**	0.10464	0.52218	3.86654
	A2_N->Y (RR)	0.09717	0.51319	3.84612
	B1->Y (FR)	0.13232	0.98320	10.68040
	B2->Y (FR)	0.10522	0.97042	10.93740
sky130_fd_sc_hs__o2bb2ai_4	**A1_N->Y (RR)**	0.11072	0.45959	3.61251
	A2_N->Y (RR)	0.10260	0.45804	3.61110
	B1->Y (FR)	0.13888	0.86918	10.49960
	B2->Y (FR)	0.11023	0.86022	10.86570

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)	0.15989	0.69450	3.87268
	A2_N->Y (FF)	0.14468	0.65809	3.77735
	B1->Y (RF)	0.06478	0.57145	5.36185
	B2->Y (RF)	0.05265	0.54996	5.29294
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.13381	0.61203	3.87163
	A2_N->Y (FF)	0.12510	0.58396	3.81943
	B1->Y (RF)	0.05718	0.49526	5.32813
	B2->Y (RF)	0.04735	0.48072	5.34594
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.14544	0.59336	4.04911
	A2_N->Y (FF)	0.12752	0.54693	3.91833
	B1->Y (RF)	0.06294	0.44791	5.29997
	B2->Y (RF)	0.04763	0.41980	5.18844

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	0.00717	0.00730	0.01617
	A1_N	0.00435	0.00450	0.01339
	A2_N	0.00645	0.00666	0.01566
	A2_N	0.00435	0.00456	0.01368
	B1	0.00066	0.00055	0.00156
	B1	0.00537	0.00526	0.00626
	B2	0.00066	0.00075	0.00260
	B2	0.00451	0.00449	0.00646
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01326	0.01344	0.03017
	A1_N	0.00709	0.00727	0.02405
	A2_N	0.01137	0.01188	0.03171
	A2_N	0.00736	0.00791	0.02773
	B1	0.00099	0.00074	0.00274
	B1	0.01040	0.01015	0.01220
	B2	0.00100	0.00129	0.00490
	B2	0.00809	0.00840	0.01202
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02896	0.02914	0.06197
	A1_N	0.01525	0.01551	0.04888
	A2_N	0.02512	0.02587	0.06222
	A2_N	0.01514	0.01599	0.05291
	B1	0.00151	0.00103	0.00508
	B1	0.02030	0.01978	0.02395
	B2	0.00135	0.00200	0.00916
	B2	0.01628	0.01653	0.02411

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00571	0.00621	0.01629
	A1_N	0.00850	0.00900	0.01899
	A2_N	0.00535	0.00576	0.01616
	A2_N	0.00752	0.00792	0.01821
	B1	0.00677	0.00667	0.00754
	B1	0.00205	0.00192	0.00281
	B2	0.00497	0.00492	0.00582
	B2	0.00107	0.00102	0.00191
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01050	0.01149	0.03143
	A1_N	0.01663	0.01756	0.03727
	A2_N	0.00984	0.01075	0.03141
	A2_N	0.01397	0.01486	0.03542
	B1	0.01322	0.01292	0.01481
	B1	0.00380	0.00347	0.00526
	B2	0.00905	0.00895	0.01129
	B2	0.00186	0.00178	0.00363
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02277	0.02427	0.06167
	A1_N	0.03653	0.03800	0.07505
	A2_N	0.02026	0.02153	0.06043
	A2_N	0.03060	0.03179	0.07046
	B1	0.02740	0.02673	0.03138
	B1	0.00858	0.00784	0.01162
	B2	0.01893	0.01870	0.02306
	B2	0.00386	0.00356	0.00760

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)	0.00606	0.00601	0.01504
	(A2_N * !B1 * !B2 * Y)	0.00214	0.00207	0.01110
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00111	0.00112	0.00112
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00137	-0.00138	-0.00137
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01185	0.01166	0.02977
	(A2_N * !B1 * !B2 * Y)	0.00346	0.00322	0.02134
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00219	0.00218	0.00218
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00327	-0.00326	-0.00326
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.02617	0.02554	0.05905
	(A2_N * !B1 * !B2 * Y)	0.00766	0.00694	0.04050
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00496	0.00500	0.00495
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00717	-0.00720	-0.00715

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)	0.00060	0.00099	0.01091
	(A2_N * !B1 * !B2 * Y)	0.00456	0.00496	0.01484
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00104	-0.00112	-0.00112
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00143	0.00140	0.00138
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00101	0.00180	0.02146
	(A2_N * !B1 * !B2 * Y)	0.00951	0.01029	0.02986
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00203	-0.00218	-0.00218
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00337	0.00332	0.00327
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00243	0.00360	0.04010
	(A2_N * !B1 * !B2 * Y)	0.02110	0.02235	0.05861
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00459	-0.00499	-0.00495
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00743	0.00729	0.00719

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)	0.00546	0.00550	0.01553
	(A1_N * !B1 * !B2 * Y)	0.00213	0.00218	0.01221
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00043	0.00043	0.00041
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00166	-0.00167	-0.00169
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01018	0.01040	0.03017
	(A1_N * !B1 * !B2 * Y)	0.00373	0.00392	0.02370
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00080	0.00081	0.00076
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00311	-0.00314	-0.00319
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.02266	0.02272	0.05991
	(A1_N * !B1 * !B2 * Y)	0.00755	0.00753	0.04477
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00186	0.00185	0.00174
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00807	-0.00808	-0.00830

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)	0.00026	0.00062	0.01101
	(A1_N * !B1 * !B2 * Y)	0.00361	0.00399	0.01436
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00040	-0.00040	-0.00040
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00169	0.00170	0.00169
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00024	0.00100	0.02141
	(A1_N * !B1 * !B2 * Y)	0.00677	0.00754	0.02788
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00074	-0.00075	-0.00074
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00320	0.00323	0.00320
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00012	0.00101	0.03940
	(A1_N * !B1 * !B2 * Y)	0.01508	0.01622	0.05463
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00166	-0.00171	-0.00168
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00826	0.00845	0.00833

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)	0.00136	0.00136	0.00136
	(A1_N * A2_N * B2 * Y)	-0.00174	-0.00176	-0.00177
	(A1_N * A2_N * !B2 * Y)	0.00131	0.00132	0.00131
	(A1_N * A2_N * !B2 * Y)	-0.00179	-0.00179	-0.00179
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00160	0.00137	0.00136
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00152	-0.00176	-0.00177
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00271	0.00271	0.00271
	(A1_N * A2_N * B2 * Y)	-0.00354	-0.00361	-0.00360
	(A1_N * A2_N * !B2 * Y)	0.00261	0.00263	0.00262
	(A1_N * A2_N * !B2 * Y)	-0.00365	-0.00367	-0.00365
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00323	0.00276	0.00274
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00306	-0.00356	-0.00357
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00524	0.00527	0.00523
	(A1_N * A2_N * B2 * Y)	-0.00690	-0.00707	-0.00701
	(A1_N * A2_N * !B2 * Y)	0.00500	0.00504	0.00502
	(A1_N * A2_N * !B2 * Y)	-0.00715	-0.00719	-0.00716
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00629	0.00530	0.00523
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00592	-0.00703	-0.00705

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)	-0.00135	-0.00136	-0.00135
	(A1_N * A2_N * B2 * Y)	0.00175	0.00178	0.00177
	(A1_N * A2_N * !B2 * Y)	-0.00124	-0.00132	-0.00131
	(A1_N * A2_N * !B2 * Y)	0.00181	0.00183	0.00180
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00136	-0.00136	-0.00135
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00177	0.00178	0.00177
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00269	-0.00271	-0.00269
	(A1_N * A2_N * B2 * Y)	0.00360	0.00363	0.00360
	(A1_N * A2_N * !B2 * Y)	-0.00249	-0.00262	-0.00262
	(A1_N * A2_N * !B2 * Y)	0.00372	0.00372	0.00368
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00273	-0.00273	-0.00271
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00358	0.00360	0.00357
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00522	-0.00525	-0.00522
	(A1_N * A2_N * B2 * Y)	0.00701	0.00709	0.00701
	(A1_N * A2_N * !B2 * Y)	-0.00475	-0.00504	-0.00502
	(A1_N * A2_N * !B2 * Y)	0.00731	0.00728	0.00720
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00519	-0.00521	-0.00518
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00703	0.00708	0.00705

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)	0.00143	0.00143	0.00142
	(A1_N * A2_N * B1 * Y)	-0.00176	-0.00176	-0.00177
	(A1_N * A2_N * !B1 * Y)	0.00137	0.00137	0.00136
	(A1_N * A2_N * !B1 * Y)	-0.00181	-0.00181	-0.00180
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00153	0.00153	0.00152
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00094	-0.00094	-0.00093
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00255	0.00256	0.00253
	(A1_N * A2_N * B1 * Y)	-0.00334	-0.00338	-0.00337
	(A1_N * A2_N * !B1 * Y)	0.00244	0.00246	0.00244
	(A1_N * A2_N * !B1 * Y)	-0.00344	-0.00345	-0.00344
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00275	0.00277	0.00276
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00166	-0.00167	-0.00167
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00528	0.00529	0.00524
	(A1_N * A2_N * B1 * Y)	-0.00699	-0.00707	-0.00705
	(A1_N * A2_N * !B1 * Y)	0.00498	0.00506	0.00502
	(A1_N * A2_N * !B1 * Y)	-0.00719	-0.00725	-0.00721
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00595	0.00600	0.00596
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00341	-0.00344	-0.00342

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)	-0.00141	-0.00140	-0.00141
	(A1_N * A2_N * B1 * Y)	0.00178	0.00176	0.00177
	(A1_N * A2_N * !B1 * Y)	-0.00130	-0.00137	-0.00136
	(A1_N * A2_N * !B1 * Y)	0.00185	0.00184	0.00181
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00148	-0.00148	-0.00152
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00099	0.00098	0.00095
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00251	-0.00252	-0.00251
	(A1_N * A2_N * B1 * Y)	0.00336	0.00338	0.00337
	(A1_N * A2_N * !B1 * Y)	-0.00234	-0.00245	-0.00244
	(A1_N * A2_N * !B1 * Y)	0.00351	0.00349	0.00346
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00262	-0.00265	-0.00275
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00176	0.00178	0.00170
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00522	-0.00523	-0.00522
	(A1_N * A2_N * B1 * Y)	0.00704	0.00707	0.00705
	(A1_N * A2_N * !B1 * Y)	-0.00474	-0.00506	-0.00502
	(A1_N * A2_N * !B1 * Y)	0.00733	0.00732	0.00725
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00566	-0.00572	-0.00594
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00366	0.00369	0.00349

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00231	0.00246	0.00251	0.00271	0.75516
sky130_fd_sc_hs__o2bb2a_2	0.00232	0.00255	0.00269	0.00278	1.42782
sky130_fd_sc_hs__o2bb2a_4	0.00231	0.00248	0.00502	0.00496	2.90260

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.25563	0.36506
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.24556	0.39022
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.47935	0.63140

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)	0.22933	1.01600	8.15767
	A2_N->X (FR)	0.21438	0.97819	8.03212
	B1->X (RR)	0.14307	0.84761	7.45929
	B2->X (RR)	0.12762	0.81495	7.38011
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.24723	0.93741	8.19307
	A2_N->X (FR)	0.23052	0.89869	8.06785
	B1->X (RR)	0.14803	0.75412	7.45651
	B2->X (RR)	0.13225	0.72720	7.38730
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.28710	0.92028	8.48027
	A2_N->X (FR)	0.27110	0.88715	8.36836
	B1->X (RR)	0.16638	0.69629	7.69272
	B2->X (RR)	0.14522	0.65905	7.59600

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)	0.18686	0.57930	3.24601
	A2_N->X (RF)	0.18245	0.57675	3.23595
	B1->X (FF)	0.23530	0.77034	4.53561
	B2->X (FF)	0.21635	0.76460	4.48006
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.20903	0.56967	3.19090
	A2_N->X (RF)	0.20508	0.56861	3.17374
	B1->X (FF)	0.29840	0.82879	4.76097
	B2->X (FF)	0.27779	0.83059	4.74193
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.23620	0.60546	3.55024
	A2_N->X (RF)	0.23197	0.61048	3.54442
	B1->X (FF)	0.29700	0.79613	4.86601
	B2->X (FF)	0.26521	0.78046	4.82207

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	0.00831	0.00890	0.01914
	A1_N	0.01101	0.01161	0.02189
	A2_N	0.00791	0.00846	0.01912
	A2_N	0.00992	0.01046	0.02121
	B1	0.00916	0.00922	0.01464
	B1	0.00482	0.00488	0.01033
	B2	0.00765	0.00762	0.01491
	B2	0.00398	0.00395	0.01129
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01127	0.01213	0.02231
	A1_N	0.01404	0.01491	0.02515
	A2_N	0.01074	0.01160	0.02216
	A2_N	0.01287	0.01375	0.02443
	B1	0.01220	0.01254	0.01797
	B1	0.00755	0.00791	0.01340
	B2	0.01063	0.01091	0.01803
	B2	0.00672	0.00702	0.01422
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02175	0.02305	0.03341
	A1_N	0.02075	0.02219	0.03589
	A2_N	0.02130	0.02260	0.03323
	A2_N	0.02219	0.02349	0.03480
	B1	0.02397	0.02447	0.03483
	B1	0.01521	0.01573	0.02663
	B2	0.01974	0.02026	0.03390
	B2	0.01280	0.01338	0.02753

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01002	0.01011	0.01954
	A1_N	0.00729	0.00732	0.01633
	A2_N	0.00922	0.00949	0.01997
	A2_N	0.00728	0.00743	0.01785
	B1	0.00382	0.00400	0.01005
	B1	0.00812	0.00831	0.01403
	B2	0.00382	0.00439	0.01345
	B2	0.00742	0.00799	0.01628
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01254	0.01299	0.02221
	A1_N	0.00979	0.01017	0.01880
	A2_N	0.01189	0.01238	0.02296
	A2_N	0.00978	0.01026	0.02018
	B1	0.00606	0.00640	0.01281
	B1	0.01065	0.01103	0.01695
	B2	0.00608	0.00685	0.01627
	B2	0.00993	0.01071	0.01923
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01920	0.02042	0.02959
	A1_N	0.01763	0.01867	0.02729
	A2_N	0.01834	0.01957	0.03044
	A2_N	0.01761	0.01878	0.02880
	B1	0.01144	0.01219	0.02309
	B1	0.02016	0.02089	0.03161
	B2	0.01151	0.01280	0.02996
	B2	0.01834	0.01967	0.03578

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)	0.00543	0.00540	0.01460
	(A2_N * !B1 * !B2 * !X)	0.00154	0.00150	0.01070
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00118	0.00118	0.00118
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00134	-0.00134	-0.00133
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00578	0.00573	0.01475
	(A2_N * !B1 * !B2 * !X)	0.00177	0.00172	0.01074
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00123	0.00125	0.00124
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00130	-0.00131	-0.00131
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00688	0.00680	0.01541
	(A2_N * !B1 * !B2 * !X)	0.00288	0.00279	0.01141
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00123	0.00124	0.00123
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00128	-0.00129	-0.00128

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)	0.00060	0.00102	0.01104
	(A2_N * !B1 * !B2 * !X)	0.00452	0.00494	0.01493
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00110	-0.00117	-0.00118
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00140	0.00137	0.00134
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00061	0.00102	0.01089
	(A2_N * !B1 * !B2 * !X)	0.00466	0.00506	0.01489
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00116	-0.00123	-0.00124
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00137	0.00134	0.00132
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00112	0.00146	0.01111
	(A2_N * !B1 * !B2 * !X)	0.00517	0.00552	0.01512
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00115	-0.00122	-0.00123
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00135	0.00132	0.00130

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)	0.00486	0.00495	0.01515
	(A1_N * !B1 * !B2 * !X)	0.00165	0.00173	0.01192
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00040	0.00040	0.00038
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00164	-0.00165	-0.00167
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00528	0.00531	0.01531
	(A1_N * !B1 * !B2 * !X)	0.00189	0.00192	0.01192
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00047	0.00047	0.00045
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00166	-0.00167	-0.00169
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00634	0.00633	0.01591
	(A1_N * !B1 * !B2 * !X)	0.00302	0.00299	0.01258
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00042	0.00043	0.00041
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00162	-0.00163	-0.00165

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)	0.00018	0.00061	0.01112
	(A1_N * !B1 * !B2 * !X)	0.00342	0.00385	0.01435
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00167	0.00169	0.00167
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00018	0.00055	0.01088
	(A1_N * !B1 * !B2 * !X)	0.00359	0.00397	0.01429
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00043	-0.00044	-0.00043
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00169	0.00171	0.00170
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00075	0.00101	0.01103
	(A1_N * !B1 * !B2 * !X)	0.00411	0.00439	0.01439
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00040	-0.00039	-0.00039
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00168	0.00167	0.00166

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)	0.00118	0.00118	0.00118
	(A1_N * A2_N * B2 * !X)	-0.00156	-0.00158	-0.00158
	(A1_N * A2_N * !B2 * !X)	0.00113	0.00114	0.00113
	(A1_N * A2_N * !B2 * !X)	-0.00159	-0.00160	-0.00159
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00142	0.00120	0.00118
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00133	-0.00156	-0.00158
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00135	0.00136	0.00134
	(A1_N * A2_N * B2 * !X)	-0.00159	-0.00163	-0.00162
	(A1_N * A2_N * !B2 * !X)	0.00129	0.00130	0.00129
	(A1_N * A2_N * !B2 * !X)	-0.00163	-0.00164	-0.00163
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00158	0.00135	0.00134
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00137	-0.00160	-0.00163
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00237	0.00239	0.00237
	(A1_N * A2_N * B2 * !X)	-0.00315	-0.00324	-0.00322
	(A1_N * A2_N * !B2 * !X)	0.00226	0.00229	0.00228
	(A1_N * A2_N * !B2 * !X)	-0.00327	-0.00330	-0.00328
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00293	0.00242	0.00238
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00264	-0.00320	-0.00324

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)	-0.00116	-0.00117	-0.00117
	(A1_N * A2_N * B2 * !X)	0.00157	0.00159	0.00158
	(A1_N * A2_N * !B2 * !X)	-0.00108	-0.00113	-0.00113
	(A1_N * A2_N * !B2 * !X)	0.00163	0.00162	0.00161
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00116	-0.00117	-0.00116
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00158	0.00159	0.00159
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00133	-0.00134	-0.00133
	(A1_N * A2_N * B2 * !X)	0.00161	0.00163	0.00162
	(A1_N * A2_N * !B2 * !X)	-0.00123	-0.00130	-0.00129
	(A1_N * A2_N * !B2 * !X)	0.00166	0.00167	0.00165
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00133	-0.00133	-0.00132
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00163	0.00163	0.00163
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00236	-0.00237	-0.00236
	(A1_N * A2_N * B2 * !X)	0.00322	0.00324	0.00322
	(A1_N * A2_N * !B2 * !X)	-0.00216	-0.00229	-0.00228
	(A1_N * A2_N * !B2 * !X)	0.00337	0.00334	0.00330
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00236	-0.00237	-0.00235
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00322	0.00325	0.00324

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)	0.00126	0.00127	0.00126
	(A1_N * A2_N * B1 * !X)	-0.00158	-0.00161	-0.00160
	(A1_N * A2_N * !B1 * !X)	0.00122	0.00122	0.00121
	(A1_N * A2_N * !B1 * !X)	-0.00163	-0.00163	-0.00162
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00136	0.00136	0.00135
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00087	-0.00086	-0.00086
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00144	0.00145	0.00144
	(A1_N * A2_N * B1 * !X)	-0.00155	-0.00158	-0.00157
	(A1_N * A2_N * !B1 * !X)	0.00140	0.00140	0.00139
	(A1_N * A2_N * !B1 * !X)	-0.00160	-0.00160	-0.00159
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00144	0.00145	0.00144
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00091	-0.00092	-0.00091
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00228	0.00232	0.00230
	(A1_N * A2_N * B1 * !X)	-0.00312	-0.00321	-0.00319
	(A1_N * A2_N * !B1 * !X)	0.00222	0.00223	0.00221
	(A1_N * A2_N * !B1 * !X)	-0.00327	-0.00328	-0.00326
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00252	0.00254	0.00253
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00166	-0.00168	-0.00167

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)	-0.00125	-0.00126	-0.00125
	(A1_N * A2_N * B1 * !X)	0.00160	0.00161	0.00160
	(A1_N * A2_N * !B1 * !X)	-0.00115	-0.00121	-0.00121
	(A1_N * A2_N * !B1 * !X)	0.00167	0.00165	0.00164
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00130	-0.00131	-0.00135
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00091	0.00091	0.00087
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00143	-0.00144	-0.00143
	(A1_N * A2_N * B1 * !X)	0.00156	0.00158	0.00157
	(A1_N * A2_N * !B1 * !X)	-0.00132	-0.00140	-0.00139
	(A1_N * A2_N * !B1 * !X)	0.00162	0.00162	0.00160
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00140	-0.00140	-0.00144
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00097	0.00096	0.00093
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00228	-0.00231	-0.00229
	(A1_N * A2_N * B1 * !X)	0.00319	0.00321	0.00319
	(A1_N * A2_N * !B1 * !X)	-0.00211	-0.00222	-0.00221
	(A1_N * A2_N * !B1 * !X)	0.00334	0.00331	0.00328
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00237	-0.00238	-0.00251
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00183	0.00182	0.00171

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00277	0.00292	0.00285	0.00295	0.00301	0.24295
sky130_fd_sc_hs__o311ai_2	0.00542	0.00556	0.00564	0.00564	0.00573	0.43276
sky130_fd_sc_hs__o311ai_4	0.01069	0.01073	0.01124	0.00841	0.00798	0.83936

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.03870	0.09550
sky130_fd_sc_hs__o311ai_2	0.00000	0.07778	0.19405
sky130_fd_sc_hs__o311ai_4	0.00000	0.12448	0.37649

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)	0.32143	1.41395	10.22360
	A2->Y (FR)	0.30392	1.41965	10.73260
	A3->Y (FR)	0.24752	1.36240	10.80390
	B1->Y (FR)	0.07209	0.71561	6.51861
	C1->Y (FR)	0.05967	0.70189	6.49914
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.34127	1.26255	10.00300
	A2->Y (FR)	0.31270	1.24809	10.49160
	A3->Y (FR)	0.25428	1.20106	10.68550
	B1->Y (FR)	0.07038	0.64691	6.35567
	C1->Y (FR)	0.05586	0.62949	6.34792
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.30360	1.07491	9.89679
	A2->Y (FR)	0.28195	1.08006	10.50990
	A3->Y (FR)	0.21613	1.01753	10.64060
	B1->Y (FR)	0.09839	0.76576	8.40698
	C1->Y (FR)	0.06824	0.74103	8.43951

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.10379	0.59810	4.57441
	A2->Y (RF)	0.10164	0.59166	4.60962
	A3->Y (RF)	0.08108	0.56130	4.54153
	B1->Y (RF)	0.08932	0.62637	5.22326
	C1->Y (RF)	0.07688	0.65104	5.58529
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.11414	0.55713	4.55646
	A2->Y (RF)	0.10565	0.53316	4.50684
	A3->Y (RF)	0.08556	0.50341	4.44625
	B1->Y (RF)	0.10157	0.58966	5.19014
	C1->Y (RF)	0.08604	0.62849	5.76599
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.11038	0.49466	4.56771
	A2->Y (RF)	0.10091	0.47042	4.51102
	A3->Y (RF)	0.07657	0.43490	4.43620
	B1->Y (RF)	0.09686	0.56334	5.60270
	C1->Y (RF)	0.07629	0.58334	6.04411

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00138	0.00124	0.00217
	A1	0.00925	0.00910	0.01001
	A2	0.00146	0.00130	0.00238
	A2	0.00839	0.00822	0.00930
	A3	0.00144	0.00144	0.00354
	A3	0.00739	0.00738	0.00948
	B1	0.00026	0.00045	0.00320
	B1	0.00702	0.00716	0.00975
	C1	-0.00032	-0.00013	0.00259
	C1	0.00571	0.00590	0.00859
sky130_fd_sc_hs__o311ai_2	A1	0.00321	0.00285	0.00465
	A1	0.01912	0.01879	0.02056
	A2	0.00323	0.00287	0.00509
	A2	0.01721	0.01686	0.01905
	A3	0.00319	0.00306	0.00723
	A3	0.01526	0.01512	0.01926
	B1	0.00064	0.00093	0.00660
	B1	0.01428	0.01445	0.01977
	C1	-0.00067	-0.00033	0.00526
	C1	0.01130	0.01167	0.01685

sky130_fd_sc_hs__o311ai_4	**A1**	0.00473	0.00416	0.00776
	A1	0.03593	0.03541	0.03886
	A2	0.00490	0.00424	0.00840
	A2	0.03211	0.03148	0.03561
	A3	0.00490	0.00471	0.01253
	A3	0.02849	0.02806	0.03612
	B1	0.00083	0.00074	0.00693
	B1	0.02430	0.02402	0.02986
	C1	-0.00196	-0.00168	0.00459
	C1	0.01776	0.01814	0.02401

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01079	0.01062	0.01168
	A1	0.00284	0.00265	0.00357
	A2	0.00911	0.00895	0.00994
	A2	0.00205	0.00189	0.00280
	A3	0.00710	0.00706	0.00797
	A3	0.00099	0.00093	0.00186
	B1	0.00964	0.00948	0.01069
	B1	0.00297	0.00279	0.00390
	C1	0.00884	0.00873	0.01029
	C1	0.00293	0.00279	0.00427

sky130_fd_sc_hs__o311ai_2	**A1**	0.02212	0.02165	0.02355
	A1	0.00601	0.00554	0.00734
	A2	0.01793	0.01762	0.01968
	A2	0.00365	0.00331	0.00520
	A3	0.01409	0.01393	0.01595
	A3	0.00167	0.00146	0.00343
	B1	0.01953	0.01920	0.02138
	B1	0.00610	0.00572	0.00800
	C1	0.01775	0.01761	0.02065
	C1	0.00606	0.00591	0.00873
sky130_fd_sc_hs__o311ai_4	**A1**	0.04041	0.03963	0.04335
	A1	0.00890	0.00802	0.01194
	A2	0.03321	0.03235	0.03631
	A2	0.00541	0.00450	0.00850
	A3	0.02448	0.02412	0.02866
	A3	0.00020	-0.00019	0.00406
	B1	0.03441	0.03411	0.03674
	B1	0.01133	0.01101	0.01323
	C1	0.03057	0.03043	0.03332
	C1	0.01132	0.01114	0.01415

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)**	0.00135	0.00134	0.00134
	(A2 * B1 * !C1 * Y)	-0.00172	-0.00177	-0.00176
	(A2 * A3 * B1 * C1 * !Y)	0.00134	0.00134	0.00134
	(A2 * A3 * B1 * C1 * !Y)	-0.00172	-0.00177	-0.00176
	(A2 * !B1 * Y)	0.00135	0.00134	0.00134
	(A2 * !B1 * Y)	-0.00172	-0.00176	-0.00176
	(A2 * !A3 * B1 * C1 * !Y)	0.00139	0.00134	0.00134
	(A2 * !A3 * B1 * C1 * !Y)	-0.00166	-0.00176	-0.00176
	(!A2 * A3 * B1 * C1 * !Y)	0.00136	0.00136	0.00134
	(!A2 * A3 * B1 * C1 * !Y)	-0.00157	-0.00171	-0.00170
	(!A2 * A3 * B1 * !C1 * Y)	0.00134	0.00136	0.00134
	(!A2 * A3 * B1 * !C1 * Y)	-0.00159	-0.00171	-0.00169
	(!A2 * A3 * !B1 * Y)	0.00134	0.00136	0.00134
	(!A2 * A3 * !B1 * Y)	-0.00159	-0.00171	-0.00169
	(!A2 * !A3 * B1 * !C1 * Y)	0.00124	0.00126	0.00124
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00179	-0.00180	-0.00179
	(!A2 * !A3 * !B1 * C1 * Y)	0.00127	0.00128	0.00126
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00180	-0.00180	-0.00179
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00127	0.00128	0.00126
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00180	-0.00180	-0.00179

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00261	0.00264	0.00262
	(A2 * B1 * !C1 * Y)	-0.00339	-0.00353	-0.00350
	(A2 * A3 * B1 * C1 * !Y)	0.00263	0.00264	0.00262
	(A2 * A3 * B1 * C1 * !Y)	-0.00337	-0.00352	-0.00349
	(A2 * !B1 * Y)	0.00261	0.00264	0.00262
	(A2 * !B1 * Y)	-0.00339	-0.00351	-0.00350
	(A2 * !A3 * B1 * C1 * !Y)	0.00270	0.00264	0.00262
	(A2 * !A3 * B1 * C1 * !Y)	-0.00327	-0.00350	-0.00349
	(!A2 * A3 * B1 * C1 * !Y)	0.00268	0.00264	0.00262
	(!A2 * A3 * B1 * C1 * !Y)	-0.00309	-0.00335	-0.00335
	(!A2 * A3 * B1 * !C1 * Y)	0.00261	0.00263	0.00262
	(!A2 * A3 * B1 * !C1 * Y)	-0.00314	-0.00336	-0.00336
	(!A2 * A3 * !B1 * Y)	0.00261	0.00263	0.00262
	(!A2 * A3 * !B1 * Y)	-0.00314	-0.00336	-0.00336
	(!A2 * !A3 * B1 * !C1 * Y)	0.00241	0.00242	0.00241
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00359	-0.00359	-0.00358
	(!A2 * !A3 * !B1 * C1 * Y)	0.00245	0.00245	0.00245
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00359	-0.00359	-0.00359
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00245	0.00245	0.00245
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00359	-0.00359	-0.00359

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00526	0.00527	0.00524
	(A2 * B1 * !C1 * Y)	-0.00682	-0.00703	-0.00697
	(A2 * A3 * B1 * C1 * !Y)	0.00526	0.00526	0.00524
	(A2 * A3 * B1 * C1 * !Y)	-0.00681	-0.00702	-0.00697
	(A2 * !B1 * Y)	0.00526	0.00527	0.00524
	(A2 * !B1 * Y)	-0.00682	-0.00702	-0.00697
	(A2 * !A3 * B1 * C1 * !Y)	0.00541	0.00527	0.00524
	(A2 * !A3 * B1 * C1 * !Y)	-0.00660	-0.00697	-0.00698
	(!A2 * A3 * B1 * C1 * !Y)	0.00535	0.00526	0.00524
	(!A2 * A3 * B1 * C1 * !Y)	-0.00625	-0.00672	-0.00672
	(!A2 * A3 * B1 * !C1 * Y)	0.00526	0.00525	0.00524
	(!A2 * A3 * B1 * !C1 * Y)	-0.00633	-0.00673	-0.00672
	(!A2 * A3 * !B1 * Y)	0.00526	0.00525	0.00524
	(!A2 * A3 * !B1 * Y)	-0.00633	-0.00673	-0.00672
	(!A2 * !A3 * B1 * !C1 * Y)	0.00483	0.00482	0.00482
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00718	-0.00717	-0.00717
	(!A2 * !A3 * !B1 * C1 * Y)	0.00488	0.00493	0.00489
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00716	-0.00720	-0.00717
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00488	0.00491	0.00489
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00716	-0.00719	-0.00717

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)**	-0.00134	-0.00134	-0.00134
	(A2 * B1 * !C1 * Y)	0.00176	0.00177	0.00176
	(A2 * A3 * B1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A2 * A3 * B1 * C1 * !Y)	0.00176	0.00177	0.00176
	(A2 * !B1 * Y)	-0.00134	-0.00134	-0.00134
	(A2 * !B1 * Y)	0.00176	0.00177	0.00176
	(A2 * !A3 * B1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A2 * !A3 * B1 * C1 * !Y)	0.00176	0.00177	0.00176
	(!A2 * A3 * B1 * C1 * !Y)	-0.00133	-0.00134	-0.00133
	(!A2 * A3 * B1 * C1 * !Y)	0.00169	0.00171	0.00170
	(!A2 * A3 * B1 * !C1 * Y)	-0.00134	-0.00135	-0.00134
	(!A2 * A3 * B1 * !C1 * Y)	0.00169	0.00171	0.00169
	(!A2 * A3 * !B1 * Y)	-0.00134	-0.00135	-0.00134
	(!A2 * A3 * !B1 * Y)	0.00169	0.00171	0.00169
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00116	-0.00126	-0.00124
	(!A2 * !A3 * B1 * !C1 * Y)	0.00179	0.00181	0.00180
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00120	-0.00128	-0.00126
	(!A2 * !A3 * !B1 * C1 * Y)	0.00180	0.00181	0.00180
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00121	-0.00128	-0.00126
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00180	0.00181	0.00180

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00260	-0.00262	-0.00261
	(A2 * B1 * !C1 * Y)	0.00349	0.00353	0.00350
	(A2 * A3 * B1 * C1 * !Y)	-0.00261	-0.00263	-0.00262
	(A2 * A3 * B1 * C1 * !Y)	0.00348	0.00352	0.00349
	(A2 * !B1 * Y)	-0.00260	-0.00262	-0.00261
	(A2 * !B1 * Y)	0.00348	0.00351	0.00350
	(A2 * !A3 * B1 * C1 * !Y)	-0.00261	-0.00262	-0.00262
	(A2 * !A3 * B1 * C1 * !Y)	0.00348	0.00350	0.00349
	(!A2 * A3 * B1 * C1 * !Y)	-0.00261	-0.00261	-0.00261
	(!A2 * A3 * B1 * C1 * !Y)	0.00334	0.00335	0.00335
	(!A2 * A3 * B1 * !C1 * Y)	-0.00260	-0.00261	-0.00261
	(!A2 * A3 * B1 * !C1 * Y)	0.00335	0.00336	0.00336
	(!A2 * A3 * !B1 * Y)	-0.00261	-0.00261	-0.00261
	(!A2 * A3 * !B1 * Y)	0.00336	0.00336	0.00336
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00222	-0.00242	-0.00241
	(!A2 * !A3 * B1 * !C1 * Y)	0.00360	0.00363	0.00360
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00231	-0.00245	-0.00245
	(!A2 * !A3 * !B1 * C1 * Y)	0.00361	0.00363	0.00360
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00231	-0.00245	-0.00245
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00361	0.00363	0.00360

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00523	-0.00525	-0.00523
	(A2 * B1 * !C1 * Y)	0.00697	0.00703	0.00697
	(A2 * A3 * B1 * C1 * !Y)	-0.00523	-0.00525	-0.00523
	(A2 * A3 * B1 * C1 * !Y)	0.00696	0.00702	0.00697
	(A2 * !B1 * Y)	-0.00523	-0.00525	-0.00523
	(A2 * !B1 * Y)	0.00697	0.00702	0.00697
	(A2 * !A3 * B1 * C1 * !Y)	-0.00523	-0.00522	-0.00523
	(A2 * !A3 * B1 * C1 * !Y)	0.00698	0.00697	0.00698
	(!A2 * A3 * B1 * C1 * !Y)	-0.00522	-0.00523	-0.00522
	(!A2 * A3 * B1 * C1 * !Y)	0.00671	0.00672	0.00672
	(!A2 * A3 * B1 * !C1 * Y)	-0.00522	-0.00523	-0.00522
	(!A2 * A3 * B1 * !C1 * Y)	0.00672	0.00673	0.00672
	(!A2 * A3 * !B1 * Y)	-0.00523	-0.00523	-0.00523
	(!A2 * A3 * !B1 * Y)	0.00672	0.00673	0.00672
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00450	-0.00482	-0.00482
	(!A2 * !A3 * B1 * !C1 * Y)	0.00721	0.00724	0.00718
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00462	-0.00493	-0.00489
	(!A2 * !A3 * !B1 * C1 * Y)	0.00717	0.00725	0.00719
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00462	-0.00491	-0.00489
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00717	0.00725	0.00719

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)**	0.00145	0.00147	0.00138
	(A1 * A3 * B1 * C1 * !Y)	-0.00119	-0.00120	-0.00119
	(A1 * A3 * B1 * !C1 * Y)	0.00127	0.00129	0.00128
	(A1 * A3 * B1 * !C1 * Y)	-0.00129	-0.00129	-0.00128
	(A1 * A3 * !B1 * Y)	0.00127	0.00129	0.00128
	(A1 * A3 * !B1 * Y)	-0.00129	-0.00129	-0.00128
	(A1 * !A3 * B1 * C1 * !Y)	0.00136	0.00136	0.00134
	(A1 * !A3 * B1 * C1 * !Y)	-0.00095	-0.00095	-0.00096
	(A1 * !A3 * B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(A1 * !A3 * B1 * !C1 * Y)	-0.00177	-0.00178	-0.00177
	(A1 * !A3 * !B1 * C1 * Y)	0.00128	0.00129	0.00128
	(A1 * !A3 * !B1 * C1 * Y)	-0.00177	-0.00178	-0.00177
	(A1 * !A3 * !B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00177	-0.00179	-0.00178
	(!A1 * A3 * B1 * C1 * !Y)	0.00166	0.00136	0.00133
	(!A1 * A3 * B1 * C1 * !Y)	-0.00140	-0.00173	-0.00173
	(!A1 * A3 * B1 * !C1 * Y)	0.00128	0.00129	0.00128
	(!A1 * A3 * B1 * !C1 * Y)	-0.00177	-0.00179	-0.00178
	(!A1 * A3 * !B1 * Y)	0.00129	0.00129	0.00128
	(!A1 * A3 * !B1 * Y)	-0.00177	-0.00179	-0.00178
	(!A1 * !A3 * B1 * !C1 * Y)	0.00117	0.00119	0.00118
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00181	-0.00183	-0.00182
	(!A1 * !A3 * !B1 * C1 * Y)	0.00119	0.00120	0.00120
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00182	-0.00182	-0.00182
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00119	0.00120	0.00119
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00182	-0.00182	-0.00182

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00300	0.00300	0.00281
	(A1 * A3 * B1 * C1 * !Y)	-0.00247	-0.00249	-0.00248
	(A1 * A3 * B1 * !C1 * Y)	0.00264	0.00266	0.00264
	(A1 * A3 * B1 * !C1 * Y)	-0.00260	-0.00260	-0.00258
	(A1 * A3 * !B1 * Y)	0.00264	0.00266	0.00264
	(A1 * A3 * !B1 * Y)	-0.00260	-0.00260	-0.00258
	(A1 * !A3 * B1 * C1 * !Y)	0.00270	0.00270	0.00266
	(A1 * !A3 * B1 * C1 * !Y)	-0.00198	-0.00197	-0.00198
	(A1 * !A3 * B1 * !C1 * Y)	0.00266	0.00267	0.00264
	(A1 * !A3 * B1 * !C1 * Y)	-0.00350	-0.00353	-0.00352
	(A1 * !A3 * !B1 * C1 * Y)	0.00266	0.00267	0.00264
	(A1 * !A3 * !B1 * C1 * Y)	-0.00350	-0.00353	-0.00352
	(A1 * !A3 * !B1 * !C1 * Y)	0.00266	0.00267	0.00264
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00350	-0.00353	-0.00353
	(!A1 * A3 * B1 * C1 * !Y)	0.00328	0.00269	0.00264
	(!A1 * A3 * B1 * C1 * !Y)	-0.00292	-0.00358	-0.00358
	(!A1 * A3 * B1 * !C1 * Y)	0.00265	0.00267	0.00264
	(!A1 * A3 * B1 * !C1 * Y)	-0.00352	-0.00358	-0.00356
	(!A1 * A3 * !B1 * Y)	0.00265	0.00267	0.00264
	(!A1 * A3 * !B1 * Y)	-0.00352	-0.00358	-0.00356
	(!A1 * !A3 * B1 * !C1 * Y)	0.00240	0.00242	0.00241
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00363	-0.00365	-0.00364
	(!A1 * !A3 * !B1 * C1 * Y)	0.00245	0.00248	0.00245
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00364	-0.00366	-0.00364
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00244	0.00247	0.00245
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00364	-0.00366	-0.00364

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00583	0.00587	0.00551
	(A1 * A3 * B1 * C1 * !Y)	-0.00481	-0.00484	-0.00481
	(A1 * A3 * B1 * !C1 * Y)	0.00523	0.00521	0.00519
	(A1 * A3 * B1 * !C1 * Y)	-0.00504	-0.00507	-0.00504
	(A1 * A3 * !B1 * Y)	0.00523	0.00521	0.00519
	(A1 * A3 * !B1 * Y)	-0.00504	-0.00507	-0.00504
	(A1 * !A3 * B1 * C1 * !Y)	0.00528	0.00531	0.00526
	(A1 * !A3 * B1 * C1 * !Y)	-0.00379	-0.00382	-0.00383
	(A1 * !A3 * B1 * !C1 * Y)	0.00523	0.00524	0.00517
	(A1 * !A3 * B1 * !C1 * Y)	-0.00692	-0.00692	-0.00691
	(A1 * !A3 * !B1 * C1 * Y)	0.00523	0.00524	0.00518
	(A1 * !A3 * !B1 * C1 * Y)	-0.00690	-0.00692	-0.00691
	(A1 * !A3 * !B1 * !C1 * Y)	0.00523	0.00515	0.00518
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00692	-0.00694	-0.00693
	(!A1 * A3 * B1 * C1 * !Y)	0.00660	0.00532	0.00524
	(!A1 * A3 * B1 * C1 * !Y)	-0.00563	-0.00700	-0.00698
	(!A1 * A3 * B1 * !C1 * Y)	0.00514	0.00523	0.00517
	(!A1 * A3 * B1 * !C1 * Y)	-0.00687	-0.00704	-0.00702
	(!A1 * A3 * !B1 * Y)	0.00515	0.00523	0.00517
	(!A1 * A3 * !B1 * Y)	-0.00688	-0.00704	-0.00702
	(!A1 * !A3 * B1 * !C1 * Y)	0.00472	0.00477	0.00473
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00718	-0.00722	-0.00718
	(!A1 * !A3 * !B1 * C1 * Y)	0.00481	0.00483	0.00481
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00719	-0.00720	-0.00719
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00480	0.00483	0.00481
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00719	-0.00720	-0.00719

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)**	-0.00133	-0.00133	-0.00133
	(A1 * A3 * B1 * C1 * !Y)	0.00119	0.00120	0.00119
	(A1 * A3 * B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * A3 * B1 * !C1 * Y)	0.00129	0.00129	0.00128
	(A1 * A3 * !B1 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * A3 * !B1 * Y)	0.00129	0.00129	0.00128
	(A1 * !A3 * B1 * C1 * !Y)	-0.00133	-0.00133	-0.00131
	(A1 * !A3 * B1 * C1 * !Y)	0.00098	0.00098	0.00099
	(A1 * !A3 * B1 * !C1 * Y)	-0.00128	-0.00128	-0.00127
	(A1 * !A3 * B1 * !C1 * Y)	0.00178	0.00178	0.00177
	(A1 * !A3 * !B1 * C1 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * !B1 * C1 * Y)	0.00177	0.00178	0.00177
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * !B1 * !C1 * Y)	0.00177	0.00179	0.00178
	(!A1 * A3 * B1 * C1 * !Y)	-0.00132	-0.00133	-0.00132
	(!A1 * A3 * B1 * C1 * !Y)	0.00172	0.00174	0.00173
	(!A1 * A3 * B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * B1 * !C1 * Y)	0.00177	0.00179	0.00178
	(!A1 * A3 * !B1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * !B1 * Y)	0.00178	0.00179	0.00178
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00110	-0.00119	-0.00118
	(!A1 * !A3 * B1 * !C1 * Y)	0.00184	0.00183	0.00182
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00113	-0.00120	-0.00120
	(!A1 * !A3 * !B1 * C1 * Y)	0.00182	0.00184	0.00182
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00114	-0.00120	-0.00119
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00182	0.00184	0.00182

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00268	-0.00269	-0.00268
	(A1 * A3 * B1 * C1 * !Y)	0.00247	0.00249	0.00248
	(A1 * A3 * B1 * !C1 * Y)	-0.00264	-0.00264	-0.00263
	(A1 * A3 * B1 * !C1 * Y)	0.00260	0.00260	0.00258
	(A1 * A3 * !B1 * Y)	-0.00264	-0.00264	-0.00263
	(A1 * A3 * !B1 * Y)	0.00260	0.00260	0.00258
	(A1 * !A3 * B1 * C1 * !Y)	-0.00263	-0.00263	-0.00261
	(A1 * !A3 * B1 * C1 * !Y)	0.00205	0.00204	0.00205
	(A1 * !A3 * B1 * !C1 * Y)	-0.00264	-0.00264	-0.00263
	(A1 * !A3 * B1 * !C1 * Y)	0.00353	0.00353	0.00352
	(A1 * !A3 * !B1 * C1 * Y)	-0.00263	-0.00264	-0.00263
	(A1 * !A3 * !B1 * C1 * Y)	0.00351	0.00353	0.00352
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00263	-0.00264	-0.00263
	(A1 * !A3 * !B1 * !C1 * Y)	0.00352	0.00353	0.00353
	(!A1 * A3 * B1 * C1 * !Y)	-0.00264	-0.00264	-0.00262
	(!A1 * A3 * B1 * C1 * !Y)	0.00357	0.00359	0.00358
	(!A1 * A3 * B1 * !C1 * Y)	-0.00265	-0.00264	-0.00263
	(!A1 * A3 * B1 * !C1 * Y)	0.00358	0.00358	0.00356
	(!A1 * A3 * !B1 * Y)	-0.00263	-0.00264	-0.00263
	(!A1 * A3 * !B1 * Y)	0.00355	0.00358	0.00356
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00222	-0.00242	-0.00241
	(!A1 * !A3 * B1 * !C1 * Y)	0.00365	0.00368	0.00365
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00231	-0.00248	-0.00245
	(!A1 * !A3 * !B1 * C1 * Y)	0.00366	0.00368	0.00365
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00231	-0.00247	-0.00245
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00366	0.00368	0.00365

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00527	-0.00530	-0.00528
	(A1 * A3 * B1 * C1 * !Y)	0.00481	0.00484	0.00481
	(A1 * A3 * B1 * !C1 * Y)	-0.00517	-0.00519	-0.00517
	(A1 * A3 * B1 * !C1 * Y)	0.00504	0.00507	0.00504
	(A1 * A3 * !B1 * Y)	-0.00517	-0.00519	-0.00517
	(A1 * A3 * !B1 * Y)	0.00504	0.00507	0.00504
	(A1 * !A3 * B1 * C1 * !Y)	-0.00520	-0.00520	-0.00515
	(A1 * !A3 * B1 * C1 * !Y)	0.00392	0.00391	0.00396
	(A1 * !A3 * B1 * !C1 * Y)	-0.00519	-0.00518	-0.00517
	(A1 * !A3 * B1 * !C1 * Y)	0.00695	0.00692	0.00691
	(A1 * !A3 * !B1 * C1 * Y)	-0.00516	-0.00518	-0.00517
	(A1 * !A3 * !B1 * C1 * Y)	0.00690	0.00692	0.00691
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00516	-0.00515	-0.00517
	(A1 * !A3 * !B1 * !C1 * Y)	0.00692	0.00694	0.00693
	(!A1 * A3 * B1 * C1 * !Y)	-0.00520	-0.00524	-0.00519
	(!A1 * A3 * B1 * C1 * !Y)	0.00693	0.00702	0.00698
	(!A1 * A3 * B1 * !C1 * Y)	-0.00514	-0.00517	-0.00516
	(!A1 * A3 * B1 * !C1 * Y)	0.00699	0.00704	0.00702
	(!A1 * A3 * !B1 * Y)	-0.00515	-0.00518	-0.00516
	(!A1 * A3 * !B1 * Y)	0.00700	0.00704	0.00702
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00439	-0.00477	-0.00473
	(!A1 * !A3 * B1 * !C1 * Y)	0.00721	0.00724	0.00720
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00455	-0.00483	-0.00481
	(!A1 * !A3 * !B1 * C1 * Y)	0.00721	0.00725	0.00720
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00456	-0.00483	-0.00481
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00721	0.00725	0.00720

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)**	0.00145	0.00144	0.00144
	(A2 * B1 * C1 * !Y)	-0.00084	-0.00084	-0.00083
	(A2 * B1 * !C1 * Y)	0.00131	0.00132	0.00130
	(A2 * B1 * !C1 * Y)	-0.00167	-0.00171	-0.00170
	(A2 * !B1 * C1 * Y)	0.00131	0.00132	0.00130
	(A2 * !B1 * C1 * Y)	-0.00167	-0.00172	-0.00170
	(A2 * !B1 * !C1 * Y)	0.00132	0.00131	0.00130
	(A2 * !B1 * !C1 * Y)	-0.00167	-0.00172	-0.00171
	(A1 * !A2 * B1 * C1 * !Y)	0.00144	0.00145	0.00144
	(A1 * !A2 * B1 * C1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * B1 * !C1 * Y)	0.00130	0.00131	0.00130
	(A1 * !A2 * B1 * !C1 * Y)	-0.00150	-0.00162	-0.00161
	(A1 * !A2 * !B1 * C1 * Y)	0.00130	0.00131	0.00130
	(A1 * !A2 * !B1 * C1 * Y)	-0.00150	-0.00161	-0.00162
	(A1 * !A2 * !B1 * !C1 * Y)	0.00130	0.00131	0.00130
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00151	-0.00164	-0.00163
	(!A1 * !A2 * B1 * !C1 * Y)	0.00120	0.00120	0.00120
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00174	-0.00174	-0.00174
	(!A1 * !A2 * !B1 * C1 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00174	-0.00175	-0.00174
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00123	0.00122	0.00122
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00174	-0.00175	-0.00174

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00296	0.00298	0.00296
	(A2 * B1 * C1 * !Y)	-0.00171	-0.00172	-0.00171
	(A2 * B1 * !C1 * Y)	0.00260	0.00263	0.00260
	(A2 * B1 * !C1 * Y)	-0.00344	-0.00355	-0.00353
	(A2 * !B1 * C1 * Y)	0.00260	0.00263	0.00260
	(A2 * !B1 * C1 * Y)	-0.00344	-0.00355	-0.00353
	(A2 * !B1 * !C1 * Y)	0.00260	0.00263	0.00260
	(A2 * !B1 * !C1 * Y)	-0.00344	-0.00355	-0.00354
	(A1 * !A2 * B1 * C1 * !Y)	0.00297	0.00298	0.00296
	(A1 * !A2 * B1 * C1 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * !A2 * B1 * !C1 * Y)	0.00260	0.00263	0.00260
	(A1 * !A2 * B1 * !C1 * Y)	-0.00316	-0.00336	-0.00335
	(A1 * !A2 * !B1 * C1 * Y)	0.00260	0.00263	0.00260
	(A1 * !A2 * !B1 * C1 * Y)	-0.00316	-0.00336	-0.00335
	(A1 * !A2 * !B1 * !C1 * Y)	0.00260	0.00262	0.00260
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00318	-0.00338	-0.00338
	(!A1 * !A2 * B1 * !C1 * Y)	0.00239	0.00242	0.00240
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00361	-0.00363	-0.00361
	(!A1 * !A2 * !B1 * C1 * Y)	0.00245	0.00245	0.00243
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00362	-0.00362	-0.00361
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00245	0.00245	0.00243
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00362	-0.00363	-0.00361

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00601	0.00606	0.00602
	(A2 * B1 * C1 * !Y)	-0.00342	-0.00344	-0.00341
	(A2 * B1 * !C1 * Y)	0.00504	0.00506	0.00500
	(A2 * B1 * !C1 * Y)	-0.00716	-0.00735	-0.00732
	(A2 * !B1 * C1 * Y)	0.00504	0.00506	0.00500
	(A2 * !B1 * C1 * Y)	-0.00716	-0.00735	-0.00733
	(A2 * !B1 * !C1 * Y)	0.00505	0.00505	0.00500
	(A2 * !B1 * !C1 * Y)	-0.00718	-0.00737	-0.00735
	(A1 * !A2 * B1 * C1 * !Y)	0.00602	0.00606	0.00602
	(A1 * !A2 * B1 * C1 * !Y)	-0.00341	-0.00342	-0.00340
	(A1 * !A2 * B1 * !C1 * Y)	0.00500	0.00504	0.00500
	(A1 * !A2 * B1 * !C1 * Y)	-0.00646	-0.00687	-0.00684
	(A1 * !A2 * !B1 * C1 * Y)	0.00499	0.00504	0.00500
	(A1 * !A2 * !B1 * C1 * Y)	-0.00646	-0.00687	-0.00685
	(A1 * !A2 * !B1 * !C1 * Y)	0.00499	0.00504	0.00500
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00649	-0.00697	-0.00694
	(!A1 * !A2 * B1 * !C1 * Y)	0.00458	0.00464	0.00460
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00750	-0.00755	-0.00752
	(!A1 * !A2 * !B1 * C1 * Y)	0.00466	0.00467	0.00467
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00752	-0.00752	-0.00752
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00466	0.00466	0.00466
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00752	-0.00752	-0.00752

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)**	-0.00138	-0.00139	-0.00144
	(A2 * B1 * C1 * !Y)	0.00089	0.00089	0.00085
	(A2 * B1 * !C1 * Y)	-0.00130	-0.00131	-0.00130
	(A2 * B1 * !C1 * Y)	0.00170	0.00171	0.00170
	(A2 * !B1 * C1 * Y)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * C1 * Y)	0.00170	0.00172	0.00170
	(A2 * !B1 * !C1 * Y)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * !C1 * Y)	0.00170	0.00172	0.00171
	(A1 * !A2 * B1 * C1 * !Y)	-0.00130	-0.00131	-0.00142
	(A1 * !A2 * B1 * C1 * !Y)	0.00093	0.00093	0.00085
	(A1 * !A2 * B1 * !C1 * Y)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * B1 * !C1 * Y)	0.00161	0.00162	0.00161
	(A1 * !A2 * !B1 * C1 * Y)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !B1 * C1 * Y)	0.00162	0.00161	0.00162
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !B1 * !C1 * Y)	0.00163	0.00164	0.00163
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00111	-0.00120	-0.00120
	(!A1 * !A2 * B1 * !C1 * Y)	0.00175	0.00175	0.00174
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00116	-0.00123	-0.00122
	(!A1 * !A2 * !B1 * C1 * Y)	0.00174	0.00176	0.00175
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00116	-0.00122	-0.00122
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00174	0.00176	0.00175

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00284	-0.00286	-0.00295
	(A2 * B1 * C1 * !Y)	0.00184	0.00184	0.00175
	(A2 * B1 * !C1 * Y)	-0.00260	-0.00261	-0.00260
	(A2 * B1 * !C1 * Y)	0.00353	0.00355	0.00353
	(A2 * !B1 * C1 * Y)	-0.00260	-0.00261	-0.00260
	(A2 * !B1 * C1 * Y)	0.00353	0.00355	0.00353
	(A2 * !B1 * !C1 * Y)	-0.00260	-0.00261	-0.00260
	(A2 * !B1 * !C1 * Y)	0.00354	0.00355	0.00354
	(A1 * !A2 * B1 * C1 * !Y)	-0.00261	-0.00262	-0.00291
	(A1 * !A2 * B1 * C1 * !Y)	0.00197	0.00197	0.00176
	(A1 * !A2 * B1 * !C1 * Y)	-0.00260	-0.00260	-0.00260
	(A1 * !A2 * B1 * !C1 * Y)	0.00335	0.00336	0.00335
	(A1 * !A2 * !B1 * C1 * Y)	-0.00259	-0.00260	-0.00260
	(A1 * !A2 * !B1 * C1 * Y)	0.00334	0.00336	0.00335
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00260	-0.00260	-0.00260
	(A1 * !A2 * !B1 * !C1 * Y)	0.00337	0.00338	0.00338
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00220	-0.00242	-0.00240
	(!A1 * !A2 * B1 * !C1 * Y)	0.00362	0.00365	0.00362
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00229	-0.00245	-0.00243
	(!A1 * !A2 * !B1 * C1 * Y)	0.00362	0.00365	0.00362
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00229	-0.00245	-0.00243
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00362	0.00365	0.00362

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00573	-0.00577	-0.00600
	(A2 * B1 * C1 * !Y)	0.00370	0.00370	0.00349
	(A2 * B1 * !C1 * Y)	-0.00499	-0.00500	-0.00499
	(A2 * B1 * !C1 * Y)	0.00732	0.00735	0.00732
	(A2 * !B1 * C1 * Y)	-0.00497	-0.00500	-0.00499
	(A2 * !B1 * C1 * Y)	0.00730	0.00735	0.00733
	(A2 * !B1 * !C1 * Y)	-0.00498	-0.00500	-0.00499
	(A2 * !B1 * !C1 * Y)	0.00732	0.00737	0.00735
	(A1 * !A2 * B1 * C1 * !Y)	-0.00535	-0.00539	-0.00592
	(A1 * !A2 * B1 * C1 * !Y)	0.00388	0.00387	0.00348
	(A1 * !A2 * B1 * !C1 * Y)	-0.00500	-0.00501	-0.00499
	(A1 * !A2 * B1 * !C1 * Y)	0.00685	0.00687	0.00684
	(A1 * !A2 * !B1 * C1 * Y)	-0.00498	-0.00501	-0.00499
	(A1 * !A2 * !B1 * C1 * Y)	0.00683	0.00687	0.00685
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00499	-0.00501	-0.00499
	(A1 * !A2 * !B1 * !C1 * Y)	0.00696	0.00697	0.00694
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00426	-0.00464	-0.00460
	(!A1 * !A2 * B1 * !C1 * Y)	0.00754	0.00759	0.00753
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00442	-0.00467	-0.00467
	(!A1 * !A2 * !B1 * C1 * Y)	0.00754	0.00759	0.00753
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00443	-0.00466	-0.00466
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00754	0.00759	0.00753

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00122	0.00123	0.00122
	(A3 * !C1 * Y)	-0.00185	-0.00185	-0.00184
	(A2 * !A3 * !C1 * Y)	0.00122	0.00122	0.00122
	(A2 * !A3 * !C1 * Y)	-0.00185	-0.00184	-0.00184
	(A1 * !A2 * !A3 * !C1 * Y)	0.00122	0.00123	0.00122
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00185	-0.00185	-0.00184
	(!A1 * !A2 * !A3 * C1 * Y)	0.00059	0.00060	0.00059
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00185	-0.00186	-0.00184
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00076	0.00076	0.00076
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00185	-0.00185	-0.00185
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00254	0.00253	0.00254
	(A3 * !C1 * Y)	-0.00364	-0.00363	-0.00363
	(A2 * !A3 * !C1 * Y)	0.00253	0.00256	0.00254
	(A2 * !A3 * !C1 * Y)	-0.00364	-0.00365	-0.00363
	(A1 * !A2 * !A3 * !C1 * Y)	0.00252	0.00255	0.00253
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00362	-0.00365	-0.00363
	(!A1 * !A2 * !A3 * C1 * Y)	0.00121	0.00124	0.00124
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00362	-0.00366	-0.00362
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00158	0.00160	0.00159
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00365	-0.00368	-0.00365
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00474	0.00475	0.00474
	(A3 * !C1 * Y)	-0.00410	-0.00410	-0.00409
	(A2 * !A3 * !C1 * Y)	0.00472	0.00478	0.00474
	(A2 * !A3 * !C1 * Y)	-0.00409	-0.00412	-0.00409
	(A1 * !A2 * !A3 * !C1 * Y)	0.00471	0.00476	0.00474
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00408	-0.00411	-0.00409
	(!A1 * !A2 * !A3 * C1 * Y)	0.00220	0.00224	0.00224
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00411	-0.00415	-0.00410
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00289	0.00293	0.00289
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00418	-0.00422	-0.00419

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00113	-0.00123	-0.00122
	(A3 * !C1 * Y)	0.00192	0.00188	0.00185
	(A2 * !A3 * !C1 * Y)	-0.00112	-0.00122	-0.00122
	(A2 * !A3 * !C1 * Y)	0.00191	0.00188	0.00185
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00112	-0.00123	-0.00122
	(A1 * !A2 * !A3 * !C1 * Y)	0.00194	0.00188	0.00185
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00054	-0.00055	-0.00056
	(!A1 * !A2 * !A3 * C1 * Y)	0.00189	0.00190	0.00186
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00197	0.00195	0.00188
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00235	-0.00253	-0.00254
	(A3 * !C1 * Y)	0.00376	0.00369	0.00364
	(A2 * !A3 * !C1 * Y)	-0.00233	-0.00256	-0.00254
	(A2 * !A3 * !C1 * Y)	0.00377	0.00369	0.00364
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00232	-0.00254	-0.00253
	(A1 * !A2 * !A3 * !C1 * Y)	0.00382	0.00367	0.00364
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00115	-0.00114	-0.00117
	(!A1 * !A2 * !A3 * C1 * Y)	0.00377	0.00376	0.00368
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00158	-0.00160	-0.00159
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00387	0.00384	0.00370

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00431	-0.00475	-0.00474
	(A3 * !C1 * Y)	0.00442	0.00418	0.00411
	(A2 * !A3 * !C1 * Y)	-0.00427	-0.00475	-0.00474
	(A2 * !A3 * !C1 * Y)	0.00447	0.00413	0.00411
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00422	-0.00474	-0.00474
	(A1 * !A2 * !A3 * !C1 * Y)	0.00454	0.00415	0.00411
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00204	-0.00205	-0.00211
	(!A1 * !A2 * !A3 * C1 * Y)	0.00435	0.00436	0.00421
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00289	-0.00293	-0.00289
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00463	0.00451	0.00427

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00052	0.00052	0.00050
	(A3 * !B1 * Y)	-0.00211	-0.00212	-0.00215
	(A2 * !A3 * !B1 * Y)	0.00052	0.00052	0.00050
	(A2 * !A3 * !B1 * Y)	-0.00210	-0.00212	-0.00215
	(!A2 * !A3 * !B1 * Y)	0.00052	0.00052	0.00050
	(!A2 * !A3 * !B1 * Y)	-0.00211	-0.00212	-0.00215
	(!A1 * !A2 * !A3 * B1 * Y)	0.00058	0.00057	0.00050
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00199	-0.00199	-0.00213
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00103	0.00103	0.00097
	(A3 * !B1 * Y)	-0.00414	-0.00416	-0.00423
	(A2 * !A3 * !B1 * Y)	0.00102	0.00103	0.00097
	(A2 * !A3 * !B1 * Y)	-0.00412	-0.00416	-0.00423
	(!A2 * !A3 * !B1 * Y)	0.00102	0.00103	0.00097
	(!A2 * !A3 * !B1 * Y)	-0.00412	-0.00416	-0.00423
	(!A1 * !A2 * !A3 * B1 * Y)	0.00112	0.00111	0.00095
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00388	-0.00388	-0.00419
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00192	0.00192	0.00180
	(A3 * !B1 * Y)	-0.00451	-0.00455	-0.00470
	(A2 * !A3 * !B1 * Y)	0.00192	0.00191	0.00180
	(A2 * !A3 * !B1 * Y)	-0.00451	-0.00454	-0.00470
	(!A2 * !A3 * !B1 * Y)	0.00192	0.00191	0.00180
	(!A2 * !A3 * !B1 * Y)	-0.00451	-0.00454	-0.00470
	(!A1 * !A2 * !A3 * B1 * Y)	0.00208	0.00208	0.00178
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00402	-0.00405	-0.00461

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(A3 * !B1 * Y)	0.00215	0.00217	0.00215
	(A2 * !A3 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(A2 * !A3 * !B1 * Y)	0.00215	0.00217	0.00215
	(!A2 * !A3 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(!A2 * !A3 * !B1 * Y)	0.00215	0.00216	0.00215
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * !A3 * B1 * Y)	0.00215	0.00216	0.00215
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00094	-0.00094	-0.00093
	(A3 * !B1 * Y)	0.00424	0.00427	0.00424
	(A2 * !A3 * !B1 * Y)	-0.00094	-0.00094	-0.00093
	(A2 * !A3 * !B1 * Y)	0.00424	0.00427	0.00424
	(!A2 * !A3 * !B1 * Y)	-0.00094	-0.00094	-0.00093
	(!A2 * !A3 * !B1 * Y)	0.00424	0.00426	0.00424
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00092	-0.00091	-0.00090
	(!A1 * !A2 * !A3 * B1 * Y)	0.00425	0.00426	0.00424
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00176	-0.00177	-0.00174
	(A3 * !B1 * Y)	0.00473	0.00478	0.00471
	(A2 * !A3 * !B1 * Y)	-0.00176	-0.00175	-0.00174
	(A2 * !A3 * !B1 * Y)	0.00473	0.00473	0.00471
	(!A2 * !A3 * !B1 * Y)	-0.00176	-0.00175	-0.00174
	(!A2 * !A3 * !B1 * Y)	0.00473	0.00472	0.00471
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00171	-0.00170	-0.00168
	(!A1 * !A2 * !A3 * B1 * Y)	0.00472	0.00472	0.00470

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00264	0.00311	0.00270	0.00266	0.00272	0.76006
sky130_fd_sc_hs__o311a_2	0.00294	0.00295	0.00294	0.00289	0.00287	1.50256
sky130_fd_sc_hs__o311a_4	0.00487	0.00531	0.00492	0.00592	0.00516	2.92480

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.09412	0.26344
sky130_fd_sc_hs__o311a_2	0.00000	0.11952	0.25333
sky130_fd_sc_hs__o311a_4	0.00000	0.24458	0.59428

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)	0.21904	0.95727	7.73113
	A2->X (RR)	0.21088	0.94220	7.65781
	A3->X (RR)	0.18547	0.90112	7.54757
	B1->X (RR)	0.20341	0.96497	7.89765
	C1->X (RR)	0.19259	0.96885	7.88089
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.22125	0.84659	7.71761
	A2->X (RR)	0.20793	0.82385	7.62866
	A3->X (RR)	0.18009	0.78774	7.53532
	B1->X (RR)	0.21110	0.87467	7.92746
	C1->X (RR)	0.19811	0.88040	7.92072
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.23603	0.79034	7.80935
	A2->X (RR)	0.21972	0.76349	7.71611
	A3->X (RR)	0.19426	0.72975	7.63299
	B1->X (RR)	0.22684	0.81873	8.02598
	C1->X (RR)	0.20725	0.81423	8.00384

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.48095	1.05862	5.00582
	A2->X (FF)	0.46361	1.05842	5.19880
	A3->X (FF)	0.38511	0.99675	5.07368
	B1->X (FF)	0.13336	0.71290	4.47176
	C1->X (FF)	0.12191	0.68936	4.40404
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.50898	1.06959	5.30451
	A2->X (FF)	0.48188	1.06572	5.51677
	A3->X (FF)	0.43278	1.03016	5.44894
	B1->X (FF)	0.16098	0.73522	4.79436
	C1->X (FF)	0.14626	0.70882	4.70897
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.56883	1.09734	5.35445
	A2->X (FF)	0.54492	1.08937	5.55099
	A3->X (FF)	0.46640	1.02034	5.45152
	B1->X (FF)	0.14809	0.66473	4.68635
	C1->X (FF)	0.13204	0.63674	4.61041

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01381	0.01362	0.01702
	A1	0.00629	0.00610	0.00963
	A2	0.01228	0.01213	0.01562
	A2	0.00543	0.00528	0.00890
	A3	0.00983	0.00976	0.01457
	A3	0.00402	0.00395	0.00885
	B1	0.01269	0.01258	0.01900
	B1	0.00634	0.00623	0.01275
	C1	0.01203	0.01201	0.01969
	C1	0.00630	0.00628	0.01407
sky130_fd_sc_hs__o311a_2	A1	0.01627	0.01616	0.01960
	A1	0.00808	0.00797	0.01169
	A2	0.01435	0.01455	0.01828
	A2	0.00711	0.00731	0.01131
	A3	0.01253	0.01272	0.01739
	A3	0.00623	0.00642	0.01130
	B1	0.01507	0.01503	0.02132
	B1	0.00830	0.00826	0.01474
	C1	0.01427	0.01432	0.02185
	C1	0.00827	0.00833	0.01604

sky130_fd_sc_hs__o311a_4	**A1**	0.03097	0.03128	0.03896
	A1	0.01679	0.01712	0.02534
	A2	0.02786	0.02821	0.03591
	A2	0.01496	0.01534	0.02358
	A3	0.02304	0.02352	0.03391
	A3	0.01202	0.01250	0.02344
	B1	0.02941	0.02958	0.04134
	B1	0.01679	0.01697	0.02901
	C1	0.02732	0.02772	0.04300
	C1	0.01680	0.01721	0.03278

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00471	0.00457	0.00874
	A1	0.01211	0.01197	0.01583
	A2	0.00475	0.00436	0.00899
	A2	0.01145	0.01129	0.01561
	A3	0.00473	0.00499	0.01217
	A3	0.01037	0.01063	0.01738
	B1	0.00319	0.00370	0.01311
	B1	0.00958	0.01005	0.01896
	C1	0.00280	0.00324	0.01269
	C1	0.00859	0.00899	0.01809

sky130_fd_sc_hs__o311a_2	**A1**	0.00678	0.00667	0.01252
	A1	0.01484	0.01472	0.01875
	A2	0.00679	0.00658	0.01235
	A2	0.01387	0.01385	0.01843
	A3	0.00678	0.00707	0.01478
	A3	0.01289	0.01318	0.01979
	B1	0.00560	0.00634	0.01591
	B1	0.01242	0.01311	0.02227
	C1	0.00511	0.00584	0.01628
	C1	0.01116	0.01186	0.02103
sky130_fd_sc_hs__o311a_4	**A1**	0.01441	0.01400	0.02434
	A1	0.02832	0.02816	0.03617
	A2	0.01427	0.01374	0.02424
	A2	0.02681	0.02660	0.03546
	A3	0.01443	0.01443	0.02967
	A3	0.02509	0.02523	0.03899
	B1	0.01098	0.01228	0.03169
	B1	0.02367	0.02489	0.04257
	C1	0.00988	0.01162	0.03140
	C1	0.02055	0.02194	0.04045

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)**	0.00117	0.00116	0.00117
	(A2 * B1 * !C1 * !X)	-0.00169	-0.00172	-0.00172
	(A2 * A3 * B1 * C1 * X)	0.00136	0.00135	0.00136
	(A2 * A3 * B1 * C1 * X)	-0.00150	-0.00153	-0.00153
	(A2 * !B1 * !X)	0.00117	0.00116	0.00117
	(A2 * !B1 * !X)	-0.00169	-0.00172	-0.00172
	(A2 * !A3 * B1 * C1 * X)	0.00139	0.00135	0.00136
	(A2 * !A3 * B1 * C1 * X)	-0.00146	-0.00153	-0.00153
	(!A2 * A3 * B1 * C1 * X)	0.00139	0.00137	0.00136
	(!A2 * A3 * B1 * C1 * X)	-0.00137	-0.00149	-0.00148
	(!A2 * A3 * B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(!A2 * A3 * B1 * !C1 * !X)	-0.00159	-0.00168	-0.00167
	(!A2 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A2 * A3 * !B1 * !X)	-0.00159	-0.00168	-0.00167
	(!A2 * !A3 * B1 * !C1 * !X)	0.00111	0.00112	0.00110
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00174	-0.00175	-0.00174
	(!A2 * !A3 * !B1 * C1 * !X)	0.00113	0.00113	0.00112
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00174	-0.00175	-0.00174
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00113	0.00113	0.00112
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00174	-0.00175	-0.00174

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00126	0.00125	0.00125
	(A2 * B1 * !C1 * !X)	-0.00186	-0.00190	-0.00190
	(A2 * A3 * B1 * C1 * X)	0.00142	0.00142	0.00142
	(A2 * A3 * B1 * C1 * X)	-0.00169	-0.00174	-0.00174
	(A2 * !B1 * !X)	0.00126	0.00125	0.00125
	(A2 * !B1 * !X)	-0.00186	-0.00190	-0.00190
	(A2 * !A3 * B1 * C1 * X)	0.00147	0.00142	0.00142
	(A2 * !A3 * B1 * C1 * X)	-0.00163	-0.00174	-0.00174
	(!A2 * A3 * B1 * C1 * X)	0.00144	0.00143	0.00142
	(!A2 * A3 * B1 * C1 * X)	-0.00154	-0.00169	-0.00167
	(!A2 * A3 * B1 * !C1 * !X)	0.00125	0.00127	0.00125
	(!A2 * A3 * B1 * !C1 * !X)	-0.00172	-0.00185	-0.00183
	(!A2 * A3 * !B1 * !X)	0.00125	0.00127	0.00125
	(!A2 * A3 * !B1 * !X)	-0.00172	-0.00185	-0.00183
	(!A2 * !A3 * B1 * !C1 * !X)	0.00116	0.00116	0.00116
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00193	-0.00193	-0.00193
	(!A2 * !A3 * !B1 * C1 * !X)	0.00118	0.00119	0.00118
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00194	-0.00195	-0.00194
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00118	0.00119	0.00118
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00194	-0.00195	-0.00194

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00213	0.00214	0.00212
	(A2 * B1 * !C1 * !X)	-0.00313	-0.00320	-0.00318
	(A2 * A3 * B1 * C1 * X)	0.00214	0.00214	0.00213
	(A2 * A3 * B1 * C1 * X)	-0.00312	-0.00320	-0.00318
	(A2 * !B1 * !X)	0.00213	0.00214	0.00212
	(A2 * !B1 * !X)	-0.00313	-0.00320	-0.00318
	(A2 * !A3 * B1 * C1 * X)	0.00225	0.00214	0.00213
	(A2 * !A3 * B1 * C1 * X)	-0.00298	-0.00319	-0.00319
	(!A2 * A3 * B1 * C1 * X)	0.00223	0.00214	0.00213
	(!A2 * A3 * B1 * C1 * X)	-0.00280	-0.00309	-0.00307
	(!A2 * A3 * B1 * !C1 * !X)	0.00212	0.00214	0.00212
	(!A2 * A3 * B1 * !C1 * !X)	-0.00287	-0.00309	-0.00306
	(!A2 * A3 * !B1 * !X)	0.00212	0.00214	0.00212
	(!A2 * A3 * !B1 * !X)	-0.00287	-0.00309	-0.00306
	(!A2 * !A3 * B1 * !C1 * !X)	0.00198	0.00197	0.00197
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00326	-0.00325	-0.00325
	(!A2 * !A3 * !B1 * C1 * !X)	0.00201	0.00202	0.00200
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00326	-0.00326	-0.00325
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00201	0.00200	0.00200
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00326	-0.00325	-0.00325

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)**	-0.00116	-0.00116	-0.00116
	(A2 * B1 * !C1 * !X)	0.00172	0.00173	0.00172
	(A2 * A3 * B1 * C1 * X)	-0.00135	-0.00135	-0.00135
	(A2 * A3 * B1 * C1 * X)	0.00153	0.00154	0.00153
	(A2 * !B1 * !X)	-0.00116	-0.00116	-0.00116
	(A2 * !B1 * !X)	0.00172	0.00173	0.00172
	(A2 * !A3 * B1 * C1 * X)	-0.00135	-0.00135	-0.00135
	(A2 * !A3 * B1 * C1 * X)	0.00153	0.00154	0.00153
	(!A2 * A3 * B1 * C1 * X)	-0.00135	-0.00136	-0.00135
	(!A2 * A3 * B1 * C1 * X)	0.00148	0.00149	0.00148
	(!A2 * A3 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(!A2 * A3 * B1 * !C1 * !X)	0.00167	0.00168	0.00167
	(!A2 * A3 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(!A2 * A3 * !B1 * !X)	0.00166	0.00168	0.00167
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00105	-0.00111	-0.00110
	(!A2 * !A3 * B1 * !C1 * !X)	0.00175	0.00176	0.00175
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00108	-0.00113	-0.00112
	(!A2 * !A3 * !B1 * C1 * !X)	0.00174	0.00176	0.00175
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00108	-0.00113	-0.00112
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00174	0.00176	0.00175

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00125	-0.00125	-0.00125
	(A2 * B1 * !C1 * !X)	0.00190	0.00191	0.00190
	(A2 * A3 * B1 * C1 * X)	-0.00141	-0.00142	-0.00141
	(A2 * A3 * B1 * C1 * X)	0.00173	0.00175	0.00174
	(A2 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(A2 * !B1 * !X)	0.00190	0.00191	0.00190
	(A2 * !A3 * B1 * C1 * X)	-0.00141	-0.00142	-0.00141
	(A2 * !A3 * B1 * C1 * X)	0.00174	0.00175	0.00174
	(!A2 * A3 * B1 * C1 * X)	-0.00140	-0.00141	-0.00141
	(!A2 * A3 * B1 * C1 * X)	0.00167	0.00169	0.00167
	(!A2 * A3 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(!A2 * A3 * B1 * !C1 * !X)	0.00183	0.00185	0.00183
	(!A2 * A3 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(!A2 * A3 * !B1 * !X)	0.00183	0.00185	0.00183
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00107	-0.00116	-0.00116
	(!A2 * !A3 * B1 * !C1 * !X)	0.00194	0.00195	0.00194
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00112	-0.00119	-0.00118
	(!A2 * !A3 * !B1 * C1 * !X)	0.00195	0.00196	0.00194
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00112	-0.00119	-0.00118
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00195	0.00196	0.00194

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00211	-0.00213	-0.00212
	(A2 * B1 * !C1 * !X)	0.00317	0.00321	0.00318
	(A2 * A3 * B1 * C1 * X)	-0.00211	-0.00212	-0.00211
	(A2 * A3 * B1 * C1 * X)	0.00317	0.00321	0.00318
	(A2 * !B1 * !X)	-0.00211	-0.00213	-0.00212
	(A2 * !B1 * !X)	0.00318	0.00321	0.00318
	(A2 * !A3 * B1 * C1 * X)	-0.00211	-0.00212	-0.00211
	(A2 * !A3 * B1 * C1 * X)	0.00318	0.00320	0.00319
	(!A2 * A3 * B1 * C1 * X)	-0.00210	-0.00212	-0.00210
	(!A2 * A3 * B1 * C1 * X)	0.00305	0.00309	0.00307
	(!A2 * A3 * B1 * !C1 * !X)	-0.00211	-0.00213	-0.00212
	(!A2 * A3 * B1 * !C1 * !X)	0.00304	0.00309	0.00306
	(!A2 * A3 * !B1 * !X)	-0.00211	-0.00213	-0.00212
	(!A2 * A3 * !B1 * !X)	0.00305	0.00309	0.00306
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00184	-0.00197	-0.00197
	(!A2 * !A3 * B1 * !C1 * !X)	0.00326	0.00328	0.00326
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00190	-0.00202	-0.00200
	(!A2 * !A3 * !B1 * C1 * !X)	0.00326	0.00328	0.00326
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00190	-0.00200	-0.00200
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00326	0.00328	0.00326

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)**	0.00153	0.00156	0.00146
	(A1 * A3 * B1 * C1 * X)	-0.00117	-0.00117	-0.00116
	(A1 * A3 * B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A1 * A3 * B1 * !C1 * !X)	-0.00142	-0.00144	-0.00143
	(A1 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(A1 * A3 * !B1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * !A3 * B1 * C1 * X)	0.00142	0.00142	0.00140
	(A1 * !A3 * B1 * C1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A3 * B1 * !C1 * !X)	-0.00180	-0.00182	-0.00181
	(A1 * !A3 * !B1 * C1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A3 * !B1 * C1 * !X)	-0.00180	-0.00182	-0.00181
	(A1 * !A3 * !B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00180	-0.00182	-0.00181
	(!A1 * A3 * B1 * C1 * X)	0.00171	0.00142	0.00140
	(!A1 * A3 * B1 * C1 * X)	-0.00126	-0.00159	-0.00160
	(!A1 * A3 * B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(!A1 * A3 * B1 * !C1 * !X)	-0.00179	-0.00183	-0.00181
	(!A1 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * A3 * !B1 * !X)	-0.00179	-0.00183	-0.00181
	(!A1 * !A3 * B1 * !C1 * !X)	0.00109	0.00111	0.00110
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !A3 * !B1 * C1 * !X)	0.00112	0.00113	0.00112
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00112	0.00113	0.00112
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00144	0.00144	0.00136
	(A1 * A3 * B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A1 * A3 * B1 * !C1 * !X)	0.00127	0.00127	0.00126
	(A1 * A3 * B1 * !C1 * !X)	-0.00132	-0.00132	-0.00131
	(A1 * A3 * !B1 * !X)	0.00125	0.00127	0.00126
	(A1 * A3 * !B1 * !X)	-0.00132	-0.00132	-0.00131
	(A1 * !A3 * B1 * C1 * X)	0.00133	0.00133	0.00131
	(A1 * !A3 * B1 * C1 * X)	-0.00100	-0.00099	-0.00100
	(A1 * !A3 * B1 * !C1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A3 * B1 * !C1 * !X)	-0.00179	-0.00182	-0.00181
	(A1 * !A3 * !B1 * C1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A3 * !B1 * C1 * !X)	-0.00179	-0.00182	-0.00181
	(A1 * !A3 * !B1 * !C1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00179	-0.00182	-0.00181
	(!A1 * A3 * B1 * C1 * X)	0.00163	0.00133	0.00131
	(!A1 * A3 * B1 * C1 * X)	-0.00146	-0.00177	-0.00178
	(!A1 * A3 * B1 * !C1 * !X)	0.00127	0.00127	0.00126
	(!A1 * A3 * B1 * !C1 * !X)	-0.00181	-0.00183	-0.00181
	(!A1 * A3 * !B1 * !X)	0.00127	0.00127	0.00126
	(!A1 * A3 * !B1 * !X)	-0.00181	-0.00183	-0.00181
	(!A1 * !A3 * B1 * !C1 * !X)	0.00115	0.00117	0.00116
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00185	-0.00186	-0.00185
	(!A1 * !A3 * !B1 * C1 * !X)	0.00117	0.00119	0.00118
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00186	-0.00187	-0.00186
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00117	0.00119	0.00118
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00272	0.00274	0.00256
	(A1 * A3 * B1 * C1 * X)	-0.00233	-0.00235	-0.00233
	(A1 * A3 * B1 * !C1 * !X)	0.00246	0.00245	0.00244
	(A1 * A3 * B1 * !C1 * !X)	-0.00239	-0.00241	-0.00239
	(A1 * A3 * !B1 * !X)	0.00246	0.00245	0.00244
	(A1 * A3 * !B1 * !X)	-0.00239	-0.00241	-0.00239
	(A1 * !A3 * B1 * C1 * X)	0.00245	0.00247	0.00245
	(A1 * !A3 * B1 * C1 * X)	-0.00179	-0.00181	-0.00182
	(A1 * !A3 * B1 * !C1 * !X)	0.00247	0.00247	0.00244
	(A1 * !A3 * B1 * !C1 * !X)	-0.00315	-0.00317	-0.00315
	(A1 * !A3 * !B1 * C1 * !X)	0.00247	0.00247	0.00244
	(A1 * !A3 * !B1 * C1 * !X)	-0.00314	-0.00317	-0.00315
	(A1 * !A3 * !B1 * !C1 * !X)	0.00247	0.00247	0.00244
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00315	-0.00317	-0.00316
	(!A1 * A3 * B1 * C1 * X)	0.00307	0.00249	0.00244
	(!A1 * A3 * B1 * C1 * X)	-0.00253	-0.00317	-0.00319
	(!A1 * A3 * B1 * !C1 * !X)	0.00245	0.00246	0.00244
	(!A1 * A3 * B1 * !C1 * !X)	-0.00311	-0.00319	-0.00316
	(!A1 * A3 * !B1 * !X)	0.00245	0.00246	0.00244
	(!A1 * A3 * !B1 * !X)	-0.00311	-0.00319	-0.00316
	(!A1 * !A3 * B1 * !C1 * !X)	0.00224	0.00226	0.00225
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00322	-0.00323	-0.00323
	(!A1 * !A3 * !B1 * C1 * !X)	0.00228	0.00231	0.00229
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00323	-0.00325	-0.00323
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00228	0.00231	0.00228
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00323	-0.00325	-0.00323

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)**	-0.00140	-0.00140	-0.00140
	(A1 * A3 * B1 * C1 * X)	0.00117	0.00117	0.00116
	(A1 * A3 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * A3 * B1 * !C1 * !X)	0.00142	0.00144	0.00143
	(A1 * A3 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * A3 * !B1 * !X)	0.00143	0.00144	0.00143
	(A1 * !A3 * B1 * C1 * X)	-0.00138	-0.00139	-0.00137
	(A1 * !A3 * B1 * C1 * X)	0.00093	0.00093	0.00094
	(A1 * !A3 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A3 * B1 * !C1 * !X)	0.00181	0.00182	0.00181
	(A1 * !A3 * !B1 * C1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * !B1 * C1 * !X)	0.00181	0.00182	0.00181
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * !B1 * !C1 * !X)	0.00181	0.00182	0.00181
	(!A1 * A3 * B1 * C1 * X)	-0.00138	-0.00139	-0.00138
	(!A1 * A3 * B1 * C1 * X)	0.00159	0.00160	0.00160
	(!A1 * A3 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * A3 * B1 * !C1 * !X)	0.00181	0.00183	0.00181
	(!A1 * A3 * !B1 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * A3 * !B1 * !X)	0.00181	0.00183	0.00181
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00103	-0.00111	-0.00110
	(!A1 * !A3 * B1 * !C1 * !X)	0.00185	0.00186	0.00185
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00108	-0.00113	-0.00112
	(!A1 * !A3 * !B1 * C1 * !X)	0.00185	0.00186	0.00185
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00107	-0.00113	-0.00112
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00184	0.00186	0.00185

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00130	-0.00131	-0.00130
	(A1 * A3 * B1 * C1 * X)	0.00123	0.00124	0.00123
	(A1 * A3 * B1 * !C1 * !X)	-0.00126	-0.00126	-0.00125
	(A1 * A3 * B1 * !C1 * !X)	0.00132	0.00132	0.00131
	(A1 * A3 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * A3 * !B1 * !X)	0.00132	0.00132	0.00131
	(A1 * !A3 * B1 * C1 * X)	-0.00130	-0.00129	-0.00129
	(A1 * !A3 * B1 * C1 * X)	0.00103	0.00103	0.00103
	(A1 * !A3 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * B1 * !C1 * !X)	0.00181	0.00182	0.00181
	(A1 * !A3 * !B1 * C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * !B1 * C1 * !X)	0.00180	0.00182	0.00181
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * !B1 * !C1 * !X)	0.00181	0.00182	0.00181
	(!A1 * A3 * B1 * C1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * A3 * B1 * C1 * X)	0.00177	0.00178	0.00178
	(!A1 * A3 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(!A1 * A3 * B1 * !C1 * !X)	0.00181	0.00183	0.00181
	(!A1 * A3 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(!A1 * A3 * !B1 * !X)	0.00181	0.00183	0.00181
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00107	-0.00117	-0.00116
	(!A1 * !A3 * B1 * !C1 * !X)	0.00186	0.00187	0.00186
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00111	-0.00119	-0.00118
	(!A1 * !A3 * !B1 * C1 * !X)	0.00187	0.00187	0.00186
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00112	-0.00119	-0.00118
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00187	0.00187	0.00186

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00243	-0.00244	-0.00243
	(A1 * A3 * B1 * C1 * X)	0.00233	0.00235	0.00233
	(A1 * A3 * B1 * !C1 * !X)	-0.00243	-0.00244	-0.00243
	(A1 * A3 * B1 * !C1 * !X)	0.00239	0.00241	0.00239
	(A1 * A3 * !B1 * !X)	-0.00243	-0.00244	-0.00243
	(A1 * A3 * !B1 * !X)	0.00239	0.00241	0.00239
	(A1 * !A3 * B1 * C1 * X)	-0.00241	-0.00240	-0.00237
	(A1 * !A3 * B1 * C1 * X)	0.00187	0.00187	0.00190
	(A1 * !A3 * B1 * !C1 * !X)	-0.00243	-0.00245	-0.00243
	(A1 * !A3 * B1 * !C1 * !X)	0.00316	0.00317	0.00315
	(A1 * !A3 * !B1 * C1 * !X)	-0.00243	-0.00245	-0.00243
	(A1 * !A3 * !B1 * C1 * !X)	0.00314	0.00317	0.00315
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00243	-0.00245	-0.00243
	(A1 * !A3 * !B1 * !C1 * !X)	0.00315	0.00317	0.00316
	(!A1 * A3 * B1 * C1 * X)	-0.00242	-0.00242	-0.00240
	(!A1 * A3 * B1 * C1 * X)	0.00318	0.00320	0.00319
	(!A1 * A3 * B1 * !C1 * !X)	-0.00243	-0.00244	-0.00243
	(!A1 * A3 * B1 * !C1 * !X)	0.00317	0.00319	0.00316
	(!A1 * A3 * !B1 * !X)	-0.00243	-0.00245	-0.00243
	(!A1 * A3 * !B1 * !X)	0.00316	0.00319	0.00316
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00209	-0.00226	-0.00225
	(!A1 * !A3 * B1 * !C1 * !X)	0.00323	0.00325	0.00324
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00217	-0.00231	-0.00229
	(!A1 * !A3 * !B1 * C1 * !X)	0.00324	0.00326	0.00324
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00218	-0.00231	-0.00228
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00324	0.00326	0.00324

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)**	0.00131	0.00131	0.00130
	(A2 * B1 * C1 * X)	-0.00084	-0.00083	-0.00083
	(A2 * B1 * !C1 * !X)	0.00115	0.00117	0.00116
	(A2 * B1 * !C1 * !X)	-0.00158	-0.00163	-0.00162
	(A2 * !B1 * C1 * !X)	0.00115	0.00117	0.00116
	(A2 * !B1 * C1 * !X)	-0.00158	-0.00164	-0.00162
	(A2 * !B1 * !C1 * !X)	0.00116	0.00116	0.00116
	(A2 * !B1 * !C1 * !X)	-0.00158	-0.00164	-0.00162
	(A1 * !A2 * B1 * C1 * X)	0.00130	0.00131	0.00130
	(A1 * !A2 * B1 * C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * B1 * !C1 * !X)	-0.00147	-0.00156	-0.00155
	(A1 * !A2 * !B1 * C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * !B1 * C1 * !X)	-0.00147	-0.00156	-0.00155
	(A1 * !A2 * !B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00147	-0.00157	-0.00156
	(!A1 * !A2 * B1 * !C1 * !X)	0.00108	0.00110	0.00109
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * !A2 * !B1 * C1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00165	-0.00165	-0.00165
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00146	0.00146	0.00146
	(A2 * B1 * C1 * X)	-0.00085	-0.00084	-0.00084
	(A2 * B1 * !C1 * !X)	0.00126	0.00127	0.00126
	(A2 * B1 * !C1 * !X)	-0.00173	-0.00178	-0.00177
	(A2 * !B1 * C1 * !X)	0.00126	0.00127	0.00126
	(A2 * !B1 * C1 * !X)	-0.00173	-0.00178	-0.00177
	(A2 * !B1 * !C1 * !X)	0.00126	0.00127	0.00126
	(A2 * !B1 * !C1 * !X)	-0.00173	-0.00178	-0.00177
	(A1 * !A2 * B1 * C1 * X)	0.00145	0.00146	0.00146
	(A1 * !A2 * B1 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * !A2 * B1 * !C1 * !X)	0.00126	0.00126	0.00126
	(A1 * !A2 * B1 * !C1 * !X)	-0.00158	-0.00168	-0.00168
	(A1 * !A2 * !B1 * C1 * !X)	0.00126	0.00126	0.00126
	(A1 * !A2 * !B1 * C1 * !X)	-0.00158	-0.00168	-0.00168
	(A1 * !A2 * !B1 * !C1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00158	-0.00170	-0.00169
	(!A1 * !A2 * B1 * !C1 * !X)	0.00116	0.00116	0.00116
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00181	-0.00181	-0.00181
	(!A1 * !A2 * !B1 * C1 * !X)	0.00118	0.00118	0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00181	-0.00182	-0.00181
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00118	0.00118	0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00182	-0.00182	-0.00181

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00248	0.00249	0.00249
	(A2 * B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(A2 * B1 * !C1 * !X)	0.00216	0.00218	0.00216
	(A2 * B1 * !C1 * !X)	-0.00316	-0.00326	-0.00324
	(A2 * !B1 * C1 * !X)	0.00216	0.00218	0.00216
	(A2 * !B1 * C1 * !X)	-0.00316	-0.00326	-0.00324
	(A2 * !B1 * !C1 * !X)	0.00216	0.00218	0.00216
	(A2 * !B1 * !C1 * !X)	-0.00316	-0.00326	-0.00325
	(A1 * !A2 * B1 * C1 * X)	0.00248	0.00249	0.00249
	(A1 * !A2 * B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * !A2 * B1 * !C1 * !X)	0.00216	0.00217	0.00216
	(A1 * !A2 * B1 * !C1 * !X)	-0.00292	-0.00309	-0.00308
	(A1 * !A2 * !B1 * C1 * !X)	0.00216	0.00217	0.00216
	(A1 * !A2 * !B1 * C1 * !X)	-0.00292	-0.00309	-0.00308
	(A1 * !A2 * !B1 * !C1 * !X)	0.00215	0.00217	0.00216
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00292	-0.00310	-0.00310
	(!A1 * !A2 * B1 * !C1 * !X)	0.00200	0.00203	0.00201
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00331	-0.00333	-0.00331
	(!A1 * !A2 * !B1 * C1 * !X)	0.00204	0.00205	0.00204
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00331	-0.00332	-0.00331
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00204	0.00205	0.00204
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00332	-0.00332	-0.00331

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)**	-0.00122	-0.00122	-0.00129
	(A2 * B1 * C1 * X)	0.00091	0.00091	0.00085
	(A2 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * B1 * !C1 * !X)	0.00162	0.00163	0.00162
	(A2 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * !B1 * C1 * !X)	0.00163	0.00164	0.00162
	(A2 * !B1 * !C1 * !X)	-0.00116	-0.00116	-0.00115
	(A2 * !B1 * !C1 * !X)	0.00163	0.00164	0.00162
	(A1 * !A2 * B1 * C1 * X)	-0.00113	-0.00114	-0.00128
	(A1 * !A2 * B1 * C1 * X)	0.00096	0.00096	0.00085
	(A1 * !A2 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * B1 * !C1 * !X)	0.00155	0.00156	0.00155
	(A1 * !A2 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * C1 * !X)	0.00155	0.00156	0.00155
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00155	0.00157	0.00156
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00103	-0.00110	-0.00109
	(!A1 * !A2 * B1 * !C1 * !X)	0.00166	0.00166	0.00166
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00106	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * C1 * !X)	0.00165	0.00166	0.00166
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00106	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00165	0.00166	0.00166

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00140	-0.00141	-0.00145
	(A2 * B1 * C1 * X)	0.00089	0.00089	0.00086
	(A2 * B1 * !C1 * !X)	-0.00125	-0.00127	-0.00126
	(A2 * B1 * !C1 * !X)	0.00176	0.00178	0.00177
	(A2 * !B1 * C1 * !X)	-0.00125	-0.00126	-0.00126
	(A2 * !B1 * C1 * !X)	0.00176	0.00178	0.00177
	(A2 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00126
	(A2 * !B1 * !C1 * !X)	0.00177	0.00178	0.00177
	(A1 * !A2 * B1 * C1 * X)	-0.00132	-0.00132	-0.00143
	(A1 * !A2 * B1 * C1 * X)	0.00094	0.00093	0.00086
	(A1 * !A2 * B1 * !C1 * !X)	-0.00126	-0.00126	-0.00126
	(A1 * !A2 * B1 * !C1 * !X)	0.00168	0.00168	0.00168
	(A1 * !A2 * !B1 * C1 * !X)	-0.00126	-0.00126	-0.00126
	(A1 * !A2 * !B1 * C1 * !X)	0.00168	0.00168	0.00168
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !C1 * !X)	0.00168	0.00170	0.00169
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00107	-0.00116	-0.00116
	(!A1 * !A2 * B1 * !C1 * !X)	0.00182	0.00182	0.00181
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00112	-0.00118	-0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	0.00182	0.00183	0.00182
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00112	-0.00118	-0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00182	0.00183	0.00182

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00230	-0.00232	-0.00246
	(A2 * B1 * C1 * X)	0.00182	0.00181	0.00168
	(A2 * B1 * !C1 * !X)	-0.00216	-0.00217	-0.00215
	(A2 * B1 * !C1 * !X)	0.00325	0.00326	0.00324
	(A2 * !B1 * C1 * !X)	-0.00216	-0.00217	-0.00215
	(A2 * !B1 * C1 * !X)	0.00325	0.00326	0.00324
	(A2 * !B1 * !C1 * !X)	-0.00216	-0.00216	-0.00215
	(A2 * !B1 * !C1 * !X)	0.00325	0.00326	0.00325
	(A1 * !A2 * B1 * C1 * X)	-0.00213	-0.00215	-0.00243
	(A1 * !A2 * B1 * C1 * X)	0.00191	0.00190	0.00168
	(A1 * !A2 * B1 * !C1 * !X)	-0.00216	-0.00216	-0.00215
	(A1 * !A2 * B1 * !C1 * !X)	0.00309	0.00309	0.00308
	(A1 * !A2 * !B1 * C1 * !X)	-0.00215	-0.00216	-0.00215
	(A1 * !A2 * !B1 * C1 * !X)	0.00307	0.00309	0.00308
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00215	-0.00215	-0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	0.00309	0.00310	0.00310
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00185	-0.00203	-0.00201
	(!A1 * !A2 * B1 * !C1 * !X)	0.00332	0.00334	0.00332
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00192	-0.00205	-0.00204
	(!A1 * !A2 * !B1 * C1 * !X)	0.00332	0.00334	0.00332
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00193	-0.00205	-0.00204
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00332	0.00334	0.00332

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00105	0.00106	0.00105
	(A3 * !C1 * !X)	-0.00167	-0.00169	-0.00167
	(A2 * !A3 * !C1 * !X)	0.00105	0.00106	0.00105
	(A2 * !A3 * !C1 * !X)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * !A3 * !C1 * !X)	0.00105	0.00106	0.00105
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A2 * !A3 * C1 * !X)	0.00060	0.00060	0.00056
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00168	-0.00168	-0.00167
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00075	0.00075	0.00074
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00168	-0.00168	-0.00168
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00118	0.00119	0.00118
	(A3 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(A2 * !A3 * !C1 * !X)	0.00118	0.00118	0.00118
	(A2 * !A3 * !C1 * !X)	-0.00173	-0.00173	-0.00173
	(A1 * !A2 * !A3 * !C1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A2 * !A3 * C1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00176	-0.00176	-0.00174
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00176	-0.00176	-0.00176
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00230	0.00232	0.00230
	(A3 * !C1 * !X)	-0.00370	-0.00372	-0.00370
	(A2 * !A3 * !C1 * !X)	0.00229	0.00232	0.00230
	(A2 * !A3 * !C1 * !X)	-0.00369	-0.00372	-0.00370
	(A1 * !A2 * !A3 * !C1 * !X)	0.00228	0.00231	0.00230
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00369	-0.00371	-0.00370
	(!A1 * !A2 * !A3 * C1 * !X)	0.00125	0.00125	0.00124
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00371	-0.00372	-0.00369
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00156	0.00158	0.00156
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00371	-0.00374	-0.00372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00097	-0.00105	-0.00105
	(A3 * !C1 * !X)	0.00174	0.00171	0.00168
	(A2 * !A3 * !C1 * !X)	-0.00097	-0.00105	-0.00105
	(A2 * !A3 * !C1 * !X)	0.00176	0.00171	0.00168
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00096	-0.00105	-0.00105
	(A1 * !A2 * !A3 * !C1 * !X)	0.00177	0.00171	0.00168
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00051	-0.00051	-0.00052
	(!A1 * !A2 * !A3 * C1 * !X)	0.00171	0.00172	0.00169
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00178	0.00175	0.00170
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00109	-0.00119	-0.00118
	(A3 * !C1 * !X)	0.00181	0.00176	0.00174
	(A2 * !A3 * !C1 * !X)	-0.00109	-0.00118	-0.00118
	(A2 * !A3 * !C1 * !X)	0.00183	0.00176	0.00174
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00108	-0.00119	-0.00118
	(A1 * !A2 * !A3 * !C1 * !X)	0.00184	0.00176	0.00174
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00051	-0.00051	-0.00052
	(!A1 * !A2 * !A3 * C1 * !X)	0.00179	0.00180	0.00176
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00187	0.00185	0.00179

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00213	-0.00232	-0.00230
	(A3 * !C1 * !X)	0.00381	0.00376	0.00371
	(A2 * !A3 * !C1 * !X)	-0.00211	-0.00232	-0.00230
	(A2 * !A3 * !C1 * !X)	0.00382	0.00376	0.00371
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00211	-0.00230	-0.00230
	(A1 * !A2 * !A3 * !C1 * !X)	0.00388	0.00372	0.00371
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00115	-0.00114	-0.00117
	(!A1 * !A2 * !A3 * C1 * !X)	0.00384	0.00383	0.00375
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00156	-0.00158	-0.00156
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00392	0.00388	0.00376

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00046	0.00046	0.00044
	(A3 * !B1 * !X)	-0.00191	-0.00192	-0.00194
	(A2 * !A3 * !B1 * !X)	0.00046	0.00046	0.00044
	(A2 * !A3 * !B1 * !X)	-0.00191	-0.00192	-0.00194
	(!A2 * !A3 * !B1 * !X)	0.00046	0.00046	0.00044
	(!A2 * !A3 * !B1 * !X)	-0.00191	-0.00192	-0.00194
	(!A1 * !A2 * !A3 * B1 * !X)	0.00057	0.00057	0.00048
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00177	-0.00178	-0.00192
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00052	0.00052	0.00050
	(A3 * !B1 * !X)	-0.00193	-0.00194	-0.00197
	(A2 * !A3 * !B1 * !X)	0.00052	0.00052	0.00050
	(A2 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00197
	(!A2 * !A3 * !B1 * !X)	0.00052	0.00052	0.00050
	(!A2 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00197
	(!A1 * !A2 * !A3 * B1 * !X)	0.00057	0.00057	0.00050
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00182	-0.00183	-0.00196
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00095	0.00095	0.00089
	(A3 * !B1 * !X)	-0.00363	-0.00365	-0.00371
	(A2 * !A3 * !B1 * !X)	0.00095	0.00095	0.00089
	(A2 * !A3 * !B1 * !X)	-0.00363	-0.00365	-0.00371
	(!A2 * !A3 * !B1 * !X)	0.00095	0.00095	0.00089
	(!A2 * !A3 * !B1 * !X)	-0.00363	-0.00364	-0.00371
	(!A1 * !A2 * !A3 * B1 * !X)	0.00105	0.00105	0.00088
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00337	-0.00339	-0.00367

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(A3 * !B1 * !X)	0.00194	0.00196	0.00195
	(A2 * !A3 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(A2 * !A3 * !B1 * !X)	0.00194	0.00196	0.00195
	(!A2 * !A3 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(!A2 * !A3 * !B1 * !X)	0.00194	0.00195	0.00195
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00043	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * B1 * !X)	0.00194	0.00195	0.00195
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(A3 * !B1 * !X)	0.00197	0.00198	0.00197
	(A2 * !A3 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(A2 * !A3 * !B1 * !X)	0.00197	0.00198	0.00197
	(!A2 * !A3 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !A3 * !B1 * !X)	0.00197	0.00198	0.00197
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00048	-0.00048	-0.00047
	(!A1 * !A2 * !A3 * B1 * !X)	0.00197	0.00198	0.00197
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00087	-0.00086	-0.00086
	(A3 * !B1 * !X)	0.00374	0.00375	0.00373
	(A2 * !A3 * !B1 * !X)	-0.00087	-0.00086	-0.00086
	(A2 * !A3 * !B1 * !X)	0.00374	0.00375	0.00373
	(!A2 * !A3 * !B1 * !X)	-0.00087	-0.00086	-0.00086
	(!A2 * !A3 * !B1 * !X)	0.00374	0.00374	0.00373
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00083	-0.00083	-0.00082
	(!A1 * !A2 * !A3 * B1 * !X)	0.00374	0.00374	0.00373

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00274	0.00320	0.00314	0.00286	0.24227
sky130_fd_sc_hs__o31ai_2	0.00560	0.00549	0.00577	0.00570	0.44153
sky130_fd_sc_hs__o31ai_4	0.01079	0.01079	0.01125	0.00824	0.82876

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31ai_1	0.00000	0.04194	0.09551
sky130_fd_sc_hs__o31ai_2	0.00000	0.08349	0.19054
sky130_fd_sc_hs__o31ai_4	0.00000	0.13909	0.37756

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)	0.27188	1.35570	10.14920
	A2->Y (FR)	0.26083	1.36858	10.66350
	A3->Y (FR)	0.20496	1.31350	10.73900
	B1->Y (FR)	0.05468	0.69562	6.47761
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.28108	1.20392	10.07160
	A2->Y (FR)	0.25127	1.18941	10.56190
	A3->Y (FR)	0.19424	1.14450	10.75850
	B1->Y (FR)	0.04806	0.62511	6.41995
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.25973	1.03229	9.88529
	A2->Y (FR)	0.23267	1.02369	10.43590
	A3->Y (FR)	0.17129	0.97996	10.66500
	B1->Y (FR)	0.06257	0.73770	8.43723

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.06628	0.51582	4.21922
	A2->Y (RF)	0.06748	0.50655	4.19992
	A3->Y (RF)	0.05451	0.48422	4.15111
	B1->Y (RF)	0.05610	0.56594	4.80533
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.06646	0.47339	4.20660
	A2->Y (RF)	0.06481	0.45656	4.16893
	A3->Y (RF)	0.05341	0.43527	4.13214
	B1->Y (RF)	0.05160	0.51249	4.82488
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.06596	0.42376	4.14867
	A2->Y (RF)	0.06272	0.40302	4.08807
	A3->Y (RF)	0.04747	0.37157	3.97418
	B1->Y (RF)	0.04965	0.48962	5.11144

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00083	0.00070	0.00169
	A1	0.00788	0.00769	0.00872
	A2	0.00088	0.00070	0.00185
	A2	0.00727	0.00707	0.00824
	A3	0.00086	0.00086	0.00311
	A3	0.00624	0.00625	0.00850
	B1	-0.00025	0.00003	0.00298
	B1	0.00572	0.00594	0.00906
sky130_fd_sc_hs__o31ai_2	A1	0.00163	0.00127	0.00320
	A1	0.01585	0.01552	0.01740
	A2	0.00168	0.00132	0.00372
	A2	0.01377	0.01344	0.01583
	A3	0.00159	0.00150	0.00608
	A3	0.01188	0.01179	0.01637
	B1	-0.00133	-0.00067	0.00528
	B1	0.01037	0.01089	0.01678
sky130_fd_sc_hs__o31ai_4	A1	0.00257	0.00195	0.00589
	A1	0.03019	0.02955	0.03346
	A2	0.00261	0.00196	0.00675
	A2	0.02628	0.02561	0.03041
	A3	0.00244	0.00241	0.01125
	A3	0.02238	0.02238	0.03120
	B1	-0.00246	-0.00197	0.00504
	B1	0.01688	0.01727	0.02381

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00938	0.00924	0.01030
	A1	0.00231	0.00214	0.00318
	A2	0.00787	0.00773	0.00878
	A2	0.00143	0.00126	0.00229
	A3	0.00587	0.00584	0.00694
	A3	0.00038	0.00034	0.00139
	B1	0.00813	0.00805	0.00970
	B1	0.00232	0.00221	0.00380
sky130_fd_sc_hs__o31ai_2	A1	0.01924	0.01880	0.02086
	A1	0.00499	0.00454	0.00660
	A2	0.01498	0.01471	0.01680
	A2	0.00273	0.00243	0.00458
	A3	0.01115	0.01103	0.01335
	A3	0.00063	0.00053	0.00274
	B1	0.01639	0.01644	0.01960
	B1	0.00504	0.00502	0.00805
sky130_fd_sc_hs__o31ai_4	A1	0.03574	0.03484	0.03932
	A1	0.00809	0.00719	0.01148
	A2	0.02770	0.02701	0.03153
	A2	0.00375	0.00302	0.00756
	A3	0.01970	0.01949	0.02427
	A3	-0.00067	-0.00087	0.00391
	B1	0.02919	0.02920	0.03273
	B1	0.01048	0.01043	0.01361

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)**	0.00135	0.00134	0.00134
	(A2 * A3 * B1 * !Y)	-0.00168	-0.00172	-0.00172
	(A2 * !B1 * Y)	0.00135	0.00134	0.00134
	(A2 * !B1 * Y)	-0.00168	-0.00172	-0.00172
	(A2 * !A3 * B1 * !Y)	0.00139	0.00134	0.00134
	(A2 * !A3 * B1 * !Y)	-0.00162	-0.00172	-0.00172
	(!A2 * A3 * B1 * !Y)	0.00136	0.00136	0.00134
	(!A2 * A3 * B1 * !Y)	-0.00153	-0.00167	-0.00165
	(!A2 * A3 * !B1 * Y)	0.00134	0.00136	0.00134
	(!A2 * A3 * !B1 * Y)	-0.00155	-0.00167	-0.00165
	(!A2 * !A3 * !B1 * Y)	0.00126	0.00128	0.00127
	(!A2 * !A3 * !B1 * Y)	-0.00175	-0.00176	-0.00175
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00271	0.00273	0.00271
	(A2 * A3 * B1 * !Y)	-0.00342	-0.00354	-0.00353
	(A2 * !B1 * Y)	0.00270	0.00272	0.00270
	(A2 * !B1 * Y)	-0.00344	-0.00354	-0.00354
	(A2 * !A3 * B1 * !Y)	0.00280	0.00273	0.00271
	(A2 * !A3 * B1 * !Y)	-0.00330	-0.00356	-0.00353
	(!A2 * A3 * B1 * !Y)	0.00277	0.00272	0.00271
	(!A2 * A3 * B1 * !Y)	-0.00312	-0.00343	-0.00339
	(!A2 * A3 * !B1 * Y)	0.00270	0.00272	0.00270
	(!A2 * A3 * !B1 * Y)	-0.00317	-0.00343	-0.00340
	(!A2 * !A3 * !B1 * Y)	0.00253	0.00253	0.00252
	(!A2 * !A3 * !B1 * Y)	-0.00364	-0.00364	-0.00363

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00525	0.00525	0.00522
	(A2 * A3 * B1 * !Y)	-0.00681	-0.00703	-0.00700
	(A2 * !B1 * Y)	0.00523	0.00524	0.00522
	(A2 * !B1 * Y)	-0.00683	-0.00705	-0.00701
	(A2 * !A3 * B1 * !Y)	0.00542	0.00525	0.00522
	(A2 * !A3 * B1 * !Y)	-0.00657	-0.00704	-0.00700
	(!A2 * A3 * B1 * !Y)	0.00535	0.00525	0.00522
	(!A2 * A3 * B1 * !Y)	-0.00622	-0.00676	-0.00673
	(!A2 * A3 * !B1 * Y)	0.00523	0.00525	0.00522
	(!A2 * A3 * !B1 * Y)	-0.00631	-0.00677	-0.00673
	(!A2 * !A3 * !B1 * Y)	0.00486	0.00490	0.00488
	(!A2 * !A3 * !B1 * Y)	-0.00718	-0.00721	-0.00719

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)**	-0.00134	-0.00134	-0.00134
	(A2 * A3 * B1 * !Y)	0.00172	0.00173	0.00172
	(A2 * !B1 * Y)	-0.00134	-0.00134	-0.00134
	(A2 * !B1 * Y)	0.00172	0.00173	0.00172
	(A2 * !A3 * B1 * !Y)	-0.00134	-0.00134	-0.00134
	(A2 * !A3 * B1 * !Y)	0.00172	0.00173	0.00172
	(!A2 * A3 * B1 * !Y)	-0.00133	-0.00134	-0.00134
	(!A2 * A3 * B1 * !Y)	0.00164	0.00167	0.00165
	(!A2 * A3 * !B1 * Y)	-0.00133	-0.00135	-0.00134
	(!A2 * A3 * !B1 * Y)	0.00164	0.00167	0.00165
	(!A2 * !A3 * !B1 * Y)	-0.00120	-0.00128	-0.00127
	(!A2 * !A3 * !B1 * Y)	0.00177	0.00177	0.00176

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00270	-0.00271	-0.00270
	(A2 * A3 * B1 * !Y)	0.00352	0.00354	0.00353
	(A2 * !B1 * Y)	-0.00269	-0.00270	-0.00270
	(A2 * !B1 * Y)	0.00353	0.00354	0.00354
	(A2 * !A3 * B1 * !Y)	-0.00270	-0.00272	-0.00270
	(A2 * !A3 * B1 * !Y)	0.00352	0.00357	0.00353
	(!A2 * A3 * B1 * !Y)	-0.00269	-0.00271	-0.00270
	(!A2 * A3 * B1 * !Y)	0.00338	0.00343	0.00339
	(!A2 * A3 * !B1 * Y)	-0.00269	-0.00271	-0.00270
	(!A2 * A3 * !B1 * Y)	0.00338	0.00343	0.00340
	(!A2 * !A3 * !B1 * Y)	-0.00236	-0.00253	-0.00252
	(!A2 * !A3 * !B1 * Y)	0.00368	0.00368	0.00364
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00523	-0.00523	-0.00521
	(A2 * A3 * B1 * !Y)	0.00701	0.00703	0.00700
	(A2 * !B1 * Y)	-0.00518	-0.00522	-0.00520
	(A2 * !B1 * Y)	0.00697	0.00705	0.00701
	(A2 * !A3 * B1 * !Y)	-0.00520	-0.00523	-0.00521
	(A2 * !A3 * B1 * !Y)	0.00698	0.00704	0.00700
	(!A2 * A3 * B1 * !Y)	-0.00521	-0.00522	-0.00520
	(!A2 * A3 * B1 * !Y)	0.00672	0.00676	0.00673
	(!A2 * A3 * !B1 * Y)	-0.00519	-0.00522	-0.00520
	(!A2 * A3 * !B1 * Y)	0.00669	0.00677	0.00673
	(!A2 * !A3 * !B1 * Y)	-0.00455	-0.00490	-0.00488
	(!A2 * !A3 * !B1 * Y)	0.00727	0.00729	0.00721

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)**	0.00164	0.00166	0.00157
	(A1 * A3 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * A3 * !B1 * Y)	0.00133	0.00134	0.00133
	(A1 * A3 * !B1 * Y)	-0.00146	-0.00148	-0.00147
	(A1 * !A3 * B1 * !Y)	0.00155	0.00154	0.00153
	(A1 * !A3 * B1 * !Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * !B1 * Y)	0.00134	0.00135	0.00133
	(A1 * !A3 * !B1 * Y)	-0.00195	-0.00195	-0.00196
	(!A1 * A3 * B1 * !Y)	0.00185	0.00155	0.00152
	(!A1 * A3 * B1 * !Y)	-0.00146	-0.00178	-0.00178
	(!A1 * A3 * !B1 * Y)	0.00134	0.00134	0.00133
	(!A1 * A3 * !B1 * Y)	-0.00195	-0.00198	-0.00196
	(!A1 * !A3 * !B1 * Y)	0.00125	0.00125	0.00124
	(!A1 * !A3 * !B1 * Y)	-0.00200	-0.00201	-0.00200
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00302	0.00300	0.00281
	(A1 * A3 * B1 * !Y)	-0.00243	-0.00245	-0.00243
	(A1 * A3 * !B1 * Y)	0.00264	0.00264	0.00262
	(A1 * A3 * !B1 * Y)	-0.00256	-0.00258	-0.00256
	(A1 * !A3 * B1 * !Y)	0.00269	0.00270	0.00267
	(A1 * !A3 * B1 * !Y)	-0.00191	-0.00193	-0.00194
	(A1 * !A3 * !B1 * Y)	0.00264	0.00265	0.00262
	(A1 * !A3 * !B1 * Y)	-0.00347	-0.00351	-0.00349
	(!A1 * A3 * B1 * !Y)	0.00329	0.00270	0.00265
	(!A1 * A3 * B1 * !Y)	-0.00290	-0.00352	-0.00352
	(!A1 * A3 * !B1 * Y)	0.00265	0.00265	0.00262
	(!A1 * A3 * !B1 * Y)	-0.00351	-0.00355	-0.00353
	(!A1 * !A3 * !B1 * Y)	0.00245	0.00248	0.00245
	(!A1 * !A3 * !B1 * Y)	-0.00361	-0.00363	-0.00361

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00596	0.00594	0.00556
	(A1 * A3 * B1 * !Y)	-0.00484	-0.00488	-0.00484
	(A1 * A3 * !B1 * Y)	0.00524	0.00523	0.00519
	(A1 * A3 * !B1 * Y)	-0.00509	-0.00515	-0.00510
	(A1 * !A3 * B1 * !Y)	0.00535	0.00537	0.00530
	(A1 * !A3 * B1 * !Y)	-0.00383	-0.00385	-0.00386
	(A1 * !A3 * !B1 * Y)	0.00518	0.00519	0.00519
	(A1 * !A3 * !B1 * Y)	-0.00690	-0.00701	-0.00697
	(!A1 * A3 * B1 * !Y)	0.00654	0.00536	0.00526
	(!A1 * A3 * B1 * !Y)	-0.00565	-0.00704	-0.00702
	(!A1 * A3 * !B1 * Y)	0.00517	0.00525	0.00519
	(!A1 * A3 * !B1 * Y)	-0.00696	-0.00708	-0.00706
	(!A1 * !A3 * !B1 * Y)	0.00488	0.00490	0.00486
	(!A1 * !A3 * !B1 * Y)	-0.00726	-0.00727	-0.00723

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)**	-0.00153	-0.00153	-0.00152
	(A1 * A3 * B1 * !Y)	0.00124	0.00124	0.00124
	(A1 * A3 * !B1 * Y)	-0.00132	-0.00133	-0.00133
	(A1 * A3 * !B1 * Y)	0.00146	0.00148	0.00147
	(A1 * !A3 * B1 * !Y)	-0.00151	-0.00152	-0.00150
	(A1 * !A3 * B1 * !Y)	0.00103	0.00103	0.00103
	(A1 * !A3 * !B1 * Y)	-0.00133	-0.00133	-0.00133
	(A1 * !A3 * !B1 * Y)	0.00195	0.00195	0.00196
	(!A1 * A3 * B1 * !Y)	-0.00151	-0.00152	-0.00151
	(!A1 * A3 * B1 * !Y)	0.00177	0.00179	0.00178
	(!A1 * A3 * !B1 * Y)	-0.00133	-0.00133	-0.00133
	(!A1 * A3 * !B1 * Y)	0.00196	0.00198	0.00196
	(!A1 * !A3 * !B1 * Y)	-0.00116	-0.00125	-0.00124
	(!A1 * !A3 * !B1 * Y)	0.00203	0.00203	0.00201
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00268	-0.00270	-0.00268
	(A1 * A3 * B1 * !Y)	0.00243	0.00245	0.00243
	(A1 * A3 * !B1 * Y)	-0.00262	-0.00263	-0.00261
	(A1 * A3 * !B1 * Y)	0.00256	0.00258	0.00256
	(A1 * !A3 * B1 * !Y)	-0.00264	-0.00264	-0.00262
	(A1 * !A3 * B1 * !Y)	0.00200	0.00200	0.00200
	(A1 * !A3 * !B1 * Y)	-0.00262	-0.00263	-0.00262
	(A1 * !A3 * !B1 * Y)	0.00350	0.00351	0.00349
	(!A1 * A3 * B1 * !Y)	-0.00264	-0.00265	-0.00263
	(!A1 * A3 * B1 * !Y)	0.00351	0.00352	0.00352
	(!A1 * A3 * !B1 * Y)	-0.00262	-0.00263	-0.00262
	(!A1 * A3 * !B1 * Y)	0.00354	0.00355	0.00353
	(!A1 * !A3 * !B1 * Y)	-0.00229	-0.00248	-0.00245
	(!A1 * !A3 * !B1 * Y)	0.00366	0.00365	0.00362

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00531	-0.00534	-0.00531
	(A1 * A3 * B1 * !Y)	0.00484	0.00488	0.00484
	(A1 * A3 * !B1 * Y)	-0.00516	-0.00521	-0.00517
	(A1 * A3 * !B1 * Y)	0.00509	0.00515	0.00510
	(A1 * !A3 * B1 * !Y)	-0.00520	-0.00525	-0.00520
	(A1 * !A3 * B1 * !Y)	0.00394	0.00399	0.00400
	(A1 * !A3 * !B1 * Y)	-0.00518	-0.00519	-0.00517
	(A1 * !A3 * !B1 * Y)	0.00699	0.00701	0.00697
	(!A1 * A3 * B1 * !Y)	-0.00524	-0.00525	-0.00521
	(!A1 * A3 * B1 * !Y)	0.00701	0.00704	0.00702
	(!A1 * A3 * !B1 * Y)	-0.00517	-0.00519	-0.00517
	(!A1 * A3 * !B1 * Y)	0.00708	0.00708	0.00706
	(!A1 * !A3 * !B1 * Y)	-0.00451	-0.00490	-0.00486
	(!A1 * !A3 * !B1 * Y)	0.00729	0.00731	0.00725

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00164	0.00165	0.00164
	(A2 * B1 * !Y)	-0.00085	-0.00085	-0.00085
	(A2 * !B1 * Y)	0.00128	0.00129	0.00128
	(A2 * !B1 * Y)	-0.00190	-0.00195	-0.00194
	(A1 * !A2 * B1 * !Y)	0.00164	0.00165	0.00164
	(A1 * !A2 * B1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * !B1 * Y)	0.00127	0.00129	0.00128
	(A1 * !A2 * !B1 * Y)	-0.00173	-0.00185	-0.00185
	(!A1 * !A2 * !B1 * Y)	0.00119	0.00120	0.00120
	(!A1 * !A2 * !B1 * Y)	-0.00198	-0.00199	-0.00198

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00307	0.00308	0.00307
	(A2 * B1 * !Y)	-0.00170	-0.00170	-0.00169
	(A2 * !B1 * Y)	0.00259	0.00259	0.00256
	(A2 * !B1 * Y)	-0.00360	-0.00368	-0.00366
	(A1 * !A2 * B1 * !Y)	0.00307	0.00309	0.00307
	(A1 * !A2 * B1 * !Y)	-0.00169	-0.00170	-0.00168
	(A1 * !A2 * !B1 * Y)	0.00255	0.00258	0.00256
	(A1 * !A2 * !B1 * Y)	-0.00327	-0.00348	-0.00348
	(!A1 * !A2 * !B1 * Y)	0.00241	0.00242	0.00241
	(!A1 * !A2 * !B1 * Y)	-0.00375	-0.00375	-0.00375
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00598	0.00605	0.00601
	(A2 * B1 * !Y)	-0.00335	-0.00339	-0.00337
	(A2 * !B1 * Y)	0.00500	0.00504	0.00503
	(A2 * !B1 * Y)	-0.00704	-0.00726	-0.00725
	(A1 * !A2 * B1 * !Y)	0.00600	0.00610	0.00601
	(A1 * !A2 * B1 * !Y)	-0.00335	-0.00340	-0.00335
	(A1 * !A2 * !B1 * Y)	0.00502	0.00508	0.00502
	(A1 * !A2 * !B1 * Y)	-0.00644	-0.00681	-0.00679
	(!A1 * !A2 * !B1 * Y)	0.00475	0.00472	0.00473
	(!A1 * !A2 * !B1 * Y)	-0.00747	-0.00744	-0.00744

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00158	-0.00159	-0.00164
	(A2 * B1 * !Y)	0.00091	0.00091	0.00087
	(A2 * !B1 * Y)	-0.00128	-0.00128	-0.00127
	(A2 * !B1 * Y)	0.00194	0.00195	0.00194
	(A1 * !A2 * B1 * !Y)	-0.00150	-0.00151	-0.00162
	(A1 * !A2 * B1 * !Y)	0.00095	0.00094	0.00086
	(A1 * !A2 * !B1 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !B1 * Y)	0.00186	0.00185	0.00185
	(!A1 * !A2 * !B1 * Y)	-0.00113	-0.00120	-0.00120
	(!A1 * !A2 * !B1 * Y)	0.00200	0.00200	0.00199
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00294	-0.00297	-0.00306
	(A2 * B1 * !Y)	0.00181	0.00182	0.00173
	(A2 * !B1 * Y)	-0.00255	-0.00257	-0.00255
	(A2 * !B1 * Y)	0.00365	0.00368	0.00366
	(A1 * !A2 * B1 * !Y)	-0.00271	-0.00274	-0.00301
	(A1 * !A2 * B1 * !Y)	0.00193	0.00194	0.00173
	(A1 * !A2 * !B1 * Y)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * !B1 * Y)	0.00346	0.00348	0.00348
	(!A1 * !A2 * !B1 * Y)	-0.00226	-0.00242	-0.00241
	(!A1 * !A2 * !B1 * Y)	0.00379	0.00379	0.00376
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00576	-0.00581	-0.00599
	(A2 * B1 * !Y)	0.00360	0.00361	0.00343
	(A2 * !B1 * Y)	-0.00500	-0.00502	-0.00501
	(A2 * !B1 * Y)	0.00726	0.00726	0.00725
	(A1 * !A2 * B1 * !Y)	-0.00532	-0.00537	-0.00591
	(A1 * !A2 * B1 * !Y)	0.00384	0.00385	0.00344
	(A1 * !A2 * !B1 * Y)	-0.00501	-0.00502	-0.00501
	(A1 * !A2 * !B1 * Y)	0.00679	0.00681	0.00679
	(!A1 * !A2 * !B1 * Y)	-0.00441	-0.00472	-0.00473
	(!A1 * !A2 * !B1 * Y)	0.00748	0.00753	0.00746

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)	0.00055	0.00055	0.00050
	(!A1 * !A2 * !A3 * Y)	-0.00199	-0.00200	-0.00207
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00108	0.00108	0.00097
	(!A1 * !A2 * !A3 * Y)	-0.00391	-0.00393	-0.00414
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00194	0.00195	0.00174
	(!A1 * !A2 * !A3 * Y)	-0.00443	-0.00448	-0.00482

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)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * !A3 * Y)	0.00208	0.00209	0.00208
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00093	-0.00093	-0.00092
	(!A1 * !A2 * !A3 * Y)	0.00418	0.00419	0.00416
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00168	-0.00167	-0.00166
	(!A1 * !A2 * !A3 * Y)	0.00488	0.00489	0.00486

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00267	0.00262	0.00262	0.00240	0.74029
sky130_fd_sc_hs__o31a_2	0.00284	0.00276	0.00278	0.00290	1.35203
sky130_fd_sc_hs__o31a_4	0.00487	0.00518	0.00515	0.00512	2.85546

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.13369	0.26061
sky130_fd_sc_hs__o31a_2	0.00000	0.13154	0.22263
sky130_fd_sc_hs__o31a_4	0.00000	0.26297	0.44467

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)	0.14804	0.87947	7.52300
	A2->X (RR)	0.14275	0.85931	7.43169
	A3->X (RR)	0.12546	0.82490	7.33210
	B1->X (RR)	0.13458	0.87518	7.58712
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.15224	0.78254	7.44505
	A2->X (RR)	0.14797	0.76864	7.36747
	A3->X (RR)	0.13096	0.73981	7.27854
	B1->X (RR)	0.14012	0.79320	7.54766
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.16051	0.70839	7.65438
	A2->X (RR)	0.15348	0.68832	7.56102
	A3->X (RR)	0.13499	0.65799	7.47641
	B1->X (RR)	0.14694	0.72216	7.75914

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.38210	0.92428	4.67942
	A2->X (FF)	0.35745	0.92124	4.83815
	A3->X (FF)	0.30542	0.88122	4.72794
	B1->X (FF)	0.12749	0.68918	4.36919
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.48903	1.02191	4.86017
	A2->X (FF)	0.46397	1.02210	5.06265
	A3->X (FF)	0.41137	0.98107	4.97942
	B1->X (FF)	0.13408	0.66496	4.28684
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.48017	0.98530	5.06604
	A2->X (FF)	0.45572	0.97771	5.23770
	A3->X (FF)	0.38744	0.92051	5.13581
	B1->X (FF)	0.12456	0.61723	4.50341

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01122	0.01110	0.01507
	A1	0.00489	0.00491	0.00877
	A2	0.00962	0.00958	0.01372
	A2	0.00417	0.00414	0.00831
	A3	0.00790	0.00786	0.01330
	A3	0.00323	0.00319	0.00869
	B1	0.01000	0.01004	0.01870
	B1	0.00510	0.00516	0.01394
sky130_fd_sc_hs__o31a_2	A1	0.01415	0.01426	0.01799
	A1	0.00742	0.00755	0.01135
	A2	0.01247	0.01273	0.01655
	A2	0.00668	0.00694	0.01089
	A3	0.01078	0.01104	0.01575
	A3	0.00570	0.00598	0.01085
	B1	0.01291	0.01315	0.02172
	B1	0.00739	0.00764	0.01623
sky130_fd_sc_hs__o31a_4	A1	0.02708	0.02756	0.03651
	A1	0.01476	0.01527	0.02477
	A2	0.02416	0.02465	0.03367
	A2	0.01305	0.01356	0.02258
	A3	0.01968	0.02025	0.03215
	A3	0.01051	0.01114	0.02311
	B1	0.02484	0.02546	0.04125
	B1	0.01471	0.01536	0.03167

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00381	0.00372	0.00813
	A1	0.01008	0.00998	0.01437
	A2	0.00381	0.00383	0.00887
	A2	0.00917	0.00918	0.01402
	A3	0.00381	0.00420	0.01169
	A3	0.00839	0.00878	0.01586
	B1	0.00287	0.00347	0.01357
	B1	0.00783	0.00839	0.01811
sky130_fd_sc_hs__o31a_2	A1	0.00629	0.00600	0.01125
	A1	0.01294	0.01269	0.01704
	A2	0.00630	0.00610	0.01156
	A2	0.01199	0.01185	0.01661
	A3	0.00626	0.00642	0.01454
	A3	0.01121	0.01145	0.01847
	B1	0.00476	0.00559	0.01589
	B1	0.01035	0.01114	0.02096
sky130_fd_sc_hs__o31a_4	A1	0.01244	0.01260	0.02161
	A1	0.02468	0.02482	0.03351
	A2	0.01205	0.01176	0.02182
	A2	0.02301	0.02318	0.03270
	A3	0.01240	0.01280	0.02749
	A3	0.02133	0.02192	0.03627
	B1	0.00945	0.01126	0.03174
	B1	0.01976	0.02119	0.04032

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)**	0.00128	0.00127	0.00128
	(A2 * A3 * B1 * X)	-0.00149	-0.00153	-0.00153
	(A2 * !B1 * !X)	0.00109	0.00109	0.00109
	(A2 * !B1 * !X)	-0.00168	-0.00171	-0.00171
	(A2 * !A3 * B1 * X)	0.00136	0.00128	0.00128
	(A2 * !A3 * B1 * X)	-0.00140	-0.00153	-0.00153
	(!A2 * A3 * B1 * X)	0.00132	0.00129	0.00128
	(!A2 * A3 * B1 * X)	-0.00133	-0.00148	-0.00147
	(!A2 * A3 * !B1 * !X)	0.00109	0.00111	0.00109
	(!A2 * A3 * !B1 * !X)	-0.00155	-0.00166	-0.00165
	(!A2 * !A3 * !B1 * !X)	0.00103	0.00104	0.00103
	(!A2 * !A3 * !B1 * !X)	-0.00174	-0.00174	-0.00173
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00142	0.00142	0.00142
	(A2 * A3 * B1 * X)	-0.00155	-0.00159	-0.00159
	(A2 * !B1 * !X)	0.00132	0.00132	0.00132
	(A2 * !B1 * !X)	-0.00166	-0.00169	-0.00169
	(A2 * !A3 * B1 * X)	0.00151	0.00142	0.00142
	(A2 * !A3 * B1 * X)	-0.00146	-0.00159	-0.00159
	(!A2 * A3 * B1 * X)	0.00147	0.00144	0.00142
	(!A2 * A3 * B1 * X)	-0.00139	-0.00154	-0.00153
	(!A2 * A3 * !B1 * !X)	0.00132	0.00132	0.00132
	(!A2 * A3 * !B1 * !X)	-0.00153	-0.00164	-0.00163
	(!A2 * !A3 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A2 * !A3 * !B1 * !X)	-0.00171	-0.00172	-0.00171

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00216	0.00215	0.00215
	(A2 * A3 * B1 * X)	-0.00309	-0.00319	-0.00317
	(A2 * !B1 * !X)	0.00216	0.00215	0.00214
	(A2 * !B1 * !X)	-0.00310	-0.00319	-0.00318
	(A2 * !A3 * B1 * X)	0.00235	0.00216	0.00215
	(A2 * !A3 * B1 * X)	-0.00288	-0.00317	-0.00317
	(!A2 * A3 * B1 * X)	0.00228	0.00216	0.00215
	(!A2 * A3 * B1 * X)	-0.00274	-0.00307	-0.00305
	(!A2 * A3 * !B1 * !X)	0.00215	0.00216	0.00214
	(!A2 * A3 * !B1 * !X)	-0.00283	-0.00307	-0.00304
	(!A2 * !A3 * !B1 * !X)	0.00202	0.00203	0.00201
	(!A2 * !A3 * !B1 * !X)	-0.00327	-0.00327	-0.00326

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)**	-0.00127	-0.00127	-0.00127
	(A2 * A3 * B1 * X)	0.00153	0.00154	0.00153
	(A2 * !B1 * !X)	-0.00108	-0.00109	-0.00109
	(A2 * !B1 * !X)	0.00170	0.00172	0.00171
	(A2 * !A3 * B1 * X)	-0.00126	-0.00127	-0.00127
	(A2 * !A3 * B1 * X)	0.00152	0.00154	0.00153
	(!A2 * A3 * B1 * X)	-0.00126	-0.00127	-0.00127
	(!A2 * A3 * B1 * X)	0.00146	0.00148	0.00147
	(!A2 * A3 * !B1 * !X)	-0.00109	-0.00110	-0.00109
	(!A2 * A3 * !B1 * !X)	0.00164	0.00166	0.00165
	(!A2 * !A3 * !B1 * !X)	-0.00097	-0.00104	-0.00103
	(!A2 * !A3 * !B1 * !X)	0.00175	0.00175	0.00174

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00141	-0.00142	-0.00141
	(A2 * A3 * B1 * X)	0.00159	0.00160	0.00159
	(A2 * !B1 * !X)	-0.00132	-0.00132	-0.00132
	(A2 * !B1 * !X)	0.00168	0.00170	0.00169
	(A2 * !A3 * B1 * X)	-0.00141	-0.00142	-0.00141
	(A2 * !A3 * B1 * X)	0.00159	0.00160	0.00159
	(!A2 * A3 * B1 * X)	-0.00141	-0.00142	-0.00141
	(!A2 * A3 * B1 * X)	0.00153	0.00154	0.00153
	(!A2 * A3 * !B1 * !X)	-0.00131	-0.00132	-0.00132
	(!A2 * A3 * !B1 * !X)	0.00162	0.00164	0.00163
	(!A2 * !A3 * !B1 * !X)	-0.00118	-0.00126	-0.00125
	(!A2 * !A3 * !B1 * !X)	0.00173	0.00173	0.00172
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00213	-0.00215	-0.00214
	(A2 * A3 * B1 * X)	0.00316	0.00320	0.00317
	(A2 * !B1 * !X)	-0.00213	-0.00215	-0.00214
	(A2 * !B1 * !X)	0.00317	0.00321	0.00318
	(A2 * !A3 * B1 * X)	-0.00214	-0.00215	-0.00214
	(A2 * !A3 * B1 * X)	0.00318	0.00320	0.00317
	(!A2 * A3 * B1 * X)	-0.00213	-0.00214	-0.00213
	(!A2 * A3 * B1 * X)	0.00303	0.00307	0.00305
	(!A2 * A3 * !B1 * !X)	-0.00213	-0.00215	-0.00214
	(!A2 * A3 * !B1 * !X)	0.00303	0.00307	0.00304
	(!A2 * !A3 * !B1 * !X)	-0.00189	-0.00203	-0.00201
	(!A2 * !A3 * !B1 * !X)	0.00329	0.00329	0.00327

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)**	0.00130	0.00132	0.00124
	(A1 * A3 * B1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * A3 * !B1 * !X)	0.00113	0.00114	0.00113
	(A1 * A3 * !B1 * !X)	-0.00111	-0.00113	-0.00112
	(A1 * !A3 * B1 * X)	0.00121	0.00120	0.00119
	(A1 * !A3 * B1 * X)	-0.00083	-0.00082	-0.00083
	(A1 * !A3 * !B1 * !X)	0.00113	0.00114	0.00113
	(A1 * !A3 * !B1 * !X)	-0.00154	-0.00156	-0.00155
	(!A1 * A3 * B1 * X)	0.00150	0.00121	0.00118
	(!A1 * A3 * B1 * X)	-0.00119	-0.00150	-0.00152
	(!A1 * A3 * !B1 * !X)	0.00113	0.00114	0.00113
	(!A1 * A3 * !B1 * !X)	-0.00155	-0.00157	-0.00156
	(!A1 * !A3 * !B1 * !X)	0.00105	0.00106	0.00106
	(!A1 * !A3 * !B1 * !X)	-0.00158	-0.00159	-0.00159
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00144	0.00146	0.00138
	(A1 * A3 * B1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * A3 * !B1 * !X)	0.00127	0.00128	0.00127
	(A1 * A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(A1 * !A3 * B1 * X)	0.00135	0.00134	0.00133
	(A1 * !A3 * B1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * !B1 * !X)	0.00128	0.00129	0.00127
	(A1 * !A3 * !B1 * !X)	-0.00156	-0.00158	-0.00157
	(!A1 * A3 * B1 * X)	0.00164	0.00135	0.00132
	(!A1 * A3 * B1 * X)	-0.00121	-0.00153	-0.00154
	(!A1 * A3 * !B1 * !X)	0.00127	0.00128	0.00127
	(!A1 * A3 * !B1 * !X)	-0.00156	-0.00159	-0.00158
	(!A1 * !A3 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A3 * !B1 * !X)	-0.00160	-0.00161	-0.00160

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00281	0.00285	0.00268
	(A1 * A3 * B1 * X)	-0.00220	-0.00221	-0.00219
	(A1 * A3 * !B1 * !X)	0.00254	0.00255	0.00255
	(A1 * A3 * !B1 * !X)	-0.00227	-0.00228	-0.00227
	(A1 * !A3 * B1 * X)	0.00258	0.00263	0.00256
	(A1 * !A3 * B1 * X)	-0.00174	-0.00178	-0.00177
	(A1 * !A3 * !B1 * !X)	0.00254	0.00256	0.00254
	(A1 * !A3 * !B1 * !X)	-0.00312	-0.00316	-0.00315
	(!A1 * A3 * B1 * X)	0.00318	0.00258	0.00255
	(!A1 * A3 * B1 * X)	-0.00247	-0.00313	-0.00316
	(!A1 * A3 * !B1 * !X)	0.00254	0.00256	0.00254
	(!A1 * A3 * !B1 * !X)	-0.00306	-0.00314	-0.00313
	(!A1 * !A3 * !B1 * !X)	0.00242	0.00243	0.00241
	(!A1 * !A3 * !B1 * !X)	-0.00323	-0.00325	-0.00323

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)**	-0.00119	-0.00119	-0.00118
	(A1 * A3 * B1 * X)	0.00104	0.00104	0.00103
	(A1 * A3 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * A3 * !B1 * !X)	0.00111	0.00113	0.00112
	(A1 * !A3 * B1 * X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * B1 * X)	0.00085	0.00085	0.00086
	(A1 * !A3 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !A3 * !B1 * !X)	0.00155	0.00156	0.00155
	(!A1 * A3 * B1 * X)	-0.00117	-0.00117	-0.00116
	(!A1 * A3 * B1 * X)	0.00151	0.00152	0.00152
	(!A1 * A3 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(!A1 * A3 * !B1 * !X)	0.00155	0.00157	0.00156
	(!A1 * !A3 * !B1 * !X)	-0.00099	-0.00106	-0.00106
	(!A1 * !A3 * !B1 * !X)	0.00160	0.00160	0.00159
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00132	-0.00133	-0.00132
	(A1 * A3 * B1 * X)	0.00106	0.00107	0.00106
	(A1 * A3 * !B1 * !X)	-0.00126	-0.00128	-0.00127
	(A1 * A3 * !B1 * !X)	0.00114	0.00115	0.00114
	(A1 * !A3 * B1 * X)	-0.00131	-0.00131	-0.00130
	(A1 * !A3 * B1 * X)	0.00088	0.00088	0.00088
	(A1 * !A3 * !B1 * !X)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * !B1 * !X)	0.00157	0.00158	0.00157
	(!A1 * A3 * B1 * X)	-0.00131	-0.00131	-0.00130
	(!A1 * A3 * B1 * X)	0.00154	0.00154	0.00154
	(!A1 * A3 * !B1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * !B1 * !X)	0.00157	0.00159	0.00158
	(!A1 * !A3 * !B1 * !X)	-0.00113	-0.00121	-0.00120
	(!A1 * !A3 * !B1 * !X)	0.00162	0.00162	0.00161

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00256	-0.00256	-0.00255
	(A1 * A3 * B1 * X)	0.00220	0.00221	0.00219
	(A1 * A3 * !B1 * !X)	-0.00254	-0.00255	-0.00254
	(A1 * A3 * !B1 * !X)	0.00227	0.00228	0.00227
	(A1 * !A3 * B1 * X)	-0.00252	-0.00252	-0.00249
	(A1 * !A3 * B1 * X)	0.00182	0.00182	0.00183
	(A1 * !A3 * !B1 * !X)	-0.00254	-0.00255	-0.00253
	(A1 * !A3 * !B1 * !X)	0.00315	0.00316	0.00315
	(!A1 * A3 * B1 * X)	-0.00253	-0.00253	-0.00251
	(!A1 * A3 * B1 * X)	0.00314	0.00315	0.00316
	(!A1 * A3 * !B1 * !X)	-0.00254	-0.00255	-0.00253
	(!A1 * A3 * !B1 * !X)	0.00313	0.00314	0.00313
	(!A1 * !A3 * !B1 * !X)	-0.00229	-0.00243	-0.00241
	(!A1 * !A3 * !B1 * !X)	0.00327	0.00325	0.00324

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00129	0.00129	0.00128
	(A2 * B1 * X)	-0.00078	-0.00078	-0.00077
	(A2 * !B1 * !X)	0.00112	0.00113	0.00111
	(A2 * !B1 * !X)	-0.00155	-0.00159	-0.00158
	(A1 * !A2 * B1 * X)	0.00129	0.00129	0.00128
	(A1 * !A2 * B1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !X)	0.00113	0.00112	0.00111
	(A1 * !A2 * !B1 * !X)	-0.00142	-0.00150	-0.00150
	(!A1 * !A2 * !B1 * !X)	0.00104	0.00105	0.00104
	(!A1 * !A2 * !B1 * !X)	-0.00161	-0.00161	-0.00161

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00151	0.00150	0.00150
	(A2 * B1 * X)	-0.00078	-0.00077	-0.00077
	(A2 * !B1 * !X)	0.00131	0.00132	0.00131
	(A2 * !B1 * !X)	-0.00157	-0.00161	-0.00160
	(A1 * !A2 * B1 * X)	0.00149	0.00150	0.00150
	(A1 * !A2 * B1 * X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !X)	0.00131	0.00131	0.00131
	(A1 * !A2 * !B1 * !X)	-0.00143	-0.00152	-0.00153
	(!A1 * !A2 * !B1 * !X)	0.00124	0.00124	0.00123
	(!A1 * !A2 * !B1 * !X)	-0.00163	-0.00164	-0.00163
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00257	0.00256	0.00255
	(A2 * B1 * X)	-0.00172	-0.00170	-0.00170
	(A2 * !B1 * !X)	0.00228	0.00232	0.00230
	(A2 * !B1 * !X)	-0.00316	-0.00328	-0.00326
	(A1 * !A2 * B1 * X)	0.00254	0.00255	0.00255
	(A1 * !A2 * B1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !B1 * !X)	0.00229	0.00231	0.00229
	(A1 * !A2 * !B1 * !X)	-0.00290	-0.00309	-0.00309
	(!A1 * !A2 * !B1 * !X)	0.00215	0.00214	0.00214
	(!A1 * !A2 * !B1 * !X)	-0.00339	-0.00339	-0.00338

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00123	-0.00124	-0.00127
	(A2 * B1 * X)	0.00082	0.00082	0.00079
	(A2 * !B1 * !X)	-0.00111	-0.00112	-0.00111
	(A2 * !B1 * !X)	0.00158	0.00159	0.00158
	(A1 * !A2 * B1 * X)	-0.00115	-0.00116	-0.00126
	(A1 * !A2 * B1 * X)	0.00086	0.00086	0.00078
	(A1 * !A2 * !B1 * !X)	-0.00112	-0.00112	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00150	0.00150	0.00150
	(!A1 * !A2 * !B1 * !X)	-0.00098	-0.00105	-0.00104
	(!A1 * !A2 * !B1 * !X)	0.00163	0.00163	0.00162
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00144	-0.00145	-0.00149
	(A2 * B1 * X)	0.00082	0.00082	0.00079
	(A2 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * !X)	0.00160	0.00161	0.00160
	(A1 * !A2 * B1 * X)	-0.00137	-0.00137	-0.00148
	(A1 * !A2 * B1 * X)	0.00086	0.00086	0.00078
	(A1 * !A2 * !B1 * !X)	-0.00131	-0.00131	-0.00130
	(A1 * !A2 * !B1 * !X)	0.00153	0.00152	0.00153
	(!A1 * !A2 * !B1 * !X)	-0.00116	-0.00124	-0.00123
	(!A1 * !A2 * !B1 * !X)	0.00165	0.00165	0.00164
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00239	-0.00240	-0.00253
	(A2 * B1 * X)	0.00184	0.00183	0.00174
	(A2 * !B1 * !X)	-0.00228	-0.00230	-0.00229
	(A2 * !B1 * !X)	0.00324	0.00328	0.00326
	(A1 * !A2 * B1 * X)	-0.00222	-0.00223	-0.00249
	(A1 * !A2 * B1 * X)	0.00192	0.00192	0.00173
	(A1 * !A2 * !B1 * !X)	-0.00228	-0.00229	-0.00229
	(A1 * !A2 * !B1 * !X)	0.00308	0.00309	0.00309
	(!A1 * !A2 * !B1 * !X)	-0.00199	-0.00214	-0.00214
	(!A1 * !A2 * !B1 * !X)	0.00342	0.00342	0.00339

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)	0.00046	0.00046	0.00041
	(!A1 * !A2 * !A3 * !X)	-0.00155	-0.00156	-0.00163
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00059	0.00059	0.00054
	(!A1 * !A2 * !A3 * !X)	-0.00194	-0.00195	-0.00203
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00090	0.00089	0.00078
	(!A1 * !A2 * !A3 * !X)	-0.00366	-0.00369	-0.00385

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)	-0.00039	-0.00040	-0.00039
	(!A1 * !A2 * !A3 * !X)	0.00163	0.00165	0.00164
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00051	-0.00052	-0.00051
	(!A1 * !A2 * !A3 * !X)	0.00204	0.00205	0.00204
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00075	-0.00074	-0.00074
	(!A1 * !A2 * !A3 * !X)	0.00389	0.00389	0.00388

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00275	0.00301	0.00295	0.00291	0.00301	0.24166
sky130_fd_sc_hs__o32ai_2	0.00580	0.00544	0.00589	0.00559	0.00567	0.44403
sky130_fd_sc_hs__o32ai_4	0.01097	0.01101	0.01116	0.01139	0.01108	0.82347

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.04471	0.10083
sky130_fd_sc_hs__o32ai_2	0.00000	0.09079	0.19910
sky130_fd_sc_hs__o32ai_4	0.00000	0.17825	0.39761

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)	0.32365	1.41061	10.19060
	A2->Y (FR)	0.30345	1.41214	10.70020
	A3->Y (FR)	0.24635	1.35605	10.77600
	B1->Y (FR)	0.12442	0.96786	8.23803
	B2->Y (FR)	0.10123	0.96327	8.55105
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.33122	1.24018	10.02900
	A2->Y (FR)	0.30730	1.24427	10.63660
	A3->Y (FR)	0.24016	1.17893	10.71380
	B1->Y (FR)	0.12418	0.87235	8.34708
	B2->Y (FR)	0.08912	0.85140	8.64032
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.32798	1.09025	9.81857
	A2->Y (FR)	0.30479	1.09384	10.44150
	A3->Y (FR)	0.23652	1.03535	10.58360
	B1->Y (FR)	0.11858	0.75616	8.11668
	B2->Y (FR)	0.08524	0.74921	8.49582

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.08353	0.53981	4.24571
	A2->Y (RF)	0.08348	0.53720	4.29082
	A3->Y (RF)	0.07001	0.51822	4.25794
	B1->Y (RF)	0.06599	0.57425	4.84850
	B2->Y (RF)	0.05472	0.55165	4.79860
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.08433	0.48814	4.13057
	A2->Y (RF)	0.08487	0.48910	4.23115
	A3->Y (RF)	0.06866	0.46544	4.18464
	B1->Y (RF)	0.06562	0.52191	4.80931
	B2->Y (RF)	0.05201	0.49946	4.81586
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.08241	0.44835	4.21481
	A2->Y (RF)	0.07672	0.42612	4.14799
	A3->Y (RF)	0.05922	0.39556	4.06936
	B1->Y (RF)	0.08244	0.52732	5.13727
	B2->Y (RF)	0.06588	0.51895	5.27763

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00178	0.00162	0.00259
	A1	0.00986	0.00970	0.01063
	A2	0.00189	0.00170	0.00287
	A2	0.00907	0.00889	0.01004
	A3	0.00186	0.00187	0.00416
	A3	0.00801	0.00803	0.01021
	B1	-0.00003	-0.00016	0.00129
	B1	0.00689	0.00675	0.00814
	B2	-0.00002	0.00002	0.00273
	B2	0.00592	0.00607	0.00851
sky130_fd_sc_hs__o32ai_2	A1	0.00318	0.00279	0.00472
	A1	0.02011	0.01976	0.02162
	A2	0.00335	0.00296	0.00524
	A2	0.01791	0.01754	0.01976
	A3	0.00325	0.00307	0.00778
	A3	0.01613	0.01597	0.02050
	B1	-0.00037	-0.00059	0.00225
	B1	0.01365	0.01339	0.01608
	B2	-0.00057	-0.00020	0.00490
	B2	0.01168	0.01199	0.01684

sky130_fd_sc_hs__o32ai_4	**A1**	0.00635	0.00562	0.01024
	A1	0.03965	0.03891	0.04305
	A2	0.00647	0.00566	0.01101
	A2	0.03569	0.03497	0.04021
	A3	0.00642	0.00630	0.01614
	A3	0.03174	0.03136	0.04126
	B1	-0.00086	-0.00138	0.00437
	B1	0.02754	0.02685	0.03242
	B2	-0.00102	-0.00043	0.00914
	B2	0.02341	0.02372	0.03287

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01146	0.01134	0.01224
	A1	0.00319	0.00300	0.00397
	A2	0.00963	0.00954	0.01045
	A2	0.00219	0.00204	0.00300
	A3	0.00765	0.00759	0.00855
	A3	0.00119	0.00115	0.00212
	B1	0.00997	0.00985	0.01134
	B1	0.00321	0.00309	0.00453
	B2	0.00818	0.00815	0.00964
	B2	0.00238	0.00234	0.00370

sky130_fd_sc_hs__o32ai_2	**A1**	0.02396	0.02356	0.02542
	A1	0.00665	0.00627	0.00821
	A2	0.02015	0.01977	0.02177
	A2	0.00508	0.00473	0.00666
	A3	0.01590	0.01576	0.01777
	A3	0.00246	0.00232	0.00433
	B1	0.02058	0.02040	0.02314
	B1	0.00692	0.00670	0.00945
	B2	0.01651	0.01656	0.01940
	B2	0.00456	0.00456	0.00727
sky130_fd_sc_hs__o32ai_4	**A1**	0.04668	0.04589	0.05047
	A1	0.01269	0.01185	0.01663
	A2	0.03934	0.03858	0.04359
	A2	0.00907	0.00829	0.01314
	A3	0.03078	0.03040	0.03580
	A3	0.00435	0.00396	0.00899
	B1	0.04060	0.04017	0.04563
	B1	0.01299	0.01246	0.01793
	B2	0.03257	0.03253	0.03815
	B2	0.00876	0.00863	0.01400

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)**	0.00137	0.00136	0.00136
	(A2 * A3 * B2 * !Y)	-0.00170	-0.00175	-0.00174
	(A2 * A3 * B1 * !B2 * !Y)	0.00137	0.00136	0.00136
	(A2 * A3 * B1 * !B2 * !Y)	-0.00170	-0.00175	-0.00174
	(A2 * !B1 * !B2 * Y)	0.00137	0.00136	0.00137
	(A2 * !B1 * !B2 * Y)	-0.00170	-0.00175	-0.00174
	(A2 * !A3 * B2 * !Y)	0.00140	0.00136	0.00136
	(A2 * !A3 * B2 * !Y)	-0.00165	-0.00174	-0.00174
	(A2 * !A3 * B1 * !B2 * !Y)	0.00140	0.00136	0.00136
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00165	-0.00174	-0.00174
	(!A2 * A3 * B2 * !Y)	0.00138	0.00138	0.00136
	(!A2 * A3 * B2 * !Y)	-0.00156	-0.00169	-0.00168
	(!A2 * A3 * B1 * !B2 * !Y)	0.00138	0.00138	0.00136
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00156	-0.00169	-0.00168
	(!A2 * A3 * !B1 * !B2 * Y)	0.00136	0.00138	0.00137
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00157	-0.00169	-0.00168
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00130	0.00130	0.00129
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00283	0.00282	0.00282
	(A2 * A3 * B2 * !Y)	-0.00353	-0.00364	-0.00361
	(A2 * A3 * B1 * !B2 * !Y)	0.00283	0.00283	0.00282
	(A2 * A3 * B1 * !B2 * !Y)	-0.00353	-0.00364	-0.00361
	(A2 * !B1 * !B2 * Y)	0.00282	0.00283	0.00282
	(A2 * !B1 * !B2 * Y)	-0.00354	-0.00364	-0.00361
	(A2 * !A3 * B2 * !Y)	0.00290	0.00283	0.00282
	(A2 * !A3 * B2 * !Y)	-0.00342	-0.00363	-0.00362
	(A2 * !A3 * B1 * !B2 * !Y)	0.00290	0.00283	0.00282
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00342	-0.00363	-0.00362
	(!A2 * A3 * B2 * !Y)	0.00287	0.00283	0.00282
	(!A2 * A3 * B2 * !Y)	-0.00324	-0.00351	-0.00348
	(!A2 * A3 * B1 * !B2 * !Y)	0.00287	0.00284	0.00282
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00324	-0.00351	-0.00348
	(!A2 * A3 * !B1 * !B2 * Y)	0.00282	0.00283	0.00282
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00329	-0.00352	-0.00349
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00263	0.00262	0.00262
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00372	-0.00371	-0.00371

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00532	0.00533	0.00531
	(A2 * A3 * B2 * !Y)	-0.00687	-0.00709	-0.00704
	(A2 * A3 * B1 * !B2 * !Y)	0.00533	0.00534	0.00531
	(A2 * A3 * B1 * !B2 * !Y)	-0.00687	-0.00710	-0.00704
	(A2 * !B1 * !B2 * Y)	0.00532	0.00534	0.00531
	(A2 * !B1 * !B2 * Y)	-0.00688	-0.00710	-0.00704
	(A2 * !A3 * B2 * !Y)	0.00549	0.00534	0.00531
	(A2 * !A3 * B2 * !Y)	-0.00665	-0.00710	-0.00705
	(A2 * !A3 * B1 * !B2 * !Y)	0.00549	0.00534	0.00531
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00665	-0.00710	-0.00705
	(!A2 * A3 * B2 * !Y)	0.00542	0.00533	0.00531
	(!A2 * A3 * B2 * !Y)	-0.00631	-0.00685	-0.00679
	(!A2 * A3 * B1 * !B2 * !Y)	0.00542	0.00533	0.00531
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00631	-0.00685	-0.00679
	(!A2 * A3 * !B1 * !B2 * Y)	0.00532	0.00533	0.00531
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00639	-0.00685	-0.00679
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00497	0.00500	0.00496
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00726	-0.00727	-0.00724

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)**	-0.00136	-0.00136	-0.00136
	(A2 * A3 * B2 * !Y)	0.00174	0.00175	0.00174
	(A2 * A3 * B1 * !B2 * !Y)	-0.00136	-0.00136	-0.00136
	(A2 * A3 * B1 * !B2 * !Y)	0.00174	0.00175	0.00174
	(A2 * !B1 * !B2 * Y)	-0.00136	-0.00136	-0.00136
	(A2 * !B1 * !B2 * Y)	0.00174	0.00176	0.00174
	(A2 * !A3 * B2 * !Y)	-0.00136	-0.00136	-0.00136
	(A2 * !A3 * B2 * !Y)	0.00174	0.00175	0.00174
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00136	-0.00136	-0.00136
	(A2 * !A3 * B1 * !B2 * !Y)	0.00174	0.00175	0.00174
	(!A2 * A3 * B2 * !Y)	-0.00136	-0.00137	-0.00136
	(!A2 * A3 * B2 * !Y)	0.00168	0.00169	0.00168
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00136	-0.00137	-0.00136
	(!A2 * A3 * B1 * !B2 * !Y)	0.00168	0.00169	0.00168
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00136	-0.00137	-0.00136
	(!A2 * A3 * !B1 * !B2 * Y)	0.00167	0.00169	0.00168
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00121	-0.00130	-0.00129
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00178	0.00179	0.00178

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00281	-0.00282	-0.00281
	(A2 * A3 * B2 * !Y)	0.00361	0.00364	0.00361
	(A2 * A3 * B1 * !B2 * !Y)	-0.00281	-0.00282	-0.00281
	(A2 * A3 * B1 * !B2 * !Y)	0.00360	0.00364	0.00361
	(A2 * !B1 * !B2 * Y)	-0.00281	-0.00282	-0.00281
	(A2 * !B1 * !B2 * Y)	0.00361	0.00364	0.00361
	(A2 * !A3 * B2 * !Y)	-0.00281	-0.00282	-0.00281
	(A2 * !A3 * B2 * !Y)	0.00361	0.00364	0.00362
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00281	-0.00282	-0.00281
	(A2 * !A3 * B1 * !B2 * !Y)	0.00361	0.00364	0.00362
	(!A2 * A3 * B2 * !Y)	-0.00281	-0.00283	-0.00281
	(!A2 * A3 * B2 * !Y)	0.00347	0.00351	0.00348
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00281	-0.00283	-0.00281
	(!A2 * A3 * B1 * !B2 * !Y)	0.00348	0.00351	0.00348
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00281	-0.00282	-0.00281
	(!A2 * A3 * !B1 * !B2 * Y)	0.00349	0.00352	0.00349
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00244	-0.00262	-0.00262
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00377	0.00376	0.00373

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00529	-0.00532	-0.00530
	(A2 * A3 * B2 * !Y)	0.00703	0.00709	0.00704
	(A2 * A3 * B1 * !B2 * !Y)	-0.00529	-0.00532	-0.00530
	(A2 * A3 * B1 * !B2 * !Y)	0.00703	0.00710	0.00704
	(A2 * !B1 * !B2 * Y)	-0.00529	-0.00532	-0.00529
	(A2 * !B1 * !B2 * Y)	0.00704	0.00710	0.00704
	(A2 * !A3 * B2 * !Y)	-0.00531	-0.00532	-0.00530
	(A2 * !A3 * B2 * !Y)	0.00707	0.00710	0.00705
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00531	-0.00532	-0.00529
	(A2 * !A3 * B1 * !B2 * !Y)	0.00707	0.00710	0.00705
	(!A2 * A3 * B2 * !Y)	-0.00529	-0.00532	-0.00529
	(!A2 * A3 * B2 * !Y)	0.00678	0.00685	0.00679
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00529	-0.00532	-0.00529
	(!A2 * A3 * B1 * !B2 * !Y)	0.00678	0.00685	0.00679
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00529	-0.00532	-0.00529
	(!A2 * A3 * !B1 * !B2 * Y)	0.00679	0.00685	0.00679
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00462	-0.00500	-0.00496
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00733	0.00734	0.00727

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)**	0.00146	0.00147	0.00138
	(A1 * A3 * B2 * !Y)	-0.00128	-0.00128	-0.00128
	(A1 * A3 * B1 * !B2 * !Y)	0.00146	0.00148	0.00138
	(A1 * A3 * B1 * !B2 * !Y)	-0.00129	-0.00128	-0.00128
	(A1 * A3 * !B1 * !B2 * Y)	0.00134	0.00133	0.00132
	(A1 * A3 * !B1 * !B2 * Y)	-0.00133	-0.00133	-0.00132
	(A1 * !A3 * B2 * !Y)	0.00135	0.00135	0.00133
	(A1 * !A3 * B2 * !Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A3 * B1 * !B2 * !Y)	0.00135	0.00135	0.00133
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A3 * !B1 * !B2 * Y)	0.00132	0.00133	0.00132
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00179	-0.00181	-0.00180
	(!A1 * A3 * B2 * !Y)	0.00165	0.00135	0.00133
	(!A1 * A3 * B2 * !Y)	-0.00148	-0.00181	-0.00181
	(!A1 * A3 * B1 * !B2 * !Y)	0.00165	0.00135	0.00133
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00148	-0.00181	-0.00181
	(!A1 * A3 * !B1 * !B2 * Y)	0.00133	0.00133	0.00132
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00180	-0.00183	-0.00181
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00123	0.00124	0.00123
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00291	0.00294	0.00275
	(A1 * A3 * B2 * !Y)	-0.00243	-0.00245	-0.00242
	(A1 * A3 * B1 * !B2 * !Y)	0.00291	0.00294	0.00275
	(A1 * A3 * B1 * !B2 * !Y)	-0.00242	-0.00245	-0.00242
	(A1 * A3 * !B1 * !B2 * Y)	0.00260	0.00259	0.00258
	(A1 * A3 * !B1 * !B2 * Y)	-0.00254	-0.00256	-0.00254
	(A1 * !A3 * B2 * !Y)	0.00263	0.00264	0.00262
	(A1 * !A3 * B2 * !Y)	-0.00190	-0.00191	-0.00191
	(A1 * !A3 * B1 * !B2 * !Y)	0.00263	0.00264	0.00262
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00190	-0.00191	-0.00191
	(A1 * !A3 * !B1 * !B2 * Y)	0.00260	0.00261	0.00258
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00344	-0.00346	-0.00345
	(!A1 * A3 * B2 * !Y)	0.00325	0.00265	0.00261
	(!A1 * A3 * B2 * !Y)	-0.00284	-0.00349	-0.00348
	(!A1 * A3 * B1 * !B2 * !Y)	0.00326	0.00265	0.00261
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00284	-0.00349	-0.00348
	(!A1 * A3 * !B1 * !B2 * Y)	0.00260	0.00261	0.00258
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00346	-0.00352	-0.00350
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00241	0.00244	0.00242
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00357	-0.00359	-0.00358

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00589	0.00599	0.00560
	(A1 * A3 * B2 * !Y)	-0.00487	-0.00491	-0.00488
	(A1 * A3 * B1 * !B2 * !Y)	0.00589	0.00599	0.00561
	(A1 * A3 * B1 * !B2 * !Y)	-0.00487	-0.00491	-0.00488
	(A1 * A3 * !B1 * !B2 * Y)	0.00532	0.00535	0.00531
	(A1 * A3 * !B1 * !B2 * Y)	-0.00506	-0.00510	-0.00507
	(A1 * !A3 * B2 * !Y)	0.00538	0.00541	0.00536
	(A1 * !A3 * B2 * !Y)	-0.00387	-0.00390	-0.00391
	(A1 * !A3 * B1 * !B2 * !Y)	0.00539	0.00541	0.00536
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00388	-0.00390	-0.00391
	(A1 * !A3 * !B1 * !B2 * Y)	0.00536	0.00537	0.00531
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00695	-0.00698	-0.00697
	(!A1 * A3 * B2 * !Y)	0.00669	0.00543	0.00534
	(!A1 * A3 * B2 * !Y)	-0.00569	-0.00712	-0.00709
	(!A1 * A3 * B1 * !B2 * !Y)	0.00669	0.00543	0.00535
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00569	-0.00712	-0.00709
	(!A1 * A3 * !B1 * !B2 * Y)	0.00532	0.00537	0.00531
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00700	-0.00711	-0.00710
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00494	0.00497	0.00495
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00724	-0.00726	-0.00725

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)**	-0.00133	-0.00133	-0.00133
	(A1 * A3 * B2 * !Y)	0.00128	0.00128	0.00128
	(A1 * A3 * B1 * !B2 * !Y)	-0.00133	-0.00133	-0.00133
	(A1 * A3 * B1 * !B2 * !Y)	0.00129	0.00128	0.00128
	(A1 * A3 * !B1 * !B2 * Y)	-0.00132	-0.00132	-0.00131
	(A1 * A3 * !B1 * !B2 * Y)	0.00133	0.00133	0.00132
	(A1 * !A3 * B2 * !Y)	-0.00132	-0.00132	-0.00131
	(A1 * !A3 * B2 * !Y)	0.00106	0.00106	0.00106
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00132	-0.00132	-0.00131
	(A1 * !A3 * B1 * !B2 * !Y)	0.00106	0.00106	0.00106
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A3 * !B1 * !B2 * Y)	0.00180	0.00181	0.00180
	(!A1 * A3 * B2 * !Y)	-0.00131	-0.00132	-0.00132
	(!A1 * A3 * B2 * !Y)	0.00179	0.00181	0.00181
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00132	-0.00132	-0.00132
	(!A1 * A3 * B1 * !B2 * !Y)	0.00180	0.00181	0.00181
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00131	-0.00132	-0.00131
	(!A1 * A3 * !B1 * !B2 * Y)	0.00181	0.00183	0.00181
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00115	-0.00124	-0.00123
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00186	0.00186	0.00185

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00263	-0.00264	-0.00263
	(A1 * A3 * B2 * !Y)	0.00243	0.00245	0.00242
	(A1 * A3 * B1 * !B2 * !Y)	-0.00263	-0.00264	-0.00263
	(A1 * A3 * B1 * !B2 * !Y)	0.00242	0.00245	0.00242
	(A1 * A3 * !B1 * !B2 * Y)	-0.00257	-0.00258	-0.00257
	(A1 * A3 * !B1 * !B2 * Y)	0.00254	0.00256	0.00254
	(A1 * !A3 * B2 * !Y)	-0.00258	-0.00259	-0.00255
	(A1 * !A3 * B2 * !Y)	0.00196	0.00196	0.00198
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00258	-0.00259	-0.00255
	(A1 * !A3 * B1 * !B2 * !Y)	0.00196	0.00196	0.00198
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00256	-0.00258	-0.00257
	(A1 * !A3 * !B1 * !B2 * Y)	0.00344	0.00346	0.00345
	(!A1 * A3 * B2 * !Y)	-0.00260	-0.00260	-0.00259
	(!A1 * A3 * B2 * !Y)	0.00348	0.00349	0.00348
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00259	-0.00260	-0.00259
	(!A1 * A3 * B1 * !B2 * !Y)	0.00346	0.00349	0.00348
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00256	-0.00258	-0.00257
	(!A1 * A3 * !B1 * !B2 * Y)	0.00349	0.00352	0.00350
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00223	-0.00244	-0.00242
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00362	0.00362	0.00359

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00537	-0.00539	-0.00537
	(A1 * A3 * B2 * !Y)	0.00487	0.00491	0.00488
	(A1 * A3 * B1 * !B2 * !Y)	-0.00537	-0.00539	-0.00537
	(A1 * A3 * B1 * !B2 * !Y)	0.00487	0.00491	0.00488
	(A1 * A3 * !B1 * !B2 * Y)	-0.00528	-0.00532	-0.00530
	(A1 * A3 * !B1 * !B2 * Y)	0.00506	0.00510	0.00507
	(A1 * !A3 * B2 * !Y)	-0.00530	-0.00529	-0.00525
	(A1 * !A3 * B2 * !Y)	0.00400	0.00399	0.00404
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00530	-0.00529	-0.00524
	(A1 * !A3 * B1 * !B2 * !Y)	0.00400	0.00399	0.00404
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00529	-0.00531	-0.00530
	(A1 * !A3 * !B1 * !B2 * Y)	0.00695	0.00698	0.00697
	(!A1 * A3 * B2 * !Y)	-0.00531	-0.00534	-0.00530
	(!A1 * A3 * B2 * !Y)	0.00705	0.00713	0.00709
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00531	-0.00534	-0.00530
	(!A1 * A3 * B1 * !B2 * !Y)	0.00706	0.00713	0.00709
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00528	-0.00531	-0.00530
	(!A1 * A3 * !B1 * !B2 * Y)	0.00707	0.00711	0.00710
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00460	-0.00497	-0.00495
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00734	0.00732	0.00727

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00144	0.00144	0.00143
	(A2 * B2 * !Y)	-0.00087	-0.00086	-0.00086
	(A2 * B1 * !B2 * !Y)	0.00144	0.00144	0.00143
	(A2 * B1 * !B2 * !Y)	-0.00087	-0.00086	-0.00086
	(A2 * !B1 * !B2 * Y)	0.00132	0.00132	0.00131
	(A2 * !B1 * !B2 * Y)	-0.00168	-0.00172	-0.00171
	(A1 * !A2 * B2 * !Y)	0.00143	0.00144	0.00143
	(A1 * !A2 * B2 * !Y)	-0.00086	-0.00086	-0.00085
	(A1 * !A2 * B1 * !B2 * !Y)	0.00143	0.00144	0.00143
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00086	-0.00086	-0.00085
	(A1 * !A2 * !B1 * !B2 * Y)	0.00130	0.00132	0.00131
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00151	-0.00161	-0.00161
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00175	-0.00175	-0.00175
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00314	0.00315	0.00314
	(A2 * B2 * !Y)	-0.00171	-0.00171	-0.00170
	(A2 * B1 * !B2 * !Y)	0.00314	0.00315	0.00314
	(A2 * B1 * !B2 * !Y)	-0.00171	-0.00171	-0.00170
	(A2 * !B1 * !B2 * Y)	0.00255	0.00256	0.00256
	(A2 * !B1 * !B2 * Y)	-0.00361	-0.00373	-0.00372
	(A1 * !A2 * B2 * !Y)	0.00314	0.00316	0.00314
	(A1 * !A2 * B2 * !Y)	-0.00171	-0.00171	-0.00170
	(A1 * !A2 * B1 * !B2 * !Y)	0.00314	0.00316	0.00314
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00171	-0.00171	-0.00170
	(A1 * !A2 * !B1 * !B2 * Y)	0.00256	0.00258	0.00256
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00331	-0.00349	-0.00348
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00241	0.00243	0.00241
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00381	-0.00383	-0.00381

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00594	0.00597	0.00595
	(A2 * B2 * !Y)	-0.00337	-0.00339	-0.00337
	(A2 * B1 * !B2 * !Y)	0.00593	0.00598	0.00595
	(A2 * B1 * !B2 * !Y)	-0.00336	-0.00339	-0.00337
	(A2 * !B1 * !B2 * Y)	0.00505	0.00506	0.00500
	(A2 * !B1 * !B2 * Y)	-0.00706	-0.00723	-0.00720
	(A1 * !A2 * B2 * !Y)	0.00594	0.00598	0.00595
	(A1 * !A2 * B2 * !Y)	-0.00336	-0.00338	-0.00336
	(A1 * !A2 * B1 * !B2 * !Y)	0.00594	0.00599	0.00595
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00336	-0.00338	-0.00336
	(A1 * !A2 * !B1 * !B2 * Y)	0.00499	0.00502	0.00500
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00637	-0.00673	-0.00671
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00470	0.00475	0.00471
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00738	-0.00742	-0.00739

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00137	-0.00138	-0.00143
	(A2 * B2 * !Y)	0.00092	0.00092	0.00088
	(A2 * B1 * !B2 * !Y)	-0.00137	-0.00138	-0.00143
	(A2 * B1 * !B2 * !Y)	0.00092	0.00091	0.00088
	(A2 * !B1 * !B2 * Y)	-0.00131	-0.00131	-0.00131
	(A2 * !B1 * !B2 * Y)	0.00172	0.00172	0.00171
	(A1 * !A2 * B2 * !Y)	-0.00128	-0.00129	-0.00141
	(A1 * !A2 * B2 * !Y)	0.00096	0.00096	0.00087
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00128	-0.00129	-0.00141
	(A1 * !A2 * B1 * !B2 * !Y)	0.00096	0.00096	0.00087
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00130	-0.00131	-0.00131
	(A1 * !A2 * !B1 * !B2 * Y)	0.00161	0.00161	0.00161
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00114	-0.00123	-0.00122
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00176	0.00176	0.00175
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00296	-0.00300	-0.00313
	(A2 * B2 * !Y)	0.00185	0.00186	0.00175
	(A2 * B1 * !B2 * !Y)	-0.00297	-0.00300	-0.00313
	(A2 * B1 * !B2 * !Y)	0.00185	0.00186	0.00175
	(A2 * !B1 * !B2 * Y)	-0.00255	-0.00256	-0.00256
	(A2 * !B1 * !B2 * Y)	0.00371	0.00373	0.00372
	(A1 * !A2 * B2 * !Y)	-0.00276	-0.00281	-0.00308
	(A1 * !A2 * B2 * !Y)	0.00194	0.00195	0.00174
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00277	-0.00281	-0.00308
	(A1 * !A2 * B1 * !B2 * !Y)	0.00194	0.00195	0.00174
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00255	-0.00256	-0.00256
	(A1 * !A2 * !B1 * !B2 * Y)	0.00347	0.00349	0.00348
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00223	-0.00243	-0.00241
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00385	0.00385	0.00382

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00567	-0.00570	-0.00593
	(A2 * B2 * !Y)	0.00366	0.00365	0.00345
	(A2 * B1 * !B2 * !Y)	-0.00564	-0.00571	-0.00593
	(A2 * B1 * !B2 * !Y)	0.00363	0.00366	0.00345
	(A2 * !B1 * !B2 * Y)	-0.00500	-0.00501	-0.00498
	(A2 * !B1 * !B2 * Y)	0.00721	0.00723	0.00720
	(A1 * !A2 * B2 * !Y)	-0.00527	-0.00530	-0.00585
	(A1 * !A2 * B2 * !Y)	0.00384	0.00383	0.00344
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00523	-0.00531	-0.00585
	(A1 * !A2 * B1 * !B2 * !Y)	0.00380	0.00384	0.00344
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00497	-0.00500	-0.00498
	(A1 * !A2 * !B1 * !B2 * Y)	0.00669	0.00673	0.00671
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00438	-0.00475	-0.00471
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00745	0.00746	0.00741

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00169	0.00146	0.00145
	(A3 * B2 * !Y)	-0.00148	-0.00171	-0.00173
	(A2 * !A3 * B2 * !Y)	0.00169	0.00146	0.00145
	(A2 * !A3 * B2 * !Y)	-0.00148	-0.00171	-0.00173
	(A1 * !A2 * !A3 * B2 * !Y)	0.00169	0.00146	0.00145
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00148	-0.00171	-0.00173
	(!A1 * !A2 * !A3 * B2 * Y)	0.00052	0.00052	0.00052
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00201	-0.00204	-0.00203
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00062	0.00063	0.00055
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00192	-0.00194	-0.00205

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00312	0.00265	0.00263
	(A3 * B2 * !Y)	-0.00290	-0.00342	-0.00342
	(A2 * !A3 * B2 * !Y)	0.00312	0.00265	0.00263
	(A2 * !A3 * B2 * !Y)	-0.00290	-0.00342	-0.00342
	(A1 * !A2 * !A3 * B2 * !Y)	0.00312	0.00265	0.00263
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00290	-0.00339	-0.00342
	(!A1 * !A2 * !A3 * B2 * Y)	0.00084	0.00084	0.00083
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00397	-0.00406	-0.00404
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00104	0.00104	0.00089
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00382	-0.00383	-0.00408
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00655	0.00558	0.00552
	(A3 * B2 * !Y)	-0.00580	-0.00686	-0.00686
	(A2 * !A3 * B2 * !Y)	0.00655	0.00558	0.00552
	(A2 * !A3 * B2 * !Y)	-0.00581	-0.00686	-0.00686
	(A1 * !A2 * !A3 * B2 * !Y)	0.00655	0.00557	0.00552
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00581	-0.00686	-0.00686
	(!A1 * !A2 * !A3 * B2 * Y)	0.00169	0.00168	0.00167
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00824	-0.00840	-0.00835
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00208	0.00207	0.00179
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00792	-0.00795	-0.00844

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00145	-0.00144	-0.00144
	(A3 * B2 * !Y)	0.00173	0.00172	0.00173
	(A2 * !A3 * B2 * !Y)	-0.00144	-0.00144	-0.00144
	(A2 * !A3 * B2 * !Y)	0.00172	0.00173	0.00173
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * !A2 * !A3 * B2 * !Y)	0.00172	0.00173	0.00173
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * !A3 * B2 * Y)	0.00203	0.00205	0.00203
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00208	0.00208	0.00207
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00262	-0.00263	-0.00262
	(A3 * B2 * !Y)	0.00340	0.00343	0.00342
	(A2 * !A3 * B2 * !Y)	-0.00262	-0.00263	-0.00262
	(A2 * !A3 * B2 * !Y)	0.00340	0.00343	0.00342
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00262	-0.00262	-0.00262
	(A1 * !A2 * !A3 * B2 * !Y)	0.00340	0.00339	0.00342
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00082	-0.00083	-0.00083
	(!A1 * !A2 * !A3 * B2 * Y)	0.00402	0.00408	0.00404
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00085	-0.00085	-0.00084
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00412	0.00413	0.00411
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00550	-0.00553	-0.00550
	(A3 * B2 * !Y)	0.00683	0.00689	0.00686
	(A2 * !A3 * B2 * !Y)	-0.00550	-0.00553	-0.00550
	(A2 * !A3 * B2 * !Y)	0.00683	0.00690	0.00686
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00550	-0.00552	-0.00549
	(A1 * !A2 * !A3 * B2 * !Y)	0.00683	0.00687	0.00686
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00166	-0.00168	-0.00167
	(!A1 * !A2 * !A3 * B2 * Y)	0.00834	0.00842	0.00835
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00168	-0.00170	-0.00169
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00846	0.00854	0.00851

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00152	0.00153	0.00153
	(A3 * B1 * !Y)	-0.00083	-0.00084	-0.00083
	(A2 * !A3 * B1 * !Y)	0.00152	0.00153	0.00153
	(A2 * !A3 * B1 * !Y)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !A3 * B1 * !Y)	0.00153	0.00153	0.00153
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00085	-0.00084	-0.00083
	(!A1 * !A2 * !A3 * B1 * Y)	0.00045	0.00045	0.00044
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00204	-0.00205	-0.00204
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00055	0.00054	0.00047
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00196	-0.00196	-0.00208
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00298	0.00300	0.00299
	(A3 * B1 * !Y)	-0.00172	-0.00173	-0.00172
	(A2 * !A3 * B1 * !Y)	0.00298	0.00300	0.00299
	(A2 * !A3 * B1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * !A3 * B1 * !Y)	0.00297	0.00300	0.00299
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00171	-0.00173	-0.00172
	(!A1 * !A2 * !A3 * B1 * Y)	0.00089	0.00089	0.00088
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00405	-0.00409	-0.00407
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00109	0.00108	0.00094
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00389	-0.00390	-0.00415

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00585	0.00589	0.00586
	(A3 * B1 * !Y)	-0.00341	-0.00343	-0.00340
	(A2 * !A3 * B1 * !Y)	0.00584	0.00590	0.00586
	(A2 * !A3 * B1 * !Y)	-0.00340	-0.00343	-0.00340
	(A1 * !A2 * !A3 * B1 * !Y)	0.00584	0.00593	0.00586
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00340	-0.00346	-0.00340
	(!A1 * !A2 * !A3 * B1 * Y)	0.00171	0.00170	0.00169
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00805	-0.00809	-0.00806
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00211	0.00209	0.00181
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00774	-0.00777	-0.00825

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00147	-0.00149	-0.00152
	(A3 * B1 * !Y)	0.00087	0.00088	0.00085
	(A2 * !A3 * B1 * !Y)	-0.00148	-0.00149	-0.00152
	(A2 * !A3 * B1 * !Y)	0.00089	0.00088	0.00085
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00148	-0.00149	-0.00152
	(A1 * !A2 * !A3 * B1 * !Y)	0.00089	0.00088	0.00085
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !A3 * B1 * Y)	0.00204	0.00205	0.00204
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00210	0.00211	0.00210

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00282	-0.00286	-0.00297
	(A3 * B1 * !Y)	0.00186	0.00187	0.00176
	(A2 * !A3 * B1 * !Y)	-0.00282	-0.00286	-0.00297
	(A2 * !A3 * B1 * !Y)	0.00185	0.00187	0.00176
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00283	-0.00286	-0.00297
	(A1 * !A2 * !A3 * B1 * !Y)	0.00187	0.00187	0.00176
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00087	-0.00088	-0.00088
	(!A1 * !A2 * !A3 * B1 * Y)	0.00407	0.00409	0.00407
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00090	-0.00089	-0.00088
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00420	0.00420	0.00418
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00557	-0.00564	-0.00584
	(A3 * B1 * !Y)	0.00365	0.00367	0.00347
	(A2 * !A3 * B1 * !Y)	-0.00559	-0.00564	-0.00584
	(A2 * !A3 * B1 * !Y)	0.00367	0.00367	0.00347
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00558	-0.00558	-0.00584
	(A1 * !A2 * !A3 * B1 * !Y)	0.00366	0.00364	0.00347
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00167	-0.00168	-0.00169
	(!A1 * !A2 * !A3 * B1 * Y)	0.00806	0.00809	0.00806
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00169	-0.00172	-0.00170
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00825	0.00835	0.00831

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00270	0.00264	0.00262	0.00264	0.00269	0.74882
sky130_fd_sc_hs__o32a_2	0.00284	0.00279	0.00284	0.00304	0.00285	1.46475
sky130_fd_sc_hs__o32a_4	0.00487	0.00520	0.00488	0.00647	0.00515	2.86799

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.10335	0.18736
sky130_fd_sc_hs__o32a_2	0.00000	0.13586	0.22272
sky130_fd_sc_hs__o32a_4	0.00000	0.27250	0.44544

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)	0.17216	0.92232	7.70950
	A2->X (RR)	0.16595	0.90715	7.62941
	A3->X (RR)	0.14967	0.87945	7.53808
	B1->X (RR)	0.15551	0.92150	7.70169
	B2->X (RR)	0.14010	0.88552	7.61497
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.17501	0.81636	7.65053
	A2->X (RR)	0.17050	0.80558	7.58580
	A3->X (RR)	0.15618	0.78144	7.51381
	B1->X (RR)	0.15908	0.82646	7.67463
	B2->X (RR)	0.14431	0.79692	7.59489
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.19428	0.76342	7.82038
	A2->X (RR)	0.18304	0.74103	7.73126
	A3->X (RR)	0.16182	0.70743	7.63857
	B1->X (RR)	0.18047	0.78126	7.86340
	B2->X (RR)	0.15699	0.74031	7.75830

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.42004	1.01713	4.93299
	A2->X (FF)	0.39510	1.01599	5.11242
	A3->X (FF)	0.34229	0.97592	5.04161
	B1->X (FF)	0.21432	0.79714	4.62848
	B2->X (FF)	0.18969	0.78886	4.63097
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.53285	1.12202	5.28946
	A2->X (FF)	0.50889	1.12412	5.52668
	A3->X (FF)	0.45747	1.08370	5.48182
	B1->X (FF)	0.28160	0.85560	4.94507
	B2->X (FF)	0.25516	0.85206	4.97061
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.51850	1.07168	5.30178
	A2->X (FF)	0.49255	1.06204	5.49667
	A3->X (FF)	0.41763	1.00120	5.43174
	B1->X (FF)	0.25951	0.78526	4.93596
	B2->X (FF)	0.22737	0.77158	4.94606

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01358	0.01341	0.01699
	A1	0.00591	0.00575	0.00946
	A2	0.01195	0.01194	0.01565
	A2	0.00519	0.00519	0.00903
	A3	0.01022	0.01022	0.01502
	A3	0.00425	0.00438	0.00906
	B1	0.01223	0.01224	0.01829
	B1	0.00587	0.00587	0.01205
	B2	0.01048	0.01047	0.01804
	B2	0.00502	0.00501	0.01270
sky130_fd_sc_hs__o32a_2	A1	0.01649	0.01658	0.02020
	A1	0.00828	0.00838	0.01229
	A2	0.01486	0.01514	0.01887
	A2	0.00755	0.00783	0.01186
	A3	0.01317	0.01344	0.01816
	A3	0.00661	0.00689	0.01165
	B1	0.01507	0.01524	0.02136
	B1	0.00812	0.00830	0.01470
	B2	0.01321	0.01340	0.02089
	B2	0.00740	0.00760	0.01538

sky130_fd_sc_hs__o32a_4	**A1**	0.03225	0.03264	0.04078
	A1	0.01719	0.01759	0.02623
	A2	0.02895	0.02938	0.03750
	A2	0.01528	0.01576	0.02441
	A3	0.02438	0.02498	0.03571
	A3	0.01285	0.01345	0.02473
	B1	0.03024	0.03066	0.04224
	B1	0.01673	0.01719	0.02923
	B2	0.02596	0.02656	0.04047
	B2	0.01515	0.01576	0.03018

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00426	0.00413	0.00879
	A1	0.01185	0.01171	0.01600
	A2	0.00431	0.00422	0.00913
	A2	0.01096	0.01089	0.01562
	A3	0.00427	0.00457	0.01177
	A3	0.01013	0.01046	0.01742
	B1	0.00286	0.00296	0.00912
	B1	0.00932	0.00939	0.01517
	B2	0.00288	0.00343	0.01216
	B2	0.00844	0.00894	0.01724

sky130_fd_sc_hs__o32a_2	**A1**	0.00762	0.00717	0.01178
	A1	0.01560	0.01531	0.01973
	A2	0.00754	0.00723	0.01307
	A2	0.01473	0.01450	0.01929
	A3	0.00754	0.00757	0.01499
	A3	0.01395	0.01402	0.02115
	B1	0.00552	0.00573	0.01241
	B1	0.01256	0.01277	0.01862
	B2	0.00563	0.00622	0.01550
	B2	0.01150	0.01209	0.02065
sky130_fd_sc_hs__o32a_4	**A1**	0.01371	0.01354	0.02618
	A1	0.02870	0.02852	0.03699
	A2	0.01371	0.01285	0.02543
	A2	0.02720	0.02702	0.03632
	A3	0.01373	0.01400	0.03051
	A3	0.02506	0.02542	0.03957
	B1	0.01011	0.01054	0.02327
	B1	0.02385	0.02422	0.03559
	B2	0.01012	0.01130	0.02834
	B2	0.02114	0.02221	0.03888

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)**	0.00129	0.00129	0.00129
	(A2 * A3 * B2 * X)	-0.00151	-0.00154	-0.00154
	(A2 * A3 * B1 * !B2 * X)	0.00130	0.00129	0.00129
	(A2 * A3 * B1 * !B2 * X)	-0.00151	-0.00154	-0.00154
	(A2 * !B1 * !B2 * !X)	0.00111	0.00111	0.00111
	(A2 * !B1 * !B2 * !X)	-0.00169	-0.00173	-0.00173
	(A2 * !A3 * B2 * X)	0.00138	0.00129	0.00129
	(A2 * !A3 * B2 * X)	-0.00142	-0.00154	-0.00154
	(A2 * !A3 * B1 * !B2 * X)	0.00138	0.00129	0.00129
	(A2 * !A3 * B1 * !B2 * X)	-0.00142	-0.00154	-0.00154
	(!A2 * A3 * B2 * X)	0.00134	0.00131	0.00129
	(!A2 * A3 * B2 * X)	-0.00135	-0.00150	-0.00148
	(!A2 * A3 * B1 * !B2 * X)	0.00134	0.00131	0.00129
	(!A2 * A3 * B1 * !B2 * X)	-0.00135	-0.00150	-0.00148
	(!A2 * A3 * !B1 * !B2 * !X)	0.00110	0.00112	0.00111
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00157	-0.00168	-0.00167
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00105	0.00105	0.00104
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00175	-0.00176	-0.00175

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00146	0.00146	0.00146
	(A2 * A3 * B2 * X)	-0.00151	-0.00154	-0.00154
	(A2 * A3 * B1 * !B2 * X)	0.00146	0.00146	0.00146
	(A2 * A3 * B1 * !B2 * X)	-0.00151	-0.00154	-0.00154
	(A2 * !B1 * !B2 * !X)	0.00128	0.00128	0.00128
	(A2 * !B1 * !B2 * !X)	-0.00169	-0.00172	-0.00172
	(A2 * !A3 * B2 * X)	0.00154	0.00146	0.00146
	(A2 * !A3 * B2 * X)	-0.00142	-0.00154	-0.00154
	(A2 * !A3 * B1 * !B2 * X)	0.00154	0.00146	0.00146
	(A2 * !A3 * B1 * !B2 * X)	-0.00142	-0.00154	-0.00154
	(!A2 * A3 * B2 * X)	0.00151	0.00148	0.00146
	(!A2 * A3 * B2 * X)	-0.00135	-0.00150	-0.00149
	(!A2 * A3 * B1 * !B2 * X)	0.00151	0.00148	0.00146
	(!A2 * A3 * B1 * !B2 * X)	-0.00135	-0.00150	-0.00149
	(!A2 * A3 * !B1 * !B2 * !X)	0.00129	0.00130	0.00128
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00157	-0.00167	-0.00166
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00121	0.00122	0.00121
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00175	-0.00175	-0.00174

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00224	0.00224	0.00223
	(A2 * A3 * B2 * X)	-0.00303	-0.00308	-0.00310
	(A2 * A3 * B1 * !B2 * X)	0.00224	0.00224	0.00223
	(A2 * A3 * B1 * !B2 * X)	-0.00303	-0.00313	-0.00311
	(A2 * !B1 * !B2 * !X)	0.00224	0.00224	0.00223
	(A2 * !B1 * !B2 * !X)	-0.00303	-0.00309	-0.00311
	(A2 * !A3 * B2 * X)	0.00237	0.00224	0.00223
	(A2 * !A3 * B2 * X)	-0.00287	-0.00312	-0.00311
	(A2 * !A3 * B1 * !B2 * X)	0.00237	0.00224	0.00223
	(A2 * !A3 * B1 * !B2 * X)	-0.00287	-0.00312	-0.00311
	(!A2 * A3 * B2 * X)	0.00234	0.00224	0.00223
	(!A2 * A3 * B2 * X)	-0.00272	-0.00302	-0.00299
	(!A2 * A3 * B1 * !B2 * X)	0.00234	0.00225	0.00223
	(!A2 * A3 * B1 * !B2 * X)	-0.00272	-0.00302	-0.00299
	(!A2 * A3 * !B1 * !B2 * !X)	0.00224	0.00224	0.00223
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00279	-0.00301	-0.00299
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00211	0.00211	0.00210
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00319	-0.00319	-0.00318

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)**	-0.00129	-0.00129	-0.00129
	(A2 * A3 * B2 * X)	0.00154	0.00155	0.00154
	(A2 * A3 * B1 * !B2 * X)	-0.00129	-0.00129	-0.00129
	(A2 * A3 * B1 * !B2 * X)	0.00154	0.00155	0.00154
	(A2 * !B1 * !B2 * !X)	-0.00110	-0.00111	-0.00110
	(A2 * !B1 * !B2 * !X)	0.00172	0.00174	0.00173
	(A2 * !A3 * B2 * X)	-0.00129	-0.00129	-0.00129
	(A2 * !A3 * B2 * X)	0.00154	0.00155	0.00154
	(A2 * !A3 * B1 * !B2 * X)	-0.00128	-0.00129	-0.00129
	(A2 * !A3 * B1 * !B2 * X)	0.00153	0.00155	0.00154
	(!A2 * A3 * B2 * X)	-0.00129	-0.00129	-0.00129
	(!A2 * A3 * B2 * X)	0.00149	0.00150	0.00148
	(!A2 * A3 * B1 * !B2 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * A3 * B1 * !B2 * X)	0.00147	0.00150	0.00148
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00110	-0.00111	-0.00110
	(!A2 * A3 * !B1 * !B2 * !X)	0.00166	0.00168	0.00167
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00098	-0.00105	-0.00104
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00177	0.00177	0.00176

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00145	-0.00146	-0.00146
	(A2 * A3 * B2 * X)	0.00154	0.00155	0.00154
	(A2 * A3 * B1 * !B2 * X)	-0.00145	-0.00146	-0.00146
	(A2 * A3 * B1 * !B2 * X)	0.00154	0.00155	0.00154
	(A2 * !B1 * !B2 * !X)	-0.00128	-0.00128	-0.00128
	(A2 * !B1 * !B2 * !X)	0.00172	0.00173	0.00172
	(A2 * !A3 * B2 * X)	-0.00145	-0.00146	-0.00146
	(A2 * !A3 * B2 * X)	0.00154	0.00155	0.00154
	(A2 * !A3 * B1 * !B2 * X)	-0.00145	-0.00146	-0.00145
	(A2 * !A3 * B1 * !B2 * X)	0.00153	0.00155	0.00154
	(!A2 * A3 * B2 * X)	-0.00145	-0.00146	-0.00145
	(!A2 * A3 * B2 * X)	0.00148	0.00150	0.00149
	(!A2 * A3 * B1 * !B2 * X)	-0.00145	-0.00146	-0.00145
	(!A2 * A3 * B1 * !B2 * X)	0.00148	0.00150	0.00149
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00127	-0.00128	-0.00128
	(!A2 * A3 * !B1 * !B2 * !X)	0.00166	0.00167	0.00166
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00113	-0.00122	-0.00121
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00176	0.00176	0.00175

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00222	-0.00221	-0.00222
	(A2 * A3 * B2 * X)	0.00309	0.00308	0.00310
	(A2 * A3 * B1 * !B2 * X)	-0.00221	-0.00223	-0.00222
	(A2 * A3 * B1 * !B2 * X)	0.00309	0.00314	0.00311
	(A2 * !B1 * !B2 * !X)	-0.00221	-0.00221	-0.00222
	(A2 * !B1 * !B2 * !X)	0.00309	0.00309	0.00311
	(A2 * !A3 * B2 * X)	-0.00222	-0.00223	-0.00222
	(A2 * !A3 * B2 * X)	0.00309	0.00314	0.00311
	(A2 * !A3 * B1 * !B2 * X)	-0.00222	-0.00223	-0.00222
	(A2 * !A3 * B1 * !B2 * X)	0.00310	0.00314	0.00311
	(!A2 * A3 * B2 * X)	-0.00221	-0.00222	-0.00221
	(!A2 * A3 * B2 * X)	0.00297	0.00302	0.00299
	(!A2 * A3 * B1 * !B2 * X)	-0.00221	-0.00222	-0.00221
	(!A2 * A3 * B1 * !B2 * X)	0.00298	0.00302	0.00299
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00221	-0.00223	-0.00222
	(!A2 * A3 * !B1 * !B2 * !X)	0.00297	0.00301	0.00299
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00195	-0.00211	-0.00210
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00322	0.00322	0.00320

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)**	0.00130	0.00132	0.00124
	(A1 * A3 * B2 * X)	-0.00104	-0.00104	-0.00104
	(A1 * A3 * B1 * !B2 * X)	0.00130	0.00132	0.00124
	(A1 * A3 * B1 * !B2 * X)	-0.00105	-0.00104	-0.00104
	(A1 * A3 * !B1 * !B2 * !X)	0.00113	0.00114	0.00113
	(A1 * A3 * !B1 * !B2 * !X)	-0.00112	-0.00114	-0.00113
	(A1 * !A3 * B2 * X)	0.00120	0.00120	0.00119
	(A1 * !A3 * B2 * X)	-0.00083	-0.00083	-0.00084
	(A1 * !A3 * B1 * !B2 * X)	0.00120	0.00120	0.00119
	(A1 * !A3 * B1 * !B2 * X)	-0.00083	-0.00083	-0.00083
	(A1 * !A3 * !B1 * !B2 * !X)	0.00113	0.00114	0.00113
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(!A1 * A3 * B2 * X)	0.00150	0.00121	0.00118
	(!A1 * A3 * B2 * X)	-0.00119	-0.00151	-0.00152
	(!A1 * A3 * B1 * !B2 * X)	0.00150	0.00121	0.00118
	(!A1 * A3 * B1 * !B2 * X)	-0.00119	-0.00151	-0.00153
	(!A1 * A3 * !B1 * !B2 * !X)	0.00113	0.00114	0.00113
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00154	-0.00157	-0.00156
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00107	0.00107	0.00106
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00160	-0.00160	-0.00159

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00147	0.00149	0.00142
	(A1 * A3 * B2 * X)	-0.00105	-0.00105	-0.00104
	(A1 * A3 * B1 * !B2 * X)	0.00147	0.00149	0.00142
	(A1 * A3 * B1 * !B2 * X)	-0.00104	-0.00105	-0.00104
	(A1 * A3 * !B1 * !B2 * !X)	0.00130	0.00131	0.00130
	(A1 * A3 * !B1 * !B2 * !X)	-0.00113	-0.00115	-0.00114
	(A1 * !A3 * B2 * X)	0.00138	0.00138	0.00136
	(A1 * !A3 * B2 * X)	-0.00084	-0.00083	-0.00084
	(A1 * !A3 * B1 * !B2 * X)	0.00138	0.00138	0.00136
	(A1 * !A3 * B1 * !B2 * X)	-0.00084	-0.00083	-0.00084
	(A1 * !A3 * !B1 * !B2 * !X)	0.00131	0.00132	0.00130
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00156	-0.00157	-0.00156
	(!A1 * A3 * B2 * X)	0.00167	0.00139	0.00136
	(!A1 * A3 * B2 * X)	-0.00120	-0.00151	-0.00153
	(!A1 * A3 * B1 * !B2 * X)	0.00167	0.00139	0.00136
	(!A1 * A3 * B1 * !B2 * X)	-0.00120	-0.00151	-0.00153
	(!A1 * A3 * !B1 * !B2 * !X)	0.00130	0.00132	0.00130
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00155	-0.00158	-0.00157
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00123	0.00123	0.00122
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00161	-0.00160	-0.00160

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00252	0.00258	0.00239
	(A1 * A3 * B2 * X)	-0.00233	-0.00233	-0.00232
	(A1 * A3 * B1 * !B2 * X)	0.00252	0.00258	0.00239
	(A1 * A3 * B1 * !B2 * X)	-0.00233	-0.00233	-0.00232
	(A1 * A3 * !B1 * !B2 * !X)	0.00228	0.00230	0.00228
	(A1 * A3 * !B1 * !B2 * !X)	-0.00236	-0.00239	-0.00237
	(A1 * !A3 * B2 * X)	0.00233	0.00232	0.00229
	(A1 * !A3 * B2 * X)	-0.00188	-0.00187	-0.00188
	(A1 * !A3 * B1 * !B2 * X)	0.00233	0.00232	0.00229
	(A1 * !A3 * B1 * !B2 * X)	-0.00188	-0.00187	-0.00188
	(A1 * !A3 * !B1 * !B2 * !X)	0.00229	0.00231	0.00228
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00325	-0.00327	-0.00326
	(!A1 * A3 * B2 * X)	0.00294	0.00233	0.00228
	(!A1 * A3 * B2 * X)	-0.00261	-0.00329	-0.00331
	(!A1 * A3 * B1 * !B2 * X)	0.00294	0.00233	0.00228
	(!A1 * A3 * B1 * !B2 * X)	-0.00261	-0.00329	-0.00331
	(!A1 * A3 * !B1 * !B2 * !X)	0.00228	0.00230	0.00228
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00323	-0.00331	-0.00328
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00213	0.00216	0.00215
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00334	-0.00337	-0.00336

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)**	-0.00119	-0.00119	-0.00119
	(A1 * A3 * B2 * X)	0.00104	0.00104	0.00104
	(A1 * A3 * B1 * !B2 * X)	-0.00119	-0.00119	-0.00119
	(A1 * A3 * B1 * !B2 * X)	0.00105	0.00104	0.00104
	(A1 * A3 * !B1 * !B2 * !X)	-0.00112	-0.00113	-0.00113
	(A1 * A3 * !B1 * !B2 * !X)	0.00112	0.00114	0.00113
	(A1 * !A3 * B2 * X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * B2 * X)	0.00086	0.00086	0.00086
	(A1 * !A3 * B1 * !B2 * X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * B1 * !B2 * X)	0.00086	0.00086	0.00086
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00112	-0.00113	-0.00113
	(A1 * !A3 * !B1 * !B2 * !X)	0.00155	0.00156	0.00155
	(!A1 * A3 * B2 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * A3 * B2 * X)	0.00151	0.00152	0.00152
	(!A1 * A3 * B1 * !B2 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * A3 * B1 * !B2 * X)	0.00151	0.00152	0.00153
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00112	-0.00113	-0.00113
	(!A1 * A3 * !B1 * !B2 * !X)	0.00155	0.00157	0.00156
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00099	-0.00107	-0.00106
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00161	0.00160	0.00159

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00136	-0.00137	-0.00136
	(A1 * A3 * B2 * X)	0.00105	0.00105	0.00104
	(A1 * A3 * B1 * !B2 * X)	-0.00136	-0.00137	-0.00136
	(A1 * A3 * B1 * !B2 * X)	0.00104	0.00105	0.00104
	(A1 * A3 * !B1 * !B2 * !X)	-0.00129	-0.00131	-0.00130
	(A1 * A3 * !B1 * !B2 * !X)	0.00113	0.00115	0.00114
	(A1 * !A3 * B2 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A3 * B2 * X)	0.00086	0.00086	0.00087
	(A1 * !A3 * B1 * !B2 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A3 * B1 * !B2 * X)	0.00086	0.00086	0.00087
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00129	-0.00131	-0.00130
	(A1 * !A3 * !B1 * !B2 * !X)	0.00156	0.00157	0.00156
	(!A1 * A3 * B2 * X)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * B2 * X)	0.00152	0.00153	0.00153
	(!A1 * A3 * B1 * !B2 * X)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * B1 * !B2 * X)	0.00152	0.00153	0.00153
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * A3 * !B1 * !B2 * !X)	0.00156	0.00158	0.00157
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00114	-0.00123	-0.00122
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00162	0.00161	0.00160

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00228	-0.00228	-0.00227
	(A1 * A3 * B2 * X)	0.00233	0.00233	0.00232
	(A1 * A3 * B1 * !B2 * X)	-0.00228	-0.00228	-0.00227
	(A1 * A3 * B1 * !B2 * X)	0.00233	0.00233	0.00232
	(A1 * A3 * !B1 * !B2 * !X)	-0.00226	-0.00228	-0.00227
	(A1 * A3 * !B1 * !B2 * !X)	0.00236	0.00239	0.00237
	(A1 * !A3 * B2 * X)	-0.00225	-0.00225	-0.00222
	(A1 * !A3 * B2 * X)	0.00192	0.00192	0.00195
	(A1 * !A3 * B1 * !B2 * X)	-0.00225	-0.00225	-0.00222
	(A1 * !A3 * B1 * !B2 * X)	0.00193	0.00193	0.00195
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00228	-0.00229	-0.00227
	(A1 * !A3 * !B1 * !B2 * !X)	0.00328	0.00327	0.00326
	(!A1 * A3 * B2 * X)	-0.00226	-0.00226	-0.00224
	(!A1 * A3 * B2 * X)	0.00330	0.00331	0.00331
	(!A1 * A3 * B1 * !B2 * X)	-0.00226	-0.00226	-0.00224
	(!A1 * A3 * B1 * !B2 * X)	0.00330	0.00331	0.00331
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00227	-0.00228	-0.00227
	(!A1 * A3 * !B1 * !B2 * !X)	0.00328	0.00331	0.00328
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00198	-0.00216	-0.00215
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00339	0.00339	0.00337

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00129	0.00129	0.00128
	(A2 * B2 * X)	-0.00078	-0.00077	-0.00077
	(A2 * B1 * !B2 * X)	0.00129	0.00129	0.00128
	(A2 * B1 * !B2 * X)	-0.00078	-0.00077	-0.00077
	(A2 * !B1 * !B2 * !X)	0.00115	0.00115	0.00114
	(A2 * !B1 * !B2 * !X)	-0.00154	-0.00157	-0.00156
	(A1 * !A2 * B2 * X)	0.00129	0.00129	0.00128
	(A1 * !A2 * B2 * X)	-0.00077	-0.00077	-0.00076
	(A1 * !A2 * B1 * !B2 * X)	0.00129	0.00129	0.00128
	(A1 * !A2 * B1 * !B2 * X)	-0.00077	-0.00077	-0.00076
	(A1 * !A2 * !B1 * !B2 * !X)	0.00115	0.00115	0.00114
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00140	-0.00147	-0.00147
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00106	0.00107	0.00106
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00159	-0.00160	-0.00159
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00150	0.00149	0.00149
	(A2 * B2 * X)	-0.00077	-0.00077	-0.00077
	(A2 * B1 * !B2 * X)	0.00150	0.00149	0.00149
	(A2 * B1 * !B2 * X)	-0.00078	-0.00077	-0.00077
	(A2 * !B1 * !B2 * !X)	0.00132	0.00132	0.00131
	(A2 * !B1 * !B2 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * !A2 * B2 * X)	0.00148	0.00149	0.00149
	(A1 * !A2 * B2 * X)	-0.00076	-0.00077	-0.00076
	(A1 * !A2 * B1 * !B2 * X)	0.00148	0.00150	0.00149
	(A1 * !A2 * B1 * !B2 * X)	-0.00076	-0.00077	-0.00076
	(A1 * !A2 * !B1 * !B2 * !X)	0.00132	0.00132	0.00131
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00144	-0.00151	-0.00150
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00122	0.00124	0.00123
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00162	-0.00163	-0.00163

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00242	0.00242	0.00241
	(A2 * B2 * X)	-0.00155	-0.00155	-0.00154
	(A2 * B1 * !B2 * X)	0.00242	0.00242	0.00241
	(A2 * B1 * !B2 * X)	-0.00155	-0.00155	-0.00154
	(A2 * !B1 * !B2 * !X)	0.00220	0.00223	0.00221
	(A2 * !B1 * !B2 * !X)	-0.00293	-0.00303	-0.00302
	(A1 * !A2 * B2 * X)	0.00240	0.00242	0.00241
	(A1 * !A2 * B2 * X)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * B1 * !B2 * X)	0.00241	0.00242	0.00241
	(A1 * !A2 * B1 * !B2 * X)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * !B1 * !B2 * !X)	0.00220	0.00223	0.00220
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00268	-0.00284	-0.00284
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00207	0.00208	0.00207
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00311	-0.00312	-0.00311

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00123	-0.00124	-0.00128
	(A2 * B2 * X)	0.00082	0.00082	0.00078
	(A2 * B1 * !B2 * X)	-0.00123	-0.00124	-0.00128
	(A2 * B1 * !B2 * X)	0.00082	0.00082	0.00078
	(A2 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00113
	(A2 * !B1 * !B2 * !X)	0.00155	0.00157	0.00156
	(A1 * !A2 * B2 * X)	-0.00116	-0.00117	-0.00127
	(A1 * !A2 * B2 * X)	0.00085	0.00086	0.00078
	(A1 * !A2 * B1 * !B2 * X)	-0.00116	-0.00116	-0.00127
	(A1 * !A2 * B1 * !B2 * X)	0.00086	0.00085	0.00078
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * !A2 * !B1 * !B2 * !X)	0.00147	0.00147	0.00147
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00099	-0.00107	-0.00106
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00161	0.00160	0.00160
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00144	-0.00144	-0.00149
	(A2 * B2 * X)	0.00082	0.00082	0.00078
	(A2 * B1 * !B2 * X)	-0.00144	-0.00144	-0.00148
	(A2 * B1 * !B2 * X)	0.00082	0.00082	0.00078
	(A2 * !B1 * !B2 * !X)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * !B2 * !X)	0.00159	0.00160	0.00159
	(A1 * !A2 * B2 * X)	-0.00136	-0.00137	-0.00147
	(A1 * !A2 * B2 * X)	0.00086	0.00086	0.00078
	(A1 * !A2 * B1 * !B2 * X)	-0.00136	-0.00137	-0.00147
	(A1 * !A2 * B1 * !B2 * X)	0.00086	0.00086	0.00078
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00131	-0.00131	-0.00130
	(A1 * !A2 * !B1 * !B2 * !X)	0.00151	0.00151	0.00150
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00114	-0.00124	-0.00123
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00164	0.00164	0.00163

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00224	-0.00225	-0.00239
	(A2 * B2 * X)	0.00169	0.00168	0.00158
	(A2 * B1 * !B2 * X)	-0.00224	-0.00225	-0.00239
	(A2 * B1 * !B2 * X)	0.00169	0.00168	0.00158
	(A2 * !B1 * !B2 * !X)	-0.00220	-0.00222	-0.00220
	(A2 * !B1 * !B2 * !X)	0.00302	0.00303	0.00302
	(A1 * !A2 * B2 * X)	-0.00207	-0.00208	-0.00236
	(A1 * !A2 * B2 * X)	0.00178	0.00177	0.00158
	(A1 * !A2 * B1 * !B2 * X)	-0.00207	-0.00208	-0.00236
	(A1 * !A2 * B1 * !B2 * X)	0.00178	0.00177	0.00158
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00218	-0.00220	-0.00220
	(A1 * !A2 * !B1 * !B2 * !X)	0.00282	0.00284	0.00284
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00192	-0.00208	-0.00207
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00314	0.00313	0.00312

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00153	0.00131	0.00130
	(A3 * B2 * X)	-0.00134	-0.00157	-0.00159
	(A2 * !A3 * B2 * X)	0.00154	0.00131	0.00130
	(A2 * !A3 * B2 * X)	-0.00134	-0.00157	-0.00159
	(A1 * !A2 * !A3 * B2 * X)	0.00154	0.00131	0.00130
	(A1 * !A2 * !A3 * B2 * X)	-0.00134	-0.00157	-0.00159
	(!A1 * !A2 * !A3 * B2 * !X)	0.00048	0.00047	0.00047
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00187	-0.00190	-0.00190
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00056	0.00056	0.00050
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00179	-0.00181	-0.00191

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00183	0.00161	0.00159
	(A3 * B2 * X)	-0.00147	-0.00170	-0.00172
	(A2 * !A3 * B2 * X)	0.00183	0.00161	0.00159
	(A2 * !A3 * B2 * X)	-0.00147	-0.00170	-0.00172
	(A1 * !A2 * !A3 * B2 * X)	0.00183	0.00161	0.00159
	(A1 * !A2 * !A3 * B2 * X)	-0.00147	-0.00170	-0.00172
	(!A1 * !A2 * !A3 * B2 * !X)	0.00057	0.00057	0.00057
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00211	-0.00213	-0.00213
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00068	0.00068	0.00060
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00201	-0.00203	-0.00214
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00331	0.00282	0.00276
	(A3 * B2 * X)	-0.00305	-0.00359	-0.00364
	(A2 * !A3 * B2 * X)	0.00331	0.00282	0.00276
	(A2 * !A3 * B2 * X)	-0.00304	-0.00358	-0.00364
	(A1 * !A2 * !A3 * B2 * X)	0.00331	0.00282	0.00276
	(A1 * !A2 * !A3 * B2 * X)	-0.00303	-0.00358	-0.00363
	(!A1 * !A2 * !A3 * B2 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00451	-0.00458	-0.00457
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00102	0.00101	0.00088
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00441	-0.00442	-0.00463

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00129	-0.00130	-0.00129
	(A3 * B2 * X)	0.00158	0.00160	0.00159
	(A2 * !A3 * B2 * X)	-0.00129	-0.00130	-0.00129
	(A2 * !A3 * B2 * X)	0.00158	0.00160	0.00159
	(A1 * !A2 * !A3 * B2 * X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !A3 * B2 * X)	0.00158	0.00160	0.00159
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !A3 * B2 * !X)	0.00191	0.00191	0.00190
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00047	-0.00048	-0.00048
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00192	0.00193	0.00193
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00158	-0.00159	-0.00158
	(A3 * B2 * X)	0.00171	0.00173	0.00172
	(A2 * !A3 * B2 * X)	-0.00158	-0.00159	-0.00158
	(A2 * !A3 * B2 * X)	0.00171	0.00173	0.00172
	(A1 * !A2 * !A3 * B2 * X)	-0.00158	-0.00157	-0.00158
	(A1 * !A2 * !A3 * B2 * X)	0.00171	0.00170	0.00172
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * !A3 * B2 * !X)	0.00213	0.00215	0.00213
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00058	-0.00058	-0.00057
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00217	0.00217	0.00216
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00275	-0.00275	-0.00273
	(A3 * B2 * X)	0.00364	0.00367	0.00364
	(A2 * !A3 * B2 * X)	-0.00275	-0.00275	-0.00273
	(A2 * !A3 * B2 * X)	0.00363	0.00366	0.00364
	(A1 * !A2 * !A3 * B2 * X)	-0.00274	-0.00275	-0.00273
	(A1 * !A2 * !A3 * B2 * X)	0.00363	0.00365	0.00363
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * !A2 * !A3 * B2 * !X)	0.00458	0.00464	0.00457
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00083	-0.00085	-0.00084
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00464	0.00472	0.00466

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00134	0.00134	0.00134
	(A3 * B1 * X)	-0.00078	-0.00078	-0.00077
	(A2 * !A3 * B1 * X)	0.00134	0.00134	0.00134
	(A2 * !A3 * B1 * X)	-0.00078	-0.00078	-0.00077
	(A1 * !A2 * !A3 * B1 * X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !A3 * B1 * X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * !A3 * B1 * !X)	0.00040	0.00040	0.00039
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00186	-0.00188	-0.00186
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00048	0.00048	0.00042
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00177	-0.00178	-0.00189
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00152	0.00152	0.00152
	(A3 * B1 * X)	-0.00079	-0.00078	-0.00078
	(A2 * !A3 * B1 * X)	0.00152	0.00152	0.00152
	(A2 * !A3 * B1 * X)	-0.00079	-0.00078	-0.00078
	(A1 * !A2 * !A3 * B1 * X)	0.00152	0.00152	0.00152
	(A1 * !A2 * !A3 * B1 * X)	-0.00079	-0.00078	-0.00078
	(!A1 * !A2 * !A3 * B1 * !X)	0.00046	0.00045	0.00045
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00056	0.00055	0.00048
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00179	-0.00179	-0.00192

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00259	0.00260	0.00259
	(A3 * B1 * X)	-0.00157	-0.00158	-0.00157
	(A2 * !A3 * B1 * X)	0.00259	0.00260	0.00259
	(A2 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * !A3 * B1 * X)	0.00259	0.00260	0.00259
	(A1 * !A2 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00156
	(!A1 * !A2 * !A3 * B1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00360	-0.00364	-0.00362
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00098	0.00098	0.00085
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00348	-0.00350	-0.00371

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00129	-0.00129	-0.00133
	(A3 * B1 * X)	0.00083	0.00083	0.00079
	(A2 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00133
	(A2 * !A3 * B1 * X)	0.00083	0.00083	0.00079
	(A1 * !A2 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00133
	(A1 * !A2 * !A3 * B1 * X)	0.00083	0.00083	0.00079
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * !A2 * !A3 * B1 * !X)	0.00187	0.00188	0.00186
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00190	0.00191	0.00190

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00147	-0.00147	-0.00151
	(A3 * B1 * X)	0.00083	0.00083	0.00079
	(A2 * !A3 * B1 * X)	-0.00146	-0.00147	-0.00151
	(A2 * !A3 * B1 * X)	0.00084	0.00083	0.00079
	(A1 * !A2 * !A3 * B1 * X)	-0.00146	-0.00147	-0.00151
	(A1 * !A2 * !A3 * B1 * X)	0.00083	0.00083	0.00079
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * B1 * !X)	0.00190	0.00191	0.00189
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00193	0.00194	0.00193
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00247	-0.00248	-0.00257
	(A3 * B1 * X)	0.00168	0.00168	0.00160
	(A2 * !A3 * B1 * X)	-0.00247	-0.00248	-0.00257
	(A2 * !A3 * B1 * X)	0.00168	0.00168	0.00160
	(A1 * !A2 * !A3 * B1 * X)	-0.00246	-0.00248	-0.00257
	(A1 * !A2 * !A3 * B1 * X)	0.00168	0.00169	0.00160
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * !A3 * B1 * !X)	0.00364	0.00364	0.00362
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00080	-0.00082	-0.00081
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00372	0.00375	0.00374

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00280	0.00287	0.00297	0.00295	0.00300	0.17968
sky130_fd_sc_hs__o41ai_2	0.00552	0.00562	0.00541	0.00553	0.00583	0.32558
sky130_fd_sc_hs__o41ai_4	0.01074	0.01069	0.01085	0.01108	0.00798	0.62499

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.03994	0.12687
sky130_fd_sc_hs__o41ai_2	0.00000	0.07979	0.25056
sky130_fd_sc_hs__o41ai_4	0.00000	0.13101	0.49665

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)	0.41987	1.59446	9.89013
	A2->Y (FR)	0.39736	1.57568	10.26630
	A3->Y (FR)	0.34533	1.53969	10.66020
	A4->Y (FR)	0.25907	1.44804	10.62060
	B1->Y (FR)	0.05097	0.64428	5.64813
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.43173	1.42122	9.76424
	A2->Y (FR)	0.40538	1.39022	10.12430
	A3->Y (FR)	0.34633	1.35558	10.60660
	A4->Y (FR)	0.22854	1.23866	10.55120
	B1->Y (FR)	0.04035	0.55715	5.40986
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.40524	1.23313	9.71272
	A2->Y (FR)	0.37895	1.20782	10.12110
	A3->Y (FR)	0.32142	1.17042	10.60460
	A4->Y (FR)	0.20898	1.06682	10.59350
	B1->Y (FR)	0.05448	0.67582	7.35966

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.06623	0.49724	3.67281
	A2->Y (RF)	0.06812	0.48801	3.64890
	A3->Y (RF)	0.06671	0.47513	3.62689
	A4->Y (RF)	0.05464	0.45414	3.58718
	B1->Y (RF)	0.05159	0.53451	4.15306
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.06278	0.45024	3.58869
	A2->Y (RF)	0.06467	0.44086	3.56420
	A3->Y (RF)	0.06404	0.42580	3.52930
	A4->Y (RF)	0.05104	0.40035	3.48942
	B1->Y (RF)	0.04576	0.48478	4.12568
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.06604	0.41311	3.58365
	A2->Y (RF)	0.06578	0.39831	3.53243
	A3->Y (RF)	0.06264	0.37925	3.48126
	A4->Y (RF)	0.04659	0.34665	3.39500
	B1->Y (RF)	0.04746	0.48169	4.52065

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00139	0.00120	0.00205
	A1	0.00947	0.00931	0.01012
	A2	0.00143	0.00125	0.00226
	A2	0.00853	0.00836	0.00936
	A3	0.00142	0.00123	0.00252
	A3	0.00766	0.00747	0.00875
	A4	0.00139	0.00138	0.00382
	A4	0.00670	0.00664	0.00912
	B1	-0.00041	-0.00012	0.00347
	B1	0.00637	0.00662	0.00996
sky130_fd_sc_hs__o41ai_2	A1	0.00212	0.00173	0.00328
	A1	0.01840	0.01803	0.01954
	A2	0.00217	0.00176	0.00370
	A2	0.01649	0.01610	0.01798
	A3	0.00223	0.00186	0.00426
	A3	0.01448	0.01410	0.01650
	A4	0.00213	0.00207	0.00698
	A4	0.01246	0.01243	0.01730
	B1	-0.00184	-0.00107	0.00629
	B1	0.01185	0.01246	0.01957

sky130_fd_sc_hs__o41ai_4	**A1**	0.00368	0.00300	0.00628
	A1	0.03569	0.03497	0.03825
	A2	0.00376	0.00304	0.00699
	A2	0.03177	0.03107	0.03493
	A3	0.00376	0.00299	0.00794
	A3	0.02795	0.02725	0.03213
	A4	0.00359	0.00361	0.01311
	A4	0.02391	0.02400	0.03342
	B1	-0.00278	-0.00215	0.00652
	B1	0.02004	0.02055	0.02845

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01094	0.01073	0.01175
	A1	0.00288	0.00267	0.00371
	A2	0.00918	0.00899	0.01005
	A2	0.00203	0.00184	0.00290
	A3	0.00731	0.00724	0.00833
	A3	0.00099	0.00089	0.00198
	A4	0.00538	0.00537	0.00652
	A4	-0.00007	-0.00006	0.00106
	B1	0.00948	0.00947	0.01124
	B1	0.00292	0.00288	0.00464

sky130_fd_sc_hs__o41ai_2	**A1**	0.02292	0.02241	0.02438
	A1	0.00677	0.00625	0.00828
	A2	0.01892	0.01856	0.02069
	A2	0.00454	0.00416	0.00630
	A3	0.01517	0.01490	0.01712
	A3	0.00275	0.00246	0.00468
	A4	0.01038	0.01043	0.01284
	A4	-0.00021	-0.00019	0.00220
	B1	0.01979	0.01991	0.02351
	B1	0.00663	0.00670	0.01028
sky130_fd_sc_hs__o41ai_4	**A1**	0.04328	0.04226	0.04638
	A1	0.01151	0.01051	0.01477
	A2	0.03559	0.03472	0.03923
	A2	0.00746	0.00661	0.01110
	A3	0.02818	0.02758	0.03231
	A3	0.00359	0.00296	0.00765
	A4	0.01925	0.01930	0.02441
	A4	-0.00163	-0.00157	0.00354
	B1	0.03566	0.03562	0.03943
	B1	0.01381	0.01374	0.01752

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)**	0.00136	0.00136	0.00136
	(A2 * A4 * B1 * !Y)	-0.00173	-0.00177	-0.00177
	(A2 * A3 * !A4 * B1 * !Y)	0.00136	0.00135	0.00136
	(A2 * A3 * !A4 * B1 * !Y)	-0.00173	-0.00177	-0.00177
	(A2 * !B1 * Y)	0.00136	0.00135	0.00136
	(A2 * !B1 * Y)	-0.00173	-0.00177	-0.00177
	(A2 * !A3 * !A4 * B1 * !Y)	0.00136	0.00135	0.00136
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00170	-0.00177	-0.00177
	(!A2 * A3 * A4 * B1 * !Y)	0.00135	0.00137	0.00136
	(!A2 * A3 * A4 * B1 * !Y)	-0.00159	-0.00171	-0.00170
	(!A2 * A3 * !B1 * Y)	0.00135	0.00137	0.00136
	(!A2 * A3 * !B1 * Y)	-0.00159	-0.00171	-0.00170
	(!A2 * A3 * !A4 * B1 * !Y)	0.00135	0.00137	0.00136
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00159	-0.00171	-0.00170
	(!A2 * !A3 * A4 * B1 * !Y)	0.00135	0.00137	0.00136
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00157	-0.00168	-0.00167
	(!A2 * !A3 * A4 * !B1 * Y)	0.00135	0.00137	0.00136
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00157	-0.00168	-0.00167
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00127	0.00128	0.00127
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00180	-0.00180	-0.00180

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00269	0.00271	0.00269
	(A2 * A4 * B1 * !Y)	-0.00340	-0.00354	-0.00351
	(A2 * A3 * !A4 * B1 * !Y)	0.00269	0.00271	0.00269
	(A2 * A3 * !A4 * B1 * !Y)	-0.00339	-0.00354	-0.00351
	(A2 * !B1 * Y)	0.00269	0.00271	0.00269
	(A2 * !B1 * Y)	-0.00340	-0.00354	-0.00351
	(A2 * !A3 * !A4 * B1 * !Y)	0.00269	0.00271	0.00269
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00334	-0.00354	-0.00351
	(!A2 * A3 * A4 * B1 * !Y)	0.00269	0.00271	0.00269
	(!A2 * A3 * A4 * B1 * !Y)	-0.00314	-0.00340	-0.00337
	(!A2 * A3 * !B1 * Y)	0.00269	0.00271	0.00269
	(!A2 * A3 * !B1 * Y)	-0.00314	-0.00340	-0.00337
	(!A2 * A3 * !A4 * B1 * !Y)	0.00269	0.00271	0.00269
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00314	-0.00340	-0.00337
	(!A2 * !A3 * A4 * B1 * !Y)	0.00270	0.00273	0.00269
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00310	-0.00333	-0.00331
	(!A2 * !A3 * A4 * !B1 * Y)	0.00269	0.00272	0.00269
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00311	-0.00333	-0.00331
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00252	0.00253	0.00251
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00360	-0.00361	-0.00360

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00520	0.00522	0.00519
	(A2 * A4 * B1 * !Y)	-0.00679	-0.00705	-0.00700
	(A2 * A3 * !A4 * B1 * !Y)	0.00520	0.00522	0.00519
	(A2 * A3 * !A4 * B1 * !Y)	-0.00679	-0.00705	-0.00700
	(A2 * !B1 * Y)	0.00520	0.00522	0.00519
	(A2 * !B1 * Y)	-0.00680	-0.00705	-0.00700
	(A2 * !A3 * !A4 * B1 * !Y)	0.00520	0.00522	0.00519
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00665	-0.00705	-0.00701
	(!A2 * A3 * A4 * B1 * !Y)	0.00520	0.00521	0.00519
	(!A2 * A3 * A4 * B1 * !Y)	-0.00624	-0.00675	-0.00669
	(!A2 * A3 * !B1 * Y)	0.00520	0.00521	0.00519
	(!A2 * A3 * !B1 * Y)	-0.00625	-0.00676	-0.00669
	(!A2 * A3 * !A4 * B1 * !Y)	0.00520	0.00521	0.00519
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00625	-0.00675	-0.00669
	(!A2 * !A3 * A4 * B1 * !Y)	0.00521	0.00525	0.00519
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00618	-0.00663	-0.00659
	(!A2 * !A3 * A4 * !B1 * Y)	0.00520	0.00525	0.00519
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00619	-0.00664	-0.00659
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00484	0.00487	0.00483
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00719	-0.00721	-0.00718

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)**	-0.00135	-0.00136	-0.00135
	(A2 * A4 * B1 * !Y)	0.00176	0.00178	0.00177
	(A2 * A3 * !A4 * B1 * !Y)	-0.00135	-0.00135	-0.00135
	(A2 * A3 * !A4 * B1 * !Y)	0.00176	0.00178	0.00177
	(A2 * !B1 * Y)	-0.00135	-0.00135	-0.00135
	(A2 * !B1 * Y)	0.00177	0.00178	0.00177
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00136	-0.00135	-0.00135
	(A2 * !A3 * !A4 * B1 * !Y)	0.00177	0.00178	0.00177
	(!A2 * A3 * A4 * B1 * !Y)	-0.00135	-0.00136	-0.00135
	(!A2 * A3 * A4 * B1 * !Y)	0.00169	0.00171	0.00170
	(!A2 * A3 * !B1 * Y)	-0.00135	-0.00136	-0.00135
	(!A2 * A3 * !B1 * Y)	0.00169	0.00171	0.00170
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00135	-0.00136	-0.00135
	(!A2 * A3 * !A4 * B1 * !Y)	0.00170	0.00171	0.00170
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00135	-0.00136	-0.00135
	(!A2 * !A3 * A4 * B1 * !Y)	0.00166	0.00168	0.00167
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00135	-0.00136	-0.00135
	(!A2 * !A3 * A4 * !B1 * Y)	0.00166	0.00168	0.00167
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00119	-0.00128	-0.00127
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00181	0.00181	0.00180

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00268	-0.00270	-0.00268
	(A2 * A4 * B1 * !Y)	0.00350	0.00354	0.00351
	(A2 * A3 * !A4 * B1 * !Y)	-0.00268	-0.00270	-0.00268
	(A2 * A3 * !A4 * B1 * !Y)	0.00350	0.00354	0.00351
	(A2 * !B1 * Y)	-0.00268	-0.00270	-0.00268
	(A2 * !B1 * Y)	0.00350	0.00355	0.00351
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00268	-0.00270	-0.00268
	(A2 * !A3 * !A4 * B1 * !Y)	0.00350	0.00354	0.00351
	(!A2 * A3 * A4 * B1 * !Y)	-0.00268	-0.00270	-0.00268
	(!A2 * A3 * A4 * B1 * !Y)	0.00336	0.00340	0.00337
	(!A2 * A3 * !B1 * Y)	-0.00268	-0.00270	-0.00268
	(!A2 * A3 * !B1 * Y)	0.00336	0.00340	0.00337
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00268	-0.00270	-0.00268
	(!A2 * A3 * !A4 * B1 * !Y)	0.00336	0.00340	0.00337
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00268	-0.00270	-0.00268
	(!A2 * !A3 * A4 * B1 * !Y)	0.00330	0.00333	0.00331
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00268	-0.00270	-0.00268
	(!A2 * !A3 * A4 * !B1 * Y)	0.00330	0.00333	0.00331
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00235	-0.00253	-0.00251
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00362	0.00364	0.00361

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00517	-0.00520	-0.00518
	(A2 * A4 * B1 * !Y)	0.00699	0.00705	0.00700
	(A2 * A3 * !A4 * B1 * !Y)	-0.00517	-0.00520	-0.00518
	(A2 * A3 * !A4 * B1 * !Y)	0.00699	0.00705	0.00700
	(A2 * !B1 * Y)	-0.00517	-0.00520	-0.00517
	(A2 * !B1 * Y)	0.00699	0.00705	0.00700
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00517	-0.00519	-0.00517
	(A2 * !A3 * !A4 * B1 * !Y)	0.00699	0.00705	0.00701
	(!A2 * A3 * A4 * B1 * !Y)	-0.00517	-0.00520	-0.00518
	(!A2 * A3 * A4 * B1 * !Y)	0.00668	0.00675	0.00669
	(!A2 * A3 * !B1 * Y)	-0.00517	-0.00520	-0.00518
	(!A2 * A3 * !B1 * Y)	0.00668	0.00676	0.00669
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00517	-0.00520	-0.00518
	(!A2 * A3 * !A4 * B1 * !Y)	0.00668	0.00675	0.00669
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00517	-0.00519	-0.00517
	(!A2 * !A3 * A4 * B1 * !Y)	0.00658	0.00663	0.00659
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00518	-0.00520	-0.00518
	(!A2 * !A3 * A4 * !B1 * Y)	0.00659	0.00664	0.00659
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00452	-0.00487	-0.00483
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00723	0.00726	0.00720

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)**	0.00134	0.00135	0.00133
	(A1 * A3 * A4 * B1 * !Y)	-0.00124	-0.00124	-0.00123
	(A1 * A3 * !B1 * Y)	0.00133	0.00132	0.00131
	(A1 * A3 * !B1 * Y)	-0.00125	-0.00125	-0.00124
	(A1 * A3 * !A4 * B1 * !Y)	0.00142	0.00143	0.00134
	(A1 * A3 * !A4 * B1 * !Y)	-0.00122	-0.00122	-0.00122
	(A1 * !A3 * A4 * B1 * !Y)	0.00133	0.00138	0.00132
	(A1 * !A3 * A4 * B1 * !Y)	-0.00119	-0.00119	-0.00119
	(A1 * !A3 * A4 * !B1 * Y)	0.00131	0.00133	0.00131
	(A1 * !A3 * A4 * !B1 * Y)	-0.00122	-0.00123	-0.00121
	(A1 * !A3 * !A4 * B1 * !Y)	0.00132	0.00132	0.00131
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00097	-0.00096	-0.00096
	(A1 * !A3 * !A4 * !B1 * Y)	0.00133	0.00133	0.00131
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00171	-0.00171	-0.00171
	(!A1 * A3 * A4 * B1 * !Y)	0.00132	0.00133	0.00131
	(!A1 * A3 * A4 * B1 * !Y)	-0.00168	-0.00173	-0.00172
	(!A1 * A3 * !B1 * Y)	0.00132	0.00133	0.00131
	(!A1 * A3 * !B1 * Y)	-0.00168	-0.00173	-0.00172
	(!A1 * A3 * !A4 * B1 * !Y)	0.00144	0.00133	0.00131
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00155	-0.00173	-0.00172
	(!A1 * !A3 * A4 * B1 * !Y)	0.00136	0.00132	0.00131
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00147	-0.00163	-0.00163
	(!A1 * !A3 * A4 * !B1 * Y)	0.00131	0.00132	0.00131
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00151	-0.00163	-0.00163
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00122	0.00124	0.00122
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00176	-0.00177	-0.00176

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00272	0.00273	0.00270
	(A1 * A3 * A4 * B1 * !Y)	-0.00257	-0.00257	-0.00255
	(A1 * A3 * !B1 * Y)	0.00269	0.00271	0.00270
	(A1 * A3 * !B1 * Y)	-0.00258	-0.00258	-0.00257
	(A1 * A3 * !A4 * B1 * !Y)	0.00297	0.00296	0.00279
	(A1 * A3 * !A4 * B1 * !Y)	-0.00251	-0.00253	-0.00252
	(A1 * !A3 * A4 * B1 * !Y)	0.00273	0.00285	0.00274
	(A1 * !A3 * A4 * B1 * !Y)	-0.00248	-0.00251	-0.00249
	(A1 * !A3 * A4 * !B1 * Y)	0.00269	0.00274	0.00270
	(A1 * !A3 * A4 * !B1 * Y)	-0.00254	-0.00257	-0.00255
	(A1 * !A3 * !A4 * B1 * !Y)	0.00271	0.00271	0.00270
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00202	-0.00201	-0.00200
	(A1 * !A3 * !A4 * !B1 * Y)	0.00272	0.00273	0.00270
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00350	-0.00351	-0.00351
	(!A1 * A3 * A4 * B1 * !Y)	0.00273	0.00272	0.00270
	(!A1 * A3 * A4 * B1 * !Y)	-0.00350	-0.00359	-0.00356
	(!A1 * A3 * !B1 * Y)	0.00272	0.00272	0.00270
	(!A1 * A3 * !B1 * Y)	-0.00351	-0.00359	-0.00357
	(!A1 * A3 * !A4 * B1 * !Y)	0.00283	0.00272	0.00270
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00335	-0.00357	-0.00357
	(!A1 * !A3 * A4 * B1 * !Y)	0.00275	0.00272	0.00270
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00314	-0.00338	-0.00339
	(!A1 * !A3 * A4 * !B1 * Y)	0.00269	0.00272	0.00270
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00319	-0.00338	-0.00339
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00250	0.00251	0.00250
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00364	-0.00364	-0.00364

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00524	0.00526	0.00517
	(A1 * A3 * A4 * B1 * !Y)	-0.00487	-0.00487	-0.00484
	(A1 * A3 * !B1 * Y)	0.00513	0.00517	0.00514
	(A1 * A3 * !B1 * Y)	-0.00485	-0.00490	-0.00487
	(A1 * A3 * !A4 * B1 * !Y)	0.00572	0.00566	0.00532
	(A1 * A3 * !A4 * B1 * !Y)	-0.00480	-0.00479	-0.00477
	(A1 * !A3 * A4 * B1 * !Y)	0.00521	0.00545	0.00520
	(A1 * !A3 * A4 * B1 * !Y)	-0.00474	-0.00479	-0.00475
	(A1 * !A3 * A4 * !B1 * Y)	0.00513	0.00523	0.00514
	(A1 * !A3 * A4 * !B1 * Y)	-0.00486	-0.00491	-0.00486
	(A1 * !A3 * !A4 * B1 * !Y)	0.00515	0.00518	0.00514
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00386	-0.00387	-0.00383
	(A1 * !A3 * !A4 * !B1 * Y)	0.00518	0.00519	0.00513
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00688	-0.00692	-0.00689
	(!A1 * A3 * A4 * B1 * !Y)	0.00519	0.00519	0.00514
	(!A1 * A3 * A4 * B1 * !Y)	-0.00680	-0.00698	-0.00694
	(!A1 * A3 * !B1 * Y)	0.00520	0.00520	0.00514
	(!A1 * A3 * !B1 * Y)	-0.00681	-0.00698	-0.00694
	(!A1 * A3 * !A4 * B1 * !Y)	0.00560	0.00519	0.00514
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00636	-0.00698	-0.00695
	(!A1 * !A3 * A4 * B1 * !Y)	0.00532	0.00518	0.00513
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00600	-0.00657	-0.00659
	(!A1 * !A3 * A4 * !B1 * Y)	0.00513	0.00518	0.00513
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00614	-0.00658	-0.00658
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00477	0.00479	0.00478
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00715	-0.00717	-0.00715

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)**	-0.00131	-0.00131	-0.00131
	(A1 * A3 * A4 * B1 * !Y)	0.00124	0.00124	0.00123
	(A1 * A3 * !B1 * Y)	-0.00131	-0.00131	-0.00131
	(A1 * A3 * !B1 * Y)	0.00125	0.00125	0.00124
	(A1 * A3 * !A4 * B1 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * A3 * !A4 * B1 * !Y)	0.00122	0.00122	0.00122
	(A1 * !A3 * A4 * B1 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * !A3 * A4 * B1 * !Y)	0.00119	0.00119	0.00119
	(A1 * !A3 * A4 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A3 * A4 * !B1 * Y)	0.00122	0.00123	0.00121
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00125	-0.00125	-0.00124
	(A1 * !A3 * !A4 * B1 * !Y)	0.00101	0.00102	0.00102
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00131	-0.00131	-0.00131
	(A1 * !A3 * !A4 * !B1 * Y)	0.00171	0.00171	0.00171
	(!A1 * A3 * A4 * B1 * !Y)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * A4 * B1 * !Y)	0.00173	0.00173	0.00172
	(!A1 * A3 * !B1 * Y)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * !B1 * Y)	0.00173	0.00173	0.00172
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00130	-0.00132	-0.00131
	(!A1 * A3 * !A4 * B1 * !Y)	0.00171	0.00173	0.00172
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00131	-0.00130	-0.00130
	(!A1 * !A3 * A4 * B1 * !Y)	0.00163	0.00163	0.00163
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00131	-0.00131	-0.00131
	(!A1 * !A3 * A4 * !B1 * Y)	0.00163	0.00163	0.00163
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00114	-0.00124	-0.00122
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00177	0.00177	0.00176

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00270	-0.00270	-0.00269
	(A1 * A3 * A4 * B1 * !Y)	0.00257	0.00257	0.00255
	(A1 * A3 * !B1 * Y)	-0.00269	-0.00270	-0.00269
	(A1 * A3 * !B1 * Y)	0.00258	0.00258	0.00257
	(A1 * A3 * !A4 * B1 * !Y)	-0.00269	-0.00270	-0.00269
	(A1 * A3 * !A4 * B1 * !Y)	0.00251	0.00253	0.00252
	(A1 * !A3 * A4 * B1 * !Y)	-0.00269	-0.00272	-0.00270
	(A1 * !A3 * A4 * B1 * !Y)	0.00248	0.00251	0.00249
	(A1 * !A3 * A4 * !B1 * Y)	-0.00268	-0.00271	-0.00269
	(A1 * !A3 * A4 * !B1 * Y)	0.00254	0.00257	0.00255
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00254	-0.00255	-0.00252
	(A1 * !A3 * !A4 * B1 * !Y)	0.00214	0.00215	0.00216
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00268	-0.00269	-0.00269
	(A1 * !A3 * !A4 * !B1 * Y)	0.00350	0.00351	0.00351
	(!A1 * A3 * A4 * B1 * !Y)	-0.00270	-0.00270	-0.00269
	(!A1 * A3 * A4 * B1 * !Y)	0.00358	0.00359	0.00356
	(!A1 * A3 * !B1 * Y)	-0.00269	-0.00270	-0.00269
	(!A1 * A3 * !B1 * Y)	0.00356	0.00359	0.00357
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00269	-0.00269	-0.00269
	(!A1 * A3 * !A4 * B1 * !Y)	0.00357	0.00357	0.00357
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00269	-0.00269	-0.00269
	(!A1 * !A3 * A4 * B1 * !Y)	0.00340	0.00338	0.00339
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00269	-0.00269	-0.00269
	(!A1 * !A3 * A4 * !B1 * Y)	0.00340	0.00338	0.00339
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00233	-0.00251	-0.00250
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00367	0.00368	0.00365

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00514	-0.00515	-0.00513
	(A1 * A3 * A4 * B1 * !Y)	0.00487	0.00487	0.00484
	(A1 * A3 * !B1 * Y)	-0.00511	-0.00515	-0.00513
	(A1 * A3 * !B1 * Y)	0.00485	0.00490	0.00487
	(A1 * A3 * !A4 * B1 * !Y)	-0.00514	-0.00514	-0.00513
	(A1 * A3 * !A4 * B1 * !Y)	0.00480	0.00479	0.00477
	(A1 * !A3 * A4 * B1 * !Y)	-0.00513	-0.00516	-0.00513
	(A1 * !A3 * A4 * B1 * !Y)	0.00474	0.00479	0.00475
	(A1 * !A3 * A4 * !B1 * Y)	-0.00513	-0.00516	-0.00513
	(A1 * !A3 * A4 * !B1 * Y)	0.00486	0.00491	0.00486
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00486	-0.00489	-0.00482
	(A1 * !A3 * !A4 * B1 * !Y)	0.00409	0.00413	0.00412
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00511	-0.00514	-0.00512
	(A1 * !A3 * !A4 * !B1 * Y)	0.00688	0.00692	0.00689
	(!A1 * A3 * A4 * B1 * !Y)	-0.00512	-0.00515	-0.00512
	(!A1 * A3 * A4 * B1 * !Y)	0.00692	0.00698	0.00694
	(!A1 * A3 * !B1 * Y)	-0.00512	-0.00515	-0.00512
	(!A1 * A3 * !B1 * Y)	0.00693	0.00698	0.00694
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00512	-0.00514	-0.00512
	(!A1 * A3 * !A4 * B1 * !Y)	0.00694	0.00698	0.00695
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00512	-0.00511	-0.00511
	(!A1 * !A3 * A4 * B1 * !Y)	0.00660	0.00657	0.00659
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00513	-0.00513	-0.00512
	(!A1 * !A3 * A4 * !B1 * Y)	0.00660	0.00658	0.00658
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00445	-0.00479	-0.00478
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00719	0.00722	0.00717

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)**	0.00150	0.00151	0.00141
	(A2 * A4 * B1 * !Y)	-0.00118	-0.00119	-0.00118
	(A2 * A4 * !B1 * Y)	0.00133	0.00132	0.00132
	(A2 * A4 * !B1 * Y)	-0.00127	-0.00128	-0.00127
	(A2 * !A4 * B1 * !Y)	0.00138	0.00138	0.00136
	(A2 * !A4 * B1 * !Y)	-0.00094	-0.00094	-0.00095
	(A2 * !A4 * !B1 * Y)	0.00132	0.00133	0.00132
	(A2 * !A4 * !B1 * Y)	-0.00172	-0.00174	-0.00175
	(A1 * !A2 * A4 * B1 * !Y)	0.00160	0.00147	0.00138
	(A1 * !A2 * A4 * B1 * !Y)	-0.00111	-0.00119	-0.00119
	(A1 * !A2 * A4 * !B1 * Y)	0.00131	0.00133	0.00132
	(A1 * !A2 * A4 * !B1 * Y)	-0.00125	-0.00127	-0.00125
	(A1 * !A2 * !A4 * B1 * !Y)	0.00139	0.00139	0.00137
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00093	-0.00093	-0.00094
	(A1 * !A2 * !A4 * !B1 * Y)	0.00131	0.00132	0.00131
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00155	-0.00166	-0.00165
	(!A1 * !A2 * A4 * B1 * !Y)	0.00169	0.00139	0.00136
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00138	-0.00172	-0.00172
	(!A1 * !A2 * A4 * !B1 * Y)	0.00132	0.00133	0.00132
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00174	-0.00176	-0.00175
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00122	0.00123	0.00123
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00179	-0.00180	-0.00180

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00287	0.00289	0.00269
	(A2 * A4 * B1 * !Y)	-0.00247	-0.00249	-0.00247
	(A2 * A4 * !B1 * Y)	0.00255	0.00256	0.00255
	(A2 * A4 * !B1 * Y)	-0.00255	-0.00257	-0.00255
	(A2 * !A4 * B1 * !Y)	0.00257	0.00258	0.00256
	(A2 * !A4 * B1 * !Y)	-0.00192	-0.00193	-0.00194
	(A2 * !A4 * !B1 * Y)	0.00253	0.00253	0.00255
	(A2 * !A4 * !B1 * Y)	-0.00338	-0.00350	-0.00347
	(A1 * !A2 * A4 * B1 * !Y)	0.00304	0.00277	0.00259
	(A1 * !A2 * A4 * B1 * !Y)	-0.00228	-0.00245	-0.00245
	(A1 * !A2 * A4 * !B1 * Y)	0.00254	0.00259	0.00255
	(A1 * !A2 * A4 * !B1 * Y)	-0.00249	-0.00250	-0.00250
	(A1 * !A2 * !A4 * B1 * !Y)	0.00260	0.00260	0.00256
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00191	-0.00191	-0.00192
	(A1 * !A2 * !A4 * !B1 * Y)	0.00254	0.00256	0.00255
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00309	-0.00327	-0.00326
	(!A1 * !A2 * A4 * B1 * !Y)	0.00321	0.00260	0.00255
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00276	-0.00349	-0.00348
	(!A1 * !A2 * A4 * !B1 * Y)	0.00253	0.00258	0.00255
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00340	-0.00348	-0.00346
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00238	0.00241	0.00239
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00356	-0.00358	-0.00357

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00581	0.00585	0.00546
	(A2 * A4 * B1 * !Y)	-0.00485	-0.00488	-0.00485
	(A2 * A4 * !B1 * Y)	0.00528	0.00526	0.00523
	(A2 * A4 * !B1 * Y)	-0.00498	-0.00502	-0.00498
	(A2 * !A4 * B1 * !Y)	0.00525	0.00529	0.00523
	(A2 * !A4 * B1 * !Y)	-0.00387	-0.00390	-0.00392
	(A2 * !A4 * !B1 * Y)	0.00522	0.00523	0.00522
	(A2 * !A4 * !B1 * Y)	-0.00682	-0.00702	-0.00698
	(A1 * !A2 * A4 * B1 * !Y)	0.00625	0.00568	0.00530
	(A1 * !A2 * A4 * B1 * !Y)	-0.00451	-0.00488	-0.00487
	(A1 * !A2 * A4 * !B1 * Y)	0.00523	0.00532	0.00523
	(A1 * !A2 * A4 * !B1 * Y)	-0.00494	-0.00495	-0.00494
	(A1 * !A2 * !A4 * B1 * !Y)	0.00530	0.00531	0.00524
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00386	-0.00387	-0.00388
	(A1 * !A2 * !A4 * !B1 * Y)	0.00522	0.00524	0.00522
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00617	-0.00649	-0.00647
	(!A1 * !A2 * A4 * B1 * !Y)	0.00663	0.00526	0.00522
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00564	-0.00709	-0.00712
	(!A1 * !A2 * A4 * !B1 * Y)	0.00522	0.00523	0.00522
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00698	-0.00706	-0.00706
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00489	0.00485	0.00486
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00728	-0.00725	-0.00725

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)**	-0.00135	-0.00136	-0.00136
	(A2 * A4 * B1 * !Y)	0.00118	0.00119	0.00118
	(A2 * A4 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(A2 * A4 * !B1 * Y)	0.00127	0.00128	0.00127
	(A2 * !A4 * B1 * !Y)	-0.00135	-0.00135	-0.00134
	(A2 * !A4 * B1 * !Y)	0.00097	0.00097	0.00098
	(A2 * !A4 * !B1 * Y)	-0.00132	-0.00131	-0.00131
	(A2 * !A4 * !B1 * Y)	0.00176	0.00174	0.00175
	(A1 * !A2 * A4 * B1 * !Y)	-0.00135	-0.00136	-0.00135
	(A1 * !A2 * A4 * B1 * !Y)	0.00119	0.00119	0.00119
	(A1 * !A2 * A4 * !B1 * Y)	-0.00131	-0.00133	-0.00131
	(A1 * !A2 * A4 * !B1 * Y)	0.00125	0.00127	0.00125
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00130	-0.00131	-0.00134
	(A1 * !A2 * !A4 * B1 * !Y)	0.00099	0.00099	0.00096
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * !A4 * !B1 * Y)	0.00166	0.00166	0.00165
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00135	-0.00136	-0.00135
	(!A1 * !A2 * A4 * B1 * !Y)	0.00171	0.00172	0.00172
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(!A1 * !A2 * A4 * !B1 * Y)	0.00175	0.00176	0.00175
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00115	-0.00123	-0.00123
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00181	0.00181	0.00180

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00256	-0.00258	-0.00256
	(A2 * A4 * B1 * !Y)	0.00247	0.00249	0.00247
	(A2 * A4 * !B1 * Y)	-0.00254	-0.00256	-0.00254
	(A2 * A4 * !B1 * Y)	0.00255	0.00257	0.00255
	(A2 * !A4 * B1 * !Y)	-0.00253	-0.00253	-0.00250
	(A2 * !A4 * B1 * !Y)	0.00199	0.00199	0.00201
	(A2 * !A4 * !B1 * Y)	-0.00253	-0.00253	-0.00254
	(A2 * !A4 * !B1 * Y)	0.00346	0.00350	0.00347
	(A1 * !A2 * A4 * B1 * !Y)	-0.00255	-0.00255	-0.00255
	(A1 * !A2 * A4 * B1 * !Y)	0.00245	0.00245	0.00245
	(A1 * !A2 * A4 * !B1 * Y)	-0.00254	-0.00254	-0.00254
	(A1 * !A2 * A4 * !B1 * Y)	0.00249	0.00250	0.00250
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00242	-0.00244	-0.00249
	(A1 * !A2 * !A4 * B1 * !Y)	0.00201	0.00201	0.00197
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00253	-0.00255	-0.00254
	(A1 * !A2 * !A4 * !B1 * Y)	0.00323	0.00327	0.00326
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00253	-0.00254	-0.00252
	(!A1 * !A2 * A4 * B1 * !Y)	0.00346	0.00349	0.00348
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00253	-0.00255	-0.00254
	(!A1 * !A2 * A4 * !B1 * Y)	0.00346	0.00348	0.00346
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00222	-0.00241	-0.00239
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00359	0.00360	0.00357

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00524	-0.00526	-0.00524
	(A2 * A4 * B1 * !Y)	0.00485	0.00488	0.00485
	(A2 * A4 * !B1 * Y)	-0.00521	-0.00524	-0.00522
	(A2 * A4 * !B1 * Y)	0.00498	0.00502	0.00498
	(A2 * !A4 * B1 * !Y)	-0.00519	-0.00519	-0.00513
	(A2 * !A4 * B1 * !Y)	0.00399	0.00399	0.00404
	(A2 * !A4 * !B1 * Y)	-0.00521	-0.00523	-0.00521
	(A2 * !A4 * !B1 * Y)	0.00698	0.00702	0.00698
	(A1 * !A2 * A4 * B1 * !Y)	-0.00521	-0.00522	-0.00522
	(A1 * !A2 * A4 * B1 * !Y)	0.00486	0.00488	0.00487
	(A1 * !A2 * A4 * !B1 * Y)	-0.00521	-0.00522	-0.00521
	(A1 * !A2 * A4 * !B1 * Y)	0.00494	0.00495	0.00494
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00496	-0.00499	-0.00513
	(A1 * !A2 * !A4 * B1 * !Y)	0.00405	0.00404	0.00397
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00520	-0.00523	-0.00521
	(A1 * !A2 * !A4 * !B1 * Y)	0.00645	0.00649	0.00647
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00518	-0.00520	-0.00516
	(!A1 * !A2 * A4 * B1 * !Y)	0.00708	0.00712	0.00712
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00521	-0.00521	-0.00521
	(!A1 * !A2 * A4 * !B1 * Y)	0.00705	0.00706	0.00706
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00453	-0.00485	-0.00486
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00731	0.00732	0.00727

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00149	0.00150	0.00150
	(A3 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(A3 * !B1 * Y)	0.00132	0.00132	0.00131
	(A3 * !B1 * Y)	-0.00173	-0.00177	-0.00176
	(A2 * !A3 * B1 * !Y)	0.00150	0.00150	0.00150
	(A2 * !A3 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(A2 * !A3 * !B1 * Y)	0.00130	0.00132	0.00131
	(A2 * !A3 * !B1 * Y)	-0.00155	-0.00167	-0.00168
	(A1 * !A2 * !A3 * B1 * !Y)	0.00150	0.00150	0.00150
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * !A2 * !A3 * !B1 * Y)	0.00132	0.00132	0.00131
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00155	-0.00164	-0.00163
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00180	-0.00180	-0.00180
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00291	0.00292	0.00291
	(A3 * B1 * !Y)	-0.00174	-0.00174	-0.00173
	(A3 * !B1 * Y)	0.00260	0.00261	0.00258
	(A3 * !B1 * Y)	-0.00343	-0.00353	-0.00351
	(A2 * !A3 * B1 * !Y)	0.00291	0.00292	0.00291
	(A2 * !A3 * B1 * !Y)	-0.00173	-0.00173	-0.00172
	(A2 * !A3 * !B1 * Y)	0.00257	0.00260	0.00258
	(A2 * !A3 * !B1 * Y)	-0.00310	-0.00334	-0.00333
	(A1 * !A2 * !A3 * B1 * !Y)	0.00291	0.00292	0.00291
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00173	-0.00173	-0.00172
	(A1 * !A2 * !A3 * !B1 * Y)	0.00257	0.00260	0.00258
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00304	-0.00326	-0.00323
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00242	0.00243	0.00243
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00360	-0.00361	-0.00360

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00597	0.00600	0.00597
	(A3 * B1 * !Y)	-0.00336	-0.00338	-0.00336
	(A3 * !B1 * Y)	0.00527	0.00530	0.00523
	(A3 * !B1 * Y)	-0.00679	-0.00702	-0.00698
	(A2 * !A3 * B1 * !Y)	0.00601	0.00600	0.00597
	(A2 * !A3 * B1 * !Y)	-0.00338	-0.00336	-0.00334
	(A2 * !A3 * !B1 * Y)	0.00524	0.00528	0.00523
	(A2 * !A3 * !B1 * Y)	-0.00609	-0.00653	-0.00651
	(A1 * !A2 * !A3 * B1 * !Y)	0.00596	0.00601	0.00597
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00334	-0.00337	-0.00334
	(A1 * !A2 * !A3 * !B1 * Y)	0.00523	0.00526	0.00523
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00599	-0.00636	-0.00630
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00487	0.00491	0.00488
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00716	-0.00719	-0.00717

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00145	-0.00145	-0.00149
	(A3 * B1 * !Y)	0.00089	0.00089	0.00086
	(A3 * !B1 * Y)	-0.00130	-0.00131	-0.00130
	(A3 * !B1 * Y)	0.00175	0.00177	0.00176
	(A2 * !A3 * B1 * !Y)	-0.00135	-0.00136	-0.00148
	(A2 * !A3 * B1 * !Y)	0.00094	0.00094	0.00086
	(A2 * !A3 * !B1 * Y)	-0.00130	-0.00130	-0.00130
	(A2 * !A3 * !B1 * Y)	0.00168	0.00167	0.00168
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00122	-0.00124	-0.00145
	(A1 * !A2 * !A3 * B1 * !Y)	0.00102	0.00102	0.00088
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00131	-0.00131	-0.00130
	(A1 * !A2 * !A3 * !B1 * Y)	0.00163	0.00164	0.00163
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00114	-0.00123	-0.00122
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00181	0.00181	0.00181
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00273	-0.00276	-0.00289
	(A3 * B1 * !Y)	0.00188	0.00189	0.00177
	(A3 * !B1 * Y)	-0.00257	-0.00258	-0.00258
	(A3 * !B1 * Y)	0.00350	0.00353	0.00351
	(A2 * !A3 * B1 * !Y)	-0.00253	-0.00256	-0.00285
	(A2 * !A3 * B1 * !Y)	0.00198	0.00199	0.00177
	(A2 * !A3 * !B1 * Y)	-0.00257	-0.00259	-0.00258
	(A2 * !A3 * !B1 * Y)	0.00333	0.00334	0.00333
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00222	-0.00226	-0.00277
	(A1 * !A2 * !A3 * B1 * !Y)	0.00216	0.00217	0.00182
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00257	-0.00259	-0.00258
	(A1 * !A2 * !A3 * !B1 * Y)	0.00322	0.00326	0.00323
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00225	-0.00243	-0.00243
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00362	0.00364	0.00361

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00567	-0.00572	-0.00595
	(A3 * B1 * !Y)	0.00361	0.00363	0.00343
	(A3 * !B1 * Y)	-0.00521	-0.00525	-0.00522
	(A3 * !B1 * Y)	0.00696	0.00702	0.00698
	(A2 * !A3 * B1 * !Y)	-0.00529	-0.00535	-0.00587
	(A2 * !A3 * B1 * !Y)	0.00378	0.00380	0.00342
	(A2 * !A3 * !B1 * Y)	-0.00522	-0.00524	-0.00522
	(A2 * !A3 * !B1 * Y)	0.00650	0.00653	0.00651
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00469	-0.00477	-0.00572
	(A1 * !A2 * !A3 * B1 * !Y)	0.00413	0.00415	0.00351
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00521	-0.00525	-0.00522
	(A1 * !A2 * !A3 * !B1 * Y)	0.00629	0.00636	0.00630
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00455	-0.00491	-0.00488
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00722	0.00724	0.00719

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)	0.00061	0.00061	0.00054
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00202	-0.00204	-0.00215
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00140	0.00141	0.00126
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00385	-0.00390	-0.00412
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00208	0.00209	0.00183
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00413	-0.00419	-0.00463

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)	-0.00052	-0.00052	-0.00051
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00217	0.00218	0.00217
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00121	-0.00122	-0.00121
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00415	0.00418	0.00416
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00176	-0.00175	-0.00174
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00471	0.00471	0.00469

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00267	0.00276	0.00277	0.00280	0.00252	0.74817
sky130_fd_sc_hs__o41a_2	0.00283	0.00296	0.00303	0.00290	0.00291	1.52238
sky130_fd_sc_hs__o41a_4	0.00512	0.00551	0.00554	0.00521	0.00473	2.80619

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.13072	0.21492
sky130_fd_sc_hs__o41a_2	0.00000	0.12665	0.18359
sky130_fd_sc_hs__o41a_4	0.00000	0.32091	0.49896

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)	0.15860	0.91694	7.68671
	A2->X (RR)	0.15525	0.89598	7.58670
	A3->X (RR)	0.14569	0.86928	7.46530
	A4->X (RR)	0.12786	0.83296	7.35727
	B1->X (RR)	0.14268	0.91317	7.71524
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.15836	0.80160	7.66422
	A2->X (RR)	0.15609	0.78570	7.58563
	A3->X (RR)	0.14870	0.76506	7.49123
	A4->X (RR)	0.13004	0.73265	7.39406
	B1->X (RR)	0.14354	0.80983	7.75077
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.17227	0.74069	7.75258
	A2->X (RR)	0.16969	0.72421	7.66767
	A3->X (RR)	0.15429	0.69523	7.55072
	A4->X (RR)	0.13851	0.66116	7.44452
	B1->X (RR)	0.15590	0.75878	7.85583

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.53092	1.10650	4.89958
	A2->X (FF)	0.50670	1.08260	5.05797
	A3->X (FF)	0.45190	1.04352	5.14265
	A4->X (FF)	0.37087	0.97674	5.00056
	B1->X (FF)	0.12186	0.69468	4.52433
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.65379	1.22759	5.35953
	A2->X (FF)	0.63291	1.21329	5.56704
	A3->X (FF)	0.58187	1.17542	5.70771
	A4->X (FF)	0.48997	1.09376	5.58670
	B1->X (FF)	0.12965	0.68032	4.73186
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.65086	1.17970	5.24227
	A2->X (FF)	0.62436	1.15592	5.41939
	A3->X (FF)	0.55503	1.09719	5.53487
	A4->X (FF)	0.45709	1.01152	5.38874
	B1->X (FF)	0.14400	0.65562	4.74202

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01362	0.01363	0.01747
	A1	0.00603	0.00605	0.01003
	A2	0.01177	0.01174	0.01563
	A2	0.00513	0.00510	0.00911
	A3	0.00983	0.00980	0.01379
	A3	0.00410	0.00408	0.00810
	A4	0.00804	0.00798	0.01331
	A4	0.00315	0.00310	0.00849
	B1	0.01227	0.01241	0.01950
	B1	0.00639	0.00652	0.01375
sky130_fd_sc_hs__o41a_2	A1	0.01654	0.01681	0.02077
	A1	0.00841	0.00868	0.01292
	A2	0.01484	0.01508	0.01899
	A2	0.00762	0.00786	0.01206
	A3	0.01295	0.01321	0.01718
	A3	0.00657	0.00683	0.01088
	A4	0.01091	0.01118	0.01639
	A4	0.00547	0.00576	0.01106
	B1	0.01503	0.01536	0.02321
	B1	0.00766	0.00802	0.01680

sky130_fd_sc_hs__o41a_4	**A1**	0.03221	0.03258	0.04015
	A1	0.01712	0.01751	0.02561
	A2	0.02919	0.02957	0.03716
	A2	0.01536	0.01578	0.02389
	A3	0.02475	0.02524	0.03296
	A3	0.01287	0.01339	0.02112
	A4	0.02026	0.02080	0.03090
	A4	0.01063	0.01122	0.02142
	B1	0.02932	0.03000	0.04439
	B1	0.01765	0.01846	0.03320

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00427	0.00435	0.00773
	A1	0.01184	0.01190	0.01526
	A2	0.00430	0.00409	0.00829
	A2	0.01087	0.01096	0.01477
	A3	0.00431	0.00436	0.00905
	A3	0.00993	0.01001	0.01434
	A4	0.00427	0.00457	0.01135
	A4	0.00902	0.00939	0.01565
	B1	0.00281	0.00338	0.01355
	B1	0.00885	0.00935	0.01918

sky130_fd_sc_hs__o41a_2	**A1**	0.00687	0.00663	0.01236
	A1	0.01495	0.01479	0.01833
	A2	0.00691	0.00668	0.01185
	A2	0.01405	0.01386	0.01779
	A3	0.00691	0.00656	0.01250
	A3	0.01317	0.01295	0.01739
	A4	0.00689	0.00642	0.01454
	A4	0.01215	0.01229	0.01877
	B1	0.00488	0.00568	0.01617
	B1	0.01147	0.01222	0.02225
sky130_fd_sc_hs__o41a_4	**A1**	0.01357	0.01308	0.02098
	A1	0.02864	0.02819	0.03451
	A2	0.01302	0.01241	0.02185
	A2	0.02672	0.02628	0.03352
	A3	0.01315	0.01263	0.02216
	A3	0.02479	0.02432	0.03276
	A4	0.01345	0.01374	0.02764
	A4	0.02279	0.02307	0.03528
	B1	0.00970	0.01136	0.03214
	B1	0.02175	0.02319	0.04260

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)**	0.00118	0.00118	0.00118
	(A2 * A4 * B1 * X)	-0.00174	-0.00179	-0.00179
	(A2 * A3 * !A4 * B1 * X)	0.00118	0.00118	0.00118
	(A2 * A3 * !A4 * B1 * X)	-0.00174	-0.00179	-0.00179
	(A2 * !B1 * !X)	0.00118	0.00118	0.00118
	(A2 * !B1 * !X)	-0.00175	-0.00179	-0.00179
	(A2 * !A3 * !A4 * B1 * X)	0.00118	0.00118	0.00118
	(A2 * !A3 * !A4 * B1 * X)	-0.00172	-0.00179	-0.00179
	(!A2 * A3 * A4 * B1 * X)	0.00117	0.00119	0.00118
	(!A2 * A3 * A4 * B1 * X)	-0.00161	-0.00174	-0.00172
	(!A2 * A3 * !B1 * !X)	0.00117	0.00119	0.00118
	(!A2 * A3 * !B1 * !X)	-0.00161	-0.00173	-0.00172
	(!A2 * A3 * !A4 * B1 * X)	0.00118	0.00119	0.00118
	(!A2 * A3 * !A4 * B1 * X)	-0.00161	-0.00174	-0.00172
	(!A2 * !A3 * A4 * B1 * X)	0.00118	0.00119	0.00118
	(!A2 * !A3 * A4 * B1 * X)	-0.00159	-0.00170	-0.00169
	(!A2 * !A3 * A4 * !B1 * !X)	0.00117	0.00119	0.00118
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00159	-0.00170	-0.00169
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00111	0.00111	0.00111
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00182	-0.00182	-0.00181

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00136	0.00136	0.00136
	(A2 * A4 * B1 * X)	-0.00172	-0.00176	-0.00175
	(A2 * A3 * !A4 * B1 * X)	0.00136	0.00136	0.00136
	(A2 * A3 * !A4 * B1 * X)	-0.00171	-0.00176	-0.00175
	(A2 * !B1 * !X)	0.00136	0.00136	0.00136
	(A2 * !B1 * !X)	-0.00172	-0.00176	-0.00175
	(A2 * !A3 * !A4 * B1 * X)	0.00136	0.00136	0.00136
	(A2 * !A3 * !A4 * B1 * X)	-0.00169	-0.00176	-0.00176
	(!A2 * A3 * A4 * B1 * X)	0.00136	0.00137	0.00136
	(!A2 * A3 * A4 * B1 * X)	-0.00158	-0.00170	-0.00169
	(!A2 * A3 * !B1 * !X)	0.00135	0.00137	0.00136
	(!A2 * A3 * !B1 * !X)	-0.00158	-0.00170	-0.00169
	(!A2 * A3 * !A4 * B1 * X)	0.00136	0.00137	0.00136
	(!A2 * A3 * !A4 * B1 * X)	-0.00158	-0.00170	-0.00169
	(!A2 * !A3 * A4 * B1 * X)	0.00136	0.00137	0.00136
	(!A2 * !A3 * A4 * B1 * X)	-0.00156	-0.00167	-0.00166
	(!A2 * !A3 * A4 * !B1 * !X)	0.00136	0.00137	0.00136
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00156	-0.00167	-0.00166
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00127	0.00128	0.00127
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00179	-0.00179	-0.00178

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00219	0.00218	0.00217
	(A2 * A4 * B1 * X)	-0.00341	-0.00351	-0.00350
	(A2 * A3 * !A4 * B1 * X)	0.00219	0.00218	0.00217
	(A2 * A3 * !A4 * B1 * X)	-0.00340	-0.00351	-0.00349
	(A2 * !B1 * !X)	0.00218	0.00217	0.00216
	(A2 * !B1 * !X)	-0.00342	-0.00352	-0.00350
	(A2 * !A3 * !A4 * B1 * X)	0.00219	0.00218	0.00217
	(A2 * !A3 * !A4 * B1 * X)	-0.00333	-0.00350	-0.00349
	(!A2 * A3 * A4 * B1 * X)	0.00219	0.00218	0.00217
	(!A2 * A3 * A4 * B1 * X)	-0.00312	-0.00338	-0.00335
	(!A2 * A3 * !B1 * !X)	0.00218	0.00218	0.00216
	(!A2 * A3 * !B1 * !X)	-0.00313	-0.00338	-0.00335
	(!A2 * A3 * !A4 * B1 * X)	0.00219	0.00218	0.00217
	(!A2 * A3 * !A4 * B1 * X)	-0.00312	-0.00338	-0.00334
	(!A2 * !A3 * A4 * B1 * X)	0.00219	0.00218	0.00217
	(!A2 * !A3 * A4 * B1 * X)	-0.00306	-0.00330	-0.00328
	(!A2 * !A3 * A4 * !B1 * !X)	0.00218	0.00217	0.00216
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00307	-0.00330	-0.00328
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00202	0.00203	0.00201
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00360	-0.00360	-0.00358

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)**	-0.00117	-0.00118	-0.00117
	(A2 * A4 * B1 * X)	0.00179	0.00180	0.00179
	(A2 * A3 * !A4 * B1 * X)	-0.00117	-0.00118	-0.00117
	(A2 * A3 * !A4 * B1 * X)	0.00179	0.00180	0.00179
	(A2 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(A2 * !B1 * !X)	0.00178	0.00180	0.00179
	(A2 * !A3 * !A4 * B1 * X)	-0.00117	-0.00118	-0.00117
	(A2 * !A3 * !A4 * B1 * X)	0.00178	0.00180	0.00179
	(!A2 * A3 * A4 * B1 * X)	-0.00117	-0.00118	-0.00117
	(!A2 * A3 * A4 * B1 * X)	0.00171	0.00174	0.00172
	(!A2 * A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A2 * A3 * !B1 * !X)	0.00171	0.00173	0.00172
	(!A2 * A3 * !A4 * B1 * X)	-0.00117	-0.00118	-0.00117
	(!A2 * A3 * !A4 * B1 * X)	0.00171	0.00174	0.00172
	(!A2 * !A3 * A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A2 * !A3 * A4 * B1 * X)	0.00169	0.00170	0.00169
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A2 * !A3 * A4 * !B1 * !X)	0.00168	0.00170	0.00169
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00104	-0.00111	-0.00111
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00182	0.00183	0.00182

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00135	-0.00136	-0.00135
	(A2 * A4 * B1 * X)	0.00175	0.00177	0.00175
	(A2 * A3 * !A4 * B1 * X)	-0.00135	-0.00136	-0.00135
	(A2 * A3 * !A4 * B1 * X)	0.00175	0.00177	0.00175
	(A2 * !B1 * !X)	-0.00135	-0.00136	-0.00135
	(A2 * !B1 * !X)	0.00175	0.00177	0.00175
	(A2 * !A3 * !A4 * B1 * X)	-0.00136	-0.00136	-0.00135
	(A2 * !A3 * !A4 * B1 * X)	0.00176	0.00177	0.00176
	(!A2 * A3 * A4 * B1 * X)	-0.00135	-0.00136	-0.00135
	(!A2 * A3 * A4 * B1 * X)	0.00168	0.00170	0.00169
	(!A2 * A3 * !B1 * !X)	-0.00135	-0.00136	-0.00135
	(!A2 * A3 * !B1 * !X)	0.00168	0.00170	0.00169
	(!A2 * A3 * !A4 * B1 * X)	-0.00135	-0.00136	-0.00135
	(!A2 * A3 * !A4 * B1 * X)	0.00168	0.00170	0.00169
	(!A2 * !A3 * A4 * B1 * X)	-0.00135	-0.00136	-0.00135
	(!A2 * !A3 * A4 * B1 * X)	0.00165	0.00167	0.00166
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00135	-0.00136	-0.00135
	(!A2 * !A3 * A4 * !B1 * !X)	0.00165	0.00167	0.00166
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00118	-0.00128	-0.00127
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00180	0.00180	0.00179

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00215	-0.00217	-0.00216
	(A2 * A4 * B1 * X)	0.00348	0.00353	0.00350
	(A2 * A3 * !A4 * B1 * X)	-0.00215	-0.00217	-0.00216
	(A2 * A3 * !A4 * B1 * X)	0.00348	0.00353	0.00349
	(A2 * !B1 * !X)	-0.00215	-0.00217	-0.00216
	(A2 * !B1 * !X)	0.00348	0.00353	0.00350
	(A2 * !A3 * !A4 * B1 * X)	-0.00215	-0.00217	-0.00216
	(A2 * !A3 * !A4 * B1 * X)	0.00348	0.00352	0.00349
	(!A2 * A3 * A4 * B1 * X)	-0.00215	-0.00217	-0.00216
	(!A2 * A3 * A4 * B1 * X)	0.00333	0.00338	0.00335
	(!A2 * A3 * !B1 * !X)	-0.00215	-0.00217	-0.00216
	(!A2 * A3 * !B1 * !X)	0.00334	0.00338	0.00335
	(!A2 * A3 * !A4 * B1 * X)	-0.00215	-0.00217	-0.00216
	(!A2 * A3 * !A4 * B1 * X)	0.00333	0.00338	0.00334
	(!A2 * !A3 * A4 * B1 * X)	-0.00215	-0.00216	-0.00215
	(!A2 * !A3 * A4 * B1 * X)	0.00326	0.00330	0.00328
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00215	-0.00217	-0.00216
	(!A2 * !A3 * A4 * !B1 * !X)	0.00327	0.00330	0.00328
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00188	-0.00203	-0.00201
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00361	0.00362	0.00360

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)**	0.00119	0.00118	0.00115
	(A1 * A3 * A4 * B1 * X)	-0.00126	-0.00127	-0.00126
	(A1 * A3 * !B1 * !X)	0.00115	0.00114	0.00113
	(A1 * A3 * !B1 * !X)	-0.00127	-0.00127	-0.00126
	(A1 * A3 * !A4 * B1 * X)	0.00124	0.00124	0.00116
	(A1 * A3 * !A4 * B1 * X)	-0.00125	-0.00125	-0.00124
	(A1 * !A3 * A4 * B1 * X)	0.00115	0.00120	0.00115
	(A1 * !A3 * A4 * B1 * X)	-0.00121	-0.00121	-0.00121
	(A1 * !A3 * A4 * !B1 * !X)	0.00113	0.00115	0.00113
	(A1 * !A3 * A4 * !B1 * !X)	-0.00123	-0.00126	-0.00123
	(A1 * !A3 * !A4 * B1 * X)	0.00114	0.00114	0.00113
	(A1 * !A3 * !A4 * B1 * X)	-0.00099	-0.00099	-0.00098
	(A1 * !A3 * !A4 * !B1 * !X)	0.00115	0.00115	0.00113
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * A3 * A4 * B1 * X)	0.00114	0.00115	0.00114
	(!A1 * A3 * A4 * B1 * X)	-0.00171	-0.00176	-0.00175
	(!A1 * A3 * !B1 * !X)	0.00114	0.00115	0.00113
	(!A1 * A3 * !B1 * !X)	-0.00171	-0.00176	-0.00174
	(!A1 * A3 * !A4 * B1 * X)	0.00126	0.00115	0.00114
	(!A1 * A3 * !A4 * B1 * X)	-0.00158	-0.00176	-0.00175
	(!A1 * !A3 * A4 * B1 * X)	0.00118	0.00114	0.00113
	(!A1 * !A3 * A4 * B1 * X)	-0.00149	-0.00166	-0.00166
	(!A1 * !A3 * A4 * !B1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00153	-0.00165	-0.00166
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00106	0.00107	0.00107
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00178	-0.00178	-0.00178

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00134	0.00135	0.00132
	(A1 * A3 * A4 * B1 * X)	-0.00124	-0.00124	-0.00123
	(A1 * A3 * !B1 * !X)	0.00132	0.00131	0.00130
	(A1 * A3 * !B1 * !X)	-0.00124	-0.00124	-0.00124
	(A1 * A3 * !A4 * B1 * X)	0.00140	0.00141	0.00134
	(A1 * A3 * !A4 * B1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A3 * A4 * B1 * X)	0.00133	0.00138	0.00132
	(A1 * !A3 * A4 * B1 * X)	-0.00119	-0.00120	-0.00120
	(A1 * !A3 * A4 * !B1 * !X)	0.00130	0.00132	0.00130
	(A1 * !A3 * A4 * !B1 * !X)	-0.00122	-0.00124	-0.00122
	(A1 * !A3 * !A4 * B1 * X)	0.00131	0.00131	0.00130
	(A1 * !A3 * !A4 * B1 * X)	-0.00099	-0.00098	-0.00098
	(A1 * !A3 * !A4 * !B1 * !X)	0.00132	0.00132	0.00130
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00173	-0.00174	-0.00174
	(!A1 * A3 * A4 * B1 * X)	0.00131	0.00132	0.00130
	(!A1 * A3 * A4 * B1 * X)	-0.00170	-0.00175	-0.00174
	(!A1 * A3 * !B1 * !X)	0.00131	0.00132	0.00130
	(!A1 * A3 * !B1 * !X)	-0.00171	-0.00176	-0.00174
	(!A1 * A3 * !A4 * B1 * X)	0.00143	0.00132	0.00130
	(!A1 * A3 * !A4 * B1 * X)	-0.00158	-0.00175	-0.00174
	(!A1 * !A3 * A4 * B1 * X)	0.00135	0.00131	0.00130
	(!A1 * !A3 * A4 * B1 * X)	-0.00149	-0.00167	-0.00166
	(!A1 * !A3 * A4 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00153	-0.00164	-0.00165
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00178	-0.00179	-0.00178

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00275	0.00279	0.00274
	(A1 * A3 * A4 * B1 * X)	-0.00246	-0.00248	-0.00246
	(A1 * A3 * !B1 * !X)	0.00268	0.00273	0.00270
	(A1 * A3 * !B1 * !X)	-0.00248	-0.00250	-0.00249
	(A1 * A3 * !A4 * B1 * X)	0.00295	0.00301	0.00281
	(A1 * A3 * !A4 * B1 * X)	-0.00242	-0.00243	-0.00243
	(A1 * !A3 * A4 * B1 * X)	0.00275	0.00282	0.00274
	(A1 * !A3 * A4 * B1 * X)	-0.00237	-0.00236	-0.00236
	(A1 * !A3 * A4 * !B1 * !X)	0.00269	0.00270	0.00270
	(A1 * !A3 * A4 * !B1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !A3 * !A4 * B1 * X)	0.00271	0.00275	0.00271
	(A1 * !A3 * !A4 * B1 * X)	-0.00190	-0.00193	-0.00190
	(A1 * !A3 * !A4 * !B1 * !X)	0.00269	0.00271	0.00270
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00339	-0.00342	-0.00342
	(!A1 * A3 * A4 * B1 * X)	0.00274	0.00271	0.00270
	(!A1 * A3 * A4 * B1 * X)	-0.00331	-0.00345	-0.00342
	(!A1 * A3 * !B1 * !X)	0.00268	0.00269	0.00270
	(!A1 * A3 * !B1 * !X)	-0.00331	-0.00345	-0.00343
	(!A1 * A3 * !A4 * B1 * X)	0.00287	0.00271	0.00270
	(!A1 * A3 * !A4 * B1 * X)	-0.00311	-0.00344	-0.00342
	(!A1 * !A3 * A4 * B1 * X)	0.00278	0.00273	0.00270
	(!A1 * !A3 * A4 * B1 * X)	-0.00295	-0.00326	-0.00325
	(!A1 * !A3 * A4 * !B1 * !X)	0.00269	0.00273	0.00270
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00302	-0.00326	-0.00325
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00254	0.00257	0.00255
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00352	-0.00354	-0.00352

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)**	-0.00113	-0.00113	-0.00113
	(A1 * A3 * A4 * B1 * X)	0.00126	0.00127	0.00126
	(A1 * A3 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(A1 * A3 * !B1 * !X)	0.00127	0.00127	0.00126
	(A1 * A3 * !A4 * B1 * X)	-0.00113	-0.00113	-0.00113
	(A1 * A3 * !A4 * B1 * X)	0.00125	0.00125	0.00124
	(A1 * !A3 * A4 * B1 * X)	-0.00113	-0.00113	-0.00113
	(A1 * !A3 * A4 * B1 * X)	0.00121	0.00121	0.00121
	(A1 * !A3 * A4 * !B1 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * A4 * !B1 * !X)	0.00123	0.00126	0.00123
	(A1 * !A3 * !A4 * B1 * X)	-0.00107	-0.00108	-0.00106
	(A1 * !A3 * !A4 * B1 * X)	0.00104	0.00105	0.00105
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(A1 * !A3 * !A4 * !B1 * !X)	0.00174	0.00174	0.00173
	(!A1 * A3 * A4 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * A3 * A4 * B1 * X)	0.00175	0.00176	0.00175
	(!A1 * A3 * !B1 * !X)	-0.00112	-0.00114	-0.00113
	(!A1 * A3 * !B1 * !X)	0.00173	0.00176	0.00174
	(!A1 * A3 * !A4 * B1 * X)	-0.00112	-0.00113	-0.00113
	(!A1 * A3 * !A4 * B1 * X)	0.00173	0.00176	0.00175
	(!A1 * !A3 * A4 * B1 * X)	-0.00113	-0.00112	-0.00112
	(!A1 * !A3 * A4 * B1 * X)	0.00166	0.00166	0.00166
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(!A1 * !A3 * A4 * !B1 * !X)	0.00166	0.00165	0.00166
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00100	-0.00107	-0.00107
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00178	0.00179	0.00178

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00130	-0.00130	-0.00130
	(A1 * A3 * A4 * B1 * X)	0.00124	0.00124	0.00123
	(A1 * A3 * !B1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * A3 * !B1 * !X)	0.00124	0.00124	0.00124
	(A1 * A3 * !A4 * B1 * X)	-0.00130	-0.00130	-0.00130
	(A1 * A3 * !A4 * B1 * X)	0.00121	0.00122	0.00121
	(A1 * !A3 * A4 * B1 * X)	-0.00129	-0.00130	-0.00130
	(A1 * !A3 * A4 * B1 * X)	0.00119	0.00120	0.00120
	(A1 * !A3 * A4 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !A3 * A4 * !B1 * !X)	0.00122	0.00124	0.00122
	(A1 * !A3 * !A4 * B1 * X)	-0.00125	-0.00125	-0.00124
	(A1 * !A3 * !A4 * B1 * X)	0.00102	0.00103	0.00104
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !A3 * !A4 * !B1 * !X)	0.00173	0.00174	0.00174
	(!A1 * A3 * A4 * B1 * X)	-0.00130	-0.00131	-0.00130
	(!A1 * A3 * A4 * B1 * X)	0.00175	0.00175	0.00174
	(!A1 * A3 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * A3 * !B1 * !X)	0.00174	0.00176	0.00174
	(!A1 * A3 * !A4 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A1 * A3 * !A4 * B1 * X)	0.00173	0.00175	0.00174
	(!A1 * !A3 * A4 * B1 * X)	-0.00130	-0.00130	-0.00129
	(!A1 * !A3 * A4 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00130	-0.00130	-0.00130
	(!A1 * !A3 * A4 * !B1 * !X)	0.00166	0.00164	0.00165
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00113	-0.00122	-0.00121
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00179	0.00180	0.00179

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00271	-0.00273	-0.00271
	(A1 * A3 * A4 * B1 * X)	0.00246	0.00248	0.00246
	(A1 * A3 * !B1 * !X)	-0.00268	-0.00270	-0.00269
	(A1 * A3 * !B1 * !X)	0.00248	0.00250	0.00249
	(A1 * A3 * !A4 * B1 * X)	-0.00271	-0.00272	-0.00271
	(A1 * A3 * !A4 * B1 * X)	0.00242	0.00243	0.00243
	(A1 * !A3 * A4 * B1 * X)	-0.00270	-0.00269	-0.00270
	(A1 * !A3 * A4 * B1 * X)	0.00237	0.00236	0.00236
	(A1 * !A3 * A4 * !B1 * !X)	-0.00269	-0.00270	-0.00269
	(A1 * !A3 * A4 * !B1 * !X)	0.00242	0.00243	0.00242
	(A1 * !A3 * !A4 * B1 * X)	-0.00258	-0.00260	-0.00255
	(A1 * !A3 * !A4 * B1 * X)	0.00200	0.00203	0.00203
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00268	-0.00269	-0.00269
	(A1 * !A3 * !A4 * !B1 * !X)	0.00341	0.00342	0.00342
	(!A1 * A3 * A4 * B1 * X)	-0.00269	-0.00271	-0.00270
	(!A1 * A3 * A4 * B1 * X)	0.00341	0.00345	0.00342
	(!A1 * A3 * !B1 * !X)	-0.00268	-0.00269	-0.00269
	(!A1 * A3 * !B1 * !X)	0.00342	0.00345	0.00343
	(!A1 * A3 * !A4 * B1 * X)	-0.00269	-0.00271	-0.00270
	(!A1 * A3 * !A4 * B1 * X)	0.00341	0.00344	0.00342
	(!A1 * !A3 * A4 * B1 * X)	-0.00268	-0.00269	-0.00268
	(!A1 * !A3 * A4 * B1 * X)	0.00324	0.00326	0.00325
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00268	-0.00269	-0.00269
	(!A1 * !A3 * A4 * !B1 * !X)	0.00323	0.00326	0.00325
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00242	-0.00257	-0.00255
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00354	0.00357	0.00353

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)**	0.00127	0.00126	0.00118
	(A2 * A4 * B1 * X)	-0.00118	-0.00118	-0.00117
	(A2 * A4 * !B1 * !X)	0.00114	0.00113	0.00113
	(A2 * A4 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(A2 * !A4 * B1 * X)	0.00114	0.00114	0.00113
	(A2 * !A4 * B1 * X)	-0.00094	-0.00094	-0.00094
	(A2 * !A4 * !B1 * !X)	0.00113	0.00114	0.00113
	(A2 * !A4 * !B1 * !X)	-0.00166	-0.00171	-0.00170
	(A1 * !A2 * A4 * B1 * X)	0.00137	0.00123	0.00114
	(A1 * !A2 * A4 * B1 * X)	-0.00109	-0.00118	-0.00118
	(A1 * !A2 * A4 * !B1 * !X)	0.00113	0.00114	0.00113
	(A1 * !A2 * A4 * !B1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * !A4 * B1 * X)	0.00115	0.00115	0.00113
	(A1 * !A2 * !A4 * B1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * !A2 * !A4 * !B1 * !X)	0.00112	0.00113	0.00113
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00149	-0.00160	-0.00159
	(!A1 * !A2 * A4 * B1 * X)	0.00146	0.00115	0.00113
	(!A1 * !A2 * A4 * B1 * X)	-0.00139	-0.00171	-0.00172
	(!A1 * !A2 * A4 * !B1 * !X)	0.00114	0.00114	0.00113
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00169	-0.00171	-0.00170
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00174	-0.00175	-0.00174

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00151	0.00152	0.00143
	(A2 * A4 * B1 * X)	-0.00121	-0.00121	-0.00120
	(A2 * A4 * !B1 * !X)	0.00133	0.00133	0.00132
	(A2 * A4 * !B1 * !X)	-0.00130	-0.00130	-0.00129
	(A2 * !A4 * B1 * X)	0.00140	0.00139	0.00138
	(A2 * !A4 * B1 * X)	-0.00095	-0.00095	-0.00095
	(A2 * !A4 * !B1 * !X)	0.00132	0.00134	0.00132
	(A2 * !A4 * !B1 * !X)	-0.00173	-0.00176	-0.00177
	(A1 * !A2 * A4 * B1 * X)	0.00160	0.00148	0.00139
	(A1 * !A2 * A4 * B1 * X)	-0.00111	-0.00120	-0.00119
	(A1 * !A2 * A4 * !B1 * !X)	0.00132	0.00134	0.00132
	(A1 * !A2 * A4 * !B1 * !X)	-0.00126	-0.00129	-0.00126
	(A1 * !A2 * !A4 * B1 * X)	0.00140	0.00140	0.00138
	(A1 * !A2 * !A4 * B1 * X)	-0.00094	-0.00094	-0.00095
	(A1 * !A2 * !A4 * !B1 * !X)	0.00131	0.00133	0.00132
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00156	-0.00167	-0.00167
	(!A1 * !A2 * A4 * B1 * X)	0.00171	0.00140	0.00137
	(!A1 * !A2 * A4 * B1 * X)	-0.00140	-0.00173	-0.00173
	(!A1 * !A2 * A4 * !B1 * !X)	0.00133	0.00133	0.00132
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00177	-0.00178	-0.00177
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00306	0.00304	0.00284
	(A2 * A4 * B1 * X)	-0.00239	-0.00240	-0.00239
	(A2 * A4 * !B1 * !X)	0.00265	0.00269	0.00266
	(A2 * A4 * !B1 * !X)	-0.00248	-0.00250	-0.00249
	(A2 * !A4 * B1 * X)	0.00271	0.00274	0.00268
	(A2 * !A4 * B1 * X)	-0.00186	-0.00188	-0.00187
	(A2 * !A4 * !B1 * !X)	0.00265	0.00267	0.00265
	(A2 * !A4 * !B1 * !X)	-0.00330	-0.00340	-0.00340
	(A1 * !A2 * A4 * B1 * X)	0.00316	0.00286	0.00272
	(A1 * !A2 * A4 * B1 * X)	-0.00218	-0.00238	-0.00236
	(A1 * !A2 * A4 * !B1 * !X)	0.00265	0.00266	0.00265
	(A1 * !A2 * A4 * !B1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !A2 * !A4 * B1 * X)	0.00270	0.00275	0.00269
	(A1 * !A2 * !A4 * B1 * X)	-0.00183	-0.00187	-0.00185
	(A1 * !A2 * !A4 * !B1 * !X)	0.00264	0.00268	0.00265
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00301	-0.00320	-0.00318
	(!A1 * !A2 * A4 * B1 * X)	0.00330	0.00271	0.00267
	(!A1 * !A2 * A4 * B1 * X)	-0.00276	-0.00342	-0.00344
	(!A1 * !A2 * A4 * !B1 * !X)	0.00265	0.00267	0.00265
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00338	-0.00344	-0.00342
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00249	0.00252	0.00250
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00350	-0.00352	-0.00351

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)**	-0.00112	-0.00112	-0.00112
	(A2 * A4 * B1 * X)	0.00118	0.00118	0.00117
	(A2 * A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A2 * A4 * !B1 * !X)	0.00121	0.00122	0.00121
	(A2 * !A4 * B1 * X)	-0.00111	-0.00112	-0.00110
	(A2 * !A4 * B1 * X)	0.00097	0.00097	0.00097
	(A2 * !A4 * !B1 * !X)	-0.00113	-0.00113	-0.00112
	(A2 * !A4 * !B1 * !X)	0.00171	0.00171	0.00170
	(A1 * !A2 * A4 * B1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * !A2 * A4 * B1 * X)	0.00117	0.00118	0.00118
	(A1 * !A2 * A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * A4 * !B1 * !X)	0.00119	0.00120	0.00119
	(A1 * !A2 * !A4 * B1 * X)	-0.00105	-0.00106	-0.00111
	(A1 * !A2 * !A4 * B1 * X)	0.00099	0.00099	0.00095
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !A4 * !B1 * !X)	0.00159	0.00160	0.00159
	(!A1 * !A2 * A4 * B1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * !A2 * A4 * B1 * X)	0.00171	0.00172	0.00172
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00112	-0.00113	-0.00112
	(!A1 * !A2 * A4 * !B1 * !X)	0.00169	0.00171	0.00170
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00099	-0.00107	-0.00106
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00174	0.00175	0.00174

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00137	-0.00137	-0.00137
	(A2 * A4 * B1 * X)	0.00121	0.00121	0.00120
	(A2 * A4 * !B1 * !X)	-0.00132	-0.00132	-0.00131
	(A2 * A4 * !B1 * !X)	0.00130	0.00130	0.00129
	(A2 * !A4 * B1 * X)	-0.00136	-0.00136	-0.00135
	(A2 * !A4 * B1 * X)	0.00098	0.00098	0.00099
	(A2 * !A4 * !B1 * !X)	-0.00132	-0.00131	-0.00132
	(A2 * !A4 * !B1 * !X)	0.00178	0.00176	0.00177
	(A1 * !A2 * A4 * B1 * X)	-0.00136	-0.00137	-0.00137
	(A1 * !A2 * A4 * B1 * X)	0.00120	0.00120	0.00119
	(A1 * !A2 * A4 * !B1 * !X)	-0.00131	-0.00133	-0.00131
	(A1 * !A2 * A4 * !B1 * !X)	0.00126	0.00129	0.00126
	(A1 * !A2 * !A4 * B1 * X)	-0.00132	-0.00132	-0.00135
	(A1 * !A2 * !A4 * B1 * X)	0.00099	0.00099	0.00097
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00131	-0.00132	-0.00132
	(A1 * !A2 * !A4 * !B1 * !X)	0.00167	0.00167	0.00167
	(!A1 * !A2 * A4 * B1 * X)	-0.00135	-0.00137	-0.00136
	(!A1 * !A2 * A4 * B1 * X)	0.00171	0.00174	0.00173
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * !A2 * A4 * !B1 * !X)	0.00177	0.00178	0.00177
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00114	-0.00124	-0.00123
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00182	0.00183	0.00182

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00269	-0.00269	-0.00269
	(A2 * A4 * B1 * X)	0.00239	0.00240	0.00239
	(A2 * A4 * !B1 * !X)	-0.00264	-0.00265	-0.00265
	(A2 * A4 * !B1 * !X)	0.00248	0.00250	0.00249
	(A2 * !A4 * B1 * X)	-0.00264	-0.00267	-0.00263
	(A2 * !A4 * B1 * X)	0.00192	0.00195	0.00194
	(A2 * !A4 * !B1 * !X)	-0.00264	-0.00265	-0.00265
	(A2 * !A4 * !B1 * !X)	0.00339	0.00340	0.00340
	(A1 * !A2 * A4 * B1 * X)	-0.00267	-0.00268	-0.00267
	(A1 * !A2 * A4 * B1 * X)	0.00237	0.00238	0.00236
	(A1 * !A2 * A4 * !B1 * !X)	-0.00264	-0.00265	-0.00264
	(A1 * !A2 * A4 * !B1 * !X)	0.00242	0.00243	0.00242
	(A1 * !A2 * !A4 * B1 * X)	-0.00249	-0.00253	-0.00263
	(A1 * !A2 * !A4 * B1 * X)	0.00198	0.00199	0.00190
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00263	-0.00266	-0.00265
	(A1 * !A2 * !A4 * !B1 * !X)	0.00317	0.00320	0.00318
	(!A1 * !A2 * A4 * B1 * X)	-0.00264	-0.00265	-0.00263
	(!A1 * !A2 * A4 * B1 * X)	0.00342	0.00344	0.00344
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00264	-0.00265	-0.00264
	(!A1 * !A2 * A4 * !B1 * !X)	0.00341	0.00344	0.00342
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00236	-0.00252	-0.00250
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00353	0.00355	0.00352

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00131	0.00130	0.00130
	(A3 * B1 * X)	-0.00085	-0.00084	-0.00084
	(A3 * !B1 * !X)	0.00114	0.00116	0.00114
	(A3 * !B1 * !X)	-0.00169	-0.00174	-0.00173
	(A2 * !A3 * B1 * X)	0.00130	0.00131	0.00130
	(A2 * !A3 * B1 * X)	-0.00084	-0.00084	-0.00083
	(A2 * !A3 * !B1 * !X)	0.00114	0.00115	0.00114
	(A2 * !A3 * !B1 * !X)	-0.00153	-0.00164	-0.00164
	(A1 * !A2 * !A3 * B1 * X)	0.00130	0.00131	0.00130
	(A1 * !A2 * !A3 * B1 * X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !A3 * !B1 * !X)	0.00114	0.00115	0.00114
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00151	-0.00160	-0.00159
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00177	-0.00177	-0.00177
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00147	0.00147	0.00146
	(A3 * B1 * X)	-0.00085	-0.00085	-0.00085
	(A3 * !B1 * !X)	0.00131	0.00133	0.00132
	(A3 * !B1 * !X)	-0.00168	-0.00173	-0.00172
	(A2 * !A3 * B1 * X)	0.00146	0.00147	0.00146
	(A2 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00084
	(A2 * !A3 * !B1 * !X)	0.00131	0.00132	0.00132
	(A2 * !A3 * !B1 * !X)	-0.00154	-0.00163	-0.00164
	(A1 * !A2 * !A3 * B1 * X)	0.00146	0.00147	0.00146
	(A1 * !A2 * !A3 * B1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * !A2 * !A3 * !B1 * !X)	0.00131	0.00131	0.00131
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00151	-0.00160	-0.00159
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00122	0.00124	0.00123
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00176	-0.00177	-0.00176

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00245	0.00247	0.00246
	(A3 * B1 * X)	-0.00170	-0.00171	-0.00170
	(A3 * !B1 * !X)	0.00217	0.00220	0.00217
	(A3 * !B1 * !X)	-0.00336	-0.00348	-0.00345
	(A2 * !A3 * B1 * X)	0.00246	0.00247	0.00246
	(A2 * !A3 * B1 * X)	-0.00170	-0.00170	-0.00169
	(A2 * !A3 * !B1 * !X)	0.00217	0.00219	0.00217
	(A2 * !A3 * !B1 * !X)	-0.00306	-0.00325	-0.00325
	(A1 * !A2 * !A3 * B1 * X)	0.00246	0.00247	0.00246
	(A1 * !A2 * !A3 * B1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !A3 * !B1 * !X)	0.00217	0.00217	0.00217
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00300	-0.00317	-0.00315
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00203	0.00204	0.00203
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00355	-0.00356	-0.00354

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00125	-0.00126	-0.00130
	(A3 * B1 * X)	0.00089	0.00089	0.00086
	(A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(A3 * !B1 * !X)	0.00172	0.00174	0.00173
	(A2 * !A3 * B1 * X)	-0.00116	-0.00117	-0.00128
	(A2 * !A3 * B1 * X)	0.00094	0.00094	0.00086
	(A2 * !A3 * !B1 * !X)	-0.00114	-0.00114	-0.00114
	(A2 * !A3 * !B1 * !X)	0.00164	0.00164	0.00164
	(A1 * !A2 * !A3 * B1 * X)	-0.00103	-0.00104	-0.00125
	(A1 * !A2 * !A3 * B1 * X)	0.00102	0.00101	0.00088
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(A1 * !A2 * !A3 * !B1 * !X)	0.00159	0.00160	0.00159
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00101	-0.00108	-0.00107
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00177	0.00178	0.00177
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00140	-0.00141	-0.00145
	(A3 * B1 * X)	0.00090	0.00090	0.00086
	(A3 * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(A3 * !B1 * !X)	0.00172	0.00173	0.00172
	(A2 * !A3 * B1 * X)	-0.00131	-0.00131	-0.00144
	(A2 * !A3 * B1 * X)	0.00095	0.00095	0.00086
	(A2 * !A3 * !B1 * !X)	-0.00131	-0.00131	-0.00131
	(A2 * !A3 * !B1 * !X)	0.00164	0.00163	0.00164
	(A1 * !A2 * !A3 * B1 * X)	-0.00119	-0.00121	-0.00141
	(A1 * !A2 * !A3 * B1 * X)	0.00102	0.00102	0.00088
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00131	-0.00131	-0.00131
	(A1 * !A2 * !A3 * !B1 * !X)	0.00158	0.00160	0.00159
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00114	-0.00124	-0.00123
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00177	0.00177	0.00176

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00233	-0.00234	-0.00245
	(A3 * B1 * X)	0.00182	0.00182	0.00175
	(A3 * !B1 * !X)	-0.00215	-0.00219	-0.00217
	(A3 * !B1 * !X)	0.00343	0.00348	0.00345
	(A2 * !A3 * B1 * X)	-0.00210	-0.00212	-0.00240
	(A2 * !A3 * B1 * X)	0.00195	0.00194	0.00175
	(A2 * !A3 * !B1 * !X)	-0.00217	-0.00217	-0.00217
	(A2 * !A3 * !B1 * !X)	0.00326	0.00325	0.00325
	(A1 * !A2 * !A3 * B1 * X)	-0.00185	-0.00187	-0.00234
	(A1 * !A2 * !A3 * B1 * X)	0.00210	0.00209	0.00178
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00215	-0.00217	-0.00217
	(A1 * !A2 * !A3 * !B1 * !X)	0.00313	0.00317	0.00315
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00188	-0.00204	-0.00203
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00356	0.00357	0.00355

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)**	0.00050	0.00050	0.00043
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00162	-0.00163	-0.00173
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00055	0.00055	0.00048
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00188	-0.00189	-0.00200
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00093	0.00092	0.00080
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00308	-0.00310	-0.00329

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)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00174	0.00175	0.00175
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00201	0.00203	0.00202
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00332	0.00334	0.00333

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00258	0.00240	0.76142
sky130_fd_sc_hs__or2b_2	0.00269	0.00232	1.34459
sky130_fd_sc_hs__or2b_4	0.00512	0.00291	2.88784

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.15999	0.22493
sky130_fd_sc_hs__or2b_2	0.00000	0.20303	0.28335
sky130_fd_sc_hs__or2b_4	0.00000	0.29598	0.34364

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)	0.10149	0.80869	7.44330
	B_N->X (FR)	0.18344	0.94626	7.96287
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.09839	0.71004	7.25073
	B_N->X (FR)	0.19551	0.85961	7.86538
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.09109	0.60521	7.43381
	B_N->X (FR)	0.20690	0.81609	8.28202

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.19309	0.70595	4.38300
	B_N->X (RF)	0.20522	0.60710	3.42031
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.25742	0.76437	4.41578
	B_N->X (RF)	0.27842	0.65014	3.19004
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.24961	0.72281	4.66283
	B_N->X (RF)	0.26402	0.63180	3.50277

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00696	0.00692	0.01221
	A	0.00368	0.00363	0.00895
	B_N	0.00633	0.00691	0.01670
	B_N	0.00914	0.00973	0.01959
sky130_fd_sc_hs__or2b_2	A	0.00971	0.01002	0.01585
	A	0.00621	0.00654	0.01252
	B_N	0.00901	0.00988	0.01917
	B_N	0.01179	0.01266	0.02223
sky130_fd_sc_hs__or2b_4	A	0.01858	0.01928	0.03282
	A	0.01206	0.01277	0.02644
	B_N	0.01699	0.01839	0.02935
	B_N	0.02015	0.02157	0.03256

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00398	0.00417	0.00932
	A	0.00727	0.00733	0.01235
	B_N	0.00888	0.00908	0.01855
	B_N	0.00607	0.00626	0.01560
sky130_fd_sc_hs__or2b_2	A	0.00617	0.00639	0.01221
	A	0.00968	0.00988	0.01535
	B_N	0.01175	0.01188	0.02063
	B_N	0.00897	0.00910	0.01766
sky130_fd_sc_hs__or2b_4	A	0.01229	0.01314	0.02534
	A	0.01884	0.01958	0.03127
	B_N	0.01954	0.02088	0.03122
	B_N	0.01639	0.01743	0.02805

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00137	0.00115	0.00113
	(!B_N * X)	-0.00146	-0.00168	-0.00170
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00148	0.00126	0.00124
	(!B_N * X)	-0.00153	-0.00176	-0.00178
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00289	0.00243	0.00239
	(!B_N * X)	-0.00278	-0.00327	-0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00112	-0.00113	-0.00112
	(!B_N * X)	0.00171	0.00171	0.00171
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00123	-0.00123	-0.00122
	(!B_N * X)	0.00179	0.00180	0.00179
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00238	-0.00239	-0.00237
	(!B_N * X)	0.00330	0.00333	0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00381	0.00381	0.01294
	(A * X)	0.00059	0.00059	0.00973
sky130_fd_sc_hs__or2b_2	(A * X)	0.00403	0.00402	0.01300
	(A * X)	0.00083	0.00080	0.00979
sky130_fd_sc_hs__or2b_4	(A * X)	0.00524	0.00517	0.01485
	(A * X)	0.00143	0.00134	0.01104

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00118	0.00170	0.01127
	(A * X)	0.00439	0.00490	0.01448
sky130_fd_sc_hs__or2b_2	(A * X)	0.00114	0.00166	0.01112
	(A * X)	0.00434	0.00487	0.01433
sky130_fd_sc_hs__or2b_4	(A * X)	0.00298	0.00329	0.01358
	(A * X)	0.00678	0.00710	0.01737

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00233	0.00223	0.75838
sky130_fd_sc_hs__or2_2	0.00290	0.00256	1.35497
sky130_fd_sc_hs__or2_4	0.00468	0.00410	2.83391

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.09835	0.18757
sky130_fd_sc_hs__or2_2	0.00000	0.11852	0.15007
sky130_fd_sc_hs__or2_4	0.00000	0.21491	0.29655

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)	0.09749	0.79680	7.34894
	B->X (RR)	0.09011	0.76855	7.28997
sky130_fd_sc_hs__or2_2	A->X (RR)	0.09941	0.71177	7.28030
	B->X (RR)	0.09084	0.68564	7.19693
sky130_fd_sc_hs__or2_4	A->X (RR)	0.12912	0.69860	7.83671
	B->X (RR)	0.10983	0.65364	7.71104

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.21058	0.73384	4.45248
	B->X (FF)	0.18432	0.71158	4.38704
sky130_fd_sc_hs__or2_2	A->X (FF)	0.25335	0.76004	4.41724
	B->X (FF)	0.22340	0.75025	4.39698
sky130_fd_sc_hs__or2_4	A->X (FF)	0.23172	0.70323	4.46546
	B->X (FF)	0.20165	0.68207	4.39117

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00742	0.00740	0.01252
	A	0.00363	0.00361	0.00880
	B	0.00618	0.00628	0.01346
	B	0.00307	0.00319	0.01045
sky130_fd_sc_hs__or2_2	A	0.01071	0.01087	0.01655
	A	0.00611	0.00629	0.01212
	B	0.00902	0.00940	0.01629
	B	0.00539	0.00579	0.01284
sky130_fd_sc_hs__or2_4	A	0.01943	0.01972	0.02953
	A	0.01182	0.01213	0.02241
	B	0.01557	0.01643	0.02898
	B	0.01002	0.01090	0.02397

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00297	0.00307	0.00842
	A	0.00677	0.00686	0.01180
	B	0.00281	0.00337	0.01174
	B	0.00592	0.00646	0.01455
sky130_fd_sc_hs__or2_2	A	0.00482	0.00499	0.01071
	A	0.00942	0.00960	0.01493
	B	0.00473	0.00534	0.01386
	B	0.00835	0.00896	0.01719
sky130_fd_sc_hs__or2_4	A	0.01039	0.01125	0.02162
	A	0.01805	0.01882	0.02758
	B	0.01043	0.01175	0.02606
	B	0.01596	0.01726	0.03146

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00134	0.00114	0.00112
	(B * X)	-0.00106	-0.00126	-0.00129
sky130_fd_sc_hs__or2_2	(B * X)	0.00165	0.00141	0.00139
	(B * X)	-0.00128	-0.00151	-0.00154
sky130_fd_sc_hs__or2_4	(B * X)	0.00221	0.00172	0.00169
	(B * X)	-0.00261	-0.00311	-0.00315

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00111	-0.00112	-0.00111
	(B * X)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__or2_2	(B * X)	-0.00138	-0.00139	-0.00138
	(B * X)	0.00154	0.00154	0.00154
sky130_fd_sc_hs__or2_4	(B * X)	-0.00167	-0.00168	-0.00167
	(B * X)	0.00313	0.00317	0.00315

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00122	0.00122	0.00121
	(A * X)	-0.00062	-0.00062	-0.00062
sky130_fd_sc_hs__or2_2	(A * X)	0.00133	0.00132	0.00132
	(A * X)	-0.00077	-0.00077	-0.00076
sky130_fd_sc_hs__or2_4	(A * X)	0.00156	0.00157	0.00156
	(A * X)	-0.00153	-0.00154	-0.00154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00117	-0.00118	-0.00121
	(A * X)	0.00065	0.00066	0.00063
sky130_fd_sc_hs__or2_2	(A * X)	-0.00127	-0.00128	-0.00131
	(A * X)	0.00081	0.00081	0.00078
sky130_fd_sc_hs__or2_4	(A * X)	-0.00144	-0.00145	-0.00155
	(A * X)	0.00165	0.00165	0.00157

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00253	0.00276	0.00233	0.76176
sky130_fd_sc_hs__or3b_2	0.00271	0.00262	0.00231	1.35977
sky130_fd_sc_hs__or3b_4	0.00481	0.00442	0.00273	2.86803

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.14991	0.23346
sky130_fd_sc_hs__or3b_2	0.00000	0.19211	0.32227
sky130_fd_sc_hs__or3b_4	0.00000	0.25581	0.33588

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)	0.11176	0.84757	7.57333
	B->X (RR)	0.10834	0.82745	7.47469
	C_N->X (FR)	0.18739	0.95005	7.98543
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.10618	0.74104	7.40726
	B->X (RR)	0.10292	0.72543	7.32585
	C_N->X (FR)	0.19712	0.86409	7.92787
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.13832	0.73106	7.98051
	B->X (RR)	0.13028	0.70522	7.86437
	C_N->X (FR)	0.22509	0.82810	8.27134

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.32155	0.86499	4.63039
	B->X (FF)	0.30355	0.86068	4.76652
	C_N->X (RF)	0.29263	0.72239	3.52852
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.41376	0.94299	4.74754
	B->X (FF)	0.38734	0.93904	4.92077
	C_N->X (RF)	0.38042	0.79367	3.43221
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.36216	0.84736	4.68115
	B->X (FF)	0.33645	0.83960	4.83363
	C_N->X (RF)	0.32603	0.70617	3.55852

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00865	0.00856	0.01330
	A	0.00444	0.00435	0.00923
	B	0.00735	0.00737	0.01229
	B	0.00368	0.00372	0.00867
	C_N	0.00646	0.00712	0.01686
	C_N	0.00887	0.00953	0.01935
sky130_fd_sc_hs__or3b_2	A	0.01141	0.01159	0.01675
	A	0.00707	0.00725	0.01251
	B	0.00990	0.01029	0.01561
	B	0.00632	0.00673	0.01220
	C_N	0.00900	0.00996	0.01916
	C_N	0.01157	0.01252	0.02196
sky130_fd_sc_hs__or3b_4	A	0.02123	0.02156	0.03036
	A	0.01355	0.01391	0.02298
	B	0.01781	0.01839	0.02778
	B	0.01194	0.01254	0.02237
	C_N	0.01557	0.01699	0.02782
	C_N	0.01852	0.01995	0.03086

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00469	0.00462	0.00923
	A	0.00892	0.00896	0.01310
	B	0.00454	0.00451	0.00966
	B	0.00820	0.00828	0.01301
	C_N	0.00958	0.00972	0.01929
	C_N	0.00717	0.00731	0.01663
sky130_fd_sc_hs__or3b_2	A	0.00679	0.00657	0.01168
	A	0.01116	0.01108	0.01546
	B	0.00664	0.00654	0.01172
	B	0.01021	0.01026	0.01522
	C_N	0.01220	0.01217	0.02109
	C_N	0.00963	0.00962	0.01821
sky130_fd_sc_hs__or3b_4	A	0.01265	0.01311	0.02080
	A	0.02042	0.02086	0.02794
	B	0.01266	0.01319	0.02234
	B	0.01854	0.01905	0.02753
	C_N	0.01954	0.02034	0.03139
	C_N	0.01658	0.01732	0.02789

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)	0.00120	0.00108	0.00108
	(B * C_N * X)	-0.00143	-0.00156	-0.00156
	(B * !C_N * X)	0.00108	0.00108	0.00108
	(B * !C_N * X)	-0.00154	-0.00156	-0.00156
	(!B * !C_N * X)	0.00113	0.00110	0.00108
	(!B * !C_N * X)	-0.00138	-0.00152	-0.00151
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00139	0.00128	0.00128
	(B * C_N * X)	-0.00144	-0.00157	-0.00157
	(B * !C_N * X)	0.00123	0.00123	0.00123
	(B * !C_N * X)	-0.00160	-0.00162	-0.00162
	(!B * !C_N * X)	0.00128	0.00125	0.00123
	(!B * !C_N * X)	-0.00144	-0.00158	-0.00157
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00208	0.00188	0.00188
	(B * C_N * X)	-0.00285	-0.00310	-0.00309
	(B * !C_N * X)	0.00169	0.00168	0.00168
	(B * !C_N * X)	-0.00323	-0.00330	-0.00329
	(!B * !C_N * X)	0.00178	0.00170	0.00168
	(!B * !C_N * X)	-0.00295	-0.00323	-0.00320

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)	-0.00108	-0.00108	-0.00108
	(B * C_N * X)	0.00156	0.00157	0.00156
	(B * !C_N * X)	-0.00108	-0.00108	-0.00108
	(B * !C_N * X)	0.00156	0.00157	0.00156
	(!B * !C_N * X)	-0.00108	-0.00108	-0.00107
	(!B * !C_N * X)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00127	-0.00128	-0.00127
	(B * C_N * X)	0.00157	0.00158	0.00157
	(B * !C_N * X)	-0.00123	-0.00123	-0.00123
	(B * !C_N * X)	0.00162	0.00163	0.00162
	(!B * !C_N * X)	-0.00122	-0.00123	-0.00122
	(!B * !C_N * X)	0.00157	0.00158	0.00157
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00188	-0.00188	-0.00188
	(B * C_N * X)	0.00309	0.00311	0.00309
	(B * !C_N * X)	-0.00168	-0.00168	-0.00168
	(B * !C_N * X)	0.00328	0.00331	0.00329
	(!B * !C_N * X)	-0.00167	-0.00168	-0.00167
	(!B * !C_N * X)	0.00320	0.00323	0.00320

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)	0.00132	0.00132	0.00130
	(A * C_N * X)	-0.00089	-0.00089	-0.00089
	(A * !C_N * X)	0.00126	0.00127	0.00119
	(A * !C_N * X)	-0.00125	-0.00125	-0.00124
	(!A * !C_N * X)	0.00148	0.00118	0.00115
	(!A * !C_N * X)	-0.00141	-0.00171	-0.00173
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00136	0.00136	0.00135
	(A * C_N * X)	-0.00083	-0.00083	-0.00083
	(A * !C_N * X)	0.00123	0.00125	0.00117
	(A * !C_N * X)	-0.00128	-0.00129	-0.00128
	(!A * !C_N * X)	0.00144	0.00115	0.00112
	(!A * !C_N * X)	-0.00142	-0.00173	-0.00174
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00172	0.00172	0.00170
	(A * C_N * X)	-0.00172	-0.00173	-0.00174
	(A * !C_N * X)	0.00167	0.00168	0.00153
	(A * !C_N * X)	-0.00246	-0.00248	-0.00247
	(!A * !C_N * X)	0.00201	0.00144	0.00139
	(!A * !C_N * X)	-0.00281	-0.00341	-0.00343

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)	-0.00128	-0.00128	-0.00128
	(A * C_N * X)	0.00092	0.00092	0.00092
	(A * !C_N * X)	-0.00115	-0.00115	-0.00114
	(A * !C_N * X)	0.00125	0.00125	0.00124
	(!A * !C_N * X)	-0.00113	-0.00114	-0.00113
	(!A * !C_N * X)	0.00173	0.00173	0.00174
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00133	-0.00133	-0.00133
	(A * C_N * X)	0.00086	0.00086	0.00086
	(A * !C_N * X)	-0.00112	-0.00112	-0.00112
	(A * !C_N * X)	0.00128	0.00129	0.00128
	(!A * !C_N * X)	-0.00111	-0.00111	-0.00111
	(!A * !C_N * X)	0.00173	0.00175	0.00175
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00166	-0.00166	-0.00166
	(A * C_N * X)	0.00179	0.00179	0.00180
	(A * !C_N * X)	-0.00141	-0.00142	-0.00141
	(A * !C_N * X)	0.00246	0.00248	0.00247
	(!A * !C_N * X)	-0.00137	-0.00137	-0.00136
	(!A * !C_N * X)	0.00343	0.00346	0.00345

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00371	0.00375	0.01292
	(B * X)	0.00059	0.00061	0.00980
	(A * !B * X)	0.00379	0.00383	0.01298
	(A * !B * X)	0.00062	0.00065	0.00982
sky130_fd_sc_hs__or3b_2	(B * X)	0.00414	0.00413	0.01311
	(B * X)	0.00092	0.00090	0.00988
	(A * !B * X)	0.00422	0.00421	0.01317
	(A * !B * X)	0.00095	0.00092	0.00989
sky130_fd_sc_hs__or3b_4	(B * X)	0.00532	0.00538	0.01531
	(B * X)	0.00141	0.00146	0.01140
	(A * !B * X)	0.00549	0.00555	0.01543
	(A * !B * X)	0.00148	0.00153	0.01143

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00094	0.00142	0.01110
	(B * X)	0.00406	0.00455	0.01422
	(A * !B * X)	0.00094	0.00142	0.01110
	(A * !B * X)	0.00407	0.00455	0.01423
sky130_fd_sc_hs__or3b_2	(B * X)	0.00102	0.00154	0.01100
	(B * X)	0.00424	0.00476	0.01423
	(A * !B * X)	0.00102	0.00154	0.01100
	(A * !B * X)	0.00425	0.00477	0.01424
sky130_fd_sc_hs__or3b_4	(B * X)	0.00131	0.00177	0.01216
	(B * X)	0.00521	0.00567	0.01607
	(A * !B * X)	0.00131	0.00177	0.01216
	(A * !B * X)	0.00523	0.00569	0.01608

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00262	0.00259	0.00255	0.77197
sky130_fd_sc_hs__or3_2	0.00267	0.00271	0.00278	1.48461
sky130_fd_sc_hs__or3_4	0.00502	0.00449	0.00440	2.85223

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	0.06636	0.11484
sky130_fd_sc_hs__or3_2	0.00000	0.10812	0.17317
sky130_fd_sc_hs__or3_4	0.00000	0.19776	0.29610

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)	0.11213	0.84826	7.58160
	B->X (RR)	0.10830	0.82830	7.48047
	C->X (RR)	0.09933	0.79669	7.39543
sky130_fd_sc_hs__or3_2	A->X (RR)	0.10507	0.73220	7.50017
	B->X (RR)	0.10168	0.71498	7.41224
	C->X (RR)	0.09490	0.69160	7.33059
sky130_fd_sc_hs__or3_4	A->X (RR)	0.13863	0.73149	7.94636
	B->X (RR)	0.13076	0.70534	7.82781
	C->X (RR)	0.11647	0.67017	7.72248

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.32984	0.88008	4.68617
	B->X (FF)	0.30514	0.87145	4.82195
	C->X (FF)	0.25453	0.83231	4.70267
sky130_fd_sc_hs__or3_2	A->X (FF)	0.40406	0.94104	4.94877
	B->X (FF)	0.37727	0.93633	5.12670
	C->X (FF)	0.33165	0.90570	5.03184
sky130_fd_sc_hs__or3_4	A->X (FF)	0.36204	0.84942	4.67040
	B->X (FF)	0.33570	0.83991	4.81682
	C->X (FF)	0.28081	0.79264	4.68638

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01008	0.00995	0.01472
	A	0.00466	0.00453	0.00945
	B	0.00841	0.00842	0.01347
	B	0.00387	0.00390	0.00899
	C	0.00678	0.00684	0.01325
	C	0.00300	0.00306	0.00951
sky130_fd_sc_hs__or3_2	A	0.01256	0.01276	0.01840
	A	0.00708	0.00730	0.01300
	B	0.01080	0.01120	0.01704
	B	0.00617	0.00660	0.01252
	C	0.00929	0.00969	0.01672
	C	0.00540	0.00579	0.01294
sky130_fd_sc_hs__or3_4	A	0.02338	0.02363	0.03247
	A	0.01358	0.01388	0.02300
	B	0.01956	0.02011	0.02948
	B	0.01194	0.01250	0.02236
	C	0.01601	0.01670	0.02830
	C	0.00989	0.01060	0.02272

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00358	0.00359	0.00805
	A	0.00904	0.00906	0.01317
	B	0.00361	0.00370	0.00857
	B	0.00816	0.00823	0.01300
	C	0.00354	0.00403	0.01131
	C	0.00733	0.00780	0.01475
sky130_fd_sc_hs__or3_2	A	0.00588	0.00585	0.01120
	A	0.01139	0.01150	0.01611
	B	0.00590	0.00596	0.01139
	B	0.01053	0.01072	0.01594
	C	0.00582	0.00637	0.01384
	C	0.00974	0.01026	0.01773
sky130_fd_sc_hs__or3_4	A	0.01066	0.01109	0.01908
	A	0.02056	0.02097	0.02804
	B	0.01103	0.01161	0.02079
	B	0.01868	0.01925	0.02765
	C	0.01079	0.01171	0.02562
	C	0.01692	0.01785	0.03062

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00117	0.00119	0.00117
	(B * C * X)	-0.00151	-0.00156	-0.00155
	(B * !C * X)	0.00125	0.00119	0.00117
	(B * !C * X)	-0.00142	-0.00156	-0.00155
	(!B * C * X)	0.00122	0.00119	0.00117
	(!B * C * X)	-0.00135	-0.00150	-0.00149
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00125	0.00124	0.00125
	(B * C * X)	-0.00153	-0.00156	-0.00156
	(B * !C * X)	0.00133	0.00126	0.00125
	(B * !C * X)	-0.00144	-0.00157	-0.00157
	(!B * C * X)	0.00129	0.00126	0.00125
	(!B * C * X)	-0.00137	-0.00152	-0.00151
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00199	0.00199	0.00198
	(B * C * X)	-0.00301	-0.00308	-0.00308
	(B * !C * X)	0.00213	0.00199	0.00198
	(B * !C * X)	-0.00286	-0.00310	-0.00309
	(!B * C * X)	0.00208	0.00199	0.00198
	(!B * C * X)	-0.00273	-0.00302	-0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00117	-0.00118	-0.00117
	(B * C * X)	0.00155	0.00156	0.00155
	(B * !C * X)	-0.00117	-0.00117	-0.00117
	(B * !C * X)	0.00155	0.00156	0.00155
	(!B * C * X)	-0.00117	-0.00117	-0.00117
	(!B * C * X)	0.00149	0.00150	0.00149
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00124	-0.00124	-0.00124
	(B * C * X)	0.00156	0.00157	0.00156
	(B * !C * X)	-0.00124	-0.00125	-0.00124
	(B * !C * X)	0.00156	0.00157	0.00157
	(!B * C * X)	-0.00124	-0.00125	-0.00124
	(!B * C * X)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00198	-0.00198	-0.00198
	(B * C * X)	0.00309	0.00308	0.00308
	(B * !C * X)	-0.00198	-0.00199	-0.00198
	(B * !C * X)	0.00310	0.00312	0.00309
	(!B * C * X)	-0.00196	-0.00198	-0.00196
	(!B * C * X)	0.00297	0.00302	0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00122	0.00122	0.00114
	(A * C * X)	-0.00106	-0.00106	-0.00105
	(A * !C * X)	0.00111	0.00110	0.00109
	(A * !C * X)	-0.00084	-0.00084	-0.00084
	(!A * C * X)	0.00140	0.00111	0.00108
	(!A * C * X)	-0.00121	-0.00151	-0.00153
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00125	0.00125	0.00118
	(A * C * X)	-0.00115	-0.00115	-0.00114
	(A * !C * X)	0.00115	0.00115	0.00113
	(A * !C * X)	-0.00093	-0.00093	-0.00093
	(!A * C * X)	0.00145	0.00116	0.00112
	(!A * C * X)	-0.00131	-0.00161	-0.00163
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00167	0.00169	0.00153
	(A * C * X)	-0.00216	-0.00218	-0.00217
	(A * !C * X)	0.00144	0.00144	0.00141
	(A * !C * X)	-0.00176	-0.00175	-0.00176
	(!A * C * X)	0.00202	0.00144	0.00139
	(!A * C * X)	-0.00252	-0.00314	-0.00317

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00109	-0.00109	-0.00108
	(A * C * X)	0.00106	0.00106	0.00105
	(A * !C * X)	-0.00107	-0.00107	-0.00107
	(A * !C * X)	0.00087	0.00087	0.00087
	(!A * C * X)	-0.00107	-0.00107	-0.00106
	(!A * C * X)	0.00152	0.00153	0.00153
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00112	-0.00112	-0.00112
	(A * C * X)	0.00115	0.00115	0.00114
	(A * !C * X)	-0.00111	-0.00111	-0.00110
	(A * !C * X)	0.00096	0.00097	0.00096
	(!A * C * X)	-0.00112	-0.00112	-0.00111
	(!A * C * X)	0.00163	0.00163	0.00163
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00141	-0.00142	-0.00141
	(A * C * X)	0.00216	0.00218	0.00217
	(A * !C * X)	-0.00138	-0.00139	-0.00136
	(A * !C * X)	0.00180	0.00180	0.00182
	(!A * C * X)	-0.00137	-0.00137	-0.00136
	(!A * C * X)	0.00315	0.00317	0.00317

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00122	0.00122	0.00122
	(B * X)	-0.00079	-0.00078	-0.00078
	(A * !B * X)	0.00121	0.00122	0.00122
	(A * !B * X)	-0.00077	-0.00078	-0.00077
sky130_fd_sc_hs__or3_2	(B * X)	0.00139	0.00139	0.00138
	(B * X)	-0.00080	-0.00079	-0.00079
	(A * !B * X)	0.00139	0.00139	0.00138
	(A * !B * X)	-0.00080	-0.00079	-0.00079
sky130_fd_sc_hs__or3_4	(B * X)	0.00177	0.00177	0.00177
	(B * X)	-0.00157	-0.00157	-0.00157
	(A * !B * X)	0.00177	0.00178	0.00177
	(A * !B * X)	-0.00156	-0.00156	-0.00156

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00117	-0.00117	-0.00121
	(B * X)	0.00083	0.00082	0.00079
	(A * !B * X)	-0.00109	-0.00109	-0.00120
	(A * !B * X)	0.00087	0.00087	0.00079
sky130_fd_sc_hs__or3_2	(B * X)	-0.00133	-0.00134	-0.00138
	(B * X)	0.00083	0.00083	0.00080
	(A * !B * X)	-0.00125	-0.00126	-0.00136
	(A * !B * X)	0.00088	0.00088	0.00081
sky130_fd_sc_hs__or3_4	(B * X)	-0.00165	-0.00167	-0.00176
	(B * X)	0.00168	0.00168	0.00160
	(A * !B * X)	-0.00149	-0.00150	-0.00173
	(A * !B * X)	0.00176	0.00176	0.00159

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00257	0.00254	0.00238	0.00240	0.76167
sky130_fd_sc_hs__or4bb_2	0.00257	0.00271	0.00234	0.00232	1.34500
sky130_fd_sc_hs__or4bb_4	0.00413	0.00420	0.00262	0.00260	2.57205

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	0.22681	0.40021
sky130_fd_sc_hs__or4bb_2	0.00000	0.26607	0.50910
sky130_fd_sc_hs__or4bb_4	0.00000	0.30539	0.42252

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)	0.11398	0.86976	7.65765
	B->X (RR)	0.11329	0.85352	7.56965
	C_N->X (FR)	0.21428	0.99294	8.08122
	D_N->X (FR)	0.19363	0.95832	8.00570
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.10695	0.75658	7.42361
	B->X (RR)	0.10822	0.74648	7.35247
	C_N->X (FR)	0.19640	0.85738	7.83974
	D_N->X (FR)	0.19675	0.86136	7.87552
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.14982	0.77671	7.95206
	B->X (RR)	0.15238	0.76312	7.86996
	C_N->X (FR)	0.26710	0.88667	8.23611
	D_N->X (FR)	0.26446	0.89135	8.26118

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.46681	1.04238	4.82265
	B->X (FF)	0.43662	1.01601	4.97477
	C_N->X (RF)	0.43899	0.91600	3.75363
	D_N->X (RF)	0.34841	0.81468	3.63537
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.57192	1.12909	4.89671
	B->X (FF)	0.55362	1.11521	5.08594
	C_N->X (RF)	0.54619	0.99634	3.58664
	D_N->X (RF)	0.47523	0.92186	3.54329
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.60943	1.13399	4.76610
	B->X (FF)	0.58688	1.10702	4.93002
	C_N->X (RF)	0.58375	1.00426	3.60032
	D_N->X (RF)	0.47409	0.89775	3.53576

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00946	0.00929	0.01351
	A	0.00537	0.00522	0.00956
	B	0.00796	0.00803	0.01249
	B	0.00453	0.00460	0.00919
	C_N	0.00733	0.00799	0.01743
	C_N	0.01006	0.01072	0.02024
	D_N	0.00632	0.00701	0.01662
	D_N	0.00875	0.00945	0.01915
sky130_fd_sc_hs__or4bb_2	A	0.01176	0.01212	0.01798
	A	0.00763	0.00799	0.01395
	B	0.01052	0.01088	0.01659
	B	0.00690	0.00728	0.01313
	C_N	0.00943	0.01053	0.02022
	C_N	0.01208	0.01316	0.02319
	D_N	0.00905	0.00981	0.01896
	D_N	0.01148	0.01223	0.02167
sky130_fd_sc_hs__or4bb_4	A	0.02394	0.02437	0.03300
	A	0.01652	0.01697	0.02592
	B	0.02020	0.02070	0.02923
	B	0.01443	0.01495	0.02394
	C_N	0.01948	0.02074	0.03090
	C_N	0.02201	0.02328	0.03351
	D_N	0.01705	0.01819	0.02835
	D_N	0.01961	0.02073	0.03101

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00594	0.00580	0.00936
	A	0.01006	0.00998	0.01324
	B	0.00575	0.00571	0.00988
	B	0.00916	0.00917	0.01307
	C_N	0.01125	0.01129	0.02029
	C_N	0.00851	0.00858	0.01737
	D_N	0.00990	0.00989	0.01939
	D_N	0.00746	0.00762	0.01682
sky130_fd_sc_hs__or4bb_2	A	0.00820	0.00791	0.01311
	A	0.01237	0.01231	0.01639
	B	0.00802	0.00771	0.01251
	B	0.01163	0.01149	0.01586
	C_N	0.01333	0.01333	0.02261
	C_N	0.01069	0.01070	0.01967
	D_N	0.01266	0.01246	0.02145
	D_N	0.01023	0.01005	0.01874
sky130_fd_sc_hs__or4bb_4	A	0.01761	0.01702	0.02378
	A	0.02513	0.02487	0.03017
	B	0.01774	0.01714	0.02547
	B	0.02353	0.02318	0.02946
	C_N	0.02406	0.02392	0.03429
	C_N	0.02153	0.02143	0.03093
	D_N	0.02303	0.02225	0.03298
	D_N	0.02046	0.02012	0.02983

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)**	0.00116	0.00113	0.00112
	(B * C_N * D_N * X)	-0.00149	-0.00157	-0.00156
	(B * !D_N * X)	0.00114	0.00113	0.00111
	(B * !D_N * X)	-0.00150	-0.00157	-0.00156
	(B * !C_N * D_N * X)	0.00111	0.00113	0.00111
	(B * !C_N * D_N * X)	-0.00153	-0.00157	-0.00156
	(!B * C_N * !D_N * X)	0.00121	0.00116	0.00113
	(!B * C_N * !D_N * X)	-0.00138	-0.00149	-0.00148
	(!B * !C_N * D_N * X)	0.00111	0.00113	0.00111
	(!B * !C_N * D_N * X)	-0.00142	-0.00152	-0.00151
	(!B * !C_N * !D_N * X)	0.00112	0.00113	0.00111
	(!B * !C_N * !D_N * X)	-0.00143	-0.00152	-0.00151
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00125	0.00120	0.00120
	(B * C_N * D_N * X)	-0.00148	-0.00155	-0.00155
	(B * !D_N * X)	0.00123	0.00120	0.00120
	(B * !D_N * X)	-0.00150	-0.00155	-0.00155
	(B * !C_N * D_N * X)	0.00107	0.00107	0.00107
	(B * !C_N * D_N * X)	-0.00165	-0.00168	-0.00168
	(!B * C_N * !D_N * X)	0.00130	0.00125	0.00122
	(!B * C_N * !D_N * X)	-0.00137	-0.00148	-0.00147
	(!B * !C_N * D_N * X)	0.00108	0.00109	0.00107
	(!B * !C_N * D_N * X)	-0.00154	-0.00164	-0.00163
	(!B * !C_N * !D_N * X)	0.00107	0.00109	0.00107
	(!B * !C_N * !D_N * X)	-0.00153	-0.00164	-0.00162

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00158	0.00149	0.00148
	(B * C_N * D_N * X)	-0.00301	-0.00320	-0.00319
	(B * !D_N * X)	0.00154	0.00149	0.00148
	(B * !D_N * X)	-0.00306	-0.00320	-0.00318
	(B * !C_N * D_N * X)	0.00149	0.00149	0.00148
	(B * !C_N * D_N * X)	-0.00310	-0.00320	-0.00318
	(!B * C_N * !D_N * X)	0.00169	0.00159	0.00153
	(!B * C_N * !D_N * X)	-0.00283	-0.00304	-0.00302
	(!B * !C_N * D_N * X)	0.00150	0.00149	0.00148
	(!B * !C_N * D_N * X)	-0.00289	-0.00310	-0.00307
	(!B * !C_N * !D_N * X)	0.00149	0.00149	0.00148
	(!B * !C_N * !D_N * X)	-0.00288	-0.00309	-0.00307

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)**	-0.00111	-0.00111	-0.00111
	(B * C_N * D_N * X)	0.00156	0.00157	0.00156
	(B * !D_N * X)	-0.00111	-0.00111	-0.00111
	(B * !D_N * X)	0.00156	0.00157	0.00156
	(B * !C_N * D_N * X)	-0.00111	-0.00111	-0.00111
	(B * !C_N * D_N * X)	0.00156	0.00157	0.00156
	(!B * C_N * !D_N * X)	-0.00116	-0.00116	-0.00113
	(!B * C_N * !D_N * X)	0.00148	0.00149	0.00148
	(!B * !C_N * D_N * X)	-0.00111	-0.00111	-0.00111
	(!B * !C_N * D_N * X)	0.00151	0.00152	0.00151
	(!B * !C_N * !D_N * X)	-0.00111	-0.00112	-0.00111
	(!B * !C_N * !D_N * X)	0.00151	0.00152	0.00151

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00119	-0.00119	-0.00119
	(B * C_N * D_N * X)	0.00155	0.00156	0.00155
	(B * !D_N * X)	-0.00119	-0.00120	-0.00119
	(B * !D_N * X)	0.00155	0.00156	0.00155
	(B * !C_N * D_N * X)	-0.00107	-0.00107	-0.00107
	(B * !C_N * D_N * X)	0.00167	0.00169	0.00168
	(!B * C_N * !D_N * X)	-0.00124	-0.00125	-0.00122
	(!B * C_N * !D_N * X)	0.00146	0.00148	0.00147
	(!B * !C_N * D_N * X)	-0.00106	-0.00107	-0.00107
	(!B * !C_N * D_N * X)	0.00162	0.00164	0.00163
	(!B * !C_N * !D_N * X)	-0.00107	-0.00107	-0.00107
	(!B * !C_N * !D_N * X)	0.00162	0.00164	0.00162
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00147	-0.00148	-0.00147
	(B * C_N * D_N * X)	0.00318	0.00320	0.00319
	(B * !D_N * X)	-0.00148	-0.00148	-0.00148
	(B * !D_N * X)	0.00318	0.00320	0.00318
	(B * !C_N * D_N * X)	-0.00147	-0.00148	-0.00147
	(B * !C_N * D_N * X)	0.00318	0.00320	0.00318
	(!B * C_N * !D_N * X)	-0.00158	-0.00159	-0.00153
	(!B * C_N * !D_N * X)	0.00300	0.00304	0.00302
	(!B * !C_N * D_N * X)	-0.00147	-0.00149	-0.00148
	(!B * !C_N * D_N * X)	0.00305	0.00310	0.00307
	(!B * !C_N * !D_N * X)	-0.00147	-0.00149	-0.00148
	(!B * !C_N * !D_N * X)	0.00305	0.00309	0.00307

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)**	0.00121	0.00121	0.00120
	(A * C_N * D_N * X)	-0.00094	-0.00094	-0.00093
	(A * C_N * !D_N * X)	0.00142	0.00150	0.00146
	(A * C_N * !D_N * X)	-0.00113	-0.00113	-0.00113
	(A * !C_N * D_N * X)	0.00106	0.00106	0.00099
	(A * !C_N * D_N * X)	-0.00140	-0.00140	-0.00140
	(A * !C_N * !D_N * X)	0.00103	0.00102	0.00099
	(A * !C_N * !D_N * X)	-0.00142	-0.00142	-0.00141
	(!A * C_N * !D_N * X)	0.00143	0.00125	0.00121
	(!A * C_N * !D_N * X)	-0.00139	-0.00156	-0.00155
	(!A * !C_N * D_N * X)	0.00114	0.00097	0.00096
	(!A * !C_N * D_N * X)	-0.00168	-0.00186	-0.00185
	(!A * !C_N * !D_N * X)	0.00096	0.00097	0.00096
	(!A * !C_N * !D_N * X)	-0.00184	-0.00186	-0.00185
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00149	0.00149	0.00148
	(A * C_N * D_N * X)	-0.00085	-0.00085	-0.00084
	(A * C_N * !D_N * X)	0.00172	0.00179	0.00174
	(A * C_N * !D_N * X)	-0.00104	-0.00104	-0.00104
	(A * !C_N * D_N * X)	0.00142	0.00143	0.00135
	(A * !C_N * D_N * X)	-0.00122	-0.00124	-0.00122
	(A * !C_N * !D_N * X)	0.00139	0.00139	0.00135
	(A * !C_N * !D_N * X)	-0.00124	-0.00125	-0.00124
	(!A * C_N * !D_N * X)	0.00170	0.00154	0.00149
	(!A * C_N * !D_N * X)	-0.00129	-0.00146	-0.00146
	(!A * !C_N * D_N * X)	0.00150	0.00134	0.00132
	(!A * !C_N * D_N * X)	-0.00150	-0.00169	-0.00168
	(!A * !C_N * !D_N * X)	0.00132	0.00133	0.00132
	(!A * !C_N * !D_N * X)	-0.00167	-0.00169	-0.00168

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00153	0.00154	0.00153
	(A * C_N * D_N * X)	-0.00180	-0.00180	-0.00179
	(A * C_N * !D_N * X)	0.00191	0.00206	0.00199
	(A * C_N * !D_N * X)	-0.00226	-0.00228	-0.00226
	(A * !C_N * D_N * X)	0.00176	0.00171	0.00155
	(A * !C_N * D_N * X)	-0.00235	-0.00237	-0.00235
	(A * !C_N * !D_N * X)	0.00152	0.00151	0.00147
	(A * !C_N * !D_N * X)	-0.00239	-0.00240	-0.00238
	(!A * C_N * !D_N * X)	0.00190	0.00161	0.00153
	(!A * C_N * !D_N * X)	-0.00277	-0.00305	-0.00305
	(!A * !C_N * D_N * X)	0.00173	0.00146	0.00144
	(!A * !C_N * D_N * X)	-0.00296	-0.00326	-0.00325
	(!A * !C_N * !D_N * X)	0.00145	0.00145	0.00144
	(!A * !C_N * !D_N * X)	-0.00322	-0.00322	-0.00324

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)**	-0.00115	-0.00115	-0.00115
	(A * C_N * D_N * X)	0.00099	0.00099	0.00099
	(A * C_N * !D_N * X)	-0.00136	-0.00136	-0.00137
	(A * C_N * !D_N * X)	0.00113	0.00113	0.00113
	(A * !C_N * D_N * X)	-0.00096	-0.00096	-0.00095
	(A * !C_N * D_N * X)	0.00140	0.00140	0.00140
	(A * !C_N * !D_N * X)	-0.00096	-0.00096	-0.00096
	(A * !C_N * !D_N * X)	0.00142	0.00142	0.00141
	(!A * C_N * !D_N * X)	-0.00127	-0.00125	-0.00121
	(!A * C_N * !D_N * X)	0.00155	0.00156	0.00155
	(!A * !C_N * D_N * X)	-0.00095	-0.00096	-0.00095
	(!A * !C_N * D_N * X)	0.00184	0.00186	0.00185
	(!A * !C_N * !D_N * X)	-0.00095	-0.00096	-0.00096
	(!A * !C_N * !D_N * X)	0.00184	0.00186	0.00185
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00144	-0.00144	-0.00144
	(A * C_N * D_N * X)	0.00089	0.00090	0.00090
	(A * C_N * !D_N * X)	-0.00165	-0.00165	-0.00165
	(A * C_N * !D_N * X)	0.00104	0.00104	0.00104
	(A * !C_N * D_N * X)	-0.00131	-0.00132	-0.00131
	(A * !C_N * D_N * X)	0.00122	0.00124	0.00122
	(A * !C_N * !D_N * X)	-0.00132	-0.00132	-0.00131
	(A * !C_N * !D_N * X)	0.00124	0.00125	0.00124
	(!A * C_N * !D_N * X)	-0.00155	-0.00154	-0.00149
	(!A * C_N * !D_N * X)	0.00146	0.00146	0.00146
	(!A * !C_N * D_N * X)	-0.00132	-0.00132	-0.00131
	(!A * !C_N * D_N * X)	0.00168	0.00169	0.00169
	(!A * !C_N * !D_N * X)	-0.00131	-0.00132	-0.00131
	(!A * !C_N * !D_N * X)	0.00167	0.00169	0.00168

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	-0.00139	-0.00140	-0.00140
	(A * C_N * D_N * X)	0.00195	0.00196	0.00195
	(A * C_N * !D_N * X)	-0.00183	-0.00185	-0.00184
	(A * C_N * !D_N * X)	0.00226	0.00228	0.00226
	(A * !C_N * D_N * X)	-0.00145	-0.00146	-0.00145
	(A * !C_N * D_N * X)	0.00235	0.00237	0.00235
	(A * !C_N * !D_N * X)	-0.00145	-0.00145	-0.00145
	(A * !C_N * !D_N * X)	0.00239	0.00240	0.00238
	(!A * C_N * !D_N * X)	-0.00165	-0.00161	-0.00153
	(!A * C_N * !D_N * X)	0.00305	0.00305	0.00305
	(!A * !C_N * D_N * X)	-0.00143	-0.00144	-0.00143
	(!A * !C_N * D_N * X)	0.00324	0.00327	0.00325
	(!A * !C_N * !D_N * X)	-0.00144	-0.00143	-0.00143
	(!A * !C_N * !D_N * X)	0.00324	0.00322	0.00324

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4bb_1	**(B * X)**	0.00425	0.00423	0.01318
	(B * X)	0.00094	0.00092	0.00988
	(A * !B * X) + (!A * !B * !D_N * X)	0.00433	0.00431	0.01322
	(A * !B * X) + (!A * !B * !D_N * X)	0.00095	0.00093	0.00986
sky130_fd_sc_hs__or4bb_2	**(B * X)**	0.00389	0.00390	0.01304
	(B * X)	0.00069	0.00069	0.00984
	(A * !B * X) + (!A * !B * !D_N * X)	0.00396	0.00397	0.01308
	(A * !B * X) + (!A * !B * !D_N * X)	0.00070	0.00070	0.00981
sky130_fd_sc_hs__or4bb_4	**(B * X)**	0.00481	0.00484	0.01480
	(B * X)	0.00136	0.00139	0.01136
	(A * !B * X) + (!A * !B * !D_N * X)	0.00500	0.00503	0.01490
	(A * !B * X) + (!A * !B * !D_N * X)	0.00142	0.00144	0.01134

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00110	0.00160	0.01103
	(B * X)	0.00440	0.00491	0.01433
	(A * !B * X) + (!A * !B * !D_N * X)	0.00111	0.00161	0.01103
	(A * !B * X) + (!A * !B * !D_N * X)	0.00442	0.00493	0.01434
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00100	0.00153	0.01110
	(B * X)	0.00419	0.00472	0.01430
	(A * !B * X) + (!A * !B * !D_N * X)	0.00100	0.00154	0.01111
	(A * !B * X) + (!A * !B * !D_N * X)	0.00421	0.00474	0.01431
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00178	0.00220	0.01255
	(B * X)	0.00522	0.00564	0.01599
	(A * !B * X) + (!A * !B * !D_N * X)	0.00180	0.00221	0.01256
	(A * !B * X) + (!A * !B * !D_N * X)	0.00524	0.00566	0.01600

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)	0.00375	0.00376	0.01282
	(B * C_N * X)	0.00076	0.00076	0.00983
	(A * !B * C_N * X)	0.00387	0.00387	0.01290
	(A * !B * C_N * X)	0.00083	0.00083	0.00987
	(!C_N * X)	0.00384	0.00385	0.01292
	(!C_N * X)	0.00085	0.00086	0.00993
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00379	0.00379	0.01278
	(B * C_N * X)	0.00082	0.00081	0.00980
	(A * !B * C_N * X)	0.00390	0.00389	0.01285
	(A * !B * C_N * X)	0.00087	0.00086	0.00984
	(!C_N * X)	0.00388	0.00388	0.01289
	(!C_N * X)	0.00092	0.00091	0.00992
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00547	0.00547	0.01516
	(B * C_N * X)	0.00203	0.00202	0.01172
	(A * !B * C_N * X)	0.00575	0.00574	0.01535
	(A * !B * C_N * X)	0.00220	0.00218	0.01184
	(!C_N * X)	0.00576	0.00576	0.01548
	(!C_N * X)	0.00235	0.00233	0.01207

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)	0.00111	0.00165	0.01116
	(B * C_N * X)	0.00409	0.00465	0.01414
	(A * !B * C_N * X)	0.00111	0.00165	0.01116
	(A * !B * C_N * X)	0.00409	0.00465	0.01414
	(!C_N * X)	0.00098	0.00153	0.01103
	(!C_N * X)	0.00396	0.00451	0.01401
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00133	0.00185	0.01133
	(B * C_N * X)	0.00429	0.00483	0.01430
	(A * !B * C_N * X)	0.00133	0.00185	0.01133
	(A * !B * C_N * X)	0.00430	0.00483	0.01430
	(!C_N * X)	0.00119	0.00171	0.01119
	(!C_N * X)	0.00415	0.00469	0.01416
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00215	0.00252	0.01278
	(B * C_N * X)	0.00555	0.00595	0.01618
	(A * !B * C_N * X)	0.00215	0.00252	0.01278
	(A * !B * C_N * X)	0.00555	0.00595	0.01619
	(!C_N * X)	0.00176	0.00213	0.01240
	(!C_N * X)	0.00516	0.00556	0.01580

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00262	0.00251	0.00259	0.00243	0.74071
sky130_fd_sc_hs__or4b_2	0.00272	0.00262	0.00263	0.00231	1.35219
sky130_fd_sc_hs__or4b_4	0.00408	0.00460	0.00463	0.00257	2.88586

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.14242	0.25245
sky130_fd_sc_hs__or4b_2	0.00000	0.18300	0.35971
sky130_fd_sc_hs__or4b_4	0.00000	0.24507	0.34547

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)	0.11932	0.88399	7.64465
	B->X (RR)	0.11847	0.86647	7.56108
	C->X (RR)	0.11353	0.84656	7.46049
	D_N->X (FR)	0.19478	0.96173	7.95284
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.10893	0.76008	7.44366
	B->X (RR)	0.10912	0.75024	7.37412
	C->X (RR)	0.10541	0.73282	7.29067
	D_N->X (FR)	0.20453	0.87611	7.92320
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.15104	0.77275	8.09514
	B->X (RR)	0.15105	0.75833	8.00925
	C->X (RR)	0.13987	0.72559	7.87951
	D_N->X (FR)	0.23879	0.84991	8.29918

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.48991	1.07006	4.81183
	B->X (FF)	0.45918	1.04346	4.97054
	C->X (FF)	0.41500	1.01151	5.05054
	D_N->X (RF)	0.36692	0.84031	3.59912
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.59895	1.15995	4.94490
	B->X (FF)	0.56988	1.13725	5.15046
	C->X (FF)	0.51647	1.10014	5.26716
	D_N->X (RF)	0.48526	0.94181	3.60058
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.58730	1.12214	5.05546
	B->X (FF)	0.56772	1.10215	5.21505
	C->X (FF)	0.49635	1.03983	5.30464
	D_N->X (RF)	0.44780	0.87458	3.77404

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01077	0.01059	0.01468
	A	0.00551	0.00546	0.00956
	B	0.00908	0.00914	0.01343
	B	0.00477	0.00483	0.00913
	C	0.00764	0.00770	0.01202
	C	0.00391	0.00398	0.00833
	D_N	0.00677	0.00742	0.01707
	D_N	0.00903	0.00969	0.01941
sky130_fd_sc_hs__or4b_2	A	0.01338	0.01349	0.01816
	A	0.00804	0.00815	0.01291
	B	0.01174	0.01208	0.01695
	B	0.00733	0.00767	0.01266
	C	0.01022	0.01064	0.01543
	C	0.00638	0.00682	0.01177
	D_N	0.00947	0.01043	0.01962
	D_N	0.01186	0.01283	0.02224
sky130_fd_sc_hs__or4b_4	A	0.02508	0.02554	0.03419
	A	0.01581	0.01631	0.02518
	B	0.02224	0.02270	0.03123
	B	0.01420	0.01479	0.02349
	C	0.01838	0.01905	0.02776
	C	0.01180	0.01249	0.02159
	D_N	0.01657	0.01799	0.02837
	D_N	0.01881	0.02025	0.03063

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00508	0.00495	0.00849
	A	0.01040	0.01026	0.01348
	B	0.00510	0.00501	0.00886
	B	0.00943	0.00940	0.01319
	C	0.00498	0.00477	0.00935
	C	0.00871	0.00871	0.01288
	D_N	0.00990	0.01004	0.01956
	D_N	0.00765	0.00779	0.01708
sky130_fd_sc_hs__or4b_2	A	0.00727	0.00664	0.01039
	A	0.01268	0.01221	0.01568
	B	0.00720	0.00664	0.01091
	B	0.01166	0.01136	0.01534
	C	0.00709	0.00673	0.01121
	C	0.01093	0.01062	0.01500
	D_N	0.01281	0.01251	0.02116
	D_N	0.01043	0.01014	0.01866
sky130_fd_sc_hs__or4b_4	A	0.01557	0.01533	0.02162
	A	0.02500	0.02485	0.03036
	B	0.01543	0.01477	0.02483
	B	0.02357	0.02335	0.02964
	C	0.01499	0.01464	0.02369
	C	0.02160	0.02135	0.02894
	D_N	0.02201	0.02187	0.03239
	D_N	0.01977	0.01972	0.03010

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)**	0.00116	0.00116	0.00116
	(B * C * D_N * X)	-0.00150	-0.00154	-0.00154
	(B * !D_N * X)	0.00116	0.00116	0.00116
	(B * !D_N * X)	-0.00150	-0.00154	-0.00154
	(B * !C * D_N * X)	0.00118	0.00116	0.00116
	(B * !C * D_N * X)	-0.00147	-0.00154	-0.00155
	(!B * C * D_N * X)	0.00117	0.00117	0.00116
	(!B * C * D_N * X)	-0.00138	-0.00149	-0.00148
	(!B * C * !D_N * X)	0.00117	0.00117	0.00116
	(!B * C * !D_N * X)	-0.00139	-0.00149	-0.00148
	(!B * !C * !D_N * X)	0.00117	0.00117	0.00116
	(!B * !C * !D_N * X)	-0.00137	-0.00147	-0.00146
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00129	0.00129	0.00129
	(B * C * D_N * X)	-0.00152	-0.00156	-0.00156
	(B * !D_N * X)	0.00124	0.00124	0.00124
	(B * !D_N * X)	-0.00157	-0.00161	-0.00160
	(B * !C * D_N * X)	0.00130	0.00129	0.00129
	(B * !C * D_N * X)	-0.00149	-0.00156	-0.00156
	(!B * C * D_N * X)	0.00129	0.00130	0.00129
	(!B * C * D_N * X)	-0.00140	-0.00151	-0.00150
	(!B * C * !D_N * X)	0.00124	0.00126	0.00124
	(!B * C * !D_N * X)	-0.00144	-0.00155	-0.00154
	(!B * !C * !D_N * X)	0.00125	0.00126	0.00124
	(!B * !C * !D_N * X)	-0.00143	-0.00153	-0.00152

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00130	0.00129	0.00129
	(B * C * D_N * X)	-0.00308	-0.00318	-0.00315
	(B * !D_N * X)	0.00129	0.00129	0.00128
	(B * !D_N * X)	-0.00309	-0.00318	-0.00316
	(B * !C * D_N * X)	0.00133	0.00130	0.00129
	(B * !C * D_N * X)	-0.00300	-0.00316	-0.00315
	(!B * C * D_N * X)	0.00131	0.00130	0.00129
	(!B * C * D_N * X)	-0.00281	-0.00305	-0.00302
	(!B * C * !D_N * X)	0.00129	0.00129	0.00128
	(!B * C * !D_N * X)	-0.00283	-0.00306	-0.00303
	(!B * !C * !D_N * X)	0.00131	0.00129	0.00128
	(!B * !C * !D_N * X)	-0.00279	-0.00301	-0.00299

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)**	-0.00116	-0.00116	-0.00116
	(B * C * D_N * X)	0.00154	0.00155	0.00154
	(B * !D_N * X)	-0.00116	-0.00116	-0.00116
	(B * !D_N * X)	0.00154	0.00155	0.00154
	(B * !C * D_N * X)	-0.00116	-0.00116	-0.00116
	(B * !C * D_N * X)	0.00154	0.00155	0.00155
	(!B * C * D_N * X)	-0.00116	-0.00116	-0.00116
	(!B * C * D_N * X)	0.00148	0.00149	0.00148
	(!B * C * !D_N * X)	-0.00116	-0.00116	-0.00116
	(!B * C * !D_N * X)	0.00148	0.00149	0.00148
	(!B * !C * !D_N * X)	-0.00116	-0.00116	-0.00115
	(!B * !C * !D_N * X)	0.00146	0.00147	0.00146

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00128	-0.00129	-0.00128
	(B * C * D_N * X)	0.00156	0.00157	0.00156
	(B * !D_N * X)	-0.00124	-0.00124	-0.00124
	(B * !D_N * X)	0.00160	0.00161	0.00160
	(B * !C * D_N * X)	-0.00128	-0.00128	-0.00128
	(B * !C * D_N * X)	0.00156	0.00157	0.00156
	(!B * C * D_N * X)	-0.00128	-0.00129	-0.00128
	(!B * C * D_N * X)	0.00150	0.00151	0.00150
	(!B * C * !D_N * X)	-0.00124	-0.00124	-0.00124
	(!B * C * !D_N * X)	0.00154	0.00155	0.00154
	(!B * !C * !D_N * X)	-0.00123	-0.00124	-0.00123
	(!B * !C * !D_N * X)	0.00152	0.00153	0.00152
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00128	-0.00129	-0.00128
	(B * C * D_N * X)	0.00314	0.00318	0.00315
	(B * !D_N * X)	-0.00127	-0.00128	-0.00128
	(B * !D_N * X)	0.00315	0.00319	0.00316
	(B * !C * D_N * X)	-0.00128	-0.00128	-0.00128
	(B * !C * D_N * X)	0.00316	0.00318	0.00315
	(!B * C * D_N * X)	-0.00128	-0.00129	-0.00128
	(!B * C * D_N * X)	0.00300	0.00305	0.00302
	(!B * C * !D_N * X)	-0.00127	-0.00128	-0.00128
	(!B * C * !D_N * X)	0.00301	0.00306	0.00303
	(!B * !C * !D_N * X)	-0.00127	-0.00128	-0.00127
	(!B * !C * !D_N * X)	0.00297	0.00301	0.00299

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)**	0.00113	0.00112	0.00105
	(A * C * D_N * X)	-0.00104	-0.00105	-0.00104
	(A * C * !D_N * X)	0.00109	0.00108	0.00104
	(A * C * !D_N * X)	-0.00106	-0.00106	-0.00105
	(A * !C * D_N * X)	0.00102	0.00103	0.00101
	(A * !C * D_N * X)	-0.00084	-0.00084	-0.00083
	(A * !C * !D_N * X)	0.00104	0.00109	0.00103
	(A * !C * !D_N * X)	-0.00103	-0.00103	-0.00103
	(!A * C * D_N * X)	0.00120	0.00102	0.00101
	(!A * C * D_N * X)	-0.00132	-0.00151	-0.00151
	(!A * C * !D_N * X)	0.00102	0.00102	0.00101
	(!A * C * !D_N * X)	-0.00149	-0.00151	-0.00150
	(!A * !C * !D_N * X)	0.00110	0.00102	0.00101
	(!A * !C * !D_N * X)	-0.00127	-0.00144	-0.00144
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00125	0.00126	0.00119
	(A * C * D_N * X)	-0.00106	-0.00106	-0.00105
	(A * C * !D_N * X)	0.00118	0.00117	0.00114
	(A * C * !D_N * X)	-0.00112	-0.00111	-0.00111
	(A * !C * D_N * X)	0.00116	0.00116	0.00115
	(A * !C * D_N * X)	-0.00085	-0.00085	-0.00084
	(A * !C * !D_N * X)	0.00114	0.00119	0.00113
	(A * !C * !D_N * X)	-0.00109	-0.00109	-0.00109
	(!A * C * D_N * X)	0.00132	0.00116	0.00115
	(!A * C * D_N * X)	-0.00133	-0.00153	-0.00152
	(!A * C * !D_N * X)	0.00111	0.00113	0.00112
	(!A * C * !D_N * X)	-0.00153	-0.00156	-0.00155
	(!A * !C * !D_N * X)	0.00121	0.00113	0.00112
	(!A * !C * !D_N * X)	-0.00135	-0.00149	-0.00150

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00187	0.00190	0.00173
	(A * C * D_N * X)	-0.00225	-0.00225	-0.00224
	(A * C * !D_N * X)	0.00168	0.00169	0.00163
	(A * C * !D_N * X)	-0.00232	-0.00233	-0.00231
	(A * !C * D_N * X)	0.00163	0.00162	0.00161
	(A * !C * D_N * X)	-0.00182	-0.00181	-0.00180
	(A * !C * !D_N * X)	0.00165	0.00174	0.00163
	(A * !C * !D_N * X)	-0.00227	-0.00223	-0.00224
	(!A * C * D_N * X)	0.00194	0.00162	0.00160
	(!A * C * D_N * X)	-0.00277	-0.00317	-0.00316
	(!A * C * !D_N * X)	0.00160	0.00161	0.00159
	(!A * C * !D_N * X)	-0.00310	-0.00319	-0.00317
	(!A * !C * !D_N * X)	0.00176	0.00161	0.00159
	(!A * !C * !D_N * X)	-0.00272	-0.00307	-0.00305

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)**	-0.00101	-0.00102	-0.00101
	(A * C * D_N * X)	0.00104	0.00105	0.00104
	(A * C * !D_N * X)	-0.00102	-0.00102	-0.00101
	(A * C * !D_N * X)	0.00106	0.00106	0.00105
	(A * !C * D_N * X)	-0.00097	-0.00097	-0.00096
	(A * !C * D_N * X)	0.00089	0.00089	0.00089
	(A * !C * !D_N * X)	-0.00101	-0.00101	-0.00101
	(A * !C * !D_N * X)	0.00103	0.00103	0.00103
	(!A * C * D_N * X)	-0.00100	-0.00101	-0.00100
	(!A * C * D_N * X)	0.00151	0.00151	0.00151
	(!A * C * !D_N * X)	-0.00100	-0.00101	-0.00101
	(!A * C * !D_N * X)	0.00149	0.00151	0.00150
	(!A * !C * !D_N * X)	-0.00100	-0.00100	-0.00100
	(!A * !C * !D_N * X)	0.00144	0.00144	0.00144
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00115	-0.00116	-0.00115
	(A * C * D_N * X)	0.00106	0.00106	0.00105
	(A * C * !D_N * X)	-0.00111	-0.00112	-0.00111
	(A * C * !D_N * X)	0.00112	0.00111	0.00111
	(A * !C * D_N * X)	-0.00111	-0.00111	-0.00110
	(A * !C * D_N * X)	0.00090	0.00090	0.00090
	(A * !C * !D_N * X)	-0.00111	-0.00111	-0.00111
	(A * !C * !D_N * X)	0.00109	0.00109	0.00109
	(!A * C * D_N * X)	-0.00114	-0.00115	-0.00114
	(!A * C * D_N * X)	0.00151	0.00153	0.00152
	(!A * C * !D_N * X)	-0.00111	-0.00112	-0.00111
	(!A * C * !D_N * X)	0.00155	0.00156	0.00155
	(!A * !C * !D_N * X)	-0.00111	-0.00110	-0.00110
	(!A * !C * !D_N * X)	0.00149	0.00149	0.00150

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	-0.00164	-0.00164	-0.00163
	(A * C * D_N * X)	0.00225	0.00225	0.00224
	(A * C * !D_N * X)	-0.00160	-0.00160	-0.00159
	(A * C * !D_N * X)	0.00232	0.00233	0.00231
	(A * !C * D_N * X)	-0.00152	-0.00152	-0.00150
	(A * !C * D_N * X)	0.00189	0.00190	0.00191
	(A * !C * !D_N * X)	-0.00160	-0.00158	-0.00159
	(A * !C * !D_N * X)	0.00227	0.00223	0.00224
	(!A * C * D_N * X)	-0.00160	-0.00161	-0.00160
	(!A * C * D_N * X)	0.00315	0.00317	0.00316
	(!A * C * !D_N * X)	-0.00159	-0.00160	-0.00159
	(!A * C * !D_N * X)	0.00316	0.00319	0.00317
	(!A * !C * !D_N * X)	-0.00158	-0.00158	-0.00157
	(!A * !C * !D_N * X)	0.00304	0.00307	0.00305

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)**	0.00123	0.00122	0.00121
	(B * D_N * X)	-0.00083	-0.00082	-0.00083
	(B * !D_N * X)	0.00123	0.00123	0.00116
	(B * !D_N * X)	-0.00113	-0.00113	-0.00113
	(A * !B * D_N * X)	0.00122	0.00123	0.00122
	(A * !B * D_N * X)	-0.00081	-0.00081	-0.00082
	(A * !B * !D_N * X)	0.00133	0.00121	0.00113
	(A * !B * !D_N * X)	-0.00105	-0.00115	-0.00114
	(!A * !B * !D_N * X)	0.00144	0.00114	0.00110
	(!A * !B * !D_N * X)	-0.00130	-0.00160	-0.00161

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00137	0.00136	0.00135
	(B * D_N * X)	-0.00085	-0.00085	-0.00085
	(B * !D_N * X)	0.00124	0.00124	0.00116
	(B * !D_N * X)	-0.00133	-0.00133	-0.00132
	(A * !B * D_N * X)	0.00137	0.00137	0.00136
	(A * !B * D_N * X)	-0.00083	-0.00084	-0.00084
	(A * !B * !D_N * X)	0.00132	0.00121	0.00112
	(A * !B * !D_N * X)	-0.00123	-0.00132	-0.00132
	(!A * !B * !D_N * X)	0.00143	0.00114	0.00110
	(!A * !B * !D_N * X)	-0.00145	-0.00177	-0.00178
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00201	0.00202	0.00201
	(B * D_N * X)	-0.00172	-0.00174	-0.00174
	(B * !D_N * X)	0.00197	0.00193	0.00176
	(B * !D_N * X)	-0.00261	-0.00264	-0.00262
	(A * !B * D_N * X)	0.00203	0.00203	0.00201
	(A * !B * D_N * X)	-0.00172	-0.00172	-0.00173
	(A * !B * !D_N * X)	0.00206	0.00181	0.00166
	(A * !B * !D_N * X)	-0.00240	-0.00260	-0.00259
	(!A * !B * !D_N * X)	0.00226	0.00167	0.00162
	(!A * !B * !D_N * X)	-0.00291	-0.00349	-0.00351

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)**	-0.00119	-0.00119	-0.00120
	(B * D_N * X)	0.00085	0.00085	0.00085
	(B * !D_N * X)	-0.00111	-0.00111	-0.00111
	(B * !D_N * X)	0.00113	0.00113	0.00113
	(A * !B * D_N * X)	-0.00112	-0.00113	-0.00119
	(A * !B * D_N * X)	0.00087	0.00087	0.00084
	(A * !B * !D_N * X)	-0.00110	-0.00111	-0.00110
	(A * !B * !D_N * X)	0.00114	0.00115	0.00114
	(!A * !B * !D_N * X)	-0.00109	-0.00110	-0.00109
	(!A * !B * !D_N * X)	0.00161	0.00162	0.00162
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00133	-0.00133	-0.00133
	(B * D_N * X)	0.00087	0.00087	0.00088
	(B * !D_N * X)	-0.00110	-0.00110	-0.00110
	(B * !D_N * X)	0.00133	0.00133	0.00132
	(A * !B * D_N * X)	-0.00127	-0.00128	-0.00133
	(A * !B * D_N * X)	0.00089	0.00088	0.00086
	(A * !B * !D_N * X)	-0.00110	-0.00110	-0.00110
	(A * !B * !D_N * X)	0.00132	0.00132	0.00132
	(!A * !B * !D_N * X)	-0.00109	-0.00109	-0.00109
	(!A * !B * !D_N * X)	0.00177	0.00179	0.00179
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00194	-0.00195	-0.00197
	(B * D_N * X)	0.00179	0.00180	0.00180
	(B * !D_N * X)	-0.00162	-0.00163	-0.00162
	(B * !D_N * X)	0.00263	0.00264	0.00262
	(A * !B * D_N * X)	-0.00178	-0.00180	-0.00195
	(A * !B * D_N * X)	0.00185	0.00185	0.00177
	(A * !B * !D_N * X)	-0.00161	-0.00161	-0.00161
	(A * !B * !D_N * X)	0.00260	0.00260	0.00259
	(!A * !B * !D_N * X)	-0.00160	-0.00160	-0.00158
	(!A * !B * !D_N * X)	0.00352	0.00354	0.00353

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00383	0.00383	0.01299
	(C * X)	0.00063	0.00062	0.00978
	(B * !C * X)	0.00391	0.00391	0.01304
	(B * !C * X)	0.00066	0.00065	0.00980
	(A * !B * !C * X)	0.00402	0.00402	0.01312
	(A * !B * !C * X)	0.00073	0.00071	0.00984
sky130_fd_sc_hs__or4b_2	(C * X)	0.00429	0.00427	0.01317
	(C * X)	0.00100	0.00097	0.00989
	(B * !C * X)	0.00437	0.00435	0.01323
	(B * !C * X)	0.00104	0.00101	0.00991
	(A * !B * !C * X)	0.00448	0.00445	0.01331
	(A * !B * !C * X)	0.00110	0.00106	0.00994
sky130_fd_sc_hs__or4b_4	(C * X)	0.00517	0.00520	0.01513
	(C * X)	0.00155	0.00156	0.01150
	(B * !C * X)	0.00540	0.00543	0.01529
	(B * !C * X)	0.00165	0.00166	0.01155
	(A * !B * !C * X)	0.00563	0.00565	0.01545
	(A * !B * !C * X)	0.00177	0.00178	0.01163

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00095	0.00146	0.01108
	(C * X)	0.00414	0.00467	0.01426
	(B * !C * X)	0.00095	0.00146	0.01108
	(B * !C * X)	0.00415	0.00467	0.01427
	(A * !B * !C * X)	0.00095	0.00146	0.01108
	(A * !B * !C * X)	0.00415	0.00468	0.01427
sky130_fd_sc_hs__or4b_2	(C * X)	0.00114	0.00156	0.01106
	(C * X)	0.00442	0.00485	0.01435
	(B * !C * X)	0.00114	0.00156	0.01106
	(B * !C * X)	0.00442	0.00486	0.01435
	(A * !B * !C * X)	0.00114	0.00156	0.01106
	(A * !B * !C * X)	0.00443	0.00486	0.01436
sky130_fd_sc_hs__or4b_4	(C * X)	0.00173	0.00213	0.01254
	(C * X)	0.00535	0.00576	0.01617
	(B * !C * X)	0.00173	0.00213	0.01254
	(B * !C * X)	0.00537	0.00578	0.01619
	(A * !B * !C * X)	0.00173	0.00213	0.01254
	(A * !B * !C * X)	0.00538	0.00579	0.01619

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00260	0.00248	0.00253	0.00247	0.73902
sky130_fd_sc_hs__or4_2	0.00272	0.00268	0.00280	0.00278	1.48762
sky130_fd_sc_hs__or4_4	0.00404	0.00463	0.00469	0.00443	2.87517

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.05864	0.11483
sky130_fd_sc_hs__or4_2	0.00000	0.09826	0.20954
sky130_fd_sc_hs__or4_4	0.00000	0.18681	0.29791

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)	0.11460	0.87467	7.63788
	B->X (RR)	0.11478	0.86064	7.55275
	C->X (RR)	0.10996	0.83898	7.44431
	D->X (RR)	0.09989	0.80662	7.34946
sky130_fd_sc_hs__or4_2	A->X (RR)	0.10634	0.74753	7.56223
	B->X (RR)	0.10627	0.73751	7.48609
	C->X (RR)	0.10348	0.72060	7.40434
	D->X (RR)	0.09601	0.69706	7.32144
sky130_fd_sc_hs__or4_4	A->X (RR)	0.13954	0.74995	8.03147
	B->X (RR)	0.14454	0.74301	7.96361
	C->X (RR)	0.13296	0.70847	7.82349
	D->X (RR)	0.11970	0.67510	7.72895

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.47022	1.04340	4.73459
	B->X (FF)	0.44072	1.01755	4.88541
	C->X (FF)	0.38915	0.97811	4.95149
	D->X (FF)	0.30513	0.90900	4.80346
sky130_fd_sc_hs__or4_2	A->X (FF)	0.57774	1.14439	5.14906
	B->X (FF)	0.54807	1.12035	5.35000
	C->X (FF)	0.50331	1.09189	5.47420
	D->X (FF)	0.42380	1.02483	5.35359
sky130_fd_sc_hs__or4_4	A->X (FF)	0.55974	1.08581	4.97822
	B->X (FF)	0.54279	1.06770	5.12487
	C->X (FF)	0.47406	1.00776	5.21048
	D->X (FF)	0.37318	0.92237	5.04860

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01191	0.01176	0.01583
	A	0.00559	0.00546	0.00965
	B	0.01023	0.01026	0.01456
	B	0.00481	0.00485	0.00916
	C	0.00852	0.00857	0.01294
	C	0.00384	0.00392	0.00831
	D	0.00688	0.00699	0.01246
	D	0.00295	0.00306	0.00860
sky130_fd_sc_hs__or4_2	A	0.01441	0.01456	0.01959
	A	0.00780	0.00795	0.01300
	B	0.01266	0.01300	0.01832
	B	0.00692	0.00727	0.01268
	C	0.01112	0.01151	0.01675
	C	0.00613	0.00653	0.01186
	D	0.00950	0.00992	0.01627
	D	0.00523	0.00565	0.01213
sky130_fd_sc_hs__or4_4	A	0.02747	0.02792	0.03669
	A	0.01624	0.01672	0.02577
	B	0.02467	0.02483	0.03284
	B	0.01455	0.01477	0.02307
	C	0.02058	0.02115	0.02993
	C	0.01220	0.01280	0.02206
	D	0.01692	0.01765	0.02887
	D	0.01017	0.01093	0.02265

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00345	0.00328	0.00697
	A	0.00985	0.00975	0.01295
	B	0.00348	0.00345	0.00734
	B	0.00893	0.00890	0.01272
	C	0.00347	0.00343	0.00776
	C	0.00815	0.00818	0.01241
	D	0.00339	0.00381	0.01029
	D	0.00731	0.00777	0.01394
sky130_fd_sc_hs__or4_2	A	0.00602	0.00559	0.00956
	A	0.01272	0.01252	0.01626
	B	0.00605	0.00590	0.01075
	B	0.01183	0.01168	0.01600
	C	0.00609	0.00572	0.01171
	C	0.01110	0.01091	0.01557
	D	0.00599	0.00614	0.01374
	D	0.01027	0.01049	0.01726
sky130_fd_sc_hs__or4_4	A	0.01197	0.01169	0.01766
	A	0.02341	0.02341	0.02907
	B	0.01185	0.01173	0.01794
	B	0.02206	0.02193	0.02815
	C	0.01191	0.01159	0.02159
	C	0.02031	0.02013	0.02789
	D	0.01154	0.01187	0.02365
	D	0.01828	0.01871	0.03034

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00114	0.00116	0.00114
	(B * D * X)	-0.00152	-0.00157	-0.00156
	(B * C * !D * X)	0.00114	0.00116	0.00114
	(B * C * !D * X)	-0.00152	-0.00157	-0.00156
	(B * !C * !D * X)	0.00114	0.00116	0.00114
	(B * !C * !D * X)	-0.00149	-0.00157	-0.00156
	(!B * C * D * X)	0.00114	0.00115	0.00114
	(!B * C * D * X)	-0.00140	-0.00151	-0.00150
	(!B * C * !D * X)	0.00114	0.00115	0.00114
	(!B * C * !D * X)	-0.00140	-0.00151	-0.00150
	(!B * !C * D * X)	0.00115	0.00115	0.00114
	(!B * !C * D * X)	-0.00137	-0.00148	-0.00147
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00127	0.00128	0.00127
	(B * D * X)	-0.00154	-0.00159	-0.00158
	(B * C * !D * X)	0.00126	0.00128	0.00127
	(B * C * !D * X)	-0.00154	-0.00159	-0.00158
	(B * !C * !D * X)	0.00127	0.00128	0.00127
	(B * !C * !D * X)	-0.00151	-0.00159	-0.00158
	(!B * C * D * X)	0.00127	0.00128	0.00127
	(!B * C * D * X)	-0.00143	-0.00153	-0.00152
	(!B * C * !D * X)	0.00127	0.00128	0.00127
	(!B * C * !D * X)	-0.00143	-0.00153	-0.00152
	(!B * !C * D * X)	0.00128	0.00128	0.00127
	(!B * !C * D * X)	-0.00140	-0.00150	-0.00149

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00130	0.00130	0.00129
	(B * D * X)	-0.00306	-0.00315	-0.00312
	(B * C * !D * X)	0.00130	0.00130	0.00129
	(B * C * !D * X)	-0.00305	-0.00314	-0.00312
	(B * !C * !D * X)	0.00131	0.00130	0.00129
	(B * !C * !D * X)	-0.00298	-0.00313	-0.00312
	(!B * C * D * X)	0.00130	0.00130	0.00129
	(!B * C * D * X)	-0.00279	-0.00299	-0.00299
	(!B * C * !D * X)	0.00130	0.00130	0.00129
	(!B * C * !D * X)	-0.00279	-0.00298	-0.00299
	(!B * !C * D * X)	0.00132	0.00130	0.00129
	(!B * !C * D * X)	-0.00273	-0.00296	-0.00294

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00114	-0.00114	-0.00114
	(B * D * X)	0.00155	0.00157	0.00156
	(B * C * !D * X)	-0.00114	-0.00114	-0.00114
	(B * C * !D * X)	0.00155	0.00157	0.00156
	(B * !C * !D * X)	-0.00114	-0.00114	-0.00114
	(B * !C * !D * X)	0.00155	0.00157	0.00156
	(!B * C * D * X)	-0.00114	-0.00115	-0.00114
	(!B * C * D * X)	0.00150	0.00151	0.00150
	(!B * C * !D * X)	-0.00114	-0.00115	-0.00114
	(!B * C * !D * X)	0.00150	0.00151	0.00150
	(!B * !C * D * X)	-0.00114	-0.00114	-0.00114
	(!B * !C * D * X)	0.00147	0.00148	0.00147

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00126	-0.00127	-0.00126
	(B * D * X)	0.00158	0.00159	0.00158
	(B * C * !D * X)	-0.00126	-0.00127	-0.00126
	(B * C * !D * X)	0.00158	0.00159	0.00158
	(B * !C * !D * X)	-0.00126	-0.00127	-0.00126
	(B * !C * !D * X)	0.00158	0.00159	0.00158
	(!B * C * D * X)	-0.00126	-0.00127	-0.00126
	(!B * C * D * X)	0.00152	0.00153	0.00152
	(!B * C * !D * X)	-0.00126	-0.00127	-0.00126
	(!B * C * !D * X)	0.00152	0.00153	0.00152
	(!B * !C * D * X)	-0.00126	-0.00127	-0.00126
	(!B * !C * D * X)	0.00150	0.00150	0.00149
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00128	-0.00129	-0.00128
	(B * D * X)	0.00311	0.00315	0.00312
	(B * C * !D * X)	-0.00128	-0.00129	-0.00128
	(B * C * !D * X)	0.00311	0.00315	0.00312
	(B * !C * !D * X)	-0.00129	-0.00129	-0.00128
	(B * !C * !D * X)	0.00313	0.00315	0.00312
	(!B * C * D * X)	-0.00129	-0.00129	-0.00129
	(!B * C * D * X)	0.00298	0.00299	0.00299
	(!B * C * !D * X)	-0.00129	-0.00129	-0.00129
	(!B * C * !D * X)	0.00298	0.00298	0.00299
	(!B * !C * D * X)	-0.00128	-0.00129	-0.00128
	(!B * !C * D * X)	0.00293	0.00296	0.00294

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)**	0.00108	0.00107	0.00104
	(A * C * D * X)	-0.00111	-0.00111	-0.00111
	(A * C * !D * X)	0.00112	0.00112	0.00104
	(A * C * !D * X)	-0.00110	-0.00110	-0.00109
	(A * !C * D * X)	0.00103	0.00108	0.00103
	(A * !C * D * X)	-0.00106	-0.00106	-0.00106
	(A * !C * !D * X)	0.00101	0.00101	0.00101
	(A * !C * !D * X)	-0.00087	-0.00087	-0.00087
	(!A * C * D * X)	0.00101	0.00102	0.00101
	(!A * C * D * X)	-0.00149	-0.00154	-0.00153
	(!A * C * !D * X)	0.00116	0.00102	0.00101
	(!A * C * !D * X)	-0.00134	-0.00154	-0.00154
	(!A * !C * D * X)	0.00110	0.00102	0.00101
	(!A * !C * D * X)	-0.00130	-0.00145	-0.00146
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00120	0.00119	0.00116
	(A * C * D * X)	-0.00116	-0.00116	-0.00116
	(A * C * !D * X)	0.00123	0.00123	0.00116
	(A * C * !D * X)	-0.00115	-0.00115	-0.00114
	(A * !C * D * X)	0.00116	0.00121	0.00115
	(A * !C * D * X)	-0.00111	-0.00112	-0.00111
	(A * !C * !D * X)	0.00114	0.00114	0.00113
	(A * !C * !D * X)	-0.00094	-0.00094	-0.00093
	(!A * C * D * X)	0.00113	0.00114	0.00113
	(!A * C * D * X)	-0.00158	-0.00161	-0.00160
	(!A * C * !D * X)	0.00130	0.00114	0.00113
	(!A * C * !D * X)	-0.00142	-0.00162	-0.00161
	(!A * !C * D * X)	0.00124	0.00114	0.00113
	(!A * !C * D * X)	-0.00136	-0.00153	-0.00153

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00173	0.00174	0.00169
	(A * C * D * X)	-0.00229	-0.00231	-0.00228
	(A * C * !D * X)	0.00187	0.00191	0.00174
	(A * C * !D * X)	-0.00226	-0.00226	-0.00225
	(A * !C * D * X)	0.00170	0.00179	0.00168
	(A * !C * D * X)	-0.00220	-0.00220	-0.00220
	(A * !C * !D * X)	0.00165	0.00165	0.00164
	(A * !C * !D * X)	-0.00182	-0.00181	-0.00180
	(!A * C * D * X)	0.00165	0.00166	0.00164
	(!A * C * D * X)	-0.00305	-0.00316	-0.00314
	(!A * C * !D * X)	0.00191	0.00166	0.00164
	(!A * C * !D * X)	-0.00278	-0.00317	-0.00315
	(!A * !C * D * X)	0.00180	0.00165	0.00164
	(!A * !C * D * X)	-0.00266	-0.00302	-0.00300

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)**	-0.00101	-0.00101	-0.00101
	(A * C * D * X)	0.00111	0.00111	0.00111
	(A * C * !D * X)	-0.00101	-0.00101	-0.00101
	(A * C * !D * X)	0.00110	0.00110	0.00109
	(A * !C * D * X)	-0.00101	-0.00101	-0.00101
	(A * !C * D * X)	0.00106	0.00106	0.00106
	(A * !C * !D * X)	-0.00095	-0.00095	-0.00094
	(A * !C * !D * X)	0.00092	0.00092	0.00092
	(!A * C * D * X)	-0.00101	-0.00101	-0.00100
	(!A * C * D * X)	0.00153	0.00154	0.00153
	(!A * C * !D * X)	-0.00100	-0.00101	-0.00100
	(!A * C * !D * X)	0.00154	0.00154	0.00154
	(!A * !C * D * X)	-0.00100	-0.00100	-0.00100
	(!A * !C * D * X)	0.00146	0.00145	0.00146
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00113	-0.00113	-0.00113
	(A * C * D * X)	0.00116	0.00116	0.00116
	(A * C * !D * X)	-0.00113	-0.00113	-0.00113
	(A * C * !D * X)	0.00115	0.00115	0.00114
	(A * !C * D * X)	-0.00112	-0.00113	-0.00112
	(A * !C * D * X)	0.00111	0.00112	0.00111
	(A * !C * !D * X)	-0.00107	-0.00108	-0.00107
	(A * !C * !D * X)	0.00098	0.00099	0.00099
	(!A * C * D * X)	-0.00112	-0.00113	-0.00113
	(!A * C * D * X)	0.00160	0.00161	0.00160
	(!A * C * !D * X)	-0.00112	-0.00113	-0.00113
	(!A * C * !D * X)	0.00160	0.00162	0.00161
	(!A * !C * D * X)	-0.00112	-0.00112	-0.00112
	(!A * !C * D * X)	0.00153	0.00153	0.00153

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	-0.00166	-0.00166	-0.00165
	(A * C * D * X)	0.00229	0.00231	0.00228
	(A * C * !D * X)	-0.00166	-0.00166	-0.00165
	(A * C * !D * X)	0.00226	0.00226	0.00225
	(A * !C * D * X)	-0.00164	-0.00164	-0.00164
	(A * !C * D * X)	0.00220	0.00220	0.00220
	(A * !C * !D * X)	-0.00153	-0.00154	-0.00151
	(A * !C * !D * X)	0.00189	0.00190	0.00191
	(!A * C * D * X)	-0.00164	-0.00165	-0.00164
	(!A * C * D * X)	0.00313	0.00316	0.00314
	(!A * C * !D * X)	-0.00164	-0.00164	-0.00164
	(!A * C * !D * X)	0.00314	0.00317	0.00315
	(!A * !C * D * X)	-0.00162	-0.00163	-0.00162
	(!A * !C * D * X)	0.00299	0.00302	0.00300

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00116	0.00116	0.00109
	(B * D * X)	-0.00107	-0.00107	-0.00106
	(B * !D * X)	0.00104	0.00104	0.00103
	(B * !D * X)	-0.00086	-0.00085	-0.00085
	(A * !B * D * X)	0.00125	0.00113	0.00105
	(A * !B * D * X)	-0.00097	-0.00107	-0.00107
	(A * !B * !D * X)	0.00105	0.00105	0.00103
	(A * !B * !D * X)	-0.00084	-0.00084	-0.00085
	(!A * !B * D * X)	0.00135	0.00106	0.00103
	(!A * !B * D * X)	-0.00121	-0.00152	-0.00154

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00132	0.00133	0.00125
	(B * D * X)	-0.00106	-0.00106	-0.00105
	(B * !D * X)	0.00123	0.00123	0.00121
	(B * !D * X)	-0.00087	-0.00086	-0.00087
	(A * !B * D * X)	0.00144	0.00131	0.00123
	(A * !B * D * X)	-0.00097	-0.00107	-0.00107
	(A * !B * !D * X)	0.00122	0.00123	0.00121
	(A * !B * !D * X)	-0.00085	-0.00085	-0.00086
	(!A * !B * D * X)	0.00155	0.00124	0.00120
	(!A * !B * D * X)	-0.00123	-0.00154	-0.00156
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00204	0.00200	0.00183
	(B * D * X)	-0.00221	-0.00225	-0.00223
	(B * !D * X)	0.00169	0.00170	0.00168
	(B * !D * X)	-0.00175	-0.00177	-0.00177
	(A * !B * D * X)	0.00213	0.00187	0.00172
	(A * !B * D * X)	-0.00201	-0.00222	-0.00221
	(A * !B * !D * X)	0.00171	0.00171	0.00169
	(A * !B * !D * X)	-0.00175	-0.00175	-0.00176
	(!A * !B * D * X)	0.00231	0.00172	0.00167
	(!A * !B * D * X)	-0.00252	-0.00315	-0.00318

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00103	-0.00103	-0.00103
	(B * D * X)	0.00107	0.00107	0.00106
	(B * !D * X)	-0.00102	-0.00102	-0.00101
	(B * !D * X)	0.00088	0.00088	0.00088
	(A * !B * D * X)	-0.00102	-0.00103	-0.00102
	(A * !B * D * X)	0.00106	0.00107	0.00107
	(A * !B * !D * X)	-0.00095	-0.00096	-0.00101
	(A * !B * !D * X)	0.00091	0.00090	0.00087
	(!A * !B * D * X)	-0.00102	-0.00102	-0.00101
	(!A * !B * D * X)	0.00154	0.00154	0.00154
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00120	-0.00120	-0.00120
	(B * D * X)	0.00106	0.00106	0.00105
	(B * !D * X)	-0.00120	-0.00120	-0.00119
	(B * !D * X)	0.00089	0.00089	0.00089
	(A * !B * D * X)	-0.00119	-0.00120	-0.00120
	(A * !B * D * X)	0.00106	0.00107	0.00107
	(A * !B * !D * X)	-0.00115	-0.00115	-0.00119
	(A * !B * !D * X)	0.00090	0.00090	0.00088
	(!A * !B * D * X)	-0.00119	-0.00120	-0.00119
	(!A * !B * D * X)	0.00154	0.00156	0.00156
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00168	-0.00169	-0.00169
	(B * D * X)	0.00223	0.00225	0.00223
	(B * !D * X)	-0.00164	-0.00165	-0.00164
	(B * !D * X)	0.00184	0.00183	0.00183
	(A * !B * D * X)	-0.00167	-0.00168	-0.00167
	(A * !B * D * X)	0.00221	0.00222	0.00221
	(A * !B * !D * X)	-0.00150	-0.00152	-0.00164
	(A * !B * !D * X)	0.00189	0.00189	0.00180
	(!A * !B * D * X)	-0.00164	-0.00165	-0.00164
	(!A * !B * D * X)	0.00315	0.00318	0.00318

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00116	0.00116	0.00116
	(C * X)	-0.00081	-0.00081	-0.00080
	(B * !C * X)	0.00116	0.00116	0.00116
	(B * !C * X)	-0.00080	-0.00080	-0.00080
	(A * !B * !C * X)	0.00116	0.00116	0.00116
	(A * !B * !C * X)	-0.00081	-0.00080	-0.00080
sky130_fd_sc_hs__or4_2	(C * X)	0.00139	0.00139	0.00138
	(C * X)	-0.00081	-0.00080	-0.00080
	(B * !C * X)	0.00139	0.00139	0.00138
	(B * !C * X)	-0.00080	-0.00080	-0.00079
	(A * !B * !C * X)	0.00138	0.00139	0.00139
	(A * !B * !C * X)	-0.00079	-0.00080	-0.00079
sky130_fd_sc_hs__or4_4	(C * X)	0.00192	0.00195	0.00192
	(C * X)	-0.00156	-0.00159	-0.00157
	(B * !C * X)	0.00192	0.00195	0.00192
	(B * !C * X)	-0.00155	-0.00158	-0.00156
	(A * !B * !C * X)	0.00192	0.00195	0.00192
	(A * !B * !C * X)	-0.00155	-0.00158	-0.00156

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00111	-0.00112	-0.00115
	(C * X)	0.00085	0.00085	0.00082
	(B * !C * X)	-0.00103	-0.00104	-0.00114
	(B * !C * X)	0.00089	0.00089	0.00082
	(A * !B * !C * X)	-0.00091	-0.00092	-0.00111
	(A * !B * !C * X)	0.00097	0.00096	0.00083
sky130_fd_sc_hs__or4_2	(C * X)	-0.00134	-0.00134	-0.00138
	(C * X)	0.00084	0.00084	0.00081
	(B * !C * X)	-0.00126	-0.00127	-0.00137
	(B * !C * X)	0.00088	0.00088	0.00081
	(A * !B * !C * X)	-0.00115	-0.00116	-0.00134
	(A * !B * !C * X)	0.00095	0.00095	0.00083
sky130_fd_sc_hs__or4_4	(C * X)	-0.00181	-0.00183	-0.00191
	(C * X)	0.00168	0.00168	0.00160
	(B * !C * X)	-0.00159	-0.00161	-0.00187
	(B * !C * X)	0.00179	0.00180	0.00160
	(A * !B * !C * X)	-0.00136	-0.00139	-0.00181
	(A * !B * !C * X)	0.00194	0.00194	0.00164

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00197	0.00177	0.00415	0.00182	0.00560	0.00308	0.75599	0.75151
sky130_fd_sc_hs__sdfbbn_2	0.00198	0.00178	0.00420	0.00169	0.00554	0.00305	1.51029	1.51393

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbn_1	0.00000	1.06578	1.89024
sky130_fd_sc_hs__sdfbbn_2	0.00000	1.09110	1.97230

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)	0.64219	1.46376	8.85011
	SET_B->Q (FR)	0.29189	1.14989	8.75323
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.73225	1.42337	8.91105
	SET_B->Q (FR)	0.34697	1.09894	8.90731

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)	0.65037	1.18071	4.74475
	RESET_B->Q (FF)	0.41505	0.98789	4.72774
	SET_B->Q (RF)	0.24945	0.67828	3.59831
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.69835	1.18544	4.80452
	RESET_B->Q (FF)	0.46889	0.99966	4.81389
	SET_B->Q (RF)	0.30375	0.70598	3.80745

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)	0.58584	1.42764	8.77554
	RESET_B->Q_N (FR)	0.35140	1.24155	8.77932
	SET_B->Q_N (RR)	0.18613	0.93855	7.80584
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.58158	1.31708	8.73836
	RESET_B->Q_N (FR)	0.35356	1.13317	8.75997
	SET_B->Q_N (RR)	0.18917	0.84599	7.88087

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)	0.54519	1.17342	4.85459
	SET_B->Q_N (FF)	0.20868	0.85193	4.98793
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.58383	1.19045	4.89092
	SET_B->Q_N (FF)	0.22678	0.84739	5.11125

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)	-0.05205	-0.02162	0.45705
	setup	CLK_N (F)	0.26629	0.20957	-0.34565
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05855	-0.03167	0.42786
	setup	CLK_N (F)	0.27337	0.21680	-0.31674

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)	-0.38159	-0.43582	-1.21905
	setup	CLK_N (F)	0.43064	0.47023	1.26218
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.41334	-0.46879	-1.32151
	setup	CLK_N (F)	0.46485	0.50133	1.36104

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)	-0.05205	-0.02162	0.45705
	setup	CLK_N (F)	0.26629	0.20957	-0.34565
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05855	-0.03167	0.42786
	setup	CLK_N (F)	0.27337	0.21680	-0.31674

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)	-0.38159	-0.43582	-1.21905
	setup	CLK_N (F)	0.43064	0.47023	1.26218
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.41334	-0.46879	-1.32151
	setup	CLK_N (F)	0.46485	0.50133	1.36104

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)	-0.08422	-0.03818	0.36504
	setup	CLK_N (F)	0.30619	0.23402	-0.23055
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08921	-0.04468	0.34162
	setup	CLK_N (F)	0.30878	0.23915	-0.21045

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)	-0.47788	-0.53615	-1.40807
	setup	CLK_N (F)	0.53370	0.57627	1.48145
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.51102	-0.57083	-1.50642
	setup	CLK_N (F)	0.56852	0.61018	1.58115

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)	-0.08422	-0.03818	0.36504
	hold	CLK_N (F)	-0.09107	-0.04917	0.32711
	setup	CLK_N (F)	0.29781	0.22617	-0.26738
	setup	CLK_N (F)	0.30619	0.23402	-0.23055
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08921	-0.04468	0.34162
	hold	CLK_N (F)	-0.09662	-0.05595	0.30403
	setup	CLK_N (F)	0.30664	0.23134	-0.24530
	setup	CLK_N (F)	0.30878	0.23915	-0.21045

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)	-0.47814	-0.54021	-1.44360
	hold	CLK_N (F)	-0.47788	-0.53615	-1.40807
	setup	CLK_N (F)	0.53280	0.57569	1.48145
	setup	CLK_N (F)	0.53370	0.57627	1.45843
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.51347	-0.57419	-1.53752
	hold	CLK_N (F)	-0.51102	-0.57083	-1.50642
	setup	CLK_N (F)	0.56852	0.60938	1.58115
	setup	CLK_N (F)	0.56812	0.61018	1.56075

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)	-0.06931	-0.04706	0.31167
	setup	CLK_N (F)	0.52020	0.49097	-0.11361
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.07725	-0.05349	0.28584
	setup	CLK_N (F)	0.55444	0.52514	-0.06827

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)	-0.14616	-0.13722	-0.00309
	setup	CLK_N (F)	0.43695	0.46931	1.24767
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.15385	-0.14572	-0.01374
	setup	CLK_N (F)	0.47422	0.50284	1.34403

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)	-0.46670	-0.45109	0.14159
	hold	CLK_N (F)	-0.06931	-0.04706	0.31167
	setup	CLK_N (F)	0.52020	0.49097	-0.11361
	setup	CLK_N (F)	0.28579	0.23515	-0.20080
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.49950	-0.48549	0.09890
	hold	CLK_N (F)	-0.07725	-0.05349	0.28584
	setup	CLK_N (F)	0.55444	0.52514	-0.06827
	setup	CLK_N (F)	0.28861	0.24022	-0.17860

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)	-0.14616	-0.13722	-0.00309
	hold	CLK_N (F)	-0.38811	-0.43542	-1.20303
	setup	CLK_N (F)	0.36001	0.32240	0.07977
	setup	CLK_N (F)	0.43695	0.46931	1.24767
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.15385	-0.14572	-0.01374
	hold	CLK_N (F)	-0.41957	-0.46647	-1.30413
	setup	CLK_N (F)	0.36563	0.33220	0.08738
	setup	CLK_N (F)	0.47422	0.50284	1.34403

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)	0.17867	0.11156	-0.70905
	removal	CLK_N (F)	0.04848	0.09806	0.88344
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.17713	0.10576	-0.72095
	removal	CLK_N (F)	0.05535	0.10337	0.89981

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)	0.17865	0.11138	-0.70905
	recovery	CLK_N (F)	0.17862	0.11156	-0.70905
	recovery	CLK_N (F)	0.17867	0.11151	-0.70930
	removal	CLK_N (F)	0.04848	0.09806	0.88344
	removal	CLK_N (F)	0.04848	0.09806	0.88344
	removal	CLK_N (F)	0.04848	0.09806	0.88344
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.17713	0.10576	-0.72122
	recovery	CLK_N (F)	0.17378	0.10546	-0.72095
	recovery	CLK_N (F)	0.17369	0.10551	-0.72102
	removal	CLK_N (F)	0.05535	0.10337	0.89981
	removal	CLK_N (F)	0.05490	0.10337	0.89981
	removal	CLK_N (F)	0.05490	0.10337	0.89981

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 ()	0.38223	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.33356	0.82031	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.38527	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.33660	0.82031	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)	-0.04434	-0.12656	-0.19838
	removal	CLK_N (F)	0.06733	0.14997	1.00049
	hold	RESET_B (R)	-0.10534	-0.16734	-0.63067
	setup	RESET_B (R)	0.22355	0.25505	0.86147
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.03852	-0.11787	0.07766
	removal	CLK_N (F)	0.06409	0.14195	0.96989
	hold	RESET_B (R)	-0.13423	-0.20525	-0.80661
	setup	RESET_B (R)	0.22387	0.27394	0.99354

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)	-0.04485	-0.12656	-0.20318
	recovery	CLK_N (F)	-0.04480	-0.12656	-0.20331
	recovery	CLK_N (F)	-0.04434	-0.12656	-0.19838
	removal	CLK_N (F)	0.06733	0.14997	0.99946
	removal	CLK_N (F)	0.06733	0.14997	0.99946
	removal	CLK_N (F)	0.06733	0.14997	1.00049
	hold	RESET_B (R)	-0.10534	-0.16916	-0.63067
	hold	RESET_B (R)	-0.10656	-0.16734	-0.63126
	setup	RESET_B (R)	0.22355	0.25505	0.84552
	setup	RESET_B (R)	0.17273	0.22574	0.86147
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.03852	-0.11837	0.07427
	recovery	CLK_N (F)	-0.03853	-0.11836	0.07641
	recovery	CLK_N (F)	-0.03877	-0.11787	0.07766
	removal	CLK_N (F)	0.06409	0.14195	0.96589
	removal	CLK_N (F)	0.06409	0.14195	0.96589
	removal	CLK_N (F)	0.06202	0.14195	0.96989
	hold	RESET_B (R)	-0.13838	-0.21205	-0.81752
	hold	RESET_B (R)	-0.13423	-0.20525	-0.80661
	setup	RESET_B (R)	0.22387	0.27394	0.99354
	setup	RESET_B (R)	0.17988	0.24609	0.98575

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 ()	0.22708	0.82031	16.50020
	min_pulse_width	SET_B ()	0.20578	0.82031	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.26054	0.82031	16.50020
	min_pulse_width	SET_B ()	0.24229	0.82031	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 ()	0.32443	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.24838	0.82031	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.33052	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.26359	0.82031	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 ()	0.29401	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.33660	0.82031	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.32443	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.34268	0.82031	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	0.01201	0.01233	0.01752
	CLK_N	0.01398	0.01430	0.01937
	SET_B	0.01266	0.01285	0.02246
	SET_B	0.01629	0.01651	0.02582
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01439	0.01487	0.02043
	CLK_N	0.01628	0.01677	0.02196
	SET_B	0.01504	0.01546	0.02553
	SET_B	0.01858	0.01902	0.02837

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01294	0.01329	0.01833
	CLK_N	0.01466	0.01501	0.01991
	RESET_B	0.01576	0.01598	0.01910
	RESET_B	0.01679	0.01701	0.01995
	SET_B	0.01648	0.01633	0.02285
	SET_B	0.01283	0.01267	0.01908
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01526	0.01593	0.02090
	CLK_N	0.01700	0.01768	0.02261
	RESET_B	0.01847	0.01897	0.02229
	RESET_B	0.01953	0.02004	0.02308
	SET_B	0.01911	0.01928	0.02561
	SET_B	0.01554	0.01568	0.02190

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01296	0.01331	0.01863
	CLK_N	0.01468	0.01503	0.02009
	RESET_B	0.01578	0.01600	0.01915
	RESET_B	0.01681	0.01703	0.02010
	SET_B	0.01650	0.01638	0.02309
	SET_B	0.01285	0.01269	0.01922
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01528	0.01595	0.02160
	CLK_N	0.01702	0.01770	0.02287
	RESET_B	0.01849	0.01901	0.02253
	RESET_B	0.01955	0.02007	0.02326
	SET_B	0.01913	0.01926	0.02616
	SET_B	0.01556	0.01571	0.02212

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01199	0.01231	0.01726
	CLK_N	0.01396	0.01428	0.01921
	SET_B	0.01261	0.01281	0.02195
	SET_B	0.01624	0.01645	0.02551
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01436	0.01486	0.02018
	CLK_N	0.01625	0.01675	0.02186
	SET_B	0.01499	0.01543	0.02447
	SET_B	0.01853	0.01896	0.02797

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)**	0.00100	0.00100	0.00100
	(CLK_N * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01024	0.01008	0.01492
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00798	0.00784	0.01266
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00713	0.00702	0.01150
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00449	0.00438	0.00886
	(CLK_N * !SCD * SCE)	0.00043	0.00043	0.00041
	(CLK_N * !SCD * SCE)	-0.00127	-0.00128	-0.00130
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00600	0.00590	0.01033
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00338	0.00328	0.00771
	(!CLK_N * SCD * SCE)	0.00100	0.00101	0.00101
	(!CLK_N * SCD * SCE)	-0.00050	-0.00051	-0.00051
	(!CLK_N * !SCE)	0.00397	0.00385	0.00901
	(!CLK_N * !SCE)	0.00135	0.00124	0.00639
	(!CLK_N * !SCD * SCE)	0.00043	0.00043	0.00041
	(!CLK_N * !SCD * SCE)	-0.00127	-0.00129	-0.00131

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00103	0.00103	0.00103
	(CLK_N * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01034	0.01017	0.01492
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00801	0.00785	0.01261
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00726	0.00714	0.01156
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00458	0.00447	0.00888
	(CLK_N * !SCD * SCE)	0.00046	0.00046	0.00044
	(CLK_N * !SCD * SCE)	-0.00128	-0.00128	-0.00131
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00606	0.00594	0.01031
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00339	0.00328	0.00765
	(!CLK_N * SCD * SCE)	0.00103	0.00103	0.00103
	(!CLK_N * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(!CLK_N * !SCE)	0.00393	0.00381	0.00891
	(!CLK_N * !SCE)	0.00126	0.00114	0.00625
	(!CLK_N * !SCD * SCE)	0.00046	0.00046	0.00044
	(!CLK_N * !SCD * SCE)	-0.00128	-0.00129	-0.00131

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)**	-0.00094	-0.00095	-0.00098
	(CLK_N * SCD * SCE)	0.00057	0.00057	0.00055
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00986	0.00984	0.01539
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01211	0.01209	0.01765
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00319	0.00322	0.00831
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00583	0.00586	0.01095
	(CLK_N * !SCD * SCE)	-0.00039	-0.00039	-0.00038
	(CLK_N * !SCD * SCE)	0.00132	0.00132	0.00132
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00407	0.00410	0.00930
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00669	0.00672	0.01190
	(!CLK_N * SCD * SCE)	-0.00094	-0.00094	-0.00098
	(!CLK_N * SCD * SCE)	0.00058	0.00057	0.00055
	(!CLK_N * !SCE)	0.00198	0.00205	0.00759
	(!CLK_N * !SCE)	0.00460	0.00467	0.01020
	(!CLK_N * !SCD * SCE)	-0.00039	-0.00039	-0.00038
	(!CLK_N * !SCD * SCE)	0.00132	0.00132	0.00131

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00097	-0.00098	-0.00101
	(CLK_N * SCD * SCE)	0.00057	0.00057	0.00055
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01067	0.01065	0.01614
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01300	0.01297	0.01846
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00348	0.00350	0.00854
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00617	0.00619	0.01123
	(CLK_N * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK_N * !SCD * SCE)	0.00132	0.00132	0.00132
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00444	0.00446	0.00960
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00710	0.00712	0.01226
	(!CLK_N * SCD * SCE)	-0.00097	-0.00098	-0.00101
	(!CLK_N * SCD * SCE)	0.00057	0.00057	0.00055
	(!CLK_N * !SCE)	0.00223	0.00228	0.00778
	(!CLK_N * !SCE)	0.00488	0.00494	0.01043
	(!CLK_N * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK_N * !SCD * SCE)	0.00132	0.00132	0.00132

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)**	0.00864	0.00853	0.01168
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00522	0.00511	0.00827
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01172	0.01158	0.01499
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00869	0.00855	0.01197
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00750	0.00739	0.01051
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00411	0.00400	0.00713
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00942	0.00931	0.01229
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00580	0.00569	0.00869
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01250	0.01237	0.01564
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00927	0.00913	0.01242
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00828	0.00818	0.01112
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00469	0.00458	0.00754
	(!CLK_N * D * SCE)	0.00548	0.00536	0.00885
	(!CLK_N * D * SCE)	0.00209	0.00196	0.00547
	(!CLK_N * !D * SCE)	0.00626	0.00614	0.00944
	(!CLK_N * !D * SCE)	0.00267	0.00254	0.00586
	!SCE	0.00090	0.00077	0.00075
	!SCE	-0.00095	-0.00110	-0.00112

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00872	0.00862	0.01174
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00533	0.00521	0.00835
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01177	0.01163	0.01501
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00874	0.00859	0.01198
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00751	0.00740	0.01049
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00414	0.00403	0.00712
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00949	0.00939	0.01235
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00590	0.00579	0.00877
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01255	0.01241	0.01564
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00930	0.00916	0.01240
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00828	0.00817	0.01111
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00471	0.00460	0.00754
	(!CLK_N * D * SCE)	0.00538	0.00527	0.00874
	(!CLK_N * D * SCE)	0.00202	0.00189	0.00538
	(!CLK_N * !D * SCE)	0.00616	0.00604	0.00933
	(!CLK_N * !D * SCE)	0.00259	0.00246	0.00576
	!SCE	0.00091	0.00077	0.00075
	!SCE	-0.00097	-0.00111	-0.00113

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)**	0.00449	0.00442	0.00768
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00792	0.00786	0.01109
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01113	0.01103	0.01468
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01417	0.01408	0.01770
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00538	0.00531	0.00864
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00877	0.00872	0.01202
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00413	0.00406	0.00741
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00775	0.00768	0.01102
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01079	0.01069	0.01443
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01402	0.01392	0.01764
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00501	0.00495	0.00838
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00861	0.00854	0.01195
	(!CLK_N * D * SCE)	0.00330	0.00323	0.00681
	(!CLK_N * D * SCE)	0.00670	0.00664	0.01019
	(!CLK_N * !D * SCE)	0.00294	0.00288	0.00656
	(!CLK_N * !D * SCE)	0.00653	0.00647	0.01014
	!SCE	-0.00071	-0.00073	-0.00074
	!SCE	0.00113	0.00114	0.00114

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00479	0.00472	0.00795
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00820	0.00814	0.01134
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01198	0.01187	0.01546
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01501	0.01491	0.01849
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00575	0.00568	0.00899
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00913	0.00907	0.01235
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00443	0.00436	0.00768
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00804	0.00797	0.01127
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01162	0.01152	0.01529
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01485	0.01476	0.01851
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00538	0.00532	0.00872
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00896	0.00889	0.01228
	(!CLK_N * D * SCE)	0.00355	0.00348	0.00703
	(!CLK_N * D * SCE)	0.00693	0.00687	0.01039
	(!CLK_N * !D * SCE)	0.00318	0.00312	0.00678
	(!CLK_N * !D * SCE)	0.00677	0.00670	0.01034
	!SCE	-0.00072	-0.00073	-0.00073
	!SCE	0.00115	0.00115	0.00115

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)	0.00433	0.00423	0.01084
	(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)	-0.00042	-0.00053	0.00609
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01569	0.01579	0.02240
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01185	0.01193	0.01851
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00905	0.00915	0.01576
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00561	0.00568	0.01225
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00995	0.01005	0.01667
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00647	0.00654	0.01314
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01118	0.01114	0.02154
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00523	0.00519	0.01562
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01427	0.01420	0.02493
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00871	0.00863	0.01938
	(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)	0.00434	0.00438	0.01094
	(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)	-0.00012	-0.00010	0.00648
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01004	0.01000	0.02037
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00412	0.00407	0.01446
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00442	0.00433	0.01093
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00032	-0.00043	0.00618
	(!CLK_N * D * !SCD)	0.00803	0.00807	0.01471
	(!CLK_N * D * !SCD)	0.00456	0.00457	0.01118
	(!CLK_N * !D * SCD)	0.00812	0.00808	0.01889
	(!CLK_N * !D * SCD)	0.00219	0.00215	0.01298

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)	0.00439	0.00430	0.01091
	(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)	-0.00041	-0.00053	0.00610
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01657	0.01666	0.02328
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01272	0.01279	0.01937
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00939	0.00950	0.01610
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00590	0.00600	0.01256
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01035	0.01048	0.01710
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00684	0.00693	0.01353
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01134	0.01131	0.02167
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00532	0.00528	0.01567
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01441	0.01430	0.02502
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00874	0.00865	0.01938
	(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)	0.00439	0.00443	0.01099
	(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)	-0.00013	-0.00011	0.00648
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01013	0.01009	0.02042
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00413	0.00408	0.01444
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00449	0.00439	0.01100
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00032	-0.00043	0.00619
	(!CLK_N * D * !SCD)	0.00832	0.00838	0.01501
	(!CLK_N * D * !SCD)	0.00481	0.00484	0.01145
	(!CLK_N * !D * SCD)	0.00811	0.00806	0.01886
	(!CLK_N * !D * SCD)	0.00211	0.00207	0.01288

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)**	-0.00037	-0.00001	0.00686
	(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)	0.00435	0.00475	0.01160
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00973	0.01002	0.01674
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01359	0.01389	0.02051
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00663	0.00692	0.01367
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01011	0.01042	0.01706
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00550	0.00579	0.01253
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00899	0.00930	0.01593
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00326	0.00340	0.01399
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00920	0.00934	0.01993
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00992	0.01001	0.02091
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01547	0.01556	0.02647
	(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)	-0.00016	0.00012	0.00694
	(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)	0.00429	0.00458	0.01142
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00415	0.00428	0.01497
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01005	0.01020	0.02087
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00046	-0.00009	0.00678
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00426	0.00466	0.01151
	(!CLK_N * D * !SCD)	0.00341	0.00362	0.01044
	(!CLK_N * D * !SCD)	0.00690	0.00715	0.01382
	(!CLK_N * !D * SCD)	0.00197	0.00212	0.01314
	(!CLK_N * !D * SCD)	0.00787	0.00804	0.01906

	(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)	-0.00044	-0.00007	0.00680
	(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)	0.00435	0.00474	0.01160
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00975	0.01004	0.01674
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01362	0.01392	0.02052
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00669	0.00698	0.01373
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01020	0.01051	0.01714
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00548	0.00577	0.01251
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00901	0.00932	0.01594
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00352	0.00364	0.01419
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00953	0.00966	0.02021
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)**	0.01070	0.01078	0.02164
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01635	0.01643	0.02730
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00021	0.00007	0.00690
	(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)	0.00430	0.00460	0.01143
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00447	0.00460	0.01524
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01045	0.01060	0.02123
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00053	-0.00016	0.00670
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00425	0.00462	0.01150
	(!CLK_N * D * !SCD)	0.00328	0.00350	0.01032
	(!CLK_N * D * !SCD)	0.00682	0.00706	0.01375
	(!CLK_N * !D * SCD)	0.00217	0.00231	0.01329
	(!CLK_N * !D * SCD)	0.00815	0.00829	0.01928

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)	0.01064	0.01047	0.01612
	(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)	0.00833	0.00816	0.01380
	(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)	0.00635	0.00633	0.01200
	(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)	0.00368	0.00365	0.00933
	(!SET_B * Q * !Q_N)	0.00633	0.00630	0.01213
	(!SET_B * Q * !Q_N)	0.00361	0.00357	0.00941

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)**	0.01036	0.01018	0.01584
	(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)	0.00810	0.00792	0.01358
	(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)	0.00606	0.00602	0.01172
	(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)	0.00346	0.00343	0.00913
	(!SET_B * Q * !Q_N)	0.00617	0.00613	0.01200
	(!SET_B * Q * !Q_N)	0.00354	0.00349	0.00935

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)**	0.00928	0.00932	0.01565
	(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)	0.01159	0.01163	0.01796
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00296	0.00305	0.00920
	(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)	0.00564	0.00571	0.01187
	(!SET_B * Q * !Q_N)	0.00211	0.00225	0.00847
	(!SET_B * Q * !Q_N)	0.00485	0.00500	0.01121

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)**	0.00984	0.00992	0.01620
	(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)	0.01211	0.01218	0.01846
	(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)	0.00310	0.00321	0.00935
	(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)	0.00570	0.00581	0.01195
	(!SET_B * Q * !Q_N)	0.00213	0.00227	0.00849
	(!SET_B * Q * !Q_N)	0.00479	0.00492	0.01114

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)**	0.00271	0.00273	0.00272
	(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)	-0.00361	-0.00363	-0.00362
	(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)	0.00959	0.00931	0.01597
	(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)	0.00278	0.00249	0.00915

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)**	0.00279	0.00282	0.00280
	(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)	-0.00350	-0.00352	-0.00350
	(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)	0.01014	0.00984	0.01640
	(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)	0.00338	0.00311	0.00965

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)**	-0.00265	-0.00271	-0.00270
	(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)	0.00371	0.00368	0.00365
	(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)	0.00150	0.00155	0.00986
	(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)	0.00828	0.00839	0.01668

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)**	-0.00272	-0.00279	-0.00278
	(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)	0.00357	0.00357	0.00354
	(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)	0.00137	0.00145	0.00971
	(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)	0.00812	0.00823	0.01647

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)	0.01752	0.01744	0.02725
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01418	0.01411	0.02392
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01089	0.01067	0.01994
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00719	0.00699	0.01624
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01760	0.01752	0.02733
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01426	0.01419	0.02400
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01096	0.01074	0.02001
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00725	0.00706	0.01631
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01889	0.01856	0.02789
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01485	0.01453	0.02387
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01081	0.01061	0.01992
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00711	0.00691	0.01623
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01194	0.01164	0.02112
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00826	0.00796	0.01746
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01335	0.01325	0.02301
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00964	0.00955	0.01932
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01341	0.01332	0.02307
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00971	0.00962	0.01939
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01752	0.01744	0.02726
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01418	0.01411	0.02393
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01089	0.01067	0.01994
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00719	0.00699	0.01625
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01892	0.01860	0.02794
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01486	0.01454	0.02389
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01889	0.01856	0.02790
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01484	0.01452	0.02386
	(!D * !SCE * SET_B * !Q * Q_N)	0.01088	0.01067	0.01999
	(!D * !SCE * SET_B * !Q * Q_N)	0.00718	0.00697	0.01630
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01201	0.01170	0.02118
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00833	0.00802	0.01751
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01082	0.01060	0.01992
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00711	0.00691	0.01623
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01194	0.01164	0.02113
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00826	0.00796	0.01746
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01335	0.01325	0.02301
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00964	0.00955	0.01932

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01769	0.01760	0.02740
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01437	0.01429	0.02409
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01079	0.01058	0.01985
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00714	0.00694	0.01622
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01777	0.01767	0.02747
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01445	0.01436	0.02416
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01086	0.01064	0.01991
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00720	0.00700	0.01628
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01929	0.01897	0.02830
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01532	0.01501	0.02435
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01077	0.01055	0.01988
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00711	0.00691	0.01623
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01183	0.01153	0.02102
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00819	0.00789	0.01739
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01343	0.01332	0.02309
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00978	0.00968	0.01944
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01349	0.01339	0.02315
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00984	0.00974	0.01950
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01770	0.01760	0.02740
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01438	0.01429	0.02410
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01080	0.01058	0.01985
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00714	0.00694	0.01622
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01932	0.01900	0.02834
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01533	0.01502	0.02436
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01929	0.01895	0.02830
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01531	0.01499	0.02434
	(!D * !SCE * SET_B * !Q * Q_N)	0.01083	0.01061	0.01994
	(!D * !SCE * SET_B * !Q * Q_N)	0.00717	0.00697	0.01629
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01189	0.01159	0.02108
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00825	0.00795	0.01746
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01077	0.01055	0.01988
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00711	0.00691	0.01623
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01183	0.01153	0.02102
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00820	0.00790	0.01740
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01343	0.01333	0.02309
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00978	0.00968	0.01944

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)**	0.00823	0.00839	0.01844
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01193	0.01209	0.02212
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00816	0.00832	0.01837
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01186	0.01203	0.02206
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00872	0.00885	0.01882
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01241	0.01254	0.02252
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01141	0.01148	0.02181
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01509	0.01517	0.02550
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01151	0.01166	0.02139
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01520	0.01536	0.02509
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01144	0.01156	0.02133
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01513	0.01525	0.02502
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00823	0.00839	0.01844
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01193	0.01209	0.02213
	(!D * !SCE * SET_B * !Q * Q_N)	0.00865	0.00878	0.01875
	(!D * !SCE * SET_B * !Q * Q_N)	0.01234	0.01248	0.02245
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01134	0.01141	0.02174
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01502	0.01510	0.02543
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00872	0.00885	0.01882
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01241	0.01254	0.02251
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01140	0.01148	0.02182
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01508	0.01517	0.02549
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01151	0.01167	0.02140
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01520	0.01536	0.02509

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00822	0.00838	0.01843
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01186	0.01204	0.02208
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00816	0.00832	0.01837
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01180	0.01195	0.02202
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00867	0.00880	0.01877
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01231	0.01245	0.02242
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01141	0.01147	0.02182
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01504	0.01512	0.02544
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01166	0.01179	0.02151
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01530	0.01544	0.02516
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01160	0.01173	0.02145
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01524	0.01538	0.02510
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00822	0.00839	0.01843
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01186	0.01202	0.02208
	(!D * !SCE * SET_B * !Q * Q_N)	0.00860	0.00874	0.01871
	(!D * !SCE * SET_B * !Q * Q_N)	0.01224	0.01239	0.02236
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01134	0.01141	0.02175
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01497	0.01505	0.02538
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00867	0.00881	0.01877
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01231	0.01246	0.02242
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01140	0.01147	0.02183
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01503	0.01511	0.02545
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01167	0.01179	0.02151
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01531	0.01545	0.02516

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00196	0.00179	0.00405	0.00170	0.00633	0.00303	0.73873	0.70862

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbp_1	0.00000	1.06095	1.87896

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)	0.62603	1.33130	7.81071
	SET_B->Q (FR)	0.27292	1.13110	8.64181

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.48673	0.89033	3.57397
	RESET_B->Q (FF)	0.39829	0.95729	4.58009
	SET_B->Q (RF)	0.25301	0.66520	3.48614

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)	0.42332	1.14866	7.68637
	RESET_B->Q_N (FR)	0.33489	1.22492	8.71595
	SET_B->Q_N (RR)	0.18978	0.93704	7.76463

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)	0.52857	1.02402	3.68236
	SET_B->Q_N (FF)	0.19128	0.81263	4.73993

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)	-0.14826	-0.23617	-0.93772
	setup	CLK (R)	0.22302	0.27581	0.98707

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)	-0.33830	-0.39736	-1.84116
	setup	CLK (R)	0.46548	0.49865	1.98572

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)	-0.14826	-0.23617	-0.93772
	setup	CLK (R)	0.22302	0.27581	0.98707

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)	-0.33830	-0.39736	-1.84116
	setup	CLK (R)	0.46548	0.49865	1.98572

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)	-0.18113	-0.25269	-1.04766
	setup	CLK (R)	0.26405	0.30149	1.11755

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)	-0.44253	-0.50634	-2.03902
	setup	CLK (R)	0.57385	0.61225	2.17487

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)	-0.18113	-0.25269	-1.04766
	hold	CLK (R)	-0.18690	-0.26112	-1.07038
	setup	CLK (R)	0.25960	0.29364	1.09129
	setup	CLK (R)	0.26405	0.30149	1.11755

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)	-0.44253	-0.50837	-2.04186
	hold	CLK (R)	-0.44383	-0.50634	-2.03902
	setup	CLK (R)	0.57007	0.60897	2.17487
	setup	CLK (R)	0.57385	0.61225	2.16995

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)	-0.16600	-0.26461	-0.42435
	setup	CLK (R)	0.55996	0.52668	1.11895

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)	-0.24769	-0.35583	-1.43943
	setup	CLK (R)	0.47168	0.49880	1.93369

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)	-0.43043	-0.42291	-0.42435
	hold	CLK (R)	-0.16600	-0.26461	-1.07307
	setup	CLK (R)	0.55996	0.52668	0.56224
	setup	CLK (R)	0.24360	0.30231	1.11895

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)	-0.24769	-0.35583	-1.43943
	hold	CLK (R)	-0.34546	-0.39973	-1.78077
	setup	CLK (R)	0.32150	0.39423	1.48125
	setup	CLK (R)	0.47168	0.49880	1.93369

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)	0.13001	0.13764	0.25231
	removal	CLK (R)	-0.04892	-0.06659	-0.11599

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)	0.13001	0.13697	0.25216
	recovery	CLK (R)	0.12993	0.13692	0.25231
	recovery	CLK (R)	0.12928	0.13764	0.25154
	removal	CLK (R)	-0.05292	-0.06659	-0.11599
	removal	CLK (R)	-0.04892	-0.06659	-0.11599
	removal	CLK (R)	-0.04892	-0.06659	-0.11599

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 ()	0.32747	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.33964	0.82031	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)	0.02618	0.00000	1.60623
	removal	CLK (R)	0.11092	0.14069	0.22218
	hold	RESET_B (R)	-0.10793	-0.17933	-0.69090
	setup	RESET_B (R)	0.19764	0.24719	0.91627

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)	0.02608	0.00000	1.60509
	recovery	CLK (R)	0.02618	0.00000	1.60623
	recovery	CLK (R)	0.02591	0.00000	1.60548
	removal	CLK (R)	0.11092	0.14069	0.22218
	removal	CLK (R)	0.11092	0.14069	0.22218
	removal	CLK (R)	0.11092	0.14069	0.22218
	hold	RESET_B (R)	-0.10907	-0.17933	-0.69204
	hold	RESET_B (R)	-0.10793	-0.18091	-0.69090
	setup	RESET_B (R)	0.18899	0.23806	0.91380
	setup	RESET_B (R)	0.19764	0.24719	0.91627

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 ()	0.18449	0.82031	16.50020
	min_pulse_width	SET_B ()	0.19970	0.82031	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 ()	0.17232	0.82031	16.50020
	min_pulse_width	CLK ()	0.20883	0.82031	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 ()	0.29401	0.82031	16.50020
	min_pulse_width	CLK ()	0.44612	0.82031	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	0.01408	0.01432	0.01953
	CLK	0.01221	0.01243	0.01739
	SET_B	0.01245	0.01261	0.02220
	SET_B	0.01633	0.01651	0.02594

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01411	0.01422	0.01902
	CLK	0.01206	0.01218	0.01687
	RESET_B	0.01447	0.01465	0.01790
	RESET_B	0.01541	0.01558	0.01860
	SET_B	0.01559	0.01533	0.02193
	SET_B	0.01169	0.01143	0.01795

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01413	0.01426	0.01937
	CLK	0.01207	0.01221	0.01714
	RESET_B	0.01449	0.01467	0.01786
	RESET_B	0.01543	0.01560	0.01877
	SET_B	0.01561	0.01540	0.02221
	SET_B	0.01171	0.01145	0.01815

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01406	0.01432	0.01906
	CLK	0.01219	0.01245	0.01712
	SET_B	0.01240	0.01256	0.02203
	SET_B	0.01628	0.01644	0.02570

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00101	0.00102	0.00102
	(CLK * SCD * SCE)	-0.00050	-0.00051	-0.00051
	(CLK * !SCE)	0.00385	0.00375	0.00909
	(CLK * !SCE)	0.00121	0.00111	0.00645
	(CLK * !SCD * SCE)	0.00044	0.00044	0.00042
	(CLK * !SCD * SCE)	-0.00127	-0.00128	-0.00130
	(!CLK * SCD * SCE)	0.00101	0.00102	0.00101
	(!CLK * SCD * SCE)	-0.00051	-0.00052	-0.00051
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01019	0.01002	0.01493
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00773	0.00758	0.01248
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00682	0.00671	0.01123
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00395	0.00385	0.00838
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00042
	(!CLK * !SCD * SCE)	-0.00127	-0.00128	-0.00130
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00581	0.00570	0.01019
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00296	0.00285	0.00734

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00095	-0.00096	-0.00099
	(CLK * SCD * SCE)	0.00057	0.00057	0.00055
	(CLK * !SCE)	0.00105	0.00117	0.00680
	(CLK * !SCE)	0.00370	0.00381	0.00944
	(CLK * !SCD * SCE)	-0.00039	-0.00039	-0.00039
	(CLK * !SCD * SCE)	0.00132	0.00132	0.00131
	(!CLK * SCD * SCE)	-0.00095	-0.00096	-0.00099
	(!CLK * SCD * SCE)	0.00057	0.00057	0.00054
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00795	0.00796	0.01362
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01042	0.01042	0.01608
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00307	0.00310	0.00821
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00594	0.00597	0.01107
	(!CLK * !SCD * SCE)	-0.00039	-0.00039	-0.00039
	(!CLK * !SCD * SCE)	0.00132	0.00132	0.00131
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00380	0.00383	0.00904
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00665	0.00668	0.01189

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00538	0.00526	0.00884
	(CLK * D * SCE)	0.00198	0.00185	0.00544
	(CLK * !D * SCE)	0.00617	0.00605	0.00941
	(CLK * !D * SCE)	0.00256	0.00242	0.00582
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00833	0.00822	0.01140
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00471	0.00459	0.00778
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01168	0.01153	0.01497
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00846	0.00831	0.01176
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00733	0.00722	0.01036
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00371	0.00359	0.00674
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00912	0.00901	0.01201
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00529	0.00517	0.00820
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01247	0.01233	0.01556
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00904	0.00890	0.01215
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00811	0.00800	0.01097
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00429	0.00418	0.00717
	!SCE	0.00092	0.00078	0.00076
	!SCE	-0.00096	-0.00111	-0.00112

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00237	0.00230	0.00595
	(CLK * D * SCE)	0.00578	0.00571	0.00934
	(CLK * !D * SCE)	0.00202	0.00195	0.00572
	(CLK * !D * SCE)	0.00563	0.00556	0.00931
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00435	0.00428	0.00755
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00800	0.00793	0.01117
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00924	0.00912	0.01288
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01246	0.01236	0.01609
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00508	0.00501	0.00837
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00871	0.00863	0.01197
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00400	0.00394	0.00730
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00784	0.00777	0.01111
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00889	0.00879	0.01264
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01231	0.01222	0.01605
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00473	0.00466	0.00812
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00855	0.00848	0.01192
	!SCE	-0.00072	-0.00073	-0.00073
	!SCE	0.00116	0.00115	0.00115

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)**	0.00428	0.00419	0.01075
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00037	-0.00050	0.00608
	(CLK * D * !SCD)	0.00700	0.00701	0.01361
	(CLK * D * !SCD)	0.00362	0.00360	0.01018
	(CLK * !D * SCD)	0.00789	0.00786	0.01873
	(CLK * !D * SCD)	0.00203	0.00199	0.01288
	(!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)	0.00445	0.00435	0.01091
	(!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	-0.00034	0.00625
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01391	0.01399	0.02058
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01035	0.01042	0.01697
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00905	0.00914	0.01571
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00590	0.00597	0.01250
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00979	0.00987	0.01646
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00662	0.00670	0.01325
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01100	0.01095	0.02136
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00492	0.00487	0.01530
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01437	0.01426	0.02500
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00869	0.00859	0.01934
	(!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)	0.00448	0.00450	0.01103
	(!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)	0.00010	0.00011	0.00666
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01000	0.00994	0.02031
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00393	0.00388	0.01426

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)**	-0.00028	0.00008	0.00691
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00436	0.00474	0.01157
	(CLK * D * !SCD)	0.00346	0.00365	0.01047
	(CLK * D * !SCD)	0.00686	0.00708	0.01376
	(CLK * !D * SCD)	0.00121	0.00138	0.01249
	(CLK * !D * SCD)	0.00705	0.00724	0.01833
	(!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)	-0.00045	-0.00009	0.00674
	(!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)	0.00419	0.00458	0.01139
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00958	0.00987	0.01654
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01317	0.01345	0.02002
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00622	0.00650	0.01323
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00940	0.00969	0.01631
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00521	0.00550	0.01222
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00840	0.00868	0.01531
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00305	0.00319	0.01376
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00912	0.00927	0.01984
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00793	0.00804	0.01900
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01359	0.01370	0.02466
	(!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)	-0.00025	0.00002	0.00681
	(!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)	0.00412	0.00441	0.01120
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00378	0.00392	0.01460
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00983	0.00999	0.02064

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)	0.00538	0.00536	0.01121
	(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)	0.00316	0.00312	0.00898
	(!SET_B * Q * !Q_N)	0.00579	0.00576	0.01179
	(!SET_B * Q * !Q_N)	0.00352	0.00348	0.00952
	(!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)	0.00997	0.00976	0.01556
	(!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)	0.00814	0.00793	0.01373

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)	0.00281	0.00289	0.00912
	(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)	0.00504	0.00513	0.01135
	(!SET_B * Q * !Q_N)	0.00151	0.00167	0.00797
	(!SET_B * Q * !Q_N)	0.00381	0.00396	0.01025
	(!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)	0.00764	0.00765	0.01408
	(!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)	0.00947	0.00948	0.01592

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)	0.00284	0.00287	0.00284
	(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)	-0.00427	-0.00429	-0.00427
	(!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)	0.00772	0.00747	0.01447
	(!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)	0.00011	-0.00018	0.00686

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)	-0.00275	-0.00284	-0.00283
	(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)	0.00433	0.00435	0.00430
	(!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)	0.00197	0.00200	0.01049
	(!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)	0.00956	0.00964	0.01811

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)**	0.01247	0.01226	0.02144
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00853	0.00833	0.01751
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01266	0.01245	0.02162
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00872	0.00852	0.01770
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01254	0.01230	0.02153
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00860	0.00836	0.01762
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01591	0.01570	0.02497
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01175	0.01154	0.02082
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01507	0.01476	0.02401
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01135	0.01104	0.02030
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01526	0.01495	0.02419
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01155	0.01123	0.02049
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01247	0.01226	0.02144
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00853	0.00833	0.01751
	(!D * !SCE * SET_B * !Q * Q_N)	0.01272	0.01249	0.02174
	(!D * !SCE * SET_B * !Q * Q_N)	0.00879	0.00855	0.01782
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01609	0.01589	0.02516
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01194	0.01173	0.02101
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01254	0.01230	0.02153
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00860	0.00837	0.01762
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01591	0.01569	0.02495
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01176	0.01154	0.02081
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01507	0.01476	0.02401
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01136	0.01104	0.02030

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)	0.01316	0.01328	0.02316
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01725	0.01738	0.02727
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00663	0.00679	0.01680
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01055	0.01072	0.02074
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01297	0.01311	0.02298
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01707	0.01720	0.02709
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00644	0.00660	0.01661
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01036	0.01053	0.02055
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01434	0.01459	0.02508
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01813	0.01837	0.02888
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00696	0.00720	0.01701
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01087	0.01113	0.02093
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00932	0.00956	0.01981
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01346	0.01373	0.02396
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00846	0.00865	0.01861
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01216	0.01237	0.02231
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00826	0.00845	0.01842
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01197	0.01217	0.02212
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01315	0.01328	0.02317
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01725	0.01737	0.02728
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00663	0.00679	0.01681
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01055	0.01072	0.02074
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01412	0.01435	0.02463
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01788	0.01811	0.02840
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01435	0.01460	0.02484
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01812	0.01837	0.02861
	(!D * !SCE * SET_B * !Q * Q_N)	0.00676	0.00701	0.01682
	(!D * !SCE * SET_B * !Q * Q_N)	0.01068	0.01094	0.02074
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00913	0.00937	0.01958
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01327	0.01353	0.02373
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00696	0.00720	0.01701
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01087	0.01113	0.02093
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00933	0.00955	0.01977
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01347	0.01372	0.02392
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00846	0.00865	0.01861
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01216	0.01237	0.02232

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00187	0.00193	0.00423	0.00575	0.00317	0.76332	0.76499
sky130_fd_sc_hs__sdfrbp_2	0.00190	0.00195	0.00434	0.00585	0.00311	1.51635	1.51298

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.69249	1.28739
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.74269	1.34757

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)	0.39052	1.08659	7.66650
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.47024	1.04733	7.91805

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.35272	0.76121	3.47587
	RESET_B->Q (FF)	0.51774	1.13903	5.55215
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.40241	0.77389	3.60990
	RESET_B->Q (FF)	0.57303	1.15784	5.70334

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)	0.28798	1.00970	7.51675
	RESET_B->Q_N (FR)	0.45271	1.38239	9.58980
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.29003	0.90977	7.49674
	RESET_B->Q_N (FR)	0.46035	1.28856	9.58266

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)	0.29507	0.80360	3.71445
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.32669	0.80940	3.68846

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)	-0.15512	-0.27699	-1.20506
	setup	CLK (R)	0.31543	0.37577	1.30863
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16093	-0.28496	-1.24326
	setup	CLK (R)	0.30672	0.37250	1.34368

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)	-0.14968	-0.27975	-1.75109
	setup	CLK (R)	0.44939	0.49950	2.05694
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.18560	-0.31747	-1.89646
	setup	CLK (R)	0.46977	0.52013	2.11329

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)	-0.15512	-0.27699	-1.20536
	hold	CLK (R)	-0.15697	-0.27730	-1.20506
	setup	CLK (R)	0.31492	0.37513	1.30690
	setup	CLK (R)	0.31543	0.37577	1.30863
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16093	-0.28496	-1.24326
	hold	CLK (R)	-0.16269	-0.28581	-1.24369
	setup	CLK (R)	0.30672	0.37231	1.34360
	setup	CLK (R)	0.30567	0.37250	1.34368

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)	-0.14968	-0.27975	-1.75109
	hold	CLK (R)	-0.14986	-0.27975	-1.75216
	setup	CLK (R)	0.44939	0.49950	2.05694
	setup	CLK (R)	0.44898	0.49825	2.05396
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.18895	-0.31747	-1.89703
	hold	CLK (R)	-0.18560	-0.32000	-1.89646
	setup	CLK (R)	0.46977	0.52013	2.11329
	setup	CLK (R)	0.46862	0.51864	2.11089

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)	-0.19711	-0.30645	-1.31590
	setup	CLK (R)	0.36468	0.40944	1.42039
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.19732	-0.30899	-1.33914
	setup	CLK (R)	0.35221	0.40314	1.44834

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)	-0.19444	-0.33756	-1.98053
	setup	CLK (R)	0.54939	0.59014	2.24672
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.23786	-0.37716	-2.10155
	setup	CLK (R)	0.57006	0.60825	2.29583

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)	-0.19711	-0.30645	-1.31590
	hold	CLK (R)	-0.20824	-0.31897	-1.33539
	setup	CLK (R)	0.35763	0.39960	1.39939
	setup	CLK (R)	0.36468	0.40944	1.42039
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.19732	-0.30899	-1.33914
	hold	CLK (R)	-0.21075	-0.32534	-1.36502
	setup	CLK (R)	0.34343	0.39416	1.42311
	setup	CLK (R)	0.35221	0.40314	1.44834

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)	-0.21433	-0.35475	-1.99725
	hold	CLK (R)	-0.19444	-0.33756	-1.98053
	setup	CLK (R)	0.54468	0.58886	2.24256
	setup	CLK (R)	0.54939	0.59014	2.24672
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.25454	-0.39447	-2.10155
	hold	CLK (R)	-0.23786	-0.37716	-2.11498
	setup	CLK (R)	0.56519	0.60763	2.28427
	setup	CLK (R)	0.57006	0.60825	2.29583

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)	-0.17017	-0.29625	-0.47759
	setup	CLK (R)	0.54501	0.53763	1.37677
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17194	-0.30016	-0.51784
	setup	CLK (R)	0.55959	0.55113	1.40128

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)	-0.16978	-0.28913	-1.65947
	setup	CLK (R)	0.46910	0.51712	2.03680
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.20327	-0.32500	-1.63594
	setup	CLK (R)	0.48552	0.53010	2.08027

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)	-0.21175	-0.30242	-0.47759
	hold	CLK (R)	-0.17017	-0.29625	-1.28181
	setup	CLK (R)	0.54501	0.53763	0.66136
	setup	CLK (R)	0.32665	0.38747	1.37677
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.25305	-0.33588	-0.51784
	hold	CLK (R)	-0.17194	-0.30016	-1.31203
	setup	CLK (R)	0.55959	0.55113	0.64992
	setup	CLK (R)	0.31227	0.38485	1.40128

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)	-0.27258	-0.42366	-1.65947
	hold	CLK (R)	-0.16978	-0.28913	-1.75817
	setup	CLK (R)	0.43475	0.51712	1.71337
	setup	CLK (R)	0.46910	0.51114	2.03680
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.27273	-0.42137	-1.63594
	hold	CLK (R)	-0.20327	-0.32500	-1.88891
	setup	CLK (R)	0.41903	0.50369	1.69295
	setup	CLK (R)	0.48552	0.53010	2.08027

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)	0.39382	0.41891	1.43586
	removal	CLK (R)	-0.27782	-0.32734	-1.25298
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.38231	0.41199	1.44625
	removal	CLK (R)	-0.29207	-0.34094	-1.28556

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)	0.38742	0.41187	1.42470
	recovery	CLK (R)	0.36881	0.38836	1.33034
	recovery	CLK (R)	0.36301	0.37897	1.29793
	recovery	CLK (R)	0.39382	0.41891	1.43586
	removal	CLK (R)	-0.30209	-0.35881	-1.38071
	removal	CLK (R)	-0.28256	-0.34094	-1.28474
	removal	CLK (R)	-0.27782	-0.32734	-1.25298
	removal	CLK (R)	-0.31297	-0.37118	-1.39431
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.37269	0.40379	1.42865
	recovery	CLK (R)	0.35821	0.38610	1.33727
	recovery	CLK (R)	0.35273	0.37338	1.31076
	recovery	CLK (R)	0.38231	0.41199	1.44625
	removal	CLK (R)	-0.31325	-0.37038	-1.40817
	removal	CLK (R)	-0.29606	-0.35145	-1.31739
	removal	CLK (R)	-0.29207	-0.34094	-1.28556
	removal	CLK (R)	-0.32295	-0.38185	-1.42489

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 ()	0.26054	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.22099	0.82031	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.26359	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.24229	0.82031	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 ()	0.22708	0.82031	16.50020
	min_pulse_width	CLK ()	0.13277	0.82031	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.29705	0.82031	16.50020
	min_pulse_width	CLK ()	0.16015	0.82031	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 ()	0.32747	0.82031	16.50020
	min_pulse_width	CLK ()	0.41570	0.82031	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.30618	0.82031	16.50020
	min_pulse_width	CLK ()	0.41874	0.82031	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	0.01280	0.01292	0.01810
	CLK	0.01080	0.01092	0.01583
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01524	0.01563	0.02109
	CLK	0.01318	0.01360	0.01861

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01307	0.01329	0.01830
	CLK	0.01110	0.01132	0.01621
	RESET_B	0.01111	0.01117	0.01663
	RESET_B	0.01551	0.01556	0.02085
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01529	0.01588	0.02088
	CLK	0.01343	0.01402	0.01897
	RESET_B	0.01344	0.01387	0.01996
	RESET_B	0.01793	0.01837	0.02372

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01308	0.01331	0.01860
	CLK	0.01111	0.01133	0.01645
	RESET_B	0.01114	0.01120	0.01712
	RESET_B	0.01555	0.01560	0.02105
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01530	0.01590	0.02156
	CLK	0.01344	0.01403	0.01933
	RESET_B	0.01346	0.01389	0.02028
	RESET_B	0.01796	0.01840	0.02393

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01279	0.01292	0.01766
	CLK	0.01078	0.01091	0.01559
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01523	0.01561	0.02056
	CLK	0.01317	0.01357	0.01832

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)**	0.00098	0.00099	0.00099
	(CLK * RESET_B * SCD * SCE)	-0.00049	-0.00050	-0.00050
	(CLK * RESET_B * SCD * !SCE)	0.00448	0.00439	0.00939
	(CLK * RESET_B * SCD * !SCE)	0.00157	0.00147	0.00648
	(CLK * RESET_B * !SCD * !SCE)	0.00448	0.00439	0.00939
	(CLK * RESET_B * !SCD * !SCE)	0.00157	0.00147	0.00648
	(CLK * !SCD * SCE)	0.00053	0.00054	0.00052
	(CLK * !SCD * SCE)	-0.00112	-0.00114	-0.00116
	(CLK * !RESET_B * SCD * SCE)	0.00052	0.00053	0.00051
	(CLK * !RESET_B * SCD * SCE)	-0.00112	-0.00115	-0.00117
	(CLK * !RESET_B * SCD * !SCE)	0.00039	0.00039	0.00032
	(CLK * !RESET_B * SCD * !SCE)	-0.00126	-0.00126	-0.00135
	(CLK * !RESET_B * !SCD * !SCE)	0.00038	0.00038	0.00033
	(CLK * !RESET_B * !SCD * !SCE)	-0.00130	-0.00130	-0.00137
	(!CLK * RESET_B * SCD * SCE)	0.00098	0.00100	0.00099
	(!CLK * RESET_B * SCD * SCE)	-0.00049	-0.00051	-0.00050
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01027	0.01020	0.01527
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00720	0.00714	0.01220
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01027	0.01020	0.01507
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00721	0.00714	0.01200
	(!CLK * !SCD * SCE)	0.00054	0.00054	0.00052
	(!CLK * !SCD * SCE)	-0.00112	-0.00114	-0.00116
	(!CLK * !RESET_B * SCD * SCE)	0.00052	0.00053	0.00051
	(!CLK * !RESET_B * SCD * SCE)	-0.00112	-0.00114	-0.00117
	(!CLK * !RESET_B * SCD * !SCE)	0.00039	0.00039	0.00032
	(!CLK * !RESET_B * SCD * !SCE)	-0.00126	-0.00126	-0.00135
	(!CLK * !RESET_B * !SCD * !SCE)	0.00038	0.00038	0.00033
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00130	-0.00130	-0.00137

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	0.00101	0.00101	0.00101
	(CLK * RESET_B * SCD * SCE)	-0.00049	-0.00050	-0.00049
	(CLK * RESET_B * SCD * !SCE)	0.00477	0.00467	0.00960
	(CLK * RESET_B * SCD * !SCE)	0.00181	0.00170	0.00662
	(CLK * RESET_B * !SCD * !SCE)	0.00477	0.00467	0.00960
	(CLK * RESET_B * !SCD * !SCE)	0.00181	0.00170	0.00663
	(CLK * !SCD * SCE)	0.00054	0.00055	0.00053
	(CLK * !SCD * SCE)	-0.00114	-0.00116	-0.00117
	(CLK * !RESET_B * SCD * SCE)	0.00053	0.00054	0.00052
	(CLK * !RESET_B * SCD * SCE)	-0.00114	-0.00116	-0.00118
	(CLK * !RESET_B * SCD * !SCE)	0.00038	0.00038	0.00032
	(CLK * !RESET_B * SCD * !SCE)	-0.00129	-0.00129	-0.00138
	(CLK * !RESET_B * !SCD * !SCE)	0.00037	0.00037	0.00032
	(CLK * !RESET_B * !SCD * !SCE)	-0.00134	-0.00133	-0.00140
	(!CLK * RESET_B * SCD * SCE)	0.00101	0.00101	0.00101
	(!CLK * RESET_B * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01058	0.01052	0.01550
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00747	0.00740	0.01237
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01059	0.01053	0.01550
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00747	0.00740	0.01237
	(!CLK * !SCD * SCE)	0.00054	0.00055	0.00053
	(!CLK * !SCD * SCE)	-0.00113	-0.00115	-0.00118
	(!CLK * !RESET_B * SCD * SCE)	0.00053	0.00054	0.00052
	(!CLK * !RESET_B * SCD * SCE)	-0.00114	-0.00116	-0.00118
	(!CLK * !RESET_B * SCD * !SCE)	0.00038	0.00038	0.00032
	(!CLK * !RESET_B * SCD * !SCE)	-0.00128	-0.00129	-0.00138
	(!CLK * !RESET_B * !SCD * !SCE)	0.00037	0.00037	0.00032
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00133	-0.00134	-0.00140

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)**	-0.00093	-0.00094	-0.00097
	(CLK * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00065	0.00074	0.00617
	(CLK * RESET_B * SCD * !SCE)	0.00357	0.00366	0.00909
	(CLK * RESET_B * !SCD * !SCE)	0.00066	0.00074	0.00618
	(CLK * RESET_B * !SCD * !SCE)	0.00357	0.00366	0.00909
	(CLK * !SCD * SCE)	-0.00050	-0.00051	-0.00050
	(CLK * !SCD * SCE)	0.00117	0.00117	0.00116
	(CLK * !RESET_B * SCD * SCE)	-0.00049	-0.00049	-0.00049
	(CLK * !RESET_B * SCD * SCE)	0.00116	0.00117	0.00117
	(CLK * !RESET_B * SCD * !SCE)	-0.00031	-0.00031	-0.00030
	(CLK * !RESET_B * SCD * !SCE)	0.00138	0.00138	0.00138
	(CLK * !RESET_B * !SCD * !SCE)	-0.00031	-0.00031	-0.00030
	(CLK * !RESET_B * !SCD * !SCE)	0.00138	0.00138	0.00138
	(!CLK * RESET_B * SCD * SCE)	-0.00093	-0.00094	-0.00097
	(!CLK * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00616	0.00623	0.01258
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00922	0.00929	0.01565
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00616	0.00623	0.01251
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00922	0.00929	0.01558
	(!CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00050
	(!CLK * !SCD * SCE)	0.00116	0.00117	0.00116
	(!CLK * !RESET_B * SCD * SCE)	-0.00049	-0.00049	-0.00049
	(!CLK * !RESET_B * SCD * SCE)	0.00116	0.00117	0.00117
	(!CLK * !RESET_B * SCD * !SCE)	-0.00030	-0.00031	-0.00030
	(!CLK * !RESET_B * SCD * !SCE)	0.00137	0.00138	0.00138
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00030	-0.00031	-0.00030
	(!CLK * !RESET_B * !SCD * !SCE)	0.00137	0.00138	0.00138

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00095	-0.00096	-0.00099
	(CLK * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00076	0.00084	0.00622
	(CLK * RESET_B * SCD * !SCE)	0.00374	0.00380	0.00919
	(CLK * RESET_B * !SCD * !SCE)	0.00076	0.00084	0.00622
	(CLK * RESET_B * !SCD * !SCE)	0.00374	0.00380	0.00919
	(CLK * !SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCD * SCE)	0.00118	0.00118	0.00117
	(CLK * !RESET_B * SCD * SCE)	-0.00049	-0.00050	-0.00050
	(CLK * !RESET_B * SCD * SCE)	0.00117	0.00118	0.00118
	(CLK * !RESET_B * SCD * !SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !RESET_B * SCD * !SCE)	0.00141	0.00141	0.00141
	(CLK * !RESET_B * !SCD * !SCE)	-0.00030	-0.00029	-0.00029
	(CLK * !RESET_B * !SCD * !SCE)	0.00141	0.00142	0.00141
	(!CLK * RESET_B * SCD * SCE)	-0.00095	-0.00097	-0.00099
	(!CLK * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00628	0.00633	0.01267
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00940	0.00945	0.01580
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00628	0.00633	0.01267
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00940	0.00945	0.01580
	(!CLK * !SCD * SCE)	-0.00050	-0.00051	-0.00051
	(!CLK * !SCD * SCE)	0.00117	0.00118	0.00118
	(!CLK * !RESET_B * SCD * SCE)	-0.00049	-0.00050	-0.00050
	(!CLK * !RESET_B * SCD * SCE)	0.00117	0.00118	0.00118
	(!CLK * !RESET_B * SCD * !SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !RESET_B * SCD * !SCE)	0.00141	0.00141	0.00141
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00030	-0.00029	-0.00029
	(!CLK * !RESET_B * !SCD * !SCE)	0.00141	0.00141	0.00141

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00580	0.00564	0.00914
	(CLK * D * RESET_B * SCE)	0.00213	0.00196	0.00547
	(CLK * D * RESET_B * !SCE)	0.00098	0.00084	0.00082
	(CLK * D * RESET_B * !SCE)	-0.00096	-0.00110	-0.00112
	(CLK * D * !RESET_B * SCE)	0.00048	0.00048	0.00046
	(CLK * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(CLK * D * !RESET_B * !SCE)	0.00033	0.00033	0.00034
	(CLK * D * !RESET_B * !SCE)	-0.00130	-0.00130	-0.00131
	(CLK * !D * RESET_B * SCE)	0.00658	0.00643	0.00972
	(CLK * !D * RESET_B * SCE)	0.00271	0.00256	0.00585
	(CLK * !D * !RESET_B * SCE)	0.00048	0.00048	0.00046
	(CLK * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!D * RESET_B * !SCE)	0.00065	0.00065	0.00065
	(!D * RESET_B * !SCE)	-0.00128	-0.00129	-0.00129
	(!D * !RESET_B * !SCE)	0.00043	0.00043	0.00043
	(!D * !RESET_B * !SCE)	-0.00137	-0.00137	-0.00137
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01157	0.01147	0.01506
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00775	0.00763	0.01122
	(!CLK * D * RESET_B * !SCE)	0.00098	0.00084	0.00082
	(!CLK * D * RESET_B * !SCE)	-0.00096	-0.00110	-0.00112
	(!CLK * D * !RESET_B * SCE)	0.00048	0.00048	0.00046
	(!CLK * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!CLK * D * !RESET_B * !SCE)	0.00033	0.00033	0.00034
	(!CLK * D * !RESET_B * !SCE)	-0.00130	-0.00130	-0.00131
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01236	0.01227	0.01566
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00834	0.00823	0.01163
	(!CLK * !D * !RESET_B * SCE)	0.00048	0.00048	0.00046
	(!CLK * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121

	(CLK * D * RESET_B * SCE)	0.00600	0.00585	0.00932
	(CLK * D * RESET_B * SCE)	0.00227	0.00211	0.00559
	(CLK * D * RESET_B * !SCE)	0.00101	0.00086	0.00084
	(CLK * D * RESET_B * !SCE)	-0.00096	-0.00110	-0.00112
	(CLK * D * !RESET_B * SCE)	0.00050	0.00050	0.00048
	(CLK * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(CLK * D * !RESET_B * !SCE)	0.00035	0.00035	0.00035
	(CLK * D * !RESET_B * !SCE)	-0.00131	-0.00132	-0.00132
	(CLK * !D * RESET_B * SCE)	0.00679	0.00664	0.00990
	(CLK * !D * RESET_B * SCE)	0.00286	0.00271	0.00597
	(CLK * !D * !RESET_B * SCE)	0.00050	0.00050	0.00048
	(CLK * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!D * RESET_B * !SCE)	0.00066	0.00067	0.00066
	(!D * RESET_B * !SCE)	-0.00129	-0.00130	-0.00130
	(!D * !RESET_B * !SCE)	0.00044	0.00044	0.00043
	(!D * !RESET_B * !SCE)	-0.00138	-0.00139	-0.00139
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01181	0.01169	0.01526
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00792	0.00781	0.01137
	(!CLK * D * RESET_B * !SCE)	0.00101	0.00086	0.00084
	(!CLK * D * RESET_B * !SCE)	-0.00096	-0.00110	-0.00112
	(!CLK * D * !RESET_B * SCE)	0.00050	0.00050	0.00048
	(!CLK * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!CLK * D * !RESET_B * !SCE)	0.00035	0.00035	0.00035
	(!CLK * D * !RESET_B * !SCE)	-0.00131	-0.00132	-0.00132
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01260	0.01250	0.01588
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00851	0.00840	0.01179
	(!CLK * !D * !RESET_B * SCE)	0.00050	0.00050	0.00048
	(!CLK * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00191	0.00175	0.00540
	(CLK * D * RESET_B * SCE)	0.00560	0.00543	0.00906
	(CLK * D * RESET_B * !SCE)	-0.00078	-0.00080	-0.00080
	(CLK * D * RESET_B * !SCE)	0.00114	0.00114	0.00114
	(CLK * D * !RESET_B * SCE)	-0.00041	-0.00042	-0.00042
	(CLK * D * !RESET_B * SCE)	0.00124	0.00125	0.00123
	(CLK * D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(CLK * D * !RESET_B * !SCE)	0.00133	0.00133	0.00132
	(CLK * !D * RESET_B * SCE)	0.00148	0.00133	0.00511
	(CLK * !D * RESET_B * SCE)	0.00536	0.00520	0.00897
	(CLK * !D * !RESET_B * SCE)	-0.00041	-0.00042	-0.00042
	(CLK * !D * !RESET_B * SCE)	0.00124	0.00125	0.00123
	(!D * RESET_B * !SCE)	-0.00059	-0.00064	-0.00065
	(!D * RESET_B * !SCE)	0.00132	0.00131	0.00129
	(!D * !RESET_B * !SCE)	-0.00043	-0.00043	-0.00043
	(!D * !RESET_B * !SCE)	0.00141	0.00141	0.00139
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00740	0.00729	0.01162
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01125	0.01113	0.01543
	(!CLK * D * RESET_B * !SCE)	-0.00078	-0.00080	-0.00080
	(!CLK * D * RESET_B * !SCE)	0.00114	0.00115	0.00114
	(!CLK * D * !RESET_B * SCE)	-0.00041	-0.00042	-0.00042
	(!CLK * D * !RESET_B * SCE)	0.00124	0.00125	0.00123
	(!CLK * D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * D * !RESET_B * !SCE)	0.00133	0.00133	0.00132
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00704	0.00692	0.01153
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01108	0.01095	0.01555
	(!CLK * !D * !RESET_B * SCE)	-0.00041	-0.00042	-0.00042
	(!CLK * !D * !RESET_B * SCE)	0.00124	0.00125	0.00123

	(CLK * D * RESET_B * SCE)	0.00198	0.00181	0.00546
	(CLK * D * RESET_B * SCE)	0.00571	0.00556	0.00918
	(CLK * D * RESET_B * !SCE)	-0.00080	-0.00082	-0.00082
	(CLK * D * RESET_B * !SCE)	0.00114	0.00115	0.00115
	(CLK * D * !RESET_B * SCE)	-0.00043	-0.00044	-0.00044
	(CLK * D * !RESET_B * SCE)	0.00124	0.00125	0.00123
	(CLK * D * !RESET_B * !SCE)	-0.00033	-0.00034	-0.00034
	(CLK * D * !RESET_B * !SCE)	0.00132	0.00134	0.00133
	(CLK * !D * RESET_B * SCE)	0.00161	0.00145	0.00521
	(CLK * !D * RESET_B * SCE)	0.00554	0.00539	0.00913
	(CLK * !D * !RESET_B * SCE)	-0.00043	-0.00044	-0.00044
	(CLK * !D * !RESET_B * SCE)	0.00124	0.00125	0.00123
	(!D * RESET_B * !SCE)	-0.00061	-0.00066	-0.00066
	(!D * RESET_B * !SCE)	0.00133	0.00131	0.00130
	(!D * !RESET_B * !SCE)	-0.00043	-0.00044	-0.00043
	(!D * !RESET_B * !SCE)	0.00142	0.00143	0.00140
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00751	0.00737	0.01171
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01142	0.01127	0.01559
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00082	-0.00082
	(!CLK * D * RESET_B * !SCE)	0.00114	0.00115	0.00115
	(!CLK * D * !RESET_B * SCE)	-0.00043	-0.00044	-0.00044
	(!CLK * D * !RESET_B * SCE)	0.00124	0.00125	0.00123
	(!CLK * D * !RESET_B * !SCE)	-0.00034	-0.00034	-0.00034
	(!CLK * D * !RESET_B * !SCE)	0.00132	0.00134	0.00133
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00718	0.00706	0.01166
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01127	0.01115	0.01574
	(!CLK * !D * !RESET_B * SCE)	-0.00043	-0.00044	-0.00044
	(!CLK * !D * !RESET_B * SCE)	0.00124	0.00125	0.00123

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)**	0.00519	0.00495	0.01134
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00010	-0.00015	0.00625
	(CLK * D * RESET_B * !SCD)	0.00737	0.00728	0.01373
	(CLK * D * RESET_B * !SCD)	0.00390	0.00377	0.01020
	(CLK * !D * RESET_B * SCD)	0.00962	0.00943	0.01985
	(CLK * !D * RESET_B * SCD)	0.00302	0.00282	0.01326
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00520	0.00496	0.01134
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00011	-0.00016	0.00625
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01279	0.01275	0.01923
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00946	0.00942	0.01584
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00516	0.00504	0.01150
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00031	0.00017	0.00663
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01540	0.01523	0.02583
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00865	0.00848	0.01909

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00479	0.00456	0.01104
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00047	-0.00071	0.00579
	(CLK * D * RESET_B * !SCD)	0.00710	0.00701	0.01359
	(CLK * D * RESET_B * !SCD)	0.00347	0.00337	0.00992
	(CLK * !D * RESET_B * SCD)	0.00946	0.00937	0.01976
	(CLK * !D * RESET_B * SCD)	0.00266	0.00256	0.01298
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00479	0.00457	0.01105
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00047	-0.00072	0.00578
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01253	0.01250	0.01905
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00907	0.00902	0.01554
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00480	0.00473	0.01124
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00021	-0.00031	0.00621
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01526	0.01518	0.02581
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00831	0.00824	0.01888

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)**	-0.00017	0.00002	0.00682
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00491	0.00513	0.01191
	(CLK * D * RESET_B * !SCD)	0.00427	0.00431	0.01108
	(CLK * D * RESET_B * !SCD)	0.00780	0.00782	0.01449
	(CLK * !D * RESET_B * SCD)	0.00112	0.00115	0.01187
	(CLK * !D * RESET_B * SCD)	0.00771	0.00774	0.01847
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00016	0.00004	0.00682
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00492	0.00511	0.01191
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01004	0.01015	0.01688
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01342	0.01350	0.02016
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00017	0.00001	0.00673
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00470	0.00487	0.01155
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00660	0.00665	0.01793
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01335	0.01339	0.02468

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00013	0.00007	0.00691
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00512	0.00534	0.01217
	(CLK * D * RESET_B * !SCD)	0.00461	0.00464	0.01144
	(CLK * D * RESET_B * !SCD)	0.00824	0.00829	0.01498
	(CLK * !D * RESET_B * SCD)	0.00121	0.00124	0.01199
	(CLK * !D * RESET_B * SCD)	0.00800	0.00806	0.01879
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00013	0.00009	0.00691
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00512	0.00535	0.01217
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01040	0.01051	0.01727
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01388	0.01399	0.02068
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00016	0.00002	0.00678
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00485	0.00506	0.01179
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00670	0.00676	0.01812
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01365	0.01371	0.02507

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)**	0.00829	0.00807	0.01272
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00020	-0.00046	0.00421
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00789	0.00766	0.01255
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00032	-0.00060	0.00433
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00270	0.00275	0.00272
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00366	-0.00370	-0.00368
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00755	0.00730	0.01235
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00032	-0.00056	0.00450
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00908	0.00888	0.01327
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00040	0.00014	0.00455
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00267	0.00271	0.00269
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00368	-0.00372	-0.00369
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00270	0.00275	0.00272
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00366	-0.00370	-0.00368
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00268	0.00272	0.00270
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00369	-0.00372	-0.00370
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01464	0.01415	0.01922
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00601	0.00549	0.01058
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01425	0.01370	0.01902
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00589	0.00537	0.01066
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00271	0.00271	0.00273
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00366	-0.00366	-0.00367
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01390	0.01338	0.01881
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00590	0.00537	0.01079
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01544	0.01498	0.01983
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00661	0.00612	0.01098
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00268	0.00272	0.00269
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00367	-0.00371	-0.00369
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00271	0.00275	0.00272
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00366	-0.00369	-0.00367
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00269	0.00273	0.00270
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00368	-0.00372	-0.00370

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00838	0.00817	0.01276
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00013	-0.00040	0.00422
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00808	0.00784	0.01267
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00016	-0.00041	0.00443
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00261	0.00265	0.00262
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00375	-0.00378	-0.00376
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00774	0.00752	0.01248
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00015	-0.00041	0.00458
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00917	0.00895	0.01330
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00046	0.00021	0.00457
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00258	0.00262	0.00259
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00377	-0.00380	-0.00378
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00261	0.00265	0.00262
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00375	-0.00378	-0.00376
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00259	0.00263	0.00260
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00377	-0.00381	-0.00378
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01473	0.01424	0.01927
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00607	0.00556	0.01061
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01444	0.01393	0.01917
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00606	0.00553	0.01078
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00260	0.00263	0.00262
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00375	-0.00377	-0.00376
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01410	0.01358	0.01899
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00606	0.00555	0.01094
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01552	0.01505	0.01988
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00667	0.00617	0.01101
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00257	0.00261	0.00259
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00377	-0.00380	-0.00378
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00260	0.00262	0.00261
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00375	-0.00377	-0.00376
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00258	0.00262	0.00259
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00377	-0.00381	-0.00379

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)**	0.00079	0.00076	0.00665
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00930	0.00930	0.01517
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00004	-0.00008	0.00581
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00818	0.00817	0.01403
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00265	-0.00272	-0.00272
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00373	0.00371	0.00370
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00030	-0.00031	0.00567
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00756	0.00756	0.01354
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00036	0.00036	0.00638
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00907	0.00909	0.01508
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00260	-0.00270	-0.00269
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00375	0.00372	0.00370
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00266	-0.00272	-0.00272
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00375	0.00371	0.00370
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00261	-0.00270	-0.00270
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00376	0.00372	0.00371
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00660	0.00627	0.01340
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01524	0.01497	0.02205
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00577	0.00543	0.01244
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01412	0.01383	0.02082
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00266	-0.00271	-0.00273
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00372	0.00371	0.00369
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00551	0.00518	0.01235
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01350	0.01322	0.02037
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00618	0.00586	0.01324
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01501	0.01475	0.02208
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00261	-0.00271	-0.00269
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00374	0.00372	0.00370
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00267	-0.00273	-0.00272
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00373	0.00371	0.00369
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00262	-0.00271	-0.00270
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00375	0.00372	0.00370

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00094	0.00091	0.00678
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00948	0.00946	0.01532
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00008	0.00003	0.00590
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00833	0.00830	0.01414
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00254	-0.00262	-0.00262
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00381	0.00380	0.00378
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00018	-0.00020	0.00576
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00770	0.00770	0.01366
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00058	0.00056	0.00656
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00932	0.00932	0.01527
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00249	-0.00260	-0.00259
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00383	0.00381	0.00378
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00254	-0.00262	-0.00262
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00381	0.00380	0.00378
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00251	-0.00260	-0.00260
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00384	0.00381	0.00379
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00677	0.00643	0.01354
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01545	0.01515	0.02224
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00590	0.00555	0.01257
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01428	0.01398	0.02097
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00254	-0.00261	-0.00262
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00380	0.00380	0.00378
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00564	0.00531	0.01247
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01366	0.01337	0.02050
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00641	0.00608	0.01343
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01528	0.01499	0.02232
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00249	-0.00260	-0.00259
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00383	0.00381	0.00379
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00254	-0.00261	-0.00261
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00380	0.00380	0.00378
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00251	-0.00260	-0.00259
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00384	0.00382	0.00379

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)**	0.01230	0.01209	0.02126
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00832	0.00809	0.01728
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01230	0.01209	0.02126
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00832	0.00809	0.01728
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01230	0.01209	0.02127
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00832	0.00809	0.01728
	(D * !SCD * SCE * !Q * Q_N)	0.01254	0.01234	0.02152
	(D * !SCD * SCE * !Q * Q_N)	0.00854	0.00833	0.01753
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01254	0.01234	0.02152
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00854	0.00834	0.01754
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01254	0.01234	0.02151
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00854	0.00834	0.01754
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01254	0.01234	0.02151
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00854	0.00834	0.01754
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01230	0.01209	0.02127
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00832	0.00809	0.01728
	(!D * !SCE * !Q * Q_N)	0.01254	0.01233	0.02151
	(!D * !SCE * !Q * Q_N)	0.00854	0.00833	0.01752
	(!D * !SCD * SCE * !Q * Q_N)	0.01254	0.01234	0.02152
	(!D * !SCD * SCE * !Q * Q_N)	0.00854	0.00833	0.01753
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01254	0.01234	0.02152
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00855	0.00834	0.01753

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01236	0.01213	0.02133
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00844	0.00821	0.01742
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01236	0.01213	0.02133
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00844	0.00821	0.01742
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01236	0.01213	0.02133
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00844	0.00821	0.01742
	(D * !SCD * SCE * !Q * Q_N)	0.01253	0.01229	0.02151
	(D * !SCD * SCE * !Q * Q_N)	0.00862	0.00837	0.01759
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01253	0.01230	0.02151
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00862	0.00838	0.01759
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01253	0.01230	0.02150
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00861	0.00838	0.01759
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01253	0.01230	0.02150
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00861	0.00838	0.01759
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01236	0.01213	0.02133
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00844	0.00821	0.01742
	(!D * !SCE * !Q * Q_N)	0.01253	0.01229	0.02150
	(!D * !SCE * !Q * Q_N)	0.00861	0.00837	0.01759
	(!D * !SCD * SCE * !Q * Q_N)	0.01253	0.01230	0.02150
	(!D * !SCD * SCE * !Q * Q_N)	0.00862	0.00837	0.01759
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01253	0.01230	0.02151
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00862	0.00838	0.01759

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)**	0.00646	0.00665	0.01655
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01044	0.01063	0.02054
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01190	0.01199	0.02217
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01573	0.01581	0.02600
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00646	0.00665	0.01655
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01044	0.01063	0.02054
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01185	0.01195	0.02213
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01568	0.01579	0.02596
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01254	0.01279	0.02299
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01670	0.01695	0.02714
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00646	0.00665	0.01656
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01044	0.01063	0.02054
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01186	0.01196	0.02213
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01568	0.01579	0.02596
	(D * !SCD * SCE * !Q * Q_N)	0.00604	0.00621	0.01619
	(D * !SCD * SCE * !Q * Q_N)	0.01002	0.01020	0.02018
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00604	0.00622	0.01618
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01002	0.01021	0.02017
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00603	0.00622	0.01619
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01002	0.01020	0.02016
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00603	0.00622	0.01619
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01002	0.01020	0.02016
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00646	0.00665	0.01656
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01044	0.01063	0.02054
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01193	0.01203	0.02220
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01574	0.01585	0.02602
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01250	0.01276	0.02294
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01664	0.01689	0.02708
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01253	0.01279	0.02297
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01668	0.01693	0.02712
	(!D * !SCE * !Q * Q_N)	0.00604	0.00621	0.01619
	(!D * !SCE * !Q * Q_N)	0.01002	0.01020	0.02018
	(!D * !SCD * SCE * !Q * Q_N)	0.00604	0.00621	0.01619
	(!D * !SCD * SCE * !Q * Q_N)	0.01002	0.01020	0.02018
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00604	0.00622	0.01618
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01002	0.01021	0.02017

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00640	0.00662	0.01654
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01033	0.01053	0.02045
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01192	0.01202	0.02221
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01568	0.01577	0.02597
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00640	0.00662	0.01654
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01032	0.01053	0.02045
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01188	0.01199	0.02217
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01564	0.01574	0.02593
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01247	0.01276	0.02299
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01658	0.01684	0.02708
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00641	0.00662	0.01654
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01033	0.01053	0.02045
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01188	0.01199	0.02218
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01564	0.01575	0.02593
	(D * !SCD * SCE * !Q * Q_N)	0.00606	0.00625	0.01625
	(D * !SCD * SCE * !Q * Q_N)	0.00998	0.01016	0.02016
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00606	0.00626	0.01625
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00998	0.01017	0.02016
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00605	0.00625	0.01625
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00997	0.01017	0.02016
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00605	0.00625	0.01625
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00997	0.01017	0.02016
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00641	0.00663	0.01654
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01033	0.01053	0.02045
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01195	0.01206	0.02225
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01570	0.01579	0.02599
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01244	0.01272	0.02296
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01652	0.01678	0.02703
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01246	0.01276	0.02298
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01655	0.01683	0.02705
	(!D * !SCE * !Q * Q_N)	0.00605	0.00625	0.01625
	(!D * !SCE * !Q * Q_N)	0.00997	0.01016	0.02016
	(!D * !SCD * SCE * !Q * Q_N)	0.00606	0.00625	0.01625
	(!D * !SCD * SCE * !Q * Q_N)	0.00998	0.01016	0.02015
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00606	0.00626	0.01625
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00998	0.01017	0.02016

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00198	0.00192	0.00417	0.00558	0.00298	0.75353

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.65851	1.25950

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)	0.42368	1.25015	8.57602

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)	0.34813	0.88684	4.52098
	RESET_B->Q (FF)	0.49773	1.11654	5.48453

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)	-0.03653	-0.02652	0.24802
	setup	CLK_N (F)	0.23414	0.19011	-0.07629

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)	-0.23185	-0.30363	-1.00998
	setup	CLK_N (F)	0.57263	0.59295	1.28295

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)	-0.03793	-0.02652	0.24802
	hold	CLK_N (F)	-0.03653	-0.02675	0.24758
	setup	CLK_N (F)	0.23414	0.18966	-0.07679
	setup	CLK_N (F)	0.23337	0.19011	-0.07629

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)	-0.23185	-0.30363	-1.00998
	hold	CLK_N (F)	-0.23501	-0.30370	-1.01266
	setup	CLK_N (F)	0.57263	0.59244	1.28010
	setup	CLK_N (F)	0.57131	0.59295	1.28295

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)	-0.07381	-0.04637	0.17362
	setup	CLK_N (F)	0.27999	0.22374	0.01680

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)	-0.29005	-0.35288	-1.17570
	setup	CLK_N (F)	0.67203	0.68842	1.49153

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)	-0.07381	-0.04637	0.17362
	hold	CLK_N (F)	-0.08735	-0.06306	0.12603
	setup	CLK_N (F)	0.27078	0.20955	-0.02895
	setup	CLK_N (F)	0.27999	0.22374	0.01680

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)	-0.31138	-0.37735	-1.23574
	hold	CLK_N (F)	-0.29005	-0.35288	-1.17570
	setup	CLK_N (F)	0.65876	0.67558	1.49153
	setup	CLK_N (F)	0.67203	0.68842	1.46476

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)	-0.04851	-0.03941	0.18173
	setup	CLK_N (F)	0.65742	0.62002	0.00048

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)	-0.15028	-0.16316	-0.11238
	setup	CLK_N (F)	0.59514	0.61279	1.30768

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)	-0.30710	-0.31732	0.18173
	hold	CLK_N (F)	-0.04851	-0.03941	0.16091
	setup	CLK_N (F)	0.65742	0.62002	-0.07329
	setup	CLK_N (F)	0.24389	0.20094	0.00048

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)	-0.15028	-0.16316	-0.11238
	hold	CLK_N (F)	-0.25921	-0.32021	-1.04776
	setup	CLK_N (F)	0.34769	0.32145	0.18626
	setup	CLK_N (F)	0.59514	0.61279	1.30768

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)	0.31193	0.23092	-0.05161
	removal	CLK_N (F)	-0.20213	-0.12798	0.23845

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)	0.30210	0.21941	-0.08227
	recovery	CLK_N (F)	0.28506	0.20183	-0.17341
	recovery	CLK_N (F)	0.27783	0.18887	-0.19548
	recovery	CLK_N (F)	0.31193	0.23092	-0.05161
	removal	CLK_N (F)	-0.22609	-0.15576	0.12225
	removal	CLK_N (F)	-0.20703	-0.14047	0.21874
	removal	CLK_N (F)	-0.20213	-0.12798	0.23845
	removal	CLK_N (F)	-0.23579	-0.16925	0.08718

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 ()	0.20883	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.26359	0.82031	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 ()	0.24838	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.40657	0.82031	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 ()	0.23925	0.82031	16.50020
	min_pulse_width	CLK_N ()	0.22099	0.82031	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	0.02006	0.02064	0.03131
	CLK_N	0.02410	0.02468	0.03538

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01873	0.01903	0.02933
	CLK_N	0.02232	0.02260	0.03261
	RESET_B	0.02025	0.02009	0.03125
	RESET_B	0.02868	0.02849	0.03898

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)**	0.00102	0.00102	0.00102
	(CLK_N * RESET_B * SCD * SCE)	-0.00057	-0.00058	-0.00058
	(CLK_N * RESET_B * SCD * !SCE)	0.01092	0.01085	0.01562
	(CLK_N * RESET_B * SCD * !SCE)	0.00792	0.00786	0.01262
	(CLK_N * RESET_B * !SCD * !SCE)	0.01092	0.01085	0.01562
	(CLK_N * RESET_B * !SCD * !SCE)	0.00792	0.00786	0.01262
	(CLK_N * !SCD * SCE)	0.00060	0.00060	0.00059
	(CLK_N * !SCD * SCE)	-0.00118	-0.00119	-0.00121
	(CLK_N * !RESET_B * SCD * SCE)	0.00059	0.00059	0.00058
	(CLK_N * !RESET_B * SCD * SCE)	-0.00118	-0.00119	-0.00121
	(CLK_N * !RESET_B * SCD * !SCE)	0.00034	0.00033	0.00028
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00143	-0.00143	-0.00152
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00032	0.00032	0.00028
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00148	-0.00147	-0.00153
	(!CLK_N * RESET_B * SCD * SCE)	0.00102	0.00102	0.00102
	(!CLK_N * RESET_B * SCD * SCE)	-0.00058	-0.00058	-0.00058
	(!CLK_N * RESET_B * SCD * !SCE)	0.00473	0.00464	0.00947
	(!CLK_N * RESET_B * SCD * !SCE)	0.00171	0.00160	0.00644
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00473	0.00464	0.00947
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00171	0.00160	0.00644
	(!CLK_N * !SCD * SCE)	0.00060	0.00060	0.00058
	(!CLK_N * !SCD * SCE)	-0.00118	-0.00119	-0.00121
	(!CLK_N * !RESET_B * SCD * SCE)	0.00059	0.00059	0.00058
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00118	-0.00120	-0.00121
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00034	0.00033	0.00028
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00143	-0.00143	-0.00152
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00032	0.00032	0.00028
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00148	-0.00148	-0.00153

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)**	-0.00096	-0.00098	-0.00100
	(CLK_N * RESET_B * SCD * SCE)	0.00063	0.00063	0.00061
	(CLK_N * RESET_B * SCD * !SCE)	0.00730	0.00738	0.01351
	(CLK_N * RESET_B * SCD * !SCE)	0.01030	0.01038	0.01651
	(CLK_N * RESET_B * !SCD * !SCE)	0.00730	0.00738	0.01351
	(CLK_N * RESET_B * !SCD * !SCE)	0.01030	0.01038	0.01651
	(CLK_N * !SCD * SCE)	-0.00056	-0.00057	-0.00056
	(CLK_N * !SCD * SCE)	0.00121	0.00122	0.00121
	(CLK_N * !RESET_B * SCD * SCE)	-0.00056	-0.00056	-0.00056
	(CLK_N * !RESET_B * SCD * SCE)	0.00121	0.00121	0.00121
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00025	-0.00026	-0.00025
	(CLK_N * !RESET_B * SCD * !SCE)	0.00153	0.00155	0.00154
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00025	-0.00026	-0.00025
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00153	0.00155	0.00154
	(!CLK_N * RESET_B * SCD * SCE)	-0.00096	-0.00097	-0.00100
	(!CLK_N * RESET_B * SCD * SCE)	0.00063	0.00063	0.00060
	(!CLK_N * RESET_B * SCD * !SCE)	0.00111	0.00119	0.00652
	(!CLK_N * RESET_B * SCD * !SCE)	0.00414	0.00423	0.00955
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00111	0.00119	0.00652
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00415	0.00422	0.00955
	(!CLK_N * !SCD * SCE)	-0.00056	-0.00057	-0.00057
	(!CLK_N * !SCD * SCE)	0.00120	0.00121	0.00121
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00056	-0.00056	-0.00056
	(!CLK_N * !RESET_B * SCD * SCE)	0.00121	0.00121	0.00121
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00025	-0.00026	-0.00025
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00153	0.00155	0.00154
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00025	-0.00026	-0.00025
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00153	0.00155	0.00154

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)**	0.01219	0.01211	0.01559
	(CLK_N * D * RESET_B * SCE)	0.00853	0.00844	0.01192
	(CLK_N * D * RESET_B * !SCE)	0.00093	0.00079	0.00077
	(CLK_N * D * RESET_B * !SCE)	-0.00103	-0.00118	-0.00119
	(CLK_N * D * !RESET_B * SCE)	0.00054	0.00054	0.00052
	(CLK_N * D * !RESET_B * SCE)	-0.00117	-0.00117	-0.00116
	(CLK_N * D * !RESET_B * !SCE)	0.00034	0.00034	0.00034
	(CLK_N * D * !RESET_B * !SCE)	-0.00132	-0.00132	-0.00133
	(CLK_N * !D * RESET_B * SCE)	0.01297	0.01289	0.01622
	(CLK_N * !D * RESET_B * SCE)	0.00910	0.00902	0.01236
	(CLK_N * !D * !RESET_B * SCE)	0.00053	0.00054	0.00052
	(CLK_N * !D * !RESET_B * SCE)	-0.00116	-0.00117	-0.00116
	(!D * RESET_B * !SCE)	0.00066	0.00066	0.00066
	(!D * RESET_B * !SCE)	-0.00129	-0.00129	-0.00129
	(!D * !RESET_B * !SCE)	0.00042	0.00042	0.00042
	(!D * !RESET_B * !SCE)	-0.00138	-0.00139	-0.00139
	(!CLK_N * D * RESET_B * SCE)	0.00601	0.00589	0.00933
	(!CLK_N * D * RESET_B * SCE)	0.00232	0.00219	0.00563
	(!CLK_N * D * RESET_B * !SCE)	0.00093	0.00079	0.00077
	(!CLK_N * D * RESET_B * !SCE)	-0.00102	-0.00118	-0.00119
	(!CLK_N * D * !RESET_B * SCE)	0.00054	0.00054	0.00052
	(!CLK_N * D * !RESET_B * SCE)	-0.00117	-0.00117	-0.00116
	(!CLK_N * D * !RESET_B * !SCE)	0.00034	0.00034	0.00034
	(!CLK_N * D * !RESET_B * !SCE)	-0.00132	-0.00132	-0.00133
	(!CLK_N * !D * RESET_B * SCE)	0.00679	0.00667	0.00990
	(!CLK_N * !D * RESET_B * SCE)	0.00289	0.00276	0.00600
	(!CLK_N * !D * !RESET_B * SCE)	0.00053	0.00054	0.00052
	(!CLK_N * !D * !RESET_B * SCE)	-0.00116	-0.00117	-0.00116

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)**	0.00842	0.00829	0.01258
	(CLK_N * D * RESET_B * SCE)	0.01211	0.01197	0.01624
	(CLK_N * D * RESET_B * !SCE)	-0.00073	-0.00075	-0.00075
	(CLK_N * D * RESET_B * !SCE)	0.00121	0.00122	0.00122
	(CLK_N * D * !RESET_B * SCE)	-0.00048	-0.00049	-0.00049
	(CLK_N * D * !RESET_B * SCE)	0.00119	0.00119	0.00118
	(CLK_N * D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(CLK_N * D * !RESET_B * !SCE)	0.00133	0.00134	0.00133
	(CLK_N * !D * RESET_B * SCE)	0.00809	0.00798	0.01245
	(CLK_N * !D * RESET_B * SCE)	0.01197	0.01185	0.01631
	(CLK_N * !D * !RESET_B * SCE)	-0.00048	-0.00049	-0.00049
	(CLK_N * !D * !RESET_B * SCE)	0.00119	0.00119	0.00118
	(!D * RESET_B * !SCE)	-0.00061	-0.00065	-0.00066
	(!D * RESET_B * !SCE)	0.00133	0.00131	0.00130
	(!D * !RESET_B * !SCE)	-0.00042	-0.00042	-0.00042
	(!D * !RESET_B * !SCE)	0.00143	0.00144	0.00141
	(!CLK_N * D * RESET_B * SCE)	0.00221	0.00207	0.00569
	(!CLK_N * D * RESET_B * SCE)	0.00591	0.00578	0.00938
	(!CLK_N * D * RESET_B * !SCE)	-0.00073	-0.00075	-0.00075
	(!CLK_N * D * RESET_B * !SCE)	0.00121	0.00122	0.00122
	(!CLK_N * D * !RESET_B * SCE)	-0.00048	-0.00049	-0.00049
	(!CLK_N * D * !RESET_B * SCE)	0.00119	0.00119	0.00118
	(!CLK_N * D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(!CLK_N * D * !RESET_B * !SCE)	0.00133	0.00134	0.00133
	(!CLK_N * !D * RESET_B * SCE)	0.00186	0.00173	0.00546
	(!CLK_N * !D * RESET_B * SCE)	0.00576	0.00564	0.00935
	(!CLK_N * !D * !RESET_B * SCE)	-0.00048	-0.00049	-0.00049
	(!CLK_N * !D * !RESET_B * SCE)	0.00119	0.00119	0.00118

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)	0.00472	0.00451	0.01098
	(CLK_N * D * RESET_B * SCD)	-0.00041	-0.00064	0.00584
	(CLK_N * D * RESET_B * !SCD)	0.01336	0.01336	0.01990
	(CLK_N * D * RESET_B * !SCD)	0.00981	0.00979	0.01630
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00470	0.00462	0.01116
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00019	-0.00029	0.00624
	(CLK_N * !D * RESET_B * SCD)	0.01559	0.01553	0.02599
	(CLK_N * !D * RESET_B * SCD)	0.00898	0.00892	0.01939
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00472	0.00451	0.01098
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00042	-0.00064	0.00583
	(!CLK_N * D * RESET_B * !SCD)	0.00726	0.00722	0.01373
	(!CLK_N * D * RESET_B * !SCD)	0.00374	0.00367	0.01015
	(!CLK_N * !D * RESET_B * SCD)	0.00941	0.00933	0.01960
	(!CLK_N * !D * RESET_B * SCD)	0.00277	0.00268	0.01298

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)	-0.00014	0.00010	0.00690
	(CLK_N * D * RESET_B * SCD)	0.00498	0.00524	0.01203
	(CLK_N * D * RESET_B * !SCD)	0.01081	0.01095	0.01766
	(CLK_N * D * RESET_B * !SCD)	0.01437	0.01453	0.02118
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00016	0.00006	0.00677
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00473	0.00495	0.01167
	(CLK_N * !D * RESET_B * SCD)	0.00769	0.00775	0.01887
	(CLK_N * !D * RESET_B * SCD)	0.01430	0.01436	0.02549
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00014	0.00008	0.00690
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00498	0.00522	0.01203
	(!CLK_N * D * RESET_B * !SCD)	0.00465	0.00472	0.01148
	(!CLK_N * D * RESET_B * !SCD)	0.00818	0.00827	0.01493
	(!CLK_N * !D * RESET_B * SCD)	0.00153	0.00157	0.01218
	(!CLK_N * !D * RESET_B * SCD)	0.00816	0.00821	0.01882

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01562	0.01511	0.02003
	(CLK_N * D * SCD * SCE * !Q)	0.00711	0.00660	0.01151
	(CLK_N * D * SCD * !SCE * !Q)	0.01535	0.01481	0.01990
	(CLK_N * D * SCD * !SCE * !Q)	0.00713	0.00659	0.01167
	(CLK_N * D * !SCD * SCE * !Q)	0.00310	0.00314	0.00311
	(CLK_N * D * !SCD * SCE * !Q)	-0.00332	-0.00334	-0.00332
	(CLK_N * D * !SCD * !SCE * !Q)	0.01500	0.01447	0.01973
	(CLK_N * D * !SCD * !SCE * !Q)	0.00714	0.00660	0.01185
	(CLK_N * !D * SCD * SCE * !Q)	0.01641	0.01592	0.02059
	(CLK_N * !D * SCD * SCE * !Q)	0.00770	0.00720	0.01187
	(CLK_N * !D * SCD * !SCE * !Q)	0.00309	0.00311	0.00308
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00335	-0.00336	-0.00334
	(CLK_N * !D * !SCD * SCE * !Q)	0.00310	0.00313	0.00311
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00332	-0.00334	-0.00332
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00308	0.00311	0.00308
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00334	-0.00336	-0.00334
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00884	0.00862	0.01316
	(!CLK_N * D * SCD * SCE * !Q)	0.00029	0.00004	0.00460
	(!CLK_N * D * SCD * !SCE * !Q)	0.00856	0.00832	0.01308
	(!CLK_N * D * SCD * !SCE * !Q)	0.00030	0.00003	0.00481
	(!CLK_N * D * !SCD * SCE * !Q)	0.00303	0.00305	0.00303
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00341	-0.00342	-0.00340
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00821	0.00798	0.01288
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00030	0.00004	0.00498
	(!CLK_N * !D * SCD * SCE * !Q)	0.00962	0.00940	0.01370
	(!CLK_N * !D * SCD * SCE * !Q)	0.00087	0.00061	0.00494
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00297	0.00301	0.00299
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00340	-0.00343	-0.00342
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00303	0.00305	0.00302
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00341	-0.00342	-0.00340
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00301	0.00302	0.00300
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00344	-0.00344	-0.00343

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00723	0.00689	0.01381
	(CLK_N * D * SCD * SCE * !Q)	0.01579	0.01545	0.02233
	(CLK_N * D * SCD * !SCE * !Q)	0.00635	0.00607	0.01284
	(CLK_N * D * SCD * !SCE * !Q)	0.01461	0.01433	0.02105
	(CLK_N * D * !SCD * SCE * !Q)	-0.00306	-0.00313	-0.00311
	(CLK_N * D * !SCD * SCE * !Q)	0.00339	0.00337	0.00334
	(CLK_N * D * !SCD * !SCE * !Q)	0.00610	0.00582	0.01272
	(CLK_N * D * !SCD * !SCE * !Q)	0.01399	0.01372	0.02061
	(CLK_N * !D * SCD * SCE * !Q)	0.00689	0.00662	0.01368
	(CLK_N * !D * SCD * SCE * !Q)	0.01564	0.01537	0.02240
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00302	-0.00310	-0.00308
	(CLK_N * !D * SCD * !SCE * !Q)	0.00343	0.00338	0.00334
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00306	-0.00313	-0.00311
	(CLK_N * !D * !SCD * SCE * !Q)	0.00339	0.00337	0.00333
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00303	-0.00311	-0.00308
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00344	0.00339	0.00335
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00071	0.00067	0.00653
	(!CLK_N * D * SCD * SCE * !Q)	0.00926	0.00926	0.01506
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00017	-0.00022	0.00563
	(!CLK_N * D * SCD * !SCE * !Q)	0.00809	0.00807	0.01389
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00293	-0.00304	-0.00303
	(!CLK_N * D * !SCD * SCE * !Q)	0.00343	0.00346	0.00342
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00043	-0.00045	0.00549
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00747	0.00748	0.01341
	(!CLK_N * !D * SCD * SCE * !Q)	0.00036	0.00034	0.00631
	(!CLK_N * !D * SCD * SCE * !Q)	0.00911	0.00913	0.01505
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00288	-0.00301	-0.00299
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00346	0.00347	0.00343
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00298	-0.00304	-0.00302
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00349	0.00346	0.00342
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00289	-0.00302	-0.00300
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00347	0.00347	0.00343

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)**	0.01121	0.01090	0.02025
	(D * RESET_B * SCD * SCE * Q)	0.00742	0.00708	0.01644
	(D * RESET_B * SCD * SCE * !Q)	0.01778	0.01750	0.02704
	(D * RESET_B * SCD * SCE * !Q)	0.01402	0.01373	0.02326
	(D * RESET_B * SCD * !SCE * Q)	0.01121	0.01090	0.02026
	(D * RESET_B * SCD * !SCE * Q)	0.00742	0.00708	0.01645
	(D * RESET_B * SCD * !SCE * !Q)	0.01775	0.01749	0.02701
	(D * RESET_B * SCD * !SCE * !Q)	0.01399	0.01370	0.02323
	(D * RESET_B * !SCD * SCE * Q)	0.01704	0.01657	0.02587
	(D * RESET_B * !SCD * SCE * Q)	0.01324	0.01277	0.02206
	(D * RESET_B * !SCD * !SCE * Q)	0.01121	0.01091	0.02025
	(D * RESET_B * !SCD * !SCE * Q)	0.00742	0.00708	0.01644
	(D * RESET_B * !SCD * !SCE * !Q)	0.01776	0.01748	0.02701
	(D * RESET_B * !SCD * !SCE * !Q)	0.01400	0.01370	0.02323
	(D * !SCD * SCE * !Q)	0.01106	0.01076	0.02009
	(D * !SCD * SCE * !Q)	0.00727	0.00695	0.01629
	(D * !RESET_B * SCD * SCE * !Q)	0.01106	0.01076	0.02010
	(D * !RESET_B * SCD * SCE * !Q)	0.00727	0.00696	0.01629
	(D * !RESET_B * SCD * !SCE * !Q)	0.01106	0.01076	0.02010
	(D * !RESET_B * SCD * !SCE * !Q)	0.00727	0.00695	0.01629
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01106	0.01076	0.02010
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00727	0.00695	0.01629
	(!D * RESET_B * SCD * SCE * Q)	0.01121	0.01091	0.02026
	(!D * RESET_B * SCD * SCE * Q)	0.00742	0.00708	0.01645
	(!D * RESET_B * SCD * SCE * !Q)	0.01782	0.01753	0.02707
	(!D * RESET_B * SCD * SCE * !Q)	0.01404	0.01375	0.02328
	(!D * RESET_B * !SCE * Q)	0.01701	0.01654	0.02584
	(!D * RESET_B * !SCE * Q)	0.01319	0.01271	0.02200
	(!D * RESET_B * !SCD * SCE * Q)	0.01703	0.01657	0.02586
	(!D * RESET_B * !SCD * SCE * Q)	0.01323	0.01275	0.02204
	(!D * !SCE * !Q)	0.01106	0.01075	0.02009
	(!D * !SCE * !Q)	0.00727	0.00695	0.01628
	(!D * !SCD * SCE * !Q)	0.01106	0.01076	0.02009
	(!D * !SCD * SCE * !Q)	0.00727	0.00695	0.01629
	(!D * !RESET_B * SCD * SCE * !Q)	0.01106	0.01076	0.02010
	(!D * !RESET_B * SCD * SCE * !Q)	0.00727	0.00696	0.01629

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)	0.00815	0.00828	0.01826
	(D * RESET_B * SCD * SCE * Q)	0.01196	0.01209	0.02207
	(D * RESET_B * SCD * !SCE * Q)	0.00815	0.00828	0.01826
	(D * RESET_B * SCD * !SCE * Q)	0.01196	0.01209	0.02207
	(D * RESET_B * !SCD * !SCE * Q)	0.00815	0.00828	0.01826
	(D * RESET_B * !SCD * !SCE * Q)	0.01196	0.01209	0.02207
	(D * !SCD * SCE * !Q)	0.00807	0.00819	0.01818
	(D * !SCD * SCE * !Q)	0.01189	0.01201	0.02198
	(D * !RESET_B * SCD * SCE * !Q)	0.00808	0.00827	0.01818
	(D * !RESET_B * SCD * SCE * !Q)	0.01188	0.01207	0.02199
	(D * !RESET_B * SCD * !SCE * !Q)	0.00807	0.00827	0.01818
	(D * !RESET_B * SCD * !SCE * !Q)	0.01188	0.01206	0.02198
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00807	0.00827	0.01818
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01188	0.01206	0.02198
	(!D * RESET_B * SCD * SCE * Q)	0.00815	0.00828	0.01826
	(!D * RESET_B * SCD * SCE * Q)	0.01196	0.01209	0.02207
	(!D * !SCE * !Q)	0.00807	0.00819	0.01818
	(!D * !SCE * !Q)	0.01188	0.01201	0.02198
	(!D * !SCD * SCE * !Q)	0.00808	0.00819	0.01819
	(!D * !SCD * SCE * !Q)	0.01189	0.01200	0.02199
	(!D * !RESET_B * SCD * SCE * !Q)	0.00808	0.00827	0.01818
	(!D * !RESET_B * SCD * SCE * !Q)	0.01188	0.01207	0.02199

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00190	0.00196	0.00418	0.00564	0.00318	0.75964
sky130_fd_sc_hs__sdfrtp_2	0.00184	0.00198	0.00426	0.00571	0.00318	1.50990
sky130_fd_sc_hs__sdfrtp_4	0.00184	0.00195	0.00429	0.00563	0.00317	2.86488

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.65679	1.25733
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.67541	1.27198
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.80931	1.50883

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)	0.32158	1.01929	7.51693
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.34477	0.92739	7.54350
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.39835	0.89994	7.60305

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.33306	0.73981	3.43104
	RESET_B->Q (FF)	0.49340	1.11086	5.49941
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.34580	0.71698	3.45552
	RESET_B->Q (FF)	0.50935	1.09354	5.54564
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.36346	0.70062	3.39634
	RESET_B->Q (FF)	0.52383	1.07393	5.47955

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)	-0.17835	-0.30287	-1.30257
	setup	CLK (R)	0.35665	0.40934	1.47496
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16931	-0.29296	-1.25095
	setup	CLK (R)	0.35942	0.40747	1.43066
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16989	-0.29062	-1.25410
	setup	CLK (R)	0.33801	0.39616	1.39450

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)	-0.14358	-0.28762	-1.67359
	setup	CLK (R)	0.47930	0.52925	2.14380
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13532	-0.26888	-1.64651
	setup	CLK (R)	0.45318	0.50714	2.08224
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14835	-0.27948	-1.70078
	setup	CLK (R)	0.45068	0.50284	2.07759

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)	-0.17835	-0.30287	-1.30257
	hold	CLK (R)	-0.17979	-0.30591	-1.30352
	setup	CLK (R)	0.35621	0.40909	1.47496
	setup	CLK (R)	0.35665	0.40934	1.47492
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16931	-0.29296	-1.25095
	hold	CLK (R)	-0.17178	-0.29321	-1.25195
	setup	CLK (R)	0.35894	0.40346	1.42707
	setup	CLK (R)	0.35942	0.40747	1.43066
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16989	-0.29062	-1.25410
	hold	CLK (R)	-0.17282	-0.29331	-1.25607
	setup	CLK (R)	0.33697	0.39167	1.39450
	setup	CLK (R)	0.33801	0.39616	1.39432

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)	-0.14410	-0.28762	-1.68489
	hold	CLK (R)	-0.14358	-0.28799	-1.67359
	setup	CLK (R)	0.47930	0.52717	2.14380
	setup	CLK (R)	0.47927	0.52925	2.14346
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13532	-0.26888	-1.64651
	hold	CLK (R)	-0.13870	-0.26888	-1.64904
	setup	CLK (R)	0.45318	0.50714	2.08224
	setup	CLK (R)	0.45303	0.50703	2.08072
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14835	-0.28006	-1.70078
	hold	CLK (R)	-0.15030	-0.27948	-1.70216
	setup	CLK (R)	0.45068	0.50284	2.07759
	setup	CLK (R)	0.44970	0.50126	2.07665

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)	-0.21453	-0.32971	-1.39072
	setup	CLK (R)	0.40412	0.44353	1.56611
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.20942	-0.32020	-1.35147
	setup	CLK (R)	0.40736	0.43944	1.52266
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.20946	-0.32030	-1.35707
	setup	CLK (R)	0.38690	0.42671	1.48877

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)	-0.18749	-0.33645	-1.88702
	setup	CLK (R)	0.57696	0.61693	2.32907
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.18516	-0.33027	-1.88573
	setup	CLK (R)	0.55851	0.60135	2.27907
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.19678	-0.34070	-1.94922
	setup	CLK (R)	0.55413	0.59888	2.27574

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)	-0.21453	-0.32971	-1.39072
	hold	CLK (R)	-0.22745	-0.34176	-1.41870
	setup	CLK (R)	0.39649	0.43247	1.53955
	setup	CLK (R)	0.40412	0.44353	1.56611
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.20942	-0.32020	-1.35147
	hold	CLK (R)	-0.22390	-0.33187	-1.38119
	setup	CLK (R)	0.39997	0.42902	1.50200
	setup	CLK (R)	0.40736	0.43944	1.52266
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.20946	-0.32030	-1.35707
	hold	CLK (R)	-0.21962	-0.33229	-1.37729
	setup	CLK (R)	0.38173	0.41802	1.47534
	setup	CLK (R)	0.38690	0.42671	1.48877

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)	-0.20083	-0.35487	-1.92085
	hold	CLK (R)	-0.18749	-0.33645	-1.88702
	setup	CLK (R)	0.57027	0.61557	2.31370
	setup	CLK (R)	0.57696	0.61693	2.32907
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.20343	-0.34888	-1.90233
	hold	CLK (R)	-0.18516	-0.33027	-1.88573
	setup	CLK (R)	0.55723	0.59809	2.26141
	setup	CLK (R)	0.55851	0.60135	2.27907
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.21668	-0.35814	-1.97087
	hold	CLK (R)	-0.19678	-0.34070	-1.94922
	setup	CLK (R)	0.55339	0.59888	2.26501
	setup	CLK (R)	0.55413	0.59735	2.27574

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)	-0.18666	-0.29313	-0.42587
	setup	CLK (R)	0.57072	0.55770	1.53548
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.18084	-0.27934	-0.40107
	setup	CLK (R)	0.54695	0.53391	1.49945
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.18283	-0.28985	-0.42781
	setup	CLK (R)	0.54239	0.53478	1.46166

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)	-0.16217	-0.29374	-1.65606
	setup	CLK (R)	0.49330	0.53757	2.11025
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15668	-0.27916	-1.62126
	setup	CLK (R)	0.47295	0.52851	2.05385
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16728	-0.28890	-1.62158
	setup	CLK (R)	0.46865	0.51735	2.04683

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)	-0.19823	-0.29313	-0.42587
	hold	CLK (R)	-0.18666	-0.31636	-1.36687
	setup	CLK (R)	0.57072	0.55770	0.65620
	setup	CLK (R)	0.36430	0.41969	1.53548
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.19335	-0.27934	-0.40107
	hold	CLK (R)	-0.18084	-0.31056	-1.33016
	setup	CLK (R)	0.54695	0.53391	0.62493
	setup	CLK (R)	0.36754	0.41752	1.49945
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.20736	-0.28985	-0.42781
	hold	CLK (R)	-0.18283	-0.30719	-1.32971
	setup	CLK (R)	0.54239	0.53478	0.62370
	setup	CLK (R)	0.34762	0.40595	1.46166

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)	-0.28791	-0.43656	-1.65606
	hold	CLK (R)	-0.16217	-0.29374	-1.67861
	setup	CLK (R)	0.46751	0.53757	1.75332
	setup	CLK (R)	0.49330	0.53682	2.11025
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.27647	-0.41977	-1.62126
	hold	CLK (R)	-0.15668	-0.27916	-1.64807
	setup	CLK (R)	0.46526	0.52851	1.71436
	setup	CLK (R)	0.47295	0.51447	2.05385
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.27622	-0.42076	-1.62158
	hold	CLK (R)	-0.16728	-0.28890	-1.71088
	setup	CLK (R)	0.44369	0.51735	1.68817
	setup	CLK (R)	0.46865	0.51109	2.04683

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)	0.43603	0.45185	1.53878
	removal	CLK (R)	-0.28914	-0.34620	-1.31114
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.43665	0.44863	1.50975
	removal	CLK (R)	-0.28858	-0.33579	-1.27626
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.41746	0.43446	1.48799
	removal	CLK (R)	-0.28780	-0.33579	-1.28129

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)	0.42901	0.44165	1.51920
	recovery	CLK (R)	0.41185	0.42398	1.43238
	recovery	CLK (R)	0.40561	0.41136	1.40474
	recovery	CLK (R)	0.43603	0.45185	1.53878
	removal	CLK (R)	-0.31274	-0.37543	-1.42591
	removal	CLK (R)	-0.29594	-0.35881	-1.34045
	removal	CLK (R)	-0.28914	-0.34620	-1.31114
	removal	CLK (R)	-0.32265	-0.38833	-1.44800
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.43128	0.43841	1.48771
	recovery	CLK (R)	0.41237	0.41839	1.40007
	recovery	CLK (R)	0.40556	0.40624	1.36957
	recovery	CLK (R)	0.43665	0.44863	1.50975
	removal	CLK (R)	-0.31337	-0.37021	-1.40004
	removal	CLK (R)	-0.29430	-0.34824	-1.31033
	removal	CLK (R)	-0.28858	-0.33579	-1.27626
	removal	CLK (R)	-0.32282	-0.37881	-1.41863
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.41184	0.42634	1.47531
	recovery	CLK (R)	0.39442	0.41052	1.38264
	recovery	CLK (R)	0.38797	0.39737	1.35356
	recovery	CLK (R)	0.41746	0.43446	1.48799
	removal	CLK (R)	-0.31071	-0.36818	-1.40588
	removal	CLK (R)	-0.29201	-0.34935	-1.30902
	removal	CLK (R)	-0.28780	-0.33579	-1.28129
	removal	CLK (R)	-0.31734	-0.37670	-1.41957

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 ()	0.25750	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.19970	0.82031	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.26359	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.20578	0.82031	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.25750	0.82031	16.50020
	min_pulse_width	RESET_B ()	0.20578	0.82031	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 ()	0.16015	0.82031	16.50020
	min_pulse_width	CLK ()	0.12364	0.82031	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.18145	0.82031	16.50020
	min_pulse_width	CLK ()	0.12364	0.82031	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.21491	0.82031	16.50020
	min_pulse_width	CLK ()	0.13277	0.82031	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 ()	0.34573	0.82031	16.50020
	min_pulse_width	CLK ()	0.41265	0.82031	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.36702	0.82031	16.50020
	min_pulse_width	CLK ()	0.42178	0.82031	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.34573	0.82031	16.50020
	min_pulse_width	CLK ()	0.41570	0.82031	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	0.02294	0.02290	0.03257
	CLK	0.01893	0.01889	0.02867
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02604	0.02636	0.03608
	CLK	0.02191	0.02229	0.03217
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03159	0.03227	0.04215
	CLK	0.02755	0.02824	0.03868

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.02368	0.02392	0.03386
	CLK	0.01975	0.01996	0.02974
	RESET_B	0.01967	0.01952	0.03080
	RESET_B	0.02847	0.02828	0.03890
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02609	0.02675	0.03701
	CLK	0.02222	0.02289	0.03271
	RESET_B	0.02251	0.02277	0.03420
	RESET_B	0.03134	0.03160	0.04228
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03228	0.03367	0.04472
	CLK	0.02834	0.02974	0.03967
	RESET_B	0.02872	0.02974	0.04535
	RESET_B	0.03747	0.03847	0.04937

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)**	0.00101	0.00102	0.00102
	(CLK * RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00527	0.00516	0.00999
	(CLK * RESET_B * SCD * !SCE)	0.00228	0.00217	0.00699
	(CLK * RESET_B * !SCD * !SCE)	0.00527	0.00516	0.00999
	(CLK * RESET_B * !SCD * !SCE)	0.00229	0.00217	0.00699
	(CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCD * SCE)	-0.00117	-0.00119	-0.00120
	(CLK * !RESET_B * SCD * SCE)	0.00053	0.00054	0.00052
	(CLK * !RESET_B * SCD * SCE)	-0.00117	-0.00119	-0.00121
	(CLK * !RESET_B * SCD * !SCE)	0.00040	0.00040	0.00034
	(CLK * !RESET_B * SCD * !SCE)	-0.00130	-0.00130	-0.00140
	(CLK * !RESET_B * !SCD * !SCE)	0.00039	0.00039	0.00034
	(CLK * !RESET_B * !SCD * !SCE)	-0.00134	-0.00135	-0.00141
	(!CLK * RESET_B * SCD * SCE)	0.00101	0.00102	0.00102
	(!CLK * RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * RESET_B * SCD * !SCE)	0.01111	0.01103	0.01590
	(!CLK * RESET_B * SCD * !SCE)	0.00797	0.00789	0.01275
	(!CLK * RESET_B * !SCD * !SCE)	0.01111	0.01104	0.01590
	(!CLK * RESET_B * !SCD * !SCE)	0.00797	0.00789	0.01275
	(!CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * !SCD * SCE)	-0.00117	-0.00118	-0.00121
	(!CLK * !RESET_B * SCD * SCE)	0.00054	0.00054	0.00052
	(!CLK * !RESET_B * SCD * SCE)	-0.00117	-0.00119	-0.00121
	(!CLK * !RESET_B * SCD * !SCE)	0.00040	0.00040	0.00034
	(!CLK * !RESET_B * SCD * !SCE)	-0.00130	-0.00131	-0.00140
	(!CLK * !RESET_B * !SCD * !SCE)	0.00039	0.00039	0.00034
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00134	-0.00135	-0.00141

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00096	0.00097	0.00096
	(CLK * RESET_B * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(CLK * RESET_B * SCD * !SCE)	0.00445	0.00437	0.00936
	(CLK * RESET_B * SCD * !SCE)	0.00160	0.00150	0.00651
	(CLK * RESET_B * !SCD * !SCE)	0.00445	0.00437	0.00936
	(CLK * RESET_B * !SCD * !SCE)	0.00160	0.00150	0.00651
	(CLK * !SCD * SCE)	0.00053	0.00053	0.00052
	(CLK * !SCD * SCE)	-0.00110	-0.00112	-0.00114
	(CLK * !RESET_B * SCD * SCE)	0.00052	0.00052	0.00051
	(CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00113	-0.00114
	(CLK * !RESET_B * SCD * !SCE)	0.00039	0.00039	0.00033
	(CLK * !RESET_B * SCD * !SCE)	-0.00124	-0.00124	-0.00133
	(CLK * !RESET_B * !SCD * !SCE)	0.00038	0.00038	0.00033
	(CLK * !RESET_B * !SCD * !SCE)	-0.00128	-0.00128	-0.00134
	(!CLK * RESET_B * SCD * SCE)	0.00096	0.00096	0.00096
	(!CLK * RESET_B * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK * RESET_B * SCD * !SCE)	0.01054	0.01049	0.01550
	(!CLK * RESET_B * SCD * !SCE)	0.00753	0.00747	0.01249
	(!CLK * RESET_B * !SCD * !SCE)	0.01054	0.01049	0.01550
	(!CLK * RESET_B * !SCD * !SCE)	0.00754	0.00748	0.01248
	(!CLK * !SCD * SCE)	0.00053	0.00053	0.00052
	(!CLK * !SCD * SCE)	-0.00110	-0.00112	-0.00114
	(!CLK * !RESET_B * SCD * SCE)	0.00052	0.00052	0.00051
	(!CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00113	-0.00114
	(!CLK * !RESET_B * SCD * !SCE)	0.00038	0.00039	0.00033
	(!CLK * !RESET_B * SCD * !SCE)	-0.00123	-0.00124	-0.00133
	(!CLK * !RESET_B * !SCD * !SCE)	0.00037	0.00038	0.00033
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00127	-0.00128	-0.00134

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00096	0.00098	0.00097
	(CLK * RESET_B * SCD * SCE)	-0.00049	-0.00051	-0.00050
	(CLK * RESET_B * SCD * !SCE)	0.00451	0.00442	0.00941
	(CLK * RESET_B * SCD * !SCE)	0.00162	0.00152	0.00653
	(CLK * RESET_B * !SCD * !SCE)	0.00451	0.00442	0.00941
	(CLK * RESET_B * !SCD * !SCE)	0.00162	0.00152	0.00653
	(CLK * !SCD * SCE)	0.00052	0.00053	0.00051
	(CLK * !SCD * SCE)	-0.00111	-0.00113	-0.00115
	(CLK * !RESET_B * SCD * SCE)	0.00051	0.00052	0.00050
	(CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00113	-0.00116
	(CLK * !RESET_B * SCD * !SCE)	0.00040	0.00039	0.00033
	(CLK * !RESET_B * SCD * !SCE)	-0.00123	-0.00123	-0.00132
	(CLK * !RESET_B * !SCD * !SCE)	0.00039	0.00038	0.00033
	(CLK * !RESET_B * !SCD * !SCE)	-0.00127	-0.00127	-0.00134
	(!CLK * RESET_B * SCD * SCE)	0.00097	0.00098	0.00097
	(!CLK * RESET_B * SCD * SCE)	-0.00050	-0.00050	-0.00049
	(!CLK * RESET_B * SCD * !SCE)	0.01061	0.01055	0.01560
	(!CLK * RESET_B * SCD * !SCE)	0.00756	0.00750	0.01255
	(!CLK * RESET_B * !SCD * !SCE)	0.01061	0.01056	0.01560
	(!CLK * RESET_B * !SCD * !SCE)	0.00757	0.00751	0.01255
	(!CLK * !SCD * SCE)	0.00053	0.00053	0.00051
	(!CLK * !SCD * SCE)	-0.00111	-0.00112	-0.00115
	(!CLK * !RESET_B * SCD * SCE)	0.00051	0.00052	0.00050
	(!CLK * !RESET_B * SCD * SCE)	-0.00111	-0.00113	-0.00116
	(!CLK * !RESET_B * SCD * !SCE)	0.00039	0.00039	0.00033
	(!CLK * !RESET_B * SCD * !SCE)	-0.00122	-0.00123	-0.00132
	(!CLK * !RESET_B * !SCD * !SCE)	0.00038	0.00038	0.00033
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00126	-0.00127	-0.00134

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)**	-0.00096	-0.00097	-0.00100
	(CLK * RESET_B * SCD * SCE)	0.00058	0.00058	0.00056
	(CLK * RESET_B * SCD * !SCE)	0.00073	0.00079	0.00613
	(CLK * RESET_B * SCD * !SCE)	0.00372	0.00379	0.00912
	(CLK * RESET_B * !SCD * !SCE)	0.00073	0.00079	0.00613
	(CLK * RESET_B * !SCD * !SCE)	0.00372	0.00379	0.00912
	(CLK * !SCD * SCE)	-0.00051	-0.00052	-0.00051
	(CLK * !SCD * SCE)	0.00120	0.00121	0.00120
	(CLK * !RESET_B * SCD * SCE)	-0.00050	-0.00051	-0.00050
	(CLK * !RESET_B * SCD * SCE)	0.00121	0.00121	0.00121
	(CLK * !RESET_B * SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(CLK * !RESET_B * SCD * !SCE)	0.00142	0.00143	0.00142
	(CLK * !RESET_B * !SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(CLK * !RESET_B * !SCD * !SCE)	0.00142	0.00143	0.00142
	(!CLK * RESET_B * SCD * SCE)	-0.00096	-0.00097	-0.00100
	(!CLK * RESET_B * SCD * SCE)	0.00058	0.00058	0.00056
	(!CLK * RESET_B * SCD * !SCE)	0.00631	0.00636	0.01270
	(!CLK * RESET_B * SCD * !SCE)	0.00946	0.00951	0.01585
	(!CLK * RESET_B * !SCD * !SCE)	0.00631	0.00636	0.01270
	(!CLK * RESET_B * !SCD * !SCE)	0.00946	0.00950	0.01585
	(!CLK * !SCD * SCE)	-0.00051	-0.00052	-0.00051
	(!CLK * !SCD * SCE)	0.00120	0.00121	0.00121
	(!CLK * !RESET_B * SCD * SCE)	-0.00050	-0.00051	-0.00050
	(!CLK * !RESET_B * SCD * SCE)	0.00121	0.00121	0.00121
	(!CLK * !RESET_B * SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(!CLK * !RESET_B * SCD * !SCE)	0.00142	0.00142	0.00142
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(!CLK * !RESET_B * !SCD * !SCE)	0.00142	0.00142	0.00142

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00091	-0.00092	-0.00095
	(CLK * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00077	0.00086	0.00629
	(CLK * RESET_B * SCD * !SCE)	0.00363	0.00373	0.00915
	(CLK * RESET_B * !SCD * !SCE)	0.00077	0.00086	0.00629
	(CLK * RESET_B * !SCD * !SCE)	0.00363	0.00373	0.00916
	(CLK * !SCD * SCE)	-0.00050	-0.00050	-0.00050
	(CLK * !SCD * SCE)	0.00114	0.00115	0.00114
	(CLK * !RESET_B * SCD * SCE)	-0.00048	-0.00049	-0.00049
	(CLK * !RESET_B * SCD * SCE)	0.00114	0.00115	0.00114
	(CLK * !RESET_B * SCD * !SCE)	-0.00031	-0.00030	-0.00030
	(CLK * !RESET_B * SCD * !SCE)	0.00135	0.00135	0.00135
	(CLK * !RESET_B * !SCD * !SCE)	-0.00031	-0.00031	-0.00030
	(CLK * !RESET_B * !SCD * !SCE)	0.00135	0.00136	0.00135
	(!CLK * RESET_B * SCD * SCE)	-0.00091	-0.00092	-0.00095
	(!CLK * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * RESET_B * SCD * !SCE)	0.00689	0.00692	0.01340
	(!CLK * RESET_B * SCD * !SCE)	0.00990	0.00993	0.01642
	(!CLK * RESET_B * !SCD * !SCE)	0.00690	0.00692	0.01341
	(!CLK * RESET_B * !SCD * !SCE)	0.00991	0.00993	0.01642
	(!CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00050
	(!CLK * !SCD * SCE)	0.00114	0.00115	0.00114
	(!CLK * !RESET_B * SCD * SCE)	-0.00048	-0.00049	-0.00049
	(!CLK * !RESET_B * SCD * SCE)	0.00114	0.00115	0.00114
	(!CLK * !RESET_B * SCD * !SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * !RESET_B * SCD * !SCE)	0.00134	0.00135	0.00135
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00030	-0.00031	-0.00030
	(!CLK * !RESET_B * !SCD * !SCE)	0.00134	0.00135	0.00135

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00091	-0.00092	-0.00095
	(CLK * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00072	0.00082	0.00624
	(CLK * RESET_B * SCD * !SCE)	0.00362	0.00371	0.00914
	(CLK * RESET_B * !SCD * !SCE)	0.00072	0.00081	0.00624
	(CLK * RESET_B * !SCD * !SCE)	0.00363	0.00371	0.00914
	(CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(CLK * !SCD * SCE)	0.00115	0.00116	0.00115
	(CLK * !RESET_B * SCD * SCE)	-0.00047	-0.00048	-0.00048
	(CLK * !RESET_B * SCD * SCE)	0.00115	0.00116	0.00116
	(CLK * !RESET_B * SCD * !SCE)	-0.00032	-0.00031	-0.00031
	(CLK * !RESET_B * SCD * !SCE)	0.00135	0.00135	0.00135
	(CLK * !RESET_B * !SCD * !SCE)	-0.00032	-0.00031	-0.00031
	(CLK * !RESET_B * !SCD * !SCE)	0.00135	0.00135	0.00135
	(!CLK * RESET_B * SCD * SCE)	-0.00090	-0.00092	-0.00095
	(!CLK * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * RESET_B * SCD * !SCE)	0.00655	0.00658	0.01311
	(!CLK * RESET_B * SCD * !SCE)	0.00960	0.00963	0.01617
	(!CLK * RESET_B * !SCD * !SCE)	0.00656	0.00658	0.01311
	(!CLK * RESET_B * !SCD * !SCE)	0.00960	0.00963	0.01617
	(!CLK * !SCD * SCE)	-0.00048	-0.00049	-0.00049
	(!CLK * !SCD * SCE)	0.00115	0.00116	0.00115
	(!CLK * !RESET_B * SCD * SCE)	-0.00047	-0.00048	-0.00048
	(!CLK * !RESET_B * SCD * SCE)	0.00115	0.00116	0.00116
	(!CLK * !RESET_B * SCD * !SCE)	-0.00031	-0.00031	-0.00031
	(!CLK * !RESET_B * SCD * !SCE)	0.00134	0.00135	0.00135
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00031	-0.00031	-0.00031
	(!CLK * !RESET_B * !SCD * !SCE)	0.00134	0.00135	0.00135

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)**	0.00646	0.00632	0.00973
	(CLK * D * RESET_B * SCE)	0.00273	0.00257	0.00599
	(CLK * D * RESET_B * !SCE)	0.00101	0.00087	0.00085
	(CLK * D * RESET_B * !SCE)	-0.00098	-0.00112	-0.00113
	(CLK * D * !RESET_B * SCE)	0.00051	0.00051	0.00049
	(CLK * D * !RESET_B * SCE)	-0.00123	-0.00123	-0.00121
	(CLK * D * !RESET_B * !SCE)	0.00035	0.00035	0.00035
	(CLK * D * !RESET_B * !SCE)	-0.00133	-0.00133	-0.00134
	(CLK * !D * RESET_B * SCE)	0.00725	0.00711	0.01031
	(CLK * !D * RESET_B * SCE)	0.00331	0.00316	0.00637
	(CLK * !D * !RESET_B * SCE)	0.00051	0.00051	0.00049
	(CLK * !D * !RESET_B * SCE)	-0.00123	-0.00123	-0.00121
	(!D * RESET_B * !SCE)	0.00067	0.00067	0.00067
	(!D * RESET_B * !SCE)	-0.00131	-0.00131	-0.00131
	(!D * !RESET_B * !SCE)	0.00044	0.00044	0.00044
	(!D * !RESET_B * !SCE)	-0.00140	-0.00140	-0.00140
	(!CLK * D * RESET_B * SCE)	0.01230	0.01219	0.01571
	(!CLK * D * RESET_B * SCE)	0.00840	0.00829	0.01182
	(!CLK * D * RESET_B * !SCE)	0.00101	0.00087	0.00085
	(!CLK * D * RESET_B * !SCE)	-0.00097	-0.00112	-0.00113
	(!CLK * D * !RESET_B * SCE)	0.00051	0.00051	0.00049
	(!CLK * D * !RESET_B * SCE)	-0.00123	-0.00123	-0.00121
	(!CLK * D * !RESET_B * !SCE)	0.00035	0.00035	0.00035
	(!CLK * D * !RESET_B * !SCE)	-0.00133	-0.00133	-0.00134
	(!CLK * !D * RESET_B * SCE)	0.01309	0.01299	0.01634
	(!CLK * !D * RESET_B * SCE)	0.00899	0.00889	0.01225
	(!CLK * !D * !RESET_B * SCE)	0.00051	0.00051	0.00049
	(!CLK * !D * !RESET_B * SCE)	-0.00123	-0.00123	-0.00121

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00582	0.00566	0.00914
	(CLK * D * RESET_B * SCE)	0.00214	0.00197	0.00547
	(CLK * D * RESET_B * !SCE)	0.00102	0.00088	0.00086
	(CLK * D * RESET_B * !SCE)	-0.00096	-0.00110	-0.00112
	(CLK * D * !RESET_B * SCE)	0.00048	0.00048	0.00046
	(CLK * D * !RESET_B * SCE)	-0.00125	-0.00126	-0.00124
	(CLK * D * !RESET_B * !SCE)	0.00034	0.00034	0.00034
	(CLK * D * !RESET_B * !SCE)	-0.00133	-0.00133	-0.00135
	(CLK * !D * RESET_B * SCE)	0.00661	0.00645	0.00972
	(CLK * !D * RESET_B * SCE)	0.00272	0.00256	0.00584
	(CLK * !D * !RESET_B * SCE)	0.00048	0.00048	0.00046
	(CLK * !D * !RESET_B * SCE)	-0.00125	-0.00126	-0.00124
	(!D * RESET_B * !SCE)	0.00066	0.00066	0.00066
	(!D * RESET_B * !SCE)	-0.00131	-0.00131	-0.00132
	(!D * !RESET_B * !SCE)	0.00043	0.00043	0.00042
	(!D * !RESET_B * !SCE)	-0.00140	-0.00141	-0.00141
	(!CLK * D * RESET_B * SCE)	0.01190	0.01177	0.01535
	(!CLK * D * RESET_B * SCE)	0.00806	0.00794	0.01151
	(!CLK * D * RESET_B * !SCE)	0.00102	0.00088	0.00086
	(!CLK * D * RESET_B * !SCE)	-0.00096	-0.00110	-0.00112
	(!CLK * D * !RESET_B * SCE)	0.00048	0.00048	0.00046
	(!CLK * D * !RESET_B * SCE)	-0.00125	-0.00126	-0.00124
	(!CLK * D * !RESET_B * !SCE)	0.00034	0.00034	0.00034
	(!CLK * D * !RESET_B * !SCE)	-0.00133	-0.00134	-0.00135
	(!CLK * !D * RESET_B * SCE)	0.01268	0.01258	0.01597
	(!CLK * !D * RESET_B * SCE)	0.00866	0.00854	0.01194
	(!CLK * !D * !RESET_B * SCE)	0.00048	0.00048	0.00046
	(!CLK * !D * !RESET_B * SCE)	-0.00125	-0.00126	-0.00124

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00584	0.00569	0.00918
	(CLK * D * RESET_B * SCE)	0.00215	0.00199	0.00549
	(CLK * D * RESET_B * !SCE)	0.00100	0.00085	0.00083
	(CLK * D * RESET_B * !SCE)	-0.00096	-0.00110	-0.00112
	(CLK * D * !RESET_B * SCE)	0.00047	0.00048	0.00046
	(CLK * D * !RESET_B * SCE)	-0.00123	-0.00123	-0.00122
	(CLK * D * !RESET_B * !SCE)	0.00034	0.00034	0.00034
	(CLK * D * !RESET_B * !SCE)	-0.00131	-0.00131	-0.00132
	(CLK * !D * RESET_B * SCE)	0.00663	0.00648	0.00975
	(CLK * !D * RESET_B * SCE)	0.00274	0.00258	0.00586
	(CLK * !D * !RESET_B * SCE)	0.00047	0.00048	0.00046
	(CLK * !D * !RESET_B * SCE)	-0.00123	-0.00123	-0.00122
	(!D * RESET_B * !SCE)	0.00066	0.00066	0.00066
	(!D * RESET_B * !SCE)	-0.00129	-0.00129	-0.00129
	(!D * !RESET_B * !SCE)	0.00043	0.00043	0.00043
	(!D * !RESET_B * !SCE)	-0.00137	-0.00138	-0.00138
	(!CLK * D * RESET_B * SCE)	0.01193	0.01183	0.01542
	(!CLK * D * RESET_B * SCE)	0.00809	0.00797	0.01157
	(!CLK * D * RESET_B * !SCE)	0.00100	0.00086	0.00084
	(!CLK * D * RESET_B * !SCE)	-0.00096	-0.00110	-0.00111
	(!CLK * D * !RESET_B * SCE)	0.00047	0.00048	0.00046
	(!CLK * D * !RESET_B * SCE)	-0.00123	-0.00123	-0.00122
	(!CLK * D * !RESET_B * !SCE)	0.00034	0.00034	0.00034
	(!CLK * D * !RESET_B * !SCE)	-0.00131	-0.00131	-0.00132
	(!CLK * !D * RESET_B * SCE)	0.01272	0.01261	0.01603
	(!CLK * !D * RESET_B * SCE)	0.00868	0.00856	0.01198
	(!CLK * !D * !RESET_B * SCE)	0.00047	0.00048	0.00046
	(!CLK * !D * !RESET_B * SCE)	-0.00123	-0.00123	-0.00122

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)	0.00197	0.00181	0.00542
	(CLK * D * RESET_B * SCE)	0.00572	0.00556	0.00915
	(CLK * D * RESET_B * !SCE)	-0.00081	-0.00083	-0.00083
	(CLK * D * RESET_B * !SCE)	0.00116	0.00116	0.00116
	(CLK * D * !RESET_B * SCE)	-0.00045	-0.00045	-0.00046
	(CLK * D * !RESET_B * SCE)	0.00125	0.00125	0.00123
	(CLK * D * !RESET_B * !SCE)	-0.00034	-0.00034	-0.00034
	(CLK * D * !RESET_B * !SCE)	0.00134	0.00135	0.00135
	(CLK * !D * RESET_B * SCE)	0.00160	0.00144	0.00517
	(CLK * !D * RESET_B * SCE)	0.00554	0.00539	0.00909
	(CLK * !D * !RESET_B * SCE)	-0.00045	-0.00045	-0.00046
	(CLK * !D * !RESET_B * SCE)	0.00125	0.00125	0.00123
	(!D * RESET_B * !SCE)	-0.00062	-0.00066	-0.00067
	(!D * RESET_B * !SCE)	0.00135	0.00133	0.00132
	(!D * !RESET_B * !SCE)	-0.00044	-0.00044	-0.00044
	(!D * !RESET_B * !SCE)	0.00144	0.00144	0.00142
	(!CLK * D * RESET_B * SCE)	0.00757	0.00743	0.01177
	(!CLK * D * RESET_B * SCE)	0.01149	0.01134	0.01566
	(!CLK * D * RESET_B * !SCE)	-0.00081	-0.00082	-0.00083
	(!CLK * D * RESET_B * !SCE)	0.00116	0.00116	0.00116
	(!CLK * D * !RESET_B * SCE)	-0.00045	-0.00045	-0.00046
	(!CLK * D * !RESET_B * SCE)	0.00125	0.00125	0.00123
	(!CLK * D * !RESET_B * !SCE)	-0.00034	-0.00034	-0.00034
	(!CLK * D * !RESET_B * !SCE)	0.00134	0.00135	0.00135
	(!CLK * !D * RESET_B * SCE)	0.00724	0.00713	0.01172
	(!CLK * !D * RESET_B * SCE)	0.01135	0.01123	0.01581
	(!CLK * !D * !RESET_B * SCE)	-0.00045	-0.00045	-0.00046
	(!CLK * !D * !RESET_B * SCE)	0.00125	0.00125	0.00123

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00195	0.00178	0.00544
	(CLK * D * RESET_B * SCE)	0.00565	0.00549	0.00910
	(CLK * D * RESET_B * !SCE)	-0.00082	-0.00084	-0.00084
	(CLK * D * RESET_B * !SCE)	0.00114	0.00115	0.00114
	(CLK * D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * D * !RESET_B * SCE)	0.00127	0.00128	0.00126
	(CLK * D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(CLK * D * !RESET_B * !SCE)	0.00136	0.00136	0.00135
	(CLK * !D * RESET_B * SCE)	0.00158	0.00142	0.00519
	(CLK * !D * RESET_B * SCE)	0.00548	0.00532	0.00906
	(CLK * !D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !D * !RESET_B * SCE)	0.00127	0.00128	0.00126
	(!D * RESET_B * !SCE)	-0.00060	-0.00065	-0.00066
	(!D * RESET_B * !SCE)	0.00135	0.00133	0.00132
	(!D * !RESET_B * !SCE)	-0.00042	-0.00043	-0.00042
	(!D * !RESET_B * !SCE)	0.00144	0.00145	0.00142
	(!CLK * D * RESET_B * SCE)	0.00808	0.00795	0.01234
	(!CLK * D * RESET_B * SCE)	0.01193	0.01180	0.01616
	(!CLK * D * RESET_B * !SCE)	-0.00082	-0.00084	-0.00084
	(!CLK * D * RESET_B * !SCE)	0.00114	0.00115	0.00114
	(!CLK * D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * D * !RESET_B * SCE)	0.00127	0.00128	0.00126
	(!CLK * D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * D * !RESET_B * !SCE)	0.00136	0.00136	0.00135
	(!CLK * !D * RESET_B * SCE)	0.00778	0.00764	0.01229
	(!CLK * !D * RESET_B * SCE)	0.01183	0.01167	0.01632
	(!CLK * !D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !D * !RESET_B * SCE)	0.00127	0.00128	0.00126

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00199	0.00182	0.00546
	(CLK * D * RESET_B * SCE)	0.00570	0.00554	0.00915
	(CLK * D * RESET_B * !SCE)	-0.00080	-0.00081	-0.00082
	(CLK * D * RESET_B * !SCE)	0.00114	0.00115	0.00114
	(CLK * D * !RESET_B * SCE)	-0.00041	-0.00042	-0.00042
	(CLK * D * !RESET_B * SCE)	0.00125	0.00126	0.00124
	(CLK * D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(CLK * D * !RESET_B * !SCE)	0.00133	0.00134	0.00133
	(CLK * !D * RESET_B * SCE)	0.00155	0.00140	0.00517
	(CLK * !D * RESET_B * SCE)	0.00545	0.00530	0.00905
	(CLK * !D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !D * !RESET_B * SCE)	0.00125	0.00126	0.00124
	(!D * RESET_B * !SCE)	-0.00060	-0.00065	-0.00066
	(!D * RESET_B * !SCE)	0.00133	0.00131	0.00130
	(!D * !RESET_B * !SCE)	-0.00042	-0.00043	-0.00043
	(!D * !RESET_B * !SCE)	0.00142	0.00142	0.00140
	(!CLK * D * RESET_B * SCE)	0.00781	0.00770	0.01212
	(!CLK * D * RESET_B * SCE)	0.01168	0.01156	0.01596
	(!CLK * D * RESET_B * !SCE)	-0.00079	-0.00081	-0.00081
	(!CLK * D * RESET_B * !SCE)	0.00114	0.00115	0.00115
	(!CLK * D * !RESET_B * SCE)	-0.00041	-0.00042	-0.00042
	(!CLK * D * !RESET_B * SCE)	0.00125	0.00126	0.00124
	(!CLK * D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * D * !RESET_B * !SCE)	0.00133	0.00134	0.00133
	(!CLK * !D * RESET_B * SCE)	0.00745	0.00732	0.01202
	(!CLK * !D * RESET_B * SCE)	0.01151	0.01138	0.01606
	(!CLK * !D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !D * !RESET_B * SCE)	0.00125	0.00126	0.00124

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)	0.00468	0.00447	0.01097
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00039	-0.00062	0.00588
	(CLK * D * RESET_B * !SCD)	0.00699	0.00694	0.01348
	(CLK * D * RESET_B * !SCD)	0.00355	0.00346	0.00997
	(CLK * !D * RESET_B * SCD)	0.00979	0.00963	0.02008
	(CLK * !D * RESET_B * SCD)	0.00319	0.00301	0.01350
	(!CLK * D * RESET_B * SCD)	0.00468	0.00447	0.01097
	(!CLK * D * RESET_B * SCD)	-0.00039	-0.00062	0.00588
	(!CLK * D * RESET_B * !SCD)	0.01250	0.01248	0.01906
	(!CLK * D * RESET_B * !SCD)	0.00921	0.00918	0.01572
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00472	0.00467	0.01120
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00011	-0.00019	0.00635
	(!CLK * !D * RESET_B * SCD)	0.01562	0.01558	0.02619
	(!CLK * !D * RESET_B * SCD)	0.00887	0.00884	0.01944

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00470	0.00451	0.01103
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00044	-0.00064	0.00589
	(CLK * D * RESET_B * !SCD)	0.00693	0.00688	0.01347
	(CLK * D * RESET_B * !SCD)	0.00338	0.00329	0.00986
	(CLK * !D * RESET_B * SCD)	0.00912	0.00897	0.01956
	(CLK * !D * RESET_B * SCD)	0.00250	0.00233	0.01296
	(!CLK * D * RESET_B * SCD)	0.00470	0.00452	0.01103
	(!CLK * D * RESET_B * SCD)	-0.00044	-0.00064	0.00589
	(!CLK * D * RESET_B * !SCD)	0.01297	0.01296	0.01959
	(!CLK * D * RESET_B * !SCD)	0.00956	0.00954	0.01612
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00468	0.00465	0.01120
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00021	-0.00027	0.00629
	(!CLK * !D * RESET_B * SCD)	0.01519	0.01507	0.02587
	(!CLK * !D * RESET_B * SCD)	0.00843	0.00830	0.01912

sky130_fd_sc_hs__sdfrtp_4	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00471	0.00453	0.01105
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00044	-0.00063	0.00589
	(CLK * D * RESET_B * !SCD)	0.00695	0.00691	0.01355
	(CLK * D * RESET_B * !SCD)	0.00343	0.00335	0.00997
	(CLK * !D * RESET_B * SCD)	0.00917	0.00900	0.01961
	(CLK * !D * RESET_B * SCD)	0.00251	0.00235	0.01297
	(!CLK * D * RESET_B * SCD)	0.00472	0.00453	0.01105
	(!CLK * D * RESET_B * SCD)	-0.00043	-0.00064	0.00589
	(!CLK * D * RESET_B * !SCD)	0.01270	0.01270	0.01933
	(!CLK * D * RESET_B * !SCD)	0.00932	0.00931	0.01590
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00467	0.00462	0.01120
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00023	-0.00031	0.00627
	(!CLK * !D * RESET_B * SCD)	0.01526	0.01513	0.02596
	(!CLK * !D * RESET_B * SCD)	0.00844	0.00831	0.01917

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	0.00011	0.00697
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00496	0.00520	0.01204
	(CLK * D * RESET_B * !SCD)	0.00510	0.00515	0.01193
	(CLK * D * RESET_B * !SCD)	0.00856	0.00863	0.01531
	(CLK * !D * RESET_B * SCD)	0.00120	0.00125	0.01195
	(CLK * !D * RESET_B * SCD)	0.00779	0.00786	0.01855
	(!CLK * D * RESET_B * SCD)	-0.00010	0.00013	0.00697
	(!CLK * D * RESET_B * SCD)	0.00496	0.00521	0.01204
	(!CLK * D * RESET_B * !SCD)	0.01093	0.01104	0.01781
	(!CLK * D * RESET_B * !SCD)	0.01423	0.01435	0.02105
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00016	0.00003	0.00679
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00465	0.00488	0.01162
	(!CLK * !D * RESET_B * SCD)	0.00675	0.00682	0.01819
	(!CLK * !D * RESET_B * SCD)	0.01351	0.01358	0.02494

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00020	0.00002	0.00691
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00492	0.00517	0.01204
	(CLK * D * RESET_B * !SCD)	0.00423	0.00429	0.01114
	(CLK * D * RESET_B * !SCD)	0.00780	0.00788	0.01461
	(CLK * !D * RESET_B * SCD)	0.00118	0.00125	0.01209
	(CLK * !D * RESET_B * SCD)	0.00779	0.00788	0.01870
	(!CLK * D * RESET_B * SCD)	-0.00020	0.00003	0.00691
	(!CLK * D * RESET_B * SCD)	0.00493	0.00518	0.01204
	(!CLK * D * RESET_B * !SCD)	0.01030	0.01043	0.01722
	(!CLK * D * RESET_B * !SCD)	0.01372	0.01386	0.02059
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00021	-0.00001	0.00679
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00468	0.00491	0.01168
	(!CLK * !D * RESET_B * SCD)	0.00728	0.00737	0.01885
	(!CLK * !D * RESET_B * SCD)	0.01405	0.01413	0.02561

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00023	-0.00001	0.00688
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00491	0.00515	0.01203
	(CLK * D * RESET_B * !SCD)	0.00425	0.00431	0.01116
	(CLK * D * RESET_B * !SCD)	0.00780	0.00789	0.01462
	(CLK * !D * RESET_B * SCD)	0.00114	0.00120	0.01204
	(CLK * !D * RESET_B * SCD)	0.00778	0.00785	0.01869
	(!CLK * D * RESET_B * SCD)	-0.00023	0.00000	0.00688
	(!CLK * D * RESET_B * SCD)	0.00491	0.00517	0.01203
	(!CLK * D * RESET_B * !SCD)	0.01033	0.01047	0.01727
	(!CLK * D * RESET_B * !SCD)	0.01373	0.01386	0.02059
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00021	-0.00001	0.00679
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00468	0.00491	0.01169
	(!CLK * !D * RESET_B * SCD)	0.00694	0.00702	0.01854
	(!CLK * !D * RESET_B * SCD)	0.01375	0.01383	0.02535

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)**	0.00886	0.00865	0.01314
	(CLK * D * SCD * SCE * !Q)	0.00043	0.00016	0.00467
	(CLK * D * SCD * !SCE * !Q)	0.00859	0.00835	0.01306
	(CLK * D * SCD * !SCE * !Q)	0.00043	0.00015	0.00489
	(CLK * D * !SCD * SCE * !Q)	0.00263	0.00267	0.00265
	(CLK * D * !SCD * SCE * !Q)	-0.00366	-0.00369	-0.00367
	(CLK * D * !SCD * !SCE * !Q)	0.00825	0.00802	0.01287
	(CLK * D * !SCD * !SCE * !Q)	0.00043	0.00017	0.00504
	(CLK * !D * SCD * SCE * !Q)	0.00966	0.00945	0.01369
	(CLK * !D * SCD * SCE * !Q)	0.00101	0.00075	0.00504
	(CLK * !D * SCD * !SCE * !Q)	0.00260	0.00264	0.00262
	(CLK * !D * SCD * !SCE * !Q)	-0.00368	-0.00371	-0.00369
	(CLK * !D * !SCD * SCE * !Q)	0.00263	0.00267	0.00265
	(CLK * !D * !SCD * SCE * !Q)	-0.00366	-0.00369	-0.00367
	(CLK * !D * !SCD * !SCE * !Q)	0.00261	0.00265	0.00262
	(CLK * !D * !SCD * !SCE * !Q)	-0.00368	-0.00371	-0.00369
	(!CLK * D * SCD * SCE * !Q)	0.01529	0.01478	0.01970
	(!CLK * D * SCD * SCE * !Q)	0.00667	0.00615	0.01111
	(!CLK * D * SCD * !SCE * !Q)	0.01501	0.01447	0.01961
	(!CLK * D * SCD * !SCE * !Q)	0.00669	0.00614	0.01129
	(!CLK * D * !SCD * SCE * !Q)	0.00265	0.00269	0.00266
	(!CLK * D * !SCD * SCE * !Q)	-0.00364	-0.00367	-0.00365
	(!CLK * D * !SCD * !SCE * !Q)	0.01466	0.01414	0.01938
	(!CLK * D * !SCD * !SCE * !Q)	0.00669	0.00616	0.01141
	(!CLK * !D * SCD * SCE * !Q)	0.01608	0.01560	0.02032
	(!CLK * !D * SCD * SCE * !Q)	0.00726	0.00677	0.01150
	(!CLK * !D * SCD * !SCE * !Q)	0.00262	0.00266	0.00263
	(!CLK * !D * SCD * !SCE * !Q)	-0.00366	-0.00369	-0.00367
	(!CLK * !D * !SCD * SCE * !Q)	0.00265	0.00269	0.00266
	(!CLK * !D * !SCD * SCE * !Q)	-0.00364	-0.00367	-0.00365
	(!CLK * !D * !SCD * !SCE * !Q)	0.00262	0.00267	0.00264
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00367	-0.00369	-0.00368

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00822	0.00800	0.01263
	(CLK * D * SCD * SCE * !Q)	-0.00023	-0.00047	0.00419
	(CLK * D * SCD * !SCE * !Q)	0.00780	0.00757	0.01246
	(CLK * D * SCD * !SCE * !Q)	-0.00035	-0.00061	0.00431
	(CLK * D * !SCD * SCE * !Q)	0.00264	0.00268	0.00265
	(CLK * D * !SCD * SCE * !Q)	-0.00368	-0.00371	-0.00369
	(CLK * D * !SCD * !SCE * !Q)	0.00745	0.00722	0.01227
	(CLK * D * !SCD * !SCE * !Q)	-0.00034	-0.00057	0.00447
	(CLK * !D * SCD * SCE * !Q)	0.00900	0.00878	0.01318
	(CLK * !D * SCD * SCE * !Q)	0.00038	0.00013	0.00453
	(CLK * !D * SCD * !SCE * !Q)	0.00261	0.00265	0.00262
	(CLK * !D * SCD * !SCE * !Q)	-0.00370	-0.00373	-0.00371
	(CLK * !D * !SCD * SCE * !Q)	0.00264	0.00268	0.00265
	(CLK * !D * !SCD * SCE * !Q)	-0.00368	-0.00371	-0.00369
	(CLK * !D * !SCD * !SCE * !Q)	0.00262	0.00266	0.00263
	(CLK * !D * !SCD * !SCE * !Q)	-0.00370	-0.00374	-0.00371
	(!CLK * D * SCD * SCE * !Q)	0.01490	0.01440	0.01944
	(!CLK * D * SCD * SCE * !Q)	0.00636	0.00582	0.01085
	(!CLK * D * SCD * !SCE * !Q)	0.01450	0.01396	0.01923
	(!CLK * D * SCD * !SCE * !Q)	0.00622	0.00568	0.01094
	(!CLK * D * !SCD * SCE * !Q)	0.00263	0.00265	0.00265
	(!CLK * D * !SCD * SCE * !Q)	-0.00368	-0.00370	-0.00370
	(!CLK * D * !SCD * !SCE * !Q)	0.01416	0.01364	0.01901
	(!CLK * D * !SCD * !SCE * !Q)	0.00622	0.00570	0.01110
	(!CLK * !D * SCD * SCE * !Q)	0.01569	0.01521	0.02002
	(!CLK * !D * SCD * SCE * !Q)	0.00695	0.00643	0.01124
	(!CLK * !D * SCD * !SCE * !Q)	0.00260	0.00264	0.00262
	(!CLK * !D * SCD * !SCE * !Q)	-0.00370	-0.00374	-0.00371
	(!CLK * !D * !SCD * SCE * !Q)	0.00263	0.00267	0.00265
	(!CLK * !D * !SCD * SCE * !Q)	-0.00369	-0.00372	-0.00370
	(!CLK * !D * !SCD * !SCE * !Q)	0.00261	0.00265	0.00263
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00371	-0.00374	-0.00372

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00824	0.00801	0.01266
	(CLK * D * SCD * SCE * !Q)	-0.00017	-0.00041	0.00425
	(CLK * D * SCD * !SCE * !Q)	0.00781	0.00760	0.01248
	(CLK * D * SCD * !SCE * !Q)	-0.00027	-0.00056	0.00435
	(CLK * D * !SCD * SCE * !Q)	0.00260	0.00264	0.00261
	(CLK * D * !SCD * SCE * !Q)	-0.00366	-0.00369	-0.00367
	(CLK * D * !SCD * !SCE * !Q)	0.00749	0.00724	0.01229
	(CLK * D * !SCD * !SCE * !Q)	-0.00029	-0.00052	0.00452
	(CLK * !D * SCD * SCE * !Q)	0.00904	0.00882	0.01321
	(CLK * !D * SCD * SCE * !Q)	0.00043	0.00018	0.00459
	(CLK * !D * SCD * !SCE * !Q)	0.00257	0.00260	0.00258
	(CLK * !D * SCD * !SCE * !Q)	-0.00368	-0.00370	-0.00369
	(CLK * !D * !SCD * SCE * !Q)	0.00260	0.00264	0.00261
	(CLK * !D * !SCD * SCE * !Q)	-0.00366	-0.00369	-0.00367
	(CLK * !D * !SCD * !SCE * !Q)	0.00258	0.00261	0.00259
	(CLK * !D * !SCD * !SCE * !Q)	-0.00368	-0.00371	-0.00369
	(!CLK * D * SCD * SCE * !Q)	0.01487	0.01437	0.01943
	(!CLK * D * SCD * SCE * !Q)	0.00631	0.00581	0.01089
	(!CLK * D * SCD * !SCE * !Q)	0.01447	0.01393	0.01920
	(!CLK * D * SCD * !SCE * !Q)	0.00620	0.00567	0.01093
	(!CLK * D * !SCD * SCE * !Q)	0.00259	0.00263	0.00260
	(!CLK * D * !SCD * SCE * !Q)	-0.00367	-0.00370	-0.00368
	(!CLK * D * !SCD * !SCE * !Q)	0.01412	0.01361	0.01902
	(!CLK * D * !SCD * !SCE * !Q)	0.00620	0.00568	0.01111
	(!CLK * !D * SCD * SCE * !Q)	0.01568	0.01518	0.02006
	(!CLK * !D * SCD * SCE * !Q)	0.00691	0.00642	0.01130
	(!CLK * !D * SCD * !SCE * !Q)	0.00256	0.00260	0.00257
	(!CLK * !D * SCD * !SCE * !Q)	-0.00369	-0.00372	-0.00370
	(!CLK * !D * !SCD * SCE * !Q)	0.00259	0.00263	0.00260
	(!CLK * !D * !SCD * SCE * !Q)	-0.00367	-0.00370	-0.00368
	(!CLK * !D * !SCD * !SCE * !Q)	0.00256	0.00261	0.00258
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00369	-0.00372	-0.00370

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)**	0.00095	0.00092	0.00674
	(CLK * D * SCD * SCE * !Q)	0.00942	0.00941	0.01521
	(CLK * D * SCD * !SCE * !Q)	0.00006	0.00001	0.00584
	(CLK * D * SCD * !SCE * !Q)	0.00824	0.00821	0.01400
	(CLK * D * !SCD * SCE * !Q)	-0.00258	-0.00265	-0.00265
	(CLK * D * !SCD * SCE * !Q)	0.00374	0.00370	0.00369
	(CLK * D * !SCD * !SCE * !Q)	-0.00020	-0.00023	0.00570
	(CLK * D * !SCD * !SCE * !Q)	0.00761	0.00762	0.01351
	(CLK * !D * SCD * SCE * !Q)	0.00058	0.00056	0.00651
	(CLK * !D * SCD * SCE * !Q)	0.00925	0.00927	0.01518
	(CLK * !D * SCD * !SCE * !Q)	-0.00252	-0.00263	-0.00262
	(CLK * !D * SCD * !SCE * !Q)	0.00375	0.00371	0.00369
	(CLK * !D * !SCD * SCE * !Q)	-0.00258	-0.00265	-0.00265
	(CLK * !D * !SCD * SCE * !Q)	0.00374	0.00370	0.00369
	(CLK * !D * !SCD * !SCE * !Q)	-0.00254	-0.00263	-0.00262
	(CLK * !D * !SCD * !SCE * !Q)	0.00376	0.00371	0.00370
	(!CLK * D * SCD * SCE * !Q)	0.00685	0.00654	0.01356
	(!CLK * D * SCD * SCE * !Q)	0.01545	0.01520	0.02219
	(!CLK * D * SCD * !SCE * !Q)	0.00595	0.00563	0.01255
	(!CLK * D * SCD * !SCE * !Q)	0.01427	0.01399	0.02089
	(!CLK * D * !SCD * SCE * !Q)	-0.00260	-0.00266	-0.00266
	(!CLK * D * !SCD * SCE * !Q)	0.00372	0.00368	0.00367
	(!CLK * D * !SCD * !SCE * !Q)	0.00569	0.00534	0.01245
	(!CLK * D * !SCD * !SCE * !Q)	0.01364	0.01333	0.02044
	(!CLK * !D * SCD * SCE * !Q)	0.00648	0.00619	0.01343
	(!CLK * !D * SCD * SCE * !Q)	0.01528	0.01504	0.02225
	(!CLK * !D * SCD * !SCE * !Q)	-0.00255	-0.00264	-0.00263
	(!CLK * !D * SCD * !SCE * !Q)	0.00374	0.00369	0.00368
	(!CLK * !D * !SCD * SCE * !Q)	-0.00260	-0.00266	-0.00266
	(!CLK * !D * !SCD * SCE * !Q)	0.00372	0.00367	0.00367
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00257	-0.00264	-0.00264
	(!CLK * !D * !SCD * !SCE * !Q)	0.00375	0.00369	0.00368

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00085	0.00083	0.00673
	(CLK * D * SCD * SCE * !Q)	0.00930	0.00930	0.01518
	(CLK * D * SCD * !SCE * !Q)	0.00004	-0.00000	0.00590
	(CLK * D * SCD * !SCE * !Q)	0.00819	0.00818	0.01405
	(CLK * D * !SCD * SCE * !Q)	-0.00258	-0.00265	-0.00265
	(CLK * D * !SCD * SCE * !Q)	0.00374	0.00372	0.00371
	(CLK * D * !SCD * !SCE * !Q)	-0.00022	-0.00023	0.00576
	(CLK * D * !SCD * !SCE * !Q)	0.00757	0.00758	0.01357
	(CLK * !D * SCD * SCE * !Q)	0.00049	0.00048	0.00650
	(CLK * !D * SCD * SCE * !Q)	0.00913	0.00916	0.01513
	(CLK * !D * SCD * !SCE * !Q)	-0.00253	-0.00263	-0.00262
	(CLK * !D * SCD * !SCE * !Q)	0.00377	0.00373	0.00371
	(CLK * !D * !SCD * SCE * !Q)	-0.00259	-0.00265	-0.00265
	(CLK * !D * !SCD * SCE * !Q)	0.00376	0.00372	0.00371
	(CLK * !D * !SCD * !SCE * !Q)	-0.00254	-0.00264	-0.00263
	(CLK * !D * !SCD * !SCE * !Q)	0.00378	0.00374	0.00372
	(!CLK * D * SCD * SCE * !Q)	0.00730	0.00694	0.01411
	(!CLK * D * SCD * SCE * !Q)	0.01587	0.01556	0.02271
	(!CLK * D * SCD * !SCE * !Q)	0.00648	0.00611	0.01317
	(!CLK * D * SCD * !SCE * !Q)	0.01476	0.01440	0.02147
	(!CLK * D * !SCD * SCE * !Q)	-0.00258	-0.00265	-0.00265
	(!CLK * D * !SCD * SCE * !Q)	0.00374	0.00374	0.00371
	(!CLK * D * !SCD * !SCE * !Q)	0.00622	0.00583	0.01307
	(!CLK * D * !SCD * !SCE * !Q)	0.01414	0.01379	0.02102
	(!CLK * !D * SCD * SCE * !Q)	0.00694	0.00659	0.01401
	(!CLK * !D * SCD * SCE * !Q)	0.01571	0.01541	0.02280
	(!CLK * !D * SCD * !SCE * !Q)	-0.00253	-0.00263	-0.00262
	(!CLK * !D * SCD * !SCE * !Q)	0.00377	0.00375	0.00372
	(!CLK * !D * !SCD * SCE * !Q)	-0.00259	-0.00265	-0.00265
	(!CLK * !D * !SCD * SCE * !Q)	0.00376	0.00373	0.00371
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00254	-0.00264	-0.00263
	(!CLK * !D * !SCD * !SCE * !Q)	0.00378	0.00375	0.00372

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00087	0.00085	0.00674
	(CLK * D * SCD * SCE * !Q)	0.00929	0.00930	0.01516
	(CLK * D * SCD * !SCE * !Q)	0.00006	0.00002	0.00590
	(CLK * D * SCD * !SCE * !Q)	0.00818	0.00816	0.01402
	(CLK * D * !SCD * SCE * !Q)	-0.00254	-0.00261	-0.00261
	(CLK * D * !SCD * SCE * !Q)	0.00372	0.00370	0.00369
	(CLK * D * !SCD * !SCE * !Q)	-0.00021	-0.00022	0.00576
	(CLK * D * !SCD * !SCE * !Q)	0.00756	0.00757	0.01354
	(CLK * !D * SCD * SCE * !Q)	0.00044	0.00044	0.00646
	(CLK * !D * SCD * SCE * !Q)	0.00906	0.00908	0.01507
	(CLK * !D * SCD * !SCE * !Q)	-0.00249	-0.00259	-0.00258
	(CLK * !D * SCD * !SCE * !Q)	0.00375	0.00371	0.00369
	(CLK * !D * !SCD * SCE * !Q)	-0.00255	-0.00261	-0.00261
	(CLK * !D * !SCD * SCE * !Q)	0.00374	0.00370	0.00369
	(CLK * !D * !SCD * !SCE * !Q)	-0.00250	-0.00259	-0.00259
	(CLK * !D * !SCD * !SCE * !Q)	0.00376	0.00371	0.00370
	(!CLK * D * SCD * SCE * !Q)	0.00703	0.00674	0.01392
	(!CLK * D * SCD * SCE * !Q)	0.01559	0.01534	0.02250
	(!CLK * D * SCD * !SCE * !Q)	0.00621	0.00591	0.01297
	(!CLK * D * SCD * !SCE * !Q)	0.01447	0.01421	0.02125
	(!CLK * D * !SCD * SCE * !Q)	-0.00253	-0.00260	-0.00260
	(!CLK * D * !SCD * SCE * !Q)	0.00373	0.00371	0.00370
	(!CLK * D * !SCD * !SCE * !Q)	0.00595	0.00566	0.01287
	(!CLK * D * !SCD * !SCE * !Q)	0.01385	0.01361	0.02080
	(!CLK * !D * SCD * SCE * !Q)	0.00661	0.00632	0.01377
	(!CLK * !D * SCD * SCE * !Q)	0.01536	0.01512	0.02254
	(!CLK * !D * SCD * !SCE * !Q)	-0.00248	-0.00258	-0.00257
	(!CLK * !D * SCD * !SCE * !Q)	0.00375	0.00372	0.00371
	(!CLK * !D * !SCD * SCE * !Q)	-0.00254	-0.00259	-0.00260
	(!CLK * !D * !SCD * SCE * !Q)	0.00374	0.00370	0.00370
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00250	-0.00258	-0.00258
	(!CLK * !D * !SCD * !SCE * !Q)	0.00376	0.00372	0.00371

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)	0.01247	0.01227	0.02144
	(D * RESET_B * SCD * SCE * Q)	0.00849	0.00829	0.01746
	(D * RESET_B * SCD * !SCE * Q)	0.01247	0.01227	0.02144
	(D * RESET_B * SCD * !SCE * Q)	0.00849	0.00829	0.01746
	(D * RESET_B * !SCD * !SCE * Q)	0.01247	0.01227	0.02144
	(D * RESET_B * !SCD * !SCE * Q)	0.00849	0.00829	0.01746
	(D * !SCD * SCE * !Q)	0.01270	0.01250	0.02166
	(D * !SCD * SCE * !Q)	0.00872	0.00850	0.01769
	(D * !RESET_B * SCD * SCE * !Q)	0.01270	0.01251	0.02166
	(D * !RESET_B * SCD * SCE * !Q)	0.00872	0.00851	0.01769
	(D * !RESET_B * SCD * !SCE * !Q)	0.01270	0.01250	0.02166
	(D * !RESET_B * SCD * !SCE * !Q)	0.00871	0.00851	0.01769
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01270	0.01250	0.02166
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00871	0.00851	0.01769
	(!D * RESET_B * SCD * SCE * Q)	0.01247	0.01227	0.02144
	(!D * RESET_B * SCD * SCE * Q)	0.00850	0.00829	0.01746
	(!D * !SCE * !Q)	0.01270	0.01250	0.02166
	(!D * !SCE * !Q)	0.00871	0.00850	0.01769
	(!D * !SCD * SCE * !Q)	0.01270	0.01250	0.02167
	(!D * !SCD * SCE * !Q)	0.00872	0.00851	0.01769
	(!D * !RESET_B * SCD * SCE * !Q)	0.01270	0.01251	0.02166
	(!D * !RESET_B * SCD * SCE * !Q)	0.00872	0.00851	0.01769

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01245	0.01225	0.02140
	(D * RESET_B * SCD * SCE * Q)	0.00845	0.00824	0.01740
	(D * RESET_B * SCD * !SCE * Q)	0.01245	0.01225	0.02140
	(D * RESET_B * SCD * !SCE * Q)	0.00845	0.00824	0.01740
	(D * RESET_B * !SCD * !SCE * Q)	0.01245	0.01225	0.02140
	(D * RESET_B * !SCD * !SCE * Q)	0.00845	0.00824	0.01740
	(D * !SCD * SCE * !Q)	0.01275	0.01255	0.02171
	(D * !SCD * SCE * !Q)	0.00874	0.00853	0.01771
	(D * !RESET_B * SCD * SCE * !Q)	0.01275	0.01255	0.02171
	(D * !RESET_B * SCD * SCE * !Q)	0.00874	0.00853	0.01771
	(D * !RESET_B * SCD * !SCE * !Q)	0.01275	0.01255	0.02171
	(D * !RESET_B * SCD * !SCE * !Q)	0.00873	0.00853	0.01771
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01275	0.01255	0.02171
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00873	0.00853	0.01771
	(!D * RESET_B * SCD * SCE * Q)	0.01245	0.01225	0.02140
	(!D * RESET_B * SCD * SCE * Q)	0.00845	0.00824	0.01740
	(!D * !SCE * !Q)	0.01275	0.01255	0.02171
	(!D * !SCE * !Q)	0.00873	0.00852	0.01771
	(!D * !SCD * SCE * !Q)	0.01275	0.01255	0.02171
	(!D * !SCD * SCE * !Q)	0.00874	0.00853	0.01772
	(!D * !RESET_B * SCD * SCE * !Q)	0.01275	0.01255	0.02172
	(!D * !RESET_B * SCD * SCE * !Q)	0.00874	0.00853	0.01772

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01229	0.01209	0.02127
	(D * RESET_B * SCD * SCE * Q)	0.00828	0.00808	0.01727
	(D * RESET_B * SCD * !SCE * Q)	0.01228	0.01209	0.02127
	(D * RESET_B * SCD * !SCE * Q)	0.00828	0.00808	0.01727
	(D * RESET_B * !SCD * !SCE * Q)	0.01229	0.01209	0.02127
	(D * RESET_B * !SCD * !SCE * Q)	0.00828	0.00808	0.01727
	(D * !SCD * SCE * !Q)	0.01254	0.01234	0.02152
	(D * !SCD * SCE * !Q)	0.00854	0.00833	0.01752
	(D * !RESET_B * SCD * SCE * !Q)	0.01254	0.01235	0.02152
	(D * !RESET_B * SCD * SCE * !Q)	0.00854	0.00833	0.01752
	(D * !RESET_B * SCD * !SCE * !Q)	0.01254	0.01235	0.02152
	(D * !RESET_B * SCD * !SCE * !Q)	0.00854	0.00833	0.01752
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01254	0.01235	0.02152
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00854	0.00833	0.01752
	(!D * RESET_B * SCD * SCE * Q)	0.01229	0.01209	0.02127
	(!D * RESET_B * SCD * SCE * Q)	0.00828	0.00808	0.01727
	(!D * !SCE * !Q)	0.01254	0.01234	0.02152
	(!D * !SCE * !Q)	0.00854	0.00832	0.01752
	(!D * !SCD * SCE * !Q)	0.01254	0.01235	0.02152
	(!D * !SCD * SCE * !Q)	0.00854	0.00833	0.01752
	(!D * !RESET_B * SCD * SCE * !Q)	0.01254	0.01235	0.02152
	(!D * !RESET_B * SCD * SCE * !Q)	0.00854	0.00833	0.01752

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)**	0.00645	0.00664	0.01653
	(D * RESET_B * SCD * SCE * Q)	0.01043	0.01060	0.02051
	(D * RESET_B * SCD * SCE * !Q)	0.01195	0.01203	0.02218
	(D * RESET_B * SCD * SCE * !Q)	0.01576	0.01584	0.02599
	(D * RESET_B * SCD * !SCE * Q)	0.00645	0.00664	0.01653
	(D * RESET_B * SCD * !SCE * Q)	0.01042	0.01060	0.02051
	(D * RESET_B * SCD * !SCE * !Q)	0.01190	0.01199	0.02214
	(D * RESET_B * SCD * !SCE * !Q)	0.01571	0.01580	0.02596
	(D * RESET_B * !SCD * SCE * Q)	0.01261	0.01285	0.02304
	(D * RESET_B * !SCD * SCE * Q)	0.01676	0.01700	0.02721
	(D * RESET_B * !SCD * !SCE * Q)	0.00645	0.00664	0.01653
	(D * RESET_B * !SCD * !SCE * Q)	0.01043	0.01060	0.02051
	(D * RESET_B * !SCD * !SCE * !Q)	0.01190	0.01199	0.02214
	(D * RESET_B * !SCD * !SCE * !Q)	0.01572	0.01581	0.02596
	(D * !SCD * SCE * !Q)	0.00604	0.00622	0.01618
	(D * !SCD * SCE * !Q)	0.01002	0.01019	0.02016
	(D * !RESET_B * SCD * SCE * !Q)	0.00605	0.00622	0.01618
	(D * !RESET_B * SCD * SCE * !Q)	0.01002	0.01019	0.02016
	(D * !RESET_B * SCD * !SCE * !Q)	0.00604	0.00622	0.01617
	(D * !RESET_B * SCD * !SCE * !Q)	0.01002	0.01019	0.02015
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00604	0.00622	0.01617
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01002	0.01019	0.02015
	(!D * RESET_B * SCD * SCE * Q)	0.00645	0.00664	0.01653
	(!D * RESET_B * SCD * SCE * Q)	0.01043	0.01060	0.02051
	(!D * RESET_B * SCD * SCE * !Q)	0.01198	0.01206	0.02221
	(!D * RESET_B * SCD * SCE * !Q)	0.01577	0.01586	0.02602
	(!D * RESET_B * !SCE * Q)	0.01257	0.01281	0.02301
	(!D * RESET_B * !SCE * Q)	0.01671	0.01694	0.02716
	(!D * RESET_B * !SCD * SCE * Q)	0.01259	0.01283	0.02303
	(!D * RESET_B * !SCD * SCE * Q)	0.01674	0.01697	0.02719
	(!D * !SCE * !Q)	0.00604	0.00621	0.01618
	(!D * !SCE * !Q)	0.01001	0.01019	0.02016
	(!D * !SCD * SCE * !Q)	0.00604	0.00622	0.01618
	(!D * !SCD * SCE * !Q)	0.01002	0.01019	0.02016
	(!D * !RESET_B * SCD * SCE * !Q)	0.00605	0.00622	0.01618
	(!D * !RESET_B * SCD * SCE * !Q)	0.01002	0.01019	0.02015

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00647	0.00665	0.01655
	(D * RESET_B * SCD * SCE * Q)	0.01047	0.01064	0.02055
	(D * RESET_B * SCD * SCE * !Q)	0.01224	0.01233	0.02246
	(D * RESET_B * SCD * SCE * !Q)	0.01609	0.01618	0.02632
	(D * RESET_B * SCD * !SCE * Q)	0.00647	0.00665	0.01655
	(D * RESET_B * SCD * !SCE * Q)	0.01046	0.01064	0.02055
	(D * RESET_B * SCD * !SCE * !Q)	0.01220	0.01229	0.02242
	(D * RESET_B * SCD * !SCE * !Q)	0.01605	0.01614	0.02628
	(D * RESET_B * !SCD * SCE * Q)	0.01317	0.01342	0.02360
	(D * RESET_B * !SCD * SCE * Q)	0.01734	0.01758	0.02778
	(D * RESET_B * !SCD * !SCE * Q)	0.00647	0.00666	0.01655
	(D * RESET_B * !SCD * !SCE * Q)	0.01047	0.01064	0.02055
	(D * RESET_B * !SCD * !SCE * !Q)	0.01220	0.01229	0.02243
	(D * RESET_B * !SCD * !SCE * !Q)	0.01605	0.01614	0.02628
	(D * !SCD * SCE * !Q)	0.00607	0.00624	0.01620
	(D * !SCD * SCE * !Q)	0.01006	0.01024	0.02020
	(D * !RESET_B * SCD * SCE * !Q)	0.00607	0.00624	0.01619
	(D * !RESET_B * SCD * SCE * !Q)	0.01007	0.01025	0.02019
	(D * !RESET_B * SCD * !SCE * !Q)	0.00607	0.00624	0.01619
	(D * !RESET_B * SCD * !SCE * !Q)	0.01006	0.01024	0.02019
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00606	0.00624	0.01619
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01006	0.01024	0.02019
	(!D * RESET_B * SCD * SCE * Q)	0.00647	0.00666	0.01655
	(!D * RESET_B * SCD * SCE * Q)	0.01047	0.01064	0.02055
	(!D * RESET_B * SCD * SCE * !Q)	0.01227	0.01236	0.02250
	(!D * RESET_B * SCD * SCE * !Q)	0.01611	0.01620	0.02634
	(!D * RESET_B * !SCE * Q)	0.01313	0.01338	0.02358
	(!D * RESET_B * !SCE * Q)	0.01728	0.01752	0.02774
	(!D * RESET_B * !SCD * SCE * Q)	0.01316	0.01340	0.02360
	(!D * RESET_B * !SCD * SCE * Q)	0.01732	0.01756	0.02775
	(!D * !SCE * !Q)	0.00606	0.00624	0.01620
	(!D * !SCE * !Q)	0.01006	0.01024	0.02020
	(!D * !SCD * SCE * !Q)	0.00607	0.00624	0.01620
	(!D * !SCD * SCE * !Q)	0.01007	0.01024	0.02020
	(!D * !RESET_B * SCD * SCE * !Q)	0.00607	0.00624	0.01619
	(!D * !RESET_B * SCD * SCE * !Q)	0.01007	0.01025	0.02019

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00643	0.00662	0.01653
	(D * RESET_B * SCD * SCE * Q)	0.01043	0.01062	0.02053
	(D * RESET_B * SCD * SCE * !Q)	0.01212	0.01221	0.02236
	(D * RESET_B * SCD * SCE * !Q)	0.01595	0.01604	0.02621
	(D * RESET_B * SCD * !SCE * Q)	0.00643	0.00662	0.01653
	(D * RESET_B * SCD * !SCE * Q)	0.01043	0.01061	0.02052
	(D * RESET_B * SCD * !SCE * !Q)	0.01207	0.01216	0.02232
	(D * RESET_B * SCD * !SCE * !Q)	0.01591	0.01600	0.02617
	(D * RESET_B * !SCD * SCE * Q)	0.01283	0.01308	0.02328
	(D * RESET_B * !SCD * SCE * Q)	0.01701	0.01725	0.02747
	(D * RESET_B * !SCD * !SCE * Q)	0.00643	0.00662	0.01653
	(D * RESET_B * !SCD * !SCE * Q)	0.01043	0.01062	0.02053
	(D * RESET_B * !SCD * !SCE * !Q)	0.01207	0.01217	0.02232
	(D * RESET_B * !SCD * !SCE * !Q)	0.01591	0.01601	0.02617
	(D * !SCD * SCE * !Q)	0.00599	0.00617	0.01615
	(D * !SCD * SCE * !Q)	0.00999	0.01017	0.02014
	(D * !RESET_B * SCD * SCE * !Q)	0.00600	0.00617	0.01614
	(D * !RESET_B * SCD * SCE * !Q)	0.00999	0.01017	0.02014
	(D * !RESET_B * SCD * !SCE * !Q)	0.00599	0.00617	0.01614
	(D * !RESET_B * SCD * !SCE * !Q)	0.00999	0.01017	0.02014
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00599	0.00617	0.01614
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00999	0.01017	0.02014
	(!D * RESET_B * SCD * SCE * Q)	0.00644	0.00662	0.01653
	(!D * RESET_B * SCD * SCE * Q)	0.01043	0.01062	0.02053
	(!D * RESET_B * SCD * SCE * !Q)	0.01215	0.01224	0.02240
	(!D * RESET_B * SCD * SCE * !Q)	0.01597	0.01607	0.02623
	(!D * RESET_B * !SCE * Q)	0.01279	0.01304	0.02324
	(!D * RESET_B * !SCE * Q)	0.01695	0.01719	0.02739
	(!D * RESET_B * !SCD * SCE * Q)	0.01282	0.01306	0.02326
	(!D * RESET_B * !SCD * SCE * Q)	0.01699	0.01722	0.02744
	(!D * !SCE * !Q)	0.00599	0.00617	0.01614
	(!D * !SCE * !Q)	0.00999	0.01016	0.02014
	(!D * !SCD * SCE * !Q)	0.00599	0.00617	0.01615
	(!D * !SCD * SCE * !Q)	0.00999	0.01017	0.02014
	(!D * !RESET_B * SCD * SCE * !Q)	0.00600	0.00617	0.01614
	(!D * !RESET_B * SCD * SCE * !Q)	0.00999	0.01017	0.02014

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00191	0.00209	0.00403	0.00340	0.00307	0.73920	0.70683
sky130_fd_sc_hs__sdfsbp_2	0.00197	0.00203	0.00423	0.00347	0.00310	1.49957	1.51039

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.66230	0.98774
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.72955	1.21226

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)	0.45003	1.14343	7.64884
	SET_B->Q (FR)	0.46645	1.39352	9.89492
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.48706	1.07074	7.75978
	SET_B->Q (FR)	0.64258	1.43630	10.35400

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.39216	0.79728	3.44202
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.43033	0.81581	3.65359

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)	0.32762	1.06695	7.56005
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.32361	0.94979	7.67123

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)	0.35574	0.85961	3.45390
	SET_B->Q_N (FF)	0.36402	1.11729	5.82110
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.35121	0.82376	3.78584
	SET_B->Q_N (FF)	0.45731	1.21894	6.51298

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)	-0.13368	-0.24743	-1.09364
	setup	CLK (R)	0.23368	0.30700	1.15071
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16672	-0.28044	-1.18521
	setup	CLK (R)	0.29876	0.35923	1.25203

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)	-0.15004	-0.27538	-1.70683
	setup	CLK (R)	0.48800	0.52609	2.15494
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18543	-0.30743	-1.75660
	setup	CLK (R)	0.58494	0.61206	2.28779

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)	-0.13368	-0.24743	-1.09364
	setup	CLK (R)	0.23368	0.30700	1.15071
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16672	-0.28044	-1.18521
	setup	CLK (R)	0.29876	0.35923	1.25203

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)	-0.15004	-0.27538	-1.70683
	setup	CLK (R)	0.48800	0.52609	2.15494
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18543	-0.30743	-1.75660
	setup	CLK (R)	0.58494	0.61206	2.28779

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)	-0.16309	-0.25919	-1.16904
	setup	CLK (R)	0.27255	0.32741	1.23034
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19711	-0.28837	-1.22542
	setup	CLK (R)	0.33384	0.37634	1.30067

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)	-0.19426	-0.33403	-1.94297
	setup	CLK (R)	0.58192	0.61207	2.32608
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.23025	-0.36502	-1.96428
	setup	CLK (R)	0.68247	0.70473	2.43761

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)	-0.16309	-0.25919	-1.16904
	hold	CLK (R)	-0.16984	-0.27105	-1.19145
	setup	CLK (R)	0.26656	0.31937	1.20921
	setup	CLK (R)	0.27255	0.32741	1.23034
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19711	-0.28837	-1.22542
	hold	CLK (R)	-0.20307	-0.29721	-1.24791
	setup	CLK (R)	0.32919	0.36693	1.27825
	setup	CLK (R)	0.33384	0.37634	1.30067

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)	-0.21047	-0.34918	-1.94650
	hold	CLK (R)	-0.19426	-0.33403	-1.94297
	setup	CLK (R)	0.57516	0.61015	2.30525
	setup	CLK (R)	0.58192	0.61207	2.32608
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.24542	-0.37833	-1.96428
	hold	CLK (R)	-0.23025	-0.36502	-1.98989
	setup	CLK (R)	0.67616	0.70028	2.42134
	setup	CLK (R)	0.68247	0.70473	2.43761

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)	-0.14704	-0.26477	-0.38368
	setup	CLK (R)	0.56744	0.54335	1.22616
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18258	-0.29792	-0.33258
	setup	CLK (R)	0.66739	0.63260	1.32484

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)	-0.17622	-0.29012	-1.59067
	setup	CLK (R)	0.50744	0.54115	2.13175
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.20825	-0.31701	-1.56888
	setup	CLK (R)	0.60533	0.62699	2.24727

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)	-0.20361	-0.27871	-0.38368
	hold	CLK (R)	-0.14704	-0.26477	-1.17790
	setup	CLK (R)	0.56744	0.54335	0.64546
	setup	CLK (R)	0.25084	0.32741	1.22616
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.23664	-0.30797	-0.33258
	hold	CLK (R)	-0.18258	-0.29792	-1.26202
	setup	CLK (R)	0.66739	0.63260	0.64561
	setup	CLK (R)	0.31330	0.37793	1.32484

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)	-0.23380	-0.37178	-1.59067
	hold	CLK (R)	-0.17622	-0.29012	-1.72139
	setup	CLK (R)	0.33607	0.42787	1.61057
	setup	CLK (R)	0.50744	0.54115	2.13175
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.26862	-0.39668	-1.56888
	hold	CLK (R)	-0.20825	-0.31701	-1.75402
	setup	CLK (R)	0.39681	0.47291	1.59312
	setup	CLK (R)	0.60533	0.62699	2.24727

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)	-0.14051	-0.20326	-0.72258
	removal	CLK (R)	0.17972	0.23420	0.75823
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.19869	-0.27775	-0.94137
	removal	CLK (R)	0.22472	0.29935	1.09946

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)	-0.14056	-0.20327	-0.72258
	recovery	CLK (R)	-0.14051	-0.20326	-0.72262
	recovery	CLK (R)	-0.14238	-0.20490	-0.72317
	removal	CLK (R)	0.17748	0.23368	0.75823
	removal	CLK (R)	0.17748	0.23368	0.75823
	removal	CLK (R)	0.17972	0.23420	0.75818
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.19869	-0.27775	-0.94148
	recovery	CLK (R)	-0.19870	-0.27776	-0.94147
	recovery	CLK (R)	-0.19905	-0.27797	-0.94137
	removal	CLK (R)	0.22472	0.29935	1.09946
	removal	CLK (R)	0.22472	0.29935	1.09946
	removal	CLK (R)	0.22472	0.29935	1.09449

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 ()	0.35181	0.82031	16.50020
	min_pulse_width	SET_B ()	0.36157	0.84480	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.40049	0.82031	16.50020
	min_pulse_width	SET_B ()	0.50518	0.98358	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 ()	0.27575	0.82031	16.50020
	min_pulse_width	CLK ()	0.15102	0.82031	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.28792	0.82031	16.50020
	min_pulse_width	CLK ()	0.16928	0.82031	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 ()	0.29401	0.82031	16.50020
	min_pulse_width	CLK ()	0.50392	0.82031	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.38223	0.82031	16.50020
	min_pulse_width	CLK ()	0.63474	0.82031	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	0.01309	0.01319	0.01828
	CLK	0.01121	0.01131	0.01618
	SET_B	0.01228	0.01236	0.01510
	SET_B	0.01423	0.01431	0.01642
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01836	0.01866	0.02414
	CLK	0.01640	0.01671	0.02169
	SET_B	0.01740	0.01763	0.02066
	SET_B	0.01942	0.01964	0.02160

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01382	0.01398	0.01865
	CLK	0.01182	0.01198	0.01660
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01839	0.01889	0.02386
	CLK	0.01642	0.01692	0.02163

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01384	0.01402	0.01885
	CLK	0.01184	0.01201	0.01685
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01842	0.01891	0.02444
	CLK	0.01645	0.01694	0.02198

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01307	0.01317	0.01778
	CLK	0.01118	0.01129	0.01589
	SET_B	0.01226	0.01233	0.01440
	SET_B	0.01421	0.01428	0.01621
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01833	0.01862	0.02333
	CLK	0.01637	0.01668	0.02124
	SET_B	0.01737	0.01759	0.02047
	SET_B	0.01938	0.01960	0.02144

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00099	0.00100	0.00100
	(CLK * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK * !SCE)	0.00356	0.00351	0.00895
	(CLK * !SCE)	0.00089	0.00084	0.00629
	(CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCD * SCE)	-0.00115	-0.00116	-0.00118
	(!CLK * SCD * SCE)	0.00099	0.00100	0.00099
	(!CLK * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00956	0.00948	0.01389
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00660	0.00652	0.01093
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00769	0.00763	0.01199
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00464	0.00458	0.00895
	(!CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * !SCD * SCE)	-0.00115	-0.00116	-0.00118

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00106	0.00107	0.00106
	(CLK * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(CLK * !SCE)	0.00372	0.00365	0.00906
	(CLK * !SCE)	0.00101	0.00093	0.00634
	(CLK * !SCD * SCE)	0.00058	0.00058	0.00056
	(CLK * !SCD * SCE)	-0.00115	-0.00118	-0.00119
	(!CLK * SCD * SCE)	0.00106	0.00106	0.00106
	(!CLK * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01078	0.01070	0.01488
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00789	0.00783	0.01200
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00896	0.00890	0.01300
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00598	0.00592	0.01002
	(!CLK * !SCD * SCE)	0.00058	0.00058	0.00056
	(!CLK * !SCD * SCE)	-0.00116	-0.00117	-0.00119

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00094	-0.00095	-0.00098
	(CLK * SCD * SCE)	0.00057	0.00057	0.00055
	(CLK * !SCE)	0.00078	0.00095	0.00664
	(CLK * !SCE)	0.00345	0.00361	0.00930
	(CLK * !SCD * SCE)	-0.00052	-0.00052	-0.00051
	(CLK * !SCD * SCE)	0.00118	0.00118	0.00118
	(!CLK * SCD * SCE)	-0.00094	-0.00095	-0.00098
	(!CLK * SCD * SCE)	0.00057	0.00057	0.00055
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00632	0.00635	0.01171
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00928	0.00931	0.01467
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00381	0.00390	0.00888
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00685	0.00696	0.01193
	(!CLK * !SCD * SCE)	-0.00051	-0.00052	-0.00051
	(!CLK * !SCD * SCE)	0.00117	0.00118	0.00118

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00101	-0.00102	-0.00105
	(CLK * SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCE)	0.00094	0.00108	0.00676
	(CLK * !SCE)	0.00367	0.00380	0.00947
	(CLK * !SCD * SCE)	-0.00055	-0.00055	-0.00054
	(CLK * !SCD * SCE)	0.00120	0.00120	0.00119
	(!CLK * SCD * SCE)	-0.00101	-0.00102	-0.00105
	(!CLK * SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00817	0.00817	0.01342
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01105	0.01105	0.01630
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00551	0.00551	0.01037
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00849	0.00850	0.01336
	(!CLK * !SCD * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK * !SCD * SCE)	0.00119	0.00120	0.00119

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00505	0.00490	0.00867
	(CLK * D * SCE)	0.00139	0.00123	0.00500
	(CLK * !D * SCE)	0.00584	0.00569	0.00923
	(CLK * !D * SCE)	0.00198	0.00182	0.00537
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01091	0.01078	0.01400
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00697	0.00681	0.01004
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00905	0.00893	0.01213
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00501	0.00487	0.00808
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01171	0.01157	0.01463
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00755	0.00741	0.01047
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00984	0.00972	0.01275
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00560	0.00546	0.00850
	!SCE	0.00125	0.00111	0.00109
	!SCE	-0.00096	-0.00110	-0.00112

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00508	0.00495	0.00869
	(CLK * D * SCE)	0.00147	0.00133	0.00509
	(CLK * !D * SCE)	0.00587	0.00573	0.00926
	(CLK * !D * SCE)	0.00206	0.00192	0.00546
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01203	0.01192	0.01503
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00826	0.00815	0.01126
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01021	0.01011	0.01318
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00635	0.00624	0.00932
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01282	0.01270	0.01566
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00885	0.00873	0.01169
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01100	0.01090	0.01382
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00694	0.00683	0.00975
	!SCE	0.00118	0.00104	0.00102
	!SCE	-0.00097	-0.00111	-0.00113

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00179	0.00165	0.00552
	(CLK * D * SCE)	0.00547	0.00533	0.00918
	(CLK * !D * SCE)	0.00142	0.00130	0.00529
	(CLK * !D * SCE)	0.00529	0.00517	0.00914
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00742	0.00729	0.01092
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01140	0.01127	0.01487
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00491	0.00478	0.00815
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00898	0.00885	0.01218
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00708	0.00695	0.01073
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01124	0.01112	0.01488
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00455	0.00443	0.00788
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00881	0.00868	0.01212
	!SCE	-0.00105	-0.00107	-0.00107
	!SCE	0.00114	0.00114	0.00114

sky130_fd_sc_hs__sdfsbp_2	(CLK * D * SCE)	0.00200	0.00188	0.00572
	(CLK * D * SCE)	0.00562	0.00551	0.00932
	(CLK * !D * SCE)	0.00163	0.00152	0.00548
	(CLK * !D * SCE)	0.00545	0.00535	0.00928
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00929	0.00918	0.01268
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01308	0.01297	0.01644
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00663	0.00653	0.00974
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01052	0.01042	0.01360
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00894	0.00884	0.01246
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01293	0.01281	0.01641
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00627	0.00617	0.00946
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01035	0.01025	0.01353
	!SCE	-0.00098	-0.00100	-0.00100
	!SCE	0.00115	0.00115	0.00116

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)**	0.00442	0.00425	0.01076
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00043	-0.00062	0.00592
	(CLK * D * !SCD)	0.00679	0.00671	0.01330
	(CLK * D * !SCD)	0.00327	0.00315	0.00973
	(CLK * !D * SCD)	0.00792	0.00787	0.01857
	(CLK * !D * SCD)	0.00184	0.00177	0.01250
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00442	0.00425	0.01076
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00043	-0.00062	0.00592
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01217	0.01218	0.01878
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00894	0.00894	0.01551
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00966	0.00968	0.01625
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00652	0.00652	0.01306
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01391	0.01374	0.02398
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00753	0.00737	0.01762
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01204	0.01189	0.02207
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00558	0.00543	0.01563
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00441	0.00434	0.01083
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00016	-0.00024	0.00625

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00462	0.00446	0.01097
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00040	-0.00059	0.00596
	(CLK * D * !SCD)	0.00713	0.00705	0.01368
	(CLK * D * !SCD)	0.00345	0.00335	0.00994
	(CLK * !D * SCD)	0.00820	0.00816	0.01887
	(CLK * !D * SCD)	0.00195	0.00189	0.01263
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00462	0.00445	0.01097
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00040	-0.00059	0.00596
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01419	0.01419	0.02083
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01066	0.01066	0.01725
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01152	0.01154	0.01814
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00810	0.00811	0.01467
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01525	0.01512	0.02526
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00883	0.00870	0.01885
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01343	0.01333	0.02337
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00692	0.00679	0.01687
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00455	0.00446	0.01098
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00019	-0.00030	0.00623

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)**	-0.00014	0.00012	0.00696
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00469	0.00497	0.01181
	(CLK * D * !SCD)	0.00346	0.00353	0.01039
	(CLK * D * !SCD)	0.00700	0.00710	0.01383
	(CLK * !D * SCD)	0.00116	0.00128	0.01227
	(CLK * !D * SCD)	0.00723	0.00735	0.01835
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00014	0.00013	0.00696
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00469	0.00499	0.01181
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00943	0.00960	0.01629
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01268	0.01285	0.01946
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00756	0.00773	0.01445
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01072	0.01091	0.01753
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00670	0.00678	0.01732
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01306	0.01315	0.02370
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00419	0.00428	0.01459
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01065	0.01075	0.02105
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00014	0.00038	0.00712
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00471	0.00497	0.01170

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00030	-0.00006	0.00683
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00473	0.00498	0.01185
	(CLK * D * !SCD)	0.00338	0.00345	0.01031
	(CLK * D * !SCD)	0.00709	0.00718	0.01392
	(CLK * !D * SCD)	0.00133	0.00141	0.01244
	(CLK * !D * SCD)	0.00758	0.00768	0.01869
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00030	-0.00004	0.00683
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00473	0.00500	0.01185
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01040	0.01056	0.01730
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01394	0.01411	0.02077
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00858	0.00875	0.01549
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01203	0.01219	0.01886
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00854	0.00861	0.01907
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01495	0.01504	0.02549
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00589	0.00596	0.01617
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01241	0.01249	0.02268
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00005	0.00027	0.00705
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00481	0.00504	0.01181

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)	0.00213	0.00216	0.00213
	(CLK * Q * !Q_N)	-0.00190	-0.00192	-0.00190
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00228	0.00229	0.00227
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00177	-0.00177	-0.00176
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00427	0.00421	0.00655
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00010	0.00001	0.00236
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00218	0.00217	0.00217
	(CLK * Q * !Q_N)	-0.00198	-0.00197	-0.00197
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00227	0.00229	0.00227
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00188	-0.00189	-0.00188
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00450	0.00445	0.00676
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00021	0.00011	0.00246

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)	-0.00209	-0.00214	-0.00212
	(CLK * Q * !Q_N)	0.00196	0.00195	0.00192
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00223	-0.00228	-0.00226
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00183	0.00181	0.00178
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00006	0.00009	0.00266
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00425	0.00429	0.00685
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00213	-0.00217	-0.00216
	(CLK * Q * !Q_N)	0.00203	0.00201	0.00199
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00222	-0.00227	-0.00226
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00194	0.00192	0.00190
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00012	-0.00011	0.00246
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00419	0.00422	0.00678

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)	0.01258	0.01235	0.02145
	(D * SCD * SCE * Q * !Q_N)	0.00868	0.00844	0.01756
	(D * !SCE * Q * !Q_N)	0.01258	0.01235	0.02145
	(D * !SCE * Q * !Q_N)	0.00868	0.00844	0.01756
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01241	0.01218	0.02126
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00853	0.00827	0.01738
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02184	0.02168	0.03126
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01758	0.01740	0.02698
	(!D * SCD * SCE * Q * !Q_N)	0.01258	0.01235	0.02145
	(!D * SCD * SCE * Q * !Q_N)	0.00868	0.00845	0.01756
	(!D * !SCE * SET_B * !Q * Q_N)	0.01240	0.01217	0.02126
	(!D * !SCE * SET_B * !Q * Q_N)	0.00853	0.00827	0.01738
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02184	0.02168	0.03125
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01757	0.01740	0.02698
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01241	0.01218	0.02127
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00854	0.00827	0.01738
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02189	0.02170	0.03125
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01762	0.01742	0.02697

sky130_fd_sc_hs__sdfsbp_2	(D * SCD * SCE * Q * !Q_N)	0.01633	0.01597	0.02479
	(D * SCD * SCE * Q * !Q_N)	0.01241	0.01203	0.02086
	(D * !SCE * Q * !Q_N)	0.01633	0.01597	0.02480
	(D * !SCE * Q * !Q_N)	0.01241	0.01203	0.02086
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01596	0.01559	0.02442
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01203	0.01166	0.02049
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03451	0.03444	0.04410
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03033	0.03025	0.03990
	(!D * SCD * SCE * Q * !Q_N)	0.01633	0.01597	0.02480
	(!D * SCD * SCE * Q * !Q_N)	0.01241	0.01203	0.02086
	(!D * !SCE * SET_B * !Q * Q_N)	0.01595	0.01559	0.02442
	(!D * !SCE * SET_B * !Q * Q_N)	0.01203	0.01166	0.02048
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03451	0.03444	0.04410
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03033	0.03025	0.03990
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01596	0.01559	0.02442
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01204	0.01166	0.02048
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03460	0.03448	0.04407
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03042	0.03028	0.03987

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)**	0.01277	0.01289	0.02285
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01637	0.01648	0.02646
	(D * SCD * SCE * Q * !Q_N)	0.00697	0.00727	0.01704
	(D * SCD * SCE * Q * !Q_N)	0.01086	0.01117	0.02093
	(D * !SCE * SET_B * !Q * Q_N)	0.01273	0.01286	0.02282
	(D * !SCE * SET_B * !Q * Q_N)	0.01633	0.01645	0.02643
	(D * !SCE * Q * !Q_N)	0.00697	0.00727	0.01704
	(D * !SCE * Q * !Q_N)	0.01086	0.01117	0.02093
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01381	0.01421	0.02439
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01802	0.01841	0.02860
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00709	0.00729	0.01720
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01098	0.01118	0.02109
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01126	0.01166	0.02183
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01553	0.01593	0.02611
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01280	0.01293	0.02289
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01639	0.01651	0.02649
	(!D * SCD * SCE * Q * !Q_N)	0.00697	0.00727	0.01704
	(!D * SCD * SCE * Q * !Q_N)	0.01086	0.01117	0.02093
	(!D * !SCE * SET_B * Q * !Q_N)	0.01379	0.01418	0.02436
	(!D * !SCE * SET_B * Q * !Q_N)	0.01797	0.01835	0.02854
	(!D * !SCE * SET_B * !Q * Q_N)	0.00709	0.00729	0.01720
	(!D * !SCE * SET_B * !Q * Q_N)	0.01098	0.01118	0.02109
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01126	0.01166	0.02183
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01554	0.01593	0.02611
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01380	0.01420	0.02438
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01800	0.01839	0.02859
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00709	0.00729	0.01719
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01098	0.01118	0.02109
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01127	0.01166	0.02184
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01554	0.01593	0.02612

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01531	0.01545	0.02503
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01907	0.01923	0.02881
	(D * SCD * SCE * Q * !Q_N)	0.00832	0.00857	0.01800
	(D * SCD * SCE * Q * !Q_N)	0.01224	0.01251	0.02193
	(D * !SCE * SET_B * !Q * Q_N)	0.01527	0.01542	0.02500
	(D * !SCE * SET_B * !Q * Q_N)	0.01904	0.01919	0.02878
	(D * !SCE * Q * !Q_N)	0.00832	0.00857	0.01800
	(D * !SCE * Q * !Q_N)	0.01224	0.01250	0.02193
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01733	0.01765	0.02748
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02144	0.02177	0.03160
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00858	0.00878	0.01833
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01251	0.01272	0.02227
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01454	0.01490	0.02476
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01873	0.01910	0.02897
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01535	0.01549	0.02507
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01910	0.01925	0.02883
	(!D * SCD * SCE * Q * !Q_N)	0.00832	0.00857	0.01800
	(!D * SCD * SCE * Q * !Q_N)	0.01225	0.01251	0.02193
	(!D * !SCE * SET_B * Q * !Q_N)	0.01730	0.01762	0.02744
	(!D * !SCE * SET_B * Q * !Q_N)	0.02139	0.02172	0.03154
	(!D * !SCE * SET_B * !Q * Q_N)	0.00858	0.00878	0.01833
	(!D * !SCE * SET_B * !Q * Q_N)	0.01251	0.01272	0.02226
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01456	0.01490	0.02475
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01876	0.01910	0.02895
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01733	0.01765	0.02747
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02143	0.02175	0.03158
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00858	0.00878	0.01833
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01251	0.01272	0.02226
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01457	0.01491	0.02476
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01877	0.01911	0.02897

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00189	0.00210	0.00402	0.00328	0.00306	0.74623
sky130_fd_sc_hs__sdfstp_2	0.00189	0.00206	0.00401	0.00338	0.00306	1.49294
sky130_fd_sc_hs__sdfstp_4	0.00189	0.00210	0.00407	0.00339	0.00305	2.87006

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.62983	0.95712
sky130_fd_sc_hs__sdfstp_2	0.00000	0.66311	1.13904
sky130_fd_sc_hs__sdfstp_4	0.00000	0.87733	1.24813

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)	0.37013	1.07231	7.60788
	SET_B->Q (FR)	0.39620	1.32871	9.70376
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.33656	0.92541	7.52993
	SET_B->Q (FR)	0.45543	1.27108	9.84146
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.38567	0.89267	7.60034
	SET_B->Q (FR)	0.52368	1.25852	9.99990

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.37208	0.77809	3.45251
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.38651	0.76576	3.54649
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.39723	0.74926	3.61046

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)	-0.13530	-0.24977	-1.10620
	setup	CLK (R)	0.24013	0.30714	1.15593
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16445	-0.27843	-1.18901
	setup	CLK (R)	0.29938	0.35511	1.30127
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.16340	-0.27975	-1.20150
	setup	CLK (R)	0.28762	0.35203	1.29337

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)	-0.12734	-0.25196	-1.56566
	setup	CLK (R)	0.46675	0.51101	2.12212
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13429	-0.26141	-1.47776
	setup	CLK (R)	0.54284	0.57849	2.24946
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15051	-0.27925	-1.56061
	setup	CLK (R)	0.54437	0.58031	2.27428

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)	-0.13530	-0.24977	-1.10620
	setup	CLK (R)	0.24013	0.30714	1.15593
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16445	-0.27843	-1.18901
	setup	CLK (R)	0.29938	0.35511	1.30127
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.16340	-0.27975	-1.20150
	setup	CLK (R)	0.28762	0.35203	1.29337

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)	-0.12734	-0.25196	-1.56566
	setup	CLK (R)	0.46675	0.51101	2.12212
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13429	-0.26141	-1.47776
	setup	CLK (R)	0.54284	0.57849	2.24946
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15051	-0.27925	-1.56061
	setup	CLK (R)	0.54437	0.58031	2.27428

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)	-0.16809	-0.26130	-1.17472
	setup	CLK (R)	0.27858	0.32847	1.23382
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.19620	-0.28931	-1.23891
	setup	CLK (R)	0.33608	0.37291	1.35067
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.19550	-0.28747	-1.24487
	setup	CLK (R)	0.32774	0.36791	1.34111

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)	-0.16988	-0.30467	-1.79391
	setup	CLK (R)	0.56264	0.59977	2.29768
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.17699	-0.31809	-1.74904
	setup	CLK (R)	0.63799	0.66870	2.41022
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.19323	-0.33184	-1.82788
	setup	CLK (R)	0.63897	0.67112	2.42404

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)	-0.16809	-0.26130	-1.17472
	hold	CLK (R)	-0.17350	-0.27372	-1.19467
	setup	CLK (R)	0.27442	0.32194	1.21525
	setup	CLK (R)	0.27858	0.32847	1.23382
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.19620	-0.28931	-1.23891
	hold	CLK (R)	-0.20005	-0.29675	-1.25954
	setup	CLK (R)	0.33208	0.36633	1.33197
	setup	CLK (R)	0.33608	0.37291	1.35067
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.19550	-0.28747	-1.24487
	hold	CLK (R)	-0.20075	-0.29939	-1.26570
	setup	CLK (R)	0.32470	0.36494	1.32088
	setup	CLK (R)	0.32774	0.36791	1.34111

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)	-0.18245	-0.32372	-1.81582
	hold	CLK (R)	-0.16988	-0.30467	-1.79391
	setup	CLK (R)	0.55777	0.59735	2.28071
	setup	CLK (R)	0.56264	0.59977	2.29768
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.19012	-0.33400	-1.74904
	hold	CLK (R)	-0.17699	-0.31809	-1.76915
	setup	CLK (R)	0.63413	0.66531	2.38955
	setup	CLK (R)	0.63799	0.66870	2.41022
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.20713	-0.34714	-1.84674
	hold	CLK (R)	-0.19323	-0.33184	-1.82788
	setup	CLK (R)	0.63602	0.66584	2.40244
	setup	CLK (R)	0.63897	0.67112	2.42404

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)	-0.15037	-0.25271	-0.32754
	setup	CLK (R)	0.55132	0.52922	1.23052
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.17685	-0.26201	-0.28389
	setup	CLK (R)	0.62294	0.59626	1.37317
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17855	-0.27492	-0.31285
	setup	CLK (R)	0.62529	0.59927	1.36302

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)	-0.14925	-0.26415	-1.57668
	setup	CLK (R)	0.49215	0.52560	2.10753
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16052	-0.27377	-1.53477
	setup	CLK (R)	0.56593	0.59305	2.22453
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17180	-0.29195	-1.60675
	setup	CLK (R)	0.56759	0.59665	2.24174

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)	-0.17583	-0.25271	-0.32754
	hold	CLK (R)	-0.15037	-0.26946	-1.18048
	setup	CLK (R)	0.55132	0.52922	0.63693
	setup	CLK (R)	0.25703	0.32673	1.23052
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18354	-0.26201	-0.28389
	hold	CLK (R)	-0.17685	-0.29230	-1.25632
	setup	CLK (R)	0.62294	0.59626	0.67302
	setup	CLK (R)	0.31205	0.37178	1.37317
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.19691	-0.27492	-0.31285
	hold	CLK (R)	-0.17855	-0.29694	-1.26799
	setup	CLK (R)	0.62529	0.59927	0.67238
	setup	CLK (R)	0.30310	0.36790	1.36302

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)	-0.23993	-0.37565	-1.60333
	hold	CLK (R)	-0.14925	-0.26415	-1.57668
	setup	CLK (R)	0.34217	0.42916	1.61866
	setup	CLK (R)	0.49215	0.52560	2.10753
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.26663	-0.40138	-1.61177
	hold	CLK (R)	-0.16052	-0.27377	-1.53477
	setup	CLK (R)	0.40166	0.47323	1.65353
	setup	CLK (R)	0.56593	0.59305	2.22453
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.26747	-0.39950	-1.61714
	hold	CLK (R)	-0.17180	-0.29195	-1.60675
	setup	CLK (R)	0.39005	0.46934	1.64516
	setup	CLK (R)	0.56759	0.59665	2.24174

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)	-0.14510	-0.21547	-0.75223
	removal	CLK (R)	0.18228	0.23895	0.82317
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.20481	-0.27925	-0.83468
	removal	CLK (R)	0.23150	0.33246	2.82738
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.19814	-0.27356	-0.84863
	removal	CLK (R)	0.22065	0.29303	1.38505

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)	-0.14650	-0.21549	-0.75384
	recovery	CLK (R)	-0.14653	-0.21547	-0.75368
	recovery	CLK (R)	-0.14510	-0.21576	-0.75223
	removal	CLK (R)	0.18228	0.23895	0.82317
	removal	CLK (R)	0.18228	0.23895	0.82317
	removal	CLK (R)	0.18228	0.23895	0.82317
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.20482	-0.27925	-0.83867
	recovery	CLK (R)	-0.20481	-0.27925	-0.83867
	recovery	CLK (R)	-0.20501	-0.27925	-0.83468
	removal	CLK (R)	0.23092	0.33246	2.82738
	removal	CLK (R)	0.23092	0.33246	2.82700
	removal	CLK (R)	0.23150	0.33246	2.80990
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.19816	-0.27356	-0.84863
	recovery	CLK (R)	-0.19814	-0.27356	-0.84863
	recovery	CLK (R)	-0.19864	-0.27356	-0.84863
	removal	CLK (R)	0.21891	0.29303	1.38505
	removal	CLK (R)	0.22065	0.29303	1.38505
	removal	CLK (R)	0.21891	0.29303	1.37503

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 ()	0.31530	0.82031	16.50020
	min_pulse_width	SET_B ()	0.29401	0.82031	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.33660	0.82031	16.50020
	min_pulse_width	SET_B ()	0.33969	0.82848	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.33964	0.82031	16.50020
	min_pulse_width	SET_B ()	0.37768	0.86113	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 ()	0.20274	0.82031	16.50020
	min_pulse_width	CLK ()	0.13886	0.82031	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.16928	0.82031	16.50020
	min_pulse_width	CLK ()	0.14798	0.82031	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.19666	0.82031	16.50020
	min_pulse_width	CLK ()	0.14798	0.82031	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 ()	0.29401	0.82031	16.50020
	min_pulse_width	CLK ()	0.48871	0.82031	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.38223	0.82031	16.50020
	min_pulse_width	CLK ()	0.59215	0.82031	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.36702	0.82031	16.50020
	min_pulse_width	CLK ()	0.58302	0.82031	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	0.02333	0.02319	0.03278
	CLK	0.01966	0.01951	0.02924
	SET_B	0.02162	0.02127	0.02533
	SET_B	0.02548	0.02511	0.02927
sky130_fd_sc_hs__sdfstp_2	CLK	0.02902	0.02909	0.03858
	CLK	0.02538	0.02545	0.03496
	SET_B	0.02865	0.02844	0.03203
	SET_B	0.03257	0.03235	0.03615
sky130_fd_sc_hs__sdfstp_4	CLK	0.03470	0.03534	0.04499
	CLK	0.03112	0.03176	0.04198
	SET_B	0.03430	0.03465	0.03847
	SET_B	0.03829	0.03862	0.04283

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.02515	0.02517	0.03466
	CLK	0.02116	0.02117	0.03046
sky130_fd_sc_hs__sdfstp_2	CLK	0.03058	0.03099	0.04079
	CLK	0.02666	0.02708	0.03616
sky130_fd_sc_hs__sdfstp_4	CLK	0.03644	0.03767	0.04745
	CLK	0.03245	0.03366	0.04300

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00098	0.00099	0.00099
	(CLK * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK * !SCE)	0.00360	0.00355	0.00901
	(CLK * !SCE)	0.00095	0.00090	0.00635
	(CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCD * SCE)	-0.00114	-0.00115	-0.00117
	(!CLK * SCD * SCE)	0.00098	0.00099	0.00099
	(!CLK * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(!CLK * !SCE * SET_B)	0.00927	0.00920	0.01362
	(!CLK * !SCE * SET_B)	0.00638	0.00631	0.01073
	(!CLK * !SCE * !SET_B * Q)	0.00752	0.00746	0.01183
	(!CLK * !SCE * !SET_B * Q)	0.00455	0.00450	0.00887
	(!CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * !SCD * SCE)	-0.00114	-0.00115	-0.00117
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00098	0.00099	0.00099
	(CLK * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK * !SCE)	0.00356	0.00351	0.00896
	(CLK * !SCE)	0.00091	0.00086	0.00632
	(CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCD * SCE)	-0.00114	-0.00115	-0.00117
	(!CLK * SCD * SCE)	0.00098	0.00099	0.00099
	(!CLK * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(!CLK * !SCE * SET_B)	0.01066	0.01060	0.01482
	(!CLK * !SCE * SET_B)	0.00766	0.00760	0.01182
	(!CLK * !SCE * !SET_B * Q)	0.00879	0.00875	0.01289
	(!CLK * !SCE * !SET_B * Q)	0.00572	0.00567	0.00982
	(!CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * !SCD * SCE)	-0.00114	-0.00115	-0.00117

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00098	0.00099	0.00098
	(CLK * SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK * !SCE)	0.00369	0.00363	0.00904
	(CLK * !SCE)	0.00104	0.00098	0.00639
	(CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCD * SCE)	-0.00113	-0.00115	-0.00116
	(!CLK * SCD * SCE)	0.00098	0.00099	0.00099
	(!CLK * SCD * SCE)	-0.00052	-0.00052	-0.00051
	(!CLK * !SCE * SET_B)	0.01058	0.01052	0.01472
	(!CLK * !SCE * SET_B)	0.00765	0.00759	0.01180
	(!CLK * !SCE * !SET_B * Q)	0.00874	0.00870	0.01283
	(!CLK * !SCE * !SET_B * Q)	0.00574	0.00569	0.00983
	(!CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK * !SCD * SCE)	-0.00113	-0.00114	-0.00116

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00093	-0.00094	-0.00098
	(CLK * SCD * SCE)	0.00057	0.00056	0.00054
	(CLK * !SCE)	0.00067	0.00084	0.00655
	(CLK * !SCE)	0.00333	0.00350	0.00920
	(CLK * !SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCD * SCE)	0.00118	0.00117	0.00117
	(!CLK * SCD * SCE)	-0.00093	-0.00095	-0.00098
	(!CLK * SCD * SCE)	0.00057	0.00057	0.00054
	(!CLK * !SCE * SET_B)	0.00626	0.00630	0.01167
	(!CLK * !SCE * SET_B)	0.00915	0.00919	0.01456
	(!CLK * !SCE * !SET_B * Q)	0.00390	0.00400	0.00898
	(!CLK * !SCE * !SET_B * Q)	0.00686	0.00697	0.01195
	(!CLK * !SCD * SCE)	-0.00051	-0.00052	-0.00051
	(!CLK * !SCD * SCE)	0.00116	0.00118	0.00117
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00093	-0.00094	-0.00097
	(CLK * SCD * SCE)	0.00057	0.00056	0.00054
	(CLK * !SCE)	0.00071	0.00089	0.00659
	(CLK * !SCE)	0.00337	0.00354	0.00924
	(CLK * !SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCD * SCE)	0.00118	0.00118	0.00117
	(!CLK * SCD * SCE)	-0.00093	-0.00095	-0.00097
	(!CLK * SCD * SCE)	0.00057	0.00057	0.00054
	(!CLK * !SCE * SET_B)	0.00728	0.00731	0.01257
	(!CLK * !SCE * SET_B)	0.01029	0.01031	0.01557
	(!CLK * !SCE * !SET_B * Q)	0.00482	0.00488	0.00975
	(!CLK * !SCE * !SET_B * Q)	0.00789	0.00796	0.01282
	(!CLK * !SCD * SCE)	-0.00051	-0.00052	-0.00051
	(!CLK * !SCD * SCE)	0.00117	0.00118	0.00117

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00093	-0.00094	-0.00097
	(CLK * SCD * SCE)	0.00057	0.00056	0.00054
	(CLK * !SCE)	0.00085	0.00101	0.00667
	(CLK * !SCE)	0.00350	0.00365	0.00932
	(CLK * !SCD * SCE)	-0.00051	-0.00052	-0.00051
	(CLK * !SCD * SCE)	0.00117	0.00117	0.00116
	(!CLK * SCD * SCE)	-0.00093	-0.00094	-0.00097
	(!CLK * SCD * SCE)	0.00057	0.00057	0.00054
	(!CLK * !SCE * SET_B)	0.00739	0.00742	0.01268
	(!CLK * !SCE * SET_B)	0.01032	0.01035	0.01560
	(!CLK * !SCE * !SET_B * Q)	0.00496	0.00502	0.00988
	(!CLK * !SCE * !SET_B * Q)	0.00795	0.00802	0.01289
	(!CLK * !SCD * SCE)	-0.00051	-0.00052	-0.00051
	(!CLK * !SCD * SCE)	0.00116	0.00117	0.00117

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00508	0.00493	0.00870
	(CLK * D * SCE)	0.00142	0.00126	0.00504
	(CLK * !D * SCE)	0.00587	0.00573	0.00927
	(CLK * !D * SCE)	0.00201	0.00185	0.00540
	(!CLK * D * SCE * SET_B)	0.01063	0.01049	0.01373
	(!CLK * D * SCE * SET_B)	0.00673	0.00658	0.00982
	(!CLK * D * SCE * !SET_B * Q)	0.00888	0.00874	0.01195
	(!CLK * D * SCE * !SET_B * Q)	0.00491	0.00477	0.00799
	(!CLK * !D * SCE * SET_B)	0.01142	0.01128	0.01435
	(!CLK * !D * SCE * SET_B)	0.00732	0.00718	0.01025
	(!CLK * !D * SCE * !SET_B * Q)	0.00967	0.00954	0.01258
	(!CLK * !D * SCE * !SET_B * Q)	0.00549	0.00536	0.00841
	!SCE	0.00124	0.00110	0.00108
	!SCE	-0.00097	-0.00112	-0.00113
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00502	0.00487	0.00863
	(CLK * D * SCE)	0.00139	0.00123	0.00500
	(CLK * !D * SCE)	0.00580	0.00566	0.00919
	(CLK * !D * SCE)	0.00198	0.00181	0.00537
	(!CLK * D * SCE * SET_B)	0.01199	0.01186	0.01499
	(!CLK * D * SCE * SET_B)	0.00801	0.00788	0.01101
	(!CLK * D * SCE * !SET_B * Q)	0.01013	0.01001	0.01309
	(!CLK * D * SCE * !SET_B * Q)	0.00607	0.00595	0.00904
	(!CLK * !D * SCE * SET_B)	0.01278	0.01265	0.01563
	(!CLK * !D * SCE * SET_B)	0.00860	0.00847	0.01145
	(!CLK * !D * SCE * !SET_B * Q)	0.01092	0.01081	0.01372
	(!CLK * !D * SCE * !SET_B * Q)	0.00666	0.00654	0.00947
	!SCE	0.00122	0.00108	0.00105
	!SCE	-0.00097	-0.00111	-0.00113

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00517	0.00502	0.00877
	(CLK * D * SCE)	0.00151	0.00135	0.00510
	(CLK * !D * SCE)	0.00596	0.00581	0.00933
	(CLK * !D * SCE)	0.00210	0.00193	0.00547
	(!CLK * D * SCE * SET_B)	0.01193	0.01180	0.01493
	(!CLK * D * SCE * SET_B)	0.00799	0.00786	0.01099
	(!CLK * D * SCE * !SET_B * Q)	0.01010	0.00999	0.01306
	(!CLK * D * SCE * !SET_B * Q)	0.00609	0.00596	0.00905
	(!CLK * !D * SCE * SET_B)	0.01272	0.01260	0.01556
	(!CLK * !D * SCE * SET_B)	0.00858	0.00845	0.01142
	(!CLK * !D * SCE * !SET_B * Q)	0.01089	0.01077	0.01369
	(!CLK * !D * SCE * !SET_B * Q)	0.00667	0.00655	0.00948
	!SCE	0.00124	0.00110	0.00108
	!SCE	-0.00097	-0.00112	-0.00113

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00169	0.00155	0.00543
	(CLK * D * SCE)	0.00537	0.00524	0.00908
	(CLK * !D * SCE)	0.00133	0.00120	0.00520
	(CLK * !D * SCE)	0.00520	0.00508	0.00906
	(!CLK * D * SCE * SET_B)	0.00737	0.00724	0.01088
	(!CLK * D * SCE * SET_B)	0.01128	0.01115	0.01477
	(!CLK * D * SCE * !SET_B * Q)	0.00501	0.00488	0.00825
	(!CLK * D * SCE * !SET_B * Q)	0.00901	0.00887	0.01221
	(!CLK * !D * SCE * SET_B)	0.00702	0.00690	0.01068
	(!CLK * !D * SCE * SET_B)	0.01113	0.01101	0.01477
	(!CLK * !D * SCE * !SET_B * Q)	0.00465	0.00452	0.00798
	(!CLK * !D * SCE * !SET_B * Q)	0.00884	0.00871	0.01215
	!SCE	-0.00104	-0.00106	-0.00106
	!SCE	0.00115	0.00115	0.00116
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00180	0.00166	0.00553
	(CLK * D * SCE)	0.00544	0.00531	0.00916
	(CLK * !D * SCE)	0.00143	0.00131	0.00530
	(CLK * !D * SCE)	0.00526	0.00515	0.00912
	(!CLK * D * SCE * SET_B)	0.00845	0.00833	0.01186
	(!CLK * D * SCE * SET_B)	0.01245	0.01233	0.01583
	(!CLK * D * SCE * !SET_B * Q)	0.00598	0.00586	0.00912
	(!CLK * D * SCE * !SET_B * Q)	0.01005	0.00994	0.01316
	(!CLK * !D * SCE * SET_B)	0.00811	0.00799	0.01164
	(!CLK * !D * SCE * SET_B)	0.01230	0.01217	0.01581
	(!CLK * !D * SCE * !SET_B * Q)	0.00562	0.00550	0.00884
	(!CLK * !D * SCE * !SET_B * Q)	0.00988	0.00976	0.01308
	!SCE	-0.00102	-0.00103	-0.00104
	!SCE	0.00115	0.00115	0.00115

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00187	0.00173	0.00558
	(CLK * D * SCE)	0.00554	0.00541	0.00923
	(CLK * !D * SCE)	0.00150	0.00137	0.00534
	(CLK * !D * SCE)	0.00537	0.00525	0.00920
	(!CLK * D * SCE * SET_B)	0.00851	0.00838	0.01192
	(!CLK * D * SCE * SET_B)	0.01246	0.01234	0.01585
	(!CLK * D * SCE * !SET_B * Q)	0.00607	0.00594	0.00920
	(!CLK * D * SCE * !SET_B * Q)	0.01010	0.00997	0.01320
	(!CLK * !D * SCE * SET_B)	0.00816	0.00804	0.01170
	(!CLK * !D * SCE * SET_B)	0.01231	0.01219	0.01582
	(!CLK * !D * SCE * !SET_B * Q)	0.00571	0.00558	0.00892
	(!CLK * !D * SCE * !SET_B * Q)	0.00993	0.00981	0.01313
	!SCE	-0.00104	-0.00106	-0.00106
	!SCE	0.00115	0.00116	0.00116

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)**	0.00443	0.00426	0.01077
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00041	-0.00059	0.00593
	(CLK * D * !SCD)	0.00670	0.00662	0.01321
	(CLK * D * !SCD)	0.00319	0.00308	0.00965
	(CLK * !D * SCD)	0.00797	0.00792	0.01862
	(CLK * !D * SCD)	0.00190	0.00185	0.01257
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00443	0.00426	0.01077
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00041	-0.00059	0.00593
	(!CLK * D * !SCD * SET_B)	0.01213	0.01215	0.01874
	(!CLK * D * !SCD * SET_B)	0.00886	0.00885	0.01541
	(!CLK * D * !SCD * !SET_B * Q)	0.00977	0.00980	0.01636
	(!CLK * D * !SCD * !SET_B * Q)	0.00657	0.00657	0.01310
	(!CLK * !D * SCD * SET_B)	0.01363	0.01348	0.02371
	(!CLK * !D * SCD * SET_B)	0.00733	0.00719	0.01743
	(!CLK * !D * SCD * !SET_B * Q)	0.01187	0.01173	0.02191
	(!CLK * !D * SCD * !SET_B * Q)	0.00550	0.00536	0.01555
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00443	0.00436	0.01085
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00013	-0.00021	0.00628

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00444	0.00427	0.01077
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00041	-0.00059	0.00593
	(CLK * D * !SCD)	0.00679	0.00671	0.01331
	(CLK * D * !SCD)	0.00325	0.00317	0.00973
	(CLK * !D * SCD)	0.00793	0.00789	0.01858
	(CLK * !D * SCD)	0.00187	0.00181	0.01253
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00444	0.00427	0.01077
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00041	-0.00059	0.00593
	(!CLK * D * !SCD * SET_B)	0.01319	0.01321	0.01981
	(!CLK * D * !SCD * SET_B)	0.01000	0.01002	0.01659
	(!CLK * D * !SCD * !SET_B * Q)	0.01070	0.01074	0.01733
	(!CLK * D * !SCD * !SET_B * Q)	0.00762	0.00762	0.01417
	(!CLK * !D * SCD * SET_B)	0.01502	0.01488	0.02500
	(!CLK * !D * SCD * SET_B)	0.00860	0.00848	0.01860
	(!CLK * !D * SCD * !SET_B * Q)	0.01315	0.01305	0.02306
	(!CLK * !D * SCD * !SET_B * Q)	0.00666	0.00655	0.01659
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00445	0.00437	0.01086
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00012	-0.00021	0.00628

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00447	0.00430	0.01081
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00041	-0.00060	0.00592
	(CLK * D * !SCD)	0.00691	0.00683	0.01342
	(CLK * D * !SCD)	0.00335	0.00324	0.00980
	(CLK * !D * SCD)	0.00810	0.00805	0.01871
	(CLK * !D * SCD)	0.00198	0.00192	0.01261
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00448	0.00430	0.01081
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00041	-0.00061	0.00592
	(!CLK * D * !SCD * SET_B)	0.01330	0.01331	0.01991
	(!CLK * D * !SCD * SET_B)	0.01001	0.01000	0.01656
	(!CLK * D * !SCD * !SET_B * Q)	0.01086	0.01088	0.01744
	(!CLK * D * !SCD * !SET_B * Q)	0.00764	0.00764	0.01418
	(!CLK * !D * SCD * SET_B)	0.01497	0.01484	0.02495
	(!CLK * !D * SCD * SET_B)	0.00858	0.00845	0.01857
	(!CLK * !D * SCD * !SET_B * Q)	0.01314	0.01301	0.02304
	(!CLK * !D * SCD * !SET_B * Q)	0.00668	0.00655	0.01659
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00448	0.00439	0.01089
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00013	-0.00022	0.00627

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)**	-0.00013	0.00013	0.00697
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00471	0.00498	0.01181
	(CLK * D * !SCD)	0.00351	0.00359	0.01044
	(CLK * D * !SCD)	0.00707	0.00715	0.01387
	(CLK * !D * SCD)	0.00106	0.00117	0.01218
	(CLK * !D * SCD)	0.00712	0.00725	0.01824
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00013	0.00015	0.00697
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00471	0.00500	0.01181
	(!CLK * D * !SCD * SET_B)	0.00916	0.00933	0.01603
	(!CLK * D * !SCD * SET_B)	0.01248	0.01264	0.01925
	(!CLK * D * !SCD * !SET_B * Q)	0.00740	0.00758	0.01429
	(!CLK * D * !SCD * !SET_B * Q)	0.01065	0.01082	0.01743
	(!CLK * !D * SCD * SET_B)	0.00664	0.00673	0.01728
	(!CLK * !D * SCD * SET_B)	0.01294	0.01302	0.02359
	(!CLK * !D * SCD * !SET_B * Q)	0.00429	0.00438	0.01469
	(!CLK * !D * SCD * !SET_B * Q)	0.01066	0.01076	0.02106
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00015	0.00039	0.00712
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00470	0.00497	0.01169

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00013	0.00013	0.00697
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00470	0.00499	0.01181
	(CLK * D * !SCD)	0.00346	0.00355	0.01039
	(CLK * D * !SCD)	0.00704	0.00709	0.01383
	(CLK * !D * SCD)	0.00111	0.00122	0.01222
	(CLK * !D * SCD)	0.00716	0.00729	0.01828
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00013	0.00014	0.00697
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00471	0.00500	0.01181
	(!CLK * D * !SCD * SET_B)	0.01053	0.01071	0.01739
	(!CLK * D * !SCD * SET_B)	0.01375	0.01390	0.02051
	(!CLK * D * !SCD * !SET_B * Q)	0.00866	0.00885	0.01554
	(!CLK * D * !SCD * !SET_B * Q)	0.01181	0.01199	0.01857
	(!CLK * !D * SCD * SET_B)	0.00767	0.00776	0.01821
	(!CLK * !D * SCD * SET_B)	0.01409	0.01416	0.02462
	(!CLK * !D * SCD * !SET_B * Q)	0.00520	0.00529	0.01548
	(!CLK * !D * SCD * !SET_B * Q)	0.01169	0.01179	0.02196
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00013	0.00037	0.00711
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00470	0.00496	0.01169

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00017	0.00009	0.00693
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00471	0.00498	0.01182
	(CLK * D * !SCD)	0.00356	0.00363	0.01047
	(CLK * D * !SCD)	0.00717	0.00724	0.01395
	(CLK * !D * SCD)	0.00121	0.00131	0.01227
	(CLK * !D * SCD)	0.00731	0.00743	0.01838
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00017	0.00010	0.00693
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00472	0.00501	0.01182
	(!CLK * D * !SCD * SET_B)	0.01043	0.01059	0.01727
	(!CLK * D * !SCD * SET_B)	0.01372	0.01390	0.02050
	(!CLK * D * !SCD * !SET_B * Q)	0.00860	0.00875	0.01545
	(!CLK * D * !SCD * !SET_B * Q)	0.01181	0.01198	0.01860
	(!CLK * !D * SCD * SET_B)	0.00774	0.00783	0.01828
	(!CLK * !D * SCD * SET_B)	0.01414	0.01423	0.02467
	(!CLK * !D * SCD * !SET_B * Q)	0.00531	0.00540	0.01558
	(!CLK * !D * SCD * !SET_B * Q)	0.01177	0.01187	0.02204
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00011	0.00034	0.00708
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00472	0.00497	0.01170

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00197	0.00197	0.00197
	(CLK * Q)	-0.00192	-0.00192	-0.00192
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00215	0.00217	0.00215
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00175	-0.00175	-0.00174
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00408	0.00403	0.00639
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00008	-0.00001	0.00237
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00219	0.00221	0.00219
	(CLK * Q)	-0.00187	-0.00188	-0.00187
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00240	0.00242	0.00240
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00166	-0.00167	-0.00166
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00430	0.00423	0.00659
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00011	0.00003	0.00239

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00203	0.00205	0.00203
	(CLK * Q)	-0.00196	-0.00197	-0.00196
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00223	0.00226	0.00224
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00176	-0.00176	-0.00175
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00418	0.00413	0.00647
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00007	-0.00002	0.00234

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00193	-0.00197	-0.00196
	(CLK * Q)	0.00198	0.00196	0.00194
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00211	-0.00214	-0.00214
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00180	0.00178	0.00176
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00004	0.00009	0.00266
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00404	0.00413	0.00667

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00215	-0.00219	-0.00218
	(CLK * Q)	0.00193	0.00191	0.00189
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00236	-0.00240	-0.00239
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00173	0.00170	0.00168
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00003	0.00000	0.00259
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00417	0.00422	0.00679
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00199	-0.00203	-0.00202
	(CLK * Q)	0.00202	0.00201	0.00198
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00219	-0.00223	-0.00222
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00182	0.00180	0.00178
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00005	0.00008	0.00265
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00418	0.00422	0.00679

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)**	0.01266	0.01244	0.02155
	(D * SCD * SCE * Q)	0.00882	0.00859	0.01771
	(D * !SCE * Q)	0.01266	0.01243	0.02155
	(D * !SCE * Q)	0.00882	0.00859	0.01771
	(D * !SCD * SCE * SET_B * !Q)	0.01240	0.01216	0.02125
	(D * !SCD * SCE * SET_B * !Q)	0.00856	0.00831	0.01743
	(D * !SCD * SCE * !SET_B * Q)	0.02185	0.02167	0.03123
	(D * !SCD * SCE * !SET_B * Q)	0.01770	0.01752	0.02709
	(!D * SCD * SCE * Q)	0.01266	0.01244	0.02155
	(!D * SCD * SCE * Q)	0.00882	0.00859	0.01772
	(!D * !SCE * SET_B * !Q)	0.01240	0.01216	0.02125
	(!D * !SCE * SET_B * !Q)	0.00855	0.00831	0.01743
	(!D * !SCE * !SET_B * Q)	0.02185	0.02167	0.03123
	(!D * !SCE * !SET_B * Q)	0.01770	0.01752	0.02709
	(!D * !SCD * SCE * SET_B * !Q)	0.01240	0.01216	0.02126
	(!D * !SCD * SCE * SET_B * !Q)	0.00856	0.00831	0.01742
	(!D * !SCD * SCE * !SET_B * Q)	0.02189	0.02169	0.03121
	(!D * !SCD * SCE * !SET_B * Q)	0.01776	0.01754	0.02707

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01459	0.01425	0.02313
	(D * SCD * SCE * Q)	0.01079	0.01045	0.01934
	(D * !SCE * Q)	0.01459	0.01425	0.02312
	(D * !SCE * Q)	0.01078	0.01045	0.01934
	(D * !SCD * SCE * SET_B * !Q)	0.01462	0.01428	0.02315
	(D * !SCD * SCE * SET_B * !Q)	0.01080	0.01046	0.01933
	(D * !SCD * SCE * !SET_B * Q)	0.03156	0.03145	0.04135
	(D * !SCD * SCE * !SET_B * Q)	0.02737	0.02727	0.03716
	(!D * SCD * SCE * Q)	0.01459	0.01426	0.02313
	(!D * SCD * SCE * Q)	0.01079	0.01045	0.01934
	(!D * !SCE * SET_B * !Q)	0.01462	0.01428	0.02314
	(!D * !SCE * SET_B * !Q)	0.01080	0.01045	0.01933
	(!D * !SCE * !SET_B * Q)	0.03155	0.03144	0.04126
	(!D * !SCE * !SET_B * Q)	0.02736	0.02726	0.03709
	(!D * !SCD * SCE * SET_B * !Q)	0.01462	0.01432	0.02316
	(!D * !SCD * SCE * SET_B * !Q)	0.01080	0.01050	0.01935
	(!D * !SCD * SCE * !SET_B * Q)	0.03164	0.03148	0.04124
	(!D * !SCD * SCE * !SET_B * Q)	0.02745	0.02730	0.03707

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01442	0.01410	0.02299
	(D * SCD * SCE * Q)	0.01061	0.01028	0.01919
	(D * !SCE * Q)	0.01442	0.01409	0.02299
	(D * !SCE * Q)	0.01061	0.01028	0.01919
	(D * !SCD * SCE * SET_B * !Q)	0.01450	0.01422	0.02308
	(D * !SCD * SCE * SET_B * !Q)	0.01068	0.01039	0.01926
	(D * !SCD * SCE * !SET_B * Q)	0.03105	0.03098	0.04101
	(D * !SCD * SCE * !SET_B * Q)	0.02691	0.02685	0.03688
	(!D * SCD * SCE * Q)	0.01442	0.01410	0.02300
	(!D * SCD * SCE * Q)	0.01061	0.01028	0.01920
	(!D * !SCE * SET_B * !Q)	0.01450	0.01421	0.02307
	(!D * !SCE * SET_B * !Q)	0.01068	0.01039	0.01926
	(!D * !SCE * !SET_B * Q)	0.03105	0.03098	0.04101
	(!D * !SCE * !SET_B * Q)	0.02691	0.02685	0.03688
	(!D * !SCD * SCE * SET_B * !Q)	0.01450	0.01422	0.02307
	(!D * !SCD * SCE * SET_B * !Q)	0.01068	0.01039	0.01926
	(!D * !SCD * SCE * !SET_B * Q)	0.03114	0.03102	0.04100
	(!D * !SCD * SCE * !SET_B * Q)	0.02700	0.02689	0.03686

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)**	0.01250	0.01262	0.02259
	(D * SCD * SCE * SET_B * !Q)	0.01610	0.01622	0.02621
	(D * SCD * SCE * Q)	0.00693	0.00722	0.01700
	(D * SCD * SCE * Q)	0.01076	0.01104	0.02083
	(D * !SCE * SET_B * !Q)	0.01246	0.01259	0.02256
	(D * !SCE * SET_B * !Q)	0.01607	0.01619	0.02617
	(D * !SCE * Q)	0.00693	0.00722	0.01700
	(D * !SCE * Q)	0.01076	0.01104	0.02083
	(D * !SCD * SCE * SET_B * Q)	0.01390	0.01428	0.02446
	(D * !SCD * SCE * SET_B * Q)	0.01799	0.01836	0.02854
	(D * !SCD * SCE * SET_B * !Q)	0.00716	0.00735	0.01726
	(D * !SCD * SCE * SET_B * !Q)	0.01098	0.01119	0.02109
	(D * !SCD * SCE * !SET_B * Q)	0.01148	0.01187	0.02204
	(D * !SCD * SCE * !SET_B * Q)	0.01561	0.01601	0.02619
	(!D * SCD * SCE * SET_B * !Q)	0.01253	0.01266	0.02263
	(!D * SCD * SCE * SET_B * !Q)	0.01612	0.01624	0.02623
	(!D * SCD * SCE * Q)	0.00693	0.00722	0.01700
	(!D * SCD * SCE * Q)	0.01076	0.01104	0.02083
	(!D * !SCE * SET_B * Q)	0.01387	0.01425	0.02443
	(!D * !SCE * SET_B * Q)	0.01793	0.01831	0.02849
	(!D * !SCE * SET_B * !Q)	0.00715	0.00735	0.01725
	(!D * !SCE * SET_B * !Q)	0.01098	0.01119	0.02109
	(!D * !SCE * !SET_B * Q)	0.01148	0.01187	0.02204
	(!D * !SCE * !SET_B * Q)	0.01563	0.01601	0.02619
	(!D * !SCD * SCE * SET_B * Q)	0.01389	0.01427	0.02445
	(!D * !SCD * SCE * SET_B * Q)	0.01797	0.01834	0.02854
	(!D * !SCD * SCE * SET_B * !Q)	0.00716	0.00735	0.01725
	(!D * !SCD * SCE * SET_B * !Q)	0.01098	0.01119	0.02109
	(!D * !SCD * SCE * !SET_B * Q)	0.01149	0.01188	0.02207
	(!D * !SCD * SCE * !SET_B * Q)	0.01564	0.01601	0.02622

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01474	0.01492	0.02461
	(D * SCD * SCE * SET_B * !Q)	0.01820	0.01837	0.02808
	(D * SCD * SCE * Q)	0.00800	0.00833	0.01780
	(D * SCD * SCE * Q)	0.01180	0.01214	0.02160
	(D * !SCE * SET_B * !Q)	0.01471	0.01484	0.02458
	(D * !SCE * SET_B * !Q)	0.01816	0.01829	0.02805
	(D * !SCE * Q)	0.00800	0.00833	0.01780
	(D * !SCE * Q)	0.01179	0.01213	0.02160
	(D * !SCD * SCE * SET_B * Q)	0.01629	0.01663	0.02659
	(D * !SCD * SCE * SET_B * Q)	0.02041	0.02076	0.03071
	(D * !SCD * SCE * SET_B * !Q)	0.00786	0.00809	0.01775
	(D * !SCD * SCE * SET_B * !Q)	0.01167	0.01190	0.02156
	(D * !SCD * SCE * !SET_B * Q)	0.01369	0.01406	0.02403
	(D * !SCD * SCE * !SET_B * Q)	0.01786	0.01825	0.02823
	(!D * SCD * SCE * SET_B * !Q)	0.01478	0.01496	0.02465
	(!D * SCD * SCE * SET_B * !Q)	0.01822	0.01839	0.02810
	(!D * SCD * SCE * Q)	0.00800	0.00833	0.01780
	(!D * SCD * SCE * Q)	0.01180	0.01214	0.02161
	(!D * !SCE * SET_B * Q)	0.01626	0.01660	0.02655
	(!D * !SCE * SET_B * Q)	0.02036	0.02070	0.03066
	(!D * !SCE * SET_B * !Q)	0.00786	0.00809	0.01775
	(!D * !SCE * SET_B * !Q)	0.01167	0.01190	0.02156
	(!D * !SCE * !SET_B * Q)	0.01371	0.01406	0.02403
	(!D * !SCE * !SET_B * Q)	0.01790	0.01825	0.02822
	(!D * !SCD * SCE * SET_B * Q)	0.01629	0.01662	0.02657
	(!D * !SCD * SCE * SET_B * Q)	0.02040	0.02074	0.03069
	(!D * !SCD * SCE * SET_B * !Q)	0.00786	0.00809	0.01775
	(!D * !SCD * SCE * SET_B * !Q)	0.01167	0.01190	0.02156
	(!D * !SCD * SCE * !SET_B * Q)	0.01372	0.01407	0.02403
	(!D * !SCD * SCE * !SET_B * Q)	0.01790	0.01825	0.02823

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01438	0.01451	0.02427
	(D * SCD * SCE * SET_B * !Q)	0.01791	0.01804	0.02781
	(D * SCD * SCE * Q)	0.00785	0.00818	0.01767
	(D * SCD * SCE * Q)	0.01164	0.01199	0.02148
	(D * !SCE * SET_B * !Q)	0.01435	0.01448	0.02424
	(D * !SCE * SET_B * !Q)	0.01788	0.01801	0.02778
	(D * !SCE * Q)	0.00784	0.00817	0.01767
	(D * !SCE * Q)	0.01164	0.01199	0.02148
	(D * !SCD * SCE * SET_B * Q)	0.01596	0.01631	0.02630
	(D * !SCD * SCE * SET_B * Q)	0.02003	0.02038	0.03038
	(D * !SCD * SCE * SET_B * !Q)	0.00765	0.00789	0.01756
	(D * !SCD * SCE * SET_B * !Q)	0.01146	0.01170	0.02138
	(D * !SCD * SCE * !SET_B * Q)	0.01340	0.01376	0.02375
	(D * !SCD * SCE * !SET_B * Q)	0.01752	0.01789	0.02789
	(!D * SCD * SCE * SET_B * !Q)	0.01442	0.01455	0.02431
	(!D * SCD * SCE * SET_B * !Q)	0.01794	0.01806	0.02784
	(!D * SCD * SCE * Q)	0.00785	0.00818	0.01767
	(!D * SCD * SCE * Q)	0.01165	0.01199	0.02148
	(!D * !SCE * SET_B * Q)	0.01593	0.01628	0.02627
	(!D * !SCE * SET_B * Q)	0.01998	0.02032	0.03031
	(!D * !SCE * SET_B * !Q)	0.00765	0.00789	0.01756
	(!D * !SCE * SET_B * !Q)	0.01146	0.01170	0.02138
	(!D * !SCE * !SET_B * Q)	0.01341	0.01376	0.02375
	(!D * !SCE * !SET_B * Q)	0.01754	0.01789	0.02789
	(!D * !SCD * SCE * SET_B * Q)	0.01596	0.01629	0.02629
	(!D * !SCD * SCE * SET_B * Q)	0.02002	0.02036	0.03034
	(!D * !SCD * SCE * SET_B * !Q)	0.00765	0.00789	0.01756
	(!D * !SCD * SCE * SET_B * !Q)	0.01146	0.01170	0.02138
	(!D * !SCD * SCE * !SET_B * Q)	0.01341	0.01377	0.02375
	(!D * !SCD * SCE * !SET_B * Q)	0.01754	0.01790	0.02789

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00190	0.00192	0.00408	0.00306	0.76859	0.73929
sky130_fd_sc_hs__sdfxbp_2	0.00188	0.00189	0.00413	0.00306	1.50213	1.49720

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.76804	1.13324
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.80385	1.14254

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)**	0.34408	1.04509	7.58582
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q (RR)**	0.33291	0.91862	7.50145

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	**CLK->Q (RF)**	0.36990	0.79525	3.51971
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q (RF)**	0.39830	0.79647	3.52074

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)**	0.43731	1.13281	7.57661
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q_N (RR)**	0.50582	1.07694	7.66513

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)**	0.40658	0.80349	3.44355
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q_N (RF)**	0.43192	0.79507	3.59041

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)	-0.10351	-0.20740	-0.92112
	setup	CLK (R)	0.23063	0.28243	1.06591
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10767	-0.20937	-0.91996
	setup	CLK (R)	0.23123	0.28547	1.06813

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)	-0.12906	-0.25896	-1.51437
	setup	CLK (R)	0.40015	0.45689	1.97879
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12780	-0.25872	-1.51935
	setup	CLK (R)	0.40281	0.46347	1.99191

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)	-0.10351	-0.20740	-0.92112
	setup	CLK (R)	0.23063	0.28243	1.06591
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10767	-0.20937	-0.91996
	setup	CLK (R)	0.23123	0.28547	1.06813

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)	-0.12906	-0.25896	-1.51437
	setup	CLK (R)	0.40015	0.45689	1.97879
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12780	-0.25872	-1.51935
	setup	CLK (R)	0.40281	0.46347	1.99191

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)	-0.13734	-0.22261	-1.02074
	setup	CLK (R)	0.27036	0.30802	1.17614
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13468	-0.22388	-1.01681
	setup	CLK (R)	0.27000	0.30576	1.16129

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)	-0.18252	-0.32088	-1.82699
	setup	CLK (R)	0.49935	0.54878	2.19168
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.17676	-0.31668	-1.84099
	setup	CLK (R)	0.50619	0.55397	2.20329

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)	-0.13734	-0.22261	-1.02074
	hold	CLK (R)	-0.14447	-0.23254	-1.04362
	setup	CLK (R)	0.26682	0.30299	1.15285
	setup	CLK (R)	0.27036	0.30802	1.17614
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13468	-0.22388	-1.01681
	hold	CLK (R)	-0.14099	-0.23100	-1.03559
	setup	CLK (R)	0.26559	0.30070	1.14138
	setup	CLK (R)	0.27000	0.30576	1.16129

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)	-0.19663	-0.33879	-1.85385
	hold	CLK (R)	-0.18252	-0.32088	-1.82699
	setup	CLK (R)	0.49284	0.54509	2.17964
	setup	CLK (R)	0.49935	0.54878	2.19168
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.19468	-0.33639	-1.85840
	hold	CLK (R)	-0.17676	-0.31668	-1.84099
	setup	CLK (R)	0.50047	0.54970	2.19138
	setup	CLK (R)	0.50619	0.55397	2.20329

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)	-0.12277	-0.22824	-0.35557
	setup	CLK (R)	0.48404	0.47253	1.17798
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11957	-0.22640	-0.36078
	setup	CLK (R)	0.49097	0.48219	1.16431

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)	-0.15646	-0.27314	-1.50281
	setup	CLK (R)	0.42544	0.47087	1.95511
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.15907	-0.27466	-1.51361
	setup	CLK (R)	0.43209	0.47941	1.97289

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)	-0.18682	-0.26658	-0.35557
	hold	CLK (R)	-0.12277	-0.22824	-1.02068
	setup	CLK (R)	0.48404	0.47253	0.54863
	setup	CLK (R)	0.25095	0.30829	1.17798
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.18563	-0.26838	-0.36078
	hold	CLK (R)	-0.11957	-0.22640	-1.01747
	setup	CLK (R)	0.49097	0.48219	0.55921
	setup	CLK (R)	0.25207	0.30886	1.16431

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)	-0.20861	-0.34056	-1.50281
	hold	CLK (R)	-0.15646	-0.27314	-1.51465
	setup	CLK (R)	0.33215	0.40941	1.57835
	setup	CLK (R)	0.42544	0.47087	1.95511
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.21148	-0.34314	-1.51361
	hold	CLK (R)	-0.15907	-0.27466	-1.52374
	setup	CLK (R)	0.33938	0.41251	1.58673
	setup	CLK (R)	0.43209	0.47941	1.97289

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 ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.12364	0.82031	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.13277	0.82031	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 ()	0.29097	0.82031	16.50020
	min_pulse_width	CLK ()	0.40049	0.82031	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.29401	0.82031	16.50020
	min_pulse_width	CLK ()	0.40657	0.82031	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	0.01289	0.01300	0.01828
	CLK	0.01096	0.01107	0.01614
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01554	0.01602	0.02148
	CLK	0.01361	0.01410	0.01924

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01318	0.01343	0.01855
	CLK	0.01127	0.01151	0.01652
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01574	0.01633	0.02165
	CLK	0.01383	0.01441	0.01949

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01320	0.01344	0.01887
	CLK	0.01128	0.01152	0.01677
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01575	0.01634	0.02217
	CLK	0.01383	0.01442	0.01982

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01288	0.01297	0.01785
	CLK	0.01095	0.01105	0.01588
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01553	0.01601	0.02105
	CLK	0.01360	0.01409	0.01894

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00106	0.00107	0.00106
	(CLK * SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCE)	0.00365	0.00361	0.00903
	(CLK * !SCE)	0.00087	0.00083	0.00626
	(CLK * !SCD * SCE)	0.00063	0.00064	0.00062
	(CLK * !SCD * SCE)	-0.00113	-0.00114	-0.00116
	(!CLK * SCD * SCE)	0.00106	0.00106	0.00106
	(!CLK * SCD * SCE)	-0.00052	-0.00052	-0.00051
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00854	0.00847	0.01370
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00576	0.00571	0.01093
	(!CLK * !SCD * SCE)	0.00063	0.00064	0.00062
	(!CLK * !SCD * SCE)	-0.00112	-0.00113	-0.00116
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00107	0.00108	0.00108
	(CLK * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(CLK * !SCE)	0.00358	0.00354	0.00895
	(CLK * !SCE)	0.00083	0.00079	0.00621
	(CLK * !SCD * SCE)	0.00066	0.00066	0.00064
	(CLK * !SCD * SCE)	-0.00110	-0.00111	-0.00114
	(!CLK * SCD * SCE)	0.00107	0.00108	0.00108
	(!CLK * SCD * SCE)	-0.00050	-0.00051	-0.00050
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00859	0.00854	0.01374
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00584	0.00579	0.01099
	(!CLK * !SCD * SCE)	0.00066	0.00066	0.00064
	(!CLK * !SCD * SCE)	-0.00110	-0.00111	-0.00113

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00101	-0.00101	-0.00105
	(CLK * SCD * SCE)	0.00057	0.00056	0.00054
	(CLK * !SCE)	0.00089	0.00105	0.00674
	(CLK * !SCE)	0.00366	0.00382	0.00951
	(CLK * !SCD * SCE)	-0.00060	-0.00060	-0.00059
	(CLK * !SCD * SCE)	0.00116	0.00116	0.00116
	(!CLK * SCD * SCE)	-0.00101	-0.00102	-0.00105
	(!CLK * SCD * SCE)	0.00057	0.00056	0.00054
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00630	0.00643	0.01262
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00907	0.00920	0.01539
	(!CLK * !SCD * SCE)	-0.00059	-0.00060	-0.00059
	(!CLK * !SCD * SCE)	0.00115	0.00116	0.00116
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00102	-0.00103	-0.00106
	(CLK * SCD * SCE)	0.00056	0.00055	0.00053
	(CLK * !SCE)	0.00100	0.00116	0.00684
	(CLK * !SCE)	0.00374	0.00390	0.00958
	(CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00113	0.00114	0.00114
	(!CLK * SCD * SCE)	-0.00102	-0.00103	-0.00106
	(!CLK * SCD * SCE)	0.00056	0.00055	0.00053
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00631	0.00645	0.01262
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00906	0.00919	0.01537
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(!CLK * !SCD * SCE)	0.00113	0.00114	0.00114

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00506	0.00492	0.00866
	(CLK * D * SCE)	0.00157	0.00142	0.00516
	(CLK * !D * SCE)	0.00585	0.00571	0.00923
	(CLK * !D * SCE)	0.00216	0.00201	0.00553
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00993	0.00982	0.01355
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00645	0.00631	0.01005
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01073	0.01061	0.01422
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00703	0.00691	0.01053
	!SCE	0.00102	0.00088	0.00086
	!SCE	-0.00097	-0.00112	-0.00113
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00497	0.00483	0.00858
	(CLK * D * SCE)	0.00152	0.00138	0.00513
	(CLK * !D * SCE)	0.00576	0.00562	0.00915
	(CLK * !D * SCE)	0.00211	0.00197	0.00550
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00996	0.00985	0.01359
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00652	0.00640	0.01014
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01076	0.01064	0.01426
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00711	0.00699	0.01061
	!SCE	0.00099	0.00085	0.00083
	!SCE	-0.00098	-0.00113	-0.00114

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00200	0.00187	0.00571
	(CLK * D * SCE)	0.00550	0.00539	0.00919
	(CLK * !D * SCE)	0.00163	0.00151	0.00547
	(CLK * !D * SCE)	0.00533	0.00522	0.00915
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00740	0.00729	0.01149
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01091	0.01080	0.01498
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00707	0.00698	0.01142
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01078	0.01068	0.01511
	!SCE	-0.00083	-0.00084	-0.00085
	!SCE	0.00115	0.00116	0.00116
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00208	0.00197	0.00581
	(CLK * D * SCE)	0.00554	0.00544	0.00925
	(CLK * !D * SCE)	0.00172	0.00161	0.00557
	(CLK * !D * SCE)	0.00537	0.00527	0.00921
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00739	0.00731	0.01151
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01086	0.01076	0.01495
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00707	0.00699	0.01144
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01073	0.01064	0.01508
	!SCE	-0.00079	-0.00081	-0.00081
	!SCE	0.00116	0.00117	0.00117

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)**	0.00466	0.00448	0.01104
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00036	-0.00058	0.00598
	(CLK * D * !SCD)	0.00698	0.00693	0.01361
	(CLK * D * !SCD)	0.00331	0.00324	0.00989
	(CLK * !D * SCD)	0.00832	0.00822	0.01901
	(CLK * !D * SCD)	0.00201	0.00189	0.01270
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00466	0.00448	0.01104
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00036	-0.00058	0.00598
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01228	0.01230	0.01893
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00861	0.00862	0.01521
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01320	0.01310	0.02394
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00689	0.00679	0.01763
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00456	0.00451	0.01100
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00019	-0.00026	0.00622

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00485	0.00465	0.01118
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00051	0.00602
	(CLK * D * !SCD)	0.00726	0.00718	0.01384
	(CLK * D * !SCD)	0.00345	0.00336	0.00998
	(CLK * !D * SCD)	0.00846	0.00835	0.01909
	(CLK * !D * SCD)	0.00207	0.00193	0.01271
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00485	0.00465	0.01118
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00028	-0.00051	0.00602
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01246	0.01246	0.01906
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00865	0.00865	0.01521
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01346	0.01335	0.02414
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00707	0.00694	0.01776
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00473	0.00467	0.01113
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00013	-0.00022	0.00624

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)**	-0.00030	-0.00000	0.00681
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00473	0.00504	0.01186
	(CLK * D * !SCD)	0.00341	0.00345	0.01034
	(CLK * D * !SCD)	0.00710	0.00717	0.01392
	(CLK * !D * SCD)	0.00123	0.00132	0.01233
	(CLK * !D * SCD)	0.00755	0.00765	0.01864
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00030	-0.00006	0.00681
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00473	0.00499	0.01185
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00826	0.00840	0.01519
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01195	0.01210	0.01879
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00664	0.00671	0.01797
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01295	0.01302	0.02429
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00007	0.00027	0.00706
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00485	0.00505	0.01184

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00033	-0.00005	0.00674
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00480	0.00511	0.01189
	(CLK * D * !SCD)	0.00332	0.00335	0.01022
	(CLK * D * !SCD)	0.00715	0.00721	0.01395
	(CLK * !D * SCD)	0.00132	0.00138	0.01236
	(CLK * !D * SCD)	0.00771	0.00779	0.01875
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00033	-0.00011	0.00674
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00480	0.00504	0.01189
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00830	0.00842	0.01519
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01212	0.01226	0.01893
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00663	0.00669	0.01791
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01302	0.01308	0.02429
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00005	0.00024	0.00701
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00495	0.00514	0.01190

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)	0.01181	0.01159	0.02102
	(D * SCD * SCE * Q * !Q_N)	0.00798	0.00775	0.01718
	(D * !SCE * Q * !Q_N)	0.01181	0.01158	0.02102
	(D * !SCE * Q * !Q_N)	0.00798	0.00774	0.01718
	(D * !SCD * SCE * !Q * Q_N)	0.01159	0.01131	0.02080
	(D * !SCD * SCE * !Q * Q_N)	0.00776	0.00746	0.01695
	(!D * SCD * SCE * Q * !Q_N)	0.01181	0.01159	0.02102
	(!D * SCD * SCE * Q * !Q_N)	0.00798	0.00775	0.01718
	(!D * !SCE * !Q * Q_N)	0.01159	0.01131	0.02079
	(!D * !SCE * !Q * Q_N)	0.00775	0.00746	0.01694
	(!D * !SCD * SCE * !Q * Q_N)	0.01159	0.01131	0.02081
	(!D * !SCD * SCE * !Q * Q_N)	0.00776	0.00746	0.01696
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01208	0.01181	0.02123
	(D * SCD * SCE * Q * !Q_N)	0.00825	0.00794	0.01739
	(D * !SCE * Q * !Q_N)	0.01207	0.01180	0.02122
	(D * !SCE * Q * !Q_N)	0.00824	0.00794	0.01739
	(D * !SCD * SCE * !Q * Q_N)	0.01187	0.01159	0.02102
	(D * !SCD * SCE * !Q * Q_N)	0.00805	0.00773	0.01717
	(!D * SCD * SCE * Q * !Q_N)	0.01208	0.01181	0.02123
	(!D * SCD * SCE * Q * !Q_N)	0.00825	0.00794	0.01740
	(!D * !SCE * !Q * Q_N)	0.01186	0.01159	0.02102
	(!D * !SCE * !Q * Q_N)	0.00804	0.00772	0.01717
	(!D * !SCD * SCE * !Q * Q_N)	0.01187	0.01159	0.02103
	(!D * !SCD * SCE * !Q * Q_N)	0.00805	0.00773	0.01718

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)**	0.00655	0.00674	0.01669
	(D * SCD * SCE * Q * !Q_N)	0.01039	0.01060	0.02054
	(D * SCD * SCE * !Q * Q_N)	0.01125	0.01131	0.02153
	(D * SCD * SCE * !Q * Q_N)	0.01510	0.01515	0.02536
	(D * !SCE * Q * !Q_N)	0.00654	0.00674	0.01669
	(D * !SCE * Q * !Q_N)	0.01039	0.01060	0.02054
	(D * !SCE * !Q * Q_N)	0.01121	0.01127	0.02152
	(D * !SCE * !Q * Q_N)	0.01506	0.01512	0.02536
	(D * !SCD * SCE * Q * !Q_N)	0.01293	0.01320	0.02360
	(D * !SCD * SCE * Q * !Q_N)	0.01680	0.01706	0.02747
	(D * !SCD * SCE * !Q * Q_N)	0.00661	0.00680	0.01682
	(D * !SCD * SCE * !Q * Q_N)	0.01046	0.01066	0.02066
	(!D * SCD * SCE * Q * !Q_N)	0.00655	0.00673	0.01669
	(!D * SCD * SCE * Q * !Q_N)	0.01039	0.01058	0.02054
	(!D * SCD * SCE * !Q * Q_N)	0.01128	0.01134	0.02156
	(!D * SCD * SCE * !Q * Q_N)	0.01512	0.01517	0.02538
	(!D * !SCE * Q * !Q_N)	0.01291	0.01316	0.02355
	(!D * !SCE * Q * !Q_N)	0.01676	0.01700	0.02740
	(!D * !SCE * !Q * Q_N)	0.00661	0.00679	0.01680
	(!D * !SCE * !Q * Q_N)	0.01045	0.01065	0.02065
	(!D * !SCD * SCE * Q * !Q_N)	0.01293	0.01319	0.02341
	(!D * !SCD * SCE * Q * !Q_N)	0.01679	0.01704	0.02728
	(!D * !SCD * SCE * !Q * Q_N)	0.00661	0.00680	0.01682
	(!D * !SCD * SCE * !Q * Q_N)	0.01046	0.01066	0.02067

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00664	0.00687	0.01676
	(D * SCD * SCE * Q * !Q_N)	0.01048	0.01071	0.02060
	(D * SCD * SCE * !Q * Q_N)	0.01144	0.01156	0.02170
	(D * SCD * SCE * !Q * Q_N)	0.01528	0.01540	0.02554
	(D * !SCE * Q * !Q_N)	0.00663	0.00688	0.01676
	(D * !SCE * Q * !Q_N)	0.01048	0.01072	0.02061
	(D * !SCE * !Q * Q_N)	0.01140	0.01152	0.02169
	(D * !SCE * !Q * Q_N)	0.01524	0.01536	0.02554
	(D * !SCD * SCE * Q * !Q_N)	0.01294	0.01320	0.02358
	(D * !SCD * SCE * Q * !Q_N)	0.01680	0.01706	0.02745
	(D * !SCD * SCE * !Q * Q_N)	0.00668	0.00691	0.01686
	(D * !SCD * SCE * !Q * Q_N)	0.01052	0.01075	0.02071
	(!D * SCD * SCE * Q * !Q_N)	0.00664	0.00687	0.01676
	(!D * SCD * SCE * Q * !Q_N)	0.01048	0.01072	0.02060
	(!D * SCD * SCE * !Q * Q_N)	0.01148	0.01159	0.02174
	(!D * SCD * SCE * !Q * Q_N)	0.01530	0.01542	0.02557
	(!D * !SCE * Q * !Q_N)	0.01290	0.01317	0.02353
	(!D * !SCE * Q * !Q_N)	0.01674	0.01700	0.02737
	(!D * !SCE * !Q * Q_N)	0.00668	0.00690	0.01686
	(!D * !SCE * !Q * Q_N)	0.01052	0.01075	0.02070
	(!D * !SCD * SCE * Q * !Q_N)	0.01293	0.01320	0.02341
	(!D * !SCD * SCE * Q * !Q_N)	0.01679	0.01704	0.02726
	(!D * !SCD * SCE * !Q * Q_N)	0.00668	0.00691	0.01686
	(!D * !SCD * SCE * !Q * Q_N)	0.01053	0.01075	0.02071

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00192	0.00201	0.00422	0.00304	0.75471
sky130_fd_sc_hs__sdfxtp_2	0.00195	0.00198	0.00409	0.00306	1.49107
sky130_fd_sc_hs__sdfxtp_4	0.00193	0.00195	0.00421	0.00304	2.87328

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.67573	0.94645
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.68137	0.99552
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.85585	1.18799

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)**	0.31741	1.01378	7.47413
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.32127	0.90435	7.48159
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.38538	0.88780	7.64020

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.35456	0.76676	3.43497
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.36820	0.74974	3.47390
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.37476	0.71893	3.51528

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)	-0.10662	-0.20975	-0.93757
	setup	CLK (R)	0.23453	0.28490	1.07800
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10937	-0.21499	-0.95388
	setup	CLK (R)	0.24659	0.29940	1.09499
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10559	-0.20672	-0.92485
	setup	CLK (R)	0.22984	0.28468	1.06129

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)	-0.13331	-0.26758	-1.52043
	setup	CLK (R)	0.41073	0.46651	2.00805
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13800	-0.26945	-1.56542
	setup	CLK (R)	0.43254	0.48719	2.05728
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13740	-0.26308	-1.60937
	setup	CLK (R)	0.40746	0.46292	1.99117

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)	-0.10662	-0.20975	-0.93757
	setup	CLK (R)	0.23453	0.28490	1.07800
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10937	-0.21499	-0.95388
	setup	CLK (R)	0.24659	0.29940	1.09499
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10559	-0.20672	-0.92485
	setup	CLK (R)	0.22984	0.28468	1.06129

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)	-0.13331	-0.26758	-1.52043
	setup	CLK (R)	0.41073	0.46651	2.00805
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13800	-0.26945	-1.56542
	setup	CLK (R)	0.43254	0.48719	2.05728
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13740	-0.26308	-1.60937
	setup	CLK (R)	0.40746	0.46292	1.99117

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)	-0.13721	-0.22632	-1.03583
	setup	CLK (R)	0.27408	0.31422	1.18895
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14083	-0.22788	-1.04347
	setup	CLK (R)	0.29096	0.32345	1.19813
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13351	-0.22256	-1.02161
	setup	CLK (R)	0.27206	0.31033	1.16718

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)	-0.18518	-0.32554	-1.83821
	setup	CLK (R)	0.51156	0.55978	2.22083
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.18729	-0.32939	-1.86966
	setup	CLK (R)	0.53453	0.57821	2.25146
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.18993	-0.32730	-1.90321
	setup	CLK (R)	0.50906	0.55769	2.20576

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)	-0.13721	-0.22632	-1.03583
	hold	CLK (R)	-0.14557	-0.23713	-1.05386
	setup	CLK (R)	0.27204	0.30663	1.16868
	setup	CLK (R)	0.27408	0.31422	1.18895
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14083	-0.22788	-1.04347
	hold	CLK (R)	-0.14875	-0.23796	-1.06248
	setup	CLK (R)	0.28515	0.31390	1.17719
	setup	CLK (R)	0.29096	0.32345	1.19813
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13351	-0.22256	-1.02161
	hold	CLK (R)	-0.14375	-0.23190	-1.04514
	setup	CLK (R)	0.27020	0.30316	1.14693
	setup	CLK (R)	0.27206	0.31033	1.16718

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)	-0.19963	-0.34307	-1.86258
	hold	CLK (R)	-0.18518	-0.32554	-1.83821
	setup	CLK (R)	0.50765	0.55553	2.21068
	setup	CLK (R)	0.51156	0.55978	2.22083
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.20241	-0.34540	-1.89015
	hold	CLK (R)	-0.18729	-0.32939	-1.86966
	setup	CLK (R)	0.52712	0.57307	2.24108
	setup	CLK (R)	0.53453	0.57821	2.25146
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.20675	-0.34331	-1.90471
	hold	CLK (R)	-0.18993	-0.32730	-1.90321
	setup	CLK (R)	0.50383	0.55258	2.19427
	setup	CLK (R)	0.50906	0.55769	2.20576

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)	-0.12523	-0.22969	-0.37340
	setup	CLK (R)	0.49647	0.49119	1.19364
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12598	-0.23401	-0.35805
	setup	CLK (R)	0.51866	0.50787	1.20209
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12063	-0.22807	-0.40033
	setup	CLK (R)	0.49598	0.48719	1.17120

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)	-0.16064	-0.27825	-1.49843
	setup	CLK (R)	0.43797	0.48300	1.98209
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.16303	-0.28221	-1.51702
	setup	CLK (R)	0.45588	0.49972	2.01766
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.16566	-0.27993	-1.52295
	setup	CLK (R)	0.43552	0.48158	1.96812

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)	-0.19126	-0.27475	-0.37340
	hold	CLK (R)	-0.12523	-0.22969	-1.03474
	setup	CLK (R)	0.49647	0.49119	0.57930
	setup	CLK (R)	0.25269	0.31130	1.19364
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.19182	-0.27864	-0.35805
	hold	CLK (R)	-0.12598	-0.23401	-1.04643
	setup	CLK (R)	0.51866	0.50787	0.57284
	setup	CLK (R)	0.26892	0.32048	1.20209
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.19534	-0.27446	-0.40033
	hold	CLK (R)	-0.12063	-0.22807	-1.02502
	setup	CLK (R)	0.49598	0.48719	0.57382
	setup	CLK (R)	0.25316	0.30726	1.17120

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)	-0.21427	-0.34836	-1.53373
	hold	CLK (R)	-0.16064	-0.27825	-1.49843
	setup	CLK (R)	0.33873	0.41952	1.60948
	setup	CLK (R)	0.43797	0.48300	1.98209
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.21232	-0.34725	-1.51702
	hold	CLK (R)	-0.16303	-0.28221	-1.53064
	setup	CLK (R)	0.35258	0.42434	1.59297
	setup	CLK (R)	0.45588	0.49972	2.01766
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.21120	-0.34695	-1.52295
	hold	CLK (R)	-0.16566	-0.27993	-1.59521
	setup	CLK (R)	0.33824	0.41704	1.58251
	setup	CLK (R)	0.43552	0.48158	1.96812

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 ()	0.15102	0.82031	16.50020
	min_pulse_width	CLK ()	0.12364	0.82031	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.16015	0.82031	16.50020
	min_pulse_width	CLK ()	0.12669	0.82031	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.20578	0.82031	16.50020
	min_pulse_width	CLK ()	0.13277	0.82031	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 ()	0.29401	0.82031	16.50020
	min_pulse_width	CLK ()	0.40049	0.82031	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.30922	0.82031	16.50020
	min_pulse_width	CLK ()	0.41874	0.82031	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.29097	0.82031	16.50020
	min_pulse_width	CLK ()	0.40657	0.82031	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	0.01991	0.01988	0.02987
	CLK	0.01609	0.01607	0.02617
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02297	0.02326	0.03318
	CLK	0.01913	0.01942	0.02957
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02890	0.02955	0.03973
	CLK	0.02507	0.02574	0.03647

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.02077	0.02099	0.03122
	CLK	0.01698	0.01719	0.02725
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02347	0.02411	0.03476
	CLK	0.01964	0.02026	0.03030
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02927	0.03059	0.04177
	CLK	0.02546	0.02678	0.03706

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00109	0.00110	0.00109
	(CLK * SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCE)	0.00367	0.00362	0.00902
	(CLK * !SCE)	0.00082	0.00077	0.00617
	(CLK * !SCD * SCE)	0.00066	0.00066	0.00064
	(CLK * !SCD * SCE)	-0.00113	-0.00114	-0.00115
	(!CLK * SCD * SCE)	0.00109	0.00109	0.00109
	(!CLK * SCD * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK * !SCE)	0.00872	0.00866	0.01386
	(!CLK * !SCE)	0.00588	0.00582	0.01101
	(!CLK * !SCD * SCE)	0.00066	0.00066	0.00065
	(!CLK * !SCD * SCE)	-0.00112	-0.00113	-0.00116
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00113	0.00113	0.00113
	(CLK * SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCE)	0.00398	0.00392	0.00924
	(CLK * !SCE)	0.00107	0.00102	0.00635
	(CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(CLK * !SCD * SCE)	-0.00114	-0.00115	-0.00117
	(!CLK * SCD * SCE)	0.00113	0.00113	0.00113
	(!CLK * SCD * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK * !SCE)	0.00949	0.00942	0.01452
	(!CLK * !SCE)	0.00659	0.00652	0.01163
	(!CLK * !SCD * SCE)	0.00069	0.00069	0.00067
	(!CLK * !SCD * SCE)	-0.00114	-0.00114	-0.00117

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00111	0.00111	0.00111
	(CLK * SCD * SCE)	-0.00050	-0.00051	-0.00050
	(CLK * !SCE)	0.00367	0.00363	0.00903
	(CLK * !SCE)	0.00083	0.00079	0.00620
	(CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(CLK * !SCD * SCE)	-0.00112	-0.00113	-0.00115
	(!CLK * SCD * SCE)	0.00111	0.00112	0.00111
	(!CLK * SCD * SCE)	-0.00051	-0.00051	-0.00050
	(!CLK * !SCE)	0.00878	0.00871	0.01390
	(!CLK * !SCE)	0.00594	0.00587	0.01107
	(!CLK * !SCD * SCE)	0.00069	0.00069	0.00067
	(!CLK * !SCD * SCE)	-0.00111	-0.00112	-0.00115

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00104	-0.00105	-0.00108
	(CLK * SCD * SCE)	0.00056	0.00055	0.00053
	(CLK * !SCE)	0.00097	0.00112	0.00680
	(CLK * !SCE)	0.00381	0.00396	0.00964
	(CLK * !SCD * SCE)	-0.00062	-0.00063	-0.00062
	(CLK * !SCD * SCE)	0.00115	0.00116	0.00115
	(!CLK * SCD * SCE)	-0.00104	-0.00105	-0.00108
	(!CLK * SCD * SCE)	0.00056	0.00056	0.00053
	(!CLK * !SCE)	0.00612	0.00625	0.01245
	(!CLK * !SCE)	0.00897	0.00909	0.01529
	(!CLK * !SCD * SCE)	-0.00062	-0.00063	-0.00062
	(!CLK * !SCD * SCE)	0.00115	0.00116	0.00116

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00107	-0.00108	-0.00112
	(CLK * SCD * SCE)	0.00056	0.00055	0.00053
	(CLK * !SCE)	0.00102	0.00116	0.00679
	(CLK * !SCE)	0.00391	0.00406	0.00969
	(CLK * !SCD * SCE)	-0.00065	-0.00065	-0.00065
	(CLK * !SCD * SCE)	0.00117	0.00117	0.00117
	(!CLK * SCD * SCE)	-0.00108	-0.00109	-0.00112
	(!CLK * SCD * SCE)	0.00056	0.00056	0.00053
	(!CLK * !SCE)	0.00629	0.00641	0.01252
	(!CLK * !SCE)	0.00919	0.00930	0.01541
	(!CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00065
	(!CLK * !SCD * SCE)	0.00116	0.00118	0.00117
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00106	-0.00106	-0.00110
	(CLK * SCD * SCE)	0.00056	0.00055	0.00053
	(CLK * !SCE)	0.00094	0.00109	0.00677
	(CLK * !SCE)	0.00377	0.00393	0.00961
	(CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00064
	(CLK * !SCD * SCE)	0.00114	0.00115	0.00115
	(!CLK * SCD * SCE)	-0.00106	-0.00107	-0.00110
	(!CLK * SCD * SCE)	0.00056	0.00056	0.00053
	(!CLK * !SCE)	0.00648	0.00662	0.01275
	(!CLK * !SCE)	0.00932	0.00945	0.01559
	(!CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00064
	(!CLK * !SCD * SCE)	0.00115	0.00116	0.00115

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00516	0.00501	0.00873
	(CLK * D * SCE)	0.00155	0.00138	0.00511
	(CLK * !D * SCE)	0.00595	0.00580	0.00930
	(CLK * !D * SCE)	0.00213	0.00197	0.00548
	(!CLK * D * SCE)	0.01020	0.01008	0.01379
	(!CLK * D * SCE)	0.00659	0.00645	0.01018
	(!CLK * !D * SCE)	0.01100	0.01088	0.01445
	(!CLK * !D * SCE)	0.00718	0.00705	0.01063
	!SCE	0.00104	0.00090	0.00088
	!SCE	-0.00103	-0.00118	-0.00119
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00531	0.00516	0.00886
	(CLK * D * SCE)	0.00173	0.00156	0.00527
	(CLK * !D * SCE)	0.00610	0.00596	0.00943
	(CLK * !D * SCE)	0.00231	0.00215	0.00565
	(!CLK * D * SCE)	0.01081	0.01069	0.01437
	(!CLK * D * SCE)	0.00723	0.00709	0.01077
	(!CLK * !D * SCE)	0.01160	0.01148	0.01501
	(!CLK * !D * SCE)	0.00782	0.00768	0.01123
	!SCE	0.00106	0.00091	0.00089
	!SCE	-0.00097	-0.00112	-0.00113
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00513	0.00498	0.00871
	(CLK * D * SCE)	0.00158	0.00143	0.00516
	(CLK * !D * SCE)	0.00591	0.00577	0.00928
	(CLK * !D * SCE)	0.00217	0.00201	0.00553
	(!CLK * D * SCE)	0.01021	0.01009	0.01380
	(!CLK * D * SCE)	0.00667	0.00653	0.01025
	(!CLK * !D * SCE)	0.01100	0.01088	0.01447
	(!CLK * !D * SCE)	0.00726	0.00713	0.01073
	!SCE	0.00102	0.00088	0.00086
	!SCE	-0.00101	-0.00115	-0.00116

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00202	0.00188	0.00570
	(CLK * D * SCE)	0.00565	0.00551	0.00931
	(CLK * !D * SCE)	0.00165	0.00152	0.00546
	(CLK * !D * SCE)	0.00547	0.00535	0.00927
	(!CLK * D * SCE)	0.00716	0.00705	0.01127
	(!CLK * D * SCE)	0.01080	0.01068	0.01488
	(!CLK * !D * SCE)	0.00685	0.00673	0.01119
	(!CLK * !D * SCE)	0.01067	0.01055	0.01500
	!SCE	-0.00085	-0.00087	-0.00087
	!SCE	0.00121	0.00122	0.00121
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00214	0.00201	0.00582
	(CLK * D * SCE)	0.00575	0.00560	0.00940
	(CLK * !D * SCE)	0.00178	0.00165	0.00557
	(CLK * !D * SCE)	0.00557	0.00545	0.00935
	(!CLK * D * SCE)	0.00741	0.00729	0.01146
	(!CLK * D * SCE)	0.01102	0.01089	0.01504
	(!CLK * !D * SCE)	0.00709	0.00697	0.01137
	(!CLK * !D * SCE)	0.01089	0.01077	0.01515
	!SCE	-0.00086	-0.00087	-0.00088
	!SCE	0.00115	0.00115	0.00116

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00201	0.00188	0.00571
	(CLK * D * SCE)	0.00556	0.00544	0.00924
	(CLK * !D * SCE)	0.00164	0.00152	0.00547
	(CLK * !D * SCE)	0.00539	0.00528	0.00920
	(!CLK * D * SCE)	0.00754	0.00743	0.01160
	(!CLK * D * SCE)	0.01110	0.01098	0.01514
	(!CLK * !D * SCE)	0.00722	0.00711	0.01152
	(!CLK * !D * SCE)	0.01097	0.01086	0.01526
	!SCE	-0.00082	-0.00084	-0.00084
	!SCE	0.00118	0.00119	0.00119

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)**	0.00493	0.00472	0.01123
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00037	-0.00062	0.00590
	(CLK * D * !SCD)	0.00733	0.00723	0.01387
	(CLK * D * !SCD)	0.00343	0.00333	0.00992
	(CLK * !D * SCD)	0.00860	0.00846	0.01919
	(CLK * !D * SCD)	0.00197	0.00181	0.01257
	(!CLK * D * SCD)	0.00493	0.00471	0.01123
	(!CLK * D * SCD)	-0.00037	-0.00061	0.00590
	(!CLK * D * !SCD)	0.01236	0.01236	0.01894
	(!CLK * D * !SCD)	0.00847	0.00845	0.01498
	(!CLK * !D * SCD)	0.01364	0.01349	0.02429
	(!CLK * !D * SCD)	0.00701	0.00687	0.01768
	(!CLK * !D * !SCD)	0.00481	0.00473	0.01119
	(!CLK * !D * !SCD)	-0.00021	-0.00031	0.00614

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00473	0.00454	0.01109
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00037	-0.00059	0.00596
	(CLK * D * !SCD)	0.00723	0.00718	0.01378
	(CLK * D * !SCD)	0.00355	0.00347	0.01004
	(CLK * !D * SCD)	0.00866	0.00855	0.01928
	(CLK * !D * SCD)	0.00220	0.00209	0.01283
	(!CLK * D * SCD)	0.00473	0.00455	0.01109
	(!CLK * D * SCD)	-0.00037	-0.00060	0.00596
	(!CLK * D * !SCD)	0.01239	0.01241	0.01902
	(!CLK * D * !SCD)	0.00871	0.00872	0.01528
	(!CLK * !D * SCD)	0.01416	0.01405	0.02484
	(!CLK * !D * SCD)	0.00771	0.00760	0.01839
	(!CLK * !D * !SCD)	0.00466	0.00461	0.01108
	(!CLK * !D * !SCD)	-0.00017	-0.00024	0.00623
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00494	0.00471	0.01120
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00038	-0.00061	0.00590
	(CLK * D * !SCD)	0.00728	0.00718	0.01382
	(CLK * D * !SCD)	0.00338	0.00326	0.00986
	(CLK * !D * SCD)	0.00861	0.00847	0.01919
	(CLK * !D * SCD)	0.00202	0.00186	0.01261
	(!CLK * D * SCD)	0.00494	0.00471	0.01120
	(!CLK * D * SCD)	-0.00038	-0.00061	0.00591
	(!CLK * D * !SCD)	0.01271	0.01269	0.01926
	(!CLK * D * !SCD)	0.00880	0.00877	0.01530
	(!CLK * !D * SCD)	0.01370	0.01355	0.02432
	(!CLK * !D * SCD)	0.00711	0.00695	0.01775
	(!CLK * !D * !SCD)	0.00482	0.00472	0.01117
	(!CLK * !D * !SCD)	-0.00022	-0.00031	0.00613

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)	-0.00032	-0.00004	0.00673
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00500	0.00526	0.01205
	(CLK * D * !SCD)	0.00343	0.00345	0.01029
	(CLK * D * !SCD)	0.00735	0.00740	0.01410
	(CLK * !D * SCD)	0.00129	0.00133	0.01230
	(CLK * !D * SCD)	0.00792	0.00798	0.01892
	(!CLK * D * SCD)	-0.00032	-0.00011	0.00673
	(!CLK * D * SCD)	0.00500	0.00522	0.01205
	(!CLK * D * !SCD)	0.00845	0.00855	0.01531
	(!CLK * D * !SCD)	0.01237	0.01248	0.01914
	(!CLK * !D * SCD)	0.00644	0.00648	0.01771
	(!CLK * !D * SCD)	0.01307	0.01311	0.02433
	(!CLK * !D * !SCD)	0.00006	0.00025	0.00700
	(!CLK * !D * !SCD)	0.00512	0.00529	0.01205

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00030	-0.00007	0.00679
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00481	0.00506	0.01191
	(CLK * D * !SCD)	0.00370	0.00375	0.01060
	(CLK * D * !SCD)	0.00741	0.00748	0.01420
	(CLK * !D * SCD)	0.00135	0.00141	0.01236
	(CLK * !D * SCD)	0.00780	0.00788	0.01883
	(!CLK * D * SCD)	-0.00030	-0.00007	0.00679
	(!CLK * D * SCD)	0.00481	0.00506	0.01191
	(!CLK * D * !SCD)	0.00919	0.00932	0.01607
	(!CLK * D * !SCD)	0.01289	0.01302	0.01969
	(!CLK * !D * SCD)	0.00662	0.00669	0.01788
	(!CLK * !D * SCD)	0.01307	0.01313	0.02433
	(!CLK * !D * !SCD)	0.00006	0.00024	0.00702
	(!CLK * !D * !SCD)	0.00490	0.00510	0.01187
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00029	-0.00003	0.00675
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00499	0.00528	0.01205
	(CLK * D * !SCD)	0.00345	0.00347	0.01032
	(CLK * D * !SCD)	0.00738	0.00742	0.01414
	(CLK * !D * SCD)	0.00129	0.00133	0.01230
	(CLK * !D * SCD)	0.00788	0.00794	0.01888
	(!CLK * D * SCD)	-0.00029	-0.00008	0.00675
	(!CLK * D * SCD)	0.00499	0.00522	0.01205
	(!CLK * D * !SCD)	0.00852	0.00862	0.01538
	(!CLK * D * !SCD)	0.01245	0.01256	0.01923
	(!CLK * !D * SCD)	0.00683	0.00687	0.01804
	(!CLK * !D * SCD)	0.01342	0.01346	0.02462
	(!CLK * !D * !SCD)	0.00009	0.00027	0.00702
	(!CLK * !D * !SCD)	0.00513	0.00532	0.01206

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)	0.01170	0.01147	0.02092
	(D * SCD * SCE * Q)	0.00790	0.00767	0.01711
	(D * !SCE * Q)	0.01168	0.01147	0.02091
	(D * !SCE * Q)	0.00789	0.00766	0.01710
	(D * !SCD * SCE * !Q)	0.01158	0.01131	0.02078
	(D * !SCD * SCE * !Q)	0.00779	0.00749	0.01697
	(!D * SCD * SCE * Q)	0.01170	0.01148	0.02092
	(!D * SCD * SCE * Q)	0.00790	0.00767	0.01711
	(!D * !SCE * !Q)	0.01158	0.01131	0.02079
	(!D * !SCE * !Q)	0.00779	0.00749	0.01698
	(!D * !SCD * SCE * !Q)	0.01158	0.01131	0.02079
	(!D * !SCD * SCE * !Q)	0.00779	0.00750	0.01698
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01191	0.01162	0.02102
	(D * SCD * SCE * Q)	0.00806	0.00777	0.01718
	(D * !SCE * Q)	0.01190	0.01162	0.02102
	(D * !SCE * Q)	0.00805	0.00777	0.01718
	(D * !SCD * SCE * !Q)	0.01191	0.01161	0.02102
	(D * !SCD * SCE * !Q)	0.00805	0.00776	0.01717
	(!D * SCD * SCE * Q)	0.01191	0.01162	0.02102
	(!D * SCD * SCE * Q)	0.00806	0.00777	0.01718
	(!D * !SCE * !Q)	0.01190	0.01161	0.02101
	(!D * !SCE * !Q)	0.00805	0.00776	0.01717
	(!D * !SCD * SCE * !Q)	0.01191	0.01162	0.02102
	(!D * !SCD * SCE * !Q)	0.00806	0.00776	0.01717

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01183	0.01162	0.02103
	(D * SCD * SCE * Q)	0.00803	0.00778	0.01721
	(D * !SCE * Q)	0.01182	0.01160	0.02103
	(D * !SCE * Q)	0.00802	0.00778	0.01720
	(D * !SCD * SCE * !Q)	0.01167	0.01140	0.02086
	(D * !SCD * SCE * !Q)	0.00786	0.00755	0.01704
	(!D * SCD * SCE * Q)	0.01183	0.01162	0.02103
	(!D * SCD * SCE * Q)	0.00803	0.00778	0.01721
	(!D * !SCE * !Q)	0.01166	0.01139	0.02085
	(!D * !SCE * !Q)	0.00786	0.00755	0.01703
	(!D * !SCD * SCE * !Q)	0.01167	0.01140	0.02087
	(!D * !SCD * SCE * !Q)	0.00786	0.00756	0.01705

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)**	0.00666	0.00685	0.01680
	(D * SCD * SCE * Q)	0.01048	0.01065	0.02061
	(D * SCD * SCE * !Q)	0.01142	0.01148	0.02170
	(D * SCD * SCE * !Q)	0.01524	0.01529	0.02551
	(D * !SCE * Q)	0.00666	0.00685	0.01680
	(D * !SCE * Q)	0.01048	0.01065	0.02061
	(D * !SCE * !Q)	0.01138	0.01143	0.02170
	(D * !SCE * !Q)	0.01520	0.01524	0.02551
	(D * !SCD * SCE * Q)	0.01276	0.01302	0.02341
	(D * !SCD * SCE * Q)	0.01659	0.01684	0.02725
	(D * !SCD * SCE * !Q)	0.00661	0.00679	0.01680
	(D * !SCD * SCE * !Q)	0.01042	0.01061	0.02061
	(!D * SCD * SCE * Q)	0.00666	0.00685	0.01680
	(!D * SCD * SCE * Q)	0.01048	0.01066	0.02062
	(!D * SCD * SCE * !Q)	0.01145	0.01151	0.02173
	(!D * SCD * SCE * !Q)	0.01526	0.01530	0.02553
	(!D * !SCE * Q)	0.01273	0.01296	0.02335
	(!D * !SCE * Q)	0.01656	0.01676	0.02716
	(!D * !SCE * !Q)	0.00660	0.00677	0.01679
	(!D * !SCE * !Q)	0.01042	0.01059	0.02060
	(!D * !SCD * SCE * Q)	0.01275	0.01302	0.02323
	(!D * !SCD * SCE * Q)	0.01658	0.01683	0.02705
	(!D * !SCD * SCE * !Q)	0.00661	0.00679	0.01680
	(!D * !SCD * SCE * !Q)	0.01042	0.01061	0.02061

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00693	0.00717	0.01702
	(D * SCD * SCE * Q)	0.01078	0.01101	0.02086
	(D * SCD * SCE * !Q)	0.01211	0.01224	0.02231
	(D * SCD * SCE * !Q)	0.01595	0.01608	0.02615
	(D * !SCE * Q)	0.00693	0.00717	0.01702
	(D * !SCE * Q)	0.01077	0.01101	0.02086
	(D * !SCE * !Q)	0.01207	0.01221	0.02231
	(D * !SCE * !Q)	0.01592	0.01606	0.02616
	(D * !SCD * SCE * Q)	0.01314	0.01346	0.02374
	(D * !SCD * SCE * Q)	0.01701	0.01731	0.02761
	(D * !SCD * SCE * !Q)	0.00677	0.00699	0.01691
	(D * !SCD * SCE * !Q)	0.01062	0.01084	0.02075
	(!D * SCD * SCE * Q)	0.00693	0.00717	0.01702
	(!D * SCD * SCE * Q)	0.01078	0.01101	0.02086
	(!D * SCD * SCE * !Q)	0.01214	0.01227	0.02234
	(!D * SCD * SCE * !Q)	0.01597	0.01610	0.02618
	(!D * !SCE * Q)	0.01310	0.01342	0.02369
	(!D * !SCE * Q)	0.01695	0.01725	0.02753
	(!D * !SCE * !Q)	0.00676	0.00699	0.01690
	(!D * !SCE * !Q)	0.01060	0.01083	0.02074
	(!D * !SCD * SCE * Q)	0.01313	0.01347	0.02356
	(!D * !SCD * SCE * Q)	0.01699	0.01732	0.02743
	(!D * !SCD * SCE * !Q)	0.00677	0.00700	0.01691
	(!D * !SCD * SCE * !Q)	0.01062	0.01085	0.02075

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00662	0.00680	0.01675
	(D * SCD * SCE * Q)	0.01044	0.01063	0.02057
	(D * SCD * SCE * !Q)	0.01148	0.01154	0.02173
	(D * SCD * SCE * !Q)	0.01530	0.01535	0.02555
	(D * !SCE * Q)	0.00662	0.00680	0.01675
	(D * !SCE * Q)	0.01044	0.01063	0.02057
	(D * !SCE * !Q)	0.01144	0.01150	0.02173
	(D * !SCE * !Q)	0.01526	0.01532	0.02556
	(D * !SCD * SCE * Q)	0.01314	0.01338	0.02379
	(D * !SCD * SCE * Q)	0.01699	0.01722	0.02764
	(D * !SCD * SCE * !Q)	0.00661	0.00678	0.01680
	(D * !SCD * SCE * !Q)	0.01043	0.01061	0.02062
	(!D * SCD * SCE * Q)	0.00662	0.00680	0.01675
	(!D * SCD * SCE * Q)	0.01044	0.01063	0.02058
	(!D * SCD * SCE * !Q)	0.01152	0.01157	0.02177
	(!D * SCD * SCE * !Q)	0.01532	0.01538	0.02558
	(!D * !SCE * Q)	0.01311	0.01335	0.02374
	(!D * !SCE * Q)	0.01693	0.01716	0.02756
	(!D * !SCE * !Q)	0.00660	0.00677	0.01679
	(!D * !SCE * !Q)	0.01043	0.01061	0.02061
	(!D * !SCD * SCE * Q)	0.01314	0.01339	0.02361
	(!D * !SCD * SCE * Q)	0.01698	0.01722	0.02745
	(!D * !SCD * SCE * !Q)	0.00661	0.00678	0.01680
	(!D * !SCD * SCE * !Q)	0.01044	0.01061	0.02062

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00241	0.00221	0.00478	0.73999
sky130_fd_sc_hs__sdlclkp_2	0.00240	0.00220	0.00509	1.48210
sky130_fd_sc_hs__sdlclkp_4	0.00228	0.00209	0.00521	2.89263

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.50309	0.76468
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.48307	0.65452
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.51635	0.69967

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)**	0.11915	0.79586	7.36528
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (RR)**	0.12460	0.70759	7.45732
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (RR)**	0.16292	0.70773	7.79102

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (FF)**	0.13878	0.65416	4.17086
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (FF)**	0.15574	0.67621	4.47462
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (FF)**	0.21075	0.75423	4.92909

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)	-0.07431	-0.16935	-0.88368
	setup	CLK (R)	0.23448	0.30551	1.55054
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.07364	-0.16935	-0.87879
	setup	CLK (R)	0.22758	0.28795	1.50211
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07716	-0.17196	-0.89590
	setup	CLK (R)	0.22807	0.27468	1.36848

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)	-0.23836	-0.32157	-1.66922
	setup	CLK (R)	0.30012	0.39738	1.80816
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.23216	-0.31497	-1.66009
	setup	CLK (R)	0.28509	0.37607	1.78358
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.24537	-0.32411	-1.67518
	setup	CLK (R)	0.29019	0.36066	1.81247

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)	-0.07431	-0.16935	-0.88368
	setup	CLK (R)	0.23448	0.30551	1.55054
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.07364	-0.16935	-0.87879
	setup	CLK (R)	0.22758	0.28795	1.50211
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07716	-0.17196	-0.89590
	setup	CLK (R)	0.22807	0.27468	1.36848

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)	-0.23836	-0.32157	-1.66922
	setup	CLK (R)	0.30012	0.39738	1.80816
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.23216	-0.31497	-1.66009
	setup	CLK (R)	0.28509	0.37607	1.78358
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.24537	-0.32411	-1.67518
	setup	CLK (R)	0.29019	0.36066	1.81247

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)	-0.08060	-0.18499	-0.94472
	setup	CLK (R)	0.24144	0.31819	1.62933
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.08193	-0.18238	-0.94346
	setup	CLK (R)	0.23351	0.30197	1.57596
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.08325	-0.18759	-0.95604
	setup	CLK (R)	0.23320	0.28652	1.44380

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)	-0.25535	-0.33425	-1.72757
	setup	CLK (R)	0.31920	0.41284	1.85744
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.24902	-0.33014	-1.72108
	setup	CLK (R)	0.30235	0.39143	1.80062
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.26088	-0.34038	-1.73794
	setup	CLK (R)	0.30878	0.37600	1.81970

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)	-0.08060	-0.18499	-0.94472
	setup	CLK (R)	0.24144	0.31819	1.62933
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.08193	-0.18238	-0.94346
	setup	CLK (R)	0.23351	0.30197	1.57596
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.08325	-0.18759	-0.95604
	setup	CLK (R)	0.23320	0.28652	1.44380

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)	-0.25535	-0.33425	-1.72757
	setup	CLK (R)	0.31920	0.41284	1.85744
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.24902	-0.33014	-1.72108
	setup	CLK (R)	0.30235	0.39143	1.80062
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.26088	-0.34038	-1.73794
	setup	CLK (R)	0.30878	0.37600	1.81970

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 ()	0.08714	0.82031	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.09626	0.82031	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.13277	0.82031	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 ()**	0.33356	0.82031	16.50020
	min_pulse_width	**CLK ()**	0.29401	0.82031	16.50020
sky130_fd_sc_hs__sdlclkp_2	**min_pulse_width**	**CLK ()**	0.32443	0.82031	16.50020
	min_pulse_width	**CLK ()**	0.28792	0.82031	16.50020
sky130_fd_sc_hs__sdlclkp_4	**min_pulse_width**	**CLK ()**	0.32443	0.82031	16.50020
	min_pulse_width	**CLK ()**	0.29097	0.82031	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	0.01472	0.01479	0.03420
	CLK	0.00872	0.00877	0.02827
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01775	0.01805	0.03711
	CLK	0.01135	0.01165	0.03076
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02329	0.02391	0.04180
	CLK	0.01672	0.01735	0.03574

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01705	0.01820	0.03892
	CLK	0.02271	0.02382	0.04433
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01898	0.02045	0.04143
	CLK	0.02499	0.02642	0.04693
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02476	0.02648	0.04736
	CLK	0.03097	0.03264	0.05232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00122	0.00122	0.00121
	(CLK * SCE)	-0.00067	-0.00066	-0.00066
	(CLK * !SCE)	0.00402	0.00401	0.01197
	(CLK * !SCE)	0.00093	0.00092	0.00888
	(!CLK * SCE * !GCLK)	0.00118	0.00118	0.00118
	(!CLK * SCE * !GCLK)	-0.00069	-0.00069	-0.00069
	(!CLK * !SCE * !GCLK)	0.01033	0.01016	0.01738
	(!CLK * !SCE * !GCLK)	0.00757	0.00740	0.01461
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00122	0.00121	0.00121
	(CLK * SCE)	-0.00067	-0.00066	-0.00066
	(CLK * !SCE)	0.00398	0.00397	0.01194
	(CLK * !SCE)	0.00090	0.00089	0.00886
	(!CLK * SCE * !GCLK)	0.00117	0.00118	0.00118
	(!CLK * SCE * !GCLK)	-0.00069	-0.00069	-0.00069
	(!CLK * !SCE * !GCLK)	0.01018	0.01001	0.01726
	(!CLK * !SCE * !GCLK)	0.00746	0.00729	0.01453
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00117	0.00116	0.00116
	(CLK * SCE)	-0.00064	-0.00064	-0.00063
	(CLK * !SCE)	0.00387	0.00388	0.01179
	(CLK * !SCE)	0.00093	0.00093	0.00885
	(!CLK * SCE * !GCLK)	0.00115	0.00114	0.00114
	(!CLK * SCE * !GCLK)	-0.00066	-0.00066	-0.00066
	(!CLK * !SCE * !GCLK)	0.01022	0.01007	0.01727
	(!CLK * !SCE * !GCLK)	0.00762	0.00745	0.01465

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00117	-0.00117	-0.00120
	(CLK * SCE)	0.00071	0.00071	0.00068
	(CLK * !SCE)	0.00083	0.00122	0.00950
	(CLK * !SCE)	0.00391	0.00432	0.01259
	(!CLK * SCE * !GCLK)	-0.00114	-0.00114	-0.00117
	(!CLK * SCE * !GCLK)	0.00074	0.00073	0.00071
	(!CLK * !SCE * !GCLK)	0.00899	0.00920	0.01783
	(!CLK * !SCE * !GCLK)	0.01176	0.01196	0.02060
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00116	-0.00116	-0.00120
	(CLK * SCE)	0.00071	0.00071	0.00068
	(CLK * !SCE)	0.00087	0.00126	0.00953
	(CLK * !SCE)	0.00393	0.00434	0.01261
	(!CLK * SCE * !GCLK)	-0.00113	-0.00113	-0.00117
	(!CLK * SCE * !GCLK)	0.00074	0.00073	0.00071
	(!CLK * !SCE * !GCLK)	0.00909	0.00931	0.01792
	(!CLK * !SCE * !GCLK)	0.01182	0.01204	0.02065
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00111	-0.00111	-0.00115
	(CLK * SCE)	0.00069	0.00068	0.00066
	(CLK * !SCE)	0.00111	0.00151	0.00975
	(CLK * !SCE)	0.00405	0.00445	0.01269
	(!CLK * SCE * !GCLK)	-0.00109	-0.00109	-0.00113
	(!CLK * SCE * !GCLK)	0.00070	0.00070	0.00067
	(!CLK * !SCE * !GCLK)	0.00941	0.00962	0.01818
	(!CLK * !SCE * !GCLK)	0.01203	0.01223	0.02081

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00123	0.00103	0.00101
	(CLK * GATE)	-0.00116	-0.00136	-0.00139
	(CLK * !GATE)	0.00524	0.00519	0.01086
	(CLK * !GATE)	0.00153	0.00146	0.00716
	(!CLK * GATE * !GCLK)	0.00123	0.00103	0.00101
	(!CLK * GATE * !GCLK)	-0.00116	-0.00136	-0.00139
	(!CLK * !GATE * !GCLK)	0.01154	0.01145	0.01680
	(!CLK * !GATE * !GCLK)	0.00816	0.00808	0.01344
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00122	0.00102	0.00100
	(CLK * GATE)	-0.00115	-0.00136	-0.00138
	(CLK * !GATE)	0.00519	0.00514	0.01082
	(CLK * !GATE)	0.00150	0.00144	0.00715
	(!CLK * GATE * !GCLK)	0.00122	0.00102	0.00100
	(!CLK * GATE * !GCLK)	-0.00116	-0.00136	-0.00138
	(!CLK * !GATE * !GCLK)	0.01139	0.01131	0.01666
	(!CLK * !GATE * !GCLK)	0.00805	0.00797	0.01333
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00118	0.00097	0.00096
	(CLK * GATE)	-0.00113	-0.00133	-0.00136
	(CLK * !GATE)	0.00510	0.00506	0.01071
	(CLK * !GATE)	0.00154	0.00149	0.00717
	(!CLK * GATE * !GCLK)	0.00118	0.00097	0.00095
	(!CLK * GATE * !GCLK)	-0.00113	-0.00133	-0.00136
	(!CLK * !GATE * !GCLK)	0.01144	0.01136	0.01670
	(!CLK * !GATE * !GCLK)	0.00822	0.00813	0.01348

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00099	-0.00100	-0.00099
	(CLK * GATE)	0.00139	0.00141	0.00140
	(CLK * !GATE)	0.00087	0.00079	0.00640
	(CLK * !GATE)	0.00457	0.00451	0.01011
	(!CLK * GATE * !GCLK)	-0.00099	-0.00100	-0.00099
	(!CLK * GATE * !GCLK)	0.00138	0.00140	0.00140
	(!CLK * !GATE * !GCLK)	0.00898	0.00889	0.01450
	(!CLK * !GATE * !GCLK)	0.01237	0.01227	0.01789
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00098	-0.00099	-0.00098
	(CLK * GATE)	0.00139	0.00140	0.00140
	(CLK * !GATE)	0.00091	0.00084	0.00644
	(CLK * !GATE)	0.00459	0.00453	0.01013
	(!CLK * GATE * !GCLK)	-0.00099	-0.00099	-0.00098
	(!CLK * GATE * !GCLK)	0.00139	0.00140	0.00140
	(!CLK * !GATE * !GCLK)	0.00908	0.00899	0.01460
	(!CLK * !GATE * !GCLK)	0.01242	0.01232	0.01795
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00094	-0.00094	-0.00093
	(CLK * GATE)	0.00137	0.00138	0.00138
	(CLK * !GATE)	0.00115	0.00108	0.00665
	(CLK * !GATE)	0.00470	0.00464	0.01021
	(!CLK * GATE * !GCLK)	-0.00094	-0.00094	-0.00093
	(!CLK * GATE * !GCLK)	0.00137	0.00138	0.00137
	(!CLK * !GATE * !GCLK)	0.00940	0.00935	0.01509
	(!CLK * !GATE * !GCLK)	0.01263	0.01257	0.01832

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	**(!GATE * !SCE * !GCLK)**	0.00909	0.00904	0.01991
	(!GATE * !SCE * !GCLK)	0.00336	0.00329	0.01418
sky130_fd_sc_hs__sdlclkp_2	**(!GATE * !SCE * !GCLK)**	0.00920	0.00919	0.02006
	(!GATE * !SCE * !GCLK)	0.00314	0.00308	0.01397
sky130_fd_sc_hs__sdlclkp_4	**(!GATE * !SCE * !GCLK)**	0.00936	0.00932	0.02014
	(!GATE * !SCE * !GCLK)	0.00311	0.00305	0.01391

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01028	0.01053	0.02288
	(GATE * SCE * !GCLK)	0.01643	0.01670	0.02904
	(GATE * !SCE * !GCLK)	0.01025	0.01051	0.02286
	(GATE * !SCE * !GCLK)	0.01641	0.01668	0.02902
	(!GATE * SCE * !GCLK)	0.01030	0.01056	0.02293
	(!GATE * SCE * !GCLK)	0.01644	0.01669	0.02907
	(!GATE * !SCE * !GCLK)	0.00415	0.00451	0.01595
	(!GATE * !SCE * !GCLK)	0.00986	0.01025	0.02169
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.00996	0.01024	0.02272
	(GATE * SCE * !GCLK)	0.01652	0.01681	0.02925
	(GATE * !SCE * !GCLK)	0.00994	0.01022	0.02266
	(GATE * !SCE * !GCLK)	0.01650	0.01679	0.02922
	(!GATE * SCE * !GCLK)	0.00999	0.01027	0.02272
	(!GATE * SCE * !GCLK)	0.01653	0.01682	0.02927
	(!GATE * !SCE * !GCLK)	0.00393	0.00431	0.01575
	(!GATE * !SCE * !GCLK)	0.01001	0.01041	0.02186
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01035	0.01061	0.02299
	(GATE * SCE * !GCLK)	0.01704	0.01731	0.02968
	(GATE * !SCE * !GCLK)	0.01033	0.01059	0.02296
	(GATE * !SCE * !GCLK)	0.01702	0.01729	0.02966
	(!GATE * SCE * !GCLK)	0.01038	0.01064	0.02303
	(!GATE * SCE * !GCLK)	0.01705	0.01732	0.02971
	(!GATE * !SCE * !GCLK)	0.00415	0.00451	0.01592
	(!GATE * !SCE * !GCLK)	0.01038	0.01076	0.02218

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00200	0.00383	0.00177	0.00386	0.00291	0.75993	0.75545
sky130_fd_sc_hs__sedfxbp_2	0.00209	0.00387	0.00179	0.00393	0.00291	1.37062	1.38034

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxbp_1	0.00000	1.02080	1.79449
sky130_fd_sc_hs__sedfxbp_2	0.00000	1.05848	1.81007

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)**	0.31479	1.03160	7.53993
sky130_fd_sc_hs__sedfxbp_2	**CLK->Q (RR)**	0.32384	0.94463	7.49185

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	**CLK->Q (RF)**	0.29379	0.78157	3.60357
sky130_fd_sc_hs__sedfxbp_2	**CLK->Q (RF)**	0.34006	0.79630	3.38798

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)**	0.43726	1.12712	7.63420
sky130_fd_sc_hs__sedfxbp_2	**CLK->Q_N (RR)**	0.52298	1.09091	7.55877

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)**	0.44505	0.87976	3.59609
sky130_fd_sc_hs__sedfxbp_2	**CLK->Q_N (RF)**	0.49823	0.88536	3.46189

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)	-0.27631	-0.38986	-1.54983
	setup	CLK (R)	0.34576	0.42894	1.60428
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27933	-0.39335	-1.55731
	setup	CLK (R)	0.34465	0.43190	1.60838

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)	-0.64866	-0.73996	-2.69339
	setup	CLK (R)	0.80456	0.85032	2.83942
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.64262	-0.73515	-2.69581
	setup	CLK (R)	0.79687	0.84281	2.81641

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)	-0.27631	-0.38986	-1.54983
	setup	CLK (R)	0.34576	0.42894	1.60428
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27933	-0.39335	-1.55731
	setup	CLK (R)	0.34465	0.43190	1.60838

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)	-0.64866	-0.73996	-2.69339
	setup	CLK (R)	0.80456	0.85032	2.83942
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.64262	-0.73515	-2.69581
	setup	CLK (R)	0.79687	0.84281	2.81641

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)	-0.07614	-0.08726	-0.17813
	setup	CLK (R)	0.86555	0.85246	1.46468
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07437	-0.08726	-0.18423
	setup	CLK (R)	0.85224	0.84681	1.46855

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)	-0.38612	-0.51678	-1.74362
	setup	CLK (R)	0.70194	0.77306	2.63684
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.38541	-0.51936	-1.74584
	setup	CLK (R)	0.69841	0.76636	2.64072

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)	-0.07614	-0.08726	-0.17813
	hold	CLK (R)	-0.25975	-0.30583	-0.54034
	setup	CLK (R)	0.34172	0.40584	1.46468
	setup	CLK (R)	0.86555	0.85246	1.05068
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07437	-0.08726	-0.18423
	hold	CLK (R)	-0.25723	-0.30544	-0.54299
	setup	CLK (R)	0.34305	0.40668	1.46855
	setup	CLK (R)	0.85224	0.84681	1.01425

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)	-0.65366	-0.74199	-2.61108
	hold	CLK (R)	-0.38612	-0.51678	-1.74362
	setup	CLK (R)	0.70194	0.77306	2.63684
	setup	CLK (R)	0.41600	0.53446	1.75086
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.64610	-0.73748	-2.61371
	hold	CLK (R)	-0.38541	-0.51936	-1.74584
	setup	CLK (R)	0.69841	0.76636	2.64072
	setup	CLK (R)	0.41830	0.53529	1.75357

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)	-0.16269	-0.25113	-1.08341
	setup	CLK (R)	0.20997	0.27719	1.11652
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16512	-0.25276	-1.09468
	setup	CLK (R)	0.20823	0.27620	1.12423

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)	-0.41456	-0.48956	-2.10921
	setup	CLK (R)	0.55206	0.59666	2.28869
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.41212	-0.49008	-2.11278
	setup	CLK (R)	0.54591	0.58863	2.26673

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)	-0.16269	-0.25113	-1.08341
	setup	CLK (R)	0.20997	0.27719	1.11652
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16512	-0.25276	-1.09468
	setup	CLK (R)	0.20823	0.27620	1.12423

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)	-0.41456	-0.48956	-2.10921
	setup	CLK (R)	0.55206	0.59666	2.28869
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.41212	-0.49008	-2.11278
	setup	CLK (R)	0.54591	0.58863	2.26673

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)	0.00018	0.01869	0.31070
	setup	CLK (R)	0.57317	0.55666	1.04128
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00097	0.01748	0.30602
	setup	CLK (R)	0.57128	0.55663	1.04674

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)	-0.26632	-0.41030	-1.68287
	setup	CLK (R)	0.57287	0.61124	2.25898
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27338	-0.41851	-1.71406
	setup	CLK (R)	0.56438	0.60723	2.25200

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)	-0.43401	-0.45390	-0.52570
	hold	CLK (R)	0.00018	0.01869	0.31070
	hold	CLK (R)	-0.14150	-0.23998	-0.99754
	hold	CLK (R)	-0.17984	-0.22014	-0.33539
	setup	CLK (R)	0.57296	0.55642	0.77665
	setup	CLK (R)	0.18415	0.27125	1.04028
	setup	CLK (R)	0.18408	0.27125	1.04128
	setup	CLK (R)	0.57317	0.55666	0.77675
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.43456	-0.45600	-0.55072
	hold	CLK (R)	0.00097	0.01748	0.30602
	hold	CLK (R)	-0.14097	-0.24389	-1.00527
	hold	CLK (R)	-0.17916	-0.22255	-0.35991
	setup	CLK (R)	0.57128	0.55618	0.75492
	setup	CLK (R)	0.18573	0.27052	1.04663
	setup	CLK (R)	0.18569	0.27030	1.04674
	setup	CLK (R)	0.56954	0.55663	0.75286

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)	-0.27291	-0.41928	-1.69828
	hold	CLK (R)	-0.40639	-0.48869	-2.06300
	hold	CLK (R)	-0.39805	-0.48250	-2.07930
	hold	CLK (R)	-0.26632	-0.41030	-1.68287
	setup	CLK (R)	0.33671	0.44896	1.73048
	setup	CLK (R)	0.45397	0.51667	2.10154
	setup	CLK (R)	0.57287	0.61124	2.25898
	setup	CLK (R)	0.30199	0.42886	1.69556
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.28353	-0.42773	-1.73167
	hold	CLK (R)	-0.40571	-0.49080	-2.08481
	hold	CLK (R)	-0.39324	-0.48407	-2.10173
	hold	CLK (R)	-0.27338	-0.41851	-1.71406
	setup	CLK (R)	0.34132	0.45925	1.75763
	setup	CLK (R)	0.45540	0.52044	2.11235
	setup	CLK (R)	0.56438	0.60723	2.25200
	setup	CLK (R)	0.30437	0.43581	1.72372

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 ()	0.14190	0.82031	16.50020
	min_pulse_width	CLK ()	0.14190	0.82031	16.50020
	min_pulse_width	CLK ()	0.23316	0.82031	16.50020
	min_pulse_width	CLK ()	0.14190	0.82031	16.50020
	min_pulse_width	CLK ()	0.23621	0.82031	16.50020
	min_pulse_width	CLK ()	0.14190	0.82031	16.50020
	min_pulse_width	CLK ()	0.23316	0.82031	16.50020
	min_pulse_width	CLK ()	0.23316	0.82031	16.50020
	min_pulse_width	CLK ()	0.14190	0.82031	16.50020
	min_pulse_width	CLK ()	0.23621	0.82031	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.31530	0.82031	16.50020
	min_pulse_width	CLK ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.31530	0.82031	16.50020
	min_pulse_width	CLK ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.31530	0.82031	16.50020
	min_pulse_width	CLK ()	0.31530	0.82031	16.50020
	min_pulse_width	CLK ()	0.16319	0.82031	16.50020
	min_pulse_width	CLK ()	0.31530	0.82031	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 ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.26359	0.82031	16.50020
	min_pulse_width	CLK ()	0.44004	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.44004	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.48263	0.82031	16.50020
	min_pulse_width	CLK ()	0.44004	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.44004	0.82031	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.26359	0.82031	16.50020
	min_pulse_width	CLK ()	0.43091	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.43091	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.47046	0.82031	16.50020
	min_pulse_width	CLK ()	0.43091	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.43091	0.82031	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	0.01582	0.01594	0.02111
	CLK	0.01351	0.01364	0.01862
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01814	0.01842	0.02358
	CLK	0.01585	0.01615	0.02120

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01444	0.01447	0.01926
	CLK	0.01300	0.01303	0.01773
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01683	0.01707	0.02180
	CLK	0.01536	0.01562	0.02032

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01446	0.01448	0.01965
	CLK	0.01302	0.01305	0.01800
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01685	0.01711	0.02209
	CLK	0.01539	0.01566	0.02063

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01578	0.01590	0.02080
	CLK	0.01348	0.01361	0.01837
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01810	0.01838	0.02338
	CLK	0.01581	0.01612	0.02093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00423	0.00413	0.00944
	(DE * SCE)	0.00158	0.00147	0.00679
	(CLK * DE * !SCE)	0.00877	0.00866	0.01303
	(CLK * DE * !SCE)	0.00527	0.00516	0.00954
	(CLK * !DE * !SCE)	0.00094	0.00095	0.00094
	(CLK * !DE * !SCE)	-0.00071	-0.00071	-0.00070
	(!DE * SCE)	0.00095	0.00096	0.00095
	(!DE * SCE)	-0.00071	-0.00071	-0.00070
	(!CLK * DE * !SCE * Q * !Q_N)	0.01516	0.01510	0.01947
	(!CLK * DE * !SCE * Q * !Q_N)	0.01166	0.01161	0.01597
	(!CLK * DE * !SCE * !Q * Q_N)	0.01489	0.01483	0.01906
	(!CLK * DE * !SCE * !Q * Q_N)	0.01134	0.01129	0.01552
	(!CLK * !DE * !SCE)	0.00094	0.00095	0.00094
	(!CLK * !DE * !SCE)	-0.00071	-0.00071	-0.00071
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00430	0.00418	0.00952
	(DE * SCE)	0.00153	0.00142	0.00676
	(CLK * DE * !SCE)	0.00893	0.00881	0.01317
	(CLK * DE * !SCE)	0.00529	0.00518	0.00955
	(CLK * !DE * !SCE)	0.00098	0.00100	0.00098
	(CLK * !DE * !SCE)	-0.00074	-0.00075	-0.00074
	(!DE * SCE)	0.00099	0.00100	0.00099
	(!DE * SCE)	-0.00073	-0.00074	-0.00073
	(!CLK * DE * !SCE * Q * !Q_N)	0.01524	0.01518	0.01954
	(!CLK * DE * !SCE * Q * !Q_N)	0.01161	0.01155	0.01591
	(!CLK * DE * !SCE * !Q * Q_N)	0.01493	0.01487	0.01911
	(!CLK * DE * !SCE * !Q * Q_N)	0.01126	0.01120	0.01544
	(!CLK * !DE * !SCE)	0.00098	0.00100	0.00099
	(!CLK * !DE * !SCE)	-0.00074	-0.00075	-0.00074

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00169	0.00181	0.00744
	(DE * SCE)	0.00440	0.00450	0.01013
	(CLK * DE * !SCE)	0.00305	0.00308	0.00819
	(CLK * DE * !SCE)	0.00659	0.00661	0.01173
	(CLK * !DE * !SCE)	-0.00030	-0.00030	-0.00030
	(CLK * !DE * !SCE)	0.00153	0.00153	0.00152
	(!DE * SCE)	-0.00029	-0.00029	-0.00029
	(!DE * SCE)	0.00153	0.00153	0.00153
	(!CLK * DE * !SCE * Q * !Q_N)	0.00929	0.00932	0.01554
	(!CLK * DE * !SCE * Q * !Q_N)	0.01278	0.01283	0.01904
	(!CLK * DE * !SCE * !Q * Q_N)	0.00999	0.01000	0.01644
	(!CLK * DE * !SCE * !Q * Q_N)	0.01353	0.01353	0.01998
	(!CLK * !DE * !SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * !DE * !SCE)	0.00153	0.00154	0.00152
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00149	0.00160	0.00725
	(DE * SCE)	0.00428	0.00440	0.01004
	(CLK * DE * !SCE)	0.00292	0.00294	0.00805
	(CLK * DE * !SCE)	0.00659	0.00660	0.01172
	(CLK * !DE * !SCE)	-0.00031	-0.00031	-0.00031
	(CLK * !DE * !SCE)	0.00160	0.00160	0.00159
	(!DE * SCE)	-0.00031	-0.00030	-0.00030
	(!DE * SCE)	0.00160	0.00160	0.00159
	(!CLK * DE * !SCE * Q * !Q_N)	0.00911	0.00914	0.01535
	(!CLK * DE * !SCE * Q * !Q_N)	0.01274	0.01277	0.01898
	(!CLK * DE * !SCE * !Q * Q_N)	0.00983	0.00987	0.01626
	(!CLK * DE * !SCE * !Q * Q_N)	0.01350	0.01354	0.01993
	(!CLK * !DE * !SCE)	-0.00031	-0.00031	-0.00031
	(!CLK * !DE * !SCE)	0.00160	0.00159	0.00159

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00801	0.00782	0.01805
	SCE	0.00223	0.00202	0.01225
	(CLK * !SCE)	0.01239	0.01220	0.02188
	(CLK * !SCE)	0.00576	0.00557	0.01526
	(!CLK * D * !SCE * Q * !Q_N)	0.00492	0.00471	0.01115
	(!CLK * D * !SCE * Q * !Q_N)	0.00009	-0.00014	0.00632
	(!CLK * D * !SCE * !Q * Q_N)	0.01874	0.01859	0.02838
	(!CLK * D * !SCE * !Q * Q_N)	0.01211	0.01196	0.02175
	(!CLK * !D * !SCE * Q * !Q_N)	0.01503	0.01494	0.02135
	(!CLK * !D * !SCE * Q * !Q_N)	0.01209	0.01200	0.01841
	(!CLK * !D * !SCE * !Q * Q_N)	0.00481	0.00476	0.01119
	(!CLK * !D * !SCE * !Q * Q_N)	0.00004	-0.00005	0.00640
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00803	0.00785	0.01810
	SCE	0.00215	0.00195	0.01220
	(CLK * !SCE)	0.01251	0.01234	0.02203
	(CLK * !SCE)	0.00575	0.00556	0.01527
	(!CLK * D * !SCE * Q * !Q_N)	0.00490	0.00469	0.01115
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00023	0.00625
	(!CLK * D * !SCE * !Q * Q_N)	0.01873	0.01856	0.02839
	(!CLK * D * !SCE * !Q * Q_N)	0.01197	0.01182	0.02164
	(!CLK * !D * !SCE * Q * !Q_N)	0.01487	0.01478	0.02121
	(!CLK * !D * !SCE * Q * !Q_N)	0.01194	0.01182	0.01825
	(!CLK * !D * !SCE * !Q * Q_N)	0.00482	0.00476	0.01121
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00003	-0.00011	0.00635

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00246	0.00255	0.01322
	SCE	0.00825	0.00835	0.01899
	(CLK * !SCE)	0.00902	0.00914	0.01574
	(CLK * !SCE)	0.01193	0.01207	0.01868
	(!CLK * D * !SCE * Q * !Q_N)	0.00007	0.00022	0.00689
	(!CLK * D * !SCE * Q * !Q_N)	0.00488	0.00504	0.01171
	(!CLK * D * !SCE * !Q * Q_N)	0.01067	0.01076	0.02175
	(!CLK * D * !SCE * !Q * Q_N)	0.01729	0.01741	0.02838
	(!CLK * !D * !SCE * Q * !Q_N)	0.01541	0.01553	0.02208
	(!CLK * !D * !SCE * Q * !Q_N)	0.01832	0.01846	0.02503
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00007	0.00009	0.00680
	(!CLK * !D * !SCE * !Q * Q_N)	0.00470	0.00489	0.01160
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00224	0.00234	0.01303
	SCE	0.00813	0.00823	0.01890
	(CLK * !SCE)	0.00909	0.00921	0.01582
	(CLK * !SCE)	0.01202	0.01217	0.01878
	(!CLK * D * !SCE * Q * !Q_N)	0.00004	0.00019	0.00687
	(!CLK * D * !SCE * Q * !Q_N)	0.00492	0.00509	0.01176
	(!CLK * D * !SCE * !Q * Q_N)	0.01048	0.01058	0.02160
	(!CLK * D * !SCE * !Q * Q_N)	0.01724	0.01736	0.02834
	(!CLK * !D * !SCE * Q * !Q_N)	0.01541	0.01553	0.02209
	(!CLK * !D * !SCE * Q * !Q_N)	0.01834	0.01848	0.02506
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00013	0.00003	0.00675
	(!CLK * !D * !SCE * !Q * Q_N)	0.00472	0.00490	0.01162

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00486	0.00477	0.00840
	(CLK * SCE)	0.00210	0.00199	0.00563
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01123	0.01115	0.01476
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00847	0.00837	0.01199
	!SCE	0.00092	0.00078	0.00076
	!SCE	-0.00098	-0.00113	-0.00114
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00497	0.00488	0.00850
	(CLK * SCE)	0.00215	0.00204	0.00567
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01120	0.01112	0.01474
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00838	0.00828	0.01191
	!SCE	0.00090	0.00077	0.00075
	!SCE	-0.00101	-0.00117	-0.00118

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00262	0.00255	0.00639
	(CLK * SCE)	0.00540	0.00532	0.00916
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00928	0.00921	0.01361
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01205	0.01199	0.01637
	!SCE	-0.00071	-0.00073	-0.00073
	!SCE	0.00117	0.00118	0.00118
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00259	0.00252	0.00636
	(CLK * SCE)	0.00543	0.00537	0.00918
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00922	0.00915	0.01355
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01205	0.01199	0.01637
	!SCE	-0.00071	-0.00072	-0.00072
	!SCE	0.00121	0.00122	0.00122

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00725	0.00726	0.01860
	(CLK * D)	0.00219	0.00219	0.01354
	(CLK * !D)	0.00756	0.00757	0.01887
	(CLK * !D)	0.00250	0.00250	0.01381
	(!CLK * D * SCD * Q * !Q_N)	0.00423	0.00422	0.01071
	(!CLK * D * SCD * Q * !Q_N)	0.00002	-0.00000	0.00649
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00407	0.00407	0.01055
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00014	-0.00016	0.00633
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01422	0.01422	0.02141
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01073	0.01072	0.01790
	(!CLK * D * !SCD * Q * !Q_N)	0.01423	0.01422	0.02145
	(!CLK * D * !SCD * Q * !Q_N)	0.01074	0.01072	0.01794
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01363	0.01365	0.02479
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00856	0.00858	0.01973
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00468	0.00470	0.01118
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00034	0.00035	0.00682
	(!CLK * !D * SCD * !Q * Q_N)	0.01362	0.01366	0.02476
	(!CLK * !D * SCD * !Q * Q_N)	0.00856	0.00859	0.01970
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01399	0.01400	0.02505
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00892	0.00893	0.01999
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00484	0.00485	0.01133
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00050	0.00051	0.00698
	(!CLK * !D * !SCD * !Q * Q_N)	0.00469	0.00470	0.01118
	(!CLK * !D * !SCD * !Q * Q_N)	0.00034	0.00035	0.00682
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00423	0.00422	0.01071
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00001	-0.00000	0.00649
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01423	0.01422	0.02145
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01074	0.01072	0.01793

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00736	0.00734	0.01867
	(CLK * D)	0.00215	0.00213	0.01347
	(CLK * !D)	0.00764	0.00763	0.01891
	(CLK * !D)	0.00243	0.00241	0.01371
	(!CLK * D * SCD * Q * !Q_N)	0.00430	0.00434	0.01073
	(!CLK * D * SCD * Q * !Q_N)	-0.00003	-0.00000	0.00641
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00416	0.00420	0.01059
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00017	-0.00014	0.00627
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01434	0.01431	0.02146
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01076	0.01072	0.01784
	(!CLK * D * !SCD * Q * !Q_N)	0.01429	0.01425	0.02143
	(!CLK * D * !SCD * Q * !Q_N)	0.01070	0.01066	0.01782
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01360	0.01358	0.02473
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00839	0.00838	0.01954
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00482	0.00482	0.01127
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00035	0.00034	0.00679
	(!CLK * !D * SCD * !Q * Q_N)	0.01360	0.01359	0.02470
	(!CLK * !D * SCD * !Q * Q_N)	0.00838	0.00839	0.01950
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01399	0.01396	0.02502
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00878	0.00877	0.01982
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00496	0.00496	0.01141
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00049	0.00048	0.00693
	(!CLK * !D * !SCD * !Q * Q_N)	0.00482	0.00482	0.01127
	(!CLK * !D * !SCD * !Q * Q_N)	0.00035	0.00034	0.00679
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00430	0.00434	0.01073
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00003	-0.00000	0.00641
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01430	0.01425	0.02144
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01071	0.01066	0.01782

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00472	0.00555	0.01632
	(CLK * D)	0.00824	0.00906	0.01973
	(CLK * !D)	0.00471	0.00554	0.01633
	(CLK * !D)	0.00823	0.00906	0.01973
	(!CLK * D * SCD * Q * !Q_N)	0.00012	0.00040	0.00718
	(!CLK * D * SCD * Q * !Q_N)	0.00432	0.00460	0.01140
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00028	0.00056	0.00734
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00448	0.00476	0.01156
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01101	0.01179	0.02249
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01453	0.01529	0.02591
	(!CLK * D * !SCD * Q * !Q_N)	0.01104	0.01182	0.02246
	(!CLK * D * !SCD * Q * !Q_N)	0.01456	0.01533	0.02590
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00810	0.00839	0.02117
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01315	0.01345	0.02623
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00016	0.00007	0.00680
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00418	0.00442	0.01116
	(!CLK * !D * SCD * !Q * Q_N)	0.00813	0.00841	0.02119
	(!CLK * !D * SCD * !Q * Q_N)	0.01317	0.01347	0.02625
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00781	0.00810	0.02092
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01286	0.01316	0.02598
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00032	-0.00008	0.00665
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00402	0.00427	0.01100
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00016	0.00008	0.00680
	(!CLK * !D * !SCD * !Q * Q_N)	0.00418	0.00443	0.01116
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00012	0.00040	0.00718
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00432	0.00460	0.01140
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01104	0.01183	0.02248
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01456	0.01533	0.02591

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00491	0.00573	0.01648
	(CLK * D)	0.00852	0.00933	0.01999
	(CLK * !D)	0.00491	0.00572	0.01649
	(CLK * !D)	0.00852	0.00932	0.01998
	(!CLK * D * SCD * Q * !Q_N)	0.00021	0.00046	0.00723
	(!CLK * D * SCD * Q * !Q_N)	0.00453	0.00481	0.01156
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00035	0.00060	0.00737
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00467	0.00495	0.01171
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01107	0.01183	0.02251
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01468	0.01543	0.02605
	(!CLK * D * !SCD * Q * !Q_N)	0.01116	0.01192	0.02258
	(!CLK * D * !SCD * Q * !Q_N)	0.01477	0.01552	0.02611
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00810	0.00838	0.02114
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01331	0.01358	0.02635
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00014	0.00008	0.00679
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00432	0.00454	0.01125
	(!CLK * !D * SCD * !Q * Q_N)	0.00812	0.00841	0.02115
	(!CLK * !D * SCD * !Q * Q_N)	0.01333	0.01360	0.02636
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00777	0.00807	0.02083
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01299	0.01326	0.02604
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00028	-0.00006	0.00665
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00418	0.00441	0.01112
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00014	0.00008	0.00679
	(!CLK * !D * !SCD * !Q * Q_N)	0.00432	0.00455	0.01126
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00021	0.00046	0.00723
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00453	0.00480	0.01156
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01116	0.01194	0.02258
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01477	0.01554	0.02611

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)	0.01264	0.01238	0.02171
	(SCD * SCE * Q * !Q_N)	0.00895	0.00866	0.01800
	(D * !SCE * Q * !Q_N)	0.01263	0.01237	0.02170
	(D * !SCE * Q * !Q_N)	0.00894	0.00865	0.01799
	(D * !DE * !SCE * !Q * Q_N)	0.01278	0.01248	0.02186
	(D * !DE * !SCE * !Q * Q_N)	0.00909	0.00876	0.01817
	(!SCD * SCE * !Q * Q_N)	0.01280	0.01250	0.02188
	(!SCD * SCE * !Q * Q_N)	0.00910	0.00878	0.01819
	(!D * !SCE * !Q * Q_N)	0.01278	0.01248	0.02187
	(!D * !SCE * !Q * Q_N)	0.00909	0.00876	0.01817
	(!D * !DE * !SCE * Q * !Q_N)	0.01263	0.01237	0.02170
	(!D * !DE * !SCE * Q * !Q_N)	0.00894	0.00865	0.01799
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01257	0.01231	0.02167
	(SCD * SCE * Q * !Q_N)	0.00888	0.00860	0.01796
	(D * !SCE * Q * !Q_N)	0.01256	0.01229	0.02165
	(D * !SCE * Q * !Q_N)	0.00887	0.00858	0.01795
	(D * !DE * !SCE * !Q * Q_N)	0.01281	0.01251	0.02193
	(D * !DE * !SCE * !Q * Q_N)	0.00912	0.00880	0.01824
	(!SCD * SCE * !Q * Q_N)	0.01284	0.01254	0.02196
	(!SCD * SCE * !Q * Q_N)	0.00915	0.00882	0.01827
	(!D * !SCE * !Q * Q_N)	0.01281	0.01251	0.02194
	(!D * !SCE * !Q * Q_N)	0.00913	0.00880	0.01824
	(!D * !DE * !SCE * Q * !Q_N)	0.01256	0.01229	0.02165
	(!D * !DE * !SCE * Q * !Q_N)	0.00887	0.00858	0.01795

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)	0.00681	0.00697	0.01692
	(SCD * SCE * Q * !Q_N)	0.01051	0.01068	0.02063
	(SCD * SCE * !Q * Q_N)	0.01321	0.01331	0.02328
	(SCD * SCE * !Q * Q_N)	0.01691	0.01701	0.02698
	(D * DE * !SCE * !Q * Q_N)	0.01317	0.01314	0.02321
	(D * DE * !SCE * !Q * Q_N)	0.01688	0.01684	0.02691
	(D * !SCE * Q * !Q_N)	0.00681	0.00697	0.01693
	(D * !SCE * Q * !Q_N)	0.01052	0.01068	0.02063
	(D * !DE * !SCE * !Q * Q_N)	0.00685	0.00705	0.01685
	(D * !DE * !SCE * !Q * Q_N)	0.01056	0.01077	0.02056
	(!SCD * SCE * Q * !Q_N)	0.01446	0.01471	0.02514
	(!SCD * SCE * Q * !Q_N)	0.01818	0.01842	0.02886
	(!SCD * SCE * !Q * Q_N)	0.00686	0.00706	0.01685
	(!SCD * SCE * !Q * Q_N)	0.01057	0.01077	0.02056
	(!D * DE * !SCE * Q * !Q_N)	0.01453	0.01477	0.02517
	(!D * DE * !SCE * Q * !Q_N)	0.01824	0.01847	0.02888
	(!D * !SCE * !Q * Q_N)	0.00686	0.00705	0.01685
	(!D * !SCE * !Q * Q_N)	0.01056	0.01077	0.02056
	(!D * !DE * !SCE * Q * !Q_N)	0.00681	0.00697	0.01692
	(!D * !DE * !SCE * Q * !Q_N)	0.01051	0.01068	0.02063

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00692	0.00712	0.01705
	(SCD * SCE * Q * !Q_N)	0.01062	0.01083	0.02076
	(SCD * SCE * !Q * Q_N)	0.01310	0.01307	0.02317
	(SCD * SCE * !Q * Q_N)	0.01680	0.01676	0.02686
	(D * DE * !SCE * !Q * Q_N)	0.01307	0.01305	0.02312
	(D * DE * !SCE * !Q * Q_N)	0.01677	0.01673	0.02682
	(D * !SCE * Q * !Q_N)	0.00693	0.00713	0.01706
	(D * !SCE * Q * !Q_N)	0.01063	0.01084	0.02077
	(D * !DE * !SCE * !Q * Q_N)	0.00687	0.00695	0.01689
	(D * !DE * !SCE * !Q * Q_N)	0.01057	0.01065	0.02059
	(!SCD * SCE * Q * !Q_N)	0.01451	0.01482	0.02520
	(!SCD * SCE * Q * !Q_N)	0.01822	0.01853	0.02892
	(!SCD * SCE * !Q * Q_N)	0.00687	0.00695	0.01689
	(!SCD * SCE * !Q * Q_N)	0.01057	0.01065	0.02059
	(!D * DE * !SCE * Q * !Q_N)	0.01458	0.01488	0.02524
	(!D * DE * !SCE * Q * !Q_N)	0.01828	0.01858	0.02894
	(!D * !SCE * !Q * Q_N)	0.00687	0.00695	0.01689
	(!D * !SCE * !Q * Q_N)	0.01057	0.01066	0.02059
	(!D * !DE * !SCE * Q * !Q_N)	0.00693	0.00713	0.01706
	(!D * !DE * !SCE * Q * !Q_N)	0.01063	0.01084	0.02077

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00201	0.00390	0.00181	0.00381	0.00289	0.75476
sky130_fd_sc_hs__sedfxtp_2	0.00211	0.00392	0.00183	0.00386	0.00291	1.50047
sky130_fd_sc_hs__sedfxtp_4	0.00211	0.00390	0.00183	0.00384	0.00301	2.89139

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxtp_1	0.00000	1.08146	1.97329
sky130_fd_sc_hs__sedfxtp_2	0.00000	1.11272	2.00015
sky130_fd_sc_hs__sedfxtp_4	0.00000	1.17777	2.05743

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)**	0.30664	1.01671	7.47678
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.31561	0.92646	7.54264
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.35522	0.89483	7.60658

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.27484	0.74131	3.48087
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.32107	0.77599	3.60173
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.43005	0.88479	3.83678

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)	-0.27643	-0.38915	-1.54686
	setup	CLK (R)	0.34231	0.43061	1.60155
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.27781	-0.39428	-1.55487
	setup	CLK (R)	0.34438	0.43205	1.60427
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.28281	-0.39516	-1.56504
	setup	CLK (R)	0.34146	0.43036	1.61376

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)	-0.64451	-0.73663	-2.70135
	setup	CLK (R)	0.80253	0.84908	2.85166
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.63958	-0.73369	-2.69208
	setup	CLK (R)	0.79885	0.84509	2.82637
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.64689	-0.74057	-2.70889
	setup	CLK (R)	0.78767	0.83766	2.80292

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)	-0.07087	-0.08625	-0.17944
	setup	CLK (R)	0.86304	0.85088	1.46737
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.07319	-0.08625	-0.17928
	setup	CLK (R)	0.85589	0.84552	1.46825
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07487	-0.08625	-0.18529
	setup	CLK (R)	0.84368	0.83835	1.47678

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)	-0.38654	-0.52142	-1.74808
	setup	CLK (R)	0.70470	0.77399	2.64367
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.39016	-0.51975	-1.75088
	setup	CLK (R)	0.70291	0.77081	2.63841
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.39386	-0.52545	-1.75410
	setup	CLK (R)	0.70591	0.77242	2.65382

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)	-0.07087	-0.08625	-0.17944
	hold	CLK (R)	-0.25803	-0.31334	-0.55024
	setup	CLK (R)	0.34391	0.40400	1.46737
	setup	CLK (R)	0.86304	0.85088	1.06739
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.07319	-0.08625	-0.17928
	hold	CLK (R)	-0.25745	-0.29977	-0.53339
	setup	CLK (R)	0.34561	0.40800	1.46825
	setup	CLK (R)	0.85589	0.84552	1.03499
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07487	-0.08625	-0.18529
	hold	CLK (R)	-0.25896	-0.30847	-0.54829
	setup	CLK (R)	0.34220	0.40621	1.47678
	setup	CLK (R)	0.84368	0.83835	0.98557

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)	-0.65644	-0.74392	-2.61240
	hold	CLK (R)	-0.38654	-0.52142	-1.74808
	setup	CLK (R)	0.70470	0.77399	2.64367
	setup	CLK (R)	0.41703	0.53728	1.76027
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.65211	-0.73989	-2.61165
	hold	CLK (R)	-0.39016	-0.51975	-1.75088
	setup	CLK (R)	0.70291	0.77081	2.63841
	setup	CLK (R)	0.42159	0.53781	1.76036
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.65621	-0.74325	-2.62916
	hold	CLK (R)	-0.39386	-0.52545	-1.75410
	setup	CLK (R)	0.70591	0.77242	2.65382
	setup	CLK (R)	0.42011	0.53899	1.76189

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)	-0.16433	-0.25208	-1.08881
	setup	CLK (R)	0.20710	0.27869	1.12487
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16265	-0.25170	-1.08920
	setup	CLK (R)	0.20891	0.27587	1.11972
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16827	-0.25670	-1.11019
	setup	CLK (R)	0.20772	0.27655	1.13919

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)	-0.41695	-0.49408	-2.11587
	setup	CLK (R)	0.55306	0.59899	2.31162
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.40878	-0.48850	-2.10860
	setup	CLK (R)	0.54484	0.59165	2.27609
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.41853	-0.49600	-2.13240
	setup	CLK (R)	0.53797	0.58698	2.25779

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)	0.00284	0.02155	0.31578
	setup	CLK (R)	0.58092	0.56427	1.04227
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00042	0.02033	0.32709
	setup	CLK (R)	0.57290	0.55591	1.03868
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00377	0.02033	0.31413
	setup	CLK (R)	0.56530	0.55099	1.05826

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)	-0.27014	-0.41567	-1.70860
	setup	CLK (R)	0.57264	0.61288	2.27948
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.27204	-0.41806	-1.71042
	setup	CLK (R)	0.56448	0.60590	2.24894
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.27843	-0.41866	-1.71540
	setup	CLK (R)	0.55623	0.60381	2.22734

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)	-0.43971	-0.45787	-0.54712
	hold	CLK (R)	0.00284	0.02155	0.31578
	hold	CLK (R)	-0.13955	-0.24009	-0.99524
	hold	CLK (R)	-0.18108	-0.23000	-0.35569
	setup	CLK (R)	0.58092	0.56427	0.82452
	setup	CLK (R)	0.18387	0.27125	1.04227
	setup	CLK (R)	0.18379	0.27125	1.04227
	setup	CLK (R)	0.57872	0.56427	0.82036
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.43495	-0.45419	-0.53480
	hold	CLK (R)	0.00042	0.02033	0.32709
	hold	CLK (R)	-0.13999	-0.24421	-0.99769
	hold	CLK (R)	-0.17951	-0.21935	-0.34650
	setup	CLK (R)	0.57290	0.55563	0.77372
	setup	CLK (R)	0.18488	0.26934	1.03817
	setup	CLK (R)	0.18478	0.26917	1.03868
	setup	CLK (R)	0.57275	0.55591	0.77351
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.44263	-0.46370	-0.55257
	hold	CLK (R)	0.00377	0.02033	0.31413
	hold	CLK (R)	-0.14223	-0.24716	-1.02259
	hold	CLK (R)	-0.18235	-0.22551	-0.36415
	setup	CLK (R)	0.56400	0.55099	0.71800
	setup	CLK (R)	0.18160	0.27125	1.05776
	setup	CLK (R)	0.18148	0.27125	1.05826
	setup	CLK (R)	0.56530	0.55079	0.71387

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)	-0.27633	-0.42442	-1.72346
	hold	CLK (R)	-0.40625	-0.49256	-2.07768
	hold	CLK (R)	-0.39962	-0.48600	-2.10163
	hold	CLK (R)	-0.27014	-0.41567	-1.70860
	setup	CLK (R)	0.34087	0.45426	1.75664
	setup	CLK (R)	0.45814	0.52061	2.11685
	setup	CLK (R)	0.57264	0.61288	2.27948
	setup	CLK (R)	0.30184	0.43443	1.71997
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.27942	-0.42475	-1.72582
	hold	CLK (R)	-0.39937	-0.48457	-2.06731
	hold	CLK (R)	-0.39036	-0.47884	-2.08595
	hold	CLK (R)	-0.27204	-0.41806	-1.71042
	setup	CLK (R)	0.34229	0.45525	1.75475
	setup	CLK (R)	0.45109	0.51664	2.09869
	setup	CLK (R)	0.56448	0.60590	2.24894
	setup	CLK (R)	0.30519	0.43503	1.71828
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.28416	-0.42723	-1.73257
	hold	CLK (R)	-0.41084	-0.49577	-2.09016
	hold	CLK (R)	-0.39865	-0.49006	-2.10408
	hold	CLK (R)	-0.27843	-0.41866	-1.71540
	setup	CLK (R)	0.33905	0.45525	1.75690
	setup	CLK (R)	0.45529	0.52260	2.12078
	setup	CLK (R)	0.55623	0.60381	2.22734
	setup	CLK (R)	0.30312	0.43489	1.72488

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** ()	0.13886	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.13886	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.21491	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.13886	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.21491	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.13886	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.21187	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.21187	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.13886	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.21491	0.82031	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK** ()	0.15407	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.15407	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.29097	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.15711	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.29097	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.15711	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.28792	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.28792	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.15711	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.29097	0.82031	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.19362	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.19362	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.42482	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.19666	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.42787	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.19666	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.42482	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.42482	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.19666	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.42787	0.82031	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 ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.26359	0.82031	16.50020
	min_pulse_width	CLK ()	0.43699	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.43699	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.47654	0.82031	16.50020
	min_pulse_width	CLK ()	0.43699	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.43699	0.82031	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.26359	0.82031	16.50020
	min_pulse_width	CLK ()	0.43091	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.43091	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.47350	0.82031	16.50020
	min_pulse_width	CLK ()	0.43091	0.82031	16.50020
	min_pulse_width	CLK ()	0.24533	0.82031	16.50020
	min_pulse_width	CLK ()	0.43091	0.82031	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.23925	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.25750	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.41265	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.23925	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.41265	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.23925	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.45220	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.41265	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.23925	0.82031	16.50020
	min_pulse_width	**CLK** ()	0.41265	0.82031	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	0.02740	0.02751	0.03735
	CLK	0.02291	0.02304	0.03294
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03017	0.03051	0.04047
	CLK	0.02566	0.02600	0.03597
sky130_fd_sc_hs__sedfxtp_4	CLK	0.03543	0.03611	0.04646
	CLK	0.03080	0.03150	0.04246

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.02484	0.02483	0.03448
	CLK	0.02189	0.02189	0.03146
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02748	0.02769	0.03767
	CLK	0.02456	0.02478	0.03434
sky130_fd_sc_hs__sedfxtp_4	CLK	0.03250	0.03234	0.04308
	CLK	0.02942	0.02930	0.03931

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00418	0.00408	0.00941
	(DE * SCE)	0.00152	0.00141	0.00675
	(CLK * DE * !SCE)	0.00876	0.00865	0.01303
	(CLK * DE * !SCE)	0.00523	0.00512	0.00951
	(CLK * !DE * !SCE)	0.00095	0.00096	0.00095
	(CLK * !DE * !SCE)	-0.00071	-0.00072	-0.00071
	(!DE * SCE)	0.00095	0.00096	0.00095
	(!DE * SCE)	-0.00071	-0.00072	-0.00071
	(!CLK * DE * !SCE * Q)	0.01518	0.01510	0.01949
	(!CLK * DE * !SCE * Q)	0.01165	0.01159	0.01596
	(!CLK * DE * !SCE * !Q)	0.01487	0.01480	0.01906
	(!CLK * DE * !SCE * !Q)	0.01130	0.01124	0.01550
	(!CLK * !DE * !SCE)	0.00095	0.00095	0.00095
	(!CLK * !DE * !SCE)	-0.00072	-0.00073	-0.00071
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00432	0.00420	0.00952
	(DE * SCE)	0.00152	0.00141	0.00673
	(CLK * DE * !SCE)	0.00890	0.00877	0.01314
	(CLK * DE * !SCE)	0.00523	0.00511	0.00948
	(CLK * !DE * !SCE)	0.00099	0.00099	0.00099
	(CLK * !DE * !SCE)	-0.00075	-0.00075	-0.00075
	(!DE * SCE)	0.00099	0.00100	0.00099
	(!DE * SCE)	-0.00074	-0.00075	-0.00075
	(!CLK * DE * !SCE * Q)	0.01528	0.01520	0.01958
	(!CLK * DE * !SCE * Q)	0.01162	0.01155	0.01592
	(!CLK * DE * !SCE * !Q)	0.01502	0.01496	0.01919
	(!CLK * DE * !SCE * !Q)	0.01132	0.01126	0.01549
	(!CLK * !DE * !SCE)	0.00099	0.00100	0.00099
	(!CLK * !DE * !SCE)	-0.00075	-0.00076	-0.00075

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00433	0.00422	0.00955
	(DE * SCE)	0.00153	0.00142	0.00675
	(CLK * DE * !SCE)	0.00895	0.00883	0.01318
	(CLK * DE * !SCE)	0.00529	0.00517	0.00952
	(CLK * !DE * !SCE)	0.00099	0.00099	0.00099
	(CLK * !DE * !SCE)	-0.00075	-0.00075	-0.00075
	(!DE * SCE)	0.00100	0.00100	0.00100
	(!DE * SCE)	-0.00074	-0.00075	-0.00075
	(!CLK * DE * !SCE * Q)	0.01518	0.01511	0.01948
	(!CLK * DE * !SCE * Q)	0.01151	0.01146	0.01582
	(!CLK * DE * !SCE * !Q)	0.01488	0.01481	0.01905
	(!CLK * DE * !SCE * !Q)	0.01117	0.01111	0.01535
	(!CLK * !DE * !SCE)	0.00099	0.00100	0.00099
	(!CLK * !DE * !SCE)	-0.00075	-0.00076	-0.00075

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00160	0.00172	0.00737
	(DE * SCE)	0.00431	0.00442	0.01007
	(CLK * DE * !SCE)	0.00297	0.00300	0.00812
	(CLK * DE * !SCE)	0.00653	0.00656	0.01168
	(CLK * !DE * !SCE)	-0.00030	-0.00030	-0.00030
	(CLK * !DE * !SCE)	0.00153	0.00154	0.00153
	(!DE * SCE)	-0.00030	-0.00030	-0.00029
	(!DE * SCE)	0.00154	0.00154	0.00154
	(!CLK * DE * !SCE * Q)	0.00912	0.00915	0.01538
	(!CLK * DE * !SCE * Q)	0.01264	0.01268	0.01890
	(!CLK * DE * !SCE * !Q)	0.00983	0.00984	0.01628
	(!CLK * DE * !SCE * !Q)	0.01339	0.01340	0.01984
	(!CLK * !DE * !SCE)	-0.00030	-0.00031	-0.00030
	(!CLK * !DE * !SCE)	0.00153	0.00154	0.00153
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00156	0.00166	0.00730
	(DE * SCE)	0.00438	0.00449	0.01013
	(CLK * DE * !SCE)	0.00291	0.00293	0.00804
	(CLK * DE * !SCE)	0.00661	0.00662	0.01174
	(CLK * !DE * !SCE)	-0.00031	-0.00031	-0.00030
	(CLK * !DE * !SCE)	0.00162	0.00162	0.00161
	(!DE * SCE)	-0.00030	-0.00030	-0.00029
	(!DE * SCE)	0.00163	0.00162	0.00162
	(!CLK * DE * !SCE * Q)	0.00907	0.00909	0.01531
	(!CLK * DE * !SCE * Q)	0.01273	0.01275	0.01897
	(!CLK * DE * !SCE * !Q)	0.00974	0.00977	0.01617
	(!CLK * DE * !SCE * !Q)	0.01343	0.01347	0.01987
	(!CLK * !DE * !SCE)	-0.00031	-0.00031	-0.00030
	(!CLK * !DE * !SCE)	0.00162	0.00162	0.00161

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00149	0.00159	0.00724
	(DE * SCE)	0.00432	0.00443	0.01008
	(CLK * DE * !SCE)	0.00309	0.00311	0.00820
	(CLK * DE * !SCE)	0.00680	0.00680	0.01190
	(CLK * !DE * !SCE)	-0.00031	-0.00031	-0.00030
	(CLK * !DE * !SCE)	0.00162	0.00162	0.00161
	(!DE * SCE)	-0.00030	-0.00030	-0.00029
	(!DE * SCE)	0.00163	0.00163	0.00162
	(!CLK * DE * !SCE * Q)	0.00916	0.00918	0.01540
	(!CLK * DE * !SCE * Q)	0.01282	0.01284	0.01906
	(!CLK * DE * !SCE * !Q)	0.00988	0.00991	0.01631
	(!CLK * DE * !SCE * !Q)	0.01357	0.01361	0.02000
	(!CLK * !DE * !SCE)	-0.00031	-0.00031	-0.00030
	(!CLK * !DE * !SCE)	0.00162	0.00162	0.00161

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00801	0.00782	0.01806
	SCE	0.00215	0.00194	0.01219
	(CLK * !SCE)	0.01242	0.01223	0.02193
	(CLK * !SCE)	0.00570	0.00552	0.01520
	(!CLK * D * !SCE * Q)	0.00496	0.00474	0.01119
	(!CLK * D * !SCE * Q)	0.00004	-0.00019	0.00628
	(!CLK * D * !SCE * !Q)	0.01877	0.01860	0.02842
	(!CLK * D * !SCE * !Q)	0.01205	0.01188	0.02169
	(!CLK * !D * !SCE * Q)	0.01488	0.01479	0.02120
	(!CLK * !D * !SCE * Q)	0.01190	0.01178	0.01821
	(!CLK * !D * !SCE * !Q)	0.00485	0.00478	0.01123
	(!CLK * !D * !SCE * !Q)	-0.00000	-0.00010	0.00636

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00812	0.00792	0.01815
	SCE	0.00215	0.00194	0.01217
	(CLK * !SCE)	0.01259	0.01240	0.02207
	(CLK * !SCE)	0.00574	0.00555	0.01523
	(!CLK * D * !SCE * Q)	0.00499	0.00477	0.01122
	(!CLK * D * !SCE * Q)	0.00000	-0.00023	0.00624
	(!CLK * D * !SCE * !Q)	0.01889	0.01873	0.02853
	(!CLK * D * !SCE * !Q)	0.01205	0.01189	0.02168
	(!CLK * !D * !SCE * Q)	0.01489	0.01480	0.02123
	(!CLK * !D * !SCE * Q)	0.01189	0.01177	0.01820
	(!CLK * !D * !SCE * !Q)	0.00488	0.00481	0.01126
	(!CLK * !D * !SCE * !Q)	-0.00004	-0.00014	0.00632
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00811	0.00792	0.01815
	SCE	0.00216	0.00194	0.01219
	(CLK * !SCE)	0.01260	0.01243	0.02208
	(CLK * !SCE)	0.00579	0.00559	0.01527
	(!CLK * D * !SCE * Q)	0.00497	0.00476	0.01121
	(!CLK * D * !SCE * Q)	0.00001	-0.00022	0.00625
	(!CLK * D * !SCE * !Q)	0.01872	0.01858	0.02837
	(!CLK * D * !SCE * !Q)	0.01191	0.01176	0.02155
	(!CLK * !D * !SCE * Q)	0.01497	0.01488	0.02131
	(!CLK * !D * !SCE * Q)	0.01199	0.01187	0.01830
	(!CLK * !D * !SCE * !Q)	0.00487	0.00480	0.01125
	(!CLK * !D * !SCE * !Q)	-0.00003	-0.00013	0.00633

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00237	0.00246	0.01313
	SCE	0.00823	0.00832	0.01898
	(CLK * !SCE)	0.00897	0.00908	0.01568
	(CLK * !SCE)	0.01195	0.01207	0.01870
	(!CLK * D * !SCE * Q)	0.00005	0.00020	0.00686
	(!CLK * D * !SCE * Q)	0.00494	0.00509	0.01177
	(!CLK * D * !SCE * !Q)	0.01051	0.01059	0.02160
	(!CLK * D * !SCE * !Q)	0.01723	0.01734	0.02831
	(!CLK * !D * !SCE * Q)	0.01538	0.01549	0.02205
	(!CLK * !D * !SCE * Q)	0.01836	0.01849	0.02507
	(!CLK * !D * !SCE * !Q)	-0.00009	0.00006	0.00677
	(!CLK * !D * !SCE * !Q)	0.00476	0.00493	0.01165
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00236	0.00245	0.01311
	SCE	0.00835	0.00842	0.01908
	(CLK * !SCE)	0.00901	0.00912	0.01572
	(CLK * !SCE)	0.01201	0.01212	0.01875
	(!CLK * D * !SCE * Q)	0.00003	0.00017	0.00684
	(!CLK * D * !SCE * Q)	0.00499	0.00514	0.01181
	(!CLK * D * !SCE * !Q)	0.01045	0.01053	0.02153
	(!CLK * D * !SCE * !Q)	0.01730	0.01739	0.02837
	(!CLK * !D * !SCE * Q)	0.01539	0.01550	0.02205
	(!CLK * !D * !SCE * Q)	0.01839	0.01852	0.02508
	(!CLK * !D * !SCE * !Q)	-0.00011	0.00003	0.00675
	(!CLK * !D * !SCE * !Q)	0.00481	0.00498	0.01170

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00230	0.00239	0.01306
	SCE	0.00826	0.00835	0.01900
	(CLK * !SCE)	0.00387	0.00395	0.01417
	(CLK * !SCE)	0.01069	0.01077	0.02098
	(!CLK * D * !SCE * Q)	0.00003	0.00018	0.00685
	(!CLK * D * !SCE * Q)	0.00497	0.00512	0.01179
	(!CLK * D * !SCE * !Q)	0.01059	0.01067	0.02167
	(!CLK * D * !SCE * !Q)	0.01741	0.01751	0.02848
	(!CLK * !D * !SCE * Q)	0.01529	0.01540	0.02197
	(!CLK * !D * !SCE * Q)	0.01827	0.01840	0.02499
	(!CLK * !D * !SCE * !Q)	-0.00011	0.00004	0.00675
	(!CLK * !D * !SCE * !Q)	0.00479	0.00495	0.01168

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00487	0.00478	0.00841
	(CLK * SCE)	0.00203	0.00194	0.00557
	(!CLK * SCE)	0.01123	0.01114	0.01476
	(!CLK * SCE)	0.00838	0.00830	0.01192
	!SCE	0.00090	0.00077	0.00074
	!SCE	-0.00104	-0.00119	-0.00121
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00498	0.00489	0.00852
	(CLK * SCE)	0.00211	0.00201	0.00564
	(!CLK * SCE)	0.01129	0.01121	0.01482
	(!CLK * SCE)	0.00842	0.00833	0.01195
	!SCE	0.00092	0.00079	0.00076
	!SCE	-0.00105	-0.00120	-0.00122
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00498	0.00489	0.00849
	(CLK * SCE)	0.00212	0.00202	0.00563
	(!CLK * SCE)	0.01111	0.01103	0.01464
	(!CLK * SCE)	0.00825	0.00816	0.01178
	!SCE	0.00091	0.00078	0.00076
	!SCE	-0.00104	-0.00119	-0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00263	0.00257	0.00642
	(CLK * SCE)	0.00548	0.00542	0.00925
	(!CLK * SCE)	0.00922	0.00916	0.01357
	(!CLK * SCE)	0.01206	0.01201	0.01640
	!SCE	-0.00070	-0.00071	-0.00071
	!SCE	0.00124	0.00125	0.00124
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00256	0.00249	0.00633
	(CLK * SCE)	0.00544	0.00539	0.00920
	(!CLK * SCE)	0.00911	0.00904	0.01344
	(!CLK * SCE)	0.01198	0.01192	0.01631
	!SCE	-0.00072	-0.00073	-0.00073
	!SCE	0.00125	0.00126	0.00125
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00285	0.00279	0.00660
	(CLK * SCE)	0.00573	0.00566	0.00946
	(!CLK * SCE)	0.00935	0.00929	0.01369
	(!CLK * SCE)	0.01221	0.01216	0.01653
	!SCE	-0.00071	-0.00073	-0.00073
	!SCE	0.00125	0.00125	0.00125

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00713	0.00715	0.01850
	(CLK * D)	0.00208	0.00209	0.01345
	(CLK * !D)	0.00741	0.00742	0.01873
	(CLK * !D)	0.00236	0.00237	0.01368
	(!CLK * D * SCD * Q)	0.00410	0.00410	0.01058
	(!CLK * D * SCD * Q)	-0.00007	-0.00008	0.00640
	(!CLK * D * DE * SCD * !Q)	0.00398	0.00398	0.01046
	(!CLK * D * DE * SCD * !Q)	-0.00019	-0.00020	0.00628
	(!CLK * D * DE * !SCD * !Q)	0.01422	0.01419	0.02133
	(!CLK * D * DE * !SCD * !Q)	0.01078	0.01075	0.01787
	(!CLK * D * !SCD * Q)	0.01416	0.01412	0.02130
	(!CLK * D * !SCD * Q)	0.01072	0.01068	0.01784
	(!CLK * D * !DE * SCD * !Q)	0.01349	0.01353	0.02468
	(!CLK * D * !DE * SCD * !Q)	0.00844	0.00848	0.01963
	(!CLK * D * !DE * !SCD * !Q)	0.00467	0.00470	0.01115
	(!CLK * D * !DE * !SCD * !Q)	0.00035	0.00037	0.00683
	(!CLK * !D * SCD * !Q)	0.01349	0.01354	0.02465
	(!CLK * !D * SCD * !Q)	0.00844	0.00849	0.01960
	(!CLK * !D * DE * SCD * Q)	0.01386	0.01388	0.02494
	(!CLK * !D * DE * SCD * Q)	0.00881	0.00883	0.01989
	(!CLK * !D * DE * !SCD * Q)	0.00479	0.00482	0.01128
	(!CLK * !D * DE * !SCD * Q)	0.00048	0.00050	0.00696
	(!CLK * !D * !SCD * !Q)	0.00467	0.00470	0.01116
	(!CLK * !D * !SCD * !Q)	0.00035	0.00038	0.00683
	(!CLK * !D * !DE * SCD * Q)	0.00410	0.00410	0.01058
	(!CLK * !D * !DE * SCD * Q)	-0.00007	-0.00008	0.00640
	(!CLK * !D * !DE * !SCD * Q)	0.01416	0.01412	0.02130
	(!CLK * !D * !DE * !SCD * Q)	0.01073	0.01068	0.01784

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00725	0.00726	0.01860
	(CLK * D)	0.00213	0.00213	0.01348
	(CLK * !D)	0.00725	0.00727	0.01856
	(CLK * !D)	0.00213	0.00214	0.01343
	(!CLK * D * SCD * Q)	0.00416	0.00422	0.01063
	(!CLK * D * SCD * Q)	-0.00008	-0.00003	0.00637
	(!CLK * D * DE * SCD * !Q)	0.00405	0.00411	0.01051
	(!CLK * D * DE * SCD * !Q)	-0.00019	-0.00014	0.00626
	(!CLK * D * DE * !SCD * !Q)	0.01418	0.01415	0.02129
	(!CLK * D * DE * !SCD * !Q)	0.01068	0.01065	0.01776
	(!CLK * D * !SCD * Q)	0.01416	0.01412	0.02129
	(!CLK * D * !SCD * Q)	0.01066	0.01062	0.01777
	(!CLK * D * !DE * SCD * !Q)	0.01358	0.01359	0.02475
	(!CLK * D * !DE * SCD * !Q)	0.00845	0.00847	0.01963
	(!CLK * D * !DE * !SCD * !Q)	0.00472	0.00473	0.01119
	(!CLK * D * !DE * !SCD * !Q)	0.00034	0.00035	0.00680
	(!CLK * !D * SCD * !Q)	0.01358	0.01360	0.02470
	(!CLK * !D * SCD * !Q)	0.00845	0.00848	0.01959
	(!CLK * !D * DE * SCD * Q)	0.01389	0.01390	0.02496
	(!CLK * !D * DE * SCD * Q)	0.00877	0.00878	0.01984
	(!CLK * !D * DE * !SCD * Q)	0.00484	0.00485	0.01131
	(!CLK * !D * DE * !SCD * Q)	0.00045	0.00047	0.00692
	(!CLK * !D * !SCD * !Q)	0.00472	0.00474	0.01120
	(!CLK * !D * !SCD * !Q)	0.00034	0.00036	0.00681
	(!CLK * !D * !DE * SCD * Q)	0.00416	0.00422	0.01063
	(!CLK * !D * !DE * SCD * Q)	-0.00008	-0.00003	0.00637
	(!CLK * !D * !DE * !SCD * Q)	0.01416	0.01412	0.02129
	(!CLK * !D * !DE * !SCD * Q)	0.01066	0.01061	0.01776

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00727	0.00727	0.01856
	(CLK * D)	0.00218	0.00218	0.01348
	(CLK * !D)	0.00750	0.00751	0.01875
	(CLK * !D)	0.00241	0.00241	0.01367
	(!CLK * D * SCD * Q)	0.00412	0.00413	0.01060
	(!CLK * D * SCD * Q)	-0.00008	-0.00009	0.00638
	(!CLK * D * DE * SCD * !Q)	0.00401	0.00402	0.01049
	(!CLK * D * DE * SCD * !Q)	-0.00019	-0.00021	0.00627
	(!CLK * D * DE * !SCD * !Q)	0.01438	0.01436	0.02149
	(!CLK * D * DE * !SCD * !Q)	0.01092	0.01088	0.01800
	(!CLK * D * !SCD * Q)	0.01432	0.01429	0.02147
	(!CLK * D * !SCD * Q)	0.01085	0.01082	0.01797
	(!CLK * D * !DE * SCD * !Q)	0.01341	0.01343	0.02457
	(!CLK * D * !DE * SCD * !Q)	0.00832	0.00834	0.01949
	(!CLK * D * !DE * !SCD * !Q)	0.00469	0.00472	0.01118
	(!CLK * D * !DE * !SCD * !Q)	0.00034	0.00036	0.00682
	(!CLK * !D * SCD * !Q)	0.01341	0.01344	0.02453
	(!CLK * !D * SCD * !Q)	0.00832	0.00836	0.01946
	(!CLK * !D * DE * SCD * Q)	0.01376	0.01377	0.02482
	(!CLK * !D * DE * SCD * Q)	0.00867	0.00868	0.01973
	(!CLK * !D * DE * !SCD * Q)	0.00481	0.00484	0.01130
	(!CLK * !D * DE * !SCD * Q)	0.00046	0.00048	0.00694
	(!CLK * !D * !SCD * !Q)	0.00470	0.00473	0.01118
	(!CLK * !D * !SCD * !Q)	0.00035	0.00036	0.00682
	(!CLK * !D * !DE * SCD * Q)	0.00412	0.00413	0.01060
	(!CLK * !D * !DE * SCD * Q)	-0.00008	-0.00009	0.00638
	(!CLK * !D * !DE * !SCD * Q)	0.01432	0.01429	0.02146
	(!CLK * !D * !DE * !SCD * Q)	0.01085	0.01082	0.01797

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00491	0.00574	0.01650
	(CLK * D)	0.00837	0.00920	0.01986
	(CLK * !D)	0.00493	0.00577	0.01654
	(CLK * !D)	0.00839	0.00922	0.01989
	(!CLK * D * SCD * Q)	0.00030	0.00057	0.00735
	(!CLK * D * SCD * Q)	0.00447	0.00476	0.01153
	(!CLK * D * DE * SCD * !Q)	0.00043	0.00070	0.00747
	(!CLK * D * DE * SCD * !Q)	0.00460	0.00489	0.01166
	(!CLK * D * DE * !SCD * !Q)	0.01119	0.01198	0.02266
	(!CLK * D * DE * !SCD * !Q)	0.01465	0.01542	0.02605
	(!CLK * D * !SCD * Q)	0.01129	0.01207	0.02273
	(!CLK * D * !SCD * Q)	0.01475	0.01552	0.02611
	(!CLK * D * !DE * SCD * !Q)	0.00811	0.00840	0.02118
	(!CLK * D * !DE * SCD * !Q)	0.01313	0.01344	0.02623
	(!CLK * D * !DE * !SCD * !Q)	-0.00009	0.00015	0.00687
	(!CLK * D * !DE * !SCD * !Q)	0.00421	0.00447	0.01118
	(!CLK * !D * SCD * !Q)	0.00813	0.00841	0.02119
	(!CLK * !D * SCD * !Q)	0.01316	0.01346	0.02623
	(!CLK * !D * DE * SCD * Q)	0.00781	0.00810	0.02090
	(!CLK * !D * DE * SCD * Q)	0.01284	0.01315	0.02595
	(!CLK * !D * DE * !SCD * Q)	-0.00022	0.00003	0.00674
	(!CLK * !D * DE * !SCD * Q)	0.00409	0.00434	0.01105
	(!CLK * !D * !SCD * !Q)	-0.00009	0.00015	0.00687
	(!CLK * !D * !SCD * !Q)	0.00421	0.00447	0.01118
	(!CLK * !D * !DE * SCD * Q)	0.00030	0.00057	0.00734
	(!CLK * !D * !DE * SCD * Q)	0.00446	0.00476	0.01153
	(!CLK * !D * !DE * !SCD * Q)	0.01129	0.01209	0.02273
	(!CLK * !D * !DE * !SCD * Q)	0.01475	0.01554	0.02611

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00493	0.00575	0.01652
	(CLK * D)	0.00845	0.00927	0.01992
	(CLK * !D)	0.00491	0.00573	0.01651
	(CLK * !D)	0.00843	0.00925	0.01991
	(!CLK * D * SCD * Q)	0.00027	0.00054	0.00731
	(!CLK * D * SCD * Q)	0.00451	0.00479	0.01156
	(!CLK * D * DE * SCD * !Q)	0.00039	0.00066	0.00743
	(!CLK * D * DE * SCD * !Q)	0.00463	0.00491	0.01168
	(!CLK * D * DE * !SCD * !Q)	0.01116	0.01194	0.02264
	(!CLK * D * DE * !SCD * !Q)	0.01469	0.01545	0.02609
	(!CLK * D * !SCD * Q)	0.01123	0.01200	0.02266
	(!CLK * D * !SCD * Q)	0.01475	0.01551	0.02611
	(!CLK * D * !DE * SCD * !Q)	0.00800	0.00830	0.02108
	(!CLK * D * !DE * SCD * !Q)	0.01313	0.01342	0.02621
	(!CLK * D * !DE * !SCD * !Q)	-0.00011	0.00012	0.00683
	(!CLK * D * !DE * !SCD * !Q)	0.00426	0.00450	0.01121
	(!CLK * !D * SCD * !Q)	0.00803	0.00832	0.02109
	(!CLK * !D * SCD * !Q)	0.01315	0.01344	0.02620
	(!CLK * !D * DE * SCD * Q)	0.00776	0.00806	0.02086
	(!CLK * !D * DE * SCD * Q)	0.01288	0.01318	0.02596
	(!CLK * !D * DE * !SCD * Q)	-0.00023	0.00000	0.00672
	(!CLK * !D * DE * !SCD * Q)	0.00414	0.00438	0.01110
	(!CLK * !D * !SCD * !Q)	-0.00011	0.00012	0.00684
	(!CLK * !D * !SCD * !Q)	0.00426	0.00450	0.01121
	(!CLK * !D * !DE * SCD * Q)	0.00027	0.00053	0.00731
	(!CLK * !D * !DE * SCD * Q)	0.00451	0.00479	0.01156
	(!CLK * !D * !DE * !SCD * Q)	0.01123	0.01202	0.02266
	(!CLK * !D * !DE * !SCD * Q)	0.01475	0.01554	0.02611

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00496	0.00580	0.01655
	(CLK * D)	0.00846	0.00928	0.01994
	(CLK * !D)	0.00495	0.00579	0.01655
	(CLK * !D)	0.00845	0.00928	0.01994
	(!CLK * D * SCD * Q)	0.00029	0.00056	0.00734
	(!CLK * D * SCD * Q)	0.00450	0.00478	0.01156
	(!CLK * D * DE * SCD * !Q)	0.00041	0.00068	0.00746
	(!CLK * D * DE * SCD * !Q)	0.00462	0.00490	0.01168
	(!CLK * D * DE * !SCD * !Q)	0.01102	0.01181	0.02252
	(!CLK * D * DE * !SCD * !Q)	0.01452	0.01528	0.02594
	(!CLK * D * !SCD * Q)	0.01112	0.01191	0.02256
	(!CLK * D * !SCD * Q)	0.01461	0.01539	0.02596
	(!CLK * D * !DE * SCD * !Q)	0.00825	0.00854	0.02132
	(!CLK * D * !DE * SCD * !Q)	0.01333	0.01363	0.02641
	(!CLK * D * !DE * !SCD * !Q)	-0.00010	0.00014	0.00686
	(!CLK * D * !DE * !SCD * !Q)	0.00424	0.00449	0.01120
	(!CLK * !D * SCD * !Q)	0.00827	0.00856	0.02133
	(!CLK * !D * SCD * !Q)	0.01336	0.01364	0.02641
	(!CLK * !D * DE * SCD * Q)	0.00796	0.00827	0.02106
	(!CLK * !D * DE * SCD * Q)	0.01305	0.01335	0.02615
	(!CLK * !D * DE * !SCD * Q)	-0.00021	0.00003	0.00674
	(!CLK * !D * DE * !SCD * Q)	0.00412	0.00437	0.01108
	(!CLK * !D * !SCD * !Q)	-0.00009	0.00015	0.00686
	(!CLK * !D * !SCD * !Q)	0.00424	0.00449	0.01120
	(!CLK * !D * !DE * SCD * Q)	0.00029	0.00056	0.00734
	(!CLK * !D * !DE * SCD * Q)	0.00449	0.00478	0.01155
	(!CLK * !D * !DE * !SCD * Q)	0.01112	0.01192	0.02257
	(!CLK * !D * !DE * !SCD * Q)	0.01461	0.01541	0.02599

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01233	0.01208	0.02144
	(SCD * SCE * Q)	0.00867	0.00839	0.01777
	(D * !SCE * Q)	0.01231	0.01206	0.02143
	(D * !SCE * Q)	0.00866	0.00838	0.01776
	(D * !DE * !SCE * !Q)	0.01269	0.01239	0.02182
	(D * !DE * !SCE * !Q)	0.00903	0.00871	0.01815
	(!SCD * SCE * !Q)	0.01271	0.01242	0.02184
	(!SCD * SCE * !Q)	0.00905	0.00873	0.01818
	(!D * !SCE * !Q)	0.01269	0.01239	0.02182
	(!D * !SCE * !Q)	0.00903	0.00871	0.01815
	(!D * !DE * !SCE * Q)	0.01231	0.01206	0.02142
	(!D * !DE * !SCE * Q)	0.00865	0.00838	0.01775
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01248	0.01223	0.02156
	(SCD * SCE * Q)	0.00879	0.00852	0.01787
	(D * !SCE * Q)	0.01247	0.01221	0.02155
	(D * !SCE * Q)	0.00878	0.00851	0.01786
	(D * !DE * !SCE * !Q)	0.01284	0.01255	0.02194
	(D * !DE * !SCE * !Q)	0.00915	0.00884	0.01827
	(!SCD * SCE * !Q)	0.01286	0.01257	0.02198
	(!SCD * SCE * !Q)	0.00917	0.00886	0.01830
	(!D * !SCE * !Q)	0.01285	0.01255	0.02195
	(!D * !SCE * !Q)	0.00916	0.00885	0.01827
	(!D * !DE * !SCE * Q)	0.01247	0.01221	0.02155
	(!D * !DE * !SCE * Q)	0.00878	0.00851	0.01786

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01247	0.01220	0.02155
	(SCD * SCE * Q)	0.00868	0.00838	0.01774
	(D * !SCE * Q)	0.01246	0.01218	0.02155
	(D * !SCE * Q)	0.00866	0.00836	0.01774
	(D * !DE * !SCE * !Q)	0.01272	0.01246	0.02183
	(D * !DE * !SCE * !Q)	0.00893	0.00865	0.01803
	(!SCD * SCE * !Q)	0.01274	0.01248	0.02186
	(!SCD * SCE * !Q)	0.00895	0.00867	0.01806
	(!D * !SCE * !Q)	0.01272	0.01246	0.02183
	(!D * !SCE * !Q)	0.00893	0.00865	0.01803
	(!D * !DE * !SCE * Q)	0.01246	0.01218	0.02155
	(!D * !DE * !SCE * Q)	0.00866	0.00836	0.01774

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00686	0.00706	0.01703
	(SCD * SCE * Q)	0.01053	0.01074	0.02069
	(SCD * SCE * !Q)	0.01305	0.01303	0.02316
	(SCD * SCE * !Q)	0.01672	0.01669	0.02683
	(D * DE * !SCE * !Q)	0.01302	0.01299	0.02311
	(D * DE * !SCE * !Q)	0.01669	0.01664	0.02678
	(D * !SCE * Q)	0.00687	0.00707	0.01704
	(D * !SCE * Q)	0.01054	0.01074	0.02071
	(D * !DE * !SCE * !Q)	0.00671	0.00679	0.01675
	(D * !DE * !SCE * !Q)	0.01039	0.01045	0.02041
	(!SCD * SCE * Q)	0.01438	0.01467	0.02514
	(!SCD * SCE * Q)	0.01808	0.01835	0.02882
	(!SCD * SCE * !Q)	0.00671	0.00679	0.01675
	(!SCD * SCE * !Q)	0.01039	0.01046	0.02041
	(!D * DE * !SCE * Q)	0.01446	0.01477	0.02518
	(!D * DE * !SCE * Q)	0.01814	0.01843	0.02885
	(!D * !SCE * !Q)	0.00671	0.00679	0.01675
	(!D * !SCE * !Q)	0.01039	0.01046	0.02041
	(!D * !DE * !SCE * Q)	0.00687	0.00707	0.01703
	(!D * !DE * !SCE * Q)	0.01054	0.01074	0.02071

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00693	0.00709	0.01706
	(SCD * SCE * Q)	0.01062	0.01079	0.02075
	(SCD * SCE * !Q)	0.01306	0.01316	0.02314
	(SCD * SCE * !Q)	0.01675	0.01684	0.02683
	(D * DE * !SCE * !Q)	0.01303	0.01312	0.02308
	(D * DE * !SCE * !Q)	0.01671	0.01680	0.02676
	(D * !SCE * Q)	0.00693	0.00709	0.01706
	(D * !SCE * Q)	0.01062	0.01079	0.02076
	(D * !DE * !SCE * !Q)	0.00677	0.00696	0.01677
	(D * !DE * !SCE * !Q)	0.01046	0.01066	0.02046
	(!SCD * SCE * Q)	0.01446	0.01469	0.02515
	(!SCD * SCE * Q)	0.01817	0.01839	0.02886
	(!SCD * SCE * !Q)	0.00677	0.00697	0.01677
	(!SCD * SCE * !Q)	0.01046	0.01067	0.02046
	(!D * DE * !SCE * Q)	0.01453	0.01476	0.02518
	(!D * DE * !SCE * Q)	0.01822	0.01844	0.02887
	(!D * !SCE * !Q)	0.00677	0.00697	0.01677
	(!D * !SCE * !Q)	0.01046	0.01066	0.02046
	(!D * !DE * !SCE * Q)	0.00693	0.00709	0.01706
	(!D * !DE * !SCE * Q)	0.01062	0.01079	0.02075

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00673	0.00689	0.01688
	(SCD * SCE * Q)	0.01054	0.01070	0.02069
	(SCD * SCE * !Q)	0.01283	0.01293	0.02292
	(SCD * SCE * !Q)	0.01664	0.01673	0.02673
	(D * DE * !SCE * !Q)	0.01281	0.01290	0.02287
	(D * DE * !SCE * !Q)	0.01661	0.01669	0.02668
	(D * !SCE * Q)	0.00674	0.00690	0.01689
	(D * !SCE * Q)	0.01055	0.01071	0.02070
	(D * !DE * !SCE * !Q)	0.00669	0.00688	0.01670
	(D * !DE * !SCE * !Q)	0.01049	0.01070	0.02050
	(!SCD * SCE * Q)	0.01416	0.01441	0.02491
	(!SCD * SCE * Q)	0.01799	0.01822	0.02873
	(!SCD * SCE * !Q)	0.00669	0.00688	0.01670
	(!SCD * SCE * !Q)	0.01049	0.01070	0.02050
	(!D * DE * !SCE * Q)	0.01423	0.01447	0.02494
	(!D * DE * !SCE * Q)	0.01804	0.01827	0.02875
	(!D * !SCE * !Q)	0.00669	0.00689	0.01670
	(!D * !SCE * !Q)	0.01049	0.01070	0.02051
	(!D * !DE * !SCE * Q)	0.00674	0.00690	0.01689
	(!D * !DE * !SCE * Q)	0.01054	0.01070	0.02069

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00517	0.00533	0.36319
sky130_fd_sc_hs__xnor2_2	0.00862	0.00856	0.69393
sky130_fd_sc_hs__xnor2_4	0.01537	0.01566	1.21600

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor2_1	0.00000	0.14678	0.33320
sky130_fd_sc_hs__xnor2_2	0.00000	0.16113	0.22408
sky130_fd_sc_hs__xnor2_4	0.00000	0.36517	0.73704

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	0.12215	0.62000	3.89573
	A->Y (FR)	!B	0.14962	1.15362	10.60680
	B->Y (RR)	A	0.11457	0.61421	3.87866
	B->Y (FR)	!A	0.12731	1.14578	10.87100
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.13554	0.57955	3.93593
	A->Y (FR)	!B	0.14683	0.99150	10.46070
	B->Y (RR)	A	0.13002	0.58632	3.91049
	B->Y (FR)	!A	0.11987	0.97878	10.71950
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.15490	0.72644	6.83200
	A->Y (FR)	!B	0.14541	0.88226	10.41620
	B->Y (RR)	A	0.14666	0.72220	6.78288
	B->Y (FR)	!A	0.11644	0.87857	10.79180

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	0.14994	0.66844	3.68230
	A->Y (RF)	!B	0.06439	0.57024	5.32130
	B->Y (FF)	A	0.14781	0.65692	3.76782
	B->Y (RF)	!A	0.05100	0.54615	5.24326
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.17625	0.70155	4.11601
	A->Y (RF)	!B	0.06212	0.49725	5.20268
	B->Y (FF)	A	0.16618	0.65284	3.85241
	B->Y (RF)	!A	0.05282	0.48488	5.23854
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.16274	0.63714	4.02483
	A->Y (RF)	!B	0.06297	0.43827	5.03810
	B->Y (FF)	A	0.15325	0.58996	3.74602
	B->Y (RF)	!A	0.05309	0.42276	5.09031

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	0.00866	0.00879	0.01764
	A	B	0.00153	0.00164	0.01049
	A	!B	-0.00051	-0.00068	0.00032
	A	!B	0.00671	0.00658	0.00760
	B	A	0.00803	0.00811	0.01803
	B	A	0.00233	0.00242	0.01235
	B	!A	0.00030	0.00035	0.00230
	B	!A	0.00615	0.00623	0.00818
sky130_fd_sc_hs__xnor2_2	A	B	0.01378	0.01392	0.02230
	A	B	0.00331	0.00343	0.01183
	A	!B	0.00032	-0.00001	0.00197
	A	!B	0.01307	0.01274	0.01479
	B	A	0.01326	0.01331	0.02166
	B	A	0.00485	0.00492	0.01341
	B	!A	0.00088	0.00097	0.00469
	B	!A	0.01144	0.01152	0.01530
sky130_fd_sc_hs__xnor2_4	A	B	0.02185	0.02220	0.03869
	A	B	0.00303	0.00335	0.01983
	A	!B	-0.00013	-0.00078	0.00342
	A	!B	0.02410	0.02344	0.02780
	B	A	0.02120	0.02120	0.03820
	B	A	0.00643	0.00640	0.02348
	B	!A	0.00071	0.00097	0.00843
	B	!A	0.02089	0.02105	0.02866

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	0.00232	0.00285	0.01305
	A	B	0.00944	0.00997	0.02003
	A	!B	0.00811	0.00801	0.00928
	A	!B	0.00082	0.00069	0.00159
	B	A	0.00378	0.00353	0.01392
	B	A	0.00936	0.00910	0.01940
	B	!A	0.00555	0.00552	0.00650
	B	!A	-0.00018	-0.00024	0.00065
sky130_fd_sc_hs__xnor2_2	A	B	0.00461	0.00518	0.01522
	A	B	0.01512	0.01569	0.02562
	A	!B	0.01551	0.01521	0.01725
	A	!B	0.00269	0.00232	0.00416
	B	A	0.00761	0.00671	0.01660
	B	A	0.01576	0.01484	0.02462
	B	!A	0.01088	0.01079	0.01326
	B	!A	0.00044	0.00031	0.00219
sky130_fd_sc_hs__xnor2_4	A	B	0.00749	0.00838	0.02813
	A	B	0.02639	0.02719	0.04664
	A	!B	0.02863	0.02793	0.03246
	A	!B	0.00422	0.00342	0.00746
	B	A	0.01133	0.01033	0.02962
	B	A	0.02565	0.02461	0.04356
	B	!A	0.02022	0.02007	0.02536
	B	!A	0.00037	0.00019	0.00444

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00270	0.00712	0.00430	0.74519
sky130_fd_sc_hs__xnor3_2	0.00275	0.00714	0.00435	1.48261
sky130_fd_sc_hs__xnor3_4	0.00274	0.00712	0.00426	2.91869

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor3_1	0.00000	1.04045	1.20139
sky130_fd_sc_hs__xnor3_2	0.00000	1.07113	1.23670
sky130_fd_sc_hs__xnor3_4	0.00000	1.13635	1.31092

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)	0.44080	1.32259	8.81234
	B->X (-R)	0.31224	1.12647	8.39051
	C->X (-R)	0.23349	1.05792	8.25601
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.46689	1.25131	8.83291
	B->X (-R)	0.33113	1.04607	8.39116
	C->X (-R)	0.24719	0.97580	8.26221
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.53234	1.26604	8.92311
	B->X (-R)	0.40255	1.06758	8.48485
	C->X (-R)	0.31051	0.99245	8.36934

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.44465	1.14931	5.50037
	B->X (-F)	0.41178	1.10185	5.52825
	C->X (-F)	0.23770	0.86036	4.82868
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.49448	1.17637	5.58432
	B->X (-F)	0.46224	1.12637	5.61905
	C->X (-F)	0.30794	0.92886	5.03762
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.59417	1.28021	5.95568
	B->X (-F)	0.58425	1.24914	6.04572
	C->X (-F)	0.46668	1.08055	5.52497

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02129	0.02134	0.02959
	A	0.02090	0.02136	0.03127
	B	0.01979	0.02046	0.04189
	B	0.01943	0.02086	0.04459
	C	0.00966	0.00975	0.02289
	C	0.01030	0.01173	0.02490
sky130_fd_sc_hs__xnor3_2	A	0.02365	0.02390	0.03188
	A	0.02307	0.02369	0.03382
	B	0.02207	0.02293	0.04417
	B	0.02161	0.02312	0.04768
	C	0.01210	0.01256	0.02533
	C	0.01246	0.01408	0.02740
sky130_fd_sc_hs__xnor3_4	A	0.02945	0.02970	0.03776
	A	0.02874	0.02936	0.04009
	B	0.02753	0.02851	0.04971
	B	0.02722	0.02862	0.05176
	C	0.01769	0.01825	0.03108
	C	0.01803	0.01956	0.03306

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01979	0.01981	0.02840
	A	0.02133	0.02158	0.03098
	B	0.01706	0.01778	0.03941
	B	0.02011	0.02123	0.04370
	C	0.01019	0.01099	0.02352
	C	0.00889	0.00951	0.02356
sky130_fd_sc_hs__xnor3_2	A	0.01925	0.01904	0.02923
	A	0.02383	0.02362	0.03303
	B	0.01968	0.02004	0.04114
	B	0.02257	0.02343	0.04571
	C	0.01276	0.01307	0.02569
	C	0.01145	0.01188	0.02586
sky130_fd_sc_hs__xnor3_4	A	0.02629	0.02444	0.03598
	A	0.03080	0.02894	0.03846
	B	0.01980	0.01882	0.04213
	B	0.02933	0.02841	0.05046
	C	0.01377	0.01205	0.02748
	C	0.01921	0.01749	0.03129

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00528	0.00548	0.34156
sky130_fd_sc_hs__xor2_2	0.00813	0.00807	0.66745
sky130_fd_sc_hs__xor2_4	0.01648	0.01611	1.20106

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	0.09180	0.14716
sky130_fd_sc_hs__xor2_2	0.00000	0.13389	0.18280
sky130_fd_sc_hs__xor2_4	0.00000	0.26372	0.36086

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	0.14534	1.01500	7.27810
	A->X (FR)	B	0.16959	1.19201	10.61640
	B->X (RR)	!A	0.17167	1.02943	7.49209
	B->X (FR)	A	0.13503	1.13315	10.37310
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.12140	0.86795	7.58651
	A->X (FR)	B	0.14920	1.02405	10.74760
	B->X (RR)	!A	0.13936	0.84664	7.49197
	B->X (FR)	A	0.11886	0.99178	10.72550
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.11258	0.72029	7.39978
	A->X (FR)	B	0.14937	0.88572	10.38410
	B->X (RR)	!A	0.12408	0.68702	7.10821
	B->X (FR)	A	0.12037	0.85955	10.48910

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	0.20428	0.63816	2.87096
	A->X (RF)	B	0.05880	0.54544	5.02589
	B->X (FF)	!A	0.18815	0.62817	2.79597
	B->X (RF)	A	0.04923	0.58415	5.56202
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.26697	0.79566	4.40934
	A->X (RF)	B	0.05463	0.49255	5.17801
	B->X (FF)	!A	0.23740	0.78365	4.35809
	B->X (RF)	A	0.04815	0.55937	6.08156
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.26474	0.74186	4.30168
	A->X (RF)	B	0.05561	0.43270	4.99196
	B->X (FF)	!A	0.22852	0.71824	4.24247
	B->X (RF)	A	0.04911	0.48502	5.76254

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	0.00053	0.00043	0.00138
	A	B	0.00791	0.00783	0.00880
	A	!B	0.01034	0.01038	0.01633
	A	!B	0.00281	0.00282	0.00882
	B	A	0.00059	0.00046	0.00142
	B	A	0.00627	0.00617	0.00711
	B	!A	0.00918	0.00848	0.01611
	B	!A	0.00333	0.00262	0.01025
sky130_fd_sc_hs__xor2_2	A	B	0.00164	0.00146	0.00331
	A	B	0.01368	0.01347	0.01541
	A	!B	0.01389	0.01386	0.02080
	A	!B	0.00343	0.00338	0.01040
	B	A	0.00063	0.00047	0.00240
	B	A	0.01034	0.01016	0.01216
	B	!A	0.01355	0.01248	0.02102
	B	!A	0.00543	0.00437	0.01291
sky130_fd_sc_hs__xor2_4	A	B	0.00257	0.00203	0.00607
	A	B	0.02790	0.02736	0.03153
	A	!B	0.02788	0.02758	0.04178
	A	!B	0.00732	0.00696	0.02124
	B	A	0.00170	0.00135	0.00544
	B	A	0.02198	0.02141	0.02588
	B	!A	0.02468	0.02308	0.04070
	B	!A	0.00916	0.00756	0.02523

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	0.00746	0.00714	0.00822
	A	B	0.00012	-0.00026	0.00065
	A	!B	0.00195	0.00207	0.00762
	A	!B	0.00942	0.00952	0.01514
	B	A	0.00638	0.00636	0.00744
	B	A	0.00063	0.00053	0.00170
	B	!A	0.00298	0.00330	0.01131
	B	!A	0.00902	0.00930	0.01736
sky130_fd_sc_hs__xor2_2	A	B	0.01276	0.01222	0.01434
	A	B	0.00071	0.00011	0.00194
	A	!B	0.00178	0.00194	0.00826
	A	!B	0.01209	0.01232	0.01860
	B	A	0.01089	0.01070	0.01283
	B	A	0.00117	0.00094	0.00311
	B	!A	0.00314	0.00343	0.01233
	B	!A	0.01173	0.01207	0.02093
sky130_fd_sc_hs__xor2_4	A	B	0.02618	0.02490	0.03032
	A	B	0.00085	-0.00054	0.00336
	A	!B	0.00376	0.00410	0.01714
	A	!B	0.02406	0.02442	0.03738
	B	A	0.02220	0.02156	0.02672
	B	A	0.00169	0.00105	0.00579
	B	!A	0.00696	0.00772	0.02594
	B	!A	0.02339	0.02409	0.04203

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_ss_1.60v_100C.ccs
Cell Library: Process , Voltage 1.60,
Temp 100.00

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	0.00270	0.00731	0.00429	0.75597
sky130_fd_sc_hs__xor3_2	0.00271	0.00740	0.00429	1.48124
sky130_fd_sc_hs__xor3_4	0.00269	0.00749	0.00425	2.90519

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	1.04199	1.20304
sky130_fd_sc_hs__xor3_2	0.00000	1.07210	1.23716
sky130_fd_sc_hs__xor3_4	0.00000	1.13816	1.31233

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)	0.42836	1.30326	8.78239
	B->X (-R)	0.30116	1.10865	8.31662
	C->X (-R)	0.22821	1.05665	8.26469
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.45711	1.24107	8.75491
	B->X (-R)	0.32269	1.03532	8.29147
	C->X (-R)	0.24454	0.98048	8.25568
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.52639	1.26110	8.92242
	B->X (-R)	0.39034	1.05114	8.44345
	C->X (-R)	0.29161	0.97350	8.40916

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.44673	1.14455	5.41613
	B->X (-F)	0.41372	1.09186	5.44111
	C->X (-F)	0.21926	0.82596	4.70713
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.49380	1.17576	5.57977
	B->X (-F)	0.46602	1.12829	5.62904
	C->X (-F)	0.29899	0.92700	5.07272
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.60827	1.29504	5.97999
	B->X (-F)	0.59641	1.25823	6.05979
	C->X (-F)	0.45687	1.08601	5.57434

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02250	0.02249	0.03053
	A	0.02086	0.02130	0.03112
	B	0.02060	0.02145	0.04322
	B	0.01863	0.02009	0.04301
	C	0.00980	0.00990	0.02318
	C	0.01022	0.01166	0.02495
sky130_fd_sc_hs__xor3_2	A	0.02495	0.02514	0.03312
	A	0.02313	0.02377	0.03384
	B	0.02301	0.02402	0.04558
	B	0.02106	0.02263	0.04554
	C	0.01228	0.01255	0.02566
	C	0.01278	0.01441	0.02770
sky130_fd_sc_hs__xor3_4	A	0.03058	0.03088	0.03884
	A	0.02896	0.02974	0.04025
	B	0.02847	0.02953	0.05089
	B	0.02691	0.02861	0.05398
	C	0.01772	0.01801	0.03071
	C	0.01804	0.01981	0.03600

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02124	0.02114	0.02972
	A	0.02143	0.02168	0.03094
	B	0.01902	0.01973	0.04094
	B	0.01996	0.02128	0.04312
	C	0.01078	0.01171	0.02431
	C	0.00881	0.00946	0.02356
sky130_fd_sc_hs__xor3_2	A	0.01953	0.01923	0.02953
	A	0.02394	0.02363	0.03305
	B	0.02170	0.02212	0.04289
	B	0.02245	0.02346	0.04522
	C	0.01341	0.01418	0.02702
	C	0.01126	0.01181	0.02583
sky130_fd_sc_hs__xor3_4	A	0.02718	0.02514	0.03846
	A	0.03165	0.02959	0.03904
	B	0.02038	0.01934	0.04390
	B	0.03020	0.02924	0.05111
	C	0.01390	0.01220	0.02777
	C	0.01935	0.01761	0.03130