sky130_fd_sc_hs_ff_1.95v_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_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00282	0.00275	0.00283	0.00296	0.00295	0.46310
sky130_fd_sc_hs__a2111oi_2	0.00537	0.00525	0.00434	0.00436	0.00435	0.77323
sky130_fd_sc_hs__a2111oi_4	0.01066	0.01054	0.00850	0.00837	0.00852	1.37503

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	32.46420	118.85700
sky130_fd_sc_hs__a2111oi_2	0.00000	64.08570	237.26300
sky130_fd_sc_hs__a2111oi_4	0.00000	128.07100	473.79900

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)	0.11605	0.79144	8.01182
	A2->Y (FR)	0.13764	0.83361	8.29669
	B1->Y (FR)	0.12710	0.86805	8.89064
	C1->Y (FR)	0.10823	0.89124	9.35030
	D1->Y (FR)	0.07968	0.88760	9.57125
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.10960	0.66568	7.75877
	A2->Y (FR)	0.13726	0.70074	7.95539
	B1->Y (FR)	0.12150	0.70840	8.12633
	C1->Y (FR)	0.10069	0.74224	8.81769
	D1->Y (FR)	0.05964	0.73034	9.03666
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.10597	0.55124	7.39696
	A2->Y (FR)	0.13678	0.59346	7.70186
	B1->Y (FR)	0.12131	0.60805	8.02775
	C1->Y (FR)	0.09743	0.64080	8.73391
	D1->Y (FR)	0.05602	0.63720	9.02516

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.02650	0.27454	2.47259
	A2->Y (RF)	0.02928	0.23966	2.01467
	B1->Y (RF)	0.02009	0.20596	1.75820
	C1->Y (RF)	0.02001	0.19884	1.70682
	D1->Y (RF)	0.01682	0.19038	1.66034
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.02327	0.23001	2.37090
	A2->Y (RF)	0.02777	0.19455	1.85773
	B1->Y (RF)	0.03115	0.29548	3.28944
	C1->Y (RF)	0.02923	0.28251	3.20885
	D1->Y (RF)	0.02066	0.26624	3.15643
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.02546	0.19802	2.41002
	A2->Y (RF)	0.02920	0.14787	1.64952
	B1->Y (RF)	0.02715	0.22621	2.88758
	C1->Y (RF)	0.02593	0.21174	2.79655
	D1->Y (RF)	0.01817	0.19990	2.81934

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00079	0.00395	0.10485
	A1	0.01183	0.01502	0.11597
	A2	0.00128	0.00450	0.10852
	A2	0.01383	0.01709	0.12104
	B1	0.00056	0.00526	0.11087
	B1	0.00999	0.01471	0.12028
	C1	0.00054	0.00546	0.10014
	C1	0.00857	0.01350	0.10875
	D1	0.00040	0.00707	0.11333
	D1	0.00710	0.01377	0.12004
sky130_fd_sc_hs__a2111oi_2	A1	0.00037	0.00660	0.19237
	A1	0.02128	0.02754	0.21356
	A2	0.00231	0.00858	0.20269
	A2	0.02620	0.03244	0.22672
	B1	0.00122	0.00772	0.15575
	B1	0.01732	0.02382	0.17185
	C1	0.00136	0.00814	0.13618
	C1	0.01435	0.02115	0.14951
	D1	0.00114	0.01106	0.15653
	D1	0.01109	0.02104	0.16648

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00029	0.01274	0.35359
	A1	0.04164	0.05468	0.39575
	A2	0.00319	0.01616	0.37280
	A2	0.05114	0.06405	0.42109
	B1	0.00159	0.01541	0.29884
	B1	0.03373	0.04759	0.33084
	C1	0.00173	0.01624	0.26327
	C1	0.02765	0.04215	0.28979
	D1	0.00128	0.02165	0.29563
	D1	0.02105	0.04147	0.31541

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01757	0.02121	0.10844
	A1	0.00652	0.01014	0.09738
	A2	0.01895	0.02233	0.11030
	A2	0.00639	0.00974	0.09772
	B1	0.01289	0.01789	0.11572
	B1	0.00348	0.00843	0.10631
	C1	0.01019	0.01529	0.10491
	C1	0.00218	0.00723	0.09688
	D1	0.00810	0.01343	0.10117
	D1	0.00144	0.00673	0.09449

sky130_fd_sc_hs__a2111oi_2	**A1**	0.03359	0.04062	0.20219
	A1	0.01270	0.01967	0.18132
	A2	0.03627	0.04300	0.20994
	A2	0.01238	0.01907	0.18595
	B1	0.02303	0.02971	0.16106
	B1	0.00692	0.01361	0.14486
	C1	0.01750	0.02431	0.14272
	C1	0.00453	0.01129	0.12959
	D1	0.01185	0.01967	0.13162
	D1	0.00194	0.00968	0.12155
sky130_fd_sc_hs__a2111oi_4	**A1**	0.06587	0.08080	0.38839
	A1	0.02394	0.03878	0.34614
	A2	0.07128	0.08629	0.41737
	A2	0.02332	0.03826	0.36924
	B1	0.04505	0.05982	0.32439
	B1	0.01289	0.02766	0.29192
	C1	0.03359	0.04878	0.28536
	C1	0.00777	0.02286	0.25910
	D1	0.02341	0.04015	0.25873
	D1	0.00363	0.02027	0.23884

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)**	0.00202	0.00200	0.00197
	(A2 * B1 * D1 * !Y)	-0.00236	-0.00246	-0.00244
	(A2 * B1 * C1 * !D1 * !Y)	0.00214	0.00204	0.00201
	(A2 * B1 * C1 * !D1 * !Y)	-0.00224	-0.00243	-0.00241
	(A2 * B1 * !C1 * !D1 * !Y)	0.00288	0.00244	0.00249
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00160	-0.00210	-0.00194
	(A2 * !B1 * C1 * D1 * !Y)	0.00216	0.00205	0.00200
	(A2 * !B1 * C1 * D1 * !Y)	-0.00218	-0.00241	-0.00240
	(A2 * !B1 * C1 * !D1 * !Y)	0.00295	0.00250	0.00254
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00154	-0.00207	-0.00190
	(A2 * !B1 * !C1 * D1 * !Y)	0.00321	0.00274	0.00295
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00136	-0.00190	-0.00152
	(!A2 * B1 * D1 * !Y)	0.00191	0.00194	0.00192
	(!A2 * B1 * D1 * !Y)	-0.00245	-0.00247	-0.00246
	(!A2 * B1 * C1 * !D1 * !Y)	0.00194	0.00197	0.00195
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00242	-0.00244	-0.00243
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00243	0.00246	0.00244
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00193	-0.00195	-0.00193
	(!A2 * !B1 * C1 * D1 * !Y)	0.00194	0.00197	0.00195
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00242	-0.00244	-0.00243
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00248	0.00250	0.00248
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00189	-0.00191	-0.00189
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00291	0.00293	0.00292
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00145	-0.00147	-0.00146
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00067	0.00067	0.00064
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00276	-0.00277	-0.00281

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00403	0.00397	0.00395
	(A2 * B1 * D1 * !Y)	-0.00471	-0.00489	-0.00487
	(A2 * B1 * C1 * !D1 * !Y)	0.00428	0.00405	0.00402
	(A2 * B1 * C1 * !D1 * !Y)	-0.00448	-0.00482	-0.00480
	(A2 * B1 * !C1 * !D1 * !Y)	0.00587	0.00486	0.00499
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00309	-0.00417	-0.00386
	(A2 * !B1 * C1 * D1 * !Y)	0.00430	0.00406	0.00401
	(A2 * !B1 * C1 * D1 * !Y)	-0.00435	-0.00479	-0.00478
	(A2 * !B1 * C1 * !D1 * !Y)	0.00599	0.00497	0.00507
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00299	-0.00410	-0.00379
	(A2 * !B1 * !C1 * D1 * !Y)	0.00648	0.00544	0.00590
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00262	-0.00375	-0.00302
	(!A2 * B1 * D1 * !Y)	0.00382	0.00385	0.00383
	(!A2 * B1 * D1 * !Y)	-0.00489	-0.00491	-0.00490
	(!A2 * B1 * C1 * !D1 * !Y)	0.00388	0.00392	0.00389
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00483	-0.00487	-0.00484
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00487	0.00490	0.00486
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00387	-0.00389	-0.00386
	(!A2 * !B1 * C1 * D1 * !Y)	0.00387	0.00390	0.00388
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00482	-0.00485	-0.00484
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00495	0.00496	0.00495
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00378	-0.00378	-0.00377
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00582	0.00583	0.00582
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00291	-0.00291	-0.00290
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00130	0.00131	0.00123
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00553	-0.00559	-0.00569

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00809	0.00795	0.00793
	(A2 * B1 * D1 * !Y)	-0.00945	-0.00980	-0.00977
	(A2 * B1 * C1 * !D1 * !Y)	0.00858	0.00809	0.00806
	(A2 * B1 * C1 * !D1 * !Y)	-0.00899	-0.00967	-0.00964
	(A2 * B1 * !C1 * !D1 * !Y)	0.01164	0.00968	0.01000
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00636	-0.00840	-0.00777
	(A2 * !B1 * C1 * D1 * !Y)	0.00864	0.00813	0.00805
	(A2 * !B1 * C1 * D1 * !Y)	-0.00876	-0.00961	-0.00958
	(A2 * !B1 * C1 * !D1 * !Y)	0.01188	0.00994	0.01017
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00616	-0.00827	-0.00761
	(A2 * !B1 * !C1 * D1 * !Y)	0.01285	0.01089	0.01182
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00546	-0.00761	-0.00608
	(!A2 * B1 * D1 * !Y)	0.00768	0.00775	0.00769
	(!A2 * B1 * D1 * !Y)	-0.00984	-0.00988	-0.00982
	(!A2 * B1 * C1 * !D1 * !Y)	0.00779	0.00785	0.00780
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00973	-0.00977	-0.00972
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00973	0.00980	0.00976
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00769	-0.00778	-0.00774
	(!A2 * !B1 * C1 * D1 * !Y)	0.00778	0.00786	0.00780
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00969	-0.00975	-0.00970
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00994	0.00997	0.00993
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00759	-0.00761	-0.00757
	(!A2 * !B1 * !C1 * D1 * !Y)	0.01167	0.01169	0.01166
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00586	-0.00587	-0.00584
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00249	0.00251	0.00236
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.01119	-0.01130	-0.01149

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)**	-0.00189	-0.00190	-0.00189
	(A2 * B1 * D1 * !Y)	0.00251	0.00255	0.00252
	(A2 * B1 * C1 * !D1 * !Y)	-0.00185	-0.00186	-0.00186
	(A2 * B1 * C1 * !D1 * !Y)	0.00255	0.00257	0.00256
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00141	-0.00143	-0.00148
	(A2 * B1 * !C1 * !D1 * !Y)	0.00306	0.00307	0.00299
	(A2 * !B1 * C1 * D1 * !Y)	-0.00185	-0.00186	-0.00185
	(A2 * !B1 * C1 * D1 * !Y)	0.00252	0.00255	0.00253
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00134	-0.00135	-0.00140
	(A2 * !B1 * C1 * !D1 * !Y)	0.00313	0.00313	0.00308
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00090	-0.00093	-0.00103
	(A2 * !B1 * !C1 * D1 * !Y)	0.00362	0.00363	0.00350
	(!A2 * B1 * D1 * !Y)	-0.00184	-0.00186	-0.00186
	(!A2 * B1 * D1 * !Y)	0.00252	0.00254	0.00253
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00182	-0.00183	-0.00183
	(!A2 * B1 * C1 * !D1 * !Y)	0.00257	0.00257	0.00256
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00133	-0.00134	-0.00134
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00305	0.00306	0.00305
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00181	-0.00183	-0.00183
	(!A2 * !B1 * C1 * D1 * !Y)	0.00254	0.00257	0.00256
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00128	-0.00131	-0.00129
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00309	0.00312	0.00310
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00085	-0.00087	-0.00086
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00352	0.00356	0.00353
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00047	-0.00047	-0.00047
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00297	0.00299	0.00297

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00377	-0.00381	-0.00378
	(A2 * B1 * D1 * !Y)	0.00501	0.00508	0.00503
	(A2 * B1 * C1 * !D1 * !Y)	-0.00372	-0.00374	-0.00372
	(A2 * B1 * C1 * !D1 * !Y)	0.00509	0.00514	0.00510
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00282	-0.00285	-0.00295
	(A2 * B1 * !C1 * !D1 * !Y)	0.00611	0.00610	0.00597
	(A2 * !B1 * C1 * D1 * !Y)	-0.00370	-0.00373	-0.00370
	(A2 * !B1 * C1 * D1 * !Y)	0.00502	0.00508	0.00504
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00268	-0.00271	-0.00280
	(A2 * !B1 * C1 * !D1 * !Y)	0.00624	0.00626	0.00614
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00180	-0.00183	-0.00205
	(A2 * !B1 * !C1 * D1 * !Y)	0.00721	0.00718	0.00697
	(!A2 * B1 * D1 * !Y)	-0.00367	-0.00375	-0.00371
	(!A2 * B1 * D1 * !Y)	0.00504	0.00512	0.00505
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00361	-0.00370	-0.00366
	(!A2 * B1 * C1 * !D1 * !Y)	0.00509	0.00517	0.00511
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00262	-0.00268	-0.00267
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00607	0.00614	0.00609
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00360	-0.00366	-0.00365
	(!A2 * !B1 * C1 * D1 * !Y)	0.00510	0.00509	0.00511
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00254	-0.00260	-0.00259
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00616	0.00623	0.00618
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00167	-0.00173	-0.00172
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00703	0.00709	0.00704
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00102	-0.00104	-0.00102
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00584	0.00592	0.00588

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00758	-0.00761	-0.00760
	(A2 * B1 * D1 * !Y)	0.01005	0.01012	0.01010
	(A2 * B1 * C1 * !D1 * !Y)	-0.00746	-0.00751	-0.00748
	(A2 * B1 * C1 * !D1 * !Y)	0.01019	0.01027	0.01023
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00571	-0.00577	-0.00598
	(A2 * B1 * !C1 * !D1 * !Y)	0.01225	0.01225	0.01195
	(A2 * !B1 * C1 * D1 * !Y)	-0.00746	-0.00749	-0.00744
	(A2 * !B1 * C1 * D1 * !Y)	0.01014	0.01021	0.01012
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00542	-0.00547	-0.00564
	(A2 * !B1 * C1 * !D1 * !Y)	0.01254	0.01256	0.01230
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00366	-0.00373	-0.00415
	(A2 * !B1 * !C1 * D1 * !Y)	0.01450	0.01446	0.01398
	(!A2 * B1 * D1 * !Y)	-0.00739	-0.00747	-0.00745
	(!A2 * B1 * D1 * !Y)	0.01015	0.01012	0.01013
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00728	-0.00737	-0.00734
	(!A2 * B1 * C1 * !D1 * !Y)	0.01025	0.01026	0.01024
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00531	-0.00538	-0.00538
	(!A2 * B1 * !C1 * !D1 * !Y)	0.01221	0.01224	0.01221
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00724	-0.00736	-0.00733
	(!A2 * !B1 * C1 * D1 * !Y)	0.01022	0.01030	0.01025
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00511	-0.00519	-0.00521
	(!A2 * !B1 * C1 * !D1 * !Y)	0.01235	0.01241	0.01238
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00338	-0.00348	-0.00348
	(!A2 * !B1 * !C1 * D1 * !Y)	0.01407	0.01417	0.01410
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00196	-0.00199	-0.00196
	(!A2 * !B1 * !C1 * !D1 * Y)	0.01181	0.01195	0.01186

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)**	0.00214	0.00211	0.00208
	(A1 * B1 * D1 * !Y)	-0.00237	-0.00247	-0.00246
	(A1 * B1 * C1 * !D1 * !Y)	0.00226	0.00215	0.00212
	(A1 * B1 * C1 * !D1 * !Y)	-0.00226	-0.00244	-0.00242
	(A1 * B1 * !C1 * !D1 * !Y)	0.00300	0.00255	0.00260
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00161	-0.00212	-0.00196
	(A1 * !B1 * C1 * D1 * !Y)	0.00227	0.00216	0.00211
	(A1 * !B1 * C1 * D1 * !Y)	-0.00220	-0.00242	-0.00241
	(A1 * !B1 * C1 * !D1 * !Y)	0.00306	0.00261	0.00265
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00156	-0.00208	-0.00191
	(A1 * !B1 * !C1 * D1 * !Y)	0.00331	0.00286	0.00306
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00138	-0.00191	-0.00153
	(!A1 * B1 * !Y)	0.00203	0.00203	0.00204
	(!A1 * B1 * !Y)	-0.00247	-0.00247	-0.00247
	(!A1 * !B1 * C1 * !Y)	0.00206	0.00209	0.00207
	(!A1 * !B1 * C1 * !Y)	-0.00244	-0.00246	-0.00244
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00303	0.00306	0.00304
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00147	-0.00148	-0.00147
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00211	0.00214	0.00212
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00241	-0.00243	-0.00241

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00405	0.00399	0.00397
	(A1 * B1 * D1 * !Y)	-0.00470	-0.00487	-0.00485
	(A1 * B1 * C1 * !D1 * !Y)	0.00428	0.00407	0.00404
	(A1 * B1 * C1 * !D1 * !Y)	-0.00447	-0.00481	-0.00479
	(A1 * B1 * !C1 * !D1 * !Y)	0.00585	0.00487	0.00501
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00312	-0.00416	-0.00385
	(A1 * !B1 * C1 * D1 * !Y)	0.00430	0.00407	0.00403
	(A1 * !B1 * C1 * D1 * !Y)	-0.00436	-0.00477	-0.00476
	(A1 * !B1 * C1 * !D1 * !Y)	0.00594	0.00498	0.00509
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00304	-0.00410	-0.00377
	(A1 * !B1 * !C1 * D1 * !Y)	0.00643	0.00546	0.00592
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00268	-0.00375	-0.00301
	(!A1 * B1 * !Y)	0.00385	0.00388	0.00385
	(!A1 * B1 * !Y)	-0.00488	-0.00490	-0.00488
	(!A1 * !B1 * C1 * !Y)	0.00391	0.00395	0.00391
	(!A1 * !B1 * C1 * !Y)	-0.00482	-0.00484	-0.00482
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00584	0.00588	0.00585
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00288	-0.00290	-0.00288
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00394	0.00395	0.00396
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00481	-0.00482	-0.00482

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00817	0.00801	0.00797
	(A1 * B1 * D1 * !Y)	-0.00948	-0.00979	-0.00975
	(A1 * B1 * C1 * !D1 * !Y)	0.00866	0.00816	0.00811
	(A1 * B1 * C1 * !D1 * !Y)	-0.00902	-0.00966	-0.00962
	(A1 * B1 * !C1 * !D1 * !Y)	0.01169	0.00974	0.01005
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00642	-0.00839	-0.00775
	(A1 * !B1 * C1 * D1 * !Y)	0.00870	0.00819	0.00810
	(A1 * !B1 * C1 * D1 * !Y)	-0.00882	-0.00959	-0.00957
	(A1 * !B1 * C1 * !D1 * !Y)	0.01187	0.00999	0.01022
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00628	-0.00826	-0.00759
	(A1 * !B1 * !C1 * D1 * !Y)	0.01283	0.01093	0.01187
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00560	-0.00759	-0.00607
	(!A1 * B1 * !Y)	0.00770	0.00782	0.00773
	(!A1 * B1 * !Y)	-0.00979	-0.00987	-0.00981
	(!A1 * !B1 * C1 * !Y)	0.00780	0.00793	0.00784
	(!A1 * !B1 * C1 * !Y)	-0.00966	-0.00975	-0.00969
	(!A1 * !B1 * !C1 * D1 * !Y)	0.01167	0.01179	0.01171
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00579	-0.00588	-0.00582
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00791	0.00804	0.00795
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00968	-0.00976	-0.00970

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)**	-0.00199	-0.00201	-0.00200
	(A1 * B1 * D1 * !Y)	0.00252	0.00256	0.00254
	(A1 * B1 * C1 * !D1 * !Y)	-0.00196	-0.00197	-0.00197
	(A1 * B1 * C1 * !D1 * !Y)	0.00256	0.00258	0.00258
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00152	-0.00153	-0.00159
	(A1 * B1 * !C1 * !D1 * !Y)	0.00307	0.00307	0.00301
	(A1 * !B1 * C1 * D1 * !Y)	-0.00195	-0.00197	-0.00196
	(A1 * !B1 * C1 * D1 * !Y)	0.00254	0.00256	0.00255
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00144	-0.00147	-0.00151
	(A1 * !B1 * C1 * !D1 * !Y)	0.00314	0.00316	0.00309
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00100	-0.00104	-0.00114
	(A1 * !B1 * !C1 * D1 * !Y)	0.00363	0.00364	0.00351
	(!A1 * B1 * !Y)	-0.00196	-0.00197	-0.00196
	(!A1 * B1 * !Y)	0.00255	0.00255	0.00255
	(!A1 * !B1 * C1 * !Y)	-0.00193	-0.00194	-0.00193
	(!A1 * !B1 * C1 * !Y)	0.00258	0.00259	0.00258
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00096	-0.00097	-0.00097
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00355	0.00355	0.00355
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00170	-0.00187	-0.00189
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00285	0.00267	0.00262

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00379	-0.00382	-0.00381
	(A1 * B1 * D1 * !Y)	0.00499	0.00504	0.00501
	(A1 * B1 * C1 * !D1 * !Y)	-0.00375	-0.00376	-0.00375
	(A1 * B1 * C1 * !D1 * !Y)	0.00508	0.00512	0.00508
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00284	-0.00288	-0.00298
	(A1 * B1 * !C1 * !D1 * !Y)	0.00609	0.00612	0.00595
	(A1 * !B1 * C1 * D1 * !Y)	-0.00372	-0.00375	-0.00373
	(A1 * !B1 * C1 * D1 * !Y)	0.00500	0.00507	0.00502
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00271	-0.00273	-0.00282
	(A1 * !B1 * C1 * !D1 * !Y)	0.00623	0.00623	0.00612
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00183	-0.00185	-0.00207
	(A1 * !B1 * !C1 * D1 * !Y)	0.00720	0.00715	0.00696
	(!A1 * B1 * !Y)	-0.00368	-0.00373	-0.00373
	(!A1 * B1 * !Y)	0.00501	0.00506	0.00503
	(!A1 * !B1 * C1 * !Y)	-0.00362	-0.00368	-0.00367
	(!A1 * !B1 * C1 * !Y)	0.00507	0.00512	0.00509
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00169	-0.00175	-0.00174
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00700	0.00705	0.00702
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00315	-0.00357	-0.00367
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00561	0.00531	0.00510

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00765	-0.00769	-0.00764
	(A1 * B1 * D1 * !Y)	0.01008	0.01017	0.01008
	(A1 * B1 * C1 * !D1 * !Y)	-0.00750	-0.00754	-0.00752
	(A1 * B1 * C1 * !D1 * !Y)	0.01018	0.01026	0.01022
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00570	-0.00580	-0.00602
	(A1 * B1 * !C1 * !D1 * !Y)	0.01216	0.01224	0.01194
	(A1 * !B1 * C1 * D1 * !Y)	-0.00749	-0.00751	-0.00748
	(A1 * !B1 * C1 * D1 * !Y)	0.01011	0.01015	0.01010
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00546	-0.00550	-0.00568
	(A1 * !B1 * C1 * !D1 * !Y)	0.01252	0.01251	0.01228
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00371	-0.00381	-0.00420
	(A1 * !B1 * !C1 * D1 * !Y)	0.01447	0.01449	0.01396
	(!A1 * B1 * !Y)	-0.00741	-0.00750	-0.00748
	(!A1 * B1 * !Y)	0.01008	0.01017	0.01012
	(!A1 * !B1 * C1 * !Y)	-0.00729	-0.00738	-0.00736
	(!A1 * !B1 * C1 * !Y)	0.01020	0.01029	0.01024
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00343	-0.00353	-0.00351
	(!A1 * !B1 * !C1 * D1 * !Y)	0.01406	0.01414	0.01409
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00635	-0.00720	-0.00736
	(!A1 * !B1 * !C1 * !D1 * Y)	0.01130	0.01058	0.01025

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)**	0.00224	0.00220	0.00209
	(A1 * A2 * C1 * D1 * !Y)	-0.00167	-0.00170	-0.00172
	(A1 * A2 * C1 * !D1 * !Y)	0.00239	0.00234	0.00223
	(A1 * A2 * C1 * !D1 * !Y)	-0.00144	-0.00151	-0.00154
	(A1 * A2 * !C1 * D1 * !Y)	0.00243	0.00255	0.00241
	(A1 * A2 * !C1 * D1 * !Y)	-0.00140	-0.00131	-0.00133
	(A1 * A2 * !C1 * !D1 * !Y)	0.00247	0.00248	0.00247
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00074	-0.00074	-0.00070
	(A1 * !A2 * C1 * D1 * !Y)	0.00241	0.00212	0.00207
	(A1 * !A2 * C1 * D1 * !Y)	-0.00205	-0.00235	-0.00236
	(A1 * !A2 * C1 * !D1 * !Y)	0.00295	0.00242	0.00260
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00157	-0.00210	-0.00185
	(A1 * !A2 * !C1 * D1 * !Y)	0.00330	0.00264	0.00300
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00130	-0.00196	-0.00148
	(!A1 * C1 * D1 * !Y)	0.00239	0.00211	0.00207
	(!A1 * C1 * D1 * !Y)	-0.00207	-0.00235	-0.00236
	(!A1 * C1 * !D1 * !Y)	0.00293	0.00242	0.00260
	(!A1 * C1 * !D1 * !Y)	-0.00159	-0.00211	-0.00185
	(!A1 * !C1 * D1 * !Y)	0.00327	0.00263	0.00300
	(!A1 * !C1 * D1 * !Y)	-0.00132	-0.00197	-0.00148

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00276	0.00271	0.00250
	(A1 * A2 * C1 * D1 * !Y)	-0.00323	-0.00333	-0.00334
	(A1 * A2 * C1 * !D1 * !Y)	0.00309	0.00298	0.00269
	(A1 * A2 * C1 * !D1 * !Y)	-0.00282	-0.00296	-0.00305
	(A1 * A2 * !C1 * D1 * !Y)	0.00311	0.00343	0.00310
	(A1 * A2 * !C1 * D1 * !Y)	-0.00288	-0.00262	-0.00268
	(A1 * A2 * !C1 * !D1 * !Y)	0.00340	0.00342	0.00336
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00133	-0.00136	-0.00132
	(A1 * !A2 * C1 * D1 * !Y)	0.00305	0.00249	0.00242
	(A1 * !A2 * C1 * D1 * !Y)	-0.00410	-0.00476	-0.00475
	(A1 * !A2 * C1 * !D1 * !Y)	0.00428	0.00317	0.00347
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00303	-0.00421	-0.00374
	(A1 * !A2 * !C1 * D1 * !Y)	0.00488	0.00367	0.00428
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00255	-0.00384	-0.00298
	(!A1 * C1 * D1 * !Y)	0.00304	0.00250	0.00242
	(!A1 * C1 * D1 * !Y)	-0.00412	-0.00475	-0.00475
	(!A1 * C1 * !D1 * !Y)	0.00425	0.00318	0.00347
	(!A1 * C1 * !D1 * !Y)	-0.00306	-0.00420	-0.00374
	(!A1 * !C1 * D1 * !Y)	0.00485	0.00367	0.00428
	(!A1 * !C1 * D1 * !Y)	-0.00258	-0.00384	-0.00298

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00525	0.00516	0.00476
	(A1 * A2 * C1 * D1 * !Y)	-0.00666	-0.00680	-0.00683
	(A1 * A2 * C1 * !D1 * !Y)	0.00581	0.00569	0.00514
	(A1 * A2 * C1 * !D1 * !Y)	-0.00581	-0.00604	-0.00623
	(A1 * A2 * !C1 * D1 * !Y)	0.00596	0.00661	0.00599
	(A1 * A2 * !C1 * D1 * !Y)	-0.00589	-0.00533	-0.00544
	(A1 * A2 * !C1 * !D1 * !Y)	0.00646	0.00651	0.00645
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00286	-0.00293	-0.00278
	(A1 * !A2 * C1 * D1 * !Y)	0.00609	0.00482	0.00467
	(A1 * !A2 * C1 * D1 * !Y)	-0.00836	-0.00970	-0.00971
	(A1 * !A2 * C1 * !D1 * !Y)	0.00852	0.00617	0.00677
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00624	-0.00860	-0.00768
	(A1 * !A2 * !C1 * D1 * !Y)	0.00972	0.00714	0.00839
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00531	-0.00792	-0.00617
	(!A1 * C1 * D1 * !Y)	0.00604	0.00483	0.00467
	(!A1 * C1 * D1 * !Y)	-0.00842	-0.00968	-0.00971
	(!A1 * C1 * !D1 * !Y)	0.00844	0.00619	0.00677
	(!A1 * C1 * !D1 * !Y)	-0.00632	-0.00858	-0.00768
	(!A1 * !C1 * D1 * !Y)	0.00958	0.00713	0.00839
	(!A1 * !C1 * D1 * !Y)	-0.00532	-0.00793	-0.00618

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)**	-0.00198	-0.00200	-0.00198
	(A1 * A2 * C1 * D1 * !Y)	0.00179	0.00181	0.00176
	(A1 * A2 * C1 * !D1 * !Y)	-0.00194	-0.00195	-0.00193
	(A1 * A2 * C1 * !D1 * !Y)	0.00179	0.00180	0.00177
	(A1 * A2 * !C1 * D1 * !Y)	-0.00200	-0.00200	-0.00196
	(A1 * A2 * !C1 * D1 * !Y)	0.00165	0.00166	0.00165
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00099	-0.00103	-0.00158
	(A1 * A2 * !C1 * !D1 * !Y)	0.00221	0.00219	0.00170
	(A1 * !A2 * C1 * D1 * !Y)	-0.00191	-0.00190	-0.00191
	(A1 * !A2 * C1 * D1 * !Y)	0.00252	0.00251	0.00252
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00144	-0.00146	-0.00153
	(A1 * !A2 * C1 * !D1 * !Y)	0.00304	0.00304	0.00295
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00096	-0.00100	-0.00113
	(A1 * !A2 * !C1 * D1 * !Y)	0.00355	0.00355	0.00340
	(!A1 * C1 * D1 * !Y)	-0.00190	-0.00192	-0.00191
	(!A1 * C1 * D1 * !Y)	0.00251	0.00255	0.00252
	(!A1 * C1 * !D1 * !Y)	-0.00143	-0.00146	-0.00153
	(!A1 * C1 * !D1 * !Y)	0.00303	0.00304	0.00295
	(!A1 * !C1 * D1 * !Y)	-0.00097	-0.00099	-0.00113
	(!A1 * !C1 * D1 * !Y)	0.00356	0.00355	0.00340

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00222	-0.00224	-0.00221
	(A1 * A2 * C1 * D1 * !Y)	0.00353	0.00358	0.00349
	(A1 * A2 * C1 * !D1 * !Y)	-0.00215	-0.00217	-0.00210
	(A1 * A2 * C1 * !D1 * !Y)	0.00352	0.00356	0.00350
	(A1 * A2 * !C1 * D1 * !Y)	-0.00227	-0.00228	-0.00220
	(A1 * A2 * !C1 * D1 * !Y)	0.00332	0.00334	0.00333
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00044	-0.00050	-0.00160
	(A1 * A2 * !C1 * !D1 * !Y)	0.00434	0.00428	0.00329
	(A1 * !A2 * C1 * D1 * !Y)	-0.00209	-0.00212	-0.00210
	(A1 * !A2 * C1 * D1 * !Y)	0.00506	0.00512	0.00508
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00116	-0.00119	-0.00135
	(A1 * !A2 * C1 * !D1 * !Y)	0.00611	0.00610	0.00594
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00021	-0.00025	-0.00053
	(A1 * !A2 * !C1 * D1 * !Y)	0.00715	0.00711	0.00684
	(!A1 * C1 * D1 * !Y)	-0.00210	-0.00212	-0.00210
	(!A1 * C1 * D1 * !Y)	0.00506	0.00512	0.00508
	(!A1 * C1 * !D1 * !Y)	-0.00116	-0.00119	-0.00135
	(!A1 * C1 * !D1 * !Y)	0.00611	0.00609	0.00594
	(!A1 * !C1 * D1 * !Y)	-0.00022	-0.00026	-0.00053
	(!A1 * !C1 * D1 * !Y)	0.00717	0.00712	0.00684

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00425	-0.00427	-0.00423
	(A1 * A2 * C1 * D1 * !Y)	0.00723	0.00726	0.00710
	(A1 * A2 * C1 * !D1 * !Y)	-0.00412	-0.00414	-0.00404
	(A1 * A2 * C1 * !D1 * !Y)	0.00718	0.00723	0.00711
	(A1 * A2 * !C1 * D1 * !Y)	-0.00437	-0.00439	-0.00424
	(A1 * A2 * !C1 * D1 * !Y)	0.00668	0.00674	0.00669
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00069	-0.00083	-0.00300
	(A1 * A2 * !C1 * !D1 * !Y)	0.00871	0.00863	0.00665
	(A1 * !A2 * C1 * D1 * !Y)	-0.00403	-0.00406	-0.00403
	(A1 * !A2 * C1 * D1 * !Y)	0.01035	0.01044	0.01036
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00216	-0.00225	-0.00254
	(A1 * !A2 * C1 * !D1 * !Y)	0.01243	0.01248	0.01207
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00025	-0.00037	-0.00091
	(A1 * !A2 * !C1 * D1 * !Y)	0.01447	0.01448	0.01387
	(!A1 * C1 * D1 * !Y)	-0.00402	-0.00405	-0.00403
	(!A1 * C1 * D1 * !Y)	0.01034	0.01044	0.01036
	(!A1 * C1 * !D1 * !Y)	-0.00216	-0.00225	-0.00254
	(!A1 * C1 * !D1 * !Y)	0.01244	0.01249	0.01207
	(!A1 * !C1 * D1 * !Y)	-0.00026	-0.00037	-0.00090
	(!A1 * !C1 * D1 * !Y)	0.01449	0.01449	0.01387

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)**	0.00242	0.00242	0.00235
	(A1 * B1 * D1 * !Y)	-0.00133	-0.00133	-0.00135
	(A1 * B1 * !D1 * !Y)	0.00224	0.00228	0.00221
	(A1 * B1 * !D1 * !Y)	-0.00095	-0.00097	-0.00098
	(A1 * A2 * !B1 * D1 * !Y)	0.00273	0.00255	0.00263
	(A1 * A2 * !B1 * D1 * !Y)	-0.00115	-0.00135	-0.00121
	(A1 * A2 * !B1 * !D1 * !Y)	0.00242	0.00243	0.00244
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00060	-0.00059	-0.00057
	(A1 * !A2 * !B1 * D1 * !Y)	0.00308	0.00253	0.00308
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00146	-0.00202	-0.00140
	(!A1 * B1 * D1 * !Y)	0.00238	0.00239	0.00233
	(!A1 * B1 * D1 * !Y)	-0.00133	-0.00134	-0.00136
	(!A1 * B1 * !D1 * !Y)	0.00239	0.00239	0.00237
	(!A1 * B1 * !D1 * !Y)	-0.00087	-0.00086	-0.00084
	(!A1 * !B1 * D1 * !Y)	0.00307	0.00253	0.00308
	(!A1 * !B1 * D1 * !Y)	-0.00146	-0.00202	-0.00140

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00281	0.00288	0.00268
	(A1 * B1 * D1 * !Y)	-0.00289	-0.00284	-0.00295
	(A1 * B1 * !D1 * !Y)	0.00249	0.00250	0.00239
	(A1 * B1 * !D1 * !Y)	-0.00204	-0.00206	-0.00211
	(A1 * A2 * !B1 * D1 * !Y)	0.00359	0.00314	0.00318
	(A1 * A2 * !B1 * D1 * !Y)	-0.00234	-0.00279	-0.00263
	(A1 * A2 * !B1 * !D1 * !Y)	0.00299	0.00299	0.00298
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00124	-0.00123	-0.00119
	(A1 * !A2 * !B1 * D1 * !Y)	0.00457	0.00313	0.00414
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00274	-0.00420	-0.00307
	(!A1 * B1 * D1 * !Y)	0.00276	0.00285	0.00266
	(!A1 * B1 * D1 * !Y)	-0.00294	-0.00287	-0.00296
	(!A1 * B1 * !D1 * !Y)	0.00287	0.00290	0.00282
	(!A1 * B1 * !D1 * !Y)	-0.00174	-0.00176	-0.00171
	(!A1 * !B1 * D1 * !Y)	0.00457	0.00313	0.00414
	(!A1 * !B1 * D1 * !Y)	-0.00275	-0.00420	-0.00307

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00558	0.00563	0.00525
	(A1 * B1 * D1 * !Y)	-0.00560	-0.00555	-0.00575
	(A1 * B1 * !D1 * !Y)	0.00487	0.00490	0.00463
	(A1 * B1 * !D1 * !Y)	-0.00403	-0.00408	-0.00418
	(A1 * A2 * !B1 * D1 * !Y)	0.00705	0.00609	0.00622
	(A1 * A2 * !B1 * D1 * !Y)	-0.00449	-0.00545	-0.00508
	(A1 * A2 * !B1 * !D1 * !Y)	0.00590	0.00598	0.00586
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00231	-0.00238	-0.00228
	(A1 * !A2 * !B1 * D1 * !Y)	0.00892	0.00605	0.00815
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00546	-0.00835	-0.00600
	(!A1 * B1 * D1 * !Y)	0.00548	0.00555	0.00520
	(!A1 * B1 * D1 * !Y)	-0.00565	-0.00562	-0.00577
	(!A1 * B1 * !D1 * !Y)	0.00569	0.00575	0.00555
	(!A1 * B1 * !D1 * !Y)	-0.00345	-0.00349	-0.00343
	(!A1 * !B1 * D1 * !Y)	0.00891	0.00607	0.00815
	(!A1 * !B1 * D1 * !Y)	-0.00547	-0.00833	-0.00601

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)**	-0.00209	-0.00210	-0.00208
	(A1 * B1 * D1 * !Y)	0.00150	0.00151	0.00150
	(A1 * B1 * !D1 * !Y)	-0.00196	-0.00198	-0.00208
	(A1 * B1 * !D1 * !Y)	0.00122	0.00123	0.00115
	(A1 * A2 * !B1 * D1 * !Y)	-0.00210	-0.00211	-0.00203
	(A1 * A2 * !B1 * D1 * !Y)	0.00160	0.00161	0.00161
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00088	-0.00092	-0.00146
	(A1 * A2 * !B1 * !D1 * !Y)	0.00221	0.00220	0.00175
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00108	-0.00111	-0.00127
	(A1 * !A2 * !B1 * D1 * !Y)	0.00343	0.00341	0.00324
	(!A1 * B1 * D1 * !Y)	-0.00209	-0.00210	-0.00208
	(!A1 * B1 * D1 * !Y)	0.00155	0.00156	0.00153
	(!A1 * B1 * !D1 * !Y)	-0.00160	-0.00163	-0.00193
	(!A1 * B1 * !D1 * !Y)	0.00163	0.00162	0.00134
	(!A1 * !B1 * D1 * !Y)	-0.00108	-0.00111	-0.00127
	(!A1 * !B1 * D1 * !Y)	0.00343	0.00341	0.00324

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00219	-0.00220	-0.00217
	(A1 * B1 * D1 * !Y)	0.00322	0.00324	0.00322
	(A1 * B1 * !D1 * !Y)	-0.00197	-0.00198	-0.00207
	(A1 * B1 * !D1 * !Y)	0.00254	0.00255	0.00248
	(A1 * A2 * !B1 * D1 * !Y)	-0.00215	-0.00215	-0.00203
	(A1 * A2 * !B1 * D1 * !Y)	0.00338	0.00340	0.00342
	(A1 * A2 * !B1 * !D1 * !Y)	0.00011	0.00005	-0.00109
	(A1 * A2 * !B1 * !D1 * !Y)	0.00443	0.00443	0.00348
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00010	-0.00017	-0.00049
	(A1 * !A2 * !B1 * D1 * !Y)	0.00714	0.00714	0.00677
	(!A1 * B1 * D1 * !Y)	-0.00219	-0.00219	-0.00215
	(!A1 * B1 * D1 * !Y)	0.00332	0.00334	0.00330
	(!A1 * B1 * !D1 * !Y)	-0.00132	-0.00136	-0.00192
	(!A1 * B1 * !D1 * !Y)	0.00328	0.00327	0.00272
	(!A1 * !B1 * D1 * !Y)	-0.00010	-0.00017	-0.00049
	(!A1 * !B1 * D1 * !Y)	0.00714	0.00714	0.00677

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00423	-0.00427	-0.00419
	(A1 * B1 * D1 * !Y)	0.00631	0.00639	0.00633
	(A1 * B1 * !D1 * !Y)	-0.00389	-0.00391	-0.00405
	(A1 * B1 * !D1 * !Y)	0.00503	0.00503	0.00489
	(A1 * A2 * !B1 * D1 * !Y)	-0.00415	-0.00416	-0.00393
	(A1 * A2 * !B1 * D1 * !Y)	0.00657	0.00660	0.00663
	(A1 * A2 * !B1 * !D1 * !Y)	0.00026	0.00016	-0.00207
	(A1 * A2 * !B1 * !D1 * !Y)	0.00874	0.00873	0.00690
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00006	-0.00021	-0.00087
	(A1 * !A2 * !B1 * D1 * !Y)	0.01416	0.01413	0.01340
	(!A1 * B1 * D1 * !Y)	-0.00422	-0.00425	-0.00417
	(!A1 * B1 * D1 * !Y)	0.00650	0.00655	0.00646
	(!A1 * B1 * !D1 * !Y)	-0.00253	-0.00265	-0.00375
	(!A1 * B1 * !D1 * !Y)	0.00655	0.00659	0.00546
	(!A1 * !B1 * D1 * !Y)	-0.00006	-0.00020	-0.00086
	(!A1 * !B1 * D1 * !Y)	0.01417	0.01414	0.01340

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00233	0.00235	0.00233
	(A1 * C1 * !Y)	-0.00096	-0.00097	-0.00096
	(A1 * B1 * !C1 * !Y)	0.00233	0.00235	0.00234
	(A1 * B1 * !C1 * !Y)	-0.00093	-0.00093	-0.00092
	(A1 * A2 * !B1 * !C1 * !Y)	0.00235	0.00240	0.00242
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00063	-0.00064	-0.00058
	(!A1 * C1 * !Y)	0.00233	0.00235	0.00234
	(!A1 * C1 * !Y)	-0.00096	-0.00097	-0.00096
	(!A1 * B1 * !C1 * !Y)	0.00234	0.00237	0.00238
	(!A1 * B1 * !C1 * !Y)	-0.00080	-0.00080	-0.00076

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00265	0.00267	0.00265
	(A1 * C1 * !Y)	-0.00196	-0.00198	-0.00196
	(A1 * B1 * !C1 * !Y)	0.00266	0.00269	0.00266
	(A1 * B1 * !C1 * !Y)	-0.00190	-0.00192	-0.00187
	(A1 * A2 * !B1 * !C1 * !Y)	0.00269	0.00271	0.00281
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00130	-0.00130	-0.00120
	(!A1 * C1 * !Y)	0.00265	0.00267	0.00266
	(!A1 * C1 * !Y)	-0.00196	-0.00197	-0.00195
	(!A1 * B1 * !C1 * !Y)	0.00267	0.00270	0.00274
	(!A1 * B1 * !C1 * !Y)	-0.00163	-0.00164	-0.00157
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00526	0.00530	0.00527
	(A1 * C1 * !Y)	-0.00384	-0.00386	-0.00382
	(A1 * B1 * !C1 * !Y)	0.00524	0.00534	0.00528
	(A1 * B1 * !C1 * !Y)	-0.00371	-0.00378	-0.00369
	(A1 * A2 * !B1 * !C1 * !Y)	0.00532	0.00539	0.00557
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00247	-0.00250	-0.00227
	(!A1 * C1 * !Y)	0.00526	0.00531	0.00528
	(!A1 * C1 * !Y)	-0.00383	-0.00385	-0.00381
	(!A1 * B1 * !C1 * !Y)	0.00530	0.00535	0.00544
	(!A1 * B1 * !C1 * !Y)	-0.00319	-0.00321	-0.00307

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00216	-0.00216	-0.00224
	(A1 * C1 * !Y)	0.00113	0.00112	0.00106
	(A1 * B1 * !C1 * !Y)	-0.00195	-0.00198	-0.00216
	(A1 * B1 * !C1 * !Y)	0.00125	0.00126	0.00112
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00078	-0.00081	-0.00127
	(A1 * A2 * !B1 * !C1 * !Y)	0.00230	0.00229	0.00192
	(!A1 * C1 * !Y)	-0.00213	-0.00215	-0.00223
	(!A1 * C1 * !Y)	0.00113	0.00114	0.00108
	(!A1 * B1 * !C1 * !Y)	-0.00151	-0.00154	-0.00178
	(!A1 * B1 * !C1 * !Y)	0.00168	0.00168	0.00146
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00230	-0.00232	-0.00254
	(A1 * C1 * !Y)	0.00229	0.00229	0.00211
	(A1 * B1 * !C1 * !Y)	-0.00191	-0.00195	-0.00238
	(A1 * B1 * !C1 * !Y)	0.00251	0.00252	0.00222
	(A1 * A2 * !B1 * !C1 * !Y)	0.00050	0.00045	-0.00053
	(A1 * A2 * !B1 * !C1 * !Y)	0.00466	0.00466	0.00387
	(!A1 * C1 * !Y)	-0.00225	-0.00228	-0.00251
	(!A1 * C1 * !Y)	0.00232	0.00233	0.00214
	(!A1 * B1 * !C1 * !Y)	-0.00095	-0.00100	-0.00156
	(!A1 * B1 * !C1 * !Y)	0.00344	0.00345	0.00297
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00453	-0.00456	-0.00499
	(A1 * C1 * !Y)	0.00450	0.00450	0.00417
	(A1 * B1 * !C1 * !Y)	-0.00375	-0.00381	-0.00467
	(A1 * B1 * !C1 * !Y)	0.00497	0.00500	0.00441
	(A1 * A2 * !B1 * !C1 * !Y)	0.00099	0.00088	-0.00102
	(A1 * A2 * !B1 * !C1 * !Y)	0.00916	0.00916	0.00764
	(!A1 * C1 * !Y)	-0.00443	-0.00449	-0.00493
	(!A1 * C1 * !Y)	0.00454	0.00457	0.00424
	(!A1 * B1 * !C1 * !Y)	-0.00189	-0.00199	-0.00307
	(!A1 * B1 * !C1 * !Y)	0.00678	0.00679	0.00586

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00260	0.00275	0.00261	0.00265	0.00261	1.69980
sky130_fd_sc_hs__a2111o_2	0.00288	0.00302	0.00282	0.00291	0.00303	3.17135
sky130_fd_sc_hs__a2111o_4	0.00490	0.00488	0.00502	0.00503	0.00495	6.07363

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	49.50140	143.22900
sky130_fd_sc_hs__a2111o_2	0.00000	59.91640	250.25400
sky130_fd_sc_hs__a2111o_4	0.00000	126.38000	520.07500

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)	0.06169	0.43308	5.39863
	A2->X (RR)	0.06503	0.42087	5.20278
	B1->X (RR)	0.05035	0.38981	4.86304
	C1->X (RR)	0.04841	0.37684	4.69875
	D1->X (RR)	0.04265	0.35859	4.58558
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.06524	0.37348	5.33940
	A2->X (RR)	0.06855	0.35643	5.14021
	B1->X (RR)	0.05108	0.32734	4.82346
	C1->X (RR)	0.04822	0.31326	4.65204
	D1->X (RR)	0.04369	0.29886	4.55480
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.07229	0.31983	5.36752
	A2->X (RR)	0.07672	0.30254	5.11359
	B1->X (RR)	0.05092	0.25267	4.61480
	C1->X (RR)	0.04879	0.24021	4.42709
	D1->X (RR)	0.04245	0.22301	4.33095

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.16032	0.53645	6.13718
	A2->X (FF)	0.17110	0.55603	6.24202
	B1->X (FF)	0.14475	0.56286	6.50482
	C1->X (FF)	0.12585	0.57373	6.60629
	D1->X (FF)	0.09667	0.57144	6.68117
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.18099	0.51296	5.92299
	A2->X (FF)	0.18904	0.53237	6.04480
	B1->X (FF)	0.16543	0.54168	6.29051
	C1->X (FF)	0.14565	0.55507	6.41020
	D1->X (FF)	0.11845	0.55490	6.47723
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.20544	0.50148	6.20341
	A2->X (FF)	0.23084	0.53936	6.39008
	B1->X (FF)	0.21807	0.56632	6.69231
	C1->X (FF)	0.19691	0.58910	6.83375
	D1->X (FF)	0.15329	0.58403	6.81633

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.02227	0.03104	0.21402
	A1	0.01212	0.02091	0.20415
	A2	0.02338	0.03121	0.21224
	A2	0.01209	0.01993	0.20086
	B1	0.01690	0.02728	0.21265
	B1	0.00835	0.01874	0.20402
	C1	0.01462	0.02449	0.18971
	C1	0.00734	0.01723	0.18237
	D1	0.01378	0.02460	0.19832
	D1	0.00777	0.01862	0.19226
sky130_fd_sc_hs__a2111o_2	A1	0.02857	0.03768	0.23751
	A1	0.01723	0.02638	0.22669
	A2	0.03005	0.03818	0.23708
	A2	0.01727	0.02544	0.22408
	B1	0.02191	0.03325	0.23503
	B1	0.01240	0.02376	0.22533
	C1	0.01895	0.02989	0.20839
	C1	0.01083	0.02179	0.20037
	D1	0.01758	0.02931	0.21675
	D1	0.01074	0.02248	0.21000

sky130_fd_sc_hs__a2111o_4	**A1**	0.05643	0.07118	0.42450
	A1	0.03646	0.05139	0.40541
	A2	0.05905	0.07155	0.41329
	A2	0.03638	0.04894	0.39002
	B1	0.04287	0.06350	0.42712
	B1	0.02558	0.04631	0.40971
	C1	0.03767	0.05671	0.36249
	C1	0.02314	0.04222	0.34779
	D1	0.03389	0.05448	0.37175
	D1	0.02228	0.04288	0.36085

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.01060	0.01445	0.19406
	A1	0.02077	0.02461	0.20206
	A2	0.01172	0.01530	0.19391
	A2	0.02299	0.02658	0.20447
	B1	0.00981	0.01623	0.19859
	B1	0.01836	0.02468	0.20530
	C1	0.00980	0.01599	0.17789
	C1	0.01707	0.02326	0.18370
	D1	0.00982	0.01780	0.18826
	D1	0.01582	0.02380	0.19345

sky130_fd_sc_hs__a2111o_2	**A1**	0.02356	0.02177	0.21205
	A1	0.03490	0.03306	0.22340
	A2	0.02480	0.02264	0.21725
	A2	0.03755	0.03539	0.22829
	B1	0.02138	0.02337	0.22390
	B1	0.03087	0.03286	0.22550
	C1	0.02134	0.02344	0.19651
	C1	0.02945	0.03145	0.20191
	D1	0.02116	0.02502	0.20945
	D1	0.02800	0.03185	0.21180
sky130_fd_sc_hs__a2111o_4	**A1**	0.05180	0.04269	0.37509
	A1	0.07174	0.06256	0.39451
	A2	0.05794	0.04526	0.37903
	A2	0.08063	0.06793	0.39649
	B1	0.04711	0.04506	0.39292
	B1	0.06441	0.06218	0.40620
	C1	0.04735	0.04452	0.33230
	C1	0.06183	0.05895	0.34680
	D1	0.04706	0.04796	0.34864
	D1	0.05871	0.05955	0.35166

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)**	0.00211	0.00208	0.00206
	(A2 * B1 * D1 * X)	-0.00210	-0.00219	-0.00218
	(A2 * B1 * C1 * !D1 * X)	0.00223	0.00211	0.00210
	(A2 * B1 * C1 * !D1 * X)	-0.00199	-0.00215	-0.00215
	(A2 * B1 * !C1 * !D1 * X)	0.00294	0.00251	0.00261
	(A2 * B1 * !C1 * !D1 * X)	-0.00138	-0.00184	-0.00165
	(A2 * !B1 * C1 * D1 * X)	0.00224	0.00211	0.00209
	(A2 * !B1 * C1 * D1 * X)	-0.00195	-0.00213	-0.00213
	(A2 * !B1 * C1 * !D1 * X)	0.00301	0.00257	0.00267
	(A2 * !B1 * C1 * !D1 * X)	-0.00134	-0.00180	-0.00160
	(A2 * !B1 * !C1 * D1 * X)	0.00328	0.00284	0.00321
	(A2 * !B1 * !C1 * D1 * X)	-0.00115	-0.00162	-0.00110
	(!A2 * B1 * D1 * X)	0.00201	0.00204	0.00202
	(!A2 * B1 * D1 * X)	-0.00218	-0.00220	-0.00219
	(!A2 * B1 * C1 * !D1 * X)	0.00204	0.00206	0.00204
	(!A2 * B1 * C1 * !D1 * X)	-0.00216	-0.00218	-0.00216
	(!A2 * B1 * !C1 * !D1 * X)	0.00257	0.00259	0.00258
	(!A2 * B1 * !C1 * !D1 * X)	-0.00163	-0.00165	-0.00164
	(!A2 * !B1 * C1 * D1 * X)	0.00204	0.00207	0.00205
	(!A2 * !B1 * C1 * D1 * X)	-0.00216	-0.00217	-0.00216
	(!A2 * !B1 * C1 * !D1 * X)	0.00262	0.00265	0.00263
	(!A2 * !B1 * C1 * !D1 * X)	-0.00157	-0.00160	-0.00158
	(!A2 * !B1 * !C1 * D1 * X)	0.00321	0.00322	0.00322
	(!A2 * !B1 * !C1 * D1 * X)	-0.00099	-0.00100	-0.00100
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00197	0.00196	0.00194
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00140	-0.00141	-0.00145

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00218	0.00216	0.00213
	(A2 * B1 * D1 * X)	-0.00235	-0.00245	-0.00243
	(A2 * B1 * C1 * !D1 * X)	0.00230	0.00216	0.00216
	(A2 * B1 * C1 * !D1 * X)	-0.00223	-0.00239	-0.00240
	(A2 * B1 * !C1 * !D1 * X)	0.00303	0.00259	0.00264
	(A2 * B1 * !C1 * !D1 * X)	-0.00160	-0.00210	-0.00193
	(A2 * !B1 * C1 * D1 * X)	0.00230	0.00220	0.00216
	(A2 * !B1 * C1 * D1 * X)	-0.00217	-0.00239	-0.00238
	(A2 * !B1 * C1 * !D1 * X)	0.00308	0.00265	0.00269
	(A2 * !B1 * C1 * !D1 * X)	-0.00155	-0.00206	-0.00189
	(A2 * !B1 * !C1 * D1 * X)	0.00334	0.00289	0.00310
	(A2 * !B1 * !C1 * D1 * X)	-0.00137	-0.00189	-0.00150
	(!A2 * B1 * D1 * X)	0.00206	0.00209	0.00207
	(!A2 * B1 * D1 * X)	-0.00244	-0.00246	-0.00244
	(!A2 * B1 * C1 * !D1 * X)	0.00209	0.00212	0.00210
	(!A2 * B1 * C1 * !D1 * X)	-0.00241	-0.00243	-0.00242
	(!A2 * B1 * !C1 * !D1 * X)	0.00258	0.00261	0.00259
	(!A2 * B1 * !C1 * !D1 * X)	-0.00191	-0.00194	-0.00192
	(!A2 * !B1 * C1 * D1 * X)	0.00209	0.00212	0.00210
	(!A2 * !B1 * C1 * D1 * X)	-0.00240	-0.00243	-0.00241
	(!A2 * !B1 * C1 * !D1 * X)	0.00263	0.00265	0.00263
	(!A2 * !B1 * C1 * !D1 * X)	-0.00188	-0.00189	-0.00188
	(!A2 * !B1 * !C1 * D1 * X)	0.00307	0.00308	0.00307
	(!A2 * !B1 * !C1 * D1 * X)	-0.00144	-0.00146	-0.00144
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00278	0.00279	0.00276
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00074	-0.00077	-0.00081

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00367	0.00362	0.00360
	(A2 * B1 * D1 * X)	-0.00423	-0.00440	-0.00438
	(A2 * B1 * C1 * !D1 * X)	0.00390	0.00369	0.00367
	(A2 * B1 * C1 * !D1 * X)	-0.00401	-0.00433	-0.00432
	(A2 * B1 * !C1 * !D1 * X)	0.00551	0.00454	0.00470
	(A2 * B1 * !C1 * !D1 * X)	-0.00263	-0.00366	-0.00332
	(A2 * !B1 * C1 * D1 * X)	0.00392	0.00370	0.00366
	(A2 * !B1 * C1 * D1 * X)	-0.00390	-0.00430	-0.00429
	(A2 * !B1 * C1 * !D1 * X)	0.00563	0.00467	0.00481
	(A2 * !B1 * C1 * !D1 * X)	-0.00254	-0.00359	-0.00322
	(A2 * !B1 * !C1 * D1 * X)	0.00619	0.00522	0.00590
	(A2 * !B1 * !C1 * D1 * X)	-0.00214	-0.00319	-0.00222
	(!A2 * B1 * D1 * X)	0.00349	0.00353	0.00350
	(!A2 * B1 * D1 * X)	-0.00440	-0.00443	-0.00441
	(!A2 * B1 * C1 * !D1 * X)	0.00354	0.00357	0.00355
	(!A2 * B1 * C1 * !D1 * X)	-0.00435	-0.00438	-0.00436
	(!A2 * B1 * !C1 * !D1 * X)	0.00460	0.00462	0.00461
	(!A2 * B1 * !C1 * !D1 * X)	-0.00329	-0.00333	-0.00330
	(!A2 * !B1 * C1 * D1 * X)	0.00356	0.00358	0.00356
	(!A2 * !B1 * C1 * D1 * X)	-0.00436	-0.00438	-0.00435
	(!A2 * !B1 * C1 * !D1 * X)	0.00471	0.00473	0.00472
	(!A2 * !B1 * C1 * !D1 * X)	-0.00319	-0.00322	-0.00319
	(!A2 * !B1 * !C1 * D1 * X)	0.00587	0.00588	0.00588
	(!A2 * !B1 * !C1 * D1 * X)	-0.00202	-0.00205	-0.00203
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00556	0.00558	0.00549
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00071	-0.00075	-0.00087

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)**	-0.00194	-0.00195	-0.00194
	(A2 * B1 * D1 * X)	0.00229	0.00231	0.00230
	(A2 * B1 * C1 * !D1 * X)	-0.00190	-0.00192	-0.00191
	(A2 * B1 * C1 * !D1 * X)	0.00232	0.00235	0.00233
	(A2 * B1 * !C1 * !D1 * X)	-0.00144	-0.00145	-0.00152
	(A2 * B1 * !C1 * !D1 * X)	0.00286	0.00286	0.00278
	(A2 * !B1 * C1 * D1 * X)	-0.00189	-0.00190	-0.00190
	(A2 * !B1 * C1 * D1 * X)	0.00230	0.00231	0.00231
	(A2 * !B1 * C1 * !D1 * X)	-0.00135	-0.00137	-0.00142
	(A2 * !B1 * C1 * !D1 * X)	0.00295	0.00296	0.00288
	(A2 * !B1 * !C1 * D1 * X)	-0.00076	-0.00079	-0.00095
	(A2 * !B1 * !C1 * D1 * X)	0.00360	0.00359	0.00342
	(!A2 * B1 * D1 * X)	-0.00190	-0.00193	-0.00191
	(!A2 * B1 * D1 * X)	0.00230	0.00233	0.00231
	(!A2 * B1 * C1 * !D1 * X)	-0.00188	-0.00190	-0.00188
	(!A2 * B1 * C1 * !D1 * X)	0.00232	0.00236	0.00233
	(!A2 * B1 * !C1 * !D1 * X)	-0.00136	-0.00138	-0.00136
	(!A2 * B1 * !C1 * !D1 * X)	0.00285	0.00288	0.00286
	(!A2 * !B1 * C1 * D1 * X)	-0.00187	-0.00188	-0.00188
	(!A2 * !B1 * C1 * D1 * X)	0.00232	0.00233	0.00233
	(!A2 * !B1 * C1 * !D1 * X)	-0.00130	-0.00132	-0.00130
	(!A2 * !B1 * C1 * !D1 * X)	0.00291	0.00294	0.00291
	(!A2 * !B1 * !C1 * D1 * X)	-0.00072	-0.00074	-0.00072
	(!A2 * !B1 * !C1 * D1 * X)	0.00349	0.00352	0.00349
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00045	0.00044	0.00045
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00382	0.00387	0.00383

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00194	-0.00194	-0.00195
	(A2 * B1 * D1 * X)	0.00260	0.00261	0.00261
	(A2 * B1 * C1 * !D1 * X)	-0.00191	-0.00193	-0.00191
	(A2 * B1 * C1 * !D1 * X)	0.00263	0.00267	0.00264
	(A2 * B1 * !C1 * !D1 * X)	-0.00147	-0.00148	-0.00154
	(A2 * B1 * !C1 * !D1 * X)	0.00314	0.00314	0.00308
	(A2 * !B1 * C1 * D1 * X)	-0.00190	-0.00191	-0.00190
	(A2 * !B1 * C1 * D1 * X)	0.00261	0.00263	0.00262
	(A2 * !B1 * C1 * !D1 * X)	-0.00140	-0.00141	-0.00146
	(A2 * !B1 * C1 * !D1 * X)	0.00321	0.00322	0.00316
	(A2 * !B1 * !C1 * D1 * X)	-0.00096	-0.00097	-0.00109
	(A2 * !B1 * !C1 * D1 * X)	0.00370	0.00369	0.00358
	(!A2 * B1 * D1 * X)	-0.00190	-0.00192	-0.00191
	(!A2 * B1 * D1 * X)	0.00260	0.00263	0.00262
	(!A2 * B1 * C1 * !D1 * X)	-0.00187	-0.00189	-0.00188
	(!A2 * B1 * C1 * !D1 * X)	0.00263	0.00266	0.00264
	(!A2 * B1 * !C1 * !D1 * X)	-0.00138	-0.00140	-0.00139
	(!A2 * B1 * !C1 * !D1 * X)	0.00313	0.00315	0.00314
	(!A2 * !B1 * C1 * D1 * X)	-0.00186	-0.00189	-0.00188
	(!A2 * !B1 * C1 * D1 * X)	0.00263	0.00266	0.00265
	(!A2 * !B1 * C1 * !D1 * X)	-0.00134	-0.00135	-0.00135
	(!A2 * !B1 * C1 * !D1 * X)	0.00318	0.00319	0.00318
	(!A2 * !B1 * !C1 * D1 * X)	-0.00091	-0.00092	-0.00091
	(!A2 * !B1 * !C1 * D1 * X)	0.00361	0.00362	0.00361
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00157	0.00157	0.00157
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00513	0.00515	0.00513

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00326	-0.00328	-0.00326
	(A2 * B1 * D1 * X)	0.00470	0.00475	0.00471
	(A2 * B1 * C1 * !D1 * X)	-0.00320	-0.00323	-0.00321
	(A2 * B1 * C1 * !D1 * X)	0.00475	0.00482	0.00478
	(A2 * B1 * !C1 * !D1 * X)	-0.00224	-0.00229	-0.00241
	(A2 * B1 * !C1 * !D1 * X)	0.00583	0.00588	0.00569
	(A2 * !B1 * C1 * D1 * X)	-0.00319	-0.00318	-0.00319
	(A2 * !B1 * C1 * D1 * X)	0.00471	0.00471	0.00472
	(A2 * !B1 * C1 * !D1 * X)	-0.00209	-0.00212	-0.00223
	(A2 * !B1 * C1 * !D1 * X)	0.00602	0.00604	0.00589
	(A2 * !B1 * !C1 * D1 * X)	-0.00091	-0.00096	-0.00127
	(A2 * !B1 * !C1 * D1 * X)	0.00732	0.00731	0.00697
	(!A2 * B1 * D1 * X)	-0.00315	-0.00323	-0.00320
	(!A2 * B1 * D1 * X)	0.00471	0.00480	0.00474
	(!A2 * B1 * C1 * !D1 * X)	-0.00311	-0.00318	-0.00315
	(!A2 * B1 * C1 * !D1 * X)	0.00479	0.00485	0.00479
	(!A2 * B1 * !C1 * !D1 * X)	-0.00206	-0.00213	-0.00210
	(!A2 * B1 * !C1 * !D1 * X)	0.00584	0.00590	0.00584
	(!A2 * !B1 * C1 * D1 * X)	-0.00311	-0.00317	-0.00314
	(!A2 * !B1 * C1 * D1 * X)	0.00479	0.00485	0.00480
	(!A2 * !B1 * C1 * !D1 * X)	-0.00195	-0.00202	-0.00199
	(!A2 * !B1 * C1 * !D1 * X)	0.00594	0.00601	0.00595
	(!A2 * !B1 * !C1 * D1 * X)	-0.00079	-0.00086	-0.00083
	(!A2 * !B1 * !C1 * D1 * X)	0.00711	0.00717	0.00711
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00347	0.00345	0.00347
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00976	0.00982	0.00979

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)**	0.00194	0.00192	0.00189
	(A1 * B1 * D1 * X)	-0.00218	-0.00228	-0.00226
	(A1 * B1 * C1 * !D1 * X)	0.00207	0.00196	0.00193
	(A1 * B1 * C1 * !D1 * X)	-0.00206	-0.00225	-0.00223
	(A1 * B1 * !C1 * !D1 * X)	0.00280	0.00237	0.00244
	(A1 * B1 * !C1 * !D1 * X)	-0.00142	-0.00192	-0.00173
	(A1 * !B1 * C1 * D1 * X)	0.00208	0.00196	0.00192
	(A1 * !B1 * C1 * D1 * X)	-0.00201	-0.00223	-0.00222
	(A1 * !B1 * C1 * !D1 * X)	0.00289	0.00243	0.00250
	(A1 * !B1 * C1 * !D1 * X)	-0.00136	-0.00188	-0.00168
	(A1 * !B1 * !C1 * D1 * X)	0.00317	0.00271	0.00304
	(A1 * !B1 * !C1 * D1 * X)	-0.00117	-0.00168	-0.00118
	(!A1 * B1 * X)	0.00185	0.00187	0.00185
	(!A1 * B1 * X)	-0.00228	-0.00229	-0.00228
	(!A1 * !B1 * C1 * X)	0.00187	0.00188	0.00187
	(!A1 * !B1 * C1 * X)	-0.00224	-0.00226	-0.00225
	(!A1 * !B1 * !C1 * D1 * X)	0.00303	0.00305	0.00304
	(!A1 * !B1 * !C1 * D1 * X)	-0.00108	-0.00110	-0.00109
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00283	0.00285	0.00283
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00133	-0.00135	-0.00134

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00219	0.00217	0.00214
	(A1 * B1 * D1 * X)	-0.00235	-0.00246	-0.00244
	(A1 * B1 * C1 * !D1 * X)	0.00232	0.00221	0.00217
	(A1 * B1 * C1 * !D1 * X)	-0.00223	-0.00242	-0.00241
	(A1 * B1 * !C1 * !D1 * X)	0.00307	0.00261	0.00266
	(A1 * B1 * !C1 * !D1 * X)	-0.00158	-0.00210	-0.00194
	(A1 * !B1 * C1 * D1 * X)	0.00233	0.00221	0.00217
	(A1 * !B1 * C1 * D1 * X)	-0.00216	-0.00240	-0.00239
	(A1 * !B1 * C1 * !D1 * X)	0.00314	0.00267	0.00270
	(A1 * !B1 * C1 * !D1 * X)	-0.00151	-0.00206	-0.00189
	(A1 * !B1 * !C1 * D1 * X)	0.00340	0.00292	0.00312
	(A1 * !B1 * !C1 * D1 * X)	-0.00132	-0.00189	-0.00151
	(!A1 * B1 * X)	0.00208	0.00210	0.00208
	(!A1 * B1 * X)	-0.00245	-0.00247	-0.00245
	(!A1 * !B1 * C1 * X)	0.00211	0.00214	0.00211
	(!A1 * !B1 * C1 * X)	-0.00242	-0.00244	-0.00242
	(!A1 * !B1 * !C1 * D1 * X)	0.00308	0.00311	0.00308
	(!A1 * !B1 * !C1 * D1 * X)	-0.00145	-0.00147	-0.00145
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00406	0.00407	0.00406
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00051	-0.00052	-0.00051

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00376	0.00371	0.00369
	(A1 * B1 * D1 * X)	-0.00426	-0.00443	-0.00441
	(A1 * B1 * C1 * !D1 * X)	0.00400	0.00379	0.00376
	(A1 * B1 * C1 * !D1 * X)	-0.00404	-0.00436	-0.00435
	(A1 * B1 * !C1 * !D1 * X)	0.00561	0.00463	0.00479
	(A1 * B1 * !C1 * !D1 * X)	-0.00266	-0.00368	-0.00335
	(A1 * !B1 * C1 * D1 * X)	0.00401	0.00379	0.00375
	(A1 * !B1 * C1 * D1 * X)	-0.00394	-0.00432	-0.00432
	(A1 * !B1 * C1 * !D1 * X)	0.00571	0.00476	0.00490
	(A1 * !B1 * C1 * !D1 * X)	-0.00258	-0.00361	-0.00325
	(A1 * !B1 * !C1 * D1 * X)	0.00627	0.00531	0.00599
	(A1 * !B1 * !C1 * D1 * X)	-0.00219	-0.00321	-0.00224
	(!A1 * B1 * X)	0.00357	0.00363	0.00359
	(!A1 * B1 * X)	-0.00443	-0.00446	-0.00444
	(!A1 * !B1 * C1 * X)	0.00363	0.00368	0.00364
	(!A1 * !B1 * C1 * X)	-0.00437	-0.00441	-0.00438
	(!A1 * !B1 * !C1 * D1 * X)	0.00596	0.00600	0.00596
	(!A1 * !B1 * !C1 * D1 * X)	-0.00206	-0.00209	-0.00206
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00800	0.00804	0.00801
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00007	-0.00010	-0.00008

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)**	-0.00176	-0.00178	-0.00177
	(A1 * B1 * D1 * X)	0.00238	0.00241	0.00239
	(A1 * B1 * C1 * !D1 * X)	-0.00174	-0.00174	-0.00173
	(A1 * B1 * C1 * !D1 * X)	0.00243	0.00244	0.00242
	(A1 * B1 * !C1 * !D1 * X)	-0.00127	-0.00128	-0.00135
	(A1 * B1 * !C1 * !D1 * X)	0.00296	0.00296	0.00287
	(A1 * !B1 * C1 * D1 * X)	-0.00172	-0.00174	-0.00173
	(A1 * !B1 * C1 * D1 * X)	0.00239	0.00241	0.00240
	(A1 * !B1 * C1 * !D1 * X)	-0.00118	-0.00119	-0.00125
	(A1 * !B1 * C1 * !D1 * X)	0.00303	0.00304	0.00297
	(A1 * !B1 * !C1 * D1 * X)	-0.00059	-0.00062	-0.00078
	(A1 * !B1 * !C1 * D1 * X)	0.00369	0.00369	0.00351
	(!A1 * B1 * X)	-0.00173	-0.00174	-0.00174
	(!A1 * B1 * X)	0.00239	0.00241	0.00240
	(!A1 * !B1 * C1 * X)	-0.00171	-0.00172	-0.00171
	(!A1 * !B1 * C1 * X)	0.00243	0.00243	0.00243
	(!A1 * !B1 * !C1 * D1 * X)	-0.00055	-0.00056	-0.00055
	(!A1 * !B1 * !C1 * D1 * X)	0.00359	0.00359	0.00358
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00019	-0.00033	-0.00035
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00400	0.00386	0.00380

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00195	-0.00197	-0.00196
	(A1 * B1 * D1 * X)	0.00261	0.00264	0.00262
	(A1 * B1 * C1 * !D1 * X)	-0.00192	-0.00194	-0.00192
	(A1 * B1 * C1 * !D1 * X)	0.00264	0.00268	0.00265
	(A1 * B1 * !C1 * !D1 * X)	-0.00148	-0.00149	-0.00155
	(A1 * B1 * !C1 * !D1 * X)	0.00316	0.00316	0.00309
	(A1 * !B1 * C1 * D1 * X)	-0.00191	-0.00192	-0.00191
	(A1 * !B1 * C1 * D1 * X)	0.00262	0.00264	0.00263
	(A1 * !B1 * C1 * !D1 * X)	-0.00140	-0.00142	-0.00146
	(A1 * !B1 * C1 * !D1 * X)	0.00322	0.00323	0.00317
	(A1 * !B1 * !C1 * D1 * X)	-0.00097	-0.00100	-0.00110
	(A1 * !B1 * !C1 * D1 * X)	0.00371	0.00373	0.00359
	(!A1 * B1 * X)	-0.00191	-0.00193	-0.00192
	(!A1 * B1 * X)	0.00262	0.00264	0.00263
	(!A1 * !B1 * C1 * X)	-0.00188	-0.00190	-0.00189
	(!A1 * !B1 * C1 * X)	0.00264	0.00267	0.00266
	(!A1 * !B1 * !C1 * D1 * X)	-0.00091	-0.00093	-0.00092
	(!A1 * !B1 * !C1 * D1 * X)	0.00361	0.00364	0.00362
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00053	0.00037	0.00033
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00509	0.00496	0.00488

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00334	-0.00336	-0.00335
	(A1 * B1 * D1 * X)	0.00472	0.00477	0.00474
	(A1 * B1 * C1 * !D1 * X)	-0.00328	-0.00331	-0.00329
	(A1 * B1 * C1 * !D1 * X)	0.00478	0.00485	0.00481
	(A1 * B1 * !C1 * !D1 * X)	-0.00234	-0.00238	-0.00250
	(A1 * B1 * !C1 * !D1 * X)	0.00589	0.00591	0.00572
	(A1 * !B1 * C1 * D1 * X)	-0.00327	-0.00330	-0.00327
	(A1 * !B1 * C1 * D1 * X)	0.00473	0.00479	0.00475
	(A1 * !B1 * C1 * !D1 * X)	-0.00218	-0.00221	-0.00232
	(A1 * !B1 * C1 * !D1 * X)	0.00606	0.00606	0.00592
	(A1 * !B1 * !C1 * D1 * X)	-0.00100	-0.00105	-0.00136
	(A1 * !B1 * !C1 * D1 * X)	0.00735	0.00734	0.00699
	(!A1 * B1 * X)	-0.00324	-0.00329	-0.00328
	(!A1 * B1 * X)	0.00475	0.00479	0.00477
	(!A1 * !B1 * C1 * X)	-0.00319	-0.00323	-0.00323
	(!A1 * !B1 * C1 * X)	0.00480	0.00485	0.00483
	(!A1 * !B1 * !C1 * D1 * X)	-0.00087	-0.00092	-0.00092
	(!A1 * !B1 * !C1 * D1 * X)	0.00712	0.00716	0.00714
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00160	0.00122	0.00111
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00968	0.00940	0.00918

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)**	0.00210	0.00207	0.00196
	(A1 * A2 * C1 * D1 * X)	-0.00145	-0.00150	-0.00151
	(A1 * A2 * C1 * !D1 * X)	0.00225	0.00220	0.00210
	(A1 * A2 * C1 * !D1 * X)	-0.00126	-0.00133	-0.00133
	(A1 * A2 * !C1 * D1 * X)	0.00227	0.00239	0.00226
	(A1 * A2 * !C1 * D1 * X)	-0.00124	-0.00115	-0.00115
	(A1 * A2 * !C1 * !D1 * X)	0.00231	0.00232	0.00233
	(A1 * A2 * !C1 * !D1 * X)	-0.00065	-0.00066	-0.00061
	(A1 * !A2 * C1 * D1 * X)	0.00225	0.00200	0.00196
	(A1 * !A2 * C1 * D1 * X)	-0.00182	-0.00209	-0.00209
	(A1 * !A2 * C1 * !D1 * X)	0.00275	0.00230	0.00253
	(A1 * !A2 * C1 * !D1 * X)	-0.00137	-0.00185	-0.00155
	(A1 * !A2 * !C1 * D1 * X)	0.00309	0.00256	0.00305
	(A1 * !A2 * !C1 * D1 * X)	-0.00111	-0.00168	-0.00105
	(!A1 * C1 * D1 * X)	0.00226	0.00200	0.00196
	(!A1 * C1 * D1 * X)	-0.00181	-0.00209	-0.00209
	(!A1 * C1 * !D1 * X)	0.00277	0.00230	0.00253
	(!A1 * C1 * !D1 * X)	-0.00135	-0.00186	-0.00155
	(!A1 * !C1 * D1 * X)	0.00311	0.00256	0.00306
	(!A1 * !C1 * D1 * X)	-0.00109	-0.00168	-0.00105

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00222	0.00221	0.00210
	(A1 * A2 * C1 * D1 * X)	-0.00160	-0.00165	-0.00167
	(A1 * A2 * C1 * !D1 * X)	0.00239	0.00235	0.00223
	(A1 * A2 * C1 * !D1 * X)	-0.00139	-0.00146	-0.00148
	(A1 * A2 * !C1 * D1 * X)	0.00244	0.00256	0.00242
	(A1 * A2 * !C1 * D1 * X)	-0.00135	-0.00126	-0.00128
	(A1 * A2 * !C1 * !D1 * X)	0.00247	0.00249	0.00248
	(A1 * A2 * !C1 * !D1 * X)	-0.00069	-0.00069	-0.00065
	(A1 * !A2 * C1 * D1 * X)	0.00242	0.00214	0.00210
	(A1 * !A2 * C1 * D1 * X)	-0.00202	-0.00230	-0.00231
	(A1 * !A2 * C1 * !D1 * X)	0.00296	0.00245	0.00263
	(A1 * !A2 * C1 * !D1 * X)	-0.00154	-0.00206	-0.00180
	(A1 * !A2 * !C1 * D1 * X)	0.00330	0.00266	0.00303
	(A1 * !A2 * !C1 * D1 * X)	-0.00128	-0.00192	-0.00143
	(!A1 * C1 * D1 * X)	0.00243	0.00215	0.00210
	(!A1 * C1 * D1 * X)	-0.00200	-0.00230	-0.00231
	(!A1 * C1 * !D1 * X)	0.00298	0.00246	0.00263
	(!A1 * C1 * !D1 * X)	-0.00152	-0.00205	-0.00180
	(!A1 * !C1 * D1 * X)	0.00333	0.00267	0.00303
	(!A1 * !C1 * D1 * X)	-0.00125	-0.00191	-0.00143

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00422	0.00419	0.00398
	(A1 * A2 * C1 * D1 * X)	-0.00287	-0.00298	-0.00299
	(A1 * A2 * C1 * !D1 * X)	0.00457	0.00446	0.00417
	(A1 * A2 * C1 * !D1 * X)	-0.00251	-0.00262	-0.00271
	(A1 * A2 * !C1 * D1 * X)	0.00453	0.00484	0.00454
	(A1 * A2 * !C1 * D1 * X)	-0.00256	-0.00233	-0.00238
	(A1 * A2 * !C1 * !D1 * X)	0.00489	0.00493	0.00486
	(A1 * A2 * !C1 * !D1 * X)	-0.00114	-0.00117	-0.00111
	(A1 * !A2 * C1 * D1 * X)	0.00450	0.00400	0.00391
	(A1 * !A2 * C1 * D1 * X)	-0.00366	-0.00428	-0.00428
	(A1 * !A2 * C1 * !D1 * X)	0.00577	0.00472	0.00504
	(A1 * !A2 * C1 * !D1 * X)	-0.00264	-0.00370	-0.00320
	(A1 * !A2 * !C1 * D1 * X)	0.00635	0.00526	0.00611
	(A1 * !A2 * !C1 * D1 * X)	-0.00214	-0.00331	-0.00220
	(!A1 * C1 * D1 * X)	0.00448	0.00400	0.00391
	(!A1 * C1 * D1 * X)	-0.00368	-0.00427	-0.00428
	(!A1 * C1 * !D1 * X)	0.00574	0.00473	0.00504
	(!A1 * C1 * !D1 * X)	-0.00267	-0.00370	-0.00320
	(!A1 * !C1 * D1 * X)	0.00632	0.00525	0.00611
	(!A1 * !C1 * D1 * X)	-0.00216	-0.00332	-0.00220

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)**	-0.00181	-0.00182	-0.00181
	(A1 * A2 * C1 * D1 * X)	0.00163	0.00164	0.00160
	(A1 * A2 * C1 * !D1 * X)	-0.00178	-0.00178	-0.00176
	(A1 * A2 * C1 * !D1 * X)	0.00163	0.00164	0.00161
	(A1 * A2 * !C1 * D1 * X)	-0.00183	-0.00184	-0.00179
	(A1 * A2 * !C1 * D1 * X)	0.00151	0.00152	0.00151
	(A1 * A2 * !C1 * !D1 * X)	-0.00079	-0.00083	-0.00139
	(A1 * A2 * !C1 * !D1 * X)	0.00218	0.00216	0.00164
	(A1 * !A2 * C1 * D1 * X)	-0.00176	-0.00177	-0.00176
	(A1 * !A2 * C1 * D1 * X)	0.00228	0.00231	0.00229
	(A1 * !A2 * C1 * !D1 * X)	-0.00126	-0.00128	-0.00136
	(A1 * !A2 * C1 * !D1 * X)	0.00285	0.00285	0.00275
	(A1 * !A2 * !C1 * D1 * X)	-0.00063	-0.00067	-0.00086
	(A1 * !A2 * !C1 * D1 * X)	0.00353	0.00352	0.00331
	(!A1 * C1 * D1 * X)	-0.00176	-0.00176	-0.00176
	(!A1 * C1 * D1 * X)	0.00228	0.00229	0.00229
	(!A1 * C1 * !D1 * X)	-0.00125	-0.00128	-0.00136
	(!A1 * C1 * !D1 * X)	0.00285	0.00285	0.00275
	(!A1 * !C1 * D1 * X)	-0.00063	-0.00067	-0.00086
	(!A1 * !C1 * D1 * X)	0.00353	0.00351	0.00330

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00189	-0.00190	-0.00189
	(A1 * A2 * C1 * D1 * X)	0.00183	0.00185	0.00181
	(A1 * A2 * C1 * !D1 * X)	-0.00185	-0.00186	-0.00183
	(A1 * A2 * C1 * !D1 * X)	0.00183	0.00184	0.00181
	(A1 * A2 * !C1 * D1 * X)	-0.00191	-0.00192	-0.00187
	(A1 * A2 * !C1 * D1 * X)	0.00170	0.00170	0.00170
	(A1 * A2 * !C1 * !D1 * X)	-0.00091	-0.00094	-0.00150
	(A1 * A2 * !C1 * !D1 * X)	0.00226	0.00223	0.00174
	(A1 * !A2 * C1 * D1 * X)	-0.00183	-0.00185	-0.00184
	(A1 * !A2 * C1 * D1 * X)	0.00256	0.00260	0.00257
	(A1 * !A2 * C1 * !D1 * X)	-0.00136	-0.00140	-0.00147
	(A1 * !A2 * C1 * !D1 * X)	0.00308	0.00310	0.00300
	(A1 * !A2 * !C1 * D1 * X)	-0.00089	-0.00093	-0.00107
	(A1 * !A2 * !C1 * D1 * X)	0.00360	0.00360	0.00345
	(!A1 * C1 * D1 * X)	-0.00184	-0.00185	-0.00184
	(!A1 * C1 * D1 * X)	0.00257	0.00259	0.00257
	(!A1 * C1 * !D1 * X)	-0.00137	-0.00139	-0.00147
	(!A1 * C1 * !D1 * X)	0.00309	0.00309	0.00300
	(!A1 * !C1 * D1 * X)	-0.00090	-0.00093	-0.00107
	(!A1 * !C1 * D1 * X)	0.00360	0.00360	0.00345

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00352	-0.00355	-0.00351
	(A1 * A2 * C1 * D1 * X)	0.00339	0.00342	0.00334
	(A1 * A2 * C1 * !D1 * X)	-0.00345	-0.00347	-0.00341
	(A1 * A2 * C1 * !D1 * X)	0.00339	0.00340	0.00335
	(A1 * A2 * !C1 * D1 * X)	-0.00355	-0.00357	-0.00349
	(A1 * A2 * !C1 * D1 * X)	0.00319	0.00321	0.00320
	(A1 * A2 * !C1 * !D1 * X)	-0.00169	-0.00175	-0.00290
	(A1 * A2 * !C1 * !D1 * X)	0.00438	0.00432	0.00327
	(A1 * !A2 * C1 * D1 * X)	-0.00339	-0.00342	-0.00341
	(A1 * !A2 * C1 * D1 * X)	0.00476	0.00480	0.00478
	(A1 * !A2 * C1 * !D1 * X)	-0.00239	-0.00245	-0.00262
	(A1 * !A2 * C1 * !D1 * X)	0.00591	0.00594	0.00571
	(A1 * !A2 * !C1 * D1 * X)	-0.00114	-0.00121	-0.00159
	(A1 * !A2 * !C1 * D1 * X)	0.00725	0.00722	0.00683
	(!A1 * C1 * D1 * X)	-0.00339	-0.00343	-0.00341
	(!A1 * C1 * D1 * X)	0.00477	0.00483	0.00479
	(!A1 * C1 * !D1 * X)	-0.00239	-0.00245	-0.00261
	(!A1 * C1 * !D1 * X)	0.00591	0.00594	0.00571
	(!A1 * !C1 * D1 * X)	-0.00114	-0.00121	-0.00159
	(!A1 * !C1 * D1 * X)	0.00726	0.00723	0.00683

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)**	0.00217	0.00219	0.00212
	(A1 * B1 * D1 * X)	-0.00118	-0.00118	-0.00120
	(A1 * B1 * !D1 * X)	0.00203	0.00204	0.00199
	(A1 * B1 * !D1 * X)	-0.00087	-0.00088	-0.00090
	(A1 * A2 * !B1 * D1 * X)	0.00249	0.00231	0.00240
	(A1 * A2 * !B1 * D1 * X)	-0.00102	-0.00120	-0.00106
	(A1 * A2 * !B1 * !D1 * X)	0.00220	0.00222	0.00222
	(A1 * A2 * !B1 * !D1 * X)	-0.00053	-0.00054	-0.00050
	(A1 * !A2 * !B1 * D1 * X)	0.00284	0.00232	0.00304
	(A1 * !A2 * !B1 * D1 * X)	-0.00125	-0.00181	-0.00103
	(!A1 * B1 * D1 * X)	0.00214	0.00217	0.00211
	(!A1 * B1 * D1 * X)	-0.00120	-0.00120	-0.00120
	(!A1 * B1 * !D1 * X)	0.00216	0.00218	0.00217
	(!A1 * B1 * !D1 * X)	-0.00079	-0.00080	-0.00076
	(!A1 * !B1 * D1 * X)	0.00284	0.00232	0.00304
	(!A1 * !B1 * D1 * X)	-0.00125	-0.00181	-0.00103

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00231	0.00232	0.00225
	(A1 * B1 * D1 * X)	-0.00140	-0.00141	-0.00143
	(A1 * B1 * !D1 * X)	0.00216	0.00218	0.00212
	(A1 * B1 * !D1 * X)	-0.00102	-0.00104	-0.00105
	(A1 * A2 * !B1 * D1 * X)	0.00262	0.00245	0.00254
	(A1 * A2 * !B1 * D1 * X)	-0.00121	-0.00140	-0.00126
	(A1 * A2 * !B1 * !D1 * X)	0.00232	0.00236	0.00234
	(A1 * A2 * !B1 * !D1 * X)	-0.00066	-0.00068	-0.00063
	(A1 * !A2 * !B1 * D1 * X)	0.00299	0.00244	0.00300
	(A1 * !A2 * !B1 * D1 * X)	-0.00155	-0.00211	-0.00150
	(!A1 * B1 * D1 * X)	0.00229	0.00229	0.00223
	(!A1 * B1 * D1 * X)	-0.00143	-0.00143	-0.00144
	(!A1 * B1 * !D1 * X)	0.00229	0.00229	0.00228
	(!A1 * B1 * !D1 * X)	-0.00095	-0.00095	-0.00093
	(!A1 * !B1 * D1 * X)	0.00300	0.00244	0.00300
	(!A1 * !B1 * D1 * X)	-0.00155	-0.00212	-0.00150

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00427	0.00436	0.00416
	(A1 * B1 * D1 * X)	-0.00259	-0.00253	-0.00263
	(A1 * B1 * !D1 * X)	0.00399	0.00402	0.00389
	(A1 * B1 * !D1 * X)	-0.00185	-0.00187	-0.00192
	(A1 * A2 * !B1 * D1 * X)	0.00501	0.00462	0.00464
	(A1 * A2 * !B1 * D1 * X)	-0.00204	-0.00245	-0.00232
	(A1 * A2 * !B1 * !D1 * X)	0.00453	0.00453	0.00451
	(A1 * A2 * !B1 * !D1 * X)	-0.00104	-0.00102	-0.00098
	(A1 * !A2 * !B1 * D1 * X)	0.00604	0.00475	0.00598
	(A1 * !A2 * !B1 * D1 * X)	-0.00234	-0.00364	-0.00228
	(!A1 * B1 * D1 * X)	0.00426	0.00433	0.00415
	(!A1 * B1 * D1 * X)	-0.00264	-0.00256	-0.00264
	(!A1 * B1 * !D1 * X)	0.00442	0.00446	0.00437
	(!A1 * B1 * !D1 * X)	-0.00153	-0.00155	-0.00149
	(!A1 * !B1 * D1 * X)	0.00604	0.00475	0.00598
	(!A1 * !B1 * D1 * X)	-0.00235	-0.00365	-0.00228

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)**	-0.00184	-0.00185	-0.00183
	(A1 * B1 * D1 * X)	0.00139	0.00140	0.00139
	(A1 * B1 * !D1 * X)	-0.00174	-0.00176	-0.00183
	(A1 * B1 * !D1 * X)	0.00116	0.00117	0.00110
	(A1 * A2 * !B1 * D1 * X)	-0.00184	-0.00185	-0.00178
	(A1 * A2 * !B1 * D1 * X)	0.00148	0.00150	0.00150
	(A1 * A2 * !B1 * !D1 * X)	-0.00061	-0.00064	-0.00118
	(A1 * A2 * !B1 * !D1 * X)	0.00220	0.00218	0.00172
	(A1 * !A2 * !B1 * D1 * X)	-0.00065	-0.00070	-0.00090
	(A1 * !A2 * !B1 * D1 * X)	0.00343	0.00342	0.00319
	(!A1 * B1 * D1 * X)	-0.00184	-0.00185	-0.00182
	(!A1 * B1 * D1 * X)	0.00144	0.00145	0.00142
	(!A1 * B1 * !D1 * X)	-0.00135	-0.00138	-0.00168
	(!A1 * B1 * !D1 * X)	0.00161	0.00160	0.00129
	(!A1 * !B1 * D1 * X)	-0.00065	-0.00070	-0.00090
	(!A1 * !B1 * D1 * X)	0.00343	0.00342	0.00319

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00189	-0.00190	-0.00189
	(A1 * B1 * D1 * X)	0.00166	0.00167	0.00167
	(A1 * B1 * !D1 * X)	-0.00180	-0.00181	-0.00189
	(A1 * B1 * !D1 * X)	0.00138	0.00138	0.00131
	(A1 * A2 * !B1 * D1 * X)	-0.00190	-0.00191	-0.00184
	(A1 * A2 * !B1 * D1 * X)	0.00174	0.00175	0.00176
	(A1 * A2 * !B1 * !D1 * X)	-0.00071	-0.00074	-0.00129
	(A1 * A2 * !B1 * !D1 * X)	0.00235	0.00234	0.00188
	(A1 * !A2 * !B1 * D1 * X)	-0.00090	-0.00093	-0.00109
	(A1 * !A2 * !B1 * D1 * X)	0.00363	0.00362	0.00343
	(!A1 * B1 * D1 * X)	-0.00190	-0.00191	-0.00188
	(!A1 * B1 * D1 * X)	0.00174	0.00174	0.00172
	(!A1 * B1 * !D1 * X)	-0.00143	-0.00145	-0.00175
	(!A1 * B1 * !D1 * X)	0.00182	0.00180	0.00152
	(!A1 * !B1 * D1 * X)	-0.00090	-0.00093	-0.00109
	(!A1 * !B1 * D1 * X)	0.00363	0.00362	0.00343

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00349	-0.00350	-0.00348
	(A1 * B1 * D1 * X)	0.00308	0.00310	0.00309
	(A1 * B1 * !D1 * X)	-0.00333	-0.00335	-0.00340
	(A1 * B1 * !D1 * X)	0.00250	0.00250	0.00245
	(A1 * A2 * !B1 * D1 * X)	-0.00346	-0.00347	-0.00334
	(A1 * A2 * !B1 * D1 * X)	0.00324	0.00326	0.00328
	(A1 * A2 * !B1 * !D1 * X)	-0.00120	-0.00125	-0.00240
	(A1 * A2 * !B1 * !D1 * X)	0.00449	0.00446	0.00347
	(A1 * !A2 * !B1 * D1 * X)	-0.00105	-0.00115	-0.00156
	(A1 * !A2 * !B1 * D1 * X)	0.00723	0.00719	0.00674
	(!A1 * B1 * D1 * X)	-0.00348	-0.00351	-0.00346
	(!A1 * B1 * D1 * X)	0.00318	0.00321	0.00317
	(!A1 * B1 * !D1 * X)	-0.00261	-0.00268	-0.00326
	(!A1 * B1 * !D1 * X)	0.00329	0.00329	0.00270
	(!A1 * !B1 * D1 * X)	-0.00105	-0.00114	-0.00156
	(!A1 * !B1 * D1 * X)	0.00723	0.00719	0.00674

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00203	0.00205	0.00204
	(A1 * C1 * X)	-0.00091	-0.00092	-0.00090
	(A1 * B1 * !C1 * X)	0.00203	0.00205	0.00204
	(A1 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00086
	(A1 * A2 * !B1 * !C1 * X)	0.00205	0.00209	0.00212
	(A1 * A2 * !B1 * !C1 * X)	-0.00057	-0.00058	-0.00051
	(!A1 * C1 * X)	0.00203	0.00206	0.00204
	(!A1 * C1 * X)	-0.00090	-0.00091	-0.00090
	(!A1 * B1 * !C1 * X)	0.00204	0.00207	0.00208
	(!A1 * B1 * !C1 * X)	-0.00073	-0.00074	-0.00070

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00244	0.00246	0.00244
	(A1 * C1 * X)	-0.00095	-0.00096	-0.00094
	(A1 * B1 * !C1 * X)	0.00244	0.00246	0.00245
	(A1 * B1 * !C1 * X)	-0.00091	-0.00092	-0.00090
	(A1 * A2 * !B1 * !C1 * X)	0.00245	0.00250	0.00252
	(A1 * A2 * !B1 * !C1 * X)	-0.00061	-0.00063	-0.00056
	(!A1 * C1 * X)	0.00244	0.00246	0.00245
	(!A1 * C1 * X)	-0.00095	-0.00095	-0.00094
	(!A1 * B1 * !C1 * X)	0.00245	0.00248	0.00249
	(!A1 * B1 * !C1 * X)	-0.00078	-0.00079	-0.00075
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00402	0.00405	0.00403
	(A1 * C1 * X)	-0.00180	-0.00181	-0.00180
	(A1 * B1 * !C1 * X)	0.00401	0.00409	0.00404
	(A1 * B1 * !C1 * X)	-0.00171	-0.00176	-0.00171
	(A1 * A2 * !B1 * !C1 * X)	0.00406	0.00409	0.00419
	(A1 * A2 * !B1 * !C1 * X)	-0.00113	-0.00113	-0.00102
	(!A1 * C1 * X)	0.00402	0.00405	0.00403
	(!A1 * C1 * X)	-0.00180	-0.00181	-0.00179
	(!A1 * B1 * !C1 * X)	0.00405	0.00406	0.00412
	(!A1 * B1 * !C1 * X)	-0.00146	-0.00146	-0.00140

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00183	-0.00184	-0.00191
	(A1 * C1 * X)	0.00110	0.00110	0.00104
	(A1 * B1 * !C1 * X)	-0.00165	-0.00166	-0.00182
	(A1 * B1 * !C1 * X)	0.00121	0.00121	0.00110
	(A1 * A2 * !B1 * !C1 * X)	-0.00043	-0.00045	-0.00090
	(A1 * A2 * !B1 * !C1 * X)	0.00231	0.00230	0.00192
	(!A1 * C1 * X)	-0.00182	-0.00182	-0.00190
	(!A1 * C1 * X)	0.00112	0.00111	0.00105
	(!A1 * B1 * !C1 * X)	-0.00116	-0.00117	-0.00142
	(!A1 * B1 * !C1 * X)	0.00170	0.00168	0.00146
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00217	-0.00218	-0.00226
	(A1 * C1 * X)	0.00121	0.00120	0.00114
	(A1 * B1 * !C1 * X)	-0.00197	-0.00199	-0.00217
	(A1 * B1 * !C1 * X)	0.00133	0.00134	0.00120
	(A1 * A2 * !B1 * !C1 * X)	-0.00079	-0.00082	-0.00128
	(A1 * A2 * !B1 * !C1 * X)	0.00238	0.00237	0.00199
	(!A1 * C1 * X)	-0.00215	-0.00216	-0.00224
	(!A1 * C1 * X)	0.00122	0.00122	0.00116
	(!A1 * B1 * !C1 * X)	-0.00153	-0.00155	-0.00179
	(!A1 * B1 * !C1 * X)	0.00177	0.00176	0.00154
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00349	-0.00352	-0.00373
	(A1 * C1 * X)	0.00231	0.00231	0.00213
	(A1 * B1 * !C1 * X)	-0.00313	-0.00317	-0.00358
	(A1 * B1 * !C1 * X)	0.00249	0.00252	0.00222
	(A1 * A2 * !B1 * !C1 * X)	-0.00064	-0.00070	-0.00166
	(A1 * A2 * !B1 * !C1 * X)	0.00473	0.00473	0.00393
	(!A1 * C1 * X)	-0.00343	-0.00348	-0.00370
	(!A1 * C1 * X)	0.00232	0.00235	0.00216
	(!A1 * B1 * !C1 * X)	-0.00208	-0.00215	-0.00270
	(!A1 * B1 * !C1 * X)	0.00351	0.00352	0.00302

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00287	0.00275	0.00286	0.00291	0.59348
sky130_fd_sc_hs__a211oi_2	0.00526	0.00556	0.00441	0.00419	1.06336
sky130_fd_sc_hs__a211oi_4	0.01059	0.01072	0.00842	0.00853	1.83433

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	47.56420	119.91000
sky130_fd_sc_hs__a211oi_2	0.00000	94.02130	239.81500
sky130_fd_sc_hs__a211oi_4	0.00000	187.89900	479.55800

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)	0.07742	0.71239	8.02802
	A2->Y (FR)	0.09275	0.74913	8.31087
	B1->Y (FR)	0.08171	0.79660	9.10475
	C1->Y (FR)	0.06202	0.80682	9.44207
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.07005	0.60061	7.94054
	A2->Y (FR)	0.08954	0.61910	7.99023
	B1->Y (FR)	0.05707	0.64232	8.67021
	C1->Y (FR)	0.02990	0.64851	9.03577
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.06805	0.49628	7.51323
	A2->Y (FR)	0.09096	0.53140	7.80835
	B1->Y (FR)	0.07562	0.57037	8.51072
	C1->Y (FR)	0.04777	0.58471	8.98046

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.02551	0.29883	3.14414
	A2->Y (RF)	0.02815	0.26409	2.66285
	B1->Y (RF)	0.01855	0.22571	2.34259
	C1->Y (RF)	0.01569	0.21869	2.30697
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.02287	0.25911	3.24833
	A2->Y (RF)	0.02779	0.22527	2.71535
	B1->Y (RF)	0.02817	0.32337	4.24304
	C1->Y (RF)	0.01894	0.29995	4.07743
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.02398	0.21998	3.19131
	A2->Y (RF)	0.02788	0.16853	2.36253
	B1->Y (RF)	0.02688	0.26774	4.04332
	C1->Y (RF)	0.01835	0.24940	3.97234

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00062	0.00490	0.10545
	A1	0.00978	0.01407	0.11471
	A2	0.00107	0.00553	0.10974
	A2	0.01167	0.01615	0.12027
	B1	0.00038	0.00637	0.11378
	B1	0.00794	0.01394	0.12165
	C1	0.00013	0.00781	0.12571
	C1	0.00641	0.01408	0.13195
sky130_fd_sc_hs__a211oi_2	A1	-0.00018	0.00884	0.19324
	A1	0.01741	0.02639	0.21104
	A2	0.00196	0.01088	0.20236
	A2	0.02277	0.03171	0.22326
	B1	0.00081	0.00884	0.14746
	B1	0.01357	0.02158	0.16056
	C1	0.00060	0.01188	0.17058
	C1	0.01017	0.02145	0.18035
sky130_fd_sc_hs__a211oi_4	A1	-0.00087	0.01715	0.35463
	A1	0.03410	0.05204	0.38988
	A2	0.00254	0.02059	0.37544
	A2	0.04384	0.06197	0.41719
	B1	0.00121	0.01832	0.28289
	B1	0.02606	0.04320	0.30770
	C1	0.00085	0.02379	0.31605
	C1	0.01953	0.04247	0.33554

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.01425	0.01853	0.10360
	A1	0.00510	0.00931	0.09420
	A2	0.01553	0.01944	0.10494
	A2	0.00493	0.00884	0.09433
	B1	0.00952	0.01521	0.11281
	B1	0.00197	0.00765	0.10524
	C1	0.00758	0.01328	0.10467
	C1	0.00132	0.00699	0.09836
sky130_fd_sc_hs__a211oi_2	A1	0.02707	0.03586	0.19177
	A1	0.00950	0.01823	0.17378
	A2	0.03004	0.03821	0.19985
	A2	0.00925	0.01737	0.17894
	B1	0.01751	0.02538	0.14568
	B1	0.00479	0.01258	0.13287
	C1	0.01195	0.02043	0.13470
	C1	0.00239	0.01083	0.12427
sky130_fd_sc_hs__a211oi_4	A1	0.05385	0.07201	0.36879
	A1	0.01896	0.03700	0.33311
	A2	0.05956	0.07770	0.40012
	A2	0.01827	0.03633	0.35821
	B1	0.03291	0.04908	0.28315
	B1	0.00812	0.02420	0.25832
	C1	0.02285	0.04035	0.25400
	C1	0.00418	0.02163	0.23429

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)**	0.00221	0.00206	0.00202
	(A2 * B1 * C1 * !Y)	-0.00220	-0.00241	-0.00240
	(A2 * B1 * !C1 * !Y)	0.00288	0.00243	0.00255
	(A2 * B1 * !C1 * !Y)	-0.00160	-0.00211	-0.00189
	(A2 * !B1 * C1 * !Y)	0.00318	0.00265	0.00296
	(A2 * !B1 * C1 * !Y)	-0.00136	-0.00195	-0.00151
	(!A2 * B1 * C1 * !Y)	0.00196	0.00199	0.00196
	(!A2 * B1 * C1 * !Y)	-0.00242	-0.00243	-0.00242
	(!A2 * B1 * !C1 * !Y)	0.00249	0.00251	0.00250
	(!A2 * B1 * !C1 * !Y)	-0.00188	-0.00190	-0.00188
	(!A2 * !B1 * C1 * !Y)	0.00293	0.00295	0.00293
	(!A2 * !B1 * C1 * !Y)	-0.00144	-0.00146	-0.00145
	(!A2 * !B1 * !C1 * Y)	0.00061	0.00061	0.00058
	(!A2 * !B1 * !C1 * Y)	-0.00280	-0.00282	-0.00285
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00442	0.00414	0.00412
	(A2 * B1 * C1 * !Y)	-0.00440	-0.00474	-0.00473
	(A2 * B1 * !C1 * !Y)	0.00573	0.00486	0.00517
	(A2 * B1 * !C1 * !Y)	-0.00324	-0.00415	-0.00372
	(A2 * !B1 * C1 * !Y)	0.00624	0.00530	0.00598
	(A2 * !B1 * C1 * !Y)	-0.00285	-0.00382	-0.00295
	(!A2 * B1 * C1 * !Y)	0.00397	0.00398	0.00398
	(!A2 * B1 * C1 * !Y)	-0.00475	-0.00475	-0.00476
	(!A2 * B1 * !C1 * !Y)	0.00506	0.00510	0.00505
	(!A2 * B1 * !C1 * !Y)	-0.00370	-0.00372	-0.00369
	(!A2 * !B1 * C1 * !Y)	0.00590	0.00594	0.00593
	(!A2 * !B1 * C1 * !Y)	-0.00280	-0.00283	-0.00282
	(!A2 * !B1 * !C1 * Y)	0.00140	0.00140	0.00133
	(!A2 * !B1 * !C1 * Y)	-0.00546	-0.00548	-0.00562

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00877	0.00808	0.00803
	(A2 * B1 * C1 * !Y)	-0.00881	-0.00963	-0.00961
	(A2 * B1 * !C1 * !Y)	0.01157	0.00956	0.01014
	(A2 * B1 * !C1 * !Y)	-0.00634	-0.00842	-0.00758
	(A2 * !B1 * C1 * !Y)	0.01264	0.01048	0.01177
	(A2 * !B1 * C1 * !Y)	-0.00552	-0.00781	-0.00605
	(!A2 * B1 * C1 * !Y)	0.00774	0.00783	0.00777
	(!A2 * B1 * C1 * !Y)	-0.00967	-0.00974	-0.00969
	(!A2 * B1 * !C1 * !Y)	0.00991	0.00992	0.00990
	(!A2 * B1 * !C1 * !Y)	-0.00757	-0.00758	-0.00755
	(!A2 * !B1 * C1 * !Y)	0.01164	0.01167	0.01164
	(!A2 * !B1 * C1 * !Y)	-0.00583	-0.00585	-0.00581
	(!A2 * !B1 * !C1 * Y)	0.00242	0.00242	0.00230
	(!A2 * !B1 * !C1 * Y)	-0.01120	-0.01122	-0.01150

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)**	-0.00186	-0.00187	-0.00186
	(A2 * B1 * C1 * !Y)	0.00256	0.00258	0.00256
	(A2 * B1 * !C1 * !Y)	-0.00137	-0.00139	-0.00145
	(A2 * B1 * !C1 * !Y)	0.00310	0.00311	0.00302
	(A2 * !B1 * C1 * !Y)	-0.00091	-0.00094	-0.00107
	(A2 * !B1 * C1 * !Y)	0.00360	0.00360	0.00346
	(!A2 * B1 * C1 * !Y)	-0.00182	-0.00184	-0.00184
	(!A2 * B1 * C1 * !Y)	0.00254	0.00257	0.00256
	(!A2 * B1 * !C1 * !Y)	-0.00130	-0.00130	-0.00130
	(!A2 * B1 * !C1 * !Y)	0.00309	0.00308	0.00309
	(!A2 * !B1 * C1 * !Y)	-0.00086	-0.00089	-0.00087
	(!A2 * !B1 * C1 * !Y)	0.00352	0.00355	0.00352
	(!A2 * !B1 * !C1 * Y)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !C1 * Y)	0.00296	0.00301	0.00296
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00379	-0.00382	-0.00381
	(A2 * B1 * C1 * !Y)	0.00502	0.00507	0.00504
	(A2 * B1 * !C1 * !Y)	-0.00282	-0.00286	-0.00299
	(A2 * B1 * !C1 * !Y)	0.00609	0.00611	0.00596
	(A2 * !B1 * C1 * !Y)	-0.00190	-0.00193	-0.00219
	(A2 * !B1 * C1 * !Y)	0.00714	0.00711	0.00684
	(!A2 * B1 * C1 * !Y)	-0.00371	-0.00379	-0.00375
	(!A2 * B1 * C1 * !Y)	0.00502	0.00510	0.00504
	(!A2 * B1 * !C1 * !Y)	-0.00264	-0.00269	-0.00269
	(!A2 * B1 * !C1 * !Y)	0.00610	0.00615	0.00610
	(!A2 * !B1 * C1 * !Y)	-0.00177	-0.00182	-0.00182
	(!A2 * !B1 * C1 * !Y)	0.00696	0.00702	0.00697
	(!A2 * !B1 * !C1 * Y)	-0.00117	-0.00119	-0.00117
	(!A2 * !B1 * !C1 * Y)	0.00573	0.00584	0.00575

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00738	-0.00742	-0.00740
	(A2 * B1 * C1 * !Y)	0.01021	0.01029	0.01025
	(A2 * B1 * !C1 * !Y)	-0.00547	-0.00553	-0.00578
	(A2 * B1 * !C1 * !Y)	0.01244	0.01243	0.01209
	(A2 * !B1 * C1 * !Y)	-0.00361	-0.00369	-0.00420
	(A2 * !B1 * C1 * !Y)	0.01446	0.01440	0.01384
	(!A2 * B1 * C1 * !Y)	-0.00721	-0.00732	-0.00729
	(!A2 * B1 * C1 * !Y)	0.01021	0.01026	0.01024
	(!A2 * B1 * !C1 * !Y)	-0.00507	-0.00518	-0.00516
	(!A2 * B1 * !C1 * !Y)	0.01233	0.01247	0.01237
	(!A2 * !B1 * C1 * !Y)	-0.00333	-0.00342	-0.00343
	(!A2 * !B1 * C1 * !Y)	0.01407	0.01414	0.01410
	(!A2 * !B1 * !C1 * Y)	-0.00199	-0.00204	-0.00199
	(!A2 * !B1 * !C1 * Y)	0.01172	0.01196	0.01177

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)**	0.00224	0.00208	0.00204
	(A1 * B1 * C1 * !Y)	-0.00222	-0.00243	-0.00242
	(A1 * B1 * !C1 * !Y)	0.00290	0.00245	0.00257
	(A1 * B1 * !C1 * !Y)	-0.00162	-0.00213	-0.00191
	(A1 * !B1 * C1 * !Y)	0.00319	0.00268	0.00298
	(A1 * !B1 * C1 * !Y)	-0.00141	-0.00197	-0.00153
	(!A1 * B1 * !Y)	0.00198	0.00201	0.00199
	(!A1 * B1 * !Y)	-0.00243	-0.00245	-0.00244
	(!A1 * !B1 * C1 * !Y)	0.00295	0.00297	0.00296
	(!A1 * !B1 * C1 * !Y)	-0.00146	-0.00148	-0.00147
	(!A1 * !B1 * !C1 * Y)	0.00201	0.00203	0.00202
	(!A1 * !B1 * !C1 * Y)	-0.00243	-0.00244	-0.00244

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00455	0.00429	0.00422
	(A1 * B1 * C1 * !Y)	-0.00453	-0.00492	-0.00489
	(A1 * B1 * !C1 * !Y)	0.00592	0.00503	0.00527
	(A1 * B1 * !C1 * !Y)	-0.00332	-0.00431	-0.00387
	(A1 * !B1 * C1 * !Y)	0.00646	0.00543	0.00609
	(A1 * !B1 * C1 * !Y)	-0.00290	-0.00394	-0.00310
	(!A1 * B1 * !Y)	0.00408	0.00411	0.00409
	(!A1 * B1 * !Y)	-0.00492	-0.00494	-0.00493
	(!A1 * !B1 * C1 * !Y)	0.00602	0.00605	0.00603
	(!A1 * !B1 * C1 * !Y)	-0.00297	-0.00300	-0.00299
	(!A1 * !B1 * !C1 * Y)	0.00380	0.00384	0.00381
	(!A1 * !B1 * !C1 * Y)	-0.00525	-0.00528	-0.00525
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00904	0.00832	0.00823
	(A1 * B1 * C1 * !Y)	-0.00894	-0.00973	-0.00971
	(A1 * B1 * !C1 * !Y)	0.01183	0.00980	0.01034
	(A1 * B1 * !C1 * !Y)	-0.00646	-0.00851	-0.00768
	(A1 * !B1 * C1 * !Y)	0.01288	0.01071	0.01198
	(A1 * !B1 * C1 * !Y)	-0.00567	-0.00790	-0.00615
	(!A1 * B1 * !Y)	0.00794	0.00805	0.00796
	(!A1 * B1 * !Y)	-0.00978	-0.00985	-0.00979
	(!A1 * !B1 * C1 * !Y)	0.01183	0.01193	0.01183
	(!A1 * !B1 * C1 * !Y)	-0.00591	-0.00597	-0.00591
	(!A1 * !B1 * !C1 * Y)	0.00798	0.00801	0.00801
	(!A1 * !B1 * !C1 * Y)	-0.00983	-0.00985	-0.00985

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)**	-0.00188	-0.00189	-0.00189
	(A1 * B1 * C1 * !Y)	0.00258	0.00260	0.00258
	(A1 * B1 * !C1 * !Y)	-0.00139	-0.00141	-0.00148
	(A1 * B1 * !C1 * !Y)	0.00312	0.00313	0.00304
	(A1 * !B1 * C1 * !Y)	-0.00093	-0.00096	-0.00109
	(A1 * !B1 * C1 * !Y)	0.00362	0.00363	0.00348
	(!A1 * B1 * !Y)	-0.00184	-0.00187	-0.00186
	(!A1 * B1 * !Y)	0.00256	0.00260	0.00258
	(!A1 * !B1 * C1 * !Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !B1 * C1 * !Y)	0.00355	0.00357	0.00354
	(!A1 * !B1 * !C1 * Y)	-0.00166	-0.00182	-0.00184
	(!A1 * !B1 * !C1 * Y)	0.00282	0.00264	0.00260
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00389	-0.00391	-0.00390
	(A1 * B1 * C1 * !Y)	0.00520	0.00524	0.00521
	(A1 * B1 * !C1 * !Y)	-0.00292	-0.00297	-0.00309
	(A1 * B1 * !C1 * !Y)	0.00627	0.00631	0.00612
	(A1 * !B1 * C1 * !Y)	-0.00200	-0.00205	-0.00229
	(A1 * !B1 * C1 * !Y)	0.00732	0.00731	0.00700
	(!A1 * B1 * !Y)	-0.00380	-0.00386	-0.00385
	(!A1 * B1 * !Y)	0.00518	0.00523	0.00520
	(!A1 * !B1 * C1 * !Y)	-0.00186	-0.00192	-0.00192
	(!A1 * !B1 * C1 * !Y)	0.00712	0.00716	0.00714
	(!A1 * !B1 * !C1 * Y)	-0.00308	-0.00351	-0.00358
	(!A1 * !B1 * !C1 * Y)	0.00597	0.00566	0.00548

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00756	-0.00761	-0.00759
	(A1 * B1 * C1 * !Y)	0.01033	0.01042	0.01036
	(A1 * B1 * !C1 * !Y)	-0.00562	-0.00573	-0.00598
	(A1 * B1 * !C1 * !Y)	0.01247	0.01255	0.01220
	(A1 * !B1 * C1 * !Y)	-0.00382	-0.00392	-0.00441
	(A1 * !B1 * C1 * !Y)	0.01455	0.01454	0.01394
	(!A1 * B1 * !Y)	-0.00741	-0.00749	-0.00747
	(!A1 * B1 * !Y)	0.01031	0.01039	0.01034
	(!A1 * !B1 * C1 * !Y)	-0.00354	-0.00363	-0.00361
	(!A1 * !B1 * C1 * !Y)	0.01418	0.01426	0.01420
	(!A1 * !B1 * !C1 * Y)	-0.00649	-0.00736	-0.00751
	(!A1 * !B1 * !C1 * Y)	0.01138	0.01064	0.01031

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)	0.00247	0.00243	0.00242
	(A1 * A2 * C1 * !Y)	-0.00139	-0.00145	-0.00141
	(A1 * A2 * !C1 * !Y)	0.00240	0.00241	0.00241
	(A1 * A2 * !C1 * !Y)	-0.00081	-0.00080	-0.00076
	(A1 * !A2 * C1 * !Y)	0.00302	0.00249	0.00304
	(A1 * !A2 * C1 * !Y)	-0.00153	-0.00206	-0.00146
	(!A1 * C1 * !Y)	0.00300	0.00248	0.00304
	(!A1 * C1 * !Y)	-0.00155	-0.00207	-0.00146
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00323	0.00323	0.00312
	(A1 * A2 * C1 * !Y)	-0.00270	-0.00277	-0.00277
	(A1 * A2 * !C1 * !Y)	0.00326	0.00325	0.00327
	(A1 * A2 * !C1 * !Y)	-0.00138	-0.00136	-0.00130
	(A1 * !A2 * C1 * !Y)	0.00467	0.00337	0.00436
	(A1 * !A2 * C1 * !Y)	-0.00266	-0.00397	-0.00287
	(!A1 * C1 * !Y)	0.00468	0.00337	0.00436
	(!A1 * C1 * !Y)	-0.00265	-0.00397	-0.00287
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00598	0.00588	0.00572
	(A1 * A2 * C1 * !Y)	-0.00557	-0.00575	-0.00569
	(A1 * A2 * !C1 * !Y)	0.00597	0.00597	0.00600
	(A1 * A2 * !C1 * !Y)	-0.00305	-0.00301	-0.00286
	(A1 * !A2 * C1 * !Y)	0.00884	0.00620	0.00826
	(A1 * !A2 * C1 * !Y)	-0.00569	-0.00834	-0.00606
	(!A1 * C1 * !Y)	0.00877	0.00621	0.00826
	(!A1 * C1 * !Y)	-0.00576	-0.00833	-0.00606

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)	-0.00205	-0.00206	-0.00201
	(A1 * A2 * C1 * !Y)	0.00173	0.00175	0.00172
	(A1 * A2 * !C1 * !Y)	-0.00092	-0.00095	-0.00149
	(A1 * A2 * !C1 * !Y)	0.00228	0.00226	0.00177
	(A1 * !A2 * C1 * !Y)	-0.00103	-0.00107	-0.00122
	(A1 * !A2 * C1 * !Y)	0.00350	0.00349	0.00330
	(!A1 * C1 * !Y)	-0.00102	-0.00107	-0.00122
	(!A1 * C1 * !Y)	0.00348	0.00349	0.00330
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00241	-0.00242	-0.00235
	(A1 * A2 * C1 * !Y)	0.00338	0.00340	0.00337
	(A1 * A2 * !C1 * !Y)	-0.00029	-0.00037	-0.00144
	(A1 * A2 * !C1 * !Y)	0.00435	0.00432	0.00329
	(A1 * !A2 * C1 * !Y)	-0.00031	-0.00037	-0.00070
	(A1 * !A2 * C1 * !Y)	0.00694	0.00693	0.00658
	(!A1 * C1 * !Y)	-0.00031	-0.00037	-0.00070
	(!A1 * C1 * !Y)	0.00695	0.00693	0.00658
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00430	-0.00431	-0.00417
	(A1 * A2 * C1 * !Y)	0.00695	0.00699	0.00691
	(A1 * A2 * !C1 * !Y)	-0.00013	-0.00027	-0.00241
	(A1 * A2 * !C1 * !Y)	0.00893	0.00886	0.00684
	(A1 * !A2 * C1 * !Y)	-0.00018	-0.00031	-0.00097
	(A1 * !A2 * C1 * !Y)	0.01421	0.01417	0.01346
	(!A1 * C1 * !Y)	-0.00018	-0.00031	-0.00096
	(!A1 * C1 * !Y)	0.01422	0.01419	0.01346

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00242	0.00246	0.00243
	(A1 * B1 * !Y)	-0.00095	-0.00097	-0.00094
	(A1 * A2 * !B1 * !Y)	0.00244	0.00246	0.00250
	(A1 * A2 * !B1 * !Y)	-0.00069	-0.00069	-0.00062
	(!A1 * B1 * !Y)	0.00241	0.00247	0.00247
	(!A1 * B1 * !Y)	-0.00092	-0.00094	-0.00088
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00257	0.00259	0.00259
	(A1 * B1 * !Y)	-0.00195	-0.00196	-0.00194
	(A1 * A2 * !B1 * !Y)	0.00262	0.00264	0.00275
	(A1 * A2 * !B1 * !Y)	-0.00139	-0.00140	-0.00128
	(!A1 * B1 * !Y)	0.00263	0.00267	0.00270
	(!A1 * B1 * !Y)	-0.00188	-0.00189	-0.00178
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00519	0.00523	0.00522
	(A1 * B1 * !Y)	-0.00392	-0.00395	-0.00389
	(A1 * A2 * !B1 * !Y)	0.00524	0.00530	0.00550
	(A1 * A2 * !B1 * !Y)	-0.00281	-0.00282	-0.00257
	(!A1 * B1 * !Y)	0.00528	0.00537	0.00542
	(!A1 * B1 * !Y)	-0.00380	-0.00383	-0.00359

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00211	-0.00213	-0.00223
	(A1 * B1 * !Y)	0.00122	0.00123	0.00115
	(A1 * A2 * !B1 * !Y)	-0.00089	-0.00093	-0.00134
	(A1 * A2 * !B1 * !Y)	0.00232	0.00231	0.00192
	(!A1 * B1 * !Y)	-0.00164	-0.00166	-0.00195
	(!A1 * B1 * !Y)	0.00172	0.00171	0.00143
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00200	-0.00201	-0.00228
	(A1 * B1 * !Y)	0.00250	0.00250	0.00229
	(A1 * A2 * !B1 * !Y)	0.00048	0.00042	-0.00043
	(A1 * A2 * !B1 * !Y)	0.00468	0.00467	0.00389
	(!A1 * B1 * !Y)	-0.00095	-0.00100	-0.00156
	(!A1 * B1 * !Y)	0.00355	0.00354	0.00299
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00406	-0.00411	-0.00460
	(A1 * B1 * !Y)	0.00495	0.00498	0.00461
	(A1 * A2 * !B1 * !Y)	0.00092	0.00081	-0.00089
	(A1 * A2 * !B1 * !Y)	0.00938	0.00934	0.00778
	(!A1 * B1 * !Y)	-0.00201	-0.00211	-0.00321
	(!A1 * B1 * !Y)	0.00708	0.00705	0.00595

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00266	0.00253	0.00270	0.00267	1.69250
sky130_fd_sc_hs__a211o_2	0.00290	0.00290	0.00285	0.00275	3.14533
sky130_fd_sc_hs__a211o_4	0.00495	0.00511	0.00536	0.00485	6.12689

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	78.35590	143.65700
sky130_fd_sc_hs__a211o_2	0.00000	101.83900	247.42500
sky130_fd_sc_hs__a211o_4	0.00000	206.01400	509.42300

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)	0.05689	0.41887	5.46317
	A2->X (RR)	0.05977	0.40416	5.21404
	B1->X (RR)	0.04698	0.37639	4.85265
	C1->X (RR)	0.04228	0.35939	4.72460
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.05806	0.34741	5.16981
	A2->X (RR)	0.06123	0.33047	4.92973
	B1->X (RR)	0.04696	0.30677	4.61373
	C1->X (RR)	0.04281	0.29315	4.50807
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.06230	0.29746	5.47555
	A2->X (RR)	0.06667	0.28565	5.28615
	B1->X (RR)	0.04596	0.24211	4.77991
	C1->X (RR)	0.04320	0.23700	4.75698

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.11150	0.48059	5.70075
	A2->X (FF)	0.12701	0.50970	5.88714
	B1->X (FF)	0.11433	0.53756	6.35730
	C1->X (FF)	0.09418	0.54260	6.46618
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.14194	0.48591	5.67797
	A2->X (FF)	0.16210	0.51851	5.87532
	B1->X (FF)	0.14896	0.55015	6.32725
	C1->X (FF)	0.12690	0.55632	6.42469
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.13534	0.43193	5.86800
	A2->X (FF)	0.14387	0.45136	5.97282
	B1->X (FF)	0.12243	0.47201	6.25641
	C1->X (FF)	0.09877	0.47395	6.38621

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01935	0.02933	0.22317
	A1	0.01099	0.02098	0.21523
	A2	0.02052	0.02953	0.22058
	A2	0.01094	0.01998	0.21091
	B1	0.01448	0.02662	0.22774
	B1	0.00743	0.01961	0.22060
	C1	0.01384	0.02656	0.23131
	C1	0.00803	0.02078	0.22542
sky130_fd_sc_hs__a211o_2	A1	0.02405	0.03352	0.22247
	A1	0.01505	0.02461	0.21324
	A2	0.02554	0.03386	0.21934
	A2	0.01498	0.02332	0.20865
	B1	0.01868	0.03040	0.22390
	B1	0.01107	0.02279	0.21650
	C1	0.01782	0.03014	0.22673
	C1	0.01148	0.02380	0.22053
sky130_fd_sc_hs__a211o_4	A1	0.04722	0.06790	0.46888
	A1	0.03074	0.05148	0.45390
	A2	0.05022	0.06910	0.46376
	A2	0.03077	0.04977	0.44523
	B1	0.03508	0.05957	0.45225
	B1	0.02124	0.04571	0.43805
	C1	0.03246	0.05834	0.45554
	C1	0.02175	0.04764	0.44438

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00881	0.01641	0.19103
	A1	0.01716	0.02415	0.19909
	A2	0.00988	0.01650	0.19047
	A2	0.01945	0.02605	0.20003
	B1	0.00785	0.01744	0.21580
	B1	0.01489	0.02447	0.22053
	C1	0.00772	0.01892	0.22005
	C1	0.01353	0.02472	0.22555
sky130_fd_sc_hs__a211o_2	A1	0.02011	0.02154	0.18685
	A1	0.02912	0.03044	0.19426
	A2	0.02236	0.02237	0.18691
	A2	0.03292	0.03292	0.19748
	B1	0.01841	0.02306	0.20898
	B1	0.02603	0.03046	0.21496
	C1	0.01830	0.02445	0.21804
	C1	0.02468	0.03081	0.22113
sky130_fd_sc_hs__a211o_4	A1	0.04028	0.04451	0.42290
	A1	0.05677	0.06058	0.43940
	A2	0.04184	0.04555	0.42799
	A2	0.06130	0.06453	0.44520
	B1	0.03585	0.04599	0.40732
	B1	0.04971	0.05931	0.42027
	C1	0.03596	0.04911	0.43879
	C1	0.04671	0.05978	0.44304

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)**	0.00202	0.00187	0.00183
	(A2 * B1 * C1 * X)	-0.00201	-0.00223	-0.00222
	(A2 * B1 * !C1 * X)	0.00273	0.00225	0.00240
	(A2 * B1 * !C1 * X)	-0.00141	-0.00191	-0.00167
	(A2 * !B1 * C1 * X)	0.00302	0.00251	0.00294
	(A2 * !B1 * C1 * X)	-0.00116	-0.00173	-0.00116
	(!A2 * B1 * C1 * X)	0.00178	0.00179	0.00178
	(!A2 * B1 * C1 * X)	-0.00224	-0.00224	-0.00224
	(!A2 * B1 * !C1 * X)	0.00236	0.00237	0.00237
	(!A2 * B1 * !C1 * X)	-0.00165	-0.00167	-0.00166
	(!A2 * !B1 * C1 * X)	0.00295	0.00297	0.00295
	(!A2 * !B1 * C1 * X)	-0.00107	-0.00109	-0.00107
	(!A2 * !B1 * !C1 * !X)	0.00161	0.00161	0.00158
	(!A2 * !B1 * !C1 * !X)	-0.00159	-0.00160	-0.00164
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00239	0.00222	0.00221
	(A2 * B1 * C1 * X)	-0.00190	-0.00209	-0.00210
	(A2 * B1 * !C1 * X)	0.00306	0.00258	0.00278
	(A2 * B1 * !C1 * X)	-0.00131	-0.00179	-0.00155
	(A2 * !B1 * C1 * X)	0.00336	0.00283	0.00331
	(A2 * !B1 * C1 * X)	-0.00108	-0.00162	-0.00105
	(!A2 * B1 * C1 * X)	0.00215	0.00218	0.00216
	(!A2 * B1 * C1 * X)	-0.00211	-0.00213	-0.00211
	(!A2 * B1 * !C1 * X)	0.00274	0.00274	0.00273
	(!A2 * B1 * !C1 * X)	-0.00153	-0.00154	-0.00153
	(!A2 * !B1 * C1 * X)	0.00332	0.00333	0.00332
	(!A2 * !B1 * C1 * X)	-0.00094	-0.00096	-0.00094
	(!A2 * !B1 * !C1 * !X)	0.00269	0.00270	0.00267
	(!A2 * !B1 * !C1 * !X)	-0.00059	-0.00061	-0.00065

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00398	0.00366	0.00363
	(A2 * B1 * C1 * X)	-0.00399	-0.00436	-0.00436
	(A2 * B1 * !C1 * X)	0.00533	0.00441	0.00476
	(A2 * B1 * !C1 * X)	-0.00279	-0.00373	-0.00327
	(A2 * !B1 * C1 * X)	0.00589	0.00492	0.00584
	(A2 * !B1 * C1 * X)	-0.00238	-0.00336	-0.00226
	(!A2 * B1 * C1 * X)	0.00350	0.00355	0.00352
	(!A2 * B1 * C1 * X)	-0.00439	-0.00443	-0.00440
	(!A2 * B1 * !C1 * X)	0.00468	0.00471	0.00468
	(!A2 * B1 * !C1 * X)	-0.00325	-0.00327	-0.00324
	(!A2 * !B1 * C1 * X)	0.00585	0.00588	0.00585
	(!A2 * !B1 * C1 * X)	-0.00208	-0.00210	-0.00207
	(!A2 * !B1 * !C1 * !X)	0.00529	0.00531	0.00524
	(!A2 * !B1 * !C1 * !X)	-0.00095	-0.00100	-0.00108

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)**	-0.00163	-0.00163	-0.00163
	(A2 * B1 * C1 * X)	0.00242	0.00243	0.00242
	(A2 * B1 * !C1 * X)	-0.00109	-0.00112	-0.00119
	(A2 * B1 * !C1 * X)	0.00301	0.00302	0.00292
	(A2 * !B1 * C1 * X)	-0.00049	-0.00052	-0.00070
	(A2 * !B1 * C1 * X)	0.00366	0.00367	0.00346
	(!A2 * B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * B1 * C1 * X)	0.00241	0.00242	0.00241
	(!A2 * B1 * !C1 * X)	-0.00103	-0.00104	-0.00104
	(!A2 * B1 * !C1 * X)	0.00299	0.00300	0.00299
	(!A2 * !B1 * C1 * X)	-0.00044	-0.00046	-0.00045
	(!A2 * !B1 * C1 * X)	0.00357	0.00359	0.00358
	(!A2 * !B1 * !C1 * !X)	0.00072	0.00071	0.00072
	(!A2 * !B1 * !C1 * !X)	0.00392	0.00395	0.00393
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00197	-0.00197	-0.00197
	(A2 * B1 * C1 * X)	0.00234	0.00234	0.00234
	(A2 * B1 * !C1 * X)	-0.00143	-0.00145	-0.00152
	(A2 * B1 * !C1 * X)	0.00292	0.00293	0.00284
	(A2 * !B1 * C1 * X)	-0.00082	-0.00085	-0.00103
	(A2 * !B1 * C1 * X)	0.00358	0.00358	0.00338
	(!A2 * B1 * C1 * X)	-0.00194	-0.00195	-0.00194
	(!A2 * B1 * C1 * X)	0.00234	0.00234	0.00233
	(!A2 * B1 * !C1 * X)	-0.00136	-0.00137	-0.00136
	(!A2 * B1 * !C1 * X)	0.00291	0.00292	0.00291
	(!A2 * !B1 * C1 * X)	-0.00077	-0.00079	-0.00078
	(!A2 * !B1 * C1 * X)	0.00349	0.00351	0.00349
	(!A2 * !B1 * !C1 * !X)	0.00161	0.00161	0.00162
	(!A2 * !B1 * !C1 * !X)	0.00492	0.00494	0.00492

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00312	-0.00315	-0.00313
	(A2 * B1 * C1 * X)	0.00484	0.00490	0.00485
	(A2 * B1 * !C1 * X)	-0.00206	-0.00212	-0.00226
	(A2 * B1 * !C1 * X)	0.00601	0.00606	0.00585
	(A2 * !B1 * C1 * X)	-0.00085	-0.00091	-0.00128
	(A2 * !B1 * C1 * X)	0.00735	0.00732	0.00693
	(!A2 * B1 * C1 * X)	-0.00307	-0.00313	-0.00310
	(!A2 * B1 * C1 * X)	0.00483	0.00490	0.00485
	(!A2 * B1 * !C1 * X)	-0.00191	-0.00197	-0.00194
	(!A2 * B1 * !C1 * X)	0.00598	0.00606	0.00600
	(!A2 * !B1 * C1 * X)	-0.00075	-0.00080	-0.00077
	(!A2 * !B1 * C1 * X)	0.00717	0.00723	0.00717
	(!A2 * !B1 * !C1 * !X)	0.00353	0.00351	0.00353
	(!A2 * !B1 * !C1 * !X)	0.00979	0.00985	0.00982

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)**	0.00205	0.00190	0.00186
	(A1 * B1 * C1 * X)	-0.00199	-0.00220	-0.00219
	(A1 * B1 * !C1 * X)	0.00272	0.00228	0.00243
	(A1 * B1 * !C1 * X)	-0.00140	-0.00189	-0.00165
	(A1 * !B1 * C1 * X)	0.00301	0.00254	0.00297
	(A1 * !B1 * C1 * X)	-0.00119	-0.00171	-0.00114
	(!A1 * B1 * X)	0.00182	0.00184	0.00182
	(!A1 * B1 * X)	-0.00221	-0.00222	-0.00221
	(!A1 * !B1 * C1 * X)	0.00299	0.00301	0.00299
	(!A1 * !B1 * C1 * X)	-0.00104	-0.00106	-0.00104
	(!A1 * !B1 * !C1 * !X)	0.00277	0.00280	0.00278
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00129	-0.00129

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00254	0.00237	0.00236
	(A1 * B1 * C1 * X)	-0.00192	-0.00211	-0.00211
	(A1 * B1 * !C1 * X)	0.00320	0.00273	0.00292
	(A1 * B1 * !C1 * X)	-0.00133	-0.00181	-0.00156
	(A1 * !B1 * C1 * X)	0.00348	0.00298	0.00346
	(A1 * !B1 * C1 * X)	-0.00112	-0.00164	-0.00106
	(!A1 * B1 * X)	0.00229	0.00231	0.00230
	(!A1 * B1 * X)	-0.00212	-0.00213	-0.00213
	(!A1 * !B1 * C1 * X)	0.00346	0.00348	0.00346
	(!A1 * !B1 * C1 * X)	-0.00095	-0.00097	-0.00096
	(!A1 * !B1 * !C1 * !X)	0.00405	0.00408	0.00405
	(!A1 * !B1 * !C1 * !X)	-0.00041	-0.00042	-0.00040
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00459	0.00433	0.00428
	(A1 * B1 * C1 * X)	-0.00387	-0.00422	-0.00422
	(A1 * B1 * !C1 * X)	0.00591	0.00509	0.00541
	(A1 * B1 * !C1 * X)	-0.00271	-0.00359	-0.00313
	(A1 * !B1 * C1 * X)	0.00647	0.00560	0.00648
	(A1 * !B1 * C1 * X)	-0.00229	-0.00324	-0.00212
	(!A1 * B1 * X)	0.00418	0.00422	0.00419
	(!A1 * B1 * X)	-0.00424	-0.00427	-0.00425
	(!A1 * !B1 * C1 * X)	0.00651	0.00657	0.00652
	(!A1 * !B1 * C1 * X)	-0.00190	-0.00194	-0.00192
	(!A1 * !B1 * !C1 * !X)	0.00836	0.00839	0.00837
	(!A1 * !B1 * !C1 * !X)	-0.00011	-0.00013	-0.00013

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)**	-0.00166	-0.00167	-0.00167
	(A1 * B1 * C1 * X)	0.00238	0.00240	0.00239
	(A1 * B1 * !C1 * X)	-0.00113	-0.00115	-0.00123
	(A1 * B1 * !C1 * X)	0.00298	0.00298	0.00289
	(A1 * !B1 * C1 * X)	-0.00052	-0.00056	-0.00074
	(A1 * !B1 * C1 * X)	0.00363	0.00363	0.00343
	(!A1 * B1 * X)	-0.00165	-0.00165	-0.00165
	(!A1 * B1 * X)	0.00239	0.00240	0.00239
	(!A1 * !B1 * C1 * X)	-0.00048	-0.00049	-0.00049
	(!A1 * !B1 * C1 * X)	0.00355	0.00356	0.00355
	(!A1 * !B1 * !C1 * !X)	-0.00022	-0.00038	-0.00039
	(!A1 * !B1 * !C1 * !X)	0.00386	0.00369	0.00365
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00210	-0.00211	-0.00211
	(A1 * B1 * C1 * X)	0.00234	0.00235	0.00235
	(A1 * B1 * !C1 * X)	-0.00157	-0.00159	-0.00167
	(A1 * B1 * !C1 * X)	0.00294	0.00294	0.00285
	(A1 * !B1 * C1 * X)	-0.00096	-0.00100	-0.00118
	(A1 * !B1 * C1 * X)	0.00360	0.00360	0.00340
	(!A1 * B1 * X)	-0.00208	-0.00209	-0.00209
	(!A1 * B1 * X)	0.00235	0.00236	0.00235
	(!A1 * !B1 * C1 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * !B1 * C1 * X)	0.00352	0.00352	0.00351
	(!A1 * !B1 * !C1 * !X)	0.00048	0.00033	0.00029
	(!A1 * !B1 * !C1 * !X)	0.00495	0.00480	0.00473

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00379	-0.00382	-0.00379
	(A1 * B1 * C1 * X)	0.00468	0.00475	0.00470
	(A1 * B1 * !C1 * X)	-0.00273	-0.00278	-0.00291
	(A1 * B1 * !C1 * X)	0.00587	0.00590	0.00570
	(A1 * !B1 * C1 * X)	-0.00150	-0.00157	-0.00192
	(A1 * !B1 * C1 * X)	0.00719	0.00719	0.00679
	(!A1 * B1 * X)	-0.00373	-0.00377	-0.00375
	(!A1 * B1 * X)	0.00468	0.00473	0.00470
	(!A1 * !B1 * C1 * X)	-0.00140	-0.00145	-0.00143
	(!A1 * !B1 * C1 * X)	0.00700	0.00706	0.00702
	(!A1 * !B1 * !C1 * !X)	0.00093	0.00057	0.00057
	(!A1 * !B1 * !C1 * !X)	0.00942	0.00910	0.00903

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)	0.00250	0.00245	0.00246
	(A1 * A2 * C1 * X)	-0.00120	-0.00127	-0.00120
	(A1 * A2 * !C1 * X)	0.00240	0.00239	0.00243
	(A1 * A2 * !C1 * X)	-0.00069	-0.00068	-0.00064
	(A1 * !A2 * C1 * X)	0.00297	0.00251	0.00321
	(A1 * !A2 * C1 * X)	-0.00132	-0.00182	-0.00105
	(!A1 * C1 * X)	0.00295	0.00251	0.00321
	(!A1 * C1 * X)	-0.00134	-0.00182	-0.00106
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00260	0.00255	0.00256
	(A1 * A2 * C1 * X)	-0.00118	-0.00124	-0.00118
	(A1 * A2 * !C1 * X)	0.00253	0.00254	0.00255
	(A1 * A2 * !C1 * X)	-0.00069	-0.00068	-0.00062
	(A1 * !A2 * C1 * X)	0.00309	0.00261	0.00330
	(A1 * !A2 * C1 * X)	-0.00129	-0.00177	-0.00103
	(!A1 * C1 * X)	0.00304	0.00260	0.00330
	(!A1 * C1 * X)	-0.00129	-0.00178	-0.00103
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00474	0.00463	0.00462
	(A1 * A2 * C1 * X)	-0.00250	-0.00259	-0.00251
	(A1 * A2 * !C1 * X)	0.00464	0.00466	0.00468
	(A1 * A2 * !C1 * X)	-0.00141	-0.00140	-0.00129
	(A1 * !A2 * C1 * X)	0.00579	0.00480	0.00615
	(A1 * !A2 * C1 * X)	-0.00259	-0.00367	-0.00221
	(!A1 * C1 * X)	0.00586	0.00482	0.00615
	(!A1 * C1 * X)	-0.00261	-0.00365	-0.00221

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)	-0.00203	-0.00205	-0.00200
	(A1 * A2 * C1 * X)	0.00158	0.00159	0.00157
	(A1 * A2 * !C1 * X)	-0.00084	-0.00088	-0.00144
	(A1 * A2 * !C1 * X)	0.00227	0.00225	0.00172
	(A1 * !A2 * C1 * X)	-0.00083	-0.00087	-0.00107
	(A1 * !A2 * C1 * X)	0.00347	0.00346	0.00322
	(!A1 * C1 * X)	-0.00082	-0.00087	-0.00107
	(!A1 * C1 * X)	0.00347	0.00346	0.00323
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00209	-0.00209	-0.00207
	(A1 * A2 * C1 * X)	0.00161	0.00160	0.00160
	(A1 * A2 * !C1 * X)	-0.00090	-0.00094	-0.00151
	(A1 * A2 * !C1 * X)	0.00229	0.00226	0.00173
	(A1 * !A2 * C1 * X)	-0.00086	-0.00090	-0.00110
	(A1 * !A2 * C1 * X)	0.00350	0.00348	0.00325
	(!A1 * C1 * X)	-0.00086	-0.00089	-0.00110
	(!A1 * C1 * X)	0.00350	0.00346	0.00325
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00369	-0.00370	-0.00363
	(A1 * A2 * C1 * X)	0.00335	0.00337	0.00333
	(A1 * A2 * !C1 * X)	-0.00141	-0.00149	-0.00262
	(A1 * A2 * !C1 * X)	0.00463	0.00460	0.00352
	(A1 * !A2 * C1 * X)	-0.00125	-0.00135	-0.00175
	(A1 * !A2 * C1 * X)	0.00714	0.00713	0.00666
	(!A1 * C1 * X)	-0.00124	-0.00135	-0.00175
	(!A1 * C1 * X)	0.00712	0.00713	0.00666

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00226	0.00227	0.00228
	(A1 * B1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !B1 * X)	0.00229	0.00234	0.00237
	(A1 * A2 * !B1 * X)	-0.00060	-0.00062	-0.00054
	(!A1 * B1 * X)	0.00227	0.00228	0.00234
	(!A1 * B1 * X)	-0.00086	-0.00086	-0.00080
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00230	0.00234	0.00231
	(A1 * B1 * X)	-0.00090	-0.00092	-0.00089
	(A1 * A2 * !B1 * X)	0.00235	0.00238	0.00242
	(A1 * A2 * !B1 * X)	-0.00063	-0.00063	-0.00056
	(!A1 * B1 * X)	0.00230	0.00235	0.00237
	(!A1 * B1 * X)	-0.00087	-0.00089	-0.00082
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00379	0.00382	0.00380
	(A1 * B1 * X)	-0.00173	-0.00175	-0.00172
	(A1 * A2 * !B1 * X)	0.00384	0.00387	0.00399
	(A1 * A2 * !B1 * X)	-0.00118	-0.00118	-0.00105
	(!A1 * B1 * X)	0.00379	0.00387	0.00390
	(!A1 * B1 * X)	-0.00169	-0.00173	-0.00159

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00195	-0.00197	-0.00205
	(A1 * B1 * X)	0.00119	0.00119	0.00112
	(A1 * A2 * !B1 * X)	-0.00067	-0.00070	-0.00114
	(A1 * A2 * !B1 * X)	0.00234	0.00232	0.00190
	(!A1 * B1 * X)	-0.00143	-0.00145	-0.00177
	(!A1 * B1 * X)	0.00174	0.00172	0.00139
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00194	-0.00195	-0.00204
	(A1 * B1 * X)	0.00126	0.00126	0.00118
	(A1 * A2 * !B1 * X)	-0.00067	-0.00070	-0.00114
	(A1 * A2 * !B1 * X)	0.00241	0.00239	0.00197
	(!A1 * B1 * X)	-0.00140	-0.00143	-0.00175
	(!A1 * B1 * X)	0.00180	0.00178	0.00146
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00310	-0.00312	-0.00330
	(A1 * B1 * X)	0.00240	0.00241	0.00225
	(A1 * A2 * !B1 * X)	-0.00048	-0.00056	-0.00145
	(A1 * A2 * !B1 * X)	0.00471	0.00469	0.00385
	(!A1 * B1 * X)	-0.00194	-0.00201	-0.00263
	(!A1 * B1 * X)	0.00357	0.00356	0.00292

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00282	0.00276	0.00260	0.85341
sky130_fd_sc_hs__a21boi_2	0.00535	0.00523	0.00256	1.63004
sky130_fd_sc_hs__a21boi_4	0.01060	0.01065	0.00374	2.83532

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	246.72300	492.74400
sky130_fd_sc_hs__a21boi_2	0.00000	202.27300	402.07100
sky130_fd_sc_hs__a21boi_4	0.00000	621.40300	1245.52000

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)	0.04422	0.64539	8.35870
	A2->Y (FR)	0.05583	0.68008	8.68429
	B1_N->Y (RR)	0.06037	0.52669	5.79735
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.04092	0.55904	8.56233
	A2->Y (FR)	0.05268	0.56693	8.54233
	B1_N->Y (RR)	0.05870	0.41113	5.54078
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.04164	0.46735	8.23764
	A2->Y (FR)	0.05232	0.47198	8.06927
	B1_N->Y (RR)	0.05833	0.39560	6.26918

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.02278	0.34529	4.34427
	A2->Y (RF)	0.02539	0.30687	3.76781
	B1_N->Y (FF)	0.04523	0.32538	3.43683
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.02124	0.30680	4.65948
	A2->Y (RF)	0.02515	0.26714	4.00284
	B1_N->Y (FF)	0.04856	0.31948	3.57938
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.02217	0.26027	4.61473
	A2->Y (RF)	0.02593	0.20578	3.66614
	B1_N->Y (FF)	0.04981	0.26391	2.83280

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.01098	0.01617	0.10827
	A1	0.01633	0.02153	0.11451
	A2	0.01213	0.01733	0.11319
	A2	0.01887	0.02406	0.11992
	B1_N	0.01629	0.03296	0.30001
	B1_N	0.01173	0.02840	0.29559
sky130_fd_sc_hs__a21boi_2	A1	0.00695	0.01752	0.18202
	A1	0.01732	0.02785	0.19209
	A2	0.00913	0.02005	0.19523
	A2	0.02236	0.03326	0.20813
	B1_N	0.01570	0.03463	0.33356
	B1_N	0.01169	0.03064	0.32983
sky130_fd_sc_hs__a21boi_4	A1	0.02609	0.04816	0.35552
	A1	0.04713	0.06921	0.37610
	A2	0.02863	0.05136	0.37567
	A2	0.05549	0.07832	0.40256
	B1_N	0.03778	0.06733	0.54438
	B1_N	0.03273	0.06231	0.54024

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.01559	0.02033	0.09680
	A1	0.01025	0.01500	0.09135
	A2	0.01644	0.02075	0.09791
	A2	0.00971	0.01399	0.09054
	B1_N	0.00585	0.02266	0.26980
	B1_N	0.01044	0.02722	0.27432
sky130_fd_sc_hs__a21boi_2	A1	0.02052	0.02995	0.16618
	A1	0.01019	0.01960	0.15477
	A2	0.02285	0.03208	0.17450
	A2	0.00966	0.01880	0.16076
	B1_N	0.01191	0.02899	0.29589
	B1_N	0.01593	0.03298	0.29950
sky130_fd_sc_hs__a21boi_4	A1	0.04853	0.06914	0.32598
	A1	0.02755	0.04802	0.30391
	A2	0.05300	0.07437	0.36790
	A2	0.02620	0.04753	0.34112
	B1_N	0.02498	0.05292	0.48687
	B1_N	0.03003	0.05798	0.49171

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)	0.00302	0.00255	0.00301
	(A2 * !B1_N * !Y)	-0.00156	-0.00209	-0.00156
	(!A2 * B1_N * Y)	0.00390	0.00390	0.00387
	(!A2 * B1_N * Y)	0.00034	0.00032	0.00029
	(!A2 * !B1_N * !Y)	0.00300	0.00302	0.00300
	(!A2 * !B1_N * !Y)	-0.00151	-0.00153	-0.00151
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00615	0.00503	0.00598
	(A2 * !B1_N * !Y)	-0.00279	-0.00395	-0.00294
	(!A2 * B1_N * Y)	0.00257	0.00257	0.00250
	(!A2 * B1_N * Y)	-0.00435	-0.00436	-0.00450
	(!A2 * !B1_N * !Y)	0.00593	0.00595	0.00595
	(!A2 * !B1_N * !Y)	-0.00283	-0.00285	-0.00284
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.01197	0.00985	0.01179
	(A2 * !B1_N * !Y)	-0.00589	-0.00810	-0.00603
	(!A2 * B1_N * Y)	0.00878	0.00881	0.00866
	(!A2 * B1_N * Y)	-0.00498	-0.00508	-0.00525
	(!A2 * !B1_N * !Y)	0.01170	0.01178	0.01172
	(!A2 * !B1_N * !Y)	-0.00581	-0.00589	-0.00583

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)	-0.00094	-0.00097	-0.00112
	(A2 * !B1_N * !Y)	0.00365	0.00365	0.00347
	(!A2 * B1_N * Y)	0.00251	0.00250	0.00252
	(!A2 * B1_N * Y)	0.00609	0.00614	0.00609
	(!A2 * !B1_N * !Y)	-0.00088	-0.00092	-0.00090
	(!A2 * !B1_N * !Y)	0.00361	0.00367	0.00363
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00182	-0.00187	-0.00217
	(A2 * !B1_N * !Y)	0.00714	0.00711	0.00678
	(!A2 * B1_N * Y)	0.00012	0.00009	0.00012
	(!A2 * B1_N * Y)	0.00707	0.00720	0.00711
	(!A2 * !B1_N * !Y)	-0.00168	-0.00177	-0.00173
	(!A2 * !B1_N * !Y)	0.00709	0.00717	0.00710
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00359	-0.00375	-0.00434
	(A2 * !B1_N * !Y)	0.01422	0.01427	0.01355
	(!A2 * B1_N * Y)	0.00426	0.00421	0.00427
	(!A2 * B1_N * Y)	0.01810	0.01833	0.01814
	(!A2 * !B1_N * !Y)	-0.00336	-0.00345	-0.00342
	(!A2 * !B1_N * !Y)	0.01421	0.01424	0.01420

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)	0.00313	0.00263	0.00309
	(A1 * !B1_N * !Y)	-0.00145	-0.00200	-0.00148
	(!A1 * B1_N * Y)	0.00524	0.00527	0.00524
	(!A1 * B1_N * Y)	0.00071	0.00069	0.00071
	(!A1 * !B1_N * !Y)	0.00309	0.00309	0.00309
	(!A1 * !B1_N * !Y)	-0.00142	-0.00143	-0.00143
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00604	0.00496	0.00592
	(A1 * !B1_N * !Y)	-0.00283	-0.00394	-0.00293
	(!A1 * B1_N * Y)	0.00512	0.00519	0.00514
	(!A1 * B1_N * Y)	-0.00361	-0.00366	-0.00362
	(!A1 * !B1_N * !Y)	0.00587	0.00592	0.00589
	(!A1 * !B1_N * !Y)	-0.00281	-0.00286	-0.00283
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.01216	0.00992	0.01188
	(A1 * !B1_N * !Y)	-0.00582	-0.00805	-0.00598
	(!A1 * B1_N * Y)	0.01390	0.01395	0.01391
	(!A1 * B1_N * Y)	-0.00379	-0.00382	-0.00378
	(!A1 * !B1_N * !Y)	0.01178	0.01188	0.01181
	(!A1 * !B1_N * !Y)	-0.00572	-0.00583	-0.00578

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)	-0.00102	-0.00105	-0.00120
	(A1 * !B1_N * !Y)	0.00356	0.00357	0.00339
	(!A1 * B1_N * Y)	0.00139	0.00122	0.00119
	(!A1 * B1_N * Y)	0.00594	0.00577	0.00572
	(!A1 * !B1_N * !Y)	-0.00097	-0.00098	-0.00098
	(!A1 * !B1_N * !Y)	0.00355	0.00354	0.00355
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00176	-0.00182	-0.00211
	(A1 * !B1_N * !Y)	0.00713	0.00713	0.00677
	(!A1 * B1_N * Y)	-0.00194	-0.00233	-0.00244
	(!A1 * B1_N * Y)	0.00682	0.00654	0.00632
	(!A1 * !B1_N * !Y)	-0.00161	-0.00167	-0.00167
	(!A1 * !B1_N * !Y)	0.00707	0.00711	0.00709
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00365	-0.00381	-0.00442
	(A1 * !B1_N * !Y)	0.01415	0.01419	0.01350
	(!A1 * B1_N * Y)	0.00012	-0.00062	-0.00081
	(!A1 * B1_N * Y)	0.01781	0.01727	0.01686
	(!A1 * !B1_N * !Y)	-0.00342	-0.00353	-0.00352
	(!A1 * !B1_N * !Y)	0.01413	0.01420	0.01415

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)	0.01042	0.02693	0.29020
	(A1 * A2 * !Y)	0.00529	0.02179	0.28505
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.01075	0.02849	0.31856
	(A1 * A2 * !Y)	0.00566	0.02340	0.31350
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.02206	0.04834	0.50352
	(A1 * A2 * !Y)	0.01452	0.04079	0.49597

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)	0.00125	0.01897	0.28585
	(A1 * A2 * !Y)	0.00641	0.02416	0.29101
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00371	0.02221	0.31489
	(A1 * A2 * !Y)	0.00882	0.02736	0.31997
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00796	0.03775	0.50213
	(A1 * A2 * !Y)	0.01561	0.04545	0.50971

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00262	0.00255	0.00221	1.51779
sky130_fd_sc_hs__a21bo_2	0.00279	0.00266	0.00231	2.69101
sky130_fd_sc_hs__a21bo_4	0.00485	0.00518	0.00266	5.05767

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	303.38900	502.87300
sky130_fd_sc_hs__a21bo_2	0.00000	348.49100	606.28900
sky130_fd_sc_hs__a21bo_4	0.00000	409.19800	639.94300

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)	0.05637	0.44059	5.71264
	A2->X (RR)	0.05911	0.42763	5.48777
	B1_N->X (FR)	0.07145	0.58562	7.81392
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.05411	0.35070	5.15606
	A2->X (RR)	0.05693	0.33368	4.91878
	B1_N->X (FR)	0.07458	0.49952	7.46967
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.05675	0.29831	5.37079
	A2->X (RR)	0.06187	0.28787	5.17944
	B1_N->X (FR)	0.08485	0.46855	7.73174

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.07571	0.43635	5.36307
	A2->X (FF)	0.08674	0.45966	5.54895
	B1_N->X (RF)	0.09017	0.29622	2.80527
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.09287	0.41983	5.13725
	A2->X (FF)	0.10579	0.44618	5.33592
	B1_N->X (RF)	0.11360	0.28406	2.39131
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.09064	0.37331	5.05363
	A2->X (FF)	0.09826	0.39315	5.17584
	B1_N->X (RF)	0.10559	0.23262	2.10205

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.02450	0.03671	0.24654
	A1	0.01938	0.03161	0.24152
	A2	0.02574	0.03707	0.24325
	A2	0.01934	0.03069	0.23714
	B1_N	0.01318	0.03180	0.32764
	B1_N	0.01682	0.03609	0.33180
sky130_fd_sc_hs__a21bo_2	A1	0.02854	0.04053	0.24792
	A1	0.02322	0.03526	0.24234
	A2	0.02971	0.04069	0.24482
	A2	0.02309	0.03410	0.23796
	B1_N	0.01726	0.03517	0.33018
	B1_N	0.02116	0.03905	0.33422
sky130_fd_sc_hs__a21bo_4	A1	0.04059	0.06628	0.49737
	A1	0.03129	0.05698	0.48889
	A2	0.04390	0.06714	0.49343
	A2	0.03129	0.05465	0.48038
	B1_N	0.03268	0.05307	0.42229
	B1_N	0.03684	0.05736	0.42866

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.01473	0.02542	0.23313
	A1	0.01987	0.03043	0.23801
	A2	0.01525	0.02557	0.23262
	A2	0.02165	0.03194	0.23767
	B1_N	0.02020	0.03622	0.32188
	B1_N	0.01655	0.03252	0.31785
sky130_fd_sc_hs__a21bo_2	A1	0.02234	0.02956	0.23009
	A1	0.02767	0.03475	0.23553
	A2	0.02424	0.03061	0.23419
	A2	0.03085	0.03708	0.23770
	B1_N	0.02776	0.04140	0.31915
	B1_N	0.02387	0.03750	0.31443
sky130_fd_sc_hs__a21bo_4	A1	0.03631	0.05126	0.46767
	A1	0.04563	0.06055	0.47298
	A2	0.03749	0.05231	0.47074
	A2	0.05009	0.06480	0.47789
	B1_N	0.04232	0.05752	0.39416
	B1_N	0.03813	0.05331	0.38883

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)	0.00286	0.00236	0.00295
	(A2 * !B1_N * X)	-0.00137	-0.00189	-0.00125
	(!A2 * B1_N * !X)	0.00484	0.00485	0.00481
	(!A2 * B1_N * !X)	0.00155	0.00152	0.00149
	(!A2 * !B1_N * X)	0.00298	0.00299	0.00298
	(!A2 * !B1_N * X)	-0.00117	-0.00119	-0.00117
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00315	0.00263	0.00326
	(A2 * !B1_N * X)	-0.00130	-0.00182	-0.00118
	(!A2 * B1_N * !X)	0.00598	0.00600	0.00596
	(!A2 * B1_N * !X)	0.00258	0.00255	0.00251
	(!A2 * !B1_N * X)	0.00329	0.00331	0.00330
	(!A2 * !B1_N * X)	-0.00109	-0.00111	-0.00109
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00552	0.00454	0.00578
	(A2 * !B1_N * X)	-0.00240	-0.00340	-0.00213
	(!A2 * B1_N * !X)	0.00645	0.00646	0.00638
	(!A2 * B1_N * !X)	0.00030	0.00026	0.00016
	(!A2 * !B1_N * X)	0.00581	0.00584	0.00582
	(!A2 * !B1_N * X)	-0.00196	-0.00200	-0.00197

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)	-0.00047	-0.00051	-0.00072
	(A2 * !B1_N * X)	0.00374	0.00373	0.00350
	(!A2 * B1_N * !X)	0.00369	0.00368	0.00369
	(!A2 * B1_N * !X)	0.00699	0.00702	0.00700
	(!A2 * !B1_N * X)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1_N * X)	0.00372	0.00373	0.00372
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00075	-0.00078	-0.00098
	(A2 * !B1_N * X)	0.00371	0.00370	0.00347
	(!A2 * B1_N * !X)	0.00457	0.00456	0.00457
	(!A2 * B1_N * !X)	0.00801	0.00803	0.00801
	(!A2 * !B1_N * X)	-0.00069	-0.00071	-0.00070
	(!A2 * !B1_N * X)	0.00368	0.00370	0.00369
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00072	-0.00079	-0.00119
	(A2 * !B1_N * X)	0.00721	0.00718	0.00674
	(!A2 * B1_N * !X)	0.00466	0.00464	0.00466
	(!A2 * B1_N * !X)	0.01083	0.01089	0.01085
	(!A2 * !B1_N * X)	-0.00061	-0.00066	-0.00064
	(!A2 * !B1_N * X)	0.00718	0.00724	0.00718

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)	0.00307	0.00260	0.00321
	(A1 * !B1_N * X)	-0.00122	-0.00171	-0.00106
	(!A1 * B1_N * !X)	0.00628	0.00631	0.00628
	(!A1 * B1_N * !X)	0.00203	0.00201	0.00202
	(!A1 * !B1_N * X)	0.00325	0.00327	0.00324
	(!A1 * !B1_N * X)	-0.00097	-0.00099	-0.00098
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00312	0.00259	0.00322
	(A1 * !B1_N * X)	-0.00123	-0.00176	-0.00112
	(!A1 * B1_N * !X)	0.00723	0.00726	0.00724
	(!A1 * B1_N * !X)	0.00294	0.00292	0.00294
	(!A1 * !B1_N * X)	0.00324	0.00326	0.00324
	(!A1 * !B1_N * X)	-0.00103	-0.00106	-0.00104
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00618	0.00530	0.00651
	(A1 * !B1_N * X)	-0.00244	-0.00339	-0.00211
	(!A1 * B1_N * !X)	0.00958	0.00966	0.00960
	(!A1 * B1_N * !X)	0.00105	0.00100	0.00102
	(!A1 * !B1_N * X)	0.00657	0.00662	0.00658
	(!A1 * !B1_N * X)	-0.00192	-0.00196	-0.00194

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)	-0.00074	-0.00078	-0.00098
	(A1 * !B1_N * X)	0.00353	0.00352	0.00331
	(!A1 * B1_N * !X)	0.00248	0.00230	0.00232
	(!A1 * B1_N * !X)	0.00673	0.00661	0.00655
	(!A1 * !B1_N * X)	-0.00070	-0.00073	-0.00071
	(!A1 * !B1_N * X)	0.00351	0.00355	0.00352
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00070	-0.00074	-0.00094
	(A1 * !B1_N * X)	0.00365	0.00364	0.00342
	(!A1 * B1_N * !X)	0.00356	0.00338	0.00335
	(!A1 * B1_N * !X)	0.00784	0.00768	0.00764
	(!A1 * !B1_N * X)	-0.00063	-0.00066	-0.00065
	(!A1 * !B1_N * X)	0.00362	0.00364	0.00363
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00146	-0.00155	-0.00193
	(A1 * !B1_N * X)	0.00716	0.00717	0.00672
	(!A1 * B1_N * !X)	0.00203	0.00163	0.00162
	(!A1 * B1_N * !X)	0.01060	0.01024	0.01016
	(!A1 * !B1_N * X)	-0.00135	-0.00140	-0.00138
	(!A1 * !B1_N * X)	0.00713	0.00715	0.00714

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)	0.00956	0.02562	0.27910
	(A1 * A2 * X)	0.00518	0.02123	0.27471
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.01025	0.02609	0.28138
	(A1 * A2 * X)	0.00565	0.02148	0.27679
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.01161	0.02870	0.30862
	(A1 * A2 * X)	0.00633	0.02339	0.30332

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)	0.00153	0.01876	0.27594
	(A1 * A2 * X)	0.00597	0.02320	0.28033
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00187	0.01899	0.27799
	(A1 * A2 * X)	0.00649	0.02362	0.28259
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00313	0.02096	0.30341
	(A1 * A2 * X)	0.00848	0.02632	0.30870

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00291	0.00276	0.00284	0.81897
sky130_fd_sc_hs__a21oi_2	0.00530	0.00555	0.00424	1.42592
sky130_fd_sc_hs__a21oi_4	0.01079	0.01063	0.00836	2.64714

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	64.46240	130.26700
sky130_fd_sc_hs__a21oi_2	0.00000	127.78400	260.44600
sky130_fd_sc_hs__a21oi_4	0.00000	255.46700	520.92200

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)	0.04417	0.63729	8.14464
	A2->Y (FR)	0.05487	0.66984	8.45533
	B1->Y (FR)	0.04225	0.71779	9.29607
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.04347	0.58093	8.55533
	A2->Y (FR)	0.05635	0.58255	8.39570
	B1->Y (FR)	0.02367	0.60343	9.11505
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.04045	0.48088	8.27130
	A2->Y (FR)	0.05257	0.47941	8.06188
	B1->Y (FR)	0.02165	0.50776	8.87349

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.02299	0.33804	4.18543
	A2->Y (RF)	0.02518	0.30085	3.63482
	B1->Y (RF)	0.01359	0.25156	3.15351
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.02230	0.29206	4.23546
	A2->Y (RF)	0.02739	0.25347	3.58674
	B1->Y (RF)	0.01724	0.34341	5.18430
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.02116	0.24910	4.33447
	A2->Y (RF)	0.02437	0.19352	3.38965
	B1->Y (RF)	0.01698	0.29880	5.36718

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00027	0.00503	0.09980
	A1	0.00703	0.01237	0.10718
	A2	0.00018	0.00554	0.10297
	A2	0.00891	0.01428	0.11165
	B1	-0.00071	0.00841	0.13956
	B1	0.00504	0.01417	0.14565
sky130_fd_sc_hs__a21oi_2	A1	-0.00072	0.00925	0.16830
	A1	0.01302	0.02324	0.18184
	A2	0.00112	0.01118	0.17822
	A2	0.01830	0.02858	0.19694
	B1	-0.00010	0.01308	0.18399
	B1	0.00880	0.02201	0.19292
sky130_fd_sc_hs__a21oi_4	A1	-0.00240	0.02033	0.33790
	A1	0.02571	0.04847	0.36569
	A2	0.00132	0.02576	0.37913
	A2	0.03552	0.05999	0.41353
	B1	-0.00050	0.02598	0.33078
	B1	0.01730	0.04386	0.34815

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.01133	0.01609	0.09398
	A1	0.00400	0.00873	0.08663
	A2	0.01258	0.01688	0.09521
	A2	0.00386	0.00816	0.08628
	B1	0.00712	0.01351	0.10784
	B1	0.00139	0.00777	0.10188
sky130_fd_sc_hs__a21oi_2	A1	0.02121	0.03034	0.16655
	A1	0.00747	0.01656	0.15283
	A2	0.02449	0.03344	0.17953
	A2	0.00731	0.01614	0.16198
	B1	0.01120	0.02087	0.13937
	B1	0.00230	0.01183	0.12852
sky130_fd_sc_hs__a21oi_4	A1	0.04239	0.06167	0.31610
	A1	0.01431	0.03353	0.28802
	A2	0.04739	0.06821	0.36177
	A2	0.01320	0.03394	0.32639
	B1	0.02306	0.04220	0.25344
	B1	0.00527	0.02426	0.23248

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00306	0.00257	0.00303
	(A2 * B1 * !Y)	-0.00149	-0.00204	-0.00150
	(!A2 * B1 * !Y)	0.00301	0.00303	0.00301
	(!A2 * B1 * !Y)	-0.00143	-0.00145	-0.00144
	(!A2 * !B1 * Y)	0.00060	0.00060	0.00057
	(!A2 * !B1 * Y)	-0.00289	-0.00290	-0.00293
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00623	0.00505	0.00602
	(A2 * B1 * !Y)	-0.00273	-0.00395	-0.00289
	(!A2 * B1 * !Y)	0.00595	0.00596	0.00594
	(!A2 * B1 * !Y)	-0.00279	-0.00281	-0.00279
	(!A2 * !B1 * Y)	0.00125	0.00126	0.00118
	(!A2 * !B1 * Y)	-0.00550	-0.00554	-0.00567
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.01242	0.01013	0.01208
	(A2 * B1 * !Y)	-0.00558	-0.00795	-0.00580
	(!A2 * B1 * !Y)	0.01202	0.01205	0.01202
	(!A2 * B1 * !Y)	-0.00555	-0.00558	-0.00554
	(!A2 * !B1 * Y)	0.00238	0.00238	0.00225
	(!A2 * !B1 * Y)	-0.01138	-0.01142	-0.01167

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00099	-0.00102	-0.00117
	(A2 * B1 * !Y)	0.00357	0.00357	0.00339
	(!A2 * B1 * !Y)	-0.00093	-0.00096	-0.00094
	(!A2 * B1 * !Y)	0.00351	0.00355	0.00352
	(!A2 * !B1 * Y)	-0.00050	-0.00051	-0.00050
	(!A2 * !B1 * Y)	0.00299	0.00305	0.00300
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00195	-0.00201	-0.00230
	(A2 * B1 * !Y)	0.00701	0.00700	0.00666
	(!A2 * B1 * !Y)	-0.00176	-0.00184	-0.00184
	(!A2 * B1 * !Y)	0.00693	0.00699	0.00694
	(!A2 * !B1 * Y)	-0.00107	-0.00110	-0.00107
	(!A2 * !B1 * Y)	0.00574	0.00586	0.00577
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00397	-0.00407	-0.00467
	(A2 * B1 * !Y)	0.01405	0.01399	0.01332
	(!A2 * B1 * !Y)	-0.00370	-0.00375	-0.00379
	(!A2 * B1 * !Y)	0.01386	0.01386	0.01386
	(!A2 * !B1 * Y)	-0.00204	-0.00208	-0.00204
	(!A2 * !B1 * Y)	0.01180	0.01204	0.01185

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00307	0.00258	0.00303
	(A1 * B1 * !Y)	-0.00149	-0.00204	-0.00150
	(!A1 * B1 * !Y)	0.00304	0.00305	0.00303
	(!A1 * B1 * !Y)	-0.00144	-0.00145	-0.00144
	(!A1 * !B1 * Y)	0.00206	0.00209	0.00206
	(!A1 * !B1 * Y)	-0.00244	-0.00245	-0.00244
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00638	0.00520	0.00615
	(A1 * B1 * !Y)	-0.00274	-0.00396	-0.00291
	(!A1 * B1 * !Y)	0.00609	0.00612	0.00609
	(!A1 * B1 * !Y)	-0.00278	-0.00282	-0.00280
	(!A1 * !B1 * Y)	0.00398	0.00402	0.00401
	(!A1 * !B1 * Y)	-0.00492	-0.00496	-0.00494
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.01213	0.00994	0.01189
	(A1 * B1 * !Y)	-0.00601	-0.00822	-0.00606
	(!A1 * B1 * !Y)	0.01180	0.01189	0.01181
	(!A1 * B1 * !Y)	-0.00578	-0.00588	-0.00582
	(!A1 * !B1 * Y)	0.00783	0.00793	0.00788
	(!A1 * !B1 * Y)	-0.00985	-0.00993	-0.00988

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00099	-0.00103	-0.00118
	(A1 * B1 * !Y)	0.00356	0.00357	0.00339
	(!A1 * B1 * !Y)	-0.00095	-0.00096	-0.00095
	(!A1 * B1 * !Y)	0.00353	0.00353	0.00352
	(!A1 * !B1 * Y)	-0.00174	-0.00191	-0.00193
	(!A1 * !B1 * Y)	0.00277	0.00260	0.00255
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00209	-0.00214	-0.00244
	(A1 * B1 * !Y)	0.00703	0.00699	0.00667
	(!A1 * B1 * !Y)	-0.00190	-0.00198	-0.00198
	(!A1 * B1 * !Y)	0.00694	0.00698	0.00695
	(!A1 * !B1 * Y)	-0.00325	-0.00373	-0.00381
	(!A1 * !B1 * Y)	0.00568	0.00532	0.00512
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00372	-0.00387	-0.00447
	(A1 * B1 * !Y)	0.01425	0.01429	0.01359
	(!A1 * B1 * !Y)	-0.00348	-0.00358	-0.00357
	(!A1 * B1 * !Y)	0.01411	0.01419	0.01414
	(!A1 * !B1 * Y)	-0.00646	-0.00732	-0.00747
	(!A1 * !B1 * Y)	0.01129	0.01056	0.01024

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00243	0.00246	0.00249
	(A1 * A2 * !Y)	-0.00085	-0.00085	-0.00076
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00273	0.00279	0.00288
	(A1 * A2 * !Y)	-0.00178	-0.00181	-0.00163
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00526	0.00538	0.00558
	(A1 * A2 * !Y)	-0.00332	-0.00339	-0.00303

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00085	-0.00089	-0.00141
	(A1 * A2 * !Y)	0.00244	0.00242	0.00191
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00039	0.00031	-0.00071
	(A1 * A2 * !Y)	0.00497	0.00494	0.00390
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00093	0.00079	-0.00129
	(A1 * A2 * !Y)	0.00970	0.00960	0.00755

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00246	0.00253	0.00252	1.70455
sky130_fd_sc_hs__a21o_2	0.00273	0.00265	0.00276	3.18730
sky130_fd_sc_hs__a21o_4	0.00496	0.00478	0.00505	6.14603

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	121.47700	144.08800
sky130_fd_sc_hs__a21o_2	0.00000	166.61300	244.60300
sky130_fd_sc_hs__a21o_4	0.00000	335.97500	498.80200

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)	0.05288	0.42120	5.74081
	A2->X (RR)	0.05635	0.40825	5.51046
	B1->X (RR)	0.03842	0.36153	5.03443
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.05233	0.34055	5.38752
	A2->X (RR)	0.05519	0.32341	5.14398
	B1->X (RR)	0.03842	0.28659	4.73476
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.06139	0.30608	5.74627
	A2->X (RR)	0.06550	0.28953	5.50350
	B1->X (RR)	0.03997	0.23501	4.94050

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.07216	0.44750	5.76199
	A2->X (FF)	0.08448	0.47278	5.95571
	B1->X (FF)	0.07026	0.48946	6.01669
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.08624	0.41844	5.50289
	A2->X (FF)	0.09880	0.44424	5.70868
	B1->X (FF)	0.08607	0.47139	5.88825
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.09057	0.38999	5.64613
	A2->X (FF)	0.10329	0.41640	5.84710
	B1->X (FF)	0.08798	0.44414	6.12683

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.01636	0.02870	0.23962
	A1	0.01005	0.02239	0.23343
	A2	0.01790	0.02928	0.23736
	A2	0.01001	0.02141	0.22985
	B1	0.01257	0.02787	0.27174
	B1	0.00764	0.02292	0.26703
sky130_fd_sc_hs__a21o_2	A1	0.02095	0.03350	0.24966
	A1	0.01407	0.02664	0.24333
	A2	0.02239	0.03378	0.24844
	A2	0.01402	0.02541	0.23984
	B1	0.01666	0.03227	0.28361
	B1	0.01122	0.02682	0.27810
sky130_fd_sc_hs__a21o_4	A1	0.04202	0.06512	0.47255
	A1	0.02882	0.05196	0.45970
	A2	0.04445	0.06520	0.46776
	A2	0.02874	0.04962	0.45344
	B1	0.03203	0.06345	0.55219
	B1	0.02165	0.05309	0.54127

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00731	0.01818	0.22574
	A1	0.01364	0.02437	0.23147
	A2	0.00781	0.01814	0.22492
	A2	0.01570	0.02602	0.23137
	B1	0.00665	0.02100	0.22987
	B1	0.01163	0.02585	0.23439
sky130_fd_sc_hs__a21o_2	A1	0.01531	0.02332	0.23394
	A1	0.02221	0.03000	0.23838
	A2	0.01696	0.02392	0.23430
	A2	0.02534	0.03226	0.24105
	B1	0.01366	0.02700	0.25610
	B1	0.01914	0.03229	0.26002
sky130_fd_sc_hs__a21o_4	A1	0.03235	0.04592	0.43689
	A1	0.04554	0.05896	0.45010
	A2	0.03624	0.04816	0.44246
	A2	0.05195	0.06372	0.45483
	B1	0.02855	0.05350	0.50962
	B1	0.03894	0.06368	0.51090

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00272	0.00223	0.00283
	(A2 * B1 * X)	-0.00128	-0.00179	-0.00112
	(!A2 * B1 * X)	0.00286	0.00287	0.00286
	(!A2 * B1 * X)	-0.00102	-0.00103	-0.00103
	(!A2 * !B1 * !X)	0.00161	0.00161	0.00158
	(!A2 * !B1 * !X)	-0.00146	-0.00147	-0.00151
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00305	0.00257	0.00315
	(A2 * B1 * X)	-0.00126	-0.00179	-0.00112
	(!A2 * B1 * X)	0.00318	0.00318	0.00318
	(!A2 * B1 * X)	-0.00103	-0.00104	-0.00103
	(!A2 * !B1 * !X)	0.00271	0.00272	0.00269
	(!A2 * !B1 * !X)	-0.00052	-0.00054	-0.00058
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00581	0.00473	0.00595
	(A2 * B1 * X)	-0.00240	-0.00351	-0.00219
	(!A2 * B1 * X)	0.00599	0.00600	0.00599
	(!A2 * B1 * X)	-0.00199	-0.00202	-0.00200
	(!A2 * !B1 * !X)	0.00540	0.00541	0.00532
	(!A2 * !B1 * !X)	-0.00097	-0.00102	-0.00113

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00039	-0.00043	-0.00063
	(A2 * B1 * X)	0.00358	0.00357	0.00335
	(!A2 * B1 * X)	-0.00035	-0.00036	-0.00036
	(!A2 * B1 * X)	0.00353	0.00355	0.00354
	(!A2 * !B1 * !X)	0.00063	0.00062	0.00063
	(!A2 * !B1 * !X)	0.00369	0.00372	0.00370
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00066	-0.00070	-0.00090
	(A2 * B1 * X)	0.00364	0.00363	0.00341
	(!A2 * B1 * X)	-0.00061	-0.00062	-0.00062
	(!A2 * B1 * X)	0.00360	0.00360	0.00359
	(!A2 * !B1 * !X)	0.00154	0.00154	0.00155
	(!A2 * !B1 * !X)	0.00481	0.00483	0.00481
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00097	-0.00106	-0.00146
	(A2 * B1 * X)	0.00718	0.00719	0.00674
	(!A2 * B1 * X)	-0.00086	-0.00094	-0.00091
	(!A2 * B1 * X)	0.00712	0.00718	0.00712
	(!A2 * !B1 * !X)	0.00327	0.00324	0.00327
	(!A2 * !B1 * !X)	0.00966	0.00973	0.00969

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00309	0.00261	0.00322
	(A1 * B1 * X)	-0.00127	-0.00176	-0.00109
	(!A1 * B1 * X)	0.00326	0.00325	0.00326
	(!A1 * B1 * X)	-0.00098	-0.00099	-0.00099
	(!A1 * !B1 * !X)	0.00316	0.00319	0.00316
	(!A1 * !B1 * !X)	-0.00112	-0.00114	-0.00113
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00314	0.00267	0.00325
	(A1 * B1 * X)	-0.00127	-0.00179	-0.00112
	(!A1 * B1 * X)	0.00328	0.00330	0.00328
	(!A1 * B1 * X)	-0.00102	-0.00104	-0.00103
	(!A1 * !B1 * !X)	0.00414	0.00417	0.00414
	(!A1 * !B1 * !X)	-0.00018	-0.00020	-0.00018
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00571	0.00466	0.00588
	(A1 * B1 * X)	-0.00242	-0.00351	-0.00218
	(!A1 * B1 * X)	0.00594	0.00596	0.00593
	(!A1 * B1 * X)	-0.00199	-0.00202	-0.00199
	(!A1 * !B1 * !X)	0.00775	0.00781	0.00776
	(!A1 * !B1 * !X)	-0.00020	-0.00024	-0.00022

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00079	-0.00082	-0.00103
	(A1 * B1 * X)	0.00355	0.00353	0.00332
	(!A1 * B1 * X)	-0.00075	-0.00077	-0.00076
	(!A1 * B1 * X)	0.00350	0.00353	0.00350
	(!A1 * !B1 * !X)	-0.00069	-0.00087	-0.00087
	(!A1 * !B1 * !X)	0.00359	0.00347	0.00340
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00076	-0.00080	-0.00100
	(A1 * B1 * X)	0.00364	0.00363	0.00340
	(!A1 * B1 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * B1 * X)	0.00359	0.00359	0.00359
	(!A1 * !B1 * !X)	0.00034	0.00017	0.00014
	(!A1 * !B1 * !X)	0.00468	0.00450	0.00446
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00093	-0.00100	-0.00139
	(A1 * B1 * X)	0.00721	0.00718	0.00673
	(!A1 * B1 * X)	-0.00080	-0.00084	-0.00084
	(!A1 * B1 * X)	0.00709	0.00713	0.00711
	(!A1 * !B1 * !X)	0.00145	0.00108	0.00098
	(!A1 * !B1 * !X)	0.00943	0.00915	0.00894

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00204	0.00207	0.00212
	(A1 * A2 * X)	-0.00079	-0.00079	-0.00071
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00243	0.00244	0.00249
	(A1 * A2 * X)	-0.00075	-0.00074	-0.00066
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00426	0.00432	0.00441
	(A1 * A2 * X)	-0.00162	-0.00162	-0.00143

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00037	-0.00042	-0.00098
	(A1 * A2 * X)	0.00251	0.00248	0.00190
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00069	-0.00072	-0.00129
	(A1 * A2 * X)	0.00252	0.00248	0.00191
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00080	-0.00090	-0.00204
	(A1 * A2 * X)	0.00509	0.00506	0.00390

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00280	0.00278	0.00286	0.00297	0.00294	0.55442
sky130_fd_sc_hs__a221oi_2	0.00594	0.00540	0.00584	0.00535	0.00542	0.90445
sky130_fd_sc_hs__a221oi_4	0.01094	0.01098	0.01085	0.01064	0.01073	1.52300

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	62.12700	130.10300
sky130_fd_sc_hs__a221oi_2	0.00000	124.12100	259.94900
sky130_fd_sc_hs__a221oi_4	0.00000	247.88300	519.67400

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)	0.11310	0.76413	8.12741
	A2->Y (FR)	0.12647	0.78329	8.21343
	B1->Y (FR)	0.09652	0.79754	8.77469
	B2->Y (FR)	0.11187	0.82212	8.92348
	C1->Y (FR)	0.08320	0.83778	9.46216
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.10705	0.62564	7.55623
	A2->Y (FR)	0.13694	0.69450	8.18232
	B1->Y (FR)	0.09518	0.68956	8.58940
	B2->Y (FR)	0.11829	0.73130	8.89238
	C1->Y (FR)	0.08344	0.75619	9.52386
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.12277	0.56635	7.57804
	A2->Y (FR)	0.14713	0.60123	7.81402
	B1->Y (FR)	0.10061	0.59280	8.18838
	B2->Y (FR)	0.12732	0.63938	8.55207
	C1->Y (FR)	0.09121	0.68460	9.51725

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.02768	0.30152	2.98660
	A2->Y (RF)	0.03026	0.26602	2.51260
	B1->Y (RF)	0.02732	0.29361	3.03219
	B2->Y (RF)	0.03074	0.26059	2.56287
	C1->Y (RF)	0.01653	0.21294	2.16222
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.02456	0.24143	2.69097
	A2->Y (RF)	0.02920	0.21356	2.25044
	B1->Y (RF)	0.02381	0.22307	2.60798
	B2->Y (RF)	0.02753	0.19709	2.19631
	C1->Y (RF)	0.01440	0.15518	1.84401
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.02716	0.21233	2.67410
	A2->Y (RF)	0.03079	0.16033	1.89744
	B1->Y (RF)	0.02814	0.19709	2.67070
	B2->Y (RF)	0.03187	0.14851	1.87460
	C1->Y (RF)	0.01311	0.09655	1.41194

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00139	0.00510	0.10982
	A1	0.01219	0.01591	0.12054
	A2	0.00174	0.00553	0.11432
	A2	0.01409	0.01789	0.12673
	B1	0.00141	0.00621	0.10258
	B1	0.00916	0.01395	0.11048
	B2	0.00189	0.00650	0.10347
	B2	0.01117	0.01579	0.11296
	C1	0.00098	0.00916	0.13648
	C1	0.00735	0.01555	0.14280
sky130_fd_sc_hs__a221oi_2	A1	0.00075	0.00935	0.21722
	A1	0.02284	0.03147	0.23991
	A2	0.00270	0.01049	0.20970
	A2	0.02707	0.03492	0.23404
	B1	0.00086	0.01090	0.19606
	B1	0.01659	0.02661	0.21164
	B2	0.00234	0.01237	0.20167
	B2	0.02051	0.03057	0.22010
	C1	0.00021	0.01700	0.25697
	C1	0.01257	0.02942	0.26945

sky130_fd_sc_hs__a221oi_4	**A1**	0.00070	0.01563	0.36836
	A1	0.04424	0.05946	0.41250
	A2	0.00376	0.01891	0.38988
	A2	0.05322	0.06848	0.43915
	B1	0.00054	0.01949	0.33940
	B1	0.03233	0.05125	0.37131
	B2	0.00380	0.02211	0.34510
	B2	0.04161	0.05998	0.38235
	C1	-0.00092	0.03115	0.46347
	C1	0.02351	0.05553	0.48773

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01820	0.02230	0.11195
	A1	0.00741	0.01147	0.10110
	A2	0.01960	0.02339	0.11440
	A2	0.00726	0.01099	0.10190
	B1	0.01172	0.01627	0.10068
	B1	0.00400	0.00852	0.09275
	B2	0.01313	0.01722	0.10054
	B2	0.00387	0.00796	0.09114
	C1	0.00749	0.01371	0.11234
	C1	0.00115	0.00732	0.10598

sky130_fd_sc_hs__a221oi_2	**A1**	0.03427	0.04336	0.22334
	A1	0.01220	0.02122	0.20109
	A2	0.03679	0.04445	0.21489
	A2	0.01241	0.02003	0.19032
	B1	0.02244	0.03220	0.19771
	B1	0.00672	0.01647	0.18186
	B2	0.02477	0.03367	0.19551
	B2	0.00659	0.01546	0.17723
	C1	0.01369	0.02695	0.21896
	C1	0.00133	0.01455	0.20658
sky130_fd_sc_hs__a221oi_4	**A1**	0.06901	0.08510	0.40232
	A1	0.02543	0.04148	0.35858
	A2	0.07424	0.09065	0.43344
	A2	0.02476	0.04106	0.38353
	B1	0.04488	0.06398	0.36675
	B1	0.01318	0.03212	0.33486
	B2	0.05051	0.06920	0.38314
	B2	0.01274	0.03128	0.34535
	C1	0.02808	0.05522	0.41531
	C1	0.00373	0.03075	0.39087

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)**	0.00232	0.00210	0.00206
	(A2 * B1 * B2 * C1 * !Y)	-0.00206	-0.00233	-0.00232
	(A2 * B1 * B2 * !C1 * !Y)	0.00323	0.00270	0.00304
	(A2 * B1 * B2 * !C1 * !Y)	-0.00129	-0.00185	-0.00138
	(A2 * B1 * !B2 * C1 * !Y)	0.00319	0.00271	0.00294
	(A2 * B1 * !B2 * C1 * !Y)	-0.00131	-0.00185	-0.00148
	(A2 * !B1 * C1 * !Y)	0.00320	0.00271	0.00294
	(A2 * !B1 * C1 * !Y)	-0.00129	-0.00185	-0.00148
	(!A2 * B1 * B2 * C1 * !Y)	0.00199	0.00201	0.00200
	(!A2 * B1 * B2 * C1 * !Y)	-0.00234	-0.00235	-0.00234
	(!A2 * B1 * B2 * !C1 * !Y)	0.00301	0.00302	0.00301
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00132	-0.00134	-0.00133
	(!A2 * B1 * !B2 * C1 * !Y)	0.00291	0.00293	0.00291
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00142	-0.00144	-0.00142
	(!A2 * B1 * !B2 * !C1 * Y)	0.00062	0.00062	0.00059
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00275	-0.00276	-0.00279
	(!A2 * !B1 * C1 * !Y)	0.00291	0.00293	0.00291
	(!A2 * !B1 * C1 * !Y)	-0.00142	-0.00144	-0.00142
	(!A2 * !B1 * !C1 * Y)	0.00062	0.00063	0.00060
	(!A2 * !B1 * !C1 * Y)	-0.00274	-0.00276	-0.00279

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00494	0.00441	0.00436
	(A2 * B1 * B2 * C1 * !Y)	-0.00433	-0.00493	-0.00492
	(A2 * B1 * B2 * !C1 * !Y)	0.00665	0.00552	0.00632
	(A2 * B1 * B2 * !C1 * !Y)	-0.00288	-0.00404	-0.00305
	(A2 * B1 * !B2 * C1 * !Y)	0.00663	0.00557	0.00612
	(A2 * B1 * !B2 * C1 * !Y)	-0.00291	-0.00401	-0.00325
	(A2 * !B1 * C1 * !Y)	0.00663	0.00557	0.00612
	(A2 * !B1 * C1 * !Y)	-0.00291	-0.00401	-0.00324
	(!A2 * B1 * B2 * C1 * !Y)	0.00422	0.00424	0.00423
	(!A2 * B1 * B2 * C1 * !Y)	-0.00496	-0.00498	-0.00497
	(!A2 * B1 * B2 * !C1 * !Y)	0.00624	0.00628	0.00625
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00293	-0.00298	-0.00295
	(!A2 * B1 * !B2 * C1 * !Y)	0.00604	0.00607	0.00605
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00313	-0.00316	-0.00314
	(!A2 * B1 * !B2 * !C1 * Y)	0.00140	0.00141	0.00134
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00594	-0.00597	-0.00609
	(!A2 * !B1 * C1 * !Y)	0.00604	0.00607	0.00606
	(!A2 * !B1 * C1 * !Y)	-0.00313	-0.00316	-0.00314
	(!A2 * !B1 * !C1 * Y)	0.00141	0.00141	0.00134
	(!A2 * !B1 * !C1 * Y)	-0.00593	-0.00595	-0.00608

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00987	0.00871	0.00852
	(A2 * B1 * B2 * C1 * !Y)	-0.00795	-0.00930	-0.00935
	(A2 * B1 * B2 * !C1 * !Y)	0.01340	0.01100	0.01261
	(A2 * B1 * B2 * !C1 * !Y)	-0.00500	-0.00751	-0.00549
	(A2 * B1 * !B2 * C1 * !Y)	0.01328	0.01095	0.01194
	(A2 * B1 * !B2 * C1 * !Y)	-0.00516	-0.00768	-0.00615
	(A2 * !B1 * C1 * !Y)	0.01335	0.01092	0.01194
	(A2 * !B1 * C1 * !Y)	-0.00510	-0.00769	-0.00615
	(!A2 * B1 * B2 * C1 * !Y)	0.00828	0.00838	0.00824
	(!A2 * B1 * B2 * C1 * !Y)	-0.00932	-0.00942	-0.00942
	(!A2 * B1 * B2 * !C1 * !Y)	0.01248	0.01252	0.01247
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00520	-0.00528	-0.00525
	(!A2 * B1 * !B2 * C1 * !Y)	0.01180	0.01183	0.01179
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00594	-0.00598	-0.00593
	(!A2 * B1 * !B2 * !C1 * Y)	0.00251	0.00252	0.00239
	(!A2 * B1 * !B2 * !C1 * Y)	-0.01145	-0.01150	-0.01173
	(!A2 * !B1 * C1 * !Y)	0.01179	0.01185	0.01180
	(!A2 * !B1 * C1 * !Y)	-0.00590	-0.00598	-0.00593
	(!A2 * !B1 * !C1 * Y)	0.00254	0.00255	0.00242
	(!A2 * !B1 * !C1 * Y)	-0.01142	-0.01147	-0.01170

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)**	-0.00179	-0.00180	-0.00180
	(A2 * B1 * B2 * C1 * !Y)	0.00259	0.00261	0.00259
	(A2 * B1 * B2 * !C1 * !Y)	-0.00086	-0.00090	-0.00105
	(A2 * B1 * B2 * !C1 * !Y)	0.00360	0.00360	0.00342
	(A2 * B1 * !B2 * C1 * !Y)	-0.00089	-0.00091	-0.00102
	(A2 * B1 * !B2 * C1 * !Y)	0.00357	0.00357	0.00345
	(A2 * !B1 * C1 * !Y)	-0.00089	-0.00092	-0.00102
	(A2 * !B1 * C1 * !Y)	0.00357	0.00359	0.00345
	(!A2 * B1 * B2 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(!A2 * B1 * B2 * C1 * !Y)	0.00259	0.00260	0.00259
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00074	-0.00077	-0.00075
	(!A2 * B1 * B2 * !C1 * !Y)	0.00359	0.00363	0.00360
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00084	-0.00085	-0.00085
	(!A2 * B1 * !B2 * C1 * !Y)	0.00350	0.00350	0.00350
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00048	-0.00049	-0.00048
	(!A2 * B1 * !B2 * !C1 * Y)	0.00289	0.00292	0.00290
	(!A2 * !B1 * C1 * !Y)	-0.00084	-0.00085	-0.00085
	(!A2 * !B1 * C1 * !Y)	0.00350	0.00350	0.00350
	(!A2 * !B1 * !C1 * Y)	-0.00048	-0.00048	-0.00048
	(!A2 * !B1 * !C1 * Y)	0.00290	0.00293	0.00290

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00378	-0.00382	-0.00381
	(A2 * B1 * B2 * C1 * !Y)	0.00545	0.00551	0.00548
	(A2 * B1 * B2 * !C1 * !Y)	-0.00200	-0.00205	-0.00238
	(A2 * B1 * B2 * !C1 * !Y)	0.00752	0.00749	0.00711
	(A2 * B1 * !B2 * C1 * !Y)	-0.00202	-0.00207	-0.00230
	(A2 * B1 * !B2 * C1 * !Y)	0.00744	0.00745	0.00717
	(A2 * !B1 * C1 * !Y)	-0.00202	-0.00207	-0.00230
	(A2 * !B1 * C1 * !Y)	0.00745	0.00745	0.00717
	(!A2 * B1 * B2 * C1 * !Y)	-0.00372	-0.00380	-0.00377
	(!A2 * B1 * B2 * C1 * !Y)	0.00546	0.00553	0.00547
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00170	-0.00176	-0.00176
	(!A2 * B1 * B2 * !C1 * !Y)	0.00747	0.00748	0.00748
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00190	-0.00198	-0.00195
	(!A2 * B1 * !B2 * C1 * !Y)	0.00728	0.00735	0.00729
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00110	-0.00113	-0.00110
	(!A2 * B1 * !B2 * !C1 * Y)	0.00628	0.00640	0.00630
	(!A2 * !B1 * C1 * !Y)	-0.00190	-0.00199	-0.00195
	(!A2 * !B1 * C1 * !Y)	0.00728	0.00736	0.00729
	(!A2 * !B1 * !C1 * Y)	-0.00109	-0.00112	-0.00109
	(!A2 * !B1 * !C1 * Y)	0.00629	0.00641	0.00631

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00751	-0.00754	-0.00743
	(A2 * B1 * B2 * C1 * !Y)	0.01041	0.01047	0.01043
	(A2 * B1 * B2 * !C1 * !Y)	-0.00395	-0.00408	-0.00470
	(A2 * B1 * B2 * !C1 * !Y)	0.01441	0.01439	0.01362
	(A2 * B1 * !B2 * C1 * !Y)	-0.00379	-0.00387	-0.00432
	(A2 * B1 * !B2 * C1 * !Y)	0.01456	0.01453	0.01398
	(A2 * !B1 * C1 * !Y)	-0.00378	-0.00387	-0.00432
	(A2 * !B1 * C1 * !Y)	0.01456	0.01453	0.01398
	(!A2 * B1 * B2 * C1 * !Y)	-0.00732	-0.00747	-0.00732
	(!A2 * B1 * B2 * C1 * !Y)	0.01036	0.01051	0.01042
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00341	-0.00347	-0.00349
	(!A2 * B1 * B2 * !C1 * !Y)	0.01429	0.01431	0.01431
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00352	-0.00362	-0.00360
	(!A2 * B1 * !B2 * C1 * !Y)	0.01419	0.01430	0.01421
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00192	-0.00197	-0.00192
	(!A2 * B1 * !B2 * !C1 * Y)	0.01209	0.01233	0.01215
	(!A2 * !B1 * C1 * !Y)	-0.00351	-0.00362	-0.00360
	(!A2 * !B1 * C1 * !Y)	0.01418	0.01424	0.01421
	(!A2 * !B1 * !C1 * Y)	-0.00192	-0.00196	-0.00192
	(!A2 * !B1 * !C1 * Y)	0.01212	0.01235	0.01217

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)**	0.00245	0.00223	0.00218
	(A1 * B1 * B2 * C1 * !Y)	-0.00208	-0.00238	-0.00237
	(A1 * B1 * B2 * !C1 * !Y)	0.00337	0.00283	0.00316
	(A1 * B1 * B2 * !C1 * !Y)	-0.00130	-0.00189	-0.00143
	(A1 * B1 * !B2 * C1 * !Y)	0.00333	0.00284	0.00307
	(A1 * B1 * !B2 * C1 * !Y)	-0.00133	-0.00189	-0.00153
	(A1 * !B1 * C1 * !Y)	0.00334	0.00284	0.00307
	(A1 * !B1 * C1 * !Y)	-0.00133	-0.00189	-0.00152
	(!A1 * B1 * B2 * !Y)	0.00213	0.00215	0.00213
	(!A1 * B1 * B2 * !Y)	-0.00239	-0.00240	-0.00239
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00303	0.00307	0.00304
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00146	-0.00149	-0.00147
	(!A1 * B1 * !B2 * !C1 * Y)	0.00210	0.00213	0.00210
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00244	-0.00246	-0.00244
	(!A1 * !B1 * !C1 * Y)	0.00211	0.00213	0.00210
	(!A1 * !B1 * !C1 * Y)	-0.00244	-0.00245	-0.00244

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00478	0.00422	0.00417
	(A1 * B1 * B2 * C1 * !Y)	-0.00393	-0.00457	-0.00456
	(A1 * B1 * B2 * !C1 * !Y)	0.00653	0.00532	0.00612
	(A1 * B1 * B2 * !C1 * !Y)	-0.00245	-0.00371	-0.00270
	(A1 * B1 * !B2 * C1 * !Y)	0.00650	0.00539	0.00592
	(A1 * B1 * !B2 * C1 * !Y)	-0.00248	-0.00368	-0.00290
	(A1 * !B1 * C1 * !Y)	0.00650	0.00539	0.00592
	(A1 * !B1 * C1 * !Y)	-0.00248	-0.00368	-0.00290
	(!A1 * B1 * B2 * !Y)	0.00403	0.00407	0.00404
	(!A1 * B1 * B2 * !Y)	-0.00461	-0.00463	-0.00460
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00585	0.00588	0.00586
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00277	-0.00279	-0.00278
	(!A1 * B1 * !B2 * !C1 * Y)	0.00382	0.00385	0.00382
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00487	-0.00489	-0.00487
	(!A1 * !B1 * !C1 * Y)	0.00383	0.00386	0.00383
	(!A1 * !B1 * !C1 * Y)	-0.00487	-0.00488	-0.00486

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00999	0.00883	0.00862
	(A1 * B1 * B2 * C1 * !Y)	-0.00802	-0.00931	-0.00937
	(A1 * B1 * B2 * !C1 * !Y)	0.01350	0.01117	0.01275
	(A1 * B1 * B2 * !C1 * !Y)	-0.00510	-0.00750	-0.00549
	(A1 * B1 * !B2 * C1 * !Y)	0.01336	0.01107	0.01203
	(A1 * B1 * !B2 * C1 * !Y)	-0.00531	-0.00771	-0.00621
	(A1 * !B1 * C1 * !Y)	0.01340	0.01104	0.01203
	(A1 * !B1 * C1 * !Y)	-0.00528	-0.00773	-0.00621
	(!A1 * B1 * B2 * !Y)	0.00846	0.00853	0.00835
	(!A1 * B1 * B2 * !Y)	-0.00939	-0.00943	-0.00945
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01190	0.01196	0.01189
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00600	-0.00605	-0.00599
	(!A1 * B1 * !B2 * !C1 * Y)	0.00764	0.00775	0.00768
	(!A1 * B1 * !B2 * !C1 * Y)	-0.01029	-0.01037	-0.01031
	(!A1 * !B1 * !C1 * Y)	0.00766	0.00777	0.00770
	(!A1 * !B1 * !C1 * Y)	-0.01027	-0.01035	-0.01029

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)**	-0.00191	-0.00192	-0.00192
	(A1 * B1 * B2 * C1 * !Y)	0.00263	0.00266	0.00264
	(A1 * B1 * B2 * !C1 * !Y)	-0.00098	-0.00102	-0.00118
	(A1 * B1 * B2 * !C1 * !Y)	0.00365	0.00364	0.00347
	(A1 * B1 * !B2 * C1 * !Y)	-0.00101	-0.00104	-0.00115
	(A1 * B1 * !B2 * C1 * !Y)	0.00362	0.00363	0.00349
	(A1 * !B1 * C1 * !Y)	-0.00101	-0.00104	-0.00115
	(A1 * !B1 * C1 * !Y)	0.00361	0.00363	0.00349
	(!A1 * B1 * B2 * !Y)	-0.00188	-0.00189	-0.00188
	(!A1 * B1 * B2 * !Y)	0.00264	0.00265	0.00264
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00097	-0.00097	-0.00097
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00355	0.00356	0.00355
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00174	-0.00190	-0.00193
	(!A1 * B1 * !B2 * !C1 * Y)	0.00281	0.00264	0.00259
	(!A1 * !B1 * !C1 * Y)	-0.00174	-0.00190	-0.00193
	(!A1 * !B1 * !C1 * Y)	0.00282	0.00265	0.00260

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00361	-0.00364	-0.00363
	(A1 * B1 * B2 * C1 * !Y)	0.00508	0.00512	0.00510
	(A1 * B1 * B2 * !C1 * !Y)	-0.00180	-0.00186	-0.00218
	(A1 * B1 * B2 * !C1 * !Y)	0.00714	0.00710	0.00675
	(A1 * B1 * !B2 * C1 * !Y)	-0.00184	-0.00188	-0.00210
	(A1 * B1 * !B2 * C1 * !Y)	0.00708	0.00707	0.00681
	(A1 * !B1 * C1 * !Y)	-0.00184	-0.00187	-0.00210
	(A1 * !B1 * C1 * !Y)	0.00709	0.00707	0.00681
	(!A1 * B1 * B2 * !Y)	-0.00352	-0.00358	-0.00358
	(!A1 * B1 * B2 * !Y)	0.00508	0.00512	0.00510
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00170	-0.00176	-0.00176
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00690	0.00695	0.00692
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00301	-0.00342	-0.00351
	(!A1 * B1 * !B2 * !C1 * Y)	0.00566	0.00536	0.00517
	(!A1 * !B1 * !C1 * Y)	-0.00301	-0.00341	-0.00350
	(!A1 * !B1 * !C1 * Y)	0.00567	0.00537	0.00518

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00762	-0.00765	-0.00753
	(A1 * B1 * B2 * C1 * !Y)	0.01042	0.01049	0.01045
	(A1 * B1 * B2 * !C1 * !Y)	-0.00409	-0.00416	-0.00485
	(A1 * B1 * B2 * !C1 * !Y)	0.01440	0.01425	0.01362
	(A1 * B1 * !B2 * C1 * !Y)	-0.00386	-0.00394	-0.00441
	(A1 * B1 * !B2 * C1 * !Y)	0.01460	0.01456	0.01404
	(A1 * !B1 * C1 * !Y)	-0.00386	-0.00394	-0.00441
	(A1 * !B1 * C1 * !Y)	0.01460	0.01456	0.01404
	(!A1 * B1 * B2 * !Y)	-0.00742	-0.00752	-0.00742
	(!A1 * B1 * B2 * !Y)	0.01036	0.01045	0.01045
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00360	-0.00370	-0.00369
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01424	0.01432	0.01427
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00611	-0.00688	-0.00704
	(!A1 * B1 * !B2 * !C1 * Y)	0.01188	0.01130	0.01092
	(!A1 * !B1 * !C1 * Y)	-0.00609	-0.00688	-0.00702
	(!A1 * !B1 * !C1 * Y)	0.01190	0.01131	0.01094

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)**	0.00251	0.00250	0.00240
	(A1 * A2 * B2 * C1 * !Y)	-0.00141	-0.00144	-0.00148
	(A1 * A2 * B2 * !C1 * !Y)	0.00244	0.00247	0.00243
	(A1 * A2 * B2 * !C1 * !Y)	-0.00069	-0.00071	-0.00068
	(A1 * A2 * !B2 * C1 * !Y)	0.00261	0.00261	0.00233
	(A1 * A2 * !B2 * C1 * !Y)	-0.00117	-0.00119	-0.00136
	(A1 * A2 * !B2 * !C1 * !Y)	0.00329	0.00330	0.00325
	(A1 * A2 * !B2 * !C1 * !Y)	0.00012	0.00011	0.00008
	(A1 * !A2 * B2 * C1 * !Y)	0.00313	0.00253	0.00297
	(A1 * !A2 * B2 * C1 * !Y)	-0.00137	-0.00199	-0.00150
	(A1 * !A2 * !B2 * C1 * !Y)	0.00297	0.00298	0.00296
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00141	-0.00145	-0.00143
	(A1 * !A2 * !B2 * !C1 * Y)	0.00061	0.00061	0.00059
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00281	-0.00282	-0.00286
	(!A1 * B2 * C1 * !Y)	0.00311	0.00252	0.00297
	(!A1 * B2 * C1 * !Y)	-0.00139	-0.00200	-0.00150
	(!A1 * !B2 * C1 * !Y)	0.00297	0.00298	0.00296
	(!A1 * !B2 * C1 * !Y)	-0.00141	-0.00145	-0.00144
	(!A1 * !B2 * !C1 * Y)	0.00061	0.00061	0.00059
	(!A1 * !B2 * !C1 * Y)	-0.00280	-0.00281	-0.00286

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00498	0.00500	0.00476
	(A1 * A2 * B2 * C1 * !Y)	-0.00294	-0.00294	-0.00302
	(A1 * A2 * B2 * !C1 * !Y)	0.00496	0.00502	0.00493
	(A1 * A2 * B2 * !C1 * !Y)	-0.00148	-0.00149	-0.00141
	(A1 * A2 * !B2 * C1 * !Y)	0.00521	0.00524	0.00465
	(A1 * A2 * !B2 * C1 * !Y)	-0.00239	-0.00245	-0.00276
	(A1 * A2 * !B2 * !C1 * !Y)	0.00679	0.00684	0.00670
	(A1 * A2 * !B2 * !C1 * !Y)	0.00025	0.00021	0.00017
	(A1 * !A2 * B2 * C1 * !Y)	0.00641	0.00514	0.00598
	(A1 * !A2 * B2 * C1 * !Y)	-0.00276	-0.00414	-0.00316
	(A1 * !A2 * !B2 * C1 * !Y)	0.00605	0.00599	0.00595
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00293	-0.00307	-0.00304
	(A1 * !A2 * !B2 * !C1 * Y)	0.00126	0.00126	0.00120
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00587	-0.00589	-0.00598
	(!A1 * B2 * C1 * !Y)	0.00640	0.00514	0.00598
	(!A1 * B2 * C1 * !Y)	-0.00278	-0.00414	-0.00316
	(!A1 * !B2 * C1 * !Y)	0.00603	0.00598	0.00595
	(!A1 * !B2 * C1 * !Y)	-0.00295	-0.00307	-0.00304
	(!A1 * !B2 * !C1 * Y)	0.00127	0.00127	0.00121
	(!A1 * !B2 * !C1 * Y)	-0.00586	-0.00588	-0.00597

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00988	0.00982	0.00941
	(A1 * A2 * B2 * C1 * !Y)	-0.00542	-0.00561	-0.00570
	(A1 * A2 * B2 * !C1 * !Y)	0.01000	0.00998	0.00989
	(A1 * A2 * B2 * !C1 * !Y)	-0.00287	-0.00282	-0.00276
	(A1 * A2 * !B2 * C1 * !Y)	0.01023	0.01026	0.00915
	(A1 * A2 * !B2 * C1 * !Y)	-0.00454	-0.00462	-0.00521
	(A1 * A2 * !B2 * !C1 * !Y)	0.01328	0.01335	0.01314
	(A1 * A2 * !B2 * !C1 * !Y)	0.00057	0.00052	0.00046
	(A1 * !A2 * B2 * C1 * !Y)	0.01262	0.01016	0.01186
	(A1 * !A2 * B2 * C1 * !Y)	-0.00557	-0.00808	-0.00606
	(A1 * !A2 * !B2 * C1 * !Y)	0.01196	0.01183	0.01177
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00557	-0.00586	-0.00581
	(A1 * !A2 * !B2 * !C1 * Y)	0.00251	0.00251	0.00237
	(A1 * !A2 * !B2 * !C1 * Y)	-0.01132	-0.01136	-0.01157
	(!A1 * B2 * C1 * !Y)	0.01250	0.01017	0.01185
	(!A1 * B2 * C1 * !Y)	-0.00556	-0.00807	-0.00606
	(!A1 * !B2 * C1 * !Y)	0.01191	0.01183	0.01177
	(!A1 * !B2 * C1 * !Y)	-0.00558	-0.00587	-0.00581
	(!A1 * !B2 * !C1 * Y)	0.00254	0.00254	0.00240
	(!A1 * !B2 * !C1 * Y)	-0.01130	-0.01133	-0.01155

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)**	-0.00197	-0.00198	-0.00192
	(A1 * A2 * B2 * C1 * !Y)	0.00181	0.00183	0.00183
	(A1 * A2 * B2 * !C1 * !Y)	-0.00089	-0.00092	-0.00150
	(A1 * A2 * B2 * !C1 * !Y)	0.00229	0.00227	0.00174
	(A1 * A2 * !B2 * C1 * !Y)	-0.00193	-0.00193	-0.00189
	(A1 * A2 * !B2 * C1 * !Y)	0.00168	0.00168	0.00168
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00118	-0.00121	-0.00117
	(A1 * A2 * !B2 * !C1 * !Y)	0.00201	0.00202	0.00201
	(A1 * !A2 * B2 * C1 * !Y)	-0.00093	-0.00096	-0.00111
	(A1 * !A2 * B2 * C1 * !Y)	0.00355	0.00353	0.00338
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00088	-0.00091	-0.00089
	(A1 * !A2 * !B2 * C1 * !Y)	0.00351	0.00354	0.00351
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00047	-0.00048	-0.00047
	(A1 * !A2 * !B2 * !C1 * Y)	0.00296	0.00300	0.00296
	(!A1 * B2 * C1 * !Y)	-0.00093	-0.00097	-0.00111
	(!A1 * B2 * C1 * !Y)	0.00355	0.00356	0.00338
	(!A1 * !B2 * C1 * !Y)	-0.00088	-0.00091	-0.00089
	(!A1 * !B2 * C1 * !Y)	0.00351	0.00354	0.00351
	(!A1 * !B2 * !C1 * Y)	-0.00047	-0.00048	-0.00047
	(!A1 * !B2 * !C1 * Y)	0.00296	0.00301	0.00297

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00398	-0.00400	-0.00390
	(A1 * A2 * B2 * C1 * !Y)	0.00366	0.00370	0.00366
	(A1 * A2 * B2 * !C1 * !Y)	-0.00196	-0.00204	-0.00315
	(A1 * A2 * B2 * !C1 * !Y)	0.00449	0.00447	0.00342
	(A1 * A2 * !B2 * C1 * !Y)	-0.00386	-0.00393	-0.00383
	(A1 * A2 * !B2 * C1 * !Y)	0.00334	0.00340	0.00337
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00255	-0.00260	-0.00253
	(A1 * A2 * !B2 * !C1 * !Y)	0.00403	0.00402	0.00403
	(A1 * !A2 * B2 * C1 * !Y)	-0.00191	-0.00198	-0.00227
	(A1 * !A2 * B2 * C1 * !Y)	0.00727	0.00726	0.00692
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00180	-0.00188	-0.00184
	(A1 * !A2 * !B2 * C1 * !Y)	0.00719	0.00724	0.00719
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00096	-0.00099	-0.00096
	(A1 * !A2 * !B2 * !C1 * Y)	0.00616	0.00626	0.00619
	(!A1 * B2 * C1 * !Y)	-0.00191	-0.00198	-0.00227
	(!A1 * B2 * C1 * !Y)	0.00727	0.00726	0.00692
	(!A1 * !B2 * C1 * !Y)	-0.00179	-0.00188	-0.00184
	(!A1 * !B2 * C1 * !Y)	0.00719	0.00725	0.00719
	(!A1 * !B2 * !C1 * Y)	-0.00096	-0.00098	-0.00096
	(!A1 * !B2 * !C1 * Y)	0.00617	0.00627	0.00620

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00782	-0.00784	-0.00766
	(A1 * A2 * B2 * C1 * !Y)	0.00701	0.00705	0.00701
	(A1 * A2 * B2 * !C1 * !Y)	-0.00384	-0.00398	-0.00618
	(A1 * A2 * B2 * !C1 * !Y)	0.00902	0.00897	0.00697
	(A1 * A2 * !B2 * C1 * !Y)	-0.00761	-0.00763	-0.00751
	(A1 * A2 * !B2 * C1 * !Y)	0.00645	0.00642	0.00643
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00479	-0.00488	-0.00484
	(A1 * A2 * !B2 * !C1 * !Y)	0.00796	0.00797	0.00791
	(A1 * !A2 * B2 * C1 * !Y)	-0.00375	-0.00388	-0.00448
	(A1 * !A2 * B2 * C1 * !Y)	0.01433	0.01428	0.01358
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00348	-0.00359	-0.00358
	(A1 * !A2 * !B2 * C1 * !Y)	0.01411	0.01416	0.01408
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00190	-0.00195	-0.00190
	(A1 * !A2 * !B2 * !C1 * Y)	0.01194	0.01213	0.01199
	(!A1 * B2 * C1 * !Y)	-0.00375	-0.00388	-0.00447
	(!A1 * B2 * C1 * !Y)	0.01433	0.01428	0.01358
	(!A1 * !B2 * C1 * !Y)	-0.00345	-0.00358	-0.00357
	(!A1 * !B2 * C1 * !Y)	0.01408	0.01417	0.01408
	(!A1 * !B2 * !C1 * Y)	-0.00190	-0.00195	-0.00189
	(!A1 * !B2 * !C1 * Y)	0.01196	0.01215	0.01200

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)**	0.00259	0.00256	0.00246
	(A1 * A2 * B1 * C1 * !Y)	-0.00147	-0.00149	-0.00153
	(A1 * A2 * B1 * !C1 * !Y)	0.00254	0.00257	0.00252
	(A1 * A2 * B1 * !C1 * !Y)	-0.00073	-0.00075	-0.00072
	(A1 * A2 * !B1 * C1 * !Y)	0.00268	0.00268	0.00239
	(A1 * A2 * !B1 * C1 * !Y)	-0.00123	-0.00124	-0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	0.00340	0.00342	0.00335
	(A1 * A2 * !B1 * !C1 * !Y)	0.00010	0.00009	0.00006
	(A1 * !A2 * B1 * C1 * !Y)	0.00324	0.00261	0.00303
	(A1 * !A2 * B1 * C1 * !Y)	-0.00142	-0.00205	-0.00157
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00303	0.00302	0.00302
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00148	-0.00151	-0.00151
	(A1 * !A2 * !B1 * !C1 * Y)	0.00193	0.00196	0.00193
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00262	-0.00264	-0.00262
	(!A1 * B1 * C1 * !Y)	0.00323	0.00261	0.00303
	(!A1 * B1 * C1 * !Y)	-0.00142	-0.00205	-0.00157
	(!A1 * !B1 * !C1 * Y)	0.00193	0.00196	0.00194
	(!A1 * !B1 * !C1 * Y)	-0.00261	-0.00264	-0.00262

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00485	0.00488	0.00466
	(A1 * A2 * B1 * C1 * !Y)	-0.00273	-0.00273	-0.00279
	(A1 * A2 * B1 * !C1 * !Y)	0.00475	0.00476	0.00477
	(A1 * A2 * B1 * !C1 * !Y)	-0.00123	-0.00123	-0.00121
	(A1 * A2 * !B1 * C1 * !Y)	0.00508	0.00511	0.00455
	(A1 * A2 * !B1 * C1 * !Y)	-0.00221	-0.00226	-0.00255
	(A1 * A2 * !B1 * !C1 * !Y)	0.00645	0.00650	0.00640
	(A1 * A2 * !B1 * !C1 * !Y)	0.00031	0.00028	0.00026
	(A1 * !A2 * B1 * C1 * !Y)	0.00620	0.00502	0.00587
	(A1 * !A2 * B1 * C1 * !Y)	-0.00264	-0.00384	-0.00286
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00590	0.00584	0.00585
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00264	-0.00272	-0.00273
	(A1 * !A2 * !B1 * !C1 * Y)	0.00382	0.00388	0.00384
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00479	-0.00483	-0.00480
	(!A1 * B1 * C1 * !Y)	0.00618	0.00502	0.00586
	(!A1 * B1 * C1 * !Y)	-0.00265	-0.00384	-0.00286
	(!A1 * !B1 * !C1 * Y)	0.00383	0.00388	0.00384
	(!A1 * !B1 * !C1 * Y)	-0.00478	-0.00481	-0.00479

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00996	0.00987	0.00943
	(A1 * A2 * B1 * C1 * !Y)	-0.00549	-0.00562	-0.00570
	(A1 * A2 * B1 * !C1 * !Y)	0.00995	0.00995	0.00989
	(A1 * A2 * B1 * !C1 * !Y)	-0.00285	-0.00284	-0.00279
	(A1 * A2 * !B1 * C1 * !Y)	0.01025	0.01032	0.00916
	(A1 * A2 * !B1 * C1 * !Y)	-0.00454	-0.00464	-0.00522
	(A1 * A2 * !B1 * !C1 * !Y)	0.01328	0.01344	0.01314
	(A1 * A2 * !B1 * !C1 * !Y)	0.00055	0.00046	0.00044
	(A1 * !A2 * B1 * C1 * !Y)	0.01266	0.01015	0.01187
	(A1 * !A2 * B1 * C1 * !Y)	-0.00550	-0.00813	-0.00606
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01197	0.01189	0.01179
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00557	-0.00586	-0.00580
	(A1 * !A2 * !B1 * !C1 * Y)	0.00799	0.00808	0.00802
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00968	-0.00974	-0.00969
	(!A1 * B1 * C1 * !Y)	0.01262	0.01015	0.01187
	(!A1 * B1 * C1 * !Y)	-0.00554	-0.00812	-0.00606
	(!A1 * !B1 * !C1 * Y)	0.00800	0.00810	0.00804
	(!A1 * !B1 * !C1 * Y)	-0.00967	-0.00972	-0.00968

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)**	-0.00202	-0.00204	-0.00198
	(A1 * A2 * B1 * C1 * !Y)	0.00187	0.00189	0.00189
	(A1 * A2 * B1 * !C1 * !Y)	-0.00099	-0.00102	-0.00160
	(A1 * A2 * B1 * !C1 * !Y)	0.00231	0.00229	0.00177
	(A1 * A2 * !B1 * C1 * !Y)	-0.00198	-0.00199	-0.00195
	(A1 * A2 * !B1 * C1 * !Y)	0.00171	0.00173	0.00173
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00128	-0.00130	-0.00127
	(A1 * A2 * !B1 * !C1 * !Y)	0.00203	0.00204	0.00203
	(A1 * !A2 * B1 * C1 * !Y)	-0.00099	-0.00103	-0.00117
	(A1 * !A2 * B1 * C1 * !Y)	0.00362	0.00362	0.00345
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00093	-0.00096	-0.00095
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00357	0.00359	0.00358
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00157	-0.00175	-0.00177
	(A1 * !A2 * !B1 * !C1 * Y)	0.00298	0.00285	0.00277
	(!A1 * B1 * C1 * !Y)	-0.00099	-0.00103	-0.00117
	(!A1 * B1 * C1 * !Y)	0.00362	0.00362	0.00345
	(!A1 * !B1 * !C1 * Y)	-0.00156	-0.00175	-0.00176
	(!A1 * !B1 * !C1 * Y)	0.00298	0.00285	0.00278

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00387	-0.00388	-0.00378
	(A1 * A2 * B1 * C1 * !Y)	0.00343	0.00345	0.00345
	(A1 * A2 * B1 * !C1 * !Y)	-0.00171	-0.00181	-0.00291
	(A1 * A2 * B1 * !C1 * !Y)	0.00435	0.00435	0.00330
	(A1 * A2 * !B1 * C1 * !Y)	-0.00376	-0.00382	-0.00371
	(A1 * A2 * !B1 * C1 * !Y)	0.00315	0.00320	0.00317
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00221	-0.00226	-0.00223
	(A1 * A2 * !B1 * !C1 * !Y)	0.00395	0.00396	0.00393
	(A1 * !A2 * B1 * C1 * !Y)	-0.00181	-0.00187	-0.00217
	(A1 * !A2 * B1 * C1 * !Y)	0.00696	0.00693	0.00661
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00168	-0.00176	-0.00173
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00687	0.00692	0.00688
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00305	-0.00348	-0.00351
	(A1 * !A2 * !B1 * !C1 * Y)	0.00557	0.00524	0.00510
	(!A1 * B1 * C1 * !Y)	-0.00181	-0.00186	-0.00216
	(!A1 * B1 * C1 * !Y)	0.00697	0.00693	0.00661
	(!A1 * !B1 * !C1 * Y)	-0.00304	-0.00347	-0.00350
	(!A1 * !B1 * !C1 * Y)	0.00558	0.00525	0.00511

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00785	-0.00783	-0.00768
	(A1 * A2 * B1 * C1 * !Y)	0.00704	0.00701	0.00702
	(A1 * A2 * B1 * !C1 * !Y)	-0.00383	-0.00397	-0.00617
	(A1 * A2 * B1 * !C1 * !Y)	0.00904	0.00900	0.00699
	(A1 * A2 * !B1 * C1 * !Y)	-0.00760	-0.00772	-0.00751
	(A1 * A2 * !B1 * C1 * !Y)	0.00642	0.00650	0.00643
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00480	-0.00489	-0.00482
	(A1 * A2 * !B1 * !C1 * !Y)	0.00797	0.00799	0.00793
	(A1 * !A2 * B1 * C1 * !Y)	-0.00377	-0.00391	-0.00450
	(A1 * !A2 * B1 * C1 * !Y)	0.01431	0.01427	0.01357
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00348	-0.00365	-0.00358
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01407	0.01417	0.01407
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00635	-0.00727	-0.00735
	(A1 * !A2 * !B1 * !C1 * Y)	0.01136	0.01062	0.01031
	(!A1 * B1 * C1 * !Y)	-0.00376	-0.00391	-0.00450
	(!A1 * B1 * C1 * !Y)	0.01431	0.01428	0.01357
	(!A1 * !B1 * !C1 * Y)	-0.00633	-0.00725	-0.00734
	(!A1 * !B1 * !C1 * Y)	0.01138	0.01064	0.01032

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)	0.00235	0.00238	0.00237
	(A1 * B1 * B2 * !Y)	-0.00107	-0.00107	-0.00106
	(A1 * A2 * B1 * !B2 * !Y)	0.00238	0.00242	0.00243
	(A1 * A2 * B1 * !B2 * !Y)	-0.00083	-0.00083	-0.00076
	(A1 * A2 * !B1 * !Y)	0.00238	0.00242	0.00243
	(A1 * A2 * !B1 * !Y)	-0.00083	-0.00083	-0.00076
	(!A1 * B1 * B2 * !Y)	0.00240	0.00242	0.00247
	(!A1 * B1 * B2 * !Y)	-0.00098	-0.00098	-0.00090
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00444	0.00446	0.00444
	(A1 * B1 * B2 * !Y)	-0.00194	-0.00194	-0.00191
	(A1 * A2 * B1 * !B2 * !Y)	0.00444	0.00455	0.00458
	(A1 * A2 * B1 * !B2 * !Y)	-0.00137	-0.00141	-0.00128
	(A1 * A2 * !B1 * !Y)	0.00444	0.00455	0.00458
	(A1 * A2 * !B1 * !Y)	-0.00137	-0.00141	-0.00128
	(!A1 * B1 * B2 * !Y)	0.00448	0.00458	0.00464
	(!A1 * B1 * B2 * !Y)	-0.00173	-0.00176	-0.00159
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00872	0.00883	0.00877
	(A1 * B1 * B2 * !Y)	-0.00379	-0.00383	-0.00377
	(A1 * A2 * B1 * !B2 * !Y)	0.00877	0.00887	0.00905
	(A1 * A2 * B1 * !B2 * !Y)	-0.00273	-0.00276	-0.00253
	(A1 * A2 * !B1 * !Y)	0.00878	0.00886	0.00905
	(A1 * A2 * !B1 * !Y)	-0.00274	-0.00276	-0.00253
	(!A1 * B1 * B2 * !Y)	0.00880	0.00885	0.00915
	(!A1 * B1 * B2 * !Y)	-0.00318	-0.00318	-0.00287

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)	-0.00199	-0.00202	-0.00220
	(A1 * B1 * B2 * !Y)	0.00139	0.00140	0.00126
	(A1 * A2 * B1 * !B2 * !Y)	-0.00076	-0.00080	-0.00129
	(A1 * A2 * B1 * !B2 * !Y)	0.00250	0.00250	0.00207
	(A1 * A2 * !B1 * !Y)	-0.00076	-0.00080	-0.00129
	(A1 * A2 * !B1 * !Y)	0.00250	0.00250	0.00207
	(!A1 * B1 * B2 * !Y)	-0.00084	-0.00088	-0.00139
	(!A1 * B1 * B2 * !Y)	0.00255	0.00254	0.00203
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00368	-0.00373	-0.00407
	(A1 * B1 * B2 * !Y)	0.00259	0.00261	0.00233
	(A1 * A2 * B1 * !B2 * !Y)	-0.00127	-0.00135	-0.00226
	(A1 * A2 * B1 * !B2 * !Y)	0.00474	0.00473	0.00393
	(A1 * A2 * !B1 * !Y)	-0.00128	-0.00135	-0.00226
	(A1 * A2 * !B1 * !Y)	0.00474	0.00473	0.00393
	(!A1 * B1 * B2 * !Y)	-0.00138	-0.00146	-0.00248
	(!A1 * B1 * B2 * !Y)	0.00491	0.00486	0.00385
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00742	-0.00748	-0.00809
	(A1 * B1 * B2 * !Y)	0.00501	0.00501	0.00459
	(A1 * A2 * B1 * !B2 * !Y)	-0.00253	-0.00265	-0.00446
	(A1 * A2 * B1 * !B2 * !Y)	0.00946	0.00941	0.00783
	(A1 * A2 * !B1 * !Y)	-0.00253	-0.00265	-0.00446
	(A1 * A2 * !B1 * !Y)	0.00946	0.00941	0.00783
	(!A1 * B1 * B2 * !Y)	-0.00278	-0.00291	-0.00500
	(!A1 * B1 * B2 * !Y)	0.00954	0.00942	0.00736

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00265	0.00276	0.00263	0.00265	0.00260	1.74355
sky130_fd_sc_hs__a221o_2	0.00276	0.00286	0.00284	0.00287	0.00275	3.14834
sky130_fd_sc_hs__a221o_4	0.00490	0.00494	0.00505	0.00519	0.00499	4.51638

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221o_1	0.00000	106.27700	143.81000
sky130_fd_sc_hs__a221o_2	0.00000	140.41400	247.43600
sky130_fd_sc_hs__a221o_4	0.00000	283.53000	509.23100

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)	0.06357	0.43964	5.55891
	A2->X (RR)	0.06691	0.42153	5.24037
	B1->X (RR)	0.06033	0.41661	5.15223
	B2->X (RR)	0.06359	0.40450	4.98129
	C1->X (RR)	0.04446	0.36913	4.74456
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.06631	0.37333	5.27721
	A2->X (RR)	0.06971	0.35396	4.97920
	B1->X (RR)	0.06352	0.35370	4.89663
	B2->X (RR)	0.06654	0.33943	4.74171
	C1->X (RR)	0.04632	0.30741	4.53188
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.08469	0.36127	5.22388
	A2->X (RR)	0.08892	0.31878	4.66825
	B1->X (RR)	0.07193	0.31193	4.66924
	B2->X (RR)	0.07739	0.28683	4.37117
	C1->X (RR)	0.04392	0.23310	3.99129

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.12741	0.50200	5.88005
	A2->X (FF)	0.13916	0.52151	5.99775
	B1->X (FF)	0.11349	0.52790	6.26555
	B2->X (FF)	0.12254	0.54869	6.36679
	C1->X (FF)	0.09455	0.55588	6.59552
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.16398	0.50797	5.71989
	A2->X (FF)	0.17672	0.53009	5.86601
	B1->X (FF)	0.16577	0.55733	6.24506
	B2->X (FF)	0.16947	0.57312	6.33549
	C1->X (FF)	0.13342	0.57612	6.55817
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.16740	0.43320	4.81599
	A2->X (FF)	0.18317	0.46711	5.14893
	B1->X (FF)	0.17026	0.49862	5.36117
	B2->X (FF)	0.18256	0.52551	5.55732
	C1->X (FF)	0.12982	0.51606	5.72247

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.02280	0.03236	0.23156
	A1	0.01269	0.02228	0.22180
	A2	0.02420	0.03157	0.19895
	A2	0.01269	0.02009	0.18769
	B1	0.01748	0.02739	0.19943
	B1	0.01015	0.02008	0.19237
	B2	0.01878	0.02769	0.19650
	B2	0.01023	0.01919	0.18785
	C1	0.01391	0.02679	0.23235
	C1	0.00783	0.02072	0.23412
sky130_fd_sc_hs__a221o_2	A1	0.02784	0.03638	0.23074
	A1	0.01724	0.02583	0.22062
	A2	0.02937	0.03580	0.19986
	A2	0.01723	0.02365	0.18745
	B1	0.02251	0.03198	0.20163
	B1	0.01450	0.02399	0.19337
	B2	0.02399	0.03252	0.20018
	B2	0.01468	0.02324	0.19066
	C1	0.01818	0.03066	0.23093
	C1	0.01168	0.02417	0.22450

sky130_fd_sc_hs__a221o_4	**A1**	0.05808	0.07464	0.45954
	A1	0.03860	0.05519	0.44082
	A2	0.06063	0.07298	0.40504
	A2	0.03860	0.05095	0.38269
	B1	0.04507	0.06243	0.37708
	B1	0.03103	0.04843	0.36320
	B2	0.04802	0.06364	0.37867
	B2	0.03113	0.04680	0.36159
	C1	0.03360	0.05851	0.43550
	C1	0.02262	0.04751	0.42548

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00900	0.01555	0.19775
	A1	0.01913	0.02566	0.20782
	A2	0.00936	0.01522	0.19106
	A2	0.02088	0.02673	0.20258
	B1	0.00885	0.01650	0.19847
	B1	0.01621	0.02383	0.20211
	B2	0.00946	0.01703	0.19568
	B2	0.01802	0.02555	0.20268
	C1	0.00772	0.02001	0.23379
	C1	0.01382	0.02610	0.23916

sky130_fd_sc_hs__a221o_2	**A1**	0.02056	0.02209	0.18527
	A1	0.03116	0.03254	0.19517
	A2	0.02152	0.02193	0.18220
	A2	0.03366	0.03407	0.19436
	B1	0.02068	0.02279	0.19663
	B1	0.02868	0.03078	0.20248
	B2	0.02124	0.02359	0.19863
	B2	0.03057	0.03286	0.20578
	C1	0.01800	0.02628	0.23360
	C1	0.02454	0.03265	0.23764
sky130_fd_sc_hs__a221o_4	**A1**	0.03917	0.04039	0.37659
	A1	0.05867	0.05987	0.39328
	A2	0.04259	0.04182	0.38035
	A2	0.06461	0.06369	0.40239
	B1	0.03935	0.04190	0.35435
	B1	0.05338	0.05568	0.36838
	B2	0.04145	0.04352	0.36666
	B2	0.05836	0.06041	0.38296
	C1	0.03443	0.04851	0.42190
	C1	0.04548	0.05924	0.43021

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)**	0.00216	0.00195	0.00190
	(A2 * B1 * B2 * C1 * X)	-0.00193	-0.00219	-0.00218
	(A2 * B1 * B2 * !C1 * X)	0.00302	0.00253	0.00295
	(A2 * B1 * B2 * !C1 * X)	-0.00121	-0.00173	-0.00118
	(A2 * B1 * !B2 * C1 * X)	0.00305	0.00259	0.00296
	(A2 * B1 * !B2 * C1 * X)	-0.00117	-0.00169	-0.00118
	(A2 * !B1 * C1 * X)	0.00304	0.00259	0.00296
	(A2 * !B1 * C1 * X)	-0.00117	-0.00169	-0.00118
	(!A2 * B1 * B2 * C1 * X)	0.00184	0.00187	0.00185
	(!A2 * B1 * B2 * C1 * X)	-0.00220	-0.00222	-0.00220
	(!A2 * B1 * B2 * !C1 * X)	0.00293	0.00295	0.00294
	(!A2 * B1 * B2 * !C1 * X)	-0.00111	-0.00113	-0.00111
	(!A2 * B1 * !B2 * C1 * X)	0.00296	0.00298	0.00296
	(!A2 * B1 * !B2 * C1 * X)	-0.00108	-0.00110	-0.00109
	(!A2 * B1 * !B2 * !C1 * !X)	0.00166	0.00166	0.00163
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00155	-0.00157	-0.00160
	(!A2 * !B1 * C1 * X)	0.00296	0.00298	0.00296
	(!A2 * !B1 * C1 * X)	-0.00108	-0.00111	-0.00109
	(!A2 * !B1 * !C1 * !X)	0.00167	0.00167	0.00164
	(!A2 * !B1 * !C1 * !X)	-0.00154	-0.00155	-0.00159

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00241	0.00220	0.00215
	(A2 * B1 * B2 * C1 * X)	-0.00188	-0.00215	-0.00214
	(A2 * B1 * B2 * !C1 * X)	0.00326	0.00277	0.00320
	(A2 * B1 * B2 * !C1 * X)	-0.00117	-0.00169	-0.00114
	(A2 * B1 * !B2 * C1 * X)	0.00329	0.00284	0.00321
	(A2 * B1 * !B2 * C1 * X)	-0.00113	-0.00165	-0.00114
	(A2 * !B1 * C1 * X)	0.00329	0.00284	0.00321
	(A2 * !B1 * C1 * X)	-0.00113	-0.00165	-0.00114
	(!A2 * B1 * B2 * C1 * X)	0.00208	0.00210	0.00209
	(!A2 * B1 * B2 * C1 * X)	-0.00215	-0.00217	-0.00216
	(!A2 * B1 * B2 * !C1 * X)	0.00317	0.00319	0.00318
	(!A2 * B1 * B2 * !C1 * X)	-0.00106	-0.00109	-0.00107
	(!A2 * B1 * !B2 * C1 * X)	0.00319	0.00322	0.00320
	(!A2 * B1 * !B2 * C1 * X)	-0.00104	-0.00106	-0.00105
	(!A2 * B1 * !B2 * !C1 * !X)	0.00270	0.00270	0.00267
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00058	-0.00059	-0.00063
	(!A2 * !B1 * C1 * X)	0.00320	0.00322	0.00321
	(!A2 * !B1 * C1 * X)	-0.00104	-0.00106	-0.00105
	(!A2 * !B1 * !C1 * !X)	0.00270	0.00270	0.00267
	(!A2 * !B1 * !C1 * !X)	-0.00058	-0.00059	-0.00063

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00466	0.00429	0.00424
	(A2 * B1 * B2 * C1 * X)	-0.00375	-0.00418	-0.00417
	(A2 * B1 * B2 * !C1 * X)	0.00633	0.00544	0.00632
	(A2 * B1 * B2 * !C1 * X)	-0.00235	-0.00326	-0.00219
	(A2 * B1 * !B2 * C1 * X)	0.00636	0.00556	0.00634
	(A2 * B1 * !B2 * C1 * X)	-0.00235	-0.00319	-0.00218
	(A2 * !B1 * C1 * X)	0.00636	0.00556	0.00634
	(A2 * !B1 * C1 * X)	-0.00235	-0.00319	-0.00218
	(!A2 * B1 * B2 * C1 * X)	0.00412	0.00415	0.00412
	(!A2 * B1 * B2 * C1 * X)	-0.00422	-0.00425	-0.00422
	(!A2 * B1 * B2 * !C1 * X)	0.00629	0.00631	0.00629
	(!A2 * B1 * B2 * !C1 * X)	-0.00204	-0.00208	-0.00205
	(!A2 * B1 * !B2 * C1 * X)	0.00634	0.00637	0.00635
	(!A2 * B1 * !B2 * C1 * X)	-0.00199	-0.00203	-0.00200
	(!A2 * B1 * !B2 * !C1 * !X)	0.00601	0.00601	0.00593
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00068	-0.00070	-0.00083
	(!A2 * !B1 * C1 * X)	0.00634	0.00637	0.00634
	(!A2 * !B1 * C1 * X)	-0.00200	-0.00203	-0.00200
	(!A2 * !B1 * !C1 * !X)	0.00603	0.00603	0.00595
	(!A2 * !B1 * !C1 * !X)	-0.00066	-0.00068	-0.00081

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)**	-0.00160	-0.00161	-0.00161
	(A2 * B1 * B2 * C1 * X)	0.00248	0.00250	0.00248
	(A2 * B1 * B2 * !C1 * X)	-0.00062	-0.00065	-0.00084
	(A2 * B1 * B2 * !C1 * X)	0.00357	0.00355	0.00335
	(A2 * B1 * !B2 * C1 * X)	-0.00051	-0.00054	-0.00071
	(A2 * B1 * !B2 * C1 * X)	0.00368	0.00367	0.00349
	(A2 * !B1 * C1 * X)	-0.00051	-0.00054	-0.00071
	(A2 * !B1 * C1 * X)	0.00368	0.00367	0.00349
	(!A2 * B1 * B2 * C1 * X)	-0.00158	-0.00159	-0.00158
	(!A2 * B1 * B2 * C1 * X)	0.00249	0.00249	0.00248
	(!A2 * B1 * B2 * !C1 * X)	-0.00049	-0.00051	-0.00050
	(!A2 * B1 * B2 * !C1 * X)	0.00356	0.00359	0.00356
	(!A2 * B1 * !B2 * C1 * X)	-0.00046	-0.00048	-0.00047
	(!A2 * B1 * !B2 * C1 * X)	0.00359	0.00360	0.00359
	(!A2 * B1 * !B2 * !C1 * !X)	0.00064	0.00064	0.00065
	(!A2 * B1 * !B2 * !C1 * !X)	0.00387	0.00389	0.00387
	(!A2 * !B1 * C1 * X)	-0.00046	-0.00048	-0.00047
	(!A2 * !B1 * C1 * X)	0.00359	0.00360	0.00359
	(!A2 * !B1 * !C1 * !X)	0.00065	0.00065	0.00066
	(!A2 * !B1 * !C1 * !X)	0.00388	0.00390	0.00388

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00180	-0.00181	-0.00181
	(A2 * B1 * B2 * C1 * X)	0.00249	0.00250	0.00248
	(A2 * B1 * B2 * !C1 * X)	-0.00081	-0.00085	-0.00103
	(A2 * B1 * B2 * !C1 * X)	0.00358	0.00357	0.00336
	(A2 * B1 * !B2 * C1 * X)	-0.00070	-0.00074	-0.00090
	(A2 * B1 * !B2 * C1 * X)	0.00368	0.00368	0.00349
	(A2 * !B1 * C1 * X)	-0.00070	-0.00074	-0.00090
	(A2 * !B1 * C1 * X)	0.00368	0.00368	0.00349
	(!A2 * B1 * B2 * C1 * X)	-0.00177	-0.00178	-0.00177
	(!A2 * B1 * B2 * C1 * X)	0.00248	0.00249	0.00248
	(!A2 * B1 * B2 * !C1 * X)	-0.00068	-0.00071	-0.00069
	(!A2 * B1 * B2 * !C1 * X)	0.00357	0.00361	0.00357
	(!A2 * B1 * !B2 * C1 * X)	-0.00065	-0.00067	-0.00066
	(!A2 * B1 * !B2 * C1 * X)	0.00359	0.00361	0.00360
	(!A2 * B1 * !B2 * !C1 * !X)	0.00160	0.00160	0.00161
	(!A2 * B1 * !B2 * !C1 * !X)	0.00490	0.00491	0.00490
	(!A2 * !B1 * C1 * X)	-0.00065	-0.00067	-0.00066
	(!A2 * !B1 * C1 * X)	0.00359	0.00361	0.00360
	(!A2 * !B1 * !C1 * !X)	0.00161	0.00160	0.00161
	(!A2 * !B1 * !C1 * !X)	0.00490	0.00492	0.00490

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00354	-0.00357	-0.00355
	(A2 * B1 * B2 * C1 * X)	0.00484	0.00490	0.00486
	(A2 * B1 * B2 * !C1 * X)	-0.00155	-0.00162	-0.00198
	(A2 * B1 * B2 * !C1 * X)	0.00703	0.00702	0.00663
	(A2 * B1 * !B2 * C1 * X)	-0.00135	-0.00142	-0.00174
	(A2 * B1 * !B2 * C1 * X)	0.00724	0.00725	0.00688
	(A2 * !B1 * C1 * X)	-0.00135	-0.00142	-0.00174
	(A2 * !B1 * C1 * X)	0.00723	0.00724	0.00688
	(!A2 * B1 * B2 * C1 * X)	-0.00344	-0.00350	-0.00349
	(!A2 * B1 * B2 * C1 * X)	0.00485	0.00486	0.00487
	(!A2 * B1 * B2 * !C1 * X)	-0.00129	-0.00132	-0.00133
	(!A2 * B1 * B2 * !C1 * X)	0.00704	0.00706	0.00704
	(!A2 * B1 * !B2 * C1 * X)	-0.00122	-0.00128	-0.00127
	(!A2 * B1 * !B2 * C1 * X)	0.00707	0.00709	0.00709
	(!A2 * B1 * !B2 * !C1 * !X)	0.00279	0.00276	0.00280
	(!A2 * B1 * !B2 * !C1 * !X)	0.00950	0.00960	0.00952
	(!A2 * !B1 * C1 * X)	-0.00122	-0.00129	-0.00128
	(!A2 * !B1 * C1 * X)	0.00707	0.00709	0.00709
	(!A2 * !B1 * !C1 * !X)	0.00281	0.00278	0.00282
	(!A2 * !B1 * !C1 * !X)	0.00953	0.00963	0.00954

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)**	0.00240	0.00222	0.00217
	(A1 * B1 * B2 * C1 * X)	-0.00186	-0.00212	-0.00211
	(A1 * B1 * B2 * !C1 * X)	0.00324	0.00279	0.00322
	(A1 * B1 * B2 * !C1 * X)	-0.00116	-0.00167	-0.00112
	(A1 * B1 * !B2 * C1 * X)	0.00328	0.00286	0.00323
	(A1 * B1 * !B2 * C1 * X)	-0.00114	-0.00162	-0.00111
	(A1 * !B1 * C1 * X)	0.00328	0.00286	0.00323
	(A1 * !B1 * C1 * X)	-0.00114	-0.00162	-0.00111
	(!A1 * B1 * B2 * X)	0.00211	0.00213	0.00212
	(!A1 * B1 * B2 * X)	-0.00213	-0.00214	-0.00213
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00323	0.00325	0.00323
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00101	-0.00103	-0.00102
	(!A1 * B1 * !B2 * !C1 * !X)	0.00289	0.00291	0.00288
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * !X)	0.00290	0.00292	0.00289
	(!A1 * !B1 * !C1 * !X)	-0.00139	-0.00140	-0.00139

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00260	0.00242	0.00237
	(A1 * B1 * B2 * C1 * X)	-0.00182	-0.00208	-0.00207
	(A1 * B1 * B2 * !C1 * X)	0.00343	0.00299	0.00342
	(A1 * B1 * B2 * !C1 * X)	-0.00113	-0.00163	-0.00108
	(A1 * B1 * !B2 * C1 * X)	0.00347	0.00305	0.00343
	(A1 * B1 * !B2 * C1 * X)	-0.00111	-0.00159	-0.00107
	(A1 * !B1 * C1 * X)	0.00347	0.00305	0.00343
	(A1 * !B1 * C1 * X)	-0.00111	-0.00159	-0.00107
	(!A1 * B1 * B2 * X)	0.00231	0.00234	0.00231
	(!A1 * B1 * B2 * X)	-0.00208	-0.00210	-0.00209
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00342	0.00345	0.00342
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00097	-0.00099	-0.00097
	(!A1 * B1 * !B2 * !C1 * !X)	0.00404	0.00406	0.00404
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * !B1 * !C1 * !X)	0.00404	0.00407	0.00404
	(!A1 * !B1 * !C1 * !X)	-0.00038	-0.00040	-0.00039

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00464	0.00425	0.00420
	(A1 * B1 * B2 * C1 * X)	-0.00369	-0.00415	-0.00414
	(A1 * B1 * B2 * !C1 * X)	0.00633	0.00542	0.00627
	(A1 * B1 * B2 * !C1 * X)	-0.00226	-0.00321	-0.00216
	(A1 * B1 * !B2 * C1 * X)	0.00636	0.00553	0.00630
	(A1 * B1 * !B2 * C1 * X)	-0.00226	-0.00314	-0.00214
	(A1 * !B1 * C1 * X)	0.00636	0.00554	0.00630
	(A1 * !B1 * C1 * X)	-0.00226	-0.00314	-0.00215
	(!A1 * B1 * B2 * X)	0.00406	0.00411	0.00407
	(!A1 * B1 * B2 * X)	-0.00418	-0.00422	-0.00419
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00628	0.00632	0.00629
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00195	-0.00199	-0.00197
	(!A1 * B1 * !B2 * !C1 * !X)	0.00811	0.00816	0.00812
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00019	-0.00022	-0.00020
	(!A1 * !B1 * !C1 * !X)	0.00813	0.00818	0.00814
	(!A1 * !B1 * !C1 * !X)	-0.00017	-0.00020	-0.00018

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)**	-0.00187	-0.00189	-0.00188
	(A1 * B1 * B2 * C1 * X)	0.00240	0.00243	0.00241
	(A1 * B1 * B2 * !C1 * X)	-0.00089	-0.00091	-0.00111
	(A1 * B1 * B2 * !C1 * X)	0.00350	0.00348	0.00329
	(A1 * B1 * !B2 * C1 * X)	-0.00077	-0.00081	-0.00098
	(A1 * B1 * !B2 * C1 * X)	0.00361	0.00360	0.00342
	(A1 * !B1 * C1 * X)	-0.00078	-0.00081	-0.00098
	(A1 * !B1 * C1 * X)	0.00361	0.00360	0.00342
	(!A1 * B1 * B2 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * B1 * B2 * X)	0.00241	0.00241	0.00241
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00353	0.00353	0.00352
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00036	-0.00049	-0.00052
	(!A1 * B1 * !B2 * !C1 * !X)	0.00394	0.00382	0.00375
	(!A1 * !B1 * !C1 * !X)	-0.00035	-0.00048	-0.00051
	(!A1 * !B1 * !C1 * !X)	0.00395	0.00383	0.00376

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00203	-0.00204	-0.00203
	(A1 * B1 * B2 * C1 * X)	0.00241	0.00243	0.00241
	(A1 * B1 * B2 * !C1 * X)	-0.00103	-0.00106	-0.00125
	(A1 * B1 * B2 * !C1 * X)	0.00350	0.00347	0.00329
	(A1 * B1 * !B2 * C1 * X)	-0.00092	-0.00096	-0.00113
	(A1 * B1 * !B2 * C1 * X)	0.00361	0.00361	0.00342
	(A1 * !B1 * C1 * X)	-0.00093	-0.00096	-0.00113
	(A1 * !B1 * C1 * X)	0.00361	0.00361	0.00342
	(!A1 * B1 * B2 * X)	-0.00199	-0.00200	-0.00199
	(!A1 * B1 * B2 * X)	0.00242	0.00242	0.00241
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00088	-0.00089	-0.00088
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00353	0.00354	0.00352
	(!A1 * B1 * !B2 * !C1 * !X)	0.00048	0.00033	0.00029
	(!A1 * B1 * !B2 * !C1 * !X)	0.00493	0.00478	0.00471
	(!A1 * !B1 * !C1 * !X)	0.00049	0.00034	0.00030
	(!A1 * !B1 * !C1 * !X)	0.00494	0.00479	0.00471

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00349	-0.00352	-0.00350
	(A1 * B1 * B2 * C1 * X)	0.00481	0.00487	0.00483
	(A1 * B1 * B2 * !C1 * X)	-0.00150	-0.00158	-0.00194
	(A1 * B1 * B2 * !C1 * X)	0.00700	0.00701	0.00660
	(A1 * B1 * !B2 * C1 * X)	-0.00130	-0.00137	-0.00169
	(A1 * B1 * !B2 * C1 * X)	0.00720	0.00721	0.00685
	(A1 * !B1 * C1 * X)	-0.00130	-0.00137	-0.00169
	(A1 * !B1 * C1 * X)	0.00720	0.00721	0.00685
	(!A1 * B1 * B2 * X)	-0.00339	-0.00345	-0.00345
	(!A1 * B1 * B2 * X)	0.00482	0.00482	0.00484
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00117	-0.00123	-0.00123
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00704	0.00704	0.00706
	(!A1 * B1 * !B2 * !C1 * !X)	0.00119	0.00078	0.00077
	(!A1 * B1 * !B2 * !C1 * !X)	0.00950	0.00911	0.00907
	(!A1 * !B1 * !C1 * !X)	0.00122	0.00080	0.00079
	(!A1 * !B1 * !C1 * !X)	0.00952	0.00913	0.00909

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)**	0.00224	0.00226	0.00217
	(A1 * A2 * B2 * C1 * X)	-0.00130	-0.00129	-0.00133
	(A1 * A2 * B2 * !C1 * X)	0.00224	0.00227	0.00225
	(A1 * A2 * B2 * !C1 * X)	-0.00064	-0.00066	-0.00060
	(A1 * A2 * !B2 * C1 * X)	0.00237	0.00238	0.00211
	(A1 * A2 * !B2 * C1 * X)	-0.00106	-0.00109	-0.00123
	(A1 * A2 * !B2 * !C1 * X)	0.00320	0.00323	0.00316
	(A1 * A2 * !B2 * !C1 * X)	0.00025	0.00022	0.00022
	(A1 * !A2 * B2 * C1 * X)	0.00294	0.00237	0.00294
	(A1 * !A2 * B2 * C1 * X)	-0.00120	-0.00179	-0.00116
	(A1 * !A2 * !B2 * C1 * X)	0.00300	0.00298	0.00298
	(A1 * !A2 * !B2 * C1 * X)	-0.00102	-0.00107	-0.00106
	(A1 * !A2 * !B2 * !C1 * !X)	0.00163	0.00163	0.00160
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00156	-0.00157	-0.00162
	(!A1 * B2 * C1 * X)	0.00294	0.00237	0.00294
	(!A1 * B2 * C1 * X)	-0.00120	-0.00179	-0.00116
	(!A1 * !B2 * C1 * X)	0.00300	0.00298	0.00298
	(!A1 * !B2 * C1 * X)	-0.00102	-0.00106	-0.00106
	(!A1 * !B2 * !C1 * !X)	0.00164	0.00164	0.00161
	(!A1 * !B2 * !C1 * !X)	-0.00155	-0.00156	-0.00161

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00261	0.00263	0.00254
	(A1 * A2 * B2 * C1 * X)	-0.00129	-0.00129	-0.00132
	(A1 * A2 * B2 * !C1 * X)	0.00262	0.00266	0.00263
	(A1 * A2 * B2 * !C1 * X)	-0.00063	-0.00065	-0.00060
	(A1 * A2 * !B2 * C1 * X)	0.00271	0.00272	0.00246
	(A1 * A2 * !B2 * C1 * X)	-0.00106	-0.00108	-0.00123
	(A1 * A2 * !B2 * !C1 * X)	0.00355	0.00356	0.00352
	(A1 * A2 * !B2 * !C1 * X)	0.00024	0.00024	0.00022
	(A1 * !A2 * B2 * C1 * X)	0.00329	0.00274	0.00330
	(A1 * !A2 * B2 * C1 * X)	-0.00122	-0.00178	-0.00116
	(A1 * !A2 * !B2 * C1 * X)	0.00335	0.00335	0.00333
	(A1 * !A2 * !B2 * C1 * X)	-0.00102	-0.00108	-0.00106
	(A1 * !A2 * !B2 * !C1 * !X)	0.00271	0.00270	0.00267
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00072	-0.00072	-0.00076
	(!A1 * B2 * C1 * X)	0.00329	0.00274	0.00330
	(!A1 * B2 * C1 * X)	-0.00122	-0.00178	-0.00116
	(!A1 * !B2 * C1 * X)	0.00335	0.00334	0.00333
	(!A1 * !B2 * C1 * X)	-0.00102	-0.00107	-0.00106
	(!A1 * !B2 * !C1 * !X)	0.00271	0.00270	0.00268
	(!A1 * !B2 * !C1 * !X)	-0.00072	-0.00071	-0.00076

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00491	0.00490	0.00469
	(A1 * A2 * B2 * C1 * X)	-0.00253	-0.00262	-0.00269
	(A1 * A2 * B2 * !C1 * X)	0.00496	0.00496	0.00495
	(A1 * A2 * B2 * !C1 * X)	-0.00116	-0.00115	-0.00113
	(A1 * A2 * !B2 * C1 * X)	0.00503	0.00506	0.00452
	(A1 * A2 * !B2 * C1 * X)	-0.00217	-0.00222	-0.00252
	(A1 * A2 * !B2 * !C1 * X)	0.00659	0.00661	0.00653
	(A1 * A2 * !B2 * !C1 * X)	0.00045	0.00042	0.00038
	(A1 * !A2 * B2 * C1 * X)	0.00634	0.00511	0.00618
	(A1 * !A2 * B2 * C1 * X)	-0.00223	-0.00348	-0.00227
	(A1 * !A2 * !B2 * C1 * X)	0.00629	0.00625	0.00622
	(A1 * !A2 * !B2 * C1 * X)	-0.00199	-0.00211	-0.00209
	(A1 * !A2 * !B2 * !C1 * !X)	0.00563	0.00563	0.00554
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00105	-0.00110	-0.00123
	(!A1 * B2 * C1 * X)	0.00634	0.00511	0.00618
	(!A1 * B2 * C1 * X)	-0.00223	-0.00348	-0.00227
	(!A1 * !B2 * C1 * X)	0.00629	0.00626	0.00622
	(!A1 * !B2 * C1 * X)	-0.00199	-0.00212	-0.00209
	(!A1 * !B2 * !C1 * !X)	0.00565	0.00565	0.00556
	(!A1 * !B2 * !C1 * !X)	-0.00104	-0.00108	-0.00121

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)**	-0.00174	-0.00175	-0.00170
	(A1 * A2 * B2 * C1 * X)	0.00169	0.00171	0.00170
	(A1 * A2 * B2 * !C1 * X)	-0.00066	-0.00070	-0.00128
	(A1 * A2 * B2 * !C1 * X)	0.00226	0.00223	0.00167
	(A1 * A2 * !B2 * C1 * X)	-0.00171	-0.00171	-0.00167
	(A1 * A2 * !B2 * C1 * X)	0.00157	0.00157	0.00157
	(A1 * A2 * !B2 * !C1 * X)	-0.00092	-0.00095	-0.00093
	(A1 * A2 * !B2 * !C1 * X)	0.00205	0.00205	0.00202
	(A1 * !A2 * B2 * C1 * X)	-0.00051	-0.00056	-0.00075
	(A1 * !A2 * B2 * C1 * X)	0.00360	0.00359	0.00337
	(A1 * !A2 * !B2 * C1 * X)	-0.00047	-0.00049	-0.00048
	(A1 * !A2 * !B2 * C1 * X)	0.00356	0.00357	0.00356
	(A1 * !A2 * !B2 * !C1 * !X)	0.00068	0.00067	0.00068
	(A1 * !A2 * !B2 * !C1 * !X)	0.00388	0.00390	0.00388
	(!A1 * B2 * C1 * X)	-0.00051	-0.00056	-0.00075
	(!A1 * B2 * C1 * X)	0.00360	0.00359	0.00337
	(!A1 * !B2 * C1 * X)	-0.00047	-0.00050	-0.00048
	(!A1 * !B2 * C1 * X)	0.00356	0.00358	0.00356
	(!A1 * !B2 * !C1 * !X)	0.00069	0.00068	0.00069
	(!A1 * !B2 * !C1 * !X)	0.00389	0.00391	0.00389

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00206	-0.00207	-0.00202
	(A1 * A2 * B2 * C1 * X)	0.00174	0.00176	0.00174
	(A1 * A2 * B2 * !C1 * X)	-0.00099	-0.00102	-0.00161
	(A1 * A2 * B2 * !C1 * X)	0.00231	0.00227	0.00172
	(A1 * A2 * !B2 * C1 * X)	-0.00202	-0.00202	-0.00198
	(A1 * A2 * !B2 * C1 * X)	0.00162	0.00162	0.00161
	(A1 * A2 * !B2 * !C1 * X)	-0.00122	-0.00126	-0.00123
	(A1 * A2 * !B2 * !C1 * X)	0.00209	0.00210	0.00207
	(A1 * !A2 * B2 * C1 * X)	-0.00083	-0.00087	-0.00106
	(A1 * !A2 * B2 * C1 * X)	0.00365	0.00364	0.00342
	(A1 * !A2 * !B2 * C1 * X)	-0.00077	-0.00078	-0.00079
	(A1 * !A2 * !B2 * C1 * X)	0.00361	0.00361	0.00361
	(A1 * !A2 * !B2 * !C1 * !X)	0.00161	0.00159	0.00160
	(A1 * !A2 * !B2 * !C1 * !X)	0.00502	0.00504	0.00503
	(!A1 * B2 * C1 * X)	-0.00083	-0.00087	-0.00107
	(!A1 * B2 * C1 * X)	0.00365	0.00364	0.00342
	(!A1 * !B2 * C1 * X)	-0.00077	-0.00078	-0.00079
	(!A1 * !B2 * C1 * X)	0.00361	0.00361	0.00361
	(!A1 * !B2 * !C1 * !X)	0.00162	0.00160	0.00161
	(!A1 * !B2 * !C1 * !X)	0.00503	0.00505	0.00503

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00370	-0.00372	-0.00361
	(A1 * A2 * B2 * C1 * X)	0.00354	0.00358	0.00357
	(A1 * A2 * B2 * !C1 * X)	-0.00156	-0.00164	-0.00282
	(A1 * A2 * B2 * !C1 * X)	0.00459	0.00457	0.00345
	(A1 * A2 * !B2 * C1 * X)	-0.00358	-0.00362	-0.00354
	(A1 * A2 * !B2 * C1 * X)	0.00329	0.00329	0.00330
	(A1 * A2 * !B2 * !C1 * X)	-0.00194	-0.00197	-0.00199
	(A1 * A2 * !B2 * !C1 * X)	0.00422	0.00421	0.00418
	(A1 * !A2 * B2 * C1 * X)	-0.00124	-0.00132	-0.00172
	(A1 * !A2 * B2 * C1 * X)	0.00725	0.00721	0.00678
	(A1 * !A2 * !B2 * C1 * X)	-0.00111	-0.00120	-0.00116
	(A1 * !A2 * !B2 * C1 * X)	0.00718	0.00723	0.00718
	(A1 * !A2 * !B2 * !C1 * !X)	0.00321	0.00317	0.00319
	(A1 * !A2 * !B2 * !C1 * !X)	0.00991	0.00995	0.00993
	(!A1 * B2 * C1 * X)	-0.00124	-0.00132	-0.00172
	(!A1 * B2 * C1 * X)	0.00725	0.00721	0.00678
	(!A1 * !B2 * C1 * X)	-0.00111	-0.00120	-0.00116
	(!A1 * !B2 * C1 * X)	0.00718	0.00723	0.00718
	(!A1 * !B2 * !C1 * !X)	0.00324	0.00319	0.00321
	(!A1 * !B2 * !C1 * !X)	0.00994	0.00998	0.00995

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)**	0.00233	0.00232	0.00223
	(A1 * A2 * B1 * C1 * X)	-0.00125	-0.00126	-0.00129
	(A1 * A2 * B1 * !C1 * X)	0.00234	0.00237	0.00233
	(A1 * A2 * B1 * !C1 * X)	-0.00057	-0.00058	-0.00055
	(A1 * A2 * !B1 * C1 * X)	0.00241	0.00243	0.00216
	(A1 * A2 * !B1 * C1 * X)	-0.00103	-0.00106	-0.00120
	(A1 * A2 * !B1 * !C1 * X)	0.00323	0.00327	0.00320
	(A1 * A2 * !B1 * !C1 * X)	0.00026	0.00024	0.00023
	(A1 * !A2 * B1 * C1 * X)	0.00303	0.00244	0.00301
	(A1 * !A2 * B1 * C1 * X)	-0.00114	-0.00173	-0.00111
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00307	0.00304	0.00303
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00097	-0.00102	-0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	0.00280	0.00281	0.00280
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00128	-0.00129	-0.00129
	(!A1 * B1 * C1 * X)	0.00303	0.00244	0.00301
	(!A1 * B1 * C1 * X)	-0.00114	-0.00173	-0.00111
	(!A1 * !B1 * !C1 * !X)	0.00281	0.00283	0.00281
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00129	-0.00128

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00269	0.00269	0.00260
	(A1 * A2 * B1 * C1 * X)	-0.00117	-0.00118	-0.00121
	(A1 * A2 * B1 * !C1 * X)	0.00268	0.00271	0.00268
	(A1 * A2 * B1 * !C1 * X)	-0.00051	-0.00052	-0.00047
	(A1 * A2 * !B1 * C1 * X)	0.00277	0.00279	0.00253
	(A1 * A2 * !B1 * C1 * X)	-0.00096	-0.00098	-0.00112
	(A1 * A2 * !B1 * !C1 * X)	0.00353	0.00355	0.00351
	(A1 * A2 * !B1 * !C1 * X)	0.00031	0.00030	0.00029
	(A1 * !A2 * B1 * C1 * X)	0.00336	0.00279	0.00336
	(A1 * !A2 * B1 * C1 * X)	-0.00107	-0.00164	-0.00101
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00342	0.00340	0.00339
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00087	-0.00092	-0.00091
	(A1 * !A2 * !B1 * !C1 * !X)	0.00401	0.00403	0.00400
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00032	-0.00033	-0.00032
	(!A1 * B1 * C1 * X)	0.00336	0.00279	0.00336
	(!A1 * B1 * C1 * X)	-0.00107	-0.00164	-0.00101
	(!A1 * !B1 * !C1 * !X)	0.00402	0.00403	0.00401
	(!A1 * !B1 * !C1 * !X)	-0.00032	-0.00033	-0.00032

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00530	0.00527	0.00508
	(A1 * A2 * B1 * C1 * X)	-0.00243	-0.00248	-0.00255
	(A1 * A2 * B1 * !C1 * X)	0.00529	0.00538	0.00530
	(A1 * A2 * B1 * !C1 * X)	-0.00105	-0.00109	-0.00102
	(A1 * A2 * !B1 * C1 * X)	0.00542	0.00544	0.00491
	(A1 * A2 * !B1 * C1 * X)	-0.00203	-0.00207	-0.00238
	(A1 * A2 * !B1 * !C1 * X)	0.00698	0.00705	0.00690
	(A1 * A2 * !B1 * !C1 * X)	0.00056	0.00052	0.00050
	(A1 * !A2 * B1 * C1 * X)	0.00666	0.00544	0.00657
	(A1 * !A2 * B1 * C1 * X)	-0.00212	-0.00336	-0.00213
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00668	0.00665	0.00661
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00185	-0.00197	-0.00195
	(A1 * !A2 * !B1 * !C1 * !X)	0.00841	0.00844	0.00840
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00021	-0.00024	-0.00022
	(!A1 * B1 * C1 * X)	0.00666	0.00544	0.00657
	(!A1 * B1 * C1 * X)	-0.00212	-0.00336	-0.00213
	(!A1 * !B1 * !C1 * !X)	0.00843	0.00846	0.00842
	(!A1 * !B1 * !C1 * !X)	-0.00019	-0.00022	-0.00020

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)**	-0.00179	-0.00181	-0.00176
	(A1 * A2 * B1 * C1 * X)	0.00165	0.00168	0.00167
	(A1 * A2 * B1 * !C1 * X)	-0.00073	-0.00076	-0.00135
	(A1 * A2 * B1 * !C1 * X)	0.00221	0.00218	0.00163
	(A1 * A2 * !B1 * C1 * X)	-0.00177	-0.00177	-0.00173
	(A1 * A2 * !B1 * C1 * X)	0.00154	0.00154	0.00154
	(A1 * A2 * !B1 * !C1 * X)	-0.00096	-0.00098	-0.00097
	(A1 * A2 * !B1 * !C1 * X)	0.00203	0.00203	0.00200
	(A1 * !A2 * B1 * C1 * X)	-0.00057	-0.00062	-0.00081
	(A1 * !A2 * B1 * C1 * X)	0.00356	0.00355	0.00333
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00054	-0.00055	-0.00054
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00353	0.00352	0.00352
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00027	-0.00041	-0.00043
	(A1 * !A2 * !B1 * !C1 * !X)	0.00383	0.00369	0.00364
	(!A1 * B1 * C1 * X)	-0.00057	-0.00062	-0.00081
	(!A1 * B1 * C1 * X)	0.00356	0.00355	0.00333
	(!A1 * !B1 * !C1 * !X)	-0.00026	-0.00040	-0.00042
	(!A1 * !B1 * !C1 * !X)	0.00384	0.00370	0.00365

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00212	-0.00213	-0.00207
	(A1 * A2 * B1 * C1 * X)	0.00163	0.00164	0.00163
	(A1 * A2 * B1 * !C1 * X)	-0.00101	-0.00105	-0.00162
	(A1 * A2 * B1 * !C1 * X)	0.00220	0.00218	0.00163
	(A1 * A2 * !B1 * C1 * X)	-0.00207	-0.00208	-0.00203
	(A1 * A2 * !B1 * C1 * X)	0.00151	0.00151	0.00151
	(A1 * A2 * !B1 * !C1 * X)	-0.00120	-0.00123	-0.00123
	(A1 * A2 * !B1 * !C1 * X)	0.00201	0.00202	0.00200
	(A1 * !A2 * B1 * C1 * X)	-0.00087	-0.00093	-0.00112
	(A1 * !A2 * B1 * C1 * X)	0.00350	0.00349	0.00327
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00347	0.00347	0.00346
	(A1 * !A2 * !B1 * !C1 * !X)	0.00054	0.00036	0.00033
	(A1 * !A2 * !B1 * !C1 * !X)	0.00485	0.00471	0.00464
	(!A1 * B1 * C1 * X)	-0.00087	-0.00093	-0.00112
	(!A1 * B1 * C1 * X)	0.00350	0.00349	0.00327
	(!A1 * !B1 * !C1 * !X)	0.00054	0.00036	0.00033
	(!A1 * !B1 * !C1 * !X)	0.00485	0.00471	0.00464

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00408	-0.00411	-0.00400
	(A1 * A2 * B1 * C1 * X)	0.00339	0.00343	0.00343
	(A1 * A2 * B1 * !C1 * X)	-0.00191	-0.00199	-0.00318
	(A1 * A2 * B1 * !C1 * X)	0.00448	0.00445	0.00334
	(A1 * A2 * !B1 * C1 * X)	-0.00397	-0.00400	-0.00393
	(A1 * A2 * !B1 * C1 * X)	0.00315	0.00317	0.00317
	(A1 * A2 * !B1 * !C1 * X)	-0.00230	-0.00237	-0.00236
	(A1 * A2 * !B1 * !C1 * X)	0.00409	0.00412	0.00406
	(A1 * !A2 * B1 * C1 * X)	-0.00162	-0.00171	-0.00210
	(A1 * !A2 * B1 * C1 * X)	0.00710	0.00707	0.00665
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00149	-0.00155	-0.00155
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00703	0.00705	0.00704
	(A1 * !A2 * !B1 * !C1 * !X)	0.00091	0.00054	0.00048
	(A1 * !A2 * !B1 * !C1 * !X)	0.00952	0.00921	0.00908
	(!A1 * B1 * C1 * X)	-0.00162	-0.00171	-0.00210
	(!A1 * B1 * C1 * X)	0.00710	0.00707	0.00665
	(!A1 * !B1 * !C1 * !X)	0.00093	0.00056	0.00051
	(!A1 * !B1 * !C1 * !X)	0.00954	0.00923	0.00911

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)	0.00225	0.00227	0.00224
	(A1 * B1 * B2 * X)	-0.00089	-0.00090	-0.00088
	(A1 * A2 * B1 * !B2 * X)	0.00226	0.00230	0.00232
	(A1 * A2 * B1 * !B2 * X)	-0.00061	-0.00063	-0.00056
	(A1 * A2 * !B1 * X)	0.00226	0.00230	0.00232
	(A1 * A2 * !B1 * X)	-0.00061	-0.00063	-0.00056
	(!A1 * B1 * B2 * X)	0.00227	0.00232	0.00235
	(!A1 * B1 * B2 * X)	-0.00079	-0.00081	-0.00072
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00235	0.00237	0.00236
	(A1 * B1 * B2 * X)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * B1 * !B2 * X)	0.00240	0.00243	0.00245
	(A1 * A2 * B1 * !B2 * X)	-0.00060	-0.00060	-0.00054
	(A1 * A2 * !B1 * X)	0.00240	0.00243	0.00245
	(A1 * A2 * !B1 * X)	-0.00060	-0.00060	-0.00054
	(!A1 * B1 * B2 * X)	0.00241	0.00242	0.00248
	(!A1 * B1 * B2 * X)	-0.00079	-0.00078	-0.00070
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00404	0.00405	0.00403
	(A1 * B1 * B2 * X)	-0.00189	-0.00189	-0.00186
	(A1 * A2 * B1 * !B2 * X)	0.00408	0.00418	0.00422
	(A1 * A2 * B1 * !B2 * X)	-0.00135	-0.00139	-0.00124
	(A1 * A2 * !B1 * X)	0.00408	0.00418	0.00422
	(A1 * A2 * !B1 * X)	-0.00135	-0.00139	-0.00124
	(!A1 * B1 * B2 * X)	0.00403	0.00412	0.00419
	(!A1 * B1 * B2 * X)	-0.00176	-0.00180	-0.00162

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)	-0.00186	-0.00188	-0.00204
	(A1 * B1 * B2 * X)	0.00124	0.00125	0.00111
	(A1 * A2 * B1 * !B2 * X)	-0.00057	-0.00061	-0.00107
	(A1 * A2 * B1 * !B2 * X)	0.00239	0.00239	0.00196
	(A1 * A2 * !B1 * X)	-0.00057	-0.00061	-0.00107
	(A1 * A2 * !B1 * X)	0.00239	0.00239	0.00196
	(!A1 * B1 * B2 * X)	-0.00060	-0.00064	-0.00121
	(!A1 * B1 * B2 * X)	0.00250	0.00248	0.00191
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00195	-0.00196	-0.00212
	(A1 * B1 * B2 * X)	0.00125	0.00125	0.00113
	(A1 * A2 * B1 * !B2 * X)	-0.00066	-0.00068	-0.00115
	(A1 * A2 * B1 * !B2 * X)	0.00242	0.00241	0.00198
	(A1 * A2 * !B1 * X)	-0.00065	-0.00068	-0.00115
	(A1 * A2 * !B1 * X)	0.00242	0.00241	0.00198
	(!A1 * B1 * B2 * X)	-0.00067	-0.00072	-0.00128
	(!A1 * B1 * B2 * X)	0.00253	0.00251	0.00193
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00319	-0.00323	-0.00356
	(A1 * B1 * B2 * X)	0.00263	0.00266	0.00238
	(A1 * A2 * B1 * !B2 * X)	-0.00062	-0.00069	-0.00166
	(A1 * A2 * B1 * !B2 * X)	0.00498	0.00498	0.00409
	(A1 * A2 * !B1 * X)	-0.00062	-0.00069	-0.00166
	(A1 * A2 * !B1 * X)	0.00498	0.00498	0.00409
	(!A1 * B1 * B2 * X)	-0.00060	-0.00069	-0.00183
	(!A1 * B1 * B2 * X)	0.00526	0.00521	0.00407

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00268	0.00255	0.00262	0.00266	0.00264	0.00274	0.48316
sky130_fd_sc_hs__a222oi_2	0.00538	0.00480	0.00531	0.00492	0.00482	0.00545	0.81467

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	83.07420	280.59700
sky130_fd_sc_hs__a222oi_2	0.00000	165.84700	559.70500

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)	0.14466	0.82157	8.14589
	A2->Y (FR)	0.15782	0.84014	8.23648
	B1->Y (FR)	0.12657	0.85524	8.83573
	B2->Y (FR)	0.14199	0.87999	8.96643
	C1->Y (FR)	0.09486	0.86831	9.37483
	C2->Y (FR)	0.10869	0.88651	9.41692
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.12443	0.67310	7.78216
	A2->Y (FR)	0.14399	0.70566	8.00620
	B1->Y (FR)	0.10411	0.69830	8.37705
	B2->Y (FR)	0.12806	0.75836	8.89763
	C1->Y (FR)	0.08845	0.76196	9.30626
	C2->Y (FR)	0.10783	0.77973	9.32972

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.04222	0.31738	2.87580
	A2->Y (RF)	0.04517	0.28766	2.47482
	B1->Y (RF)	0.03574	0.29622	2.77743
	B2->Y (RF)	0.03905	0.26723	2.36860
	C1->Y (RF)	0.02438	0.27697	2.71624
	C2->Y (RF)	0.02726	0.24941	2.32174
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.04061	0.26246	2.66414
	A2->Y (RF)	0.04392	0.23700	2.29075
	B1->Y (RF)	0.03488	0.24339	2.60231
	B2->Y (RF)	0.03882	0.21967	2.22032
	C1->Y (RF)	0.02023	0.20267	2.31062
	C2->Y (RF)	0.02401	0.18123	1.95735

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00113	0.00439	0.10208
	A1	0.01266	0.01595	0.11384
	A2	0.00144	0.00483	0.10651
	A2	0.01423	0.01765	0.11937
	B1	0.00116	0.00543	0.09808
	B1	0.00980	0.01408	0.10689
	B2	0.00150	0.00571	0.09934
	B2	0.01151	0.01570	0.10927
	C1	0.00101	0.00729	0.11135
	C1	0.00711	0.01340	0.11732
	C2	0.00141	0.00782	0.11570
	C2	0.00882	0.01523	0.12296
sky130_fd_sc_hs__a222oi_2	A1	0.00094	0.00838	0.19868
	A1	0.02394	0.03141	0.22150
	A2	0.00219	0.00980	0.20618
	A2	0.02712	0.03473	0.23131
	B1	0.00101	0.01028	0.18876
	B1	0.01840	0.02769	0.20659
	B2	0.00210	0.01069	0.18165
	B2	0.02156	0.03017	0.20093
	C1	0.00082	0.01403	0.21043
	C1	0.01239	0.02559	0.22171
	C2	0.00176	0.01495	0.21854
	C2	0.01647	0.02976	0.23298

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.02063	0.02485	0.11723
	A1	0.00913	0.01333	0.10558
	A2	0.02173	0.02546	0.11617
	A2	0.00896	0.01263	0.10329
	B1	0.01457	0.01921	0.10782
	B1	0.00597	0.01058	0.09906
	B2	0.01581	0.01987	0.10522
	B2	0.00584	0.00988	0.09516
	C1	0.01096	0.01580	0.09848
	C1	0.00489	0.00970	0.09225
	C2	0.01194	0.01630	0.09915
	C2	0.00454	0.00889	0.09167
sky130_fd_sc_hs__a222oi_2	A1	0.03899	0.04809	0.23296
	A1	0.01604	0.02513	0.20970
	A2	0.04075	0.04887	0.22825
	A2	0.01585	0.02394	0.20315
	B1	0.02789	0.03783	0.21165
	B1	0.01049	0.02040	0.19404
	B2	0.03013	0.03849	0.19679
	B2	0.01069	0.01899	0.17717
	C1	0.01995	0.03060	0.19376
	C1	0.00839	0.01903	0.18210
	C2	0.02244	0.03234	0.19653
	C2	0.00768	0.01756	0.18167

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)**	0.00214	0.00192	0.00187
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00191	-0.00219	-0.00218
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00307	0.00254	0.00291
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00113	-0.00169	-0.00119
	(A2 * B1 * B2 * !C1 * !Y)	0.00307	0.00254	0.00291
	(A2 * B1 * B2 * !C1 * !Y)	-0.00113	-0.00169	-0.00119
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00342	0.00295	0.00398
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00089	-0.00139	-0.00019
	(A2 * !B1 * C1 * C2 * !Y)	0.00344	0.00295	0.00398
	(A2 * !B1 * C1 * C2 * !Y)	-0.00087	-0.00139	-0.00018
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00181	0.00182	0.00182
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00221	-0.00221	-0.00221
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00291	0.00292	0.00290
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00113	-0.00114	-0.00113
	(!A2 * B1 * B2 * !C1 * !Y)	0.00289	0.00291	0.00290
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00112	-0.00114	-0.00113
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00414	0.00413	0.00414
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00010	0.00010	0.00011
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00064	0.00065	0.00062
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00255	-0.00256	-0.00259
	(!A2 * B1 * !B2 * !C1 * Y)	0.00065	0.00066	0.00063
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00254	-0.00255	-0.00258
	(!A2 * !B1 * C1 * C2 * !Y)	0.00413	0.00414	0.00414
	(!A2 * !B1 * C1 * C2 * !Y)	0.00012	0.00009	0.00011
	(!A2 * !B1 * C1 * !C2 * Y)	0.00065	0.00066	0.00063
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00254	-0.00255	-0.00258
	(!A2 * !B1 * !C1 * Y)	0.00066	0.00067	0.00064
	(!A2 * !B1 * !C1 * Y)	-0.00253	-0.00254	-0.00257

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00444	0.00392	0.00387
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00382	-0.00443	-0.00443
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00623	0.00510	0.00594
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00233	-0.00350	-0.00245
	(A2 * B1 * B2 * !C1 * !Y)	0.00623	0.00510	0.00594
	(A2 * B1 * B2 * !C1 * !Y)	-0.00233	-0.00350	-0.00245
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00691	0.00589	0.00806
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00187	-0.00292	-0.00046
	(A2 * !B1 * C1 * C2 * !Y)	0.00696	0.00590	0.00807
	(A2 * !B1 * C1 * C2 * !Y)	-0.00181	-0.00291	-0.00045
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00374	0.00378	0.00375
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00447	-0.00451	-0.00448
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00591	0.00593	0.00590
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00230	-0.00235	-0.00232
	(!A2 * B1 * B2 * !C1 * !Y)	0.00591	0.00593	0.00590
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00230	-0.00235	-0.00232
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00834	0.00837	0.00835
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00014	0.00009	0.00013
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00127	0.00127	0.00121
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00531	-0.00533	-0.00545
	(!A2 * B1 * !B2 * !C1 * Y)	0.00129	0.00129	0.00123
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00529	-0.00531	-0.00543
	(!A2 * !B1 * C1 * C2 * !Y)	0.00836	0.00838	0.00836
	(!A2 * !B1 * C1 * C2 * !Y)	0.00015	0.00010	0.00014
	(!A2 * !B1 * C1 * !C2 * Y)	0.00129	0.00130	0.00123
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00529	-0.00532	-0.00543
	(!A2 * !B1 * !C1 * Y)	0.00131	0.00132	0.00125
	(!A2 * !B1 * !C1 * Y)	-0.00527	-0.00530	-0.00541

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)	-0.00160	-0.00161	-0.00161
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00244	0.00247	0.00245
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00061	-0.00065	-0.00083
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00353	0.00354	0.00333
	(A2 * B1 * B2 * !C1 * !Y)	-0.00062	-0.00064	-0.00083
	(A2 * B1 * B2 * !C1 * !Y)	0.00355	0.00352	0.00333
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00067	0.00061	0.00017
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00492	0.00488	0.00441
	(A2 * !B1 * C1 * C2 * !Y)	0.00068	0.00061	0.00017
	(A2 * !B1 * C1 * C2 * !Y)	0.00492	0.00488	0.00442
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00157	-0.00159	-0.00158
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00245	0.00247	0.00245
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00050	-0.00052	-0.00050
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00352	0.00357	0.00353
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00050	-0.00053	-0.00050
	(!A2 * B1 * B2 * !C1 * !Y)	0.00352	0.00357	0.00353
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00074	0.00071	0.00073
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00476	0.00480	0.00476
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00275	0.00278	0.00276
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(!A2 * B1 * !B2 * !C1 * Y)	0.00276	0.00279	0.00277
	(!A2 * !B1 * C1 * C2 * !Y)	0.00074	0.00071	0.00073
	(!A2 * !B1 * C1 * C2 * !Y)	0.00476	0.00479	0.00476
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * C1 * !C2 * Y)	0.00276	0.00279	0.00277
	(!A2 * !B1 * !C1 * Y)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * !C1 * Y)	0.00277	0.00280	0.00278

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00332	-0.00334	-0.00332
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00500	0.00502	0.00497
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00136	-0.00144	-0.00180
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00714	0.00714	0.00671
	(A2 * B1 * B2 * !C1 * !Y)	-0.00136	-0.00143	-0.00180
	(A2 * B1 * B2 * !C1 * !Y)	0.00714	0.00712	0.00671
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00120	0.00108	0.00019
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00987	0.00978	0.00886
	(A2 * !B1 * C1 * C2 * !Y)	0.00122	0.00109	0.00020
	(A2 * !B1 * C1 * C2 * !Y)	0.00988	0.00981	0.00887
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00326	-0.00331	-0.00328
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00497	0.00503	0.00497
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00111	-0.00117	-0.00113
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00712	0.00718	0.00712
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00110	-0.00117	-0.00113
	(!A2 * B1 * B2 * !C1 * !Y)	0.00712	0.00718	0.00712
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00134	0.00130	0.00130
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00956	0.00957	0.00956
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00086	-0.00087	-0.00085
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00576	0.00582	0.00578
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00084	-0.00085	-0.00083
	(!A2 * B1 * !B2 * !C1 * Y)	0.00578	0.00584	0.00580
	(!A2 * !B1 * C1 * C2 * !Y)	0.00136	0.00131	0.00131
	(!A2 * !B1 * C1 * C2 * !Y)	0.00957	0.00962	0.00957
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00083	-0.00085	-0.00083
	(!A2 * !B1 * C1 * !C2 * Y)	0.00577	0.00585	0.00580
	(!A2 * !B1 * !C1 * Y)	-0.00081	-0.00083	-0.00081
	(!A2 * !B1 * !C1 * Y)	0.00579	0.00587	0.00582

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)	0.00219	0.00198	0.00193
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00191	-0.00219	-0.00218
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00310	0.00256	0.00297
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00114	-0.00168	-0.00119
	(A1 * B1 * B2 * !C1 * !Y)	0.00310	0.00256	0.00297
	(A1 * B1 * B2 * !C1 * !Y)	-0.00114	-0.00167	-0.00119
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00345	0.00300	0.00404
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00089	-0.00140	-0.00018
	(A1 * !B1 * C1 * C2 * !Y)	0.00346	0.00300	0.00404
	(A1 * !B1 * C1 * C2 * !Y)	-0.00089	-0.00139	-0.00018
	(!A1 * B1 * B2 * !Y)	0.00188	0.00191	0.00189
	(!A1 * B1 * B2 * !Y)	-0.00220	-0.00222	-0.00220
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00419	0.00421	0.00420
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00012	0.00010	0.00011
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00191	0.00193	0.00190
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00221	-0.00223	-0.00222
	(!A1 * B1 * !B2 * !C1 * Y)	0.00192	0.00194	0.00191
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00220	-0.00222	-0.00221
	(!A1 * !B1 * C1 * !C2 * Y)	0.00192	0.00194	0.00191
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00220	-0.00222	-0.00221
	(!A1 * !B1 * !C1 * Y)	0.00193	0.00195	0.00192
	(!A1 * !B1 * !C1 * Y)	-0.00219	-0.00221	-0.00220

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00412	0.00369	0.00365
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00360	-0.00412	-0.00411
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00580	0.00483	0.00572
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00222	-0.00323	-0.00214
	(A1 * B1 * B2 * !C1 * !Y)	0.00580	0.00483	0.00572
	(A1 * B1 * B2 * !C1 * !Y)	-0.00222	-0.00323	-0.00214
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00645	0.00561	0.00782
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00178	-0.00266	-0.00017
	(A1 * !B1 * C1 * C2 * !Y)	0.00648	0.00566	0.00783
	(A1 * !B1 * C1 * C2 * !Y)	-0.00175	-0.00267	-0.00016
	(!A1 * B1 * B2 * !Y)	0.00353	0.00358	0.00354
	(!A1 * B1 * B2 * !Y)	-0.00414	-0.00417	-0.00415
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00814	0.00818	0.00815
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00047	0.00043	0.00046
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00349	0.00353	0.00349
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00425	-0.00428	-0.00426
	(!A1 * B1 * !B2 * !C1 * Y)	0.00351	0.00355	0.00351
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00423	-0.00426	-0.00424
	(!A1 * !B1 * C1 * !C2 * Y)	0.00351	0.00356	0.00351
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00423	-0.00426	-0.00424
	(!A1 * !B1 * !C1 * Y)	0.00353	0.00358	0.00353
	(!A1 * !B1 * !C1 * Y)	-0.00421	-0.00424	-0.00422

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)**	-0.00167	-0.00168	-0.00167
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00244	0.00247	0.00245
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00068	-0.00071	-0.00089
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00353	0.00352	0.00333
	(A1 * B1 * B2 * !C1 * !Y)	-0.00068	-0.00071	-0.00089
	(A1 * B1 * B2 * !C1 * !Y)	0.00353	0.00352	0.00333
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00061	0.00055	0.00011
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00490	0.00486	0.00441
	(A1 * !B1 * C1 * C2 * !Y)	0.00062	0.00055	0.00011
	(A1 * !B1 * C1 * C2 * !Y)	0.00490	0.00486	0.00441
	(!A1 * B1 * B2 * !Y)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * B2 * !Y)	0.00245	0.00246	0.00245
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00067	0.00066	0.00066
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00476	0.00476	0.00475
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00148	-0.00162	-0.00164
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00266	0.00250	0.00246
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00147	-0.00161	-0.00163
	(!A1 * B1 * !B2 * !C1 * Y)	0.00267	0.00251	0.00247
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00147	-0.00161	-0.00163
	(!A1 * !B1 * C1 * !C2 * Y)	0.00267	0.00251	0.00247
	(!A1 * !B1 * !C1 * Y)	-0.00146	-0.00160	-0.00162
	(!A1 * !B1 * !C1 * Y)	0.00268	0.00252	0.00248

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00313	-0.00314	-0.00313
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00465	0.00468	0.00464
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00117	-0.00122	-0.00159
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00682	0.00677	0.00639
	(A1 * B1 * B2 * !C1 * !Y)	-0.00117	-0.00122	-0.00159
	(A1 * B1 * B2 * !C1 * !Y)	0.00682	0.00677	0.00639
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00140	0.00129	0.00040
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00955	0.00945	0.00855
	(A1 * !B1 * C1 * C2 * !Y)	0.00141	0.00130	0.00041
	(A1 * !B1 * C1 * C2 * !Y)	0.00956	0.00946	0.00855
	(!A1 * B1 * B2 * !Y)	-0.00304	-0.00308	-0.00307
	(!A1 * B1 * B2 * !Y)	0.00462	0.00466	0.00464
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00155	0.00151	0.00151
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00922	0.00925	0.00923
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00257	-0.00292	-0.00297
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00518	0.00488	0.00476
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00255	-0.00290	-0.00295
	(!A1 * B1 * !B2 * !C1 * Y)	0.00520	0.00490	0.00478
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00255	-0.00290	-0.00295
	(!A1 * !B1 * C1 * !C2 * Y)	0.00520	0.00490	0.00478
	(!A1 * !B1 * !C1 * Y)	-0.00253	-0.00288	-0.00293
	(!A1 * !B1 * !C1 * Y)	0.00522	0.00492	0.00480

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)**	0.00227	0.00228	0.00222
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00126	-0.00127	-0.00127
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00219	0.00223	0.00220
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00064	-0.00066	-0.00062
	(A1 * A2 * B2 * !C1 * !Y)	0.00219	0.00223	0.00220
	(A1 * A2 * B2 * !C1 * !Y)	-0.00064	-0.00066	-0.00062
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00238	0.00237	0.00211
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00103	-0.00104	-0.00122
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00310	0.00311	0.00306
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00020	0.00019	0.00017
	(A1 * A2 * !B2 * !C1 * !Y)	0.00309	0.00309	0.00305
	(A1 * A2 * !B2 * !C1 * !Y)	0.00020	0.00020	0.00017
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00309	0.00255	0.00390
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00102	-0.00158	-0.00016
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00417	0.00415	0.00414
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00021	0.00015	0.00017
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00060	0.00060	0.00058
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00252	-0.00253	-0.00258
	(A1 * !A2 * !B2 * !C1 * Y)	0.00061	0.00061	0.00059
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00251	-0.00252	-0.00257
	(!A1 * B2 * C1 * C2 * !Y)	0.00307	0.00254	0.00390
	(!A1 * B2 * C1 * C2 * !Y)	-0.00104	-0.00159	-0.00016
	(!A1 * !B2 * C1 * C2 * !Y)	0.00417	0.00415	0.00414
	(!A1 * !B2 * C1 * C2 * !Y)	0.00020	0.00015	0.00017
	(!A1 * !B2 * C1 * !C2 * Y)	0.00061	0.00061	0.00059
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00251	-0.00252	-0.00257
	(!A1 * !B2 * !C1 * Y)	0.00062	0.00062	0.00060
	(!A1 * !B2 * !C1 * Y)	-0.00250	-0.00251	-0.00256

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00459	0.00466	0.00452
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00264	-0.00261	-0.00263
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00451	0.00458	0.00453
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00141	-0.00144	-0.00134
	(A1 * A2 * B2 * !C1 * !Y)	0.00451	0.00458	0.00453
	(A1 * A2 * B2 * !C1 * !Y)	-0.00141	-0.00144	-0.00134
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00485	0.00489	0.00431
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00213	-0.00219	-0.00249
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00642	0.00645	0.00634
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00039	0.00037	0.00032
	(A1 * A2 * !B2 * !C1 * !Y)	0.00642	0.00645	0.00633
	(A1 * A2 * !B2 * !C1 * !Y)	0.00039	0.00037	0.00032
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00637	0.00527	0.00793
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00218	-0.00328	-0.00047
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00847	0.00839	0.00837
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00030	0.00015	0.00018
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00124	0.00124	0.00118
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00535	-0.00536	-0.00546
	(A1 * !A2 * !B2 * !C1 * Y)	0.00126	0.00126	0.00120
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00533	-0.00534	-0.00544
	(!A1 * B2 * C1 * C2 * !Y)	0.00632	0.00525	0.00793
	(!A1 * B2 * C1 * C2 * !Y)	-0.00222	-0.00330	-0.00047
	(!A1 * !B2 * C1 * C2 * !Y)	0.00845	0.00839	0.00837
	(!A1 * !B2 * C1 * C2 * !Y)	0.00029	0.00015	0.00018
	(!A1 * !B2 * C1 * !C2 * Y)	0.00126	0.00126	0.00120
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00533	-0.00534	-0.00544
	(!A1 * !B2 * !C1 * Y)	0.00128	0.00128	0.00122
	(!A1 * !B2 * !C1 * Y)	-0.00531	-0.00532	-0.00542

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)	-0.00174	-0.00175	-0.00168
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00167	0.00169	0.00170
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00060	-0.00063	-0.00125
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00227	0.00225	0.00168
	(A1 * A2 * B2 * !C1 * !Y)	-0.00060	-0.00063	-0.00125
	(A1 * A2 * B2 * !C1 * !Y)	0.00227	0.00225	0.00168
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00170	-0.00172	-0.00166
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00155	0.00157	0.00156
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00087	-0.00089	-0.00087
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00202	0.00204	0.00201
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00087	-0.00089	-0.00087
	(A1 * A2 * !B2 * !C1 * !Y)	0.00203	0.00204	0.00201
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00067	0.00060	0.00013
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00477	0.00472	0.00423
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00074	0.00071	0.00072
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00470	0.00473	0.00470
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00273	0.00276	0.00274
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00039	-0.00040	-0.00039
	(A1 * !A2 * !B2 * !C1 * Y)	0.00274	0.00277	0.00275
	(!A1 * B2 * C1 * C2 * !Y)	0.00067	0.00060	0.00013
	(!A1 * B2 * C1 * C2 * !Y)	0.00478	0.00473	0.00423
	(!A1 * !B2 * C1 * C2 * !Y)	0.00074	0.00071	0.00073
	(!A1 * !B2 * C1 * C2 * !Y)	0.00471	0.00473	0.00470
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00039	-0.00040	-0.00039
	(!A1 * !B2 * C1 * !C2 * Y)	0.00274	0.00277	0.00275
	(!A1 * !B2 * !C1 * Y)	-0.00038	-0.00039	-0.00038
	(!A1 * !B2 * !C1 * Y)	0.00275	0.00278	0.00276

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00359	-0.00362	-0.00349
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00338	0.00343	0.00342
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00142	-0.00152	-0.00270
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00453	0.00453	0.00337
	(A1 * A2 * B2 * !C1 * !Y)	-0.00142	-0.00151	-0.00270
	(A1 * A2 * B2 * !C1 * !Y)	0.00454	0.00451	0.00337
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00351	-0.00356	-0.00345
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00314	0.00318	0.00315
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00197	-0.00203	-0.00198
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00409	0.00411	0.00405
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00196	-0.00200	-0.00198
	(A1 * A2 * !B2 * !C1 * !Y)	0.00409	0.00407	0.00405
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00121	0.00105	0.00011
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00966	0.00957	0.00858
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00135	0.00129	0.00129
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00953	0.00955	0.00950
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00082	-0.00084	-0.00081
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00575	0.00585	0.00579
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00079	-0.00082	-0.00079
	(A1 * !A2 * !B2 * !C1 * Y)	0.00577	0.00587	0.00581
	(!A1 * B2 * C1 * C2 * !Y)	0.00121	0.00106	0.00012
	(!A1 * B2 * C1 * C2 * !Y)	0.00967	0.00958	0.00859
	(!A1 * !B2 * C1 * C2 * !Y)	0.00136	0.00130	0.00130
	(!A1 * !B2 * C1 * C2 * !Y)	0.00954	0.00956	0.00952
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00080	-0.00082	-0.00079
	(!A1 * !B2 * C1 * !C2 * Y)	0.00578	0.00588	0.00581
	(!A1 * !B2 * !C1 * Y)	-0.00078	-0.00080	-0.00077
	(!A1 * !B2 * !C1 * Y)	0.00579	0.00590	0.00583

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)	0.00244	0.00243	0.00238
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00126	-0.00127	-0.00128
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00235	0.00239	0.00235
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00064	-0.00066	-0.00062
	(A1 * A2 * B1 * !C1 * !Y)	0.00236	0.00239	0.00235
	(A1 * A2 * B1 * !C1 * !Y)	-0.00064	-0.00066	-0.00062
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00255	0.00253	0.00226
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00104	-0.00105	-0.00122
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00325	0.00326	0.00321
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00022	0.00020	0.00018
	(A1 * A2 * !B1 * !C1 * !Y)	0.00325	0.00326	0.00321
	(A1 * A2 * !B1 * !C1 * !Y)	0.00022	0.00020	0.00018
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00328	0.00271	0.00406
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00102	-0.00159	-0.00017
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00434	0.00431	0.00429
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00020	0.00014	0.00016
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00177	0.00180	0.00178
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00236	-0.00239	-0.00238
	(A1 * !A2 * !B1 * !C1 * Y)	0.00178	0.00178	0.00179
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00235	-0.00236	-0.00237
	(!A1 * B1 * C1 * C2 * !Y)	0.00327	0.00271	0.00405
	(!A1 * B1 * C1 * C2 * !Y)	-0.00102	-0.00159	-0.00017
	(!A1 * !B1 * C1 * !C2 * Y)	0.00178	0.00181	0.00179
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00235	-0.00238	-0.00237
	(!A1 * !B1 * !C1 * Y)	0.00181	0.00182	0.00180
	(!A1 * !B1 * !C1 * Y)	-0.00236	-0.00237	-0.00236

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00455	0.00457	0.00443
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00232	-0.00237	-0.00239
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00440	0.00448	0.00443
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00112	-0.00116	-0.00109
	(A1 * A2 * B1 * !C1 * !Y)	0.00441	0.00448	0.00443
	(A1 * A2 * B1 * !C1 * !Y)	-0.00112	-0.00116	-0.00109
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00473	0.00472	0.00422
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00192	-0.00195	-0.00227
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00616	0.00622	0.00609
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00049	0.00046	0.00046
	(A1 * A2 * !B1 * !C1 * !Y)	0.00616	0.00622	0.00609
	(A1 * A2 * !B1 * !C1 * !Y)	0.00049	0.00046	0.00046
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00634	0.00520	0.00784
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00173	-0.00296	-0.00016
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00841	0.00829	0.00829
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00061	0.00050	0.00050
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00355	0.00358	0.00356
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00429	-0.00431	-0.00431
	(A1 * !A2 * !B1 * !C1 * Y)	0.00357	0.00360	0.00358
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00427	-0.00429	-0.00429
	(!A1 * B1 * C1 * C2 * !Y)	0.00633	0.00519	0.00784
	(!A1 * B1 * C1 * C2 * !Y)	-0.00176	-0.00297	-0.00016
	(!A1 * !B1 * C1 * !C2 * Y)	0.00357	0.00361	0.00358
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00427	-0.00429	-0.00429
	(!A1 * !B1 * !C1 * Y)	0.00359	0.00362	0.00360
	(!A1 * !B1 * !C1 * Y)	-0.00425	-0.00427	-0.00427

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)	-0.00189	-0.00190	-0.00183
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00167	0.00169	0.00170
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00076	-0.00079	-0.00141
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00226	0.00224	0.00168
	(A1 * A2 * B1 * !C1 * !Y)	-0.00076	-0.00079	-0.00141
	(A1 * A2 * B1 * !C1 * !Y)	0.00226	0.00224	0.00168
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00186	-0.00186	-0.00181
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00156	0.00156	0.00156
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00104	-0.00105	-0.00103
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00203	0.00203	0.00201
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00104	-0.00105	-0.00103
	(A1 * A2 * !B1 * !C1 * !Y)	0.00203	0.00203	0.00201
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00052	0.00045	-0.00002
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00479	0.00473	0.00424
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00058	0.00057	0.00057
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00472	0.00472	0.00470
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00136	-0.00149	-0.00151
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00282	0.00269	0.00263
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00135	-0.00148	-0.00150
	(A1 * !A2 * !B1 * !C1 * Y)	0.00283	0.00270	0.00264
	(!A1 * B1 * C1 * C2 * !Y)	0.00052	0.00045	-0.00002
	(!A1 * B1 * C1 * C2 * !Y)	0.00479	0.00472	0.00424
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00135	-0.00148	-0.00150
	(!A1 * !B1 * C1 * !C2 * Y)	0.00283	0.00270	0.00264
	(!A1 * !B1 * !C1 * Y)	-0.00134	-0.00147	-0.00149
	(!A1 * !B1 * !C1 * Y)	0.00284	0.00271	0.00265

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00350	-0.00349	-0.00340
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00314	0.00314	0.00319
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00125	-0.00133	-0.00253
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00434	0.00431	0.00319
	(A1 * A2 * B1 * !C1 * !Y)	-0.00125	-0.00133	-0.00253
	(A1 * A2 * B1 * !C1 * !Y)	0.00434	0.00431	0.00319
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00342	-0.00346	-0.00335
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00291	0.00295	0.00293
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00169	-0.00173	-0.00173
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00396	0.00397	0.00391
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00169	-0.00173	-0.00173
	(A1 * A2 * !B1 * !C1 * !Y)	0.00396	0.00397	0.00391
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00128	0.00113	0.00018
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00933	0.00923	0.00826
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00144	0.00138	0.00138
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00921	0.00922	0.00920
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00263	-0.00299	-0.00303
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00522	0.00494	0.00480
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00261	-0.00297	-0.00301
	(A1 * !A2 * !B1 * !C1 * Y)	0.00524	0.00496	0.00482
	(!A1 * B1 * C1 * C2 * !Y)	0.00129	0.00113	0.00019
	(!A1 * B1 * C1 * C2 * !Y)	0.00933	0.00924	0.00827
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00261	-0.00298	-0.00301
	(!A1 * !B1 * C1 * !C2 * Y)	0.00524	0.00496	0.00482
	(!A1 * !B1 * !C1 * Y)	-0.00259	-0.00296	-0.00299
	(!A1 * !B1 * !C1 * Y)	0.00526	0.00498	0.00484

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)	0.00208	0.00210	0.00209
	(A1 * B1 * B2 * C2 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * B1 * B2 * !C2 * !Y)	0.00218	0.00222	0.00216
	(A1 * B1 * B2 * !C2 * !Y)	-0.00080	-0.00082	-0.00083
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00212	0.00216	0.00218
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00067	-0.00068	-0.00062
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00318	0.00319	0.00318
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00019	0.00018	0.00018
	(A1 * A2 * !B1 * C2 * !Y)	0.00213	0.00216	0.00218
	(A1 * A2 * !B1 * C2 * !Y)	-0.00068	-0.00068	-0.00062
	(A1 * A2 * !B1 * !C2 * !Y)	0.00319	0.00320	0.00318
	(A1 * A2 * !B1 * !C2 * !Y)	0.00018	0.00018	0.00018
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00067	0.00067	0.00064
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00259	-0.00260	-0.00264
	(A1 * !A2 * !B1 * !C2 * Y)	0.00068	0.00068	0.00065
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00258	-0.00259	-0.00263
	(!A1 * B1 * B2 * C2 * !Y)	0.00213	0.00216	0.00219
	(!A1 * B1 * B2 * C2 * !Y)	-0.00082	-0.00083	-0.00074
	(!A1 * B1 * B2 * !C2 * !Y)	0.00331	0.00332	0.00331
	(!A1 * B1 * B2 * !C2 * !Y)	0.00030	0.00030	0.00030
	(!A1 * B1 * !B2 * !C2 * Y)	0.00068	0.00068	0.00065
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00258	-0.00259	-0.00263
	(!A1 * !B1 * !C2 * Y)	0.00069	0.00069	0.00066
	(!A1 * !B1 * !C2 * Y)	-0.00257	-0.00258	-0.00262

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00369	0.00371	0.00370
	(A1 * B1 * B2 * C2 * !Y)	-0.00181	-0.00181	-0.00178
	(A1 * B1 * B2 * !C2 * !Y)	0.00391	0.00398	0.00385
	(A1 * B1 * B2 * !C2 * !Y)	-0.00151	-0.00156	-0.00158
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00373	0.00382	0.00386
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00125	-0.00128	-0.00115
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00595	0.00598	0.00594
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00048	0.00046	0.00046
	(A1 * A2 * !B1 * C2 * !Y)	0.00373	0.00382	0.00386
	(A1 * A2 * !B1 * C2 * !Y)	-0.00125	-0.00128	-0.00115
	(A1 * A2 * !B1 * !C2 * !Y)	0.00595	0.00597	0.00594
	(A1 * A2 * !B1 * !C2 * !Y)	0.00048	0.00046	0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00121	0.00121	0.00114
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00483	-0.00485	-0.00494
	(A1 * !A2 * !B1 * !C2 * Y)	0.00121	0.00123	0.00116
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00478	-0.00483	-0.00492
	(!A1 * B1 * B2 * C2 * !Y)	0.00375	0.00383	0.00391
	(!A1 * B1 * B2 * C2 * !Y)	-0.00156	-0.00159	-0.00142
	(!A1 * B1 * B2 * !C2 * !Y)	0.00620	0.00622	0.00620
	(!A1 * B1 * B2 * !C2 * !Y)	0.00071	0.00070	0.00070
	(!A1 * B1 * !B2 * !C2 * Y)	0.00123	0.00123	0.00116
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00481	-0.00483	-0.00492
	(!A1 * !B1 * !C2 * Y)	0.00123	0.00125	0.00118
	(!A1 * !B1 * !C2 * Y)	-0.00476	-0.00481	-0.00490

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)**	-0.00168	-0.00169	-0.00189
	(A1 * B1 * B2 * C2 * !Y)	0.00129	0.00129	0.00114
	(A1 * B1 * B2 * !C2 * !Y)	-0.00195	-0.00197	-0.00195
	(A1 * B1 * B2 * !C2 * !Y)	0.00103	0.00104	0.00104
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00044	-0.00046	-0.00097
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00243	0.00242	0.00198
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00099	-0.00102	-0.00104
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00201	0.00202	0.00198
	(A1 * A2 * !B1 * C2 * !Y)	-0.00043	-0.00046	-0.00097
	(A1 * A2 * !B1 * C2 * !Y)	0.00242	0.00242	0.00198
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00099	-0.00102	-0.00104
	(A1 * A2 * !B1 * !C2 * !Y)	0.00201	0.00202	0.00198
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00047	-0.00048	-0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00280	0.00283	0.00280
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00046	-0.00047	-0.00045
	(A1 * !A2 * !B1 * !C2 * Y)	0.00281	0.00284	0.00281
	(!A1 * B1 * B2 * C2 * !Y)	-0.00046	-0.00051	-0.00107
	(!A1 * B1 * B2 * C2 * !Y)	0.00250	0.00248	0.00192
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00084	-0.00087	-0.00093
	(!A1 * B1 * B2 * !C2 * !Y)	0.00217	0.00218	0.00209
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00046	-0.00047	-0.00045
	(!A1 * B1 * !B2 * !C2 * Y)	0.00281	0.00284	0.00281
	(!A1 * !B1 * !C2 * Y)	-0.00045	-0.00046	-0.00044
	(!A1 * !B1 * !C2 * Y)	0.00282	0.00285	0.00283

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00293	-0.00297	-0.00334
	(A1 * B1 * B2 * C2 * !Y)	0.00246	0.00247	0.00219
	(A1 * B1 * B2 * !C2 * !Y)	-0.00345	-0.00351	-0.00345
	(A1 * B1 * B2 * !C2 * !Y)	0.00199	0.00201	0.00200
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00044	-0.00051	-0.00147
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00472	0.00472	0.00385
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00157	-0.00161	-0.00166
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00391	0.00393	0.00386
	(A1 * A2 * !B1 * C2 * !Y)	-0.00044	-0.00051	-0.00147
	(A1 * A2 * !B1 * C2 * !Y)	0.00473	0.00472	0.00386
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00157	-0.00161	-0.00166
	(A1 * A2 * !B1 * !C2 * !Y)	0.00391	0.00393	0.00386
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00080	-0.00081	-0.00078
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00526	0.00531	0.00526
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00078	-0.00079	-0.00076
	(A1 * !A2 * !B1 * !C2 * Y)	0.00528	0.00534	0.00528
	(!A1 * B1 * B2 * C2 * !Y)	-0.00049	-0.00058	-0.00171
	(!A1 * B1 * B2 * C2 * !Y)	0.00490	0.00486	0.00373
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00125	-0.00130	-0.00144
	(!A1 * B1 * B2 * !C2 * !Y)	0.00425	0.00426	0.00410
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00078	-0.00079	-0.00076
	(!A1 * B1 * !B2 * !C2 * Y)	0.00528	0.00533	0.00528
	(!A1 * !B1 * !C2 * Y)	-0.00076	-0.00077	-0.00074
	(!A1 * !B1 * !C2 * Y)	0.00530	0.00536	0.00530

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)**	0.00216	0.00218	0.00217
	(A1 * B1 * B2 * C1 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * B1 * B2 * !C1 * !Y)	0.00230	0.00229	0.00225
	(A1 * B1 * B2 * !C1 * !Y)	-0.00081	-0.00081	-0.00084
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00220	0.00224	0.00226
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00069	-0.00070	-0.00064
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00332	0.00331	0.00330
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00019	0.00019	0.00018
	(A1 * A2 * !B1 * C1 * !Y)	0.00220	0.00224	0.00226
	(A1 * A2 * !B1 * C1 * !Y)	-0.00069	-0.00070	-0.00064
	(A1 * A2 * !B1 * !C1 * !Y)	0.00331	0.00331	0.00330
	(A1 * A2 * !B1 * !C1 * !Y)	0.00019	0.00019	0.00018
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00182	0.00183	0.00181
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00243	-0.00244	-0.00243
	(A1 * !A2 * !B1 * !C1 * Y)	0.00183	0.00184	0.00182
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00242	-0.00243	-0.00242
	(!A1 * B1 * B2 * C1 * !Y)	0.00220	0.00223	0.00228
	(!A1 * B1 * B2 * C1 * !Y)	-0.00084	-0.00085	-0.00076
	(!A1 * B1 * B2 * !C1 * !Y)	0.00343	0.00348	0.00343
	(!A1 * B1 * B2 * !C1 * !Y)	0.00032	0.00029	0.00031
	(!A1 * B1 * !B2 * !C1 * Y)	0.00183	0.00184	0.00182
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00242	-0.00243	-0.00242
	(!A1 * !B1 * !C1 * Y)	0.00184	0.00185	0.00183
	(!A1 * !B1 * !C1 * Y)	-0.00241	-0.00242	-0.00241

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00434	0.00437	0.00434
	(A1 * B1 * B2 * C1 * !Y)	-0.00189	-0.00189	-0.00187
	(A1 * B1 * B2 * !C1 * !Y)	0.00456	0.00461	0.00449
	(A1 * B1 * B2 * !C1 * !Y)	-0.00160	-0.00163	-0.00166
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00438	0.00448	0.00451
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00133	-0.00137	-0.00123
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00661	0.00666	0.00660
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00039	0.00037	0.00037
	(A1 * A2 * !B1 * C1 * !Y)	0.00438	0.00448	0.00451
	(A1 * A2 * !B1 * C1 * !Y)	-0.00133	-0.00137	-0.00123
	(A1 * A2 * !B1 * !C1 * !Y)	0.00661	0.00667	0.00660
	(A1 * A2 * !B1 * !C1 * !Y)	0.00039	0.00037	0.00037
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00361	0.00363	0.00361
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00485	-0.00487	-0.00487
	(A1 * !A2 * !B1 * !C1 * Y)	0.00363	0.00365	0.00363
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00483	-0.00485	-0.00485
	(!A1 * B1 * B2 * C1 * !Y)	0.00440	0.00449	0.00456
	(!A1 * B1 * B2 * C1 * !Y)	-0.00165	-0.00168	-0.00150
	(!A1 * B1 * B2 * !C1 * !Y)	0.00687	0.00691	0.00687
	(!A1 * B1 * B2 * !C1 * !Y)	0.00062	0.00060	0.00061
	(!A1 * B1 * !B2 * !C1 * Y)	0.00363	0.00365	0.00363
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00483	-0.00485	-0.00485
	(!A1 * !B1 * !C1 * Y)	0.00365	0.00367	0.00365
	(!A1 * !B1 * !C1 * Y)	-0.00481	-0.00483	-0.00483

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)**	-0.00177	-0.00177	-0.00197
	(A1 * B1 * B2 * C1 * !Y)	0.00131	0.00131	0.00116
	(A1 * B1 * B2 * !C1 * !Y)	-0.00206	-0.00207	-0.00204
	(A1 * B1 * B2 * !C1 * !Y)	0.00105	0.00105	0.00105
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00052	-0.00055	-0.00106
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00244	0.00243	0.00198
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00112	-0.00113	-0.00115
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00200	0.00200	0.00197
	(A1 * A2 * !B1 * C1 * !Y)	-0.00053	-0.00055	-0.00106
	(A1 * A2 * !B1 * C1 * !Y)	0.00245	0.00243	0.00198
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00112	-0.00113	-0.00115
	(A1 * A2 * !B1 * !C1 * !Y)	0.00200	0.00200	0.00197
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00139	-0.00153	-0.00154
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00286	0.00273	0.00268
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00138	-0.00152	-0.00153
	(A1 * !A2 * !B1 * !C1 * Y)	0.00287	0.00274	0.00269
	(!A1 * B1 * B2 * C1 * !Y)	-0.00057	-0.00062	-0.00117
	(!A1 * B1 * B2 * C1 * !Y)	0.00252	0.00250	0.00193
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00096	-0.00097	-0.00105
	(!A1 * B1 * B2 * !C1 * !Y)	0.00217	0.00217	0.00209
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00138	-0.00152	-0.00153
	(!A1 * B1 * !B2 * !C1 * Y)	0.00287	0.00274	0.00269
	(!A1 * !B1 * !C1 * Y)	-0.00137	-0.00151	-0.00152
	(!A1 * !B1 * !C1 * Y)	0.00288	0.00275	0.00270

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00357	-0.00361	-0.00398
	(A1 * B1 * B2 * C1 * !Y)	0.00254	0.00255	0.00227
	(A1 * B1 * B2 * !C1 * !Y)	-0.00411	-0.00412	-0.00409
	(A1 * B1 * B2 * !C1 * !Y)	0.00208	0.00208	0.00209
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00108	-0.00115	-0.00212
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00481	0.00480	0.00394
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00223	-0.00225	-0.00231
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00401	0.00400	0.00394
	(A1 * A2 * !B1 * C1 * !Y)	-0.00108	-0.00115	-0.00212
	(A1 * A2 * !B1 * C1 * !Y)	0.00481	0.00480	0.00394
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00223	-0.00225	-0.00231
	(A1 * A2 * !B1 * !C1 * !Y)	0.00401	0.00400	0.00394
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00275	-0.00308	-0.00308
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00575	0.00547	0.00535
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00273	-0.00307	-0.00306
	(A1 * !A2 * !B1 * !C1 * Y)	0.00577	0.00548	0.00538
	(!A1 * B1 * B2 * C1 * !Y)	-0.00113	-0.00124	-0.00235
	(!A1 * B1 * B2 * C1 * !Y)	0.00499	0.00496	0.00382
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00191	-0.00194	-0.00209
	(!A1 * B1 * B2 * !C1 * !Y)	0.00435	0.00433	0.00418
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00273	-0.00306	-0.00306
	(!A1 * B1 * !B2 * !C1 * Y)	0.00577	0.00548	0.00538
	(!A1 * !B1 * !C1 * Y)	-0.00271	-0.00305	-0.00304
	(!A1 * !B1 * !C1 * Y)	0.00579	0.00550	0.00540

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00259	0.00266	0.00268	0.00260	0.00266	0.00273	1.70197
sky130_fd_sc_hs__a222o_2	0.00264	0.00250	0.00261	0.00259	0.00264	0.00278	2.71993

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	135.15100	283.57700
sky130_fd_sc_hs__a222o_2	0.00000	187.14200	286.27300

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)	0.07689	0.47239	5.65035
	A2->X (RR)	0.08034	0.45302	5.34409
	B1->X (RR)	0.07035	0.44535	5.20536
	B2->X (RR)	0.07322	0.43078	5.02219
	C1->X (RR)	0.05753	0.41340	4.99090
	C2->X (RR)	0.06041	0.40327	4.85960
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.09279	0.43761	5.34891
	A2->X (RR)	0.09790	0.41101	5.24274
	B1->X (RR)	0.08054	0.40063	5.02157
	B2->X (RR)	0.08351	0.38677	4.92191
	C1->X (RR)	0.06656	0.37270	4.84447
	C2->X (RR)	0.06993	0.35740	4.65564

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.16878	0.55770	5.88392
	A2->X (FF)	0.16929	0.56346	6.00343
	B1->X (FF)	0.14368	0.57550	6.44438
	B2->X (FF)	0.14998	0.59506	6.54444
	C1->X (FF)	0.11500	0.59075	6.56526
	C2->X (FF)	0.11289	0.59707	6.66243
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.20248	0.53687	5.52939
	A2->X (FF)	0.20121	0.54728	5.72646
	B1->X (FF)	0.18861	0.57756	5.88829
	B2->X (FF)	0.17898	0.57522	5.97732
	C1->X (FF)	0.13872	0.56493	5.75547
	C2->X (FF)	0.15293	0.59224	5.90951

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.02675	0.03501	0.23239
	A1	0.01498	0.02326	0.22081
	A2	0.02805	0.03433	0.20168
	A2	0.01499	0.02126	0.18887
	B1	0.02144	0.03106	0.20829
	B1	0.01232	0.02198	0.19947
	B2	0.02258	0.03114	0.20477
	B2	0.01245	0.02101	0.19453
	C1	0.01807	0.02941	0.21882
	C1	0.01168	0.02304	0.21266
	C2	0.01921	0.02992	0.21956
	C2	0.01169	0.02240	0.21193
sky130_fd_sc_hs__a222o_2	A1	0.03267	0.03893	0.18190
	A1	0.02024	0.02651	0.16555
	A2	0.03396	0.04118	0.24634
	A2	0.02116	0.02837	0.23396
	B1	0.02564	0.03445	0.19832
	B1	0.01698	0.02580	0.18944
	B2	0.02681	0.03481	0.19953
	B2	0.01696	0.02504	0.18956
	C1	0.02254	0.03270	0.20319
	C1	0.01653	0.02675	0.19699
	C2	0.02378	0.03255	0.19917
	C2	0.01643	0.02527	0.19181

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00972	0.01550	0.18525
	A1	0.02148	0.02725	0.19702
	A2	0.01004	0.01535	0.18172
	A2	0.02311	0.02843	0.19375
	B1	0.00942	0.01666	0.20240
	B1	0.01854	0.02576	0.20990
	B2	0.01004	0.01734	0.20025
	B2	0.02018	0.02748	0.21039
	C1	0.00887	0.01956	0.21915
	C1	0.01529	0.02591	0.22346
	C2	0.00951	0.02034	0.22089
	C2	0.01707	0.02787	0.22745
sky130_fd_sc_hs__a222o_2	A1	0.01880	0.01958	0.20015
	A1	0.03023	0.03087	0.20903
	A2	0.02125	0.02310	0.22518
	A2	0.03405	0.03576	0.23549
	B1	0.01835	0.02227	0.20533
	B1	0.02702	0.03053	0.21147
	B2	0.01937	0.02304	0.20543
	B2	0.02924	0.03269	0.21393
	C1	0.01732	0.02387	0.18905
	C1	0.02333	0.02988	0.19457
	C2	0.01855	0.02461	0.19190
	C2	0.02592	0.03196	0.19677

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)**	0.00213	0.00195	0.00191
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00189	-0.00215	-0.00213
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00306	0.00257	0.00295
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00112	-0.00166	-0.00114
	(A2 * B1 * B2 * !C1 * X)	0.00306	0.00257	0.00295
	(A2 * B1 * B2 * !C1 * X)	-0.00112	-0.00166	-0.00114
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00342	0.00299	0.00402
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00086	-0.00134	-0.00013
	(A2 * !B1 * C1 * C2 * X)	0.00342	0.00299	0.00402
	(A2 * !B1 * C1 * C2 * X)	-0.00086	-0.00134	-0.00014
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00186	0.00188	0.00186
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00215	-0.00217	-0.00216
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00293	0.00294	0.00293
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00107	-0.00109	-0.00108
	(!A2 * B1 * B2 * !C1 * X)	0.00293	0.00294	0.00293
	(!A2 * B1 * B2 * !C1 * X)	-0.00107	-0.00109	-0.00108
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00417	0.00418	0.00417
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00016	0.00014	0.00016
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00166	0.00167	0.00164
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00150	-0.00153	-0.00156
	(!A2 * B1 * !B2 * !C1 * !X)	0.00167	0.00168	0.00165
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00149	-0.00152	-0.00155
	(!A2 * !B1 * C1 * C2 * X)	0.00417	0.00418	0.00417
	(!A2 * !B1 * C1 * C2 * X)	0.00016	0.00014	0.00016
	(!A2 * !B1 * C1 * !C2 * !X)	0.00167	0.00168	0.00165
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00149	-0.00152	-0.00155
	(!A2 * !B1 * !C1 * !X)	0.00168	0.00169	0.00166
	(!A2 * !B1 * !C1 * !X)	-0.00148	-0.00151	-0.00154

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00234	0.00213	0.00207
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00180	-0.00207	-0.00207
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00323	0.00271	0.00315
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00105	-0.00155	-0.00104
	(A2 * B1 * B2 * !C1 * X)	0.00323	0.00271	0.00315
	(A2 * B1 * B2 * !C1 * X)	-0.00105	-0.00155	-0.00104
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00356	0.00310	0.00416
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00084	-0.00133	-0.00010
	(A2 * !B1 * C1 * C2 * X)	0.00359	0.00310	0.00416
	(A2 * !B1 * C1 * C2 * X)	-0.00080	-0.00133	-0.00010
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00204	0.00205	0.00203
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00208	-0.00208	-0.00208
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00315	0.00315	0.00314
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00098	-0.00098	-0.00097
	(!A2 * B1 * B2 * !C1 * X)	0.00315	0.00315	0.00314
	(!A2 * B1 * B2 * !C1 * X)	-0.00098	-0.00098	-0.00097
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00432	0.00433	0.00432
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00019	0.00018	0.00020
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00280	0.00281	0.00274
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00053	-0.00054	-0.00062
	(!A2 * B1 * !B2 * !C1 * !X)	0.00281	0.00282	0.00275
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00052	-0.00053	-0.00061
	(!A2 * !B1 * C1 * C2 * X)	0.00432	0.00432	0.00432
	(!A2 * !B1 * C1 * C2 * X)	0.00019	0.00019	0.00020
	(!A2 * !B1 * C1 * !C2 * !X)	0.00281	0.00281	0.00275
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00052	-0.00053	-0.00061
	(!A2 * !B1 * !C1 * !X)	0.00282	0.00283	0.00276
	(!A2 * !B1 * !C1 * !X)	-0.00051	-0.00052	-0.00060

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)	-0.00160	-0.00161	-0.00161
	(A2 * B1 * B2 * C1 * C2 * X)	0.00244	0.00246	0.00244
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00063	-0.00067	-0.00085
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00351	0.00352	0.00330
	(A2 * B1 * B2 * !C1 * X)	-0.00063	-0.00067	-0.00085
	(A2 * B1 * B2 * !C1 * X)	0.00351	0.00352	0.00330
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00068	0.00062	0.00018
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00490	0.00487	0.00441
	(A2 * !B1 * C1 * C2 * X)	0.00068	0.00062	0.00018
	(A2 * !B1 * C1 * C2 * X)	0.00490	0.00486	0.00441
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00157	-0.00158	-0.00157
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00244	0.00246	0.00245
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00049	-0.00051	-0.00049
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00352	0.00355	0.00353
	(!A2 * B1 * B2 * !C1 * X)	-0.00049	-0.00051	-0.00049
	(!A2 * B1 * B2 * !C1 * X)	0.00352	0.00357	0.00353
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00075	0.00072	0.00074
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00476	0.00480	0.00476
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00062	0.00061	0.00062
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00381	0.00383	0.00381
	(!A2 * B1 * !B2 * !C1 * !X)	0.00063	0.00062	0.00063
	(!A2 * B1 * !B2 * !C1 * !X)	0.00382	0.00384	0.00382
	(!A2 * !B1 * C1 * C2 * X)	0.00075	0.00072	0.00074
	(!A2 * !B1 * C1 * C2 * X)	0.00475	0.00479	0.00476
	(!A2 * !B1 * C1 * !C2 * !X)	0.00063	0.00062	0.00063
	(!A2 * !B1 * C1 * !C2 * !X)	0.00382	0.00384	0.00382
	(!A2 * !B1 * !C1 * !X)	0.00064	0.00063	0.00064
	(!A2 * !B1 * !C1 * !X)	0.00383	0.00385	0.00383

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00173	-0.00174	-0.00172
	(A2 * B1 * B2 * C1 * C2 * X)	0.00241	0.00244	0.00242
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00077	-0.00080	-0.00099
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00347	0.00346	0.00326
	(A2 * B1 * B2 * !C1 * X)	-0.00077	-0.00080	-0.00099
	(A2 * B1 * B2 * !C1 * X)	0.00347	0.00346	0.00326
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00058	0.00051	0.00007
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00490	0.00487	0.00441
	(A2 * !B1 * C1 * C2 * X)	0.00059	0.00052	0.00008
	(A2 * !B1 * C1 * C2 * X)	0.00491	0.00488	0.00441
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00166	-0.00170	-0.00169
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00241	0.00243	0.00243
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00062	-0.00066	-0.00065
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00347	0.00350	0.00347
	(!A2 * B1 * B2 * !C1 * X)	-0.00061	-0.00066	-0.00065
	(!A2 * B1 * B2 * !C1 * X)	0.00347	0.00350	0.00347
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00068	0.00063	0.00063
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00476	0.00479	0.00476
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00160	0.00160	0.00160
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00495	0.00497	0.00495
	(!A2 * B1 * !B2 * !C1 * !X)	0.00161	0.00161	0.00161
	(!A2 * B1 * !B2 * !C1 * !X)	0.00496	0.00498	0.00496
	(!A2 * !B1 * C1 * C2 * X)	0.00068	0.00062	0.00063
	(!A2 * !B1 * C1 * C2 * X)	0.00476	0.00479	0.00476
	(!A2 * !B1 * C1 * !C2 * !X)	0.00161	0.00161	0.00162
	(!A2 * !B1 * C1 * !C2 * !X)	0.00496	0.00498	0.00496
	(!A2 * !B1 * !C1 * !X)	0.00162	0.00162	0.00163
	(!A2 * !B1 * !C1 * !X)	0.00497	0.00499	0.00497

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)	0.00231	0.00215	0.00211
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00183	-0.00207	-0.00206
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00321	0.00277	0.00315
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00109	-0.00158	-0.00107
	(A1 * B1 * B2 * !C1 * X)	0.00321	0.00277	0.00315
	(A1 * B1 * B2 * !C1 * X)	-0.00109	-0.00158	-0.00107
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00356	0.00318	0.00421
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00084	-0.00127	-0.00006
	(A1 * !B1 * C1 * C2 * X)	0.00356	0.00318	0.00421
	(A1 * !B1 * C1 * C2 * X)	-0.00084	-0.00127	-0.00006
	(!A1 * B1 * B2 * X)	0.00206	0.00208	0.00206
	(!A1 * B1 * B2 * X)	-0.00207	-0.00209	-0.00208
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00437	0.00439	0.00438
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00024	0.00022	0.00024
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00283	0.00285	0.00282
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00135	-0.00136	-0.00135
	(!A1 * B1 * !B2 * !C1 * !X)	0.00284	0.00286	0.00283
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00134	-0.00135	-0.00134
	(!A1 * !B1 * C1 * !C2 * !X)	0.00284	0.00286	0.00283
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00134	-0.00135	-0.00134
	(!A1 * !B1 * !C1 * !X)	0.00285	0.00287	0.00284
	(!A1 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00133

	(A1 * B1 * B2 * C1 * C2 * X)	0.00224	0.00205	0.00201
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00185	-0.00209	-0.00208
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00310	0.00265	0.00305
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00113	-0.00162	-0.00109
	(A1 * B1 * B2 * !C1 * X)	0.00310	0.00265	0.00305
	(A1 * B1 * B2 * !C1 * X)	-0.00113	-0.00162	-0.00109
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00346	0.00304	0.00411
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00088	-0.00133	-0.00009
	(A1 * !B1 * C1 * C2 * X)	0.00342	0.00304	0.00411
	(A1 * !B1 * C1 * C2 * X)	-0.00090	-0.00133	-0.00010
	(!A1 * B1 * B2 * X)	0.00195	0.00198	0.00196
sky130_fd_sc_hs__a222o_2	**(!A1 * B1 * B2 * X)**	-0.00209	-0.00211	-0.00210
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00427	0.00428	0.00428
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00022	0.00020	0.00021
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00400	0.00401	0.00401
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00007	-0.00008	-0.00008
	(!A1 * B1 * !B2 * !C1 * !X)	0.00401	0.00402	0.00402
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00006	-0.00007	-0.00007
	(!A1 * !B1 * C1 * !C2 * !X)	0.00401	0.00403	0.00402
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00006	-0.00008	-0.00007
	(!A1 * !B1 * !C1 * !X)	0.00402	0.00405	0.00403
	(!A1 * !B1 * !C1 * !X)	-0.00005	-0.00007	-0.00006

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)**	-0.00180	-0.00182	-0.00181
	(A1 * B1 * B2 * C1 * C2 * X)	0.00236	0.00238	0.00236
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00083	-0.00087	-0.00105
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00343	0.00343	0.00323
	(A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00087	-0.00105
	(A1 * B1 * B2 * !C1 * X)	0.00343	0.00343	0.00323
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00049	0.00043	-0.00002
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00483	0.00479	0.00434
	(A1 * !B1 * C1 * C2 * X)	0.00048	0.00042	-0.00002
	(A1 * !B1 * C1 * C2 * X)	0.00482	0.00479	0.00434
	(!A1 * B1 * B2 * X)	-0.00176	-0.00178	-0.00177
	(!A1 * B1 * B2 * X)	0.00236	0.00238	0.00237
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00056	0.00054	0.00054
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00467	0.00469	0.00468
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00031	-0.00045	-0.00047
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00388	0.00374	0.00368
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00030	-0.00044	-0.00046
	(!A1 * B1 * !B2 * !C1 * !X)	0.00389	0.00375	0.00369
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00030	-0.00044	-0.00046
	(!A1 * !B1 * C1 * !C2 * !X)	0.00389	0.00375	0.00369
	(!A1 * !B1 * !C1 * !X)	-0.00029	-0.00043	-0.00045
	(!A1 * !B1 * !C1 * !X)	0.00390	0.00376	0.00370

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00166	-0.00167	-0.00166
	(A1 * B1 * B2 * C1 * C2 * X)	0.00245	0.00246	0.00244
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00068	-0.00071	-0.00089
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00352	0.00350	0.00331
	(A1 * B1 * B2 * !C1 * X)	-0.00067	-0.00071	-0.00089
	(A1 * B1 * B2 * !C1 * X)	0.00351	0.00350	0.00331
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00063	0.00057	0.00013
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00490	0.00486	0.00440
	(A1 * !B1 * C1 * C2 * X)	0.00062	0.00056	0.00012
	(A1 * !B1 * C1 * C2 * X)	0.00490	0.00486	0.00440
	(!A1 * B1 * B2 * X)	-0.00160	-0.00162	-0.00163
	(!A1 * B1 * B2 * X)	0.00245	0.00245	0.00244
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00071	0.00069	0.00068
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00476	0.00476	0.00475
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00069	0.00048	0.00042
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00479	0.00460	0.00449
	(!A1 * B1 * !B2 * !C1 * !X)	0.00070	0.00049	0.00043
	(!A1 * B1 * !B2 * !C1 * !X)	0.00480	0.00461	0.00450
	(!A1 * !B1 * C1 * !C2 * !X)	0.00070	0.00048	0.00043
	(!A1 * !B1 * C1 * !C2 * !X)	0.00480	0.00460	0.00450
	(!A1 * !B1 * !C1 * !X)	0.00071	0.00050	0.00044
	(!A1 * !B1 * !C1 * !X)	0.00481	0.00462	0.00451

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)**	0.00234	0.00240	0.00229
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00135	-0.00129	-0.00134
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00236	0.00238	0.00235
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00065	-0.00066	-0.00062
	(A1 * A2 * B2 * !C1 * X)	0.00236	0.00238	0.00235
	(A1 * A2 * B2 * !C1 * X)	-0.00065	-0.00066	-0.00062
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00251	0.00251	0.00222
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00106	-0.00108	-0.00126
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00327	0.00330	0.00321
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00022	0.00019	0.00017
	(A1 * A2 * !B2 * !C1 * X)	0.00327	0.00330	0.00321
	(A1 * A2 * !B2 * !C1 * X)	0.00022	0.00019	0.00017
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00336	0.00276	0.00403
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00097	-0.00156	-0.00020
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00428	0.00426	0.00425
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00016	0.00009	0.00011
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00169	0.00168	0.00165
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00162	-0.00163	-0.00167
	(A1 * !A2 * !B2 * !C1 * !X)	0.00170	0.00169	0.00166
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00161	-0.00162	-0.00166
	(!A1 * B2 * C1 * C2 * X)	0.00336	0.00276	0.00403
	(!A1 * B2 * C1 * C2 * X)	-0.00097	-0.00156	-0.00020
	(!A1 * !B2 * C1 * C2 * X)	0.00429	0.00426	0.00425
	(!A1 * !B2 * C1 * C2 * X)	0.00016	0.00009	0.00011
	(!A1 * !B2 * C1 * !C2 * !X)	0.00170	0.00169	0.00166
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00161	-0.00162	-0.00166
	(!A1 * !B2 * !C1 * !X)	0.00171	0.00170	0.00167
	(!A1 * !B2 * !C1 * !X)	-0.00160	-0.00161	-0.00165

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00233	0.00234	0.00227
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00119	-0.00119	-0.00121
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00228	0.00231	0.00228
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00060	-0.00062	-0.00058
	(A1 * A2 * B2 * !C1 * X)	0.00228	0.00232	0.00228
	(A1 * A2 * B2 * !C1 * X)	-0.00060	-0.00062	-0.00058
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00245	0.00246	0.00218
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00095	-0.00097	-0.00113
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00316	0.00317	0.00313
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00029	0.00028	0.00026
	(A1 * A2 * !B2 * !C1 * X)	0.00316	0.00317	0.00313
	(A1 * A2 * !B2 * !C1 * X)	0.00029	0.00028	0.00026
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00322	0.00264	0.00398
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00088	-0.00149	-0.00007
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00423	0.00421	0.00420
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00030	0.00024	0.00026
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00269	0.00268	0.00266
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00042	-0.00043	-0.00047
	(A1 * !A2 * !B2 * !C1 * !X)	0.00270	0.00269	0.00267
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00041	-0.00042	-0.00046
	(!A1 * B2 * C1 * C2 * X)	0.00319	0.00263	0.00398
	(!A1 * B2 * C1 * C2 * X)	-0.00092	-0.00150	-0.00007
	(!A1 * !B2 * C1 * C2 * X)	0.00424	0.00421	0.00420
	(!A1 * !B2 * C1 * C2 * X)	0.00030	0.00023	0.00025
	(!A1 * !B2 * C1 * !C2 * !X)	0.00271	0.00271	0.00268
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00039	-0.00040	-0.00045
	(!A1 * !B2 * !C1 * !X)	0.00272	0.00272	0.00269
	(!A1 * !B2 * !C1 * !X)	-0.00038	-0.00039	-0.00044

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)	-0.00179	-0.00180	-0.00174
	(A1 * A2 * B2 * C1 * C2 * X)	0.00177	0.00178	0.00178
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00075	-0.00078	-0.00140
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00228	0.00225	0.00168
	(A1 * A2 * B2 * !C1 * X)	-0.00075	-0.00078	-0.00139
	(A1 * A2 * B2 * !C1 * X)	0.00228	0.00225	0.00168
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00175	-0.00176	-0.00171
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00164	0.00165	0.00165
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00100	-0.00103	-0.00098
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00207	0.00208	0.00207
	(A1 * A2 * !B2 * !C1 * X)	-0.00100	-0.00103	-0.00098
	(A1 * A2 * !B2 * !C1 * X)	0.00207	0.00208	0.00207
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00061	0.00054	0.00007
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00489	0.00485	0.00435
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00068	0.00065	0.00066
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00481	0.00485	0.00481
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00060	0.00059	0.00061
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00392	0.00393	0.00392
	(A1 * !A2 * !B2 * !C1 * !X)	0.00061	0.00061	0.00062
	(A1 * !A2 * !B2 * !C1 * !X)	0.00393	0.00394	0.00393
	(!A1 * B2 * C1 * C2 * X)	0.00061	0.00054	0.00007
	(!A1 * B2 * C1 * C2 * X)	0.00489	0.00483	0.00435
	(!A1 * !B2 * C1 * C2 * X)	0.00068	0.00065	0.00066
	(!A1 * !B2 * C1 * C2 * X)	0.00481	0.00484	0.00481
	(!A1 * !B2 * C1 * !C2 * !X)	0.00061	0.00061	0.00062
	(!A1 * !B2 * C1 * !C2 * !X)	0.00393	0.00394	0.00393
	(!A1 * !B2 * !C1 * !X)	0.00062	0.00062	0.00063
	(!A1 * !B2 * !C1 * !X)	0.00394	0.00395	0.00394

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00171	-0.00171	-0.00166
	(A1 * A2 * B2 * C1 * C2 * X)	0.00168	0.00169	0.00171
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00061	-0.00064	-0.00124
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00230	0.00227	0.00171
	(A1 * A2 * B2 * !C1 * X)	-0.00061	-0.00064	-0.00124
	(A1 * A2 * B2 * !C1 * X)	0.00230	0.00227	0.00171
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00167	-0.00168	-0.00163
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00156	0.00157	0.00157
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00085	-0.00087	-0.00085
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00204	0.00205	0.00202
	(A1 * A2 * !B2 * !C1 * X)	-0.00085	-0.00087	-0.00085
	(A1 * A2 * !B2 * !C1 * X)	0.00204	0.00205	0.00202
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00071	0.00063	0.00016
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00478	0.00474	0.00425
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00077	0.00074	0.00075
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00471	0.00473	0.00471
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00169	0.00168	0.00168
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00480	0.00481	0.00479
	(A1 * !A2 * !B2 * !C1 * !X)	0.00170	0.00169	0.00169
	(A1 * !A2 * !B2 * !C1 * !X)	0.00481	0.00482	0.00480
	(!A1 * B2 * C1 * C2 * X)	0.00071	0.00064	0.00016
	(!A1 * B2 * C1 * C2 * X)	0.00479	0.00474	0.00425
	(!A1 * !B2 * C1 * C2 * X)	0.00077	0.00074	0.00075
	(!A1 * !B2 * C1 * C2 * X)	0.00471	0.00473	0.00470
	(!A1 * !B2 * C1 * !C2 * !X)	0.00168	0.00167	0.00168
	(!A1 * !B2 * C1 * !C2 * !X)	0.00479	0.00481	0.00480
	(!A1 * !B2 * !C1 * !X)	0.00169	0.00168	0.00169
	(!A1 * !B2 * !C1 * !X)	0.00480	0.00482	0.00481

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)	0.00229	0.00233	0.00222
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00126	-0.00121	-0.00126
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00230	0.00232	0.00228
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00055	-0.00056	-0.00053
	(A1 * A2 * B1 * !C1 * X)	0.00230	0.00232	0.00228
	(A1 * A2 * B1 * !C1 * X)	-0.00055	-0.00056	-0.00053
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00243	0.00243	0.00216
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00100	-0.00102	-0.00119
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00315	0.00317	0.00310
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00024	0.00022	0.00021
	(A1 * A2 * !B1 * !C1 * X)	0.00314	0.00317	0.00310
	(A1 * A2 * !B1 * !C1 * X)	0.00025	0.00022	0.00021
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00330	0.00268	0.00397
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00085	-0.00146	-0.00010
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00423	0.00420	0.00419
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00026	0.00020	0.00021
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00282	0.00283	0.00281
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	0.00283	0.00284	0.00282
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * C1 * C2 * X)	0.00330	0.00268	0.00397
	(!A1 * B1 * C1 * C2 * X)	-0.00085	-0.00146	-0.00010
	(!A1 * !B1 * C1 * !C2 * !X)	0.00283	0.00284	0.00282
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * !B1 * !C1 * !X)	0.00284	0.00285	0.00283
	(!A1 * !B1 * !C1 * !X)	-0.00117	-0.00118	-0.00117

	(A1 * A2 * B1 * C1 * C2 * X)	0.00235	0.00236	0.00229
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00120	-0.00119	-0.00120
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00229	0.00232	0.00228
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00063	-0.00064	-0.00060
	(A1 * A2 * B1 * !C1 * X)	0.00229	0.00232	0.00228
	(A1 * A2 * B1 * !C1 * X)	-0.00063	-0.00064	-0.00060
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00248	0.00248	0.00220
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00095	-0.00097	-0.00113
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00318	0.00320	0.00315
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00030	0.00029	0.00027
	(A1 * A2 * !B1 * !C1 * X)	0.00318	0.00320	0.00315
	(A1 * A2 * !B1 * !C1 * X)	0.00030	0.00028	0.00027
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00320	0.00264	0.00400
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00095	-0.00151	-0.00007
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00426	0.00424	0.00422
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00030	0.00024	0.00026
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00388	0.00390	0.00388
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00008	-0.00010	-0.00008
	(A1 * !A2 * !B1 * !C1 * !X)	0.00389	0.00391	0.00389
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00007	-0.00009	-0.00007
	(!A1 * B1 * C1 * C2 * X)	0.00324	0.00266	0.00400
	(!A1 * B1 * C1 * C2 * X)	-0.00091	-0.00149	-0.00007
	(!A1 * !B1 * C1 * !C2 * !X)	0.00395	0.00398	0.00395
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00004	-0.00006	-0.00005
	(!A1 * !B1 * !C1 * !X)	0.00396	0.00399	0.00396
	(!A1 * !B1 * !C1 * !X)	-0.00003	-0.00005	-0.00004

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)	-0.00173	-0.00173	-0.00167
	(A1 * A2 * B1 * C1 * C2 * X)	0.00170	0.00170	0.00171
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00066	-0.00070	-0.00130
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00222	0.00220	0.00162
	(A1 * A2 * B1 * !C1 * X)	-0.00066	-0.00070	-0.00130
	(A1 * A2 * B1 * !C1 * X)	0.00222	0.00220	0.00162
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00169	-0.00169	-0.00164
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00158	0.00158	0.00158
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00087	-0.00088	-0.00086
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00204	0.00203	0.00202
	(A1 * A2 * !B1 * !C1 * X)	-0.00087	-0.00088	-0.00086
	(A1 * A2 * !B1 * !C1 * X)	0.00204	0.00203	0.00202
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00068	0.00061	0.00014
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00479	0.00473	0.00425
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00074	0.00073	0.00073
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00472	0.00472	0.00470
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00030	-0.00045	-0.00046
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00372	0.00356	0.00352
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00029	-0.00044	-0.00045
	(A1 * !A2 * !B1 * !C1 * !X)	0.00373	0.00357	0.00353
	(!A1 * B1 * C1 * C2 * X)	0.00068	0.00061	0.00014
	(!A1 * B1 * C1 * C2 * X)	0.00479	0.00473	0.00425
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00029	-0.00044	-0.00045
	(!A1 * !B1 * C1 * !C2 * !X)	0.00373	0.00357	0.00353
	(!A1 * !B1 * !C1 * !X)	-0.00028	-0.00043	-0.00044
	(!A1 * !B1 * !C1 * !X)	0.00374	0.00358	0.00354

	(A1 * A2 * B1 * C1 * C2 * X)	-0.00173	-0.00173	-0.00168
	(A1 * A2 * B1 * C1 * C2 * X)	0.00168	0.00169	0.00171
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00062	-0.00065	-0.00125
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00231	0.00228	0.00172
	(A1 * A2 * B1 * !C1 * X)	-0.00062	-0.00065	-0.00125
	(A1 * A2 * B1 * !C1 * X)	0.00231	0.00228	0.00172
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00170	-0.00170	-0.00166
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00156	0.00156	0.00156
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00204	0.00204	0.00202
	(A1 * A2 * !B1 * !C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !B1 * !C1 * X)	0.00204	0.00204	0.00202
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00069	0.00062	0.00014
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	0.00479	0.00474	0.00426
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00076	0.00073	0.00073
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00470	0.00472	0.00470
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00074	0.00058	0.00055
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00470	0.00458	0.00449
	(A1 * !A2 * !B1 * !C1 * !X)	0.00075	0.00059	0.00056
	(A1 * !A2 * !B1 * !C1 * !X)	0.00471	0.00459	0.00450
	(!A1 * B1 * C1 * C2 * X)	0.00068	0.00060	0.00014
	(!A1 * B1 * C1 * C2 * X)	0.00478	0.00474	0.00425
	(!A1 * !B1 * C1 * !C2 * !X)	0.00066	0.00052	0.00049
	(!A1 * !B1 * C1 * !C2 * !X)	0.00468	0.00454	0.00448
	(!A1 * !B1 * !C1 * !X)	0.00067	0.00053	0.00050
	(!A1 * !B1 * !C1 * !X)	0.00469	0.00455	0.00449

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)	0.00213	0.00215	0.00214
	(A1 * B1 * B2 * C2 * X)	-0.00096	-0.00097	-0.00096
	(A1 * B1 * B2 * !C2 * X)	0.00227	0.00231	0.00223
	(A1 * B1 * B2 * !C2 * X)	-0.00081	-0.00084	-0.00085
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00216	0.00218	0.00222
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00072	-0.00072	-0.00066
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00330	0.00331	0.00329
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00020	0.00020	0.00018
	(A1 * A2 * !B1 * C2 * X)	0.00216	0.00218	0.00222
	(A1 * A2 * !B1 * C2 * X)	-0.00072	-0.00072	-0.00066
	(A1 * A2 * !B1 * !C2 * X)	0.00330	0.00331	0.00329
	(A1 * A2 * !B1 * !C2 * X)	0.00020	0.00020	0.00018
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00172	0.00172	0.00169
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00166	-0.00166	-0.00171
	(A1 * !A2 * !B1 * !C2 * !X)	0.00173	0.00172	0.00170
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00165	-0.00165	-0.00170
	(!A1 * B1 * B2 * C2 * X)	0.00217	0.00220	0.00224
	(!A1 * B1 * B2 * C2 * X)	-0.00086	-0.00086	-0.00078
	(!A1 * B1 * B2 * !C2 * X)	0.00343	0.00347	0.00343
	(!A1 * B1 * B2 * !C2 * X)	0.00032	0.00029	0.00031
	(!A1 * B1 * !B2 * !C2 * !X)	0.00173	0.00172	0.00170
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00165	-0.00165	-0.00170
	(!A1 * !B1 * !C2 * !X)	0.00174	0.00173	0.00170
	(!A1 * !B1 * !C2 * !X)	-0.00164	-0.00164	-0.00169

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00210	0.00212	0.00211
	(A1 * B1 * B2 * C2 * X)	-0.00086	-0.00087	-0.00086
	(A1 * B1 * B2 * !C2 * X)	0.00220	0.00221	0.00218
	(A1 * B1 * B2 * !C2 * X)	-0.00075	-0.00075	-0.00077
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00214	0.00218	0.00220
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00062	-0.00063	-0.00057
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00321	0.00322	0.00320
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00024	0.00023	0.00023
	(A1 * A2 * !B1 * C2 * X)	0.00214	0.00218	0.00220
	(A1 * A2 * !B1 * C2 * X)	-0.00062	-0.00063	-0.00057
	(A1 * A2 * !B1 * !C2 * X)	0.00321	0.00321	0.00320
	(A1 * A2 * !B1 * !C2 * X)	0.00024	0.00023	0.00023
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00274	0.00273	0.00270
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00050	-0.00050	-0.00055
	(A1 * !A2 * !B1 * !C2 * !X)	0.00275	0.00274	0.00271
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00049	-0.00050	-0.00055
	(!A1 * B1 * B2 * C2 * X)	0.00217	0.00219	0.00224
	(!A1 * B1 * B2 * C2 * X)	-0.00070	-0.00071	-0.00063
	(!A1 * B1 * B2 * !C2 * X)	0.00333	0.00334	0.00334
	(!A1 * B1 * B2 * !C2 * X)	0.00036	0.00035	0.00035
	(!A1 * B1 * !B2 * !C2 * !X)	0.00275	0.00274	0.00271
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00049	-0.00050	-0.00055
	(!A1 * !B1 * !C2 * !X)	0.00276	0.00276	0.00272
	(!A1 * !B1 * !C2 * !X)	-0.00048	-0.00049	-0.00053

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)**	-0.00169	-0.00170	-0.00194
	(A1 * B1 * B2 * C2 * X)	0.00138	0.00138	0.00119
	(A1 * B1 * B2 * !C2 * X)	-0.00198	-0.00199	-0.00197
	(A1 * B1 * B2 * !C2 * X)	0.00110	0.00111	0.00111
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00044	-0.00047	-0.00099
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00252	0.00251	0.00205
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00107	-0.00110	-0.00111
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00204	0.00205	0.00201
	(A1 * A2 * !B1 * C2 * X)	-0.00044	-0.00047	-0.00099
	(A1 * A2 * !B1 * C2 * X)	0.00252	0.00251	0.00205
	(A1 * A2 * !B1 * !C2 * X)	-0.00107	-0.00110	-0.00111
	(A1 * A2 * !B1 * !C2 * X)	0.00204	0.00205	0.00201
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00058	0.00056	0.00057
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00396	0.00397	0.00395
	(A1 * !A2 * !B1 * !C2 * !X)	0.00059	0.00057	0.00059
	(A1 * !A2 * !B1 * !C2 * !X)	0.00397	0.00398	0.00396
	(!A1 * B1 * B2 * C2 * X)	-0.00046	-0.00050	-0.00105
	(!A1 * B1 * B2 * C2 * X)	0.00262	0.00259	0.00204
	(!A1 * B1 * B2 * !C2 * X)	-0.00091	-0.00094	-0.00100
	(!A1 * B1 * B2 * !C2 * X)	0.00221	0.00222	0.00213
	(!A1 * B1 * !B2 * !C2 * !X)	0.00059	0.00057	0.00059
	(!A1 * B1 * !B2 * !C2 * !X)	0.00397	0.00398	0.00396
	(!A1 * !B1 * !C2 * !X)	0.00060	0.00058	0.00060
	(!A1 * !B1 * !C2 * !X)	0.00398	0.00399	0.00397

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00163	-0.00164	-0.00184
	(A1 * B1 * B2 * C2 * X)	0.00130	0.00130	0.00116
	(A1 * B1 * B2 * !C2 * X)	-0.00188	-0.00190	-0.00188
	(A1 * B1 * B2 * !C2 * X)	0.00108	0.00109	0.00108
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00038	-0.00040	-0.00090
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00247	0.00246	0.00202
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00092	-0.00095	-0.00097
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00205	0.00206	0.00202
	(A1 * A2 * !B1 * C2 * X)	-0.00038	-0.00040	-0.00090
	(A1 * A2 * !B1 * C2 * X)	0.00247	0.00246	0.00202
	(A1 * A2 * !B1 * !C2 * X)	-0.00092	-0.00095	-0.00097
	(A1 * A2 * !B1 * !C2 * X)	0.00205	0.00206	0.00202
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00165	0.00162	0.00164
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00489	0.00489	0.00488
	(A1 * !A2 * !B1 * !C2 * !X)	0.00166	0.00164	0.00165
	(A1 * !A2 * !B1 * !C2 * !X)	0.00490	0.00490	0.00489
	(!A1 * B1 * B2 * C2 * X)	-0.00042	-0.00045	-0.00101
	(!A1 * B1 * B2 * C2 * X)	0.00252	0.00249	0.00193
	(!A1 * B1 * B2 * !C2 * X)	-0.00077	-0.00080	-0.00086
	(!A1 * B1 * B2 * !C2 * X)	0.00222	0.00222	0.00214
	(!A1 * B1 * !B2 * !C2 * !X)	0.00166	0.00164	0.00165
	(!A1 * B1 * !B2 * !C2 * !X)	0.00490	0.00490	0.00489
	(!A1 * !B1 * !C2 * !X)	0.00167	0.00164	0.00166
	(!A1 * !B1 * !C2 * !X)	0.00491	0.00491	0.00490

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)**	0.00214	0.00215	0.00214
	(A1 * B1 * B2 * C1 * X)	-0.00092	-0.00092	-0.00091
	(A1 * B1 * B2 * !C1 * X)	0.00226	0.00229	0.00222
	(A1 * B1 * B2 * !C1 * X)	-0.00078	-0.00080	-0.00081
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00215	0.00218	0.00222
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00066	-0.00067	-0.00061
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00328	0.00332	0.00327
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00023	0.00021	0.00021
	(A1 * A2 * !B1 * C1 * X)	0.00215	0.00218	0.00221
	(A1 * A2 * !B1 * C1 * X)	-0.00066	-0.00067	-0.00061
	(A1 * A2 * !B1 * !C1 * X)	0.00328	0.00332	0.00327
	(A1 * A2 * !B1 * !C1 * X)	0.00023	0.00021	0.00021
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00285	0.00286	0.00284
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00134	-0.00136	-0.00135
	(A1 * !A2 * !B1 * !C1 * !X)	0.00286	0.00287	0.00285
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00133	-0.00135	-0.00134
	(!A1 * B1 * B2 * C1 * X)	0.00217	0.00220	0.00224
	(!A1 * B1 * B2 * C1 * X)	-0.00079	-0.00080	-0.00073
	(!A1 * B1 * B2 * !C1 * X)	0.00341	0.00345	0.00340
	(!A1 * B1 * B2 * !C1 * X)	0.00035	0.00032	0.00033
	(!A1 * B1 * !B2 * !C1 * !X)	0.00286	0.00287	0.00285
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00133	-0.00135	-0.00134
	(!A1 * !B1 * !C1 * !X)	0.00287	0.00288	0.00286
	(!A1 * !B1 * !C1 * !X)	-0.00132	-0.00134	-0.00133

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00222	0.00224	0.00223
	(A1 * B1 * B2 * C1 * X)	-0.00089	-0.00089	-0.00088
	(A1 * B1 * B2 * !C1 * X)	0.00234	0.00238	0.00230
	(A1 * B1 * B2 * !C1 * X)	-0.00075	-0.00078	-0.00079
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00226	0.00230	0.00232
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00066	-0.00066	-0.00059
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00336	0.00338	0.00335
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00024	0.00024	0.00023
	(A1 * A2 * !B1 * C1 * X)	0.00224	0.00230	0.00232
	(A1 * A2 * !B1 * C1 * X)	-0.00064	-0.00066	-0.00059
	(A1 * A2 * !B1 * !C1 * X)	0.00336	0.00338	0.00335
	(A1 * A2 * !B1 * !C1 * X)	0.00024	0.00023	0.00023
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00384	0.00387	0.00384
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00040	-0.00043	-0.00042
	(A1 * !A2 * !B1 * !C1 * !X)	0.00385	0.00387	0.00385
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00039	-0.00042	-0.00041
	(!A1 * B1 * B2 * C1 * X)	0.00228	0.00231	0.00236
	(!A1 * B1 * B2 * C1 * X)	-0.00073	-0.00074	-0.00066
	(!A1 * B1 * B2 * !C1 * X)	0.00350	0.00353	0.00350
	(!A1 * B1 * B2 * !C1 * X)	0.00036	0.00035	0.00035
	(!A1 * B1 * !B2 * !C1 * !X)	0.00385	0.00388	0.00385
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00039	-0.00042	-0.00041
	(!A1 * !B1 * !C1 * !X)	0.00387	0.00389	0.00386
	(!A1 * !B1 * !C1 * !X)	-0.00038	-0.00041	-0.00040

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)**	-0.00169	-0.00170	-0.00194
	(A1 * B1 * B2 * C1 * X)	0.00134	0.00133	0.00114
	(A1 * B1 * B2 * !C1 * X)	-0.00197	-0.00198	-0.00196
	(A1 * B1 * B2 * !C1 * X)	0.00107	0.00107	0.00107
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00043	-0.00046	-0.00098
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00248	0.00247	0.00201
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00104	-0.00105	-0.00108
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00202	0.00202	0.00198
	(A1 * A2 * !B1 * C1 * X)	-0.00044	-0.00046	-0.00098
	(A1 * A2 * !B1 * C1 * X)	0.00248	0.00247	0.00201
	(A1 * A2 * !B1 * !C1 * X)	-0.00104	-0.00105	-0.00108
	(A1 * A2 * !B1 * !C1 * X)	0.00202	0.00202	0.00198
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00033	-0.00047	-0.00049
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00387	0.00373	0.00367
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00032	-0.00046	-0.00048
	(A1 * !A2 * !B1 * !C1 * !X)	0.00388	0.00374	0.00368
	(!A1 * B1 * B2 * C1 * X)	-0.00045	-0.00048	-0.00104
	(!A1 * B1 * B2 * C1 * X)	0.00258	0.00255	0.00200
	(!A1 * B1 * B2 * !C1 * X)	-0.00089	-0.00090	-0.00097
	(!A1 * B1 * B2 * !C1 * X)	0.00219	0.00218	0.00210
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00031	-0.00046	-0.00048
	(!A1 * B1 * !B2 * !C1 * !X)	0.00388	0.00374	0.00368
	(!A1 * !B1 * !C1 * !X)	-0.00030	-0.00045	-0.00047
	(!A1 * !B1 * !C1 * !X)	0.00390	0.00375	0.00369

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00175	-0.00176	-0.00196
	(A1 * B1 * B2 * C1 * X)	0.00133	0.00133	0.00118
	(A1 * B1 * B2 * !C1 * X)	-0.00202	-0.00202	-0.00200
	(A1 * B1 * B2 * !C1 * X)	0.00110	0.00109	0.00110
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00050	-0.00053	-0.00102
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00249	0.00248	0.00203
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00108	-0.00109	-0.00112
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00206	0.00205	0.00202
	(A1 * A2 * !B1 * C1 * X)	-0.00050	-0.00053	-0.00102
	(A1 * A2 * !B1 * C1 * X)	0.00249	0.00248	0.00203
	(A1 * A2 * !B1 * !C1 * X)	-0.00108	-0.00109	-0.00112
	(A1 * A2 * !B1 * !C1 * X)	0.00206	0.00205	0.00202
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00077	0.00060	0.00059
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00504	0.00488	0.00483
	(A1 * !A2 * !B1 * !C1 * !X)	0.00078	0.00062	0.00060
	(A1 * !A2 * !B1 * !C1 * !X)	0.00506	0.00490	0.00484
	(!A1 * B1 * B2 * C1 * X)	-0.00055	-0.00059	-0.00114
	(!A1 * B1 * B2 * C1 * X)	0.00254	0.00251	0.00195
	(!A1 * B1 * B2 * !C1 * X)	-0.00092	-0.00094	-0.00101
	(!A1 * B1 * B2 * !C1 * X)	0.00223	0.00222	0.00214
	(!A1 * B1 * !B2 * !C1 * !X)	0.00078	0.00062	0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	0.00505	0.00490	0.00484
	(!A1 * !B1 * !C1 * !X)	0.00079	0.00063	0.00061
	(!A1 * !B1 * !C1 * !X)	0.00506	0.00490	0.00485

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00279	0.00279	0.00289	0.00290	0.81748
sky130_fd_sc_hs__a22oi_2	0.00609	0.00540	0.00581	0.00532	1.37938
sky130_fd_sc_hs__a22oi_4	0.01070	0.01066	0.01079	0.01065	2.50788

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	72.45720	238.28900
sky130_fd_sc_hs__a22oi_2	0.00000	144.77900	475.99700
sky130_fd_sc_hs__a22oi_4	0.00000	289.36900	951.28000

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)	0.06095	0.67410	8.43544
	A2->Y (FR)	0.07120	0.68996	8.52216
	B1->Y (FR)	0.04394	0.70665	9.11572
	B2->Y (FR)	0.05437	0.72929	9.29618
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.06490	0.56579	7.98601
	A2->Y (FR)	0.07816	0.59306	8.24139
	B1->Y (FR)	0.04530	0.61213	8.86793
	B2->Y (FR)	0.05988	0.64628	9.20579
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.06115	0.47428	7.73248
	A2->Y (FR)	0.07702	0.50268	8.01202
	B1->Y (FR)	0.04288	0.52706	8.67930
	B2->Y (FR)	0.05926	0.56508	9.09127

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.02966	0.35007	4.23992
	A2->Y (RF)	0.03286	0.31164	3.66778
	B1->Y (RF)	0.01851	0.33721	4.27698
	B2->Y (RF)	0.02170	0.30193	3.73328
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.03001	0.28537	3.92483
	A2->Y (RF)	0.03323	0.25556	3.44618
	B1->Y (RF)	0.01794	0.26440	3.89196
	B2->Y (RF)	0.02219	0.23601	3.39773
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.03081	0.25926	4.19245
	A2->Y (RF)	0.03434	0.20436	3.28612
	B1->Y (RF)	0.01729	0.23480	4.17558
	B2->Y (RF)	0.02100	0.17907	3.20602

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00026	0.00496	0.10308
	A1	0.00861	0.01390	0.11189
	A2	0.00036	0.00570	0.10793
	A2	0.01082	0.01614	0.11826
	B1	-0.00031	0.00746	0.12081
	B1	0.00551	0.01319	0.12643
	B2	0.00005	0.00765	0.12111
	B2	0.00746	0.01508	0.12879
sky130_fd_sc_hs__a22oi_2	A1	0.00002	0.01163	0.20757
	A1	0.01861	0.03021	0.22666
	A2	0.00161	0.01343	0.21603
	A2	0.02233	0.03413	0.23661
	B1	-0.00028	0.01646	0.24189
	B1	0.01180	0.02895	0.25365
	B2	0.00169	0.01769	0.23988
	B2	0.01622	0.03229	0.25495
sky130_fd_sc_hs__a22oi_4	A1	-0.00213	0.02175	0.37847
	A1	0.03305	0.05714	0.41346
	A2	0.00130	0.02620	0.40353
	A2	0.04263	0.06744	0.44524
	B1	-0.00234	0.03034	0.42594
	B1	0.02042	0.05318	0.44833
	B2	0.00109	0.03303	0.43356
	B2	0.02979	0.06180	0.46265

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.01471	0.01971	0.10283
	A1	0.00586	0.01075	0.09317
	A2	0.01609	0.02055	0.10424
	A2	0.00565	0.01010	0.09373
	B1	0.00950	0.01472	0.09174
	B1	0.00370	0.00887	0.08544
	B2	0.01088	0.01549	0.09104
	B2	0.00347	0.00807	0.08341
sky130_fd_sc_hs__a22oi_2	A1	0.02925	0.04014	0.20465
	A1	0.01070	0.02140	0.18610
	A2	0.03125	0.04098	0.20400
	A2	0.01053	0.02021	0.18270
	B1	0.01940	0.03116	0.18876
	B1	0.00730	0.01906	0.17617
	B2	0.02153	0.03197	0.18477
	B2	0.00697	0.01733	0.16961
sky130_fd_sc_hs__a22oi_4	A1	0.05638	0.07836	0.37761
	A1	0.02122	0.04316	0.34180
	A2	0.06166	0.08330	0.40710
	A2	0.02040	0.04200	0.36579
	B1	0.03736	0.06096	0.33625
	B1	0.01466	0.03811	0.31276
	B2	0.04223	0.06499	0.35364
	B2	0.01351	0.03620	0.32492

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)	0.00330	0.00277	0.00383
	(A2 * B1 * B2 * !Y)	-0.00120	-0.00176	-0.00060
	(!A2 * B1 * B2 * !Y)	0.00395	0.00396	0.00395
	(!A2 * B1 * B2 * !Y)	-0.00038	-0.00040	-0.00038
	(!A2 * B1 * !B2 * Y)	0.00064	0.00064	0.00061
	(!A2 * B1 * !B2 * Y)	-0.00276	-0.00277	-0.00281
	(!A2 * !B1 * Y)	0.00064	0.00064	0.00061
	(!A2 * !B1 * Y)	-0.00275	-0.00277	-0.00281
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00707	0.00582	0.00802
	(A2 * B1 * B2 * !Y)	-0.00258	-0.00389	-0.00153
	(!A2 * B1 * B2 * !Y)	0.00824	0.00825	0.00823
	(!A2 * B1 * B2 * !Y)	-0.00108	-0.00114	-0.00111
	(!A2 * B1 * !B2 * Y)	0.00127	0.00127	0.00122
	(!A2 * B1 * !B2 * Y)	-0.00616	-0.00619	-0.00629
	(!A2 * !B1 * Y)	0.00127	0.00128	0.00123
	(!A2 * !B1 * Y)	-0.00615	-0.00618	-0.00628
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.01319	0.01090	0.01539
	(A2 * B1 * B2 * !Y)	-0.00499	-0.00738	-0.00258
	(!A2 * B1 * B2 * !Y)	0.01585	0.01588	0.01586
	(!A2 * B1 * B2 * !Y)	-0.00166	-0.00174	-0.00169
	(!A2 * B1 * !B2 * Y)	0.00242	0.00242	0.00229
	(!A2 * B1 * !B2 * Y)	-0.01131	-0.01135	-0.01159
	(!A2 * !B1 * Y)	0.00245	0.00245	0.00232
	(!A2 * !B1 * Y)	-0.01128	-0.01131	-0.01156

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)	0.00013	0.00007	-0.00029
	(A2 * B1 * B2 * !Y)	0.00460	0.00459	0.00419
	(!A2 * B1 * B2 * !Y)	0.00020	0.00016	0.00018
	(!A2 * B1 * B2 * !Y)	0.00453	0.00457	0.00453
	(!A2 * B1 * !B2 * Y)	-0.00054	-0.00055	-0.00054
	(!A2 * B1 * !B2 * Y)	0.00286	0.00290	0.00287
	(!A2 * !B1 * Y)	-0.00054	-0.00054	-0.00053
	(!A2 * !B1 * Y)	0.00287	0.00290	0.00287
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00007	-0.00020	-0.00094
	(A2 * B1 * B2 * !Y)	0.00955	0.00950	0.00870
	(!A2 * B1 * B2 * !Y)	0.00006	0.00001	0.00002
	(!A2 * B1 * B2 * !Y)	0.00939	0.00944	0.00939
	(!A2 * B1 * !B2 * Y)	-0.00108	-0.00111	-0.00108
	(!A2 * B1 * !B2 * Y)	0.00638	0.00651	0.00641
	(!A2 * !B1 * Y)	-0.00107	-0.00110	-0.00107
	(!A2 * !B1 * Y)	0.00639	0.00652	0.00642
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00040	0.00019	-0.00129
	(A2 * B1 * B2 * !Y)	0.01857	0.01840	0.01685
	(!A2 * B1 * B2 * !Y)	0.00073	0.00066	0.00063
	(!A2 * B1 * B2 * !Y)	0.01827	0.01830	0.01824
	(!A2 * B1 * !B2 * Y)	-0.00202	-0.00207	-0.00202
	(!A2 * B1 * !B2 * Y)	0.01178	0.01202	0.01182
	(!A2 * !B1 * Y)	-0.00202	-0.00206	-0.00201
	(!A2 * !B1 * Y)	0.01179	0.01203	0.01184

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)	0.00343	0.00289	0.00395
	(A1 * B1 * B2 * !Y)	-0.00126	-0.00185	-0.00069
	(!A1 * B1 * B2 * !Y)	0.00407	0.00409	0.00407
	(!A1 * B1 * B2 * !Y)	-0.00047	-0.00049	-0.00048
	(!A1 * B1 * !B2 * Y)	0.00205	0.00206	0.00205
	(!A1 * B1 * !B2 * Y)	-0.00251	-0.00252	-0.00251
	(!A1 * !B1 * Y)	0.00205	0.00207	0.00206
	(!A1 * !B1 * Y)	-0.00250	-0.00252	-0.00251
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00648	0.00541	0.00765
	(A1 * B1 * B2 * !Y)	-0.00245	-0.00357	-0.00118
	(!A1 * B1 * B2 * !Y)	0.00790	0.00794	0.00790
	(!A1 * B1 * B2 * !Y)	-0.00069	-0.00074	-0.00071
	(!A1 * B1 * !B2 * Y)	0.00377	0.00383	0.00378
	(!A1 * B1 * !B2 * Y)	-0.00488	-0.00492	-0.00489
	(!A1 * !B1 * Y)	0.00377	0.00384	0.00379
	(!A1 * !B1 * Y)	-0.00487	-0.00491	-0.00488
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.01320	0.01094	0.01544
	(A1 * B1 * B2 * !Y)	-0.00513	-0.00740	-0.00262
	(!A1 * B1 * B2 * !Y)	0.01590	0.01597	0.01589
	(!A1 * B1 * B2 * !Y)	-0.00171	-0.00178	-0.00172
	(!A1 * B1 * !B2 * Y)	0.00789	0.00792	0.00791
	(!A1 * B1 * !B2 * Y)	-0.00981	-0.00983	-0.00982
	(!A1 * !B1 * Y)	0.00791	0.00796	0.00793
	(!A1 * !B1 * Y)	-0.00980	-0.00983	-0.00980

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)	0.00003	-0.00003	-0.00040
	(A1 * B1 * B2 * !Y)	0.00470	0.00466	0.00428
	(!A1 * B1 * B2 * !Y)	0.00009	0.00007	0.00007
	(!A1 * B1 * B2 * !Y)	0.00464	0.00465	0.00463
	(!A1 * B1 * !B2 * Y)	-0.00174	-0.00192	-0.00194
	(!A1 * B1 * !B2 * Y)	0.00285	0.00270	0.00262
	(!A1 * !B1 * Y)	-0.00173	-0.00192	-0.00193
	(!A1 * !B1 * Y)	0.00285	0.00270	0.00262
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00025	0.00014	-0.00059
	(A1 * B1 * B2 * !Y)	0.00917	0.00910	0.00832
	(!A1 * B1 * B2 * !Y)	0.00040	0.00035	0.00036
	(!A1 * B1 * B2 * !Y)	0.00899	0.00903	0.00900
	(!A1 * B1 * !B2 * Y)	-0.00310	-0.00349	-0.00355
	(!A1 * B1 * !B2 * Y)	0.00557	0.00524	0.00510
	(!A1 * !B1 * Y)	-0.00309	-0.00348	-0.00354
	(!A1 * !B1 * Y)	0.00558	0.00525	0.00511
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00034	0.00012	-0.00135
	(A1 * B1 * B2 * !Y)	0.01859	0.01846	0.01688
	(!A1 * B1 * B2 * !Y)	0.00069	0.00059	0.00060
	(!A1 * B1 * B2 * !Y)	0.01826	0.01834	0.01828
	(!A1 * B1 * !B2 * Y)	-0.00641	-0.00729	-0.00745
	(!A1 * B1 * !B2 * Y)	0.01131	0.01057	0.01024
	(!A1 * !B1 * Y)	-0.00640	-0.00727	-0.00743
	(!A1 * !B1 * Y)	0.01133	0.01059	0.01026

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)	0.00225	0.00228	0.00232
	(A1 * A2 * B2 * !Y)	-0.00085	-0.00085	-0.00078
	(A1 * A2 * !B2 * !Y)	0.00341	0.00346	0.00341
	(A1 * A2 * !B2 * !Y)	0.00021	0.00019	0.00020
	(A1 * !A2 * !B2 * Y)	0.00058	0.00058	0.00055
	(A1 * !A2 * !B2 * Y)	-0.00288	-0.00289	-0.00293
	(!A1 * !B2 * Y)	0.00058	0.00058	0.00056
	(!A1 * !B2 * Y)	-0.00288	-0.00288	-0.00292
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00485	0.00489	0.00496
	(A1 * A2 * B2 * !Y)	-0.00160	-0.00159	-0.00144
	(A1 * A2 * !B2 * !Y)	0.00709	0.00709	0.00708
	(A1 * A2 * !B2 * !Y)	0.00047	0.00047	0.00046
	(A1 * !A2 * !B2 * Y)	0.00137	0.00137	0.00130
	(A1 * !A2 * !B2 * Y)	-0.00574	-0.00576	-0.00586
	(!A1 * !B2 * Y)	0.00138	0.00138	0.00131
	(!A1 * !B2 * Y)	-0.00573	-0.00575	-0.00585
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00894	0.00914	0.00924
	(A1 * A2 * B2 * !Y)	-0.00322	-0.00329	-0.00296
	(A1 * A2 * !B2 * !Y)	0.01352	0.01356	0.01352
	(A1 * A2 * !B2 * !Y)	0.00091	0.00089	0.00088
	(A1 * !A2 * !B2 * Y)	0.00239	0.00242	0.00227
	(A1 * !A2 * !B2 * Y)	-0.01131	-0.01143	-0.01163
	(!A1 * !B2 * Y)	0.00242	0.00244	0.00230
	(!A1 * !B2 * Y)	-0.01130	-0.01140	-0.01161

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)	-0.00064	-0.00068	-0.00119
	(A1 * A2 * B2 * !Y)	0.00250	0.00249	0.00200
	(A1 * A2 * !B2 * !Y)	-0.00108	-0.00112	-0.00117
	(A1 * A2 * !B2 * !Y)	0.00213	0.00214	0.00206
	(A1 * !A2 * !B2 * Y)	-0.00049	-0.00050	-0.00049
	(A1 * !A2 * !B2 * Y)	0.00298	0.00303	0.00298
	(!A1 * !B2 * Y)	-0.00049	-0.00050	-0.00048
	(!A1 * !B2 * Y)	0.00298	0.00303	0.00299
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00162	-0.00171	-0.00271
	(A1 * A2 * B2 * !Y)	0.00488	0.00485	0.00386
	(A1 * A2 * !B2 * !Y)	-0.00242	-0.00248	-0.00260
	(A1 * A2 * !B2 * !Y)	0.00420	0.00421	0.00407
	(A1 * !A2 * !B2 * Y)	-0.00118	-0.00120	-0.00117
	(A1 * !A2 * !B2 * Y)	0.00596	0.00606	0.00597
	(!A1 * !B2 * Y)	-0.00117	-0.00119	-0.00116
	(!A1 * !B2 * Y)	0.00597	0.00607	0.00598
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00259	-0.00276	-0.00477
	(A1 * A2 * B2 * !Y)	0.00979	0.00973	0.00774
	(A1 * A2 * !B2 * !Y)	-0.00416	-0.00428	-0.00457
	(A1 * A2 * !B2 * !Y)	0.00844	0.00846	0.00817
	(A1 * !A2 * !B2 * Y)	-0.00203	-0.00201	-0.00200
	(A1 * !A2 * !B2 * Y)	0.01186	0.01184	0.01186
	(!A1 * !B2 * Y)	-0.00198	-0.00200	-0.00199
	(!A1 * !B2 * Y)	0.01180	0.01185	0.01187

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)	0.00245	0.00248	0.00251
	(A1 * A2 * B1 * !Y)	-0.00085	-0.00086	-0.00079
	(A1 * A2 * !B1 * !Y)	0.00360	0.00362	0.00360
	(A1 * A2 * !B1 * !Y)	0.00020	0.00019	0.00018
	(A1 * !A2 * !B1 * Y)	0.00206	0.00209	0.00207
	(A1 * !A2 * !B1 * Y)	-0.00258	-0.00261	-0.00259
	(!A1 * !B1 * Y)	0.00206	0.00209	0.00207
	(!A1 * !B1 * Y)	-0.00258	-0.00260	-0.00259
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00429	0.00435	0.00443
	(A1 * A2 * B1 * !Y)	-0.00158	-0.00160	-0.00146
	(A1 * A2 * !B1 * !Y)	0.00655	0.00664	0.00655
	(A1 * A2 * !B1 * !Y)	0.00046	0.00042	0.00044
	(A1 * !A2 * !B1 * Y)	0.00374	0.00380	0.00376
	(A1 * !A2 * !B1 * Y)	-0.00485	-0.00488	-0.00485
	(!A1 * !B1 * Y)	0.00375	0.00381	0.00377
	(!A1 * !B1 * Y)	-0.00484	-0.00488	-0.00485
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00895	0.00915	0.00923
	(A1 * A2 * B1 * !Y)	-0.00323	-0.00329	-0.00297
	(A1 * A2 * !B1 * !Y)	0.01351	0.01369	0.01351
	(A1 * A2 * !B1 * !Y)	0.00091	0.00082	0.00087
	(A1 * !A2 * !B1 * Y)	0.00785	0.00797	0.00788
	(A1 * !A2 * !B1 * Y)	-0.00975	-0.00982	-0.00976
	(!A1 * !B1 * Y)	0.00787	0.00792	0.00790
	(!A1 * !B1 * Y)	-0.00974	-0.00977	-0.00974

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)	-0.00083	-0.00087	-0.00138
	(A1 * A2 * B1 * !Y)	0.00251	0.00250	0.00201
	(A1 * A2 * !B1 * !Y)	-0.00126	-0.00129	-0.00135
	(A1 * A2 * !B1 * !Y)	0.00214	0.00215	0.00207
	(A1 * !A2 * !B1 * Y)	-0.00175	-0.00195	-0.00195
	(A1 * !A2 * !B1 * Y)	0.00290	0.00277	0.00270
	(!A1 * !B1 * Y)	-0.00175	-0.00194	-0.00195
	(!A1 * !B1 * Y)	0.00291	0.00278	0.00270
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00108	-0.00116	-0.00217
	(A1 * A2 * B1 * !Y)	0.00489	0.00486	0.00388
	(A1 * A2 * !B1 * !Y)	-0.00188	-0.00194	-0.00207
	(A1 * A2 * !B1 * !Y)	0.00422	0.00422	0.00408
	(A1 * !A2 * !B1 * Y)	-0.00307	-0.00352	-0.00353
	(A1 * !A2 * !B1 * Y)	0.00553	0.00519	0.00506
	(!A1 * !B1 * Y)	-0.00306	-0.00350	-0.00352
	(!A1 * !B1 * Y)	0.00554	0.00521	0.00507
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00258	-0.00275	-0.00476
	(A1 * A2 * B1 * !Y)	0.00980	0.00973	0.00775
	(A1 * A2 * !B1 * !Y)	-0.00416	-0.00427	-0.00454
	(A1 * A2 * !B1 * !Y)	0.00845	0.00846	0.00818
	(A1 * !A2 * !B1 * Y)	-0.00642	-0.00741	-0.00742
	(A1 * !A2 * !B1 * Y)	0.01122	0.01044	0.01018
	(!A1 * !B1 * Y)	-0.00640	-0.00738	-0.00740
	(!A1 * !B1 * Y)	0.01123	0.01047	0.01020

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00273	0.00253	0.00266	0.00273	1.68482
sky130_fd_sc_hs__a22o_2	0.00285	0.00264	0.00278	0.00273	3.10591
sky130_fd_sc_hs__a22o_4	0.00485	0.00513	0.00484	0.00532	6.47909

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	152.10300	284.89400
sky130_fd_sc_hs__a22o_2	0.00000	218.96900	287.68500
sky130_fd_sc_hs__a22o_4	0.00000	440.88200	574.24900

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)	0.06601	0.46009	5.88768
	A2->X (RR)	0.07015	0.44196	5.77677
	B1->X (RR)	0.05142	0.41807	5.52000
	B2->X (RR)	0.05472	0.41023	5.40691
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.06677	0.38126	5.53035
	A2->X (RR)	0.07104	0.35819	5.37683
	B1->X (RR)	0.05332	0.34272	5.15208
	B2->X (RR)	0.05624	0.33074	5.03447
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.06617	0.31351	5.82089
	A2->X (RR)	0.07071	0.30066	5.62872
	B1->X (RR)	0.05335	0.27407	5.29896
	B2->X (RR)	0.05674	0.26728	5.26259

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.08891	0.45938	5.61918
	A2->X (FF)	0.09059	0.47561	5.87262
	B1->X (FF)	0.07666	0.49107	6.03227
	B2->X (FF)	0.06966	0.48881	6.12445
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.10666	0.43892	5.40708
	A2->X (FF)	0.10862	0.45578	5.67004
	B1->X (FF)	0.09536	0.47719	5.81616
	B2->X (FF)	0.08648	0.47253	5.90715
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.10190	0.40781	5.95656
	A2->X (FF)	0.11109	0.42766	6.08349
	B1->X (FF)	0.08506	0.44034	6.15377
	B2->X (FF)	0.08802	0.44611	6.19542

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01967	0.02965	0.20235
	A1	0.01148	0.02147	0.19411
	A2	0.02118	0.03229	0.25072
	A2	0.01150	0.02264	0.24114
	B1	0.01704	0.03034	0.24349
	B1	0.01174	0.02504	0.23846
	B2	0.01825	0.03097	0.24586
	B2	0.01163	0.02433	0.23962
sky130_fd_sc_hs__a22o_2	A1	0.02438	0.03431	0.20576
	A1	0.01591	0.02597	0.19813
	A2	0.02588	0.03626	0.25377
	A2	0.01586	0.02630	0.24426
	B1	0.02103	0.03410	0.24600
	B1	0.01545	0.02868	0.24089
	B2	0.02236	0.03476	0.24910
	B2	0.01539	0.02780	0.24193
sky130_fd_sc_hs__a22o_4	A1	0.04871	0.07272	0.51570
	A1	0.03283	0.05689	0.49995
	A2	0.05181	0.07369	0.51272
	A2	0.03284	0.05486	0.49497
	B1	0.04211	0.06794	0.48793
	B1	0.03206	0.05796	0.47941
	B2	0.04469	0.07013	0.51894
	B2	0.03161	0.05729	0.50735

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00667	0.01655	0.21776
	A1	0.01488	0.02468	0.22423
	A2	0.00800	0.01892	0.23592
	A2	0.01768	0.02856	0.24550
	B1	0.00658	0.02065	0.24916
	B1	0.01186	0.02594	0.25447
	B2	0.00710	0.02122	0.25052
	B2	0.01377	0.02787	0.25721
sky130_fd_sc_hs__a22o_2	A1	0.01442	0.02193	0.22171
	A1	0.02287	0.03029	0.22711
	A2	0.01697	0.02482	0.24079
	A2	0.02699	0.03481	0.24816
	B1	0.01386	0.02593	0.25460
	B1	0.01945	0.03140	0.25755
	B2	0.01491	0.02689	0.25665
	B2	0.02190	0.03382	0.26198
sky130_fd_sc_hs__a22o_4	A1	0.03197	0.04751	0.47763
	A1	0.04788	0.06334	0.49001
	A2	0.03281	0.04825	0.48207
	A2	0.05177	0.06720	0.49540
	B1	0.03160	0.04967	0.43603
	B1	0.04169	0.05955	0.44100
	B2	0.03204	0.05317	0.47547
	B2	0.04514	0.06624	0.48324

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)	0.00329	0.00286	0.00424
	(A2 * B1 * B2 * X)	-0.00107	-0.00153	-0.00006
	(!A2 * B1 * B2 * X)	0.00448	0.00448	0.00447
	(!A2 * B1 * B2 * X)	0.00027	0.00026	0.00027
	(!A2 * B1 * !B2 * !X)	0.00172	0.00172	0.00166
	(!A2 * B1 * !B2 * !X)	-0.00168	-0.00169	-0.00176
	(!A2 * !B1 * !X)	0.00173	0.00173	0.00167
	(!A2 * !B1 * !X)	-0.00166	-0.00168	-0.00175
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00351	0.00308	0.00446
	(A2 * B1 * B2 * X)	-0.00102	-0.00148	-0.00001
	(!A2 * B1 * B2 * X)	0.00469	0.00469	0.00469
	(!A2 * B1 * B2 * X)	0.00031	0.00031	0.00032
	(!A2 * B1 * !B2 * !X)	0.00278	0.00278	0.00272
	(!A2 * B1 * !B2 * !X)	-0.00066	-0.00068	-0.00076
	(!A2 * !B1 * !X)	0.00278	0.00279	0.00272
	(!A2 * !B1 * !X)	-0.00066	-0.00068	-0.00076
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00598	0.00503	0.00779
	(A2 * B1 * B2 * X)	-0.00215	-0.00312	-0.00023
	(!A2 * B1 * B2 * X)	0.00822	0.00825	0.00822
	(!A2 * B1 * B2 * X)	0.00043	0.00037	0.00042
	(!A2 * B1 * !B2 * !X)	0.00518	0.00520	0.00513
	(!A2 * B1 * !B2 * !X)	-0.00095	-0.00100	-0.00108
	(!A2 * !B1 * !X)	0.00520	0.00522	0.00515
	(!A2 * !B1 * !X)	-0.00093	-0.00098	-0.00106

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)	0.00042	0.00034	-0.00013
	(A2 * B1 * B2 * X)	0.00475	0.00471	0.00421
	(!A2 * B1 * B2 * X)	0.00052	0.00046	0.00047
	(!A2 * B1 * B2 * X)	0.00468	0.00472	0.00468
	(!A2 * B1 * !B2 * !X)	0.00053	0.00052	0.00053
	(!A2 * B1 * !B2 * !X)	0.00393	0.00398	0.00394
	(!A2 * !B1 * !X)	0.00054	0.00053	0.00054
	(!A2 * !B1 * !X)	0.00394	0.00399	0.00395
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00025	0.00017	-0.00030
	(A2 * B1 * B2 * X)	0.00475	0.00472	0.00421
	(!A2 * B1 * B2 * X)	0.00036	0.00030	0.00031
	(!A2 * B1 * B2 * X)	0.00468	0.00472	0.00468
	(!A2 * B1 * !B2 * !X)	0.00151	0.00150	0.00152
	(!A2 * B1 * !B2 * !X)	0.00498	0.00503	0.00498
	(!A2 * !B1 * !X)	0.00152	0.00151	0.00152
	(!A2 * !B1 * !X)	0.00499	0.00503	0.00499
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00162	0.00149	0.00053
	(A2 * B1 * B2 * X)	0.00975	0.00965	0.00864
	(!A2 * B1 * B2 * X)	0.00176	0.00174	0.00174
	(!A2 * B1 * B2 * X)	0.00960	0.00958	0.00958
	(!A2 * B1 * !B2 * !X)	0.00341	0.00339	0.00341
	(!A2 * B1 * !B2 * !X)	0.00957	0.00963	0.00959
	(!A2 * !B1 * !X)	0.00343	0.00342	0.00344
	(!A2 * !B1 * !X)	0.00959	0.00965	0.00961

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)	0.00325	0.00280	0.00421
	(A1 * B1 * B2 * X)	-0.00107	-0.00153	-0.00007
	(!A1 * B1 * B2 * X)	0.00442	0.00443	0.00443
	(!A1 * B1 * B2 * X)	0.00028	0.00026	0.00027
	(!A1 * B1 * !B2 * !X)	0.00309	0.00311	0.00310
	(!A1 * B1 * !B2 * !X)	-0.00108	-0.00109	-0.00109
	(!A1 * !B1 * !X)	0.00311	0.00311	0.00311
	(!A1 * !B1 * !X)	-0.00107	-0.00108	-0.00108
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00334	0.00291	0.00428
	(A1 * B1 * B2 * X)	-0.00113	-0.00157	-0.00011
	(!A1 * B1 * B2 * X)	0.00451	0.00452	0.00451
	(!A1 * B1 * B2 * X)	0.00023	0.00021	0.00023
	(!A1 * B1 * !B2 * !X)	0.00413	0.00416	0.00414
	(!A1 * B1 * !B2 * !X)	-0.00015	-0.00017	-0.00015
	(!A1 * !B1 * !X)	0.00414	0.00417	0.00415
	(!A1 * !B1 * !X)	-0.00015	-0.00016	-0.00015
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00663	0.00575	0.00848
	(A1 * B1 * B2 * X)	-0.00210	-0.00305	-0.00016
	(!A1 * B1 * B2 * X)	0.00895	0.00896	0.00895
	(!A1 * B1 * B2 * X)	0.00053	0.00049	0.00050
	(!A1 * B1 * !B2 * !X)	0.00822	0.00824	0.00823
	(!A1 * B1 * !B2 * !X)	-0.00025	-0.00026	-0.00027
	(!A1 * !B1 * !X)	0.00824	0.00826	0.00825
	(!A1 * !B1 * !X)	-0.00023	-0.00024	-0.00025

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)	0.00044	0.00039	-0.00009
	(A1 * B1 * B2 * X)	0.00476	0.00470	0.00422
	(!A1 * B1 * B2 * X)	0.00055	0.00050	0.00051
	(!A1 * B1 * B2 * X)	0.00468	0.00472	0.00468
	(!A1 * B1 * !B2 * !X)	-0.00059	-0.00082	-0.00083
	(!A1 * B1 * !B2 * !X)	0.00360	0.00343	0.00335
	(!A1 * !B1 * !X)	-0.00058	-0.00081	-0.00082
	(!A1 * !B1 * !X)	0.00361	0.00344	0.00336
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00042	0.00035	-0.00012
	(A1 * B1 * B2 * X)	0.00486	0.00481	0.00431
	(!A1 * B1 * B2 * X)	0.00053	0.00050	0.00049
	(!A1 * B1 * B2 * X)	0.00479	0.00480	0.00478
	(!A1 * B1 * !B2 * !X)	0.00041	0.00019	0.00013
	(!A1 * B1 * !B2 * !X)	0.00471	0.00452	0.00442
	(!A1 * !B1 * !X)	0.00041	0.00020	0.00013
	(!A1 * !B1 * !X)	0.00472	0.00452	0.00442
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00093	0.00078	-0.00016
	(A1 * B1 * B2 * X)	0.00963	0.00957	0.00857
	(!A1 * B1 * B2 * X)	0.00107	0.00102	0.00104
	(!A1 * B1 * B2 * X)	0.00948	0.00953	0.00948
	(!A1 * B1 * !B2 * !X)	0.00084	0.00049	0.00048
	(!A1 * B1 * !B2 * !X)	0.00933	0.00902	0.00895
	(!A1 * !B1 * !X)	0.00086	0.00051	0.00050
	(!A1 * !B1 * !X)	0.00935	0.00904	0.00897

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)	0.00204	0.00208	0.00212
	(A1 * A2 * B2 * X)	-0.00075	-0.00076	-0.00067
	(A1 * A2 * !B2 * X)	0.00324	0.00328	0.00325
	(A1 * A2 * !B2 * X)	0.00037	0.00035	0.00037
	(A1 * !A2 * !B2 * !X)	0.00161	0.00160	0.00158
	(A1 * !A2 * !B2 * !X)	-0.00150	-0.00151	-0.00155
	(!A1 * !B2 * !X)	0.00165	0.00165	0.00162
	(!A1 * !B2 * !X)	-0.00147	-0.00148	-0.00152
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00227	0.00229	0.00234
	(A1 * A2 * B2 * X)	-0.00072	-0.00072	-0.00064
	(A1 * A2 * !B2 * X)	0.00348	0.00352	0.00349
	(A1 * A2 * !B2 * X)	0.00042	0.00039	0.00041
	(A1 * !A2 * !B2 * !X)	0.00265	0.00265	0.00263
	(A1 * !A2 * !B2 * !X)	-0.00053	-0.00054	-0.00058
	(!A1 * !B2 * !X)	0.00268	0.00267	0.00265
	(!A1 * !B2 * !X)	-0.00052	-0.00052	-0.00057
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00387	0.00393	0.00401
	(A1 * A2 * B2 * X)	-0.00136	-0.00136	-0.00119
	(A1 * A2 * !B2 * X)	0.00623	0.00627	0.00624
	(A1 * A2 * !B2 * X)	0.00082	0.00078	0.00080
	(A1 * !A2 * !B2 * !X)	0.00523	0.00522	0.00515
	(A1 * !A2 * !B2 * !X)	-0.00076	-0.00078	-0.00088
	(!A1 * !B2 * !X)	0.00525	0.00524	0.00517
	(!A1 * !B2 * !X)	-0.00074	-0.00076	-0.00086

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)	-0.00035	-0.00039	-0.00095
	(A1 * A2 * B2 * X)	0.00249	0.00246	0.00190
	(A1 * A2 * !B2 * X)	-0.00071	-0.00075	-0.00080
	(A1 * A2 * !B2 * X)	0.00216	0.00217	0.00209
	(A1 * !A2 * !B2 * !X)	0.00062	0.00060	0.00061
	(A1 * !A2 * !B2 * !X)	0.00373	0.00377	0.00372
	(!A1 * !B2 * !X)	0.00059	0.00057	0.00059
	(!A1 * !B2 * !X)	0.00371	0.00375	0.00372
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00054	-0.00057	-0.00114
	(A1 * A2 * B2 * X)	0.00251	0.00247	0.00191
	(A1 * A2 * !B2 * X)	-0.00091	-0.00094	-0.00100
	(A1 * A2 * !B2 * X)	0.00217	0.00218	0.00209
	(A1 * !A2 * !B2 * !X)	0.00161	0.00159	0.00160
	(A1 * !A2 * !B2 * !X)	0.00481	0.00483	0.00480
	(!A1 * !B2 * !X)	0.00160	0.00157	0.00159
	(!A1 * !B2 * !X)	0.00480	0.00483	0.00480
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00033	-0.00043	-0.00154
	(A1 * A2 * B2 * X)	0.00495	0.00492	0.00380
	(A1 * A2 * !B2 * X)	-0.00108	-0.00112	-0.00127
	(A1 * A2 * !B2 * X)	0.00437	0.00437	0.00420
	(A1 * !A2 * !B2 * !X)	0.00341	0.00336	0.00339
	(A1 * !A2 * !B2 * !X)	0.00939	0.00942	0.00939
	(!A1 * !B2 * !X)	0.00343	0.00339	0.00341
	(!A1 * !B2 * !X)	0.00941	0.00944	0.00941

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)	0.00214	0.00216	0.00221
	(A1 * A2 * B1 * X)	-0.00086	-0.00085	-0.00077
	(A1 * A2 * !B1 * X)	0.00336	0.00339	0.00336
	(A1 * A2 * !B1 * X)	0.00030	0.00028	0.00029
	(A1 * !A2 * !B1 * !X)	0.00285	0.00288	0.00285
	(A1 * !A2 * !B1 * !X)	-0.00124	-0.00126	-0.00124
	(!A1 * !B1 * !X)	0.00298	0.00301	0.00298
	(!A1 * !B1 * !X)	-0.00119	-0.00121	-0.00120
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00223	0.00225	0.00230
	(A1 * A2 * B1 * X)	-0.00079	-0.00078	-0.00070
	(A1 * A2 * !B1 * X)	0.00350	0.00351	0.00350
	(A1 * A2 * !B1 * X)	0.00041	0.00040	0.00040
	(A1 * !A2 * !B1 * !X)	0.00402	0.00404	0.00403
	(A1 * !A2 * !B1 * !X)	-0.00014	-0.00015	-0.00014
	(!A1 * !B1 * !X)	0.00409	0.00410	0.00409
	(!A1 * !B1 * !X)	-0.00011	-0.00012	-0.00012
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00415	0.00422	0.00433
	(A1 * A2 * B1 * X)	-0.00156	-0.00159	-0.00142
	(A1 * A2 * !B1 * X)	0.00679	0.00681	0.00677
	(A1 * A2 * !B1 * X)	0.00075	0.00073	0.00072
	(A1 * !A2 * !B1 * !X)	0.00752	0.00753	0.00751
	(A1 * !A2 * !B1 * !X)	-0.00074	-0.00075	-0.00076
	(!A1 * !B1 * !X)	0.00754	0.00755	0.00753
	(!A1 * !B1 * !X)	-0.00072	-0.00074	-0.00074

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)	-0.00045	-0.00049	-0.00105
	(A1 * A2 * B1 * X)	0.00258	0.00255	0.00198
	(A1 * A2 * !B1 * X)	-0.00082	-0.00085	-0.00092
	(A1 * A2 * !B1 * X)	0.00224	0.00224	0.00216
	(A1 * !A2 * !B1 * !X)	-0.00038	-0.00054	-0.00057
	(A1 * !A2 * !B1 * !X)	0.00374	0.00361	0.00351
	(!A1 * !B1 * !X)	-0.00051	-0.00067	-0.00069
	(!A1 * !B1 * !X)	0.00367	0.00354	0.00348
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00052	-0.00055	-0.00112
	(A1 * A2 * B1 * X)	0.00255	0.00251	0.00194
	(A1 * A2 * !B1 * X)	-0.00090	-0.00093	-0.00100
	(A1 * A2 * !B1 * X)	0.00218	0.00219	0.00210
	(A1 * !A2 * !B1 * !X)	0.00048	0.00030	0.00026
	(A1 * !A2 * !B1 * !X)	0.00465	0.00450	0.00441
	(!A1 * !B1 * !X)	0.00041	0.00023	0.00020
	(!A1 * !B1 * !X)	0.00461	0.00446	0.00439
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00072	-0.00081	-0.00195
	(A1 * A2 * B1 * X)	0.00510	0.00507	0.00394
	(A1 * A2 * !B1 * X)	-0.00159	-0.00162	-0.00177
	(A1 * A2 * !B1 * X)	0.00446	0.00445	0.00428
	(A1 * !A2 * !B1 * !X)	0.00156	0.00123	0.00120
	(A1 * !A2 * !B1 * !X)	0.00987	0.00958	0.00943
	(!A1 * !B1 * !X)	0.00159	0.00124	0.00122
	(!A1 * !B1 * !X)	0.00989	0.00959	0.00946

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00237	0.00256	0.00275	0.00291	0.77929
sky130_fd_sc_hs__a2bb2oi_2	0.00258	0.00268	0.00537	0.00536	1.55991
sky130_fd_sc_hs__a2bb2oi_4	0.00406	0.00425	0.01067	0.01076	2.85836

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2oi_1	0.00000	106.61400	271.33800
sky130_fd_sc_hs__a2bb2oi_2	0.00000	158.43000	401.62100
sky130_fd_sc_hs__a2bb2oi_4	0.00000	312.89500	802.88700

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)	0.07109	0.55558	5.59806
	A2_N->Y (RR)	0.06591	0.52829	5.31521
	B1->Y (FR)	0.05960	0.69459	8.63334
	B2->Y (FR)	0.04617	0.64732	8.17890
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.06654	0.41715	5.20412
	A2_N->Y (RR)	0.06201	0.39787	4.99059
	B1->Y (FR)	0.05443	0.57434	8.52284
	B2->Y (FR)	0.04052	0.55023	8.32195
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.08610	0.42759	6.12854
	A2_N->Y (RR)	0.07542	0.39515	5.83348
	B1->Y (FR)	0.05479	0.49089	8.44486
	B2->Y (FR)	0.03961	0.46116	8.10262

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)	0.06995	0.35666	3.59200
	A2_N->Y (FF)	0.06204	0.37001	3.69051
	B1->Y (RF)	0.02532	0.29352	3.46740
	B2->Y (RF)	0.02279	0.33127	4.02788
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.08663	0.37344	4.02707
	A2_N->Y (FF)	0.07763	0.38751	3.93722
	B1->Y (RF)	0.02588	0.26410	3.88539
	B2->Y (RF)	0.02134	0.30292	4.54066
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.08464	0.31048	3.02033
	A2_N->Y (FF)	0.07465	0.33561	3.55839
	B1->Y (RF)	0.02484	0.20453	3.66689
	B2->Y (RF)	0.02116	0.25905	4.61250

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	0.01290	0.02534	0.23175
	A1_N	0.00718	0.01962	0.22642
	A2_N	0.01191	0.02446	0.23018
	A2_N	0.00741	0.01996	0.22584
	B1	0.00247	0.00757	0.10375
	B1	0.00917	0.01420	0.11033
	B2	0.00171	0.00674	0.10020
	B2	0.00715	0.01220	0.10566
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01754	0.03247	0.27269
	A1_N	0.01177	0.02672	0.26704
	A2_N	0.01616	0.03047	0.26085
	A2_N	0.01183	0.02614	0.25699
	B1	0.00542	0.01608	0.18968
	B1	0.01883	0.02946	0.20279
	B2	0.00327	0.01397	0.18141
	B2	0.01363	0.02432	0.19148
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.03376	0.05421	0.40295
	A1_N	0.02458	0.04507	0.39448
	A2_N	0.03039	0.05295	0.41728
	A2_N	0.02360	0.04622	0.41061
	B1	0.01006	0.03356	0.36919
	B1	0.03713	0.06054	0.39581
	B2	0.00643	0.02961	0.34913
	B2	0.02746	0.05076	0.37023

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00696	0.01827	0.22001
	A1_N	0.01270	0.02398	0.22562
	A2_N	0.00689	0.01906	0.20811
	A2_N	0.01140	0.02357	0.21247
	B1	0.01055	0.01482	0.09304
	B1	0.00386	0.00810	0.08603
	B2	0.00946	0.01431	0.09367
	B2	0.00403	0.00881	0.08740
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01384	0.02429	0.25386
	A1_N	0.01960	0.03001	0.25924
	A2_N	0.01404	0.02493	0.21832
	A2_N	0.01838	0.02926	0.22213
	B1	0.02074	0.02971	0.17168
	B1	0.00733	0.01620	0.15753
	B2	0.01801	0.02768	0.16557
	B2	0.00768	0.01735	0.15421
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02898	0.04182	0.32200
	A1_N	0.03813	0.05097	0.33074
	A2_N	0.02852	0.04615	0.39690
	A2_N	0.03531	0.05291	0.40299
	B1	0.04090	0.06135	0.34410
	B1	0.01388	0.03432	0.31594
	B2	0.03562	0.05624	0.31690
	B2	0.01463	0.03527	0.29402

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)	0.00347	0.00311	0.00385
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00046	-0.00085	-0.00005
	(!A2_N * B1 * B2 * !Y)	0.01002	0.02165	0.22121
	(!A2_N * B1 * B2 * !Y)	0.00372	0.01535	0.21491
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00509	0.00473	0.00548
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00074	0.00037	0.00116
	(!A2_N * B1 * B2 * !Y)	0.01315	0.02623	0.25215
	(!A2_N * B1 * B2 * !Y)	0.00632	0.01936	0.24533
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00864	0.00763	0.00900
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00181	0.00077	0.00222
	(!A2_N * B1 * B2 * !Y)	0.02413	0.04134	0.37517
	(!A2_N * B1 * B2 * !Y)	0.01269	0.02988	0.36378

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)	0.00077	0.00072	0.00052
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00468	0.00467	0.00444
	(!A2_N * B1 * B2 * !Y)	0.00207	0.01374	0.21483
	(!A2_N * B1 * B2 * !Y)	0.00840	0.02009	0.22114
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00141	0.00136	0.00116
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00574	0.00575	0.00551
	(!A2_N * B1 * B2 * !Y)	0.00371	0.01611	0.24394
	(!A2_N * B1 * B2 * !Y)	0.01060	0.02302	0.25078
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00483	0.00475	0.00433
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.01163	0.01161	0.01116
	(!A2_N * B1 * B2 * !Y)	0.00845	0.02614	0.36464
	(!A2_N * B1 * B2 * !Y)	0.02000	0.03772	0.37609

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)	0.00301	0.00303	0.00307
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00021	0.00021	0.00028
	(!A1_N * B1 * B2 * !Y)	0.00840	0.02064	0.22308
	(!A1_N * B1 * B2 * !Y)	0.00332	0.01555	0.21799
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00438	0.00439	0.00443
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00134	0.00135	0.00142
	(!A1_N * B1 * B2 * !Y)	0.01134	0.02451	0.24787
	(!A1_N * B1 * B2 * !Y)	0.00591	0.01908	0.24245
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00758	0.00763	0.00766
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00274	0.00272	0.00284
	(!A1_N * B1 * B2 * !Y)	0.01973	0.03875	0.38135
	(!A1_N * B1 * B2 * !Y)	0.01070	0.02970	0.37233

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)	0.00007	0.00004	-0.00028
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00287	0.00285	0.00253
	(!A1_N * B1 * B2 * !Y)	0.00200	0.01498	0.21921
	(!A1_N * B1 * B2 * !Y)	0.00710	0.02010	0.22430
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00098	0.00095	0.00063
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00400	0.00398	0.00366
	(!A1_N * B1 * B2 * !Y)	0.00396	0.01738	0.24290
	(!A1_N * B1 * B2 * !Y)	0.00942	0.02287	0.24832
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00321	0.00317	0.00256
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00809	0.00806	0.00746
	(!A1_N * B1 * B2 * !Y)	0.00781	0.02897	0.37697
	(!A1_N * B1 * B2 * !Y)	0.01694	0.03813	0.38602

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)	0.00212	0.00216	0.00213
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00235	-0.00238	-0.00236
	(!A1_N * !A2_N * B2 * !Y)	0.00314	0.00259	0.00308
	(!A1_N * !A2_N * B2 * !Y)	-0.00140	-0.00196	-0.00144
	(!A1_N * !A2_N * !B2 * !Y)	0.00308	0.00310	0.00308
	(!A1_N * !A2_N * !B2 * !Y)	-0.00138	-0.00140	-0.00139
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00403	0.00407	0.00405
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00483	-0.00485	-0.00484
	(!A1_N * !A2_N * B2 * !Y)	0.00621	0.00510	0.00604
	(!A1_N * !A2_N * B2 * !Y)	-0.00277	-0.00394	-0.00292
	(!A1_N * !A2_N * !B2 * !Y)	0.00600	0.00603	0.00600
	(!A1_N * !A2_N * !B2 * !Y)	-0.00283	-0.00285	-0.00283
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00808	0.00817	0.00810
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00968	-0.00974	-0.00969
	(!A1_N * !A2_N * B2 * !Y)	0.01222	0.01002	0.01195
	(!A1_N * !A2_N * B2 * !Y)	-0.00586	-0.00808	-0.00601
	(!A1_N * !A2_N * !B2 * !Y)	0.01186	0.01194	0.01185
	(!A1_N * !A2_N * !B2 * !Y)	-0.00581	-0.00587	-0.00581

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)	-0.00169	-0.00185	-0.00188
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00282	0.00264	0.00260
	(!A1_N * !A2_N * B2 * !Y)	-0.00097	-0.00101	-0.00115
	(!A1_N * !A2_N * B2 * !Y)	0.00356	0.00357	0.00339
	(!A1_N * !A2_N * !B2 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1_N * !A2_N * !B2 * !Y)	0.00355	0.00354	0.00354
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00315	-0.00359	-0.00368
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00572	0.00539	0.00519
	(!A1_N * !A2_N * B2 * !Y)	-0.00178	-0.00184	-0.00214
	(!A1_N * !A2_N * B2 * !Y)	0.00722	0.00720	0.00686
	(!A1_N * !A2_N * !B2 * !Y)	-0.00164	-0.00169	-0.00169
	(!A1_N * !A2_N * !B2 * !Y)	0.00716	0.00720	0.00717
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00632	-0.00720	-0.00735
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.01147	0.01072	0.01040
	(!A1_N * !A2_N * B2 * !Y)	-0.00367	-0.00382	-0.00443
	(!A1_N * !A2_N * B2 * !Y)	0.01425	0.01428	0.01360
	(!A1_N * !A2_N * !B2 * !Y)	-0.00343	-0.00352	-0.00351
	(!A1_N * !A2_N * !B2 * !Y)	0.01421	0.01429	0.01423

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)	0.00085	0.00086	0.00083
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00279	-0.00280	-0.00285
	(!A1_N * !A2_N * B1 * !Y)	0.00313	0.00258	0.00307
	(!A1_N * !A2_N * B1 * !Y)	-0.00155	-0.00212	-0.00160
	(!A1_N * !A2_N * !B1 * !Y)	0.00306	0.00308	0.00306
	(!A1_N * !A2_N * !B1 * !Y)	-0.00155	-0.00157	-0.00155
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00139	0.00139	0.00132
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00550	-0.00552	-0.00566
	(!A1_N * !A2_N * B1 * !Y)	0.00617	0.00507	0.00602
	(!A1_N * !A2_N * B1 * !Y)	-0.00275	-0.00390	-0.00289
	(!A1_N * !A2_N * !B1 * !Y)	0.00597	0.00603	0.00599
	(!A1_N * !A2_N * !B1 * !Y)	-0.00278	-0.00282	-0.00279
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00261	0.00261	0.00249
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.01124	-0.01125	-0.01153
	(!A1_N * !A2_N * B1 * !Y)	0.01214	0.00995	0.01190
	(!A1_N * !A2_N * B1 * !Y)	-0.00584	-0.00811	-0.00605
	(!A1_N * !A2_N * !B1 * !Y)	0.01182	0.01188	0.01182
	(!A1_N * !A2_N * !B1 * !Y)	-0.00586	-0.00591	-0.00585

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)	-0.00064	-0.00065	-0.00063
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00303	0.00308	0.00304
	(!A1_N * !A2_N * B1 * !Y)	-0.00096	-0.00100	-0.00114
	(!A1_N * !A2_N * B1 * !Y)	0.00372	0.00373	0.00355
	(!A1_N * !A2_N * !B1 * !Y)	-0.00091	-0.00094	-0.00092
	(!A1_N * !A2_N * !B1 * !Y)	0.00371	0.00375	0.00370
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00104	-0.00107	-0.00104
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00589	0.00601	0.00592
	(!A1_N * !A2_N * B1 * !Y)	-0.00177	-0.00181	-0.00212
	(!A1_N * !A2_N * B1 * !Y)	0.00718	0.00714	0.00682
	(!A1_N * !A2_N * !B1 * !Y)	-0.00163	-0.00172	-0.00168
	(!A1_N * !A2_N * !B1 * !Y)	0.00712	0.00720	0.00713
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00193	-0.00199	-0.00193
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.01199	0.01225	0.01205
	(!A1_N * !A2_N * B1 * !Y)	-0.00361	-0.00378	-0.00437
	(!A1_N * !A2_N * B1 * !Y)	0.01429	0.01435	0.01364
	(!A1_N * !A2_N * !B1 * !Y)	-0.00338	-0.00350	-0.00348
	(!A1_N * !A2_N * !B1 * !Y)	0.01425	0.01428	0.01427

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00235	0.00241	0.00257	0.00247	1.68546
sky130_fd_sc_hs__a2bb2o_2	0.00247	0.00251	0.00269	0.00286	2.73685
sky130_fd_sc_hs__a2bb2o_4	0.00268	0.00283	0.00489	0.00488	6.03987

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2o_1	0.00000	182.66500	281.83200
sky130_fd_sc_hs__a2bb2o_2	0.00000	248.88600	385.41400
sky130_fd_sc_hs__a2bb2o_4	0.00000	436.63700	610.36200

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)	0.09530	0.59407	7.91860
	A2_N->X (FR)	0.08646	0.60937	8.15765
	B1->X (RR)	0.05867	0.41726	5.57737
	B2->X (RR)	0.05506	0.43114	5.81286
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.10116	0.52734	7.66853
	A2_N->X (FR)	0.09203	0.54324	7.93744
	B1->X (RR)	0.05853	0.33976	5.03093
	B2->X (RR)	0.05615	0.35702	5.26870
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.12450	0.48804	7.84512
	A2_N->X (FR)	0.12397	0.51088	8.07465
	B1->X (RR)	0.06784	0.29223	5.43448
	B2->X (RR)	0.06346	0.30977	5.69647

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)	0.09903	0.31677	2.77451
	A2_N->X (RF)	0.09285	0.29032	2.44485
	B1->X (FF)	0.08811	0.46651	5.76061
	B2->X (FF)	0.07529	0.44091	5.56415
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.11515	0.28440	2.24619
	A2_N->X (RF)	0.10875	0.25327	1.81066
	B1->X (FF)	0.10351	0.44034	5.29352
	B2->X (FF)	0.09180	0.41592	5.09650
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.11518	0.26192	2.77314
	A2_N->X (RF)	0.10797	0.23487	2.35740
	B1->X (FF)	0.10740	0.41886	5.77026
	B2->X (FF)	0.09337	0.39093	5.55494

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	0.01435	0.02711	0.25560
	A1_N	0.01957	0.03231	0.26127
	A2_N	0.01427	0.02822	0.26039
	A2_N	0.01820	0.03220	0.26446
	B1	0.01690	0.02812	0.23685
	B1	0.01029	0.02154	0.23064
	B2	0.01546	0.02771	0.23880
	B2	0.01033	0.02258	0.23373
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01827	0.03072	0.25982
	A1_N	0.02395	0.03646	0.26576
	A2_N	0.01831	0.03225	0.27139
	A2_N	0.02255	0.03660	0.27656
	B1	0.02137	0.03276	0.24553
	B1	0.01469	0.02614	0.23867
	B2	0.02012	0.03250	0.24769
	B2	0.01473	0.02721	0.24277
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.03352	0.04717	0.33234
	A1_N	0.03935	0.05318	0.34036
	A2_N	0.03341	0.04787	0.33838
	A2_N	0.03784	0.05249	0.34375
	B1	0.04171	0.06267	0.46590
	B1	0.02920	0.05033	0.45439
	B2	0.03907	0.06250	0.47355
	B2	0.02929	0.05277	0.46447

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01896	0.03156	0.25779
	A1_N	0.01375	0.02626	0.25184
	A2_N	0.01740	0.03020	0.24979
	A2_N	0.01346	0.02628	0.24508
	B1	0.00986	0.01997	0.22556
	B1	0.01646	0.02651	0.23216
	B2	0.00914	0.01964	0.22812
	B2	0.01428	0.02472	0.23163
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.02602	0.03635	0.26080
	A1_N	0.02034	0.03062	0.25479
	A2_N	0.02424	0.03505	0.24974
	A2_N	0.02000	0.03077	0.24504
	B1	0.01854	0.02558	0.23364
	B1	0.02523	0.03197	0.23848
	B2	0.01702	0.02457	0.23205
	B2	0.02242	0.02986	0.23633
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.04611	0.05897	0.37550
	A1_N	0.04028	0.05312	0.36971
	A2_N	0.04363	0.05669	0.34059
	A2_N	0.03919	0.05225	0.33616
	B1	0.04047	0.05171	0.44251
	B1	0.05298	0.06418	0.45501
	B2	0.03666	0.05008	0.44546
	B2	0.04646	0.05964	0.45193

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)	0.00369	0.00332	0.00405
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00023	-0.00064	0.00016
	(!A2_N * B1 * B2 * X)	0.00986	0.02140	0.21925
	(!A2_N * B1 * B2 * X)	0.00378	0.01531	0.21319
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00378	0.00340	0.00414
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00030	-0.00073	0.00007
	(!A2_N * B1 * B2 * X)	0.01009	0.02138	0.21539
	(!A2_N * B1 * B2 * X)	0.00371	0.01499	0.20902
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00523	0.00484	0.00544
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00076	0.00034	0.00101
	(!A2_N * B1 * B2 * X)	0.01362	0.02817	0.27282
	(!A2_N * B1 * B2 * X)	0.00648	0.02100	0.26568

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00075	0.00071	0.00050
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00465	0.00464	0.00442
	(!A2_N * B1 * B2 * X)	0.00205	0.01362	0.21310
	(!A2_N * B1 * B2 * X)	0.00815	0.01974	0.21918
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00072	0.00067	0.00047
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00479	0.00478	0.00455
	(!A2_N * B1 * B2 * X)	0.00197	0.01330	0.20890
	(!A2_N * B1 * B2 * X)	0.00838	0.01973	0.21528
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00157	0.00154	0.00138
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00602	0.00602	0.00584
	(!A2_N * B1 * B2 * X)	0.00191	0.01600	0.26291
	(!A2_N * B1 * B2 * X)	0.00911	0.02323	0.27008

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)	0.00309	0.00311	0.00315
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00036	0.00036	0.00043
	(!A1_N * B1 * B2 * X)	0.00812	0.02024	0.21907
	(!A1_N * B1 * B2 * X)	0.00331	0.01543	0.21427
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00315	0.00316	0.00320
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00038	0.00039	0.00045
	(!A1_N * B1 * B2 * X)	0.00828	0.02037	0.21895
	(!A1_N * B1 * B2 * X)	0.00335	0.01542	0.21400
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00472	0.00475	0.00476
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00154	0.00153	0.00160
	(!A1_N * B1 * B2 * X)	0.01158	0.02663	0.27114
	(!A1_N * B1 * B2 * X)	0.00585	0.02090	0.26539

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)	0.00018	0.00014	-0.00018
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00290	0.00289	0.00257
	(!A1_N * B1 * B2 * X)	0.00200	0.01478	0.21547
	(!A1_N * B1 * B2 * X)	0.00683	0.01961	0.22027
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00018	0.00015	-0.00017
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00293	0.00291	0.00259
	(!A1_N * B1 * B2 * X)	0.00200	0.01480	0.21520
	(!A1_N * B1 * B2 * X)	0.00696	0.01978	0.22014
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00108	0.00105	0.00076
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00424	0.00422	0.00394
	(!A1_N * B1 * B2 * X)	0.00187	0.01726	0.26408
	(!A1_N * B1 * B2 * X)	0.00767	0.02306	0.26984

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)	0.00329	0.00331	0.00330
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00106	-0.00107	-0.00107
	(!A1_N * !A2_N * B2 * X)	0.00319	0.00272	0.00334
	(!A1_N * !A2_N * B2 * X)	-0.00122	-0.00170	-0.00105
	(!A1_N * !A2_N * !B2 * X)	0.00337	0.00340	0.00337
	(!A1_N * !A2_N * !B2 * X)	-0.00095	-0.00098	-0.00096
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00423	0.00424	0.00422
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00011	-0.00012	-0.00011
	(!A1_N * !A2_N * B2 * X)	0.00318	0.00268	0.00330
	(!A1_N * !A2_N * B2 * X)	-0.00120	-0.00170	-0.00107
	(!A1_N * !A2_N * !B2 * X)	0.00333	0.00334	0.00332
	(!A1_N * !A2_N * !B2 * X)	-0.00098	-0.00099	-0.00098
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00780	0.00784	0.00782
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00025	-0.00027	-0.00027
	(!A1_N * !A2_N * B2 * X)	0.00589	0.00483	0.00604
	(!A1_N * !A2_N * B2 * X)	-0.00227	-0.00338	-0.00210
	(!A1_N * !A2_N * !B2 * X)	0.00607	0.00609	0.00606
	(!A1_N * !A2_N * !B2 * X)	-0.00194	-0.00197	-0.00194

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)	-0.00070	-0.00089	-0.00089
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00366	0.00353	0.00347
	(!A1_N * !A2_N * B2 * X)	-0.00083	-0.00087	-0.00107
	(!A1_N * !A2_N * B2 * X)	0.00355	0.00354	0.00333
	(!A1_N * !A2_N * !B2 * X)	-0.00079	-0.00082	-0.00080
	(!A1_N * !A2_N * !B2 * X)	0.00354	0.00357	0.00355
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00038	0.00022	0.00019
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00473	0.00456	0.00451
	(!A1_N * !A2_N * B2 * X)	-0.00075	-0.00078	-0.00098
	(!A1_N * !A2_N * B2 * X)	0.00363	0.00362	0.00340
	(!A1_N * !A2_N * !B2 * X)	-0.00070	-0.00071	-0.00070
	(!A1_N * !A2_N * !B2 * X)	0.00362	0.00362	0.00361
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00141	0.00094	0.00093
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00948	0.00913	0.00899
	(!A1_N * !A2_N * B2 * X)	-0.00090	-0.00097	-0.00137
	(!A1_N * !A2_N * B2 * X)	0.00728	0.00725	0.00680
	(!A1_N * !A2_N * !B2 * X)	-0.00075	-0.00080	-0.00079
	(!A1_N * !A2_N * !B2 * X)	0.00723	0.00727	0.00725

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)	0.00187	0.00188	0.00184
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00136	-0.00139	-0.00143
	(!A1_N * !A2_N * B1 * X)	0.00275	0.00228	0.00288
	(!A1_N * !A2_N * B1 * X)	-0.00140	-0.00189	-0.00124
	(!A1_N * !A2_N * !B1 * X)	0.00291	0.00294	0.00292
	(!A1_N * !A2_N * !B1 * X)	-0.00115	-0.00118	-0.00116
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00284	0.00285	0.00282
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00058	-0.00060	-0.00064
	(!A1_N * !A2_N * B1 * X)	0.00318	0.00269	0.00327
	(!A1_N * !A2_N * B1 * X)	-0.00130	-0.00185	-0.00120
	(!A1_N * !A2_N * !B1 * X)	0.00329	0.00331	0.00330
	(!A1_N * !A2_N * !B1 * X)	-0.00111	-0.00114	-0.00112
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00545	0.00546	0.00538
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00085	-0.00090	-0.00100
	(!A1_N * !A2_N * B1 * X)	0.00587	0.00482	0.00604
	(!A1_N * !A2_N * B1 * X)	-0.00229	-0.00338	-0.00210
	(!A1_N * !A2_N * !B1 * X)	0.00606	0.00607	0.00606
	(!A1_N * !A2_N * !B1 * X)	-0.00194	-0.00197	-0.00194

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)	0.00048	0.00047	0.00049
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00374	0.00377	0.00375
	(!A1_N * !A2_N * B1 * X)	-0.00038	-0.00041	-0.00061
	(!A1_N * !A2_N * B1 * X)	0.00375	0.00374	0.00352
	(!A1_N * !A2_N * !B1 * X)	-0.00033	-0.00034	-0.00034
	(!A1_N * !A2_N * !B1 * X)	0.00374	0.00375	0.00374
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00153	0.00152	0.00153
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00498	0.00501	0.00498
	(!A1_N * !A2_N * B1 * X)	-0.00071	-0.00075	-0.00095
	(!A1_N * !A2_N * B1 * X)	0.00378	0.00377	0.00354
	(!A1_N * !A2_N * !B1 * X)	-0.00066	-0.00067	-0.00067
	(!A1_N * !A2_N * !B1 * X)	0.00376	0.00377	0.00375
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00320	0.00318	0.00321
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00955	0.00959	0.00956
	(!A1_N * !A2_N * B1 * X)	-0.00089	-0.00097	-0.00137
	(!A1_N * !A2_N * B1 * X)	0.00726	0.00727	0.00680
	(!A1_N * !A2_N * !B1 * X)	-0.00076	-0.00083	-0.00080
	(!A1_N * !A2_N * !B1 * X)	0.00723	0.00730	0.00724

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00291	0.00299	0.00290	0.00304	0.00290	0.57529
sky130_fd_sc_hs__a311oi_2	0.00553	0.00539	0.00520	0.00441	0.00430	1.03111
sky130_fd_sc_hs__a311oi_4	0.01071	0.01051	0.01053	0.00829	0.00840	1.76972

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	51.04780	173.29800
sky130_fd_sc_hs__a311oi_2	0.00000	100.82100	346.61400
sky130_fd_sc_hs__a311oi_4	0.00000	201.48500	693.14600

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)	0.08654	0.72691	7.98789
	A2->Y (FR)	0.10790	0.77479	8.34827
	A3->Y (FR)	0.11591	0.76667	8.15568
	B1->Y (FR)	0.09294	0.82855	9.29816
	C1->Y (FR)	0.07042	0.83407	9.59627
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.07391	0.59005	7.61112
	A2->Y (FR)	0.09173	0.61319	7.76337
	A3->Y (FR)	0.10837	0.63200	7.82244
	B1->Y (FR)	0.09255	0.67725	8.64568
	C1->Y (FR)	0.06480	0.68327	9.01617
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.07039	0.47922	7.09399
	A2->Y (FR)	0.09177	0.51037	7.34624
	A3->Y (FR)	0.11212	0.54198	7.57135
	B1->Y (FR)	0.09491	0.59501	8.53501
	C1->Y (FR)	0.06622	0.60427	8.93577

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.03638	0.37035	3.91545
	A2->Y (RF)	0.04203	0.34284	3.49692
	A3->Y (RF)	0.04441	0.29894	2.89382
	B1->Y (RF)	0.01971	0.22517	2.28880
	C1->Y (RF)	0.01682	0.21843	2.25504
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.03454	0.35144	4.38276
	A2->Y (RF)	0.03998	0.29470	3.54400
	A3->Y (RF)	0.04409	0.25455	2.90449
	B1->Y (RF)	0.02665	0.31027	4.03012
	C1->Y (RF)	0.01910	0.29510	3.96958
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.03570	0.30225	4.27420
	A2->Y (RF)	0.04179	0.24721	3.40836
	A3->Y (RF)	0.04544	0.19731	2.59966
	B1->Y (RF)	0.02385	0.24006	3.58937
	C1->Y (RF)	0.01810	0.24534	3.86738

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00084	0.00440	0.09183
	A1	0.01061	0.01417	0.10163
	A2	0.00163	0.00511	0.09505
	A2	0.01287	0.01638	0.10632
	A3	0.00194	0.00579	0.10110
	A3	0.01470	0.01854	0.11379
	B1	0.00046	0.00654	0.11775
	B1	0.00869	0.01480	0.12609
	C1	0.00033	0.00810	0.12872
	C1	0.00714	0.01490	0.13578
sky130_fd_sc_hs__a311oi_2	A1	0.00018	0.00735	0.16485
	A1	0.01832	0.02542	0.18300
	A2	0.00179	0.00904	0.17681
	A2	0.02267	0.02994	0.19782
	A3	0.00361	0.01103	0.18553
	A3	0.02721	0.03461	0.20924
	B1	0.00095	0.00950	0.15641
	B1	0.01359	0.02214	0.16895
	C1	0.00075	0.01254	0.17818
	C1	0.01019	0.02202	0.18799

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00046	0.01470	0.31389
	A1	0.03492	0.05011	0.34885
	A2	0.00286	0.01816	0.33469
	A2	0.04401	0.05930	0.37555
	A3	0.00598	0.02152	0.35387
	A3	0.05304	0.06856	0.40078
	B1	0.00116	0.02021	0.31363
	B1	0.02564	0.04481	0.33889
	C1	0.00079	0.02431	0.32778
	C1	0.01925	0.04282	0.34595

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.01604	0.01942	0.09121
	A1	0.00628	0.00966	0.08128
	A2	0.01735	0.02035	0.09064
	A2	0.00611	0.00900	0.07938
	A3	0.01868	0.02199	0.10289
	A3	0.00591	0.00917	0.08998
	B1	0.01034	0.01609	0.11681
	B1	0.00212	0.00785	0.10856
	C1	0.00822	0.01394	0.10801
	C1	0.00144	0.00714	0.10119

sky130_fd_sc_hs__a311oi_2	**A1**	0.03106	0.03764	0.16271
	A1	0.01295	0.01949	0.14436
	A2	0.03346	0.03997	0.17736
	A2	0.01260	0.01902	0.15573
	A3	0.03603	0.04297	0.19965
	A3	0.01235	0.01929	0.17530
	B1	0.01707	0.02533	0.15433
	B1	0.00447	0.01266	0.14161
	C1	0.01161	0.02034	0.13952
	C1	0.00217	0.01088	0.12943
sky130_fd_sc_hs__a311oi_4	**A1**	0.06039	0.07427	0.31670
	A1	0.02494	0.03876	0.28033
	A2	0.06527	0.07907	0.34444
	A2	0.02419	0.03791	0.30292
	A3	0.07078	0.08625	0.39792
	A3	0.02359	0.03894	0.35075
	B1	0.03234	0.05024	0.31140
	B1	0.00782	0.02567	0.28691
	C1	0.02265	0.04066	0.26380
	C1	0.00422	0.02221	0.24439

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)**	0.00225	0.00211	0.00211
	(A2 * A3 * B1 * C1 * !Y)	-0.00220	-0.00235	-0.00235
	(A2 * A3 * B1 * !C1 * !Y)	0.00295	0.00248	0.00264
	(A2 * A3 * B1 * !C1 * !Y)	-0.00157	-0.00203	-0.00185
	(A2 * A3 * !B1 * C1 * !Y)	0.00326	0.00272	0.00305
	(A2 * A3 * !B1 * C1 * !Y)	-0.00132	-0.00187	-0.00146
	(A2 * !A3 * B1 * C1 * !Y)	0.00203	0.00205	0.00204
	(A2 * !A3 * B1 * C1 * !Y)	-0.00237	-0.00238	-0.00237
	(A2 * !A3 * B1 * !C1 * !Y)	0.00257	0.00258	0.00257
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00183	-0.00184	-0.00183
	(A2 * !A3 * !B1 * C1 * !Y)	0.00300	0.00301	0.00301
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00140	-0.00140	-0.00140
	(A2 * !A3 * !B1 * !C1 * Y)	0.00061	0.00062	0.00058
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00277	-0.00278	-0.00289
	(!A2 * B1 * C1 * !Y)	0.00204	0.00207	0.00205
	(!A2 * B1 * C1 * !Y)	-0.00236	-0.00238	-0.00237
	(!A2 * B1 * !C1 * !Y)	0.00258	0.00261	0.00259
	(!A2 * B1 * !C1 * !Y)	-0.00182	-0.00185	-0.00183
	(!A2 * !B1 * C1 * !Y)	0.00302	0.00304	0.00302
	(!A2 * !B1 * C1 * !Y)	-0.00139	-0.00141	-0.00140
	(!A2 * !B1 * !C1 * Y)	0.00064	0.00063	0.00061
	(!A2 * !B1 * !C1 * Y)	-0.00284	-0.00284	-0.00290

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00440	0.00421	0.00414
	(A2 * A3 * B1 * C1 * !Y)	-0.00463	-0.00494	-0.00490
	(A2 * A3 * B1 * !C1 * !Y)	0.00588	0.00504	0.00520
	(A2 * A3 * B1 * !C1 * !Y)	-0.00329	-0.00424	-0.00388
	(A2 * A3 * !B1 * C1 * !Y)	0.00644	0.00551	0.00603
	(A2 * A3 * !B1 * C1 * !Y)	-0.00286	-0.00390	-0.00311
	(A2 * !A3 * B1 * C1 * !Y)	0.00398	0.00402	0.00399
	(A2 * !A3 * B1 * C1 * !Y)	-0.00494	-0.00496	-0.00494
	(A2 * !A3 * B1 * !C1 * !Y)	0.00505	0.00508	0.00506
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00386	-0.00389	-0.00387
	(A2 * !A3 * !B1 * C1 * !Y)	0.00591	0.00594	0.00592
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00300	-0.00302	-0.00300
	(A2 * !A3 * !B1 * !C1 * Y)	0.00132	0.00133	0.00121
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00559	-0.00564	-0.00586
	(!A2 * B1 * C1 * !Y)	0.00402	0.00406	0.00402
	(!A2 * B1 * C1 * !Y)	-0.00495	-0.00497	-0.00494
	(!A2 * B1 * !C1 * !Y)	0.00509	0.00512	0.00509
	(!A2 * B1 * !C1 * !Y)	-0.00387	-0.00390	-0.00387
	(!A2 * !B1 * C1 * !Y)	0.00595	0.00600	0.00596
	(!A2 * !B1 * C1 * !Y)	-0.00299	-0.00303	-0.00300
	(!A2 * !B1 * !C1 * Y)	0.00130	0.00132	0.00125
	(!A2 * !B1 * !C1 * Y)	-0.00575	-0.00581	-0.00590

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00867	0.00819	0.00811
	(A2 * A3 * B1 * C1 * !Y)	-0.00915	-0.00975	-0.00971
	(A2 * A3 * B1 * !C1 * !Y)	0.01160	0.00979	0.01023
	(A2 * A3 * B1 * !C1 * !Y)	-0.00653	-0.00841	-0.00767
	(A2 * A3 * !B1 * C1 * !Y)	0.01270	0.01069	0.01187
	(A2 * A3 * !B1 * C1 * !Y)	-0.00566	-0.00775	-0.00613
	(A2 * !A3 * B1 * C1 * !Y)	0.00762	0.00772	0.00765
	(A2 * !A3 * B1 * C1 * !Y)	-0.00976	-0.00984	-0.00978
	(A2 * !A3 * B1 * !C1 * !Y)	0.00975	0.00985	0.00977
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00760	-0.00770	-0.00764
	(A2 * !A3 * !B1 * C1 * !Y)	0.01146	0.01151	0.01148
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00588	-0.00594	-0.00590
	(A2 * !A3 * !B1 * !C1 * Y)	0.00249	0.00249	0.00227
	(A2 * !A3 * !B1 * !C1 * Y)	-0.01105	-0.01110	-0.01157
	(!A2 * B1 * C1 * !Y)	0.00783	0.00795	0.00787
	(!A2 * B1 * C1 * !Y)	-0.00975	-0.00983	-0.00978
	(!A2 * B1 * !C1 * !Y)	0.00999	0.01008	0.01001
	(!A2 * B1 * !C1 * !Y)	-0.00760	-0.00769	-0.00764
	(!A2 * !B1 * C1 * !Y)	0.01175	0.01180	0.01175
	(!A2 * !B1 * C1 * !Y)	-0.00591	-0.00595	-0.00590
	(!A2 * !B1 * !C1 * Y)	0.00249	0.00249	0.00237
	(!A2 * !B1 * !C1 * Y)	-0.01138	-0.01143	-0.01163

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)**	-0.00196	-0.00197	-0.00196
	(A2 * A3 * B1 * C1 * !Y)	0.00251	0.00253	0.00251
	(A2 * A3 * B1 * !C1 * !Y)	-0.00145	-0.00148	-0.00153
	(A2 * A3 * B1 * !C1 * !Y)	0.00305	0.00308	0.00299
	(A2 * A3 * !B1 * C1 * !Y)	-0.00099	-0.00103	-0.00114
	(A2 * A3 * !B1 * C1 * !Y)	0.00355	0.00356	0.00342
	(A2 * !A3 * B1 * C1 * !Y)	-0.00179	-0.00189	-0.00191
	(A2 * !A3 * B1 * C1 * !Y)	0.00250	0.00253	0.00251
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00125	-0.00137	-0.00138
	(A2 * !A3 * B1 * !C1 * !Y)	0.00303	0.00307	0.00304
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00081	-0.00094	-0.00094
	(A2 * !A3 * !B1 * C1 * !Y)	0.00346	0.00350	0.00347
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !C1 * Y)	0.00301	0.00302	0.00301
	(!A2 * B1 * C1 * !Y)	-0.00192	-0.00194	-0.00193
	(!A2 * B1 * C1 * !Y)	0.00251	0.00252	0.00251
	(!A2 * B1 * !C1 * !Y)	-0.00138	-0.00140	-0.00140
	(!A2 * B1 * !C1 * !Y)	0.00303	0.00305	0.00304
	(!A2 * !B1 * C1 * !Y)	-0.00095	-0.00098	-0.00096
	(!A2 * !B1 * C1 * !Y)	0.00347	0.00350	0.00347
	(!A2 * !B1 * !C1 * Y)	-0.00049	-0.00050	-0.00048
	(!A2 * !B1 * !C1 * Y)	0.00300	0.00306	0.00301

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00384	-0.00384	-0.00383
	(A2 * A3 * B1 * C1 * !Y)	0.00523	0.00524	0.00522
	(A2 * A3 * B1 * !C1 * !Y)	-0.00284	-0.00289	-0.00299
	(A2 * A3 * B1 * !C1 * !Y)	0.00631	0.00635	0.00617
	(A2 * A3 * !B1 * C1 * !Y)	-0.00192	-0.00198	-0.00220
	(A2 * A3 * !B1 * C1 * !Y)	0.00730	0.00732	0.00703
	(A2 * !A3 * B1 * C1 * !Y)	-0.00347	-0.00375	-0.00375
	(A2 * !A3 * B1 * C1 * !Y)	0.00522	0.00528	0.00521
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00238	-0.00268	-0.00268
	(A2 * !A3 * B1 * !C1 * !Y)	0.00627	0.00627	0.00628
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00150	-0.00181	-0.00181
	(A2 * !A3 * !B1 * C1 * !Y)	0.00714	0.00716	0.00715
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00105	-0.00106	-0.00105
	(A2 * !A3 * !B1 * !C1 * Y)	0.00600	0.00605	0.00602
	(!A2 * B1 * C1 * !Y)	-0.00375	-0.00382	-0.00378
	(!A2 * B1 * C1 * !Y)	0.00520	0.00528	0.00521
	(!A2 * B1 * !C1 * !Y)	-0.00268	-0.00276	-0.00272
	(!A2 * B1 * !C1 * !Y)	0.00626	0.00634	0.00628
	(!A2 * !B1 * C1 * !Y)	-0.00180	-0.00185	-0.00184
	(!A2 * !B1 * C1 * !Y)	0.00713	0.00715	0.00715
	(!A2 * !B1 * !C1 * Y)	-0.00109	-0.00112	-0.00109
	(!A2 * !B1 * !C1 * Y)	0.00600	0.00612	0.00603

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00747	-0.00753	-0.00749
	(A2 * A3 * B1 * C1 * !Y)	0.01029	0.01042	0.01034
	(A2 * A3 * B1 * !C1 * !Y)	-0.00549	-0.00559	-0.00581
	(A2 * A3 * B1 * !C1 * !Y)	0.01248	0.01255	0.01224
	(A2 * A3 * !B1 * C1 * !Y)	-0.00369	-0.00380	-0.00425
	(A2 * A3 * !B1 * C1 * !Y)	0.01451	0.01453	0.01396
	(A2 * !A3 * B1 * C1 * !Y)	-0.00675	-0.00730	-0.00731
	(A2 * !A3 * B1 * C1 * !Y)	0.01035	0.01030	0.01033
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00459	-0.00518	-0.00519
	(A2 * !A3 * B1 * !C1 * !Y)	0.01248	0.01252	0.01246
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00284	-0.00335	-0.00345
	(A2 * !A3 * !B1 * C1 * !Y)	0.01421	0.01427	0.01419
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00195	-0.00198	-0.00195
	(A2 * !A3 * !B1 * !C1 * Y)	0.01182	0.01197	0.01188
	(!A2 * B1 * C1 * !Y)	-0.00731	-0.00747	-0.00739
	(!A2 * B1 * C1 * !Y)	0.01027	0.01046	0.01033
	(!A2 * B1 * !C1 * !Y)	-0.00521	-0.00528	-0.00526
	(!A2 * B1 * !C1 * !Y)	0.01247	0.01255	0.01246
	(!A2 * !B1 * C1 * !Y)	-0.00347	-0.00353	-0.00352
	(!A2 * !B1 * C1 * !Y)	0.01420	0.01425	0.01419
	(!A2 * !B1 * !C1 * Y)	-0.00207	-0.00211	-0.00206
	(!A2 * !B1 * !C1 * Y)	0.01187	0.01210	0.01190

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)**	0.00234	0.00220	0.00220
	(A1 * A3 * B1 * C1 * !Y)	-0.00220	-0.00235	-0.00235
	(A1 * A3 * B1 * !C1 * !Y)	0.00303	0.00257	0.00272
	(A1 * A3 * B1 * !C1 * !Y)	-0.00157	-0.00204	-0.00185
	(A1 * A3 * !B1 * C1 * !Y)	0.00333	0.00280	0.00313
	(A1 * A3 * !B1 * C1 * !Y)	-0.00135	-0.00187	-0.00146
	(A1 * !A3 * B1 * C1 * !Y)	0.00213	0.00215	0.00214
	(A1 * !A3 * B1 * C1 * !Y)	-0.00236	-0.00238	-0.00237
	(A1 * !A3 * B1 * !C1 * !Y)	0.00266	0.00269	0.00267
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00182	-0.00184	-0.00183
	(A1 * !A3 * !B1 * C1 * !Y)	0.00310	0.00313	0.00311
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00139	-0.00141	-0.00140
	(A1 * !A3 * !B1 * !C1 * Y)	0.00072	0.00073	0.00073
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00264	-0.00266	-0.00264
	(!A1 * A3 * B1 * !Y)	0.00214	0.00216	0.00214
	(!A1 * A3 * B1 * !Y)	-0.00237	-0.00238	-0.00237
	(!A1 * A3 * !B1 * C1 * !Y)	0.00311	0.00314	0.00311
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * A3 * !B1 * !C1 * Y)	0.00191	0.00194	0.00192
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00261	-0.00263	-0.00262
	(!A1 * !A3 * B1 * !Y)	0.00124	0.00125	0.00123
	(!A1 * !A3 * B1 * !Y)	-0.00237	-0.00238	-0.00237
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00221	0.00222	0.00221
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00139	-0.00141	-0.00140
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00092	0.00093	0.00092
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00264	-0.00265	-0.00264

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00434	0.00415	0.00408
	(A1 * A3 * B1 * C1 * !Y)	-0.00457	-0.00489	-0.00485
	(A1 * A3 * B1 * !C1 * !Y)	0.00584	0.00498	0.00514
	(A1 * A3 * B1 * !C1 * !Y)	-0.00324	-0.00420	-0.00383
	(A1 * A3 * !B1 * C1 * !Y)	0.00639	0.00545	0.00597
	(A1 * A3 * !B1 * C1 * !Y)	-0.00279	-0.00385	-0.00306
	(A1 * !A3 * B1 * C1 * !Y)	0.00392	0.00396	0.00394
	(A1 * !A3 * B1 * C1 * !Y)	-0.00488	-0.00491	-0.00489
	(A1 * !A3 * B1 * !C1 * !Y)	0.00500	0.00503	0.00501
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00381	-0.00384	-0.00382
	(A1 * !A3 * !B1 * C1 * !Y)	0.00587	0.00590	0.00588
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00294	-0.00297	-0.00295
	(A1 * !A3 * !B1 * !C1 * Y)	0.00158	0.00160	0.00159
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00498	-0.00502	-0.00499
	(!A1 * A3 * B1 * !Y)	0.00393	0.00400	0.00396
	(!A1 * A3 * B1 * !Y)	-0.00487	-0.00492	-0.00489
	(!A1 * A3 * !B1 * C1 * !Y)	0.00588	0.00594	0.00591
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00292	-0.00298	-0.00295
	(!A1 * A3 * !B1 * !C1 * Y)	0.00397	0.00402	0.00398
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00492	-0.00496	-0.00493
	(!A1 * !A3 * B1 * !Y)	0.00220	0.00222	0.00220
	(!A1 * !A3 * B1 * !Y)	-0.00488	-0.00491	-0.00489
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00415	0.00416	0.00415
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00294	-0.00296	-0.00295
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00202	0.00204	0.00202
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00501	-0.00504	-0.00502

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00866	0.00816	0.00813
	(A1 * A3 * B1 * C1 * !Y)	-0.00905	-0.00964	-0.00964
	(A1 * A3 * B1 * !C1 * !Y)	0.01156	0.00976	0.01025
	(A1 * A3 * B1 * !C1 * !Y)	-0.00646	-0.00831	-0.00760
	(A1 * A3 * !B1 * C1 * !Y)	0.01264	0.01070	0.01189
	(A1 * A3 * !B1 * C1 * !Y)	-0.00564	-0.00768	-0.00606
	(A1 * !A3 * B1 * C1 * !Y)	0.00781	0.00790	0.00784
	(A1 * !A3 * B1 * C1 * !Y)	-0.00969	-0.00976	-0.00971
	(A1 * !A3 * B1 * !C1 * !Y)	0.00997	0.01002	0.00997
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00757	-0.00762	-0.00757
	(A1 * !A3 * !B1 * C1 * !Y)	0.01170	0.01175	0.01171
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00583	-0.00588	-0.00583
	(A1 * !A3 * !B1 * !C1 * Y)	0.00301	0.00305	0.00303
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00987	-0.00995	-0.00988
	(!A1 * A3 * B1 * !Y)	0.00789	0.00796	0.00789
	(!A1 * A3 * B1 * !Y)	-0.00972	-0.00976	-0.00970
	(!A1 * A3 * !B1 * C1 * !Y)	0.01174	0.01186	0.01178
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00579	-0.00589	-0.00582
	(!A1 * A3 * !B1 * !C1 * Y)	0.00794	0.00797	0.00794
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00979	-0.00979	-0.00977
	(!A1 * !A3 * B1 * !Y)	0.00420	0.00422	0.00420
	(!A1 * !A3 * B1 * !Y)	-0.00969	-0.00974	-0.00971
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00808	0.00811	0.00808
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00581	-0.00586	-0.00583
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00385	0.00389	0.00385
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00991	-0.00998	-0.00993

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)**	-0.00204	-0.00206	-0.00204
	(A1 * A3 * B1 * C1 * !Y)	0.00251	0.00253	0.00251
	(A1 * A3 * B1 * !C1 * !Y)	-0.00154	-0.00156	-0.00162
	(A1 * A3 * B1 * !C1 * !Y)	0.00306	0.00306	0.00299
	(A1 * A3 * !B1 * C1 * !Y)	-0.00108	-0.00111	-0.00123
	(A1 * A3 * !B1 * C1 * !Y)	0.00355	0.00355	0.00341
	(A1 * !A3 * B1 * C1 * !Y)	-0.00201	-0.00204	-0.00201
	(A1 * !A3 * B1 * C1 * !Y)	0.00250	0.00254	0.00251
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00147	-0.00150	-0.00148
	(A1 * !A3 * B1 * !C1 * !Y)	0.00303	0.00307	0.00304
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00104	-0.00105	-0.00104
	(A1 * !A3 * !B1 * C1 * !Y)	0.00347	0.00350	0.00347
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00057	-0.00058	-0.00059
	(A1 * !A3 * !B1 * !C1 * Y)	0.00282	0.00285	0.00277
	(!A1 * A3 * B1 * !Y)	-0.00200	-0.00204	-0.00202
	(!A1 * A3 * B1 * !Y)	0.00249	0.00253	0.00251
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00103	-0.00107	-0.00105
	(!A1 * A3 * !B1 * C1 * !Y)	0.00346	0.00350	0.00347
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00148	-0.00175	-0.00175
	(!A1 * A3 * !B1 * !C1 * Y)	0.00304	0.00284	0.00278
	(!A1 * !A3 * B1 * !Y)	-0.00123	-0.00123	-0.00116
	(!A1 * !A3 * B1 * !Y)	0.00250	0.00252	0.00251
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00026	-0.00026	-0.00019
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00347	0.00349	0.00348
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00085	-0.00084	-0.00086
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00287	0.00289	0.00278

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00378	-0.00379	-0.00377
	(A1 * A3 * B1 * C1 * !Y)	0.00518	0.00522	0.00517
	(A1 * A3 * B1 * !C1 * !Y)	-0.00279	-0.00281	-0.00293
	(A1 * A3 * B1 * !C1 * !Y)	0.00627	0.00626	0.00612
	(A1 * A3 * !B1 * C1 * !Y)	-0.00187	-0.00192	-0.00215
	(A1 * A3 * !B1 * C1 * !Y)	0.00727	0.00727	0.00698
	(A1 * !A3 * B1 * C1 * !Y)	-0.00366	-0.00372	-0.00371
	(A1 * !A3 * B1 * C1 * !Y)	0.00515	0.00519	0.00517
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00260	-0.00263	-0.00264
	(A1 * !A3 * B1 * !C1 * !Y)	0.00621	0.00623	0.00623
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00173	-0.00177	-0.00177
	(A1 * !A3 * !B1 * C1 * !Y)	0.00708	0.00711	0.00710
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00136	-0.00138	-0.00140
	(A1 * !A3 * !B1 * !C1 * Y)	0.00526	0.00531	0.00516
	(!A1 * A3 * B1 * !Y)	-0.00369	-0.00376	-0.00372
	(!A1 * A3 * B1 * !Y)	0.00515	0.00523	0.00517
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00175	-0.00182	-0.00178
	(!A1 * A3 * !B1 * C1 * !Y)	0.00709	0.00716	0.00710
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00314	-0.00374	-0.00373
	(!A1 * A3 * !B1 * !C1 * Y)	0.00577	0.00528	0.00515
	(!A1 * !A3 * B1 * !Y)	-0.00220	-0.00221	-0.00207
	(!A1 * !A3 * B1 * !Y)	0.00516	0.00520	0.00517
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00027	-0.00028	-0.00013
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00710	0.00714	0.00711
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00192	-0.00192	-0.00198
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00543	0.00545	0.00522

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00749	-0.00754	-0.00752
	(A1 * A3 * B1 * C1 * !Y)	0.01021	0.01032	0.01026
	(A1 * A3 * B1 * !C1 * !Y)	-0.00555	-0.00563	-0.00584
	(A1 * A3 * B1 * !C1 * !Y)	0.01248	0.01252	0.01217
	(A1 * A3 * !B1 * C1 * !Y)	-0.00372	-0.00382	-0.00428
	(A1 * A3 * !B1 * C1 * !Y)	0.01447	0.01447	0.01389
	(A1 * !A3 * B1 * C1 * !Y)	-0.00731	-0.00737	-0.00737
	(A1 * !A3 * B1 * C1 * !Y)	0.01025	0.01029	0.01026
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00516	-0.00523	-0.00524
	(A1 * !A3 * B1 * !C1 * !Y)	0.01236	0.01242	0.01239
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00343	-0.00350	-0.00351
	(A1 * !A3 * !B1 * C1 * !Y)	0.01409	0.01416	0.01412
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00259	-0.00262	-0.00267
	(A1 * !A3 * !B1 * !C1 * Y)	0.01044	0.01054	0.01023
	(!A1 * A3 * B1 * !Y)	-0.00735	-0.00742	-0.00741
	(!A1 * A3 * B1 * !Y)	0.01023	0.01021	0.01025
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00348	-0.00355	-0.00354
	(!A1 * A3 * !B1 * C1 * !Y)	0.01410	0.01407	0.01412
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00616	-0.00747	-0.00745
	(!A1 * A3 * !B1 * !C1 * Y)	0.01156	0.01048	0.01022
	(!A1 * !A3 * B1 * !Y)	-0.00420	-0.00422	-0.00392
	(!A1 * !A3 * B1 * !Y)	0.01022	0.01033	0.01026
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00032	-0.00035	-0.00005
	(!A1 * !A3 * !B1 * C1 * !Y)	0.01408	0.01420	0.01413
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00363	-0.00367	-0.00378
	(!A1 * !A3 * !B1 * !C1 * Y)	0.01066	0.01078	0.01033

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)**	0.00246	0.00233	0.00232
	(A1 * A2 * B1 * C1 * !Y)	-0.00222	-0.00237	-0.00236
	(A1 * A2 * B1 * !C1 * !Y)	0.00313	0.00270	0.00285
	(A1 * A2 * B1 * !C1 * !Y)	-0.00162	-0.00205	-0.00186
	(A1 * A2 * !B1 * C1 * !Y)	0.00341	0.00292	0.00325
	(A1 * A2 * !B1 * C1 * !Y)	-0.00140	-0.00189	-0.00148
	(A1 * !A2 * !B1 * !C1 * Y)	0.00210	0.00212	0.00209
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00257	-0.00258	-0.00257
	(!A2 * B1 * !Y)	0.00227	0.00228	0.00226
	(!A2 * B1 * !Y)	-0.00238	-0.00239	-0.00238
	(!A2 * !B1 * C1 * !Y)	0.00323	0.00325	0.00323
	(!A2 * !B1 * C1 * !Y)	-0.00140	-0.00142	-0.00141
	(!A1 * A2 * B1 * !Y)	0.00225	0.00225	0.00225
	(!A1 * A2 * B1 * !Y)	-0.00238	-0.00238	-0.00238
	(!A1 * A2 * !B1 * C1 * !Y)	0.00322	0.00322	0.00322
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00141	-0.00141	-0.00141
	(!A1 * A2 * !B1 * !C1 * Y)	0.00208	0.00208	0.00207
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00258	-0.00258	-0.00257
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00205	0.00207	0.00205
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00259	-0.00261	-0.00259

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00424	0.00402	0.00400
	(A1 * A2 * B1 * C1 * !Y)	-0.00448	-0.00475	-0.00474
	(A1 * A2 * B1 * !C1 * !Y)	0.00569	0.00482	0.00506
	(A1 * A2 * B1 * !C1 * !Y)	-0.00320	-0.00408	-0.00373
	(A1 * A2 * !B1 * C1 * !Y)	0.00621	0.00528	0.00588
	(A1 * A2 * !B1 * C1 * !Y)	-0.00279	-0.00374	-0.00296
	(A1 * !A2 * !B1 * !C1 * Y)	0.00387	0.00392	0.00388
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00480	-0.00483	-0.00481
	(!A2 * B1 * !Y)	0.00388	0.00392	0.00388
	(!A2 * B1 * !Y)	-0.00478	-0.00480	-0.00478
	(!A2 * !B1 * C1 * !Y)	0.00582	0.00586	0.00582
	(!A2 * !B1 * C1 * !Y)	-0.00284	-0.00286	-0.00284
	(!A1 * A2 * B1 * !Y)	0.00386	0.00389	0.00385
	(!A1 * A2 * B1 * !Y)	-0.00479	-0.00480	-0.00478
	(!A1 * A2 * !B1 * C1 * !Y)	0.00580	0.00583	0.00579
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00284	-0.00286	-0.00284
	(!A1 * A2 * !B1 * !C1 * Y)	0.00384	0.00388	0.00385
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00481	-0.00484	-0.00481
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00379	0.00381	0.00379
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00486	-0.00488	-0.00486

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00866	0.00815	0.00811
	(A1 * A2 * B1 * C1 * !Y)	-0.00908	-0.00960	-0.00959
	(A1 * A2 * B1 * !C1 * !Y)	0.01151	0.00973	0.01022
	(A1 * A2 * B1 * !C1 * !Y)	-0.00654	-0.00828	-0.00756
	(A1 * A2 * !B1 * C1 * !Y)	0.01252	0.01067	0.01186
	(A1 * A2 * !B1 * C1 * !Y)	-0.00576	-0.00766	-0.00602
	(A1 * !A2 * !B1 * !C1 * Y)	0.00787	0.00795	0.00787
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00972	-0.00977	-0.00971
	(!A2 * B1 * !Y)	0.00783	0.00793	0.00783
	(!A2 * B1 * !Y)	-0.00966	-0.00972	-0.00966
	(!A2 * !B1 * C1 * !Y)	0.01168	0.01179	0.01170
	(!A2 * !B1 * C1 * !Y)	-0.00576	-0.00584	-0.00578
	(!A1 * A2 * B1 * !Y)	0.00780	0.00780	0.00778
	(!A1 * A2 * B1 * !Y)	-0.00968	-0.00967	-0.00966
	(!A1 * A2 * !B1 * C1 * !Y)	0.01167	0.01173	0.01165
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00580	-0.00583	-0.00578
	(!A1 * A2 * !B1 * !C1 * Y)	0.00771	0.00772	0.00771
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00975	-0.00974	-0.00970
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00764	0.00775	0.00767
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00980	-0.00987	-0.00982

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)**	-0.00216	-0.00217	-0.00217
	(A1 * A2 * B1 * C1 * !Y)	0.00251	0.00253	0.00252
	(A1 * A2 * B1 * !C1 * !Y)	-0.00166	-0.00169	-0.00174
	(A1 * A2 * B1 * !C1 * !Y)	0.00306	0.00309	0.00300
	(A1 * A2 * !B1 * C1 * !Y)	-0.00120	-0.00123	-0.00135
	(A1 * A2 * !B1 * C1 * !Y)	0.00356	0.00356	0.00343
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00174	-0.00190	-0.00192
	(A1 * !A2 * !B1 * !C1 * Y)	0.00290	0.00278	0.00274
	(!A2 * B1 * !Y)	-0.00212	-0.00214	-0.00214
	(!A2 * B1 * !Y)	0.00250	0.00253	0.00252
	(!A2 * !B1 * C1 * !Y)	-0.00115	-0.00118	-0.00117
	(!A2 * !B1 * C1 * !Y)	0.00347	0.00350	0.00348
	(!A1 * A2 * B1 * !Y)	-0.00201	-0.00210	-0.00212
	(!A1 * A2 * B1 * !Y)	0.00251	0.00253	0.00252
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00104	-0.00114	-0.00115
	(!A1 * A2 * !B1 * C1 * !Y)	0.00348	0.00350	0.00349
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00166	-0.00187	-0.00191
	(!A1 * A2 * !B1 * !C1 * Y)	0.00294	0.00280	0.00273
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00188	-0.00195	-0.00195
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00270	0.00272	0.00270

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00369	-0.00371	-0.00369
	(A1 * A2 * B1 * C1 * !Y)	0.00506	0.00510	0.00506
	(A1 * A2 * B1 * !C1 * !Y)	-0.00271	-0.00275	-0.00285
	(A1 * A2 * B1 * !C1 * !Y)	0.00616	0.00619	0.00601
	(A1 * A2 * !B1 * C1 * !Y)	-0.00179	-0.00184	-0.00207
	(A1 * A2 * !B1 * C1 * !Y)	0.00715	0.00715	0.00688
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00322	-0.00358	-0.00366
	(A1 * !A2 * !B1 * !C1 * Y)	0.00543	0.00518	0.00504
	(!A2 * B1 * !Y)	-0.00359	-0.00364	-0.00364
	(!A2 * B1 * !Y)	0.00503	0.00508	0.00505
	(!A2 * !B1 * C1 * !Y)	-0.00165	-0.00171	-0.00170
	(!A2 * !B1 * C1 * !Y)	0.00697	0.00701	0.00699
	(!A1 * A2 * B1 * !Y)	-0.00335	-0.00356	-0.00360
	(!A1 * A2 * B1 * !Y)	0.00505	0.00511	0.00505
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00140	-0.00162	-0.00167
	(!A1 * A2 * !B1 * C1 * !Y)	0.00698	0.00704	0.00699
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00301	-0.00354	-0.00363
	(!A1 * A2 * !B1 * !C1 * Y)	0.00554	0.00518	0.00503
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00354	-0.00369	-0.00371
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00499	0.00503	0.00498

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00745	-0.00752	-0.00749
	(A1 * A2 * B1 * C1 * !Y)	0.01016	0.01030	0.01022
	(A1 * A2 * B1 * !C1 * !Y)	-0.00553	-0.00560	-0.00581
	(A1 * A2 * B1 * !C1 * !Y)	0.01243	0.01247	0.01212
	(A1 * A2 * !B1 * C1 * !Y)	-0.00370	-0.00378	-0.00425
	(A1 * A2 * !B1 * C1 * !Y)	0.01442	0.01439	0.01384
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00650	-0.00730	-0.00740
	(A1 * !A2 * !B1 * !C1 * Y)	0.01102	0.01038	0.01019
	(!A2 * B1 * !Y)	-0.00728	-0.00737	-0.00735
	(!A2 * B1 * !Y)	0.01018	0.01026	0.01021
	(!A2 * !B1 * C1 * !Y)	-0.00341	-0.00351	-0.00349
	(!A2 * !B1 * C1 * !Y)	0.01404	0.01413	0.01407
	(!A1 * A2 * B1 * !Y)	-0.00678	-0.00718	-0.00729
	(!A1 * A2 * B1 * !Y)	0.01022	0.01032	0.01021
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00291	-0.00331	-0.00342
	(!A1 * A2 * !B1 * C1 * !Y)	0.01409	0.01418	0.01408
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00609	-0.00714	-0.00735
	(!A1 * A2 * !B1 * !C1 * Y)	0.01127	0.01049	0.01016
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00715	-0.00747	-0.00750
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01011	0.01011	0.01006

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)**	0.00266	0.00259	0.00263
	(A1 * A2 * A3 * C1 * !Y)	-0.00135	-0.00142	-0.00133
	(A1 * A2 * A3 * !C1 * !Y)	0.00259	0.00262	0.00264
	(A1 * A2 * A3 * !C1 * !Y)	-0.00069	-0.00070	-0.00060
	(A1 * A2 * !A3 * C1 * !Y)	0.00313	0.00260	0.00315
	(A1 * A2 * !A3 * C1 * !Y)	-0.00151	-0.00204	-0.00144
	(A1 * !A2 * C1 * !Y)	0.00314	0.00261	0.00315
	(A1 * !A2 * C1 * !Y)	-0.00150	-0.00204	-0.00144
	(!A1 * C1 * !Y)	0.00310	0.00259	0.00315
	(!A1 * C1 * !Y)	-0.00154	-0.00205	-0.00144
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00320	0.00309	0.00306
	(A1 * A2 * A3 * C1 * !Y)	-0.00276	-0.00292	-0.00283
	(A1 * A2 * A3 * !C1 * !Y)	0.00317	0.00318	0.00323
	(A1 * A2 * A3 * !C1 * !Y)	-0.00129	-0.00128	-0.00116
	(A1 * A2 * !A3 * C1 * !Y)	0.00450	0.00320	0.00417
	(A1 * A2 * !A3 * C1 * !Y)	-0.00282	-0.00413	-0.00305
	(A1 * !A2 * C1 * !Y)	0.00450	0.00320	0.00417
	(A1 * !A2 * C1 * !Y)	-0.00282	-0.00413	-0.00305
	(!A1 * C1 * !Y)	0.00448	0.00320	0.00417
	(!A1 * C1 * !Y)	-0.00284	-0.00413	-0.00305
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00619	0.00594	0.00593
	(A1 * A2 * A3 * C1 * !Y)	-0.00547	-0.00574	-0.00550
	(A1 * A2 * A3 * !C1 * !Y)	0.00593	0.00598	0.00613
	(A1 * A2 * A3 * !C1 * !Y)	-0.00262	-0.00264	-0.00235
	(A1 * A2 * !A3 * C1 * !Y)	0.00875	0.00610	0.00816
	(A1 * A2 * !A3 * C1 * !Y)	-0.00560	-0.00826	-0.00598
	(A1 * !A2 * C1 * !Y)	0.00871	0.00610	0.00816
	(A1 * !A2 * C1 * !Y)	-0.00564	-0.00827	-0.00599
	(!A1 * C1 * !Y)	0.00860	0.00610	0.00815
	(!A1 * C1 * !Y)	-0.00561	-0.00826	-0.00599

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)	-0.00220	-0.00220	-0.00215
	(A1 * A2 * A3 * C1 * !Y)	0.00175	0.00176	0.00173
	(A1 * A2 * A3 * !C1 * !Y)	-0.00048	-0.00053	-0.00127
	(A1 * A2 * A3 * !C1 * !Y)	0.00281	0.00277	0.00207
	(A1 * A2 * !A3 * C1 * !Y)	-0.00114	-0.00118	-0.00133
	(A1 * A2 * !A3 * C1 * !Y)	0.00348	0.00347	0.00328
	(A1 * !A2 * C1 * !Y)	-0.00114	-0.00118	-0.00133
	(A1 * !A2 * C1 * !Y)	0.00348	0.00347	0.00328
	(!A1 * C1 * !Y)	-0.00113	-0.00118	-0.00133
	(!A1 * C1 * !Y)	0.00346	0.00347	0.00328
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00219	-0.00219	-0.00210
	(A1 * A2 * A3 * C1 * !Y)	0.00364	0.00367	0.00364
	(A1 * A2 * A3 * !C1 * !Y)	0.00106	0.00096	-0.00054
	(A1 * A2 * A3 * !C1 * !Y)	0.00558	0.00553	0.00409
	(A1 * A2 * !A3 * C1 * !Y)	-0.00012	-0.00018	-0.00051
	(A1 * A2 * !A3 * C1 * !Y)	0.00713	0.00711	0.00676
	(A1 * !A2 * C1 * !Y)	-0.00012	-0.00018	-0.00051
	(A1 * !A2 * C1 * !Y)	0.00714	0.00711	0.00676
	(!A1 * C1 * !Y)	-0.00012	-0.00018	-0.00051
	(!A1 * C1 * !Y)	0.00714	0.00711	0.00676

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00420	-0.00422	-0.00402
	(A1 * A2 * A3 * C1 * !Y)	0.00713	0.00718	0.00710
	(A1 * A2 * A3 * !C1 * !Y)	0.00239	0.00220	-0.00081
	(A1 * A2 * A3 * !C1 * !Y)	0.01114	0.01100	0.00814
	(A1 * A2 * !A3 * C1 * !Y)	-0.00007	-0.00021	-0.00086
	(A1 * A2 * !A3 * C1 * !Y)	0.01414	0.01413	0.01339
	(A1 * !A2 * C1 * !Y)	-0.00007	-0.00021	-0.00085
	(A1 * !A2 * C1 * !Y)	0.01414	0.01414	0.01339
	(!A1 * C1 * !Y)	-0.00007	-0.00021	-0.00085
	(!A1 * C1 * !Y)	0.01415	0.01414	0.01340

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)	0.00230	0.00234	0.00231
	(A1 * A2 * B1 * !Y)	-0.00100	-0.00102	-0.00099
	(A1 * A2 * A3 * !B1 * !Y)	0.00236	0.00238	0.00246
	(A1 * A2 * A3 * !B1 * !Y)	-0.00062	-0.00061	-0.00052
	(A1 * !A2 * B1 * !Y)	0.00232	0.00235	0.00236
	(A1 * !A2 * B1 * !Y)	-0.00099	-0.00100	-0.00093
	(!A1 * B1 * !Y)	0.00232	0.00235	0.00236
	(!A1 * B1 * !Y)	-0.00099	-0.00100	-0.00093
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00260	0.00262	0.00262
	(A1 * A2 * B1 * !Y)	-0.00193	-0.00194	-0.00191
	(A1 * A2 * A3 * !B1 * !Y)	0.00264	0.00266	0.00283
	(A1 * A2 * A3 * !B1 * !Y)	-0.00118	-0.00117	-0.00101
	(A1 * !A2 * B1 * !Y)	0.00265	0.00268	0.00271
	(A1 * !A2 * B1 * !Y)	-0.00188	-0.00189	-0.00178
	(!A1 * B1 * !Y)	0.00264	0.00269	0.00271
	(!A1 * B1 * !Y)	-0.00187	-0.00189	-0.00178
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00520	0.00522	0.00521
	(A1 * A2 * B1 * !Y)	-0.00385	-0.00385	-0.00378
	(A1 * A2 * A3 * !B1 * !Y)	0.00522	0.00531	0.00563
	(A1 * A2 * A3 * !B1 * !Y)	-0.00226	-0.00231	-0.00194
	(A1 * !A2 * B1 * !Y)	0.00522	0.00535	0.00541
	(A1 * !A2 * B1 * !Y)	-0.00365	-0.00373	-0.00350
	(!A1 * B1 * !Y)	0.00524	0.00535	0.00541
	(!A1 * B1 * !Y)	-0.00366	-0.00373	-0.00350

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)	-0.00195	-0.00197	-0.00207
	(A1 * A2 * B1 * !Y)	0.00133	0.00134	0.00125
	(A1 * A2 * A3 * !B1 * !Y)	-0.00015	-0.00020	-0.00078
	(A1 * A2 * A3 * !B1 * !Y)	0.00294	0.00292	0.00236
	(A1 * !A2 * B1 * !Y)	-0.00151	-0.00155	-0.00183
	(A1 * !A2 * B1 * !Y)	0.00178	0.00177	0.00149
	(!A1 * B1 * !Y)	-0.00152	-0.00154	-0.00183
	(!A1 * B1 * !Y)	0.00178	0.00177	0.00149
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00187	-0.00191	-0.00219
	(A1 * A2 * B1 * !Y)	0.00261	0.00263	0.00240
	(A1 * A2 * A3 * !B1 * !Y)	0.00179	0.00171	0.00053
	(A1 * A2 * A3 * !B1 * !Y)	0.00587	0.00585	0.00474
	(A1 * !A2 * B1 * !Y)	-0.00097	-0.00102	-0.00157
	(A1 * !A2 * B1 * !Y)	0.00355	0.00355	0.00300
	(!A1 * B1 * !Y)	-0.00097	-0.00102	-0.00157
	(!A1 * B1 * !Y)	0.00355	0.00354	0.00300
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00372	-0.00378	-0.00431
	(A1 * A2 * B1 * !Y)	0.00518	0.00521	0.00479
	(A1 * A2 * A3 * !B1 * !Y)	0.00355	0.00341	0.00105
	(A1 * A2 * A3 * !B1 * !Y)	0.01165	0.01157	0.00935
	(A1 * !A2 * B1 * !Y)	-0.00198	-0.00208	-0.00319
	(A1 * !A2 * B1 * !Y)	0.00699	0.00697	0.00588
	(!A1 * B1 * !Y)	-0.00198	-0.00208	-0.00318
	(!A1 * B1 * !Y)	0.00701	0.00698	0.00588

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00267	0.00255	0.00256	0.00263	0.00271	1.69859
sky130_fd_sc_hs__a311o_2	0.00275	0.00275	0.00292	0.00295	0.00279	2.71975
sky130_fd_sc_hs__a311o_4	0.00504	0.00473	0.00501	0.00487	0.00485	4.40056

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	86.32510	182.91000
sky130_fd_sc_hs__a311o_2	0.00000	113.37000	247.34300
sky130_fd_sc_hs__a311o_4	0.00000	229.02900	509.22500

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)	0.07010	0.46213	5.87952
	A2->X (RR)	0.07498	0.45110	5.68136
	A3->X (RR)	0.07834	0.42752	5.35241
	B1->X (RR)	0.04771	0.38738	4.86266
	C1->X (RR)	0.04289	0.37222	4.74975
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.07768	0.40464	5.40266
	A2->X (RR)	0.08279	0.39184	5.19152
	A3->X (RR)	0.08656	0.36542	4.73689
	B1->X (RR)	0.05152	0.32835	4.38154
	C1->X (RR)	0.04697	0.31602	4.29401
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.10034	0.38931	5.50453
	A2->X (RR)	0.10883	0.38108	5.33777
	A3->X (RR)	0.11209	0.32726	4.68002
	B1->X (RR)	0.04998	0.25171	4.03953
	C1->X (RR)	0.04465	0.23497	3.91453

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.11202	0.47602	5.45432
	A2->X (FF)	0.12775	0.50348	5.62146
	A3->X (FF)	0.13830	0.52282	5.80508
	B1->X (FF)	0.11334	0.54525	6.51145
	C1->X (FF)	0.09359	0.55042	6.61794
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.14642	0.46753	4.91957
	A2->X (FF)	0.16795	0.50114	5.11421
	A3->X (FF)	0.18088	0.52142	5.28707
	B1->X (FF)	0.16734	0.56065	5.87886
	C1->X (FF)	0.14473	0.56834	5.97754
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.15975	0.41392	4.46229
	A2->X (FF)	0.17944	0.44296	4.60707
	A3->X (FF)	0.19538	0.47736	5.04189
	B1->X (FF)	0.18097	0.53158	5.50075
	C1->X (FF)	0.14860	0.53699	5.72514

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.02118	0.02960	0.20691
	A1	0.01260	0.02103	0.19827
	A2	0.02215	0.02947	0.20364
	A2	0.01254	0.01989	0.19422
	A3	0.02339	0.02946	0.18543
	A3	0.01248	0.01855	0.17477
	B1	0.01418	0.02634	0.22639
	B1	0.00718	0.01935	0.21929
	C1	0.01379	0.02644	0.22925
	C1	0.00782	0.02051	0.22322
sky130_fd_sc_hs__a311o_2	A1	0.02719	0.03501	0.21275
	A1	0.01802	0.02585	0.20410
	A2	0.02851	0.03505	0.21008
	A2	0.01797	0.02453	0.19934
	A3	0.03012	0.03402	0.15405
	A3	0.01795	0.02193	0.14192
	B1	0.01934	0.03058	0.21107
	B1	0.01147	0.02275	0.20303
	C1	0.01845	0.03013	0.21439
	C1	0.01188	0.02357	0.20803

sky130_fd_sc_hs__a311o_4	**A1**	0.05806	0.07138	0.42409
	A1	0.04168	0.05508	0.40896
	A2	0.06020	0.07106	0.41885
	A2	0.04142	0.05237	0.40089
	A3	0.06312	0.07149	0.38486
	A3	0.04153	0.04990	0.36361
	B1	0.03697	0.05885	0.40899
	B1	0.02368	0.04565	0.39667
	C1	0.03361	0.05740	0.41429
	C1	0.02295	0.04679	0.40492

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00830	0.01432	0.16457
	A1	0.01690	0.02290	0.17245
	A2	0.00973	0.01534	0.16413
	A2	0.01935	0.02493	0.17371
	A3	0.01044	0.01541	0.16657
	A3	0.02134	0.02630	0.17747
	B1	0.00744	0.01763	0.22047
	B1	0.01443	0.02462	0.22747
	C1	0.00715	0.01886	0.22651
	C1	0.01311	0.02480	0.23076

sky130_fd_sc_hs__a311o_2	**A1**	0.02014	0.02068	0.16745
	A1	0.02929	0.02983	0.17649
	A2	0.02284	0.02180	0.17119
	A2	0.03337	0.03233	0.18007
	A3	0.02374	0.02085	0.16449
	A3	0.03589	0.03295	0.17431
	B1	0.01741	0.02246	0.21627
	B1	0.02526	0.03032	0.22013
	C1	0.01731	0.02419	0.22032
	C1	0.02390	0.03067	0.22419
sky130_fd_sc_hs__a311o_4	**A1**	0.04297	0.04124	0.35162
	A1	0.05930	0.05737	0.36215
	A2	0.04892	0.04463	0.35619
	A2	0.06767	0.06317	0.37180
	A3	0.05193	0.04503	0.36949
	A3	0.07348	0.06632	0.38731
	B1	0.03741	0.04359	0.36966
	B1	0.05072	0.05676	0.38165
	C1	0.03727	0.04719	0.40271
	C1	0.04794	0.05766	0.41079

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)**	0.00216	0.00204	0.00202
	(A2 * A3 * B1 * C1 * X)	-0.00199	-0.00214	-0.00213
	(A2 * A3 * B1 * !C1 * X)	0.00286	0.00243	0.00259
	(A2 * A3 * B1 * !C1 * X)	-0.00136	-0.00181	-0.00158
	(A2 * A3 * !B1 * C1 * X)	0.00317	0.00267	0.00313
	(A2 * A3 * !B1 * C1 * X)	-0.00113	-0.00163	-0.00108
	(A2 * !A3 * B1 * C1 * X)	0.00196	0.00196	0.00195
	(A2 * !A3 * B1 * C1 * X)	-0.00215	-0.00215	-0.00214
	(A2 * !A3 * B1 * !C1 * X)	0.00251	0.00252	0.00251
	(A2 * !A3 * B1 * !C1 * X)	-0.00156	-0.00158	-0.00156
	(A2 * !A3 * !B1 * C1 * X)	0.00309	0.00311	0.00309
	(A2 * !A3 * !B1 * C1 * X)	-0.00097	-0.00099	-0.00098
	(A2 * !A3 * !B1 * !C1 * !X)	0.00186	0.00186	0.00181
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00137	-0.00138	-0.00147
	(!A2 * B1 * C1 * X)	0.00197	0.00197	0.00197
	(!A2 * B1 * C1 * X)	-0.00214	-0.00215	-0.00214
	(!A2 * B1 * !C1 * X)	0.00255	0.00256	0.00255
	(!A2 * B1 * !C1 * X)	-0.00156	-0.00157	-0.00156
	(!A2 * !B1 * C1 * X)	0.00313	0.00314	0.00314
	(!A2 * !B1 * C1 * X)	-0.00097	-0.00098	-0.00098
	(!A2 * !B1 * !C1 * !X)	0.00186	0.00186	0.00183
	(!A2 * !B1 * !C1 * !X)	-0.00143	-0.00143	-0.00148

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00227	0.00217	0.00214
	(A2 * A3 * B1 * C1 * X)	-0.00194	-0.00210	-0.00209
	(A2 * A3 * B1 * !C1 * X)	0.00297	0.00255	0.00270
	(A2 * A3 * B1 * !C1 * X)	-0.00131	-0.00178	-0.00154
	(A2 * A3 * !B1 * C1 * X)	0.00329	0.00277	0.00324
	(A2 * A3 * !B1 * C1 * X)	-0.00108	-0.00158	-0.00104
	(A2 * !A3 * B1 * C1 * X)	0.00206	0.00207	0.00206
	(A2 * !A3 * B1 * C1 * X)	-0.00210	-0.00211	-0.00210
	(A2 * !A3 * B1 * !C1 * X)	0.00264	0.00263	0.00264
	(A2 * !A3 * B1 * !C1 * X)	-0.00152	-0.00152	-0.00152
	(A2 * !A3 * !B1 * C1 * X)	0.00322	0.00323	0.00323
	(A2 * !A3 * !B1 * C1 * X)	-0.00093	-0.00094	-0.00094
	(A2 * !A3 * !B1 * !C1 * !X)	0.00271	0.00270	0.00266
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00046	-0.00045	-0.00057
	(!A2 * B1 * C1 * X)	0.00207	0.00210	0.00208
	(!A2 * B1 * C1 * X)	-0.00210	-0.00212	-0.00210
	(!A2 * B1 * !C1 * X)	0.00265	0.00268	0.00266
	(!A2 * B1 * !C1 * X)	-0.00151	-0.00154	-0.00152
	(!A2 * !B1 * C1 * X)	0.00324	0.00326	0.00324
	(!A2 * !B1 * C1 * X)	-0.00093	-0.00095	-0.00093
	(!A2 * !B1 * !C1 * !X)	0.00272	0.00272	0.00269
	(!A2 * !B1 * !C1 * !X)	-0.00052	-0.00054	-0.00058

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00400	0.00377	0.00375
	(A2 * A3 * B1 * C1 * X)	-0.00409	-0.00437	-0.00436
	(A2 * A3 * B1 * !C1 * X)	0.00552	0.00462	0.00489
	(A2 * A3 * B1 * !C1 * X)	-0.00272	-0.00366	-0.00326
	(A2 * A3 * !B1 * C1 * X)	0.00610	0.00515	0.00597
	(A2 * A3 * !B1 * C1 * X)	-0.00228	-0.00328	-0.00225
	(A2 * !A3 * B1 * C1 * X)	0.00357	0.00360	0.00357
	(A2 * !A3 * B1 * C1 * X)	-0.00440	-0.00442	-0.00440
	(A2 * !A3 * B1 * !C1 * X)	0.00473	0.00475	0.00473
	(A2 * !A3 * B1 * !C1 * X)	-0.00323	-0.00326	-0.00324
	(A2 * !A3 * !B1 * C1 * X)	0.00591	0.00592	0.00590
	(A2 * !A3 * !B1 * C1 * X)	-0.00208	-0.00210	-0.00207
	(A2 * !A3 * !B1 * !C1 * !X)	0.00549	0.00549	0.00536
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00073	-0.00076	-0.00102
	(!A2 * B1 * C1 * X)	0.00362	0.00367	0.00363
	(!A2 * B1 * C1 * X)	-0.00439	-0.00443	-0.00440
	(!A2 * B1 * !C1 * X)	0.00478	0.00480	0.00479
	(!A2 * B1 * !C1 * X)	-0.00322	-0.00326	-0.00324
	(!A2 * !B1 * C1 * X)	0.00595	0.00599	0.00596
	(!A2 * !B1 * C1 * X)	-0.00206	-0.00211	-0.00207
	(!A2 * !B1 * !C1 * !X)	0.00559	0.00560	0.00548
	(!A2 * !B1 * !C1 * !X)	-0.00084	-0.00089	-0.00103

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)**	-0.00182	-0.00183	-0.00183
	(A2 * A3 * B1 * C1 * X)	0.00231	0.00234	0.00232
	(A2 * A3 * B1 * !C1 * X)	-0.00129	-0.00130	-0.00137
	(A2 * A3 * B1 * !C1 * X)	0.00292	0.00292	0.00283
	(A2 * A3 * !B1 * C1 * X)	-0.00068	-0.00071	-0.00088
	(A2 * A3 * !B1 * C1 * X)	0.00357	0.00356	0.00337
	(A2 * !A3 * B1 * C1 * X)	-0.00169	-0.00179	-0.00179
	(A2 * !A3 * B1 * C1 * X)	0.00231	0.00234	0.00232
	(A2 * !A3 * B1 * !C1 * X)	-0.00111	-0.00122	-0.00121
	(A2 * !A3 * B1 * !C1 * X)	0.00289	0.00292	0.00290
	(A2 * !A3 * !B1 * C1 * X)	-0.00052	-0.00064	-0.00063
	(A2 * !A3 * !B1 * C1 * X)	0.00347	0.00351	0.00348
	(A2 * !A3 * !B1 * !C1 * !X)	0.00049	0.00049	0.00050
	(A2 * !A3 * !B1 * !C1 * !X)	0.00377	0.00377	0.00377
	(!A2 * B1 * C1 * X)	-0.00180	-0.00183	-0.00180
	(!A2 * B1 * C1 * X)	0.00231	0.00235	0.00232
	(!A2 * B1 * !C1 * X)	-0.00122	-0.00125	-0.00123
	(!A2 * B1 * !C1 * X)	0.00289	0.00293	0.00290
	(!A2 * !B1 * C1 * X)	-0.00064	-0.00066	-0.00064
	(!A2 * !B1 * C1 * X)	0.00348	0.00351	0.00348
	(!A2 * !B1 * !C1 * !X)	0.00047	0.00045	0.00047
	(!A2 * !B1 * !C1 * !X)	0.00376	0.00381	0.00377

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00189	-0.00191	-0.00190
	(A2 * A3 * B1 * C1 * X)	0.00233	0.00235	0.00233
	(A2 * A3 * B1 * !C1 * X)	-0.00135	-0.00137	-0.00144
	(A2 * A3 * B1 * !C1 * X)	0.00292	0.00294	0.00284
	(A2 * A3 * !B1 * C1 * X)	-0.00074	-0.00078	-0.00095
	(A2 * A3 * !B1 * C1 * X)	0.00358	0.00357	0.00338
	(A2 * !A3 * B1 * C1 * X)	-0.00173	-0.00183	-0.00185
	(A2 * !A3 * B1 * C1 * X)	0.00232	0.00235	0.00233
	(A2 * !A3 * B1 * !C1 * X)	-0.00115	-0.00125	-0.00127
	(A2 * !A3 * B1 * !C1 * X)	0.00290	0.00293	0.00290
	(A2 * !A3 * !B1 * C1 * X)	-0.00056	-0.00068	-0.00069
	(A2 * !A3 * !B1 * C1 * X)	0.00348	0.00351	0.00349
	(A2 * !A3 * !B1 * !C1 * !X)	0.00163	0.00162	0.00163
	(A2 * !A3 * !B1 * !C1 * !X)	0.00485	0.00485	0.00485
	(!A2 * B1 * C1 * X)	-0.00186	-0.00187	-0.00187
	(!A2 * B1 * C1 * X)	0.00233	0.00233	0.00232
	(!A2 * B1 * !C1 * X)	-0.00128	-0.00130	-0.00129
	(!A2 * B1 * !C1 * X)	0.00291	0.00291	0.00290
	(!A2 * !B1 * C1 * X)	-0.00069	-0.00071	-0.00071
	(!A2 * !B1 * C1 * X)	0.00349	0.00350	0.00349
	(!A2 * !B1 * !C1 * !X)	0.00160	0.00159	0.00160
	(!A2 * !B1 * !C1 * !X)	0.00485	0.00487	0.00486

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00325	-0.00328	-0.00326
	(A2 * A3 * B1 * C1 * X)	0.00483	0.00490	0.00485
	(A2 * A3 * B1 * !C1 * X)	-0.00219	-0.00223	-0.00236
	(A2 * A3 * B1 * !C1 * X)	0.00602	0.00605	0.00586
	(A2 * A3 * !B1 * C1 * X)	-0.00098	-0.00105	-0.00138
	(A2 * A3 * !B1 * C1 * X)	0.00733	0.00733	0.00694
	(A2 * !A3 * B1 * C1 * X)	-0.00294	-0.00320	-0.00319
	(A2 * !A3 * B1 * C1 * X)	0.00484	0.00491	0.00485
	(A2 * !A3 * B1 * !C1 * X)	-0.00178	-0.00205	-0.00203
	(A2 * !A3 * B1 * !C1 * X)	0.00599	0.00606	0.00600
	(A2 * !A3 * !B1 * C1 * X)	-0.00061	-0.00089	-0.00087
	(A2 * !A3 * !B1 * C1 * X)	0.00716	0.00723	0.00716
	(A2 * !A3 * !B1 * !C1 * !X)	0.00341	0.00339	0.00342
	(A2 * !A3 * !B1 * !C1 * !X)	0.00976	0.00985	0.00977
	(!A2 * B1 * C1 * X)	-0.00318	-0.00325	-0.00323
	(!A2 * B1 * C1 * X)	0.00484	0.00490	0.00485
	(!A2 * B1 * !C1 * X)	-0.00202	-0.00210	-0.00207
	(!A2 * B1 * !C1 * X)	0.00599	0.00606	0.00600
	(!A2 * !B1 * C1 * X)	-0.00085	-0.00094	-0.00091
	(!A2 * !B1 * C1 * X)	0.00716	0.00723	0.00716
	(!A2 * !B1 * !C1 * !X)	0.00328	0.00327	0.00328
	(!A2 * !B1 * !C1 * !X)	0.00974	0.00980	0.00976

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)**	0.00192	0.00180	0.00177
	(A1 * A3 * B1 * C1 * X)	-0.00204	-0.00220	-0.00219
	(A1 * A3 * B1 * !C1 * X)	0.00264	0.00221	0.00234
	(A1 * A3 * B1 * !C1 * X)	-0.00141	-0.00186	-0.00164
	(A1 * A3 * !B1 * C1 * X)	0.00294	0.00247	0.00288
	(A1 * A3 * !B1 * C1 * X)	-0.00117	-0.00168	-0.00113
	(A1 * !A3 * B1 * C1 * X)	0.00173	0.00174	0.00173
	(A1 * !A3 * B1 * C1 * X)	-0.00220	-0.00221	-0.00220
	(A1 * !A3 * B1 * !C1 * X)	0.00231	0.00232	0.00231
	(A1 * !A3 * B1 * !C1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A3 * !B1 * C1 * X)	0.00289	0.00290	0.00290
	(A1 * !A3 * !B1 * C1 * X)	-0.00103	-0.00105	-0.00104
	(A1 * !A3 * !B1 * !C1 * !X)	0.00171	0.00171	0.00170
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00126	-0.00127	-0.00125
	(!A1 * A3 * B1 * X)	0.00173	0.00174	0.00173
	(!A1 * A3 * B1 * X)	-0.00220	-0.00221	-0.00220
	(!A1 * A3 * !B1 * C1 * X)	0.00290	0.00291	0.00290
	(!A1 * A3 * !B1 * C1 * X)	-0.00104	-0.00105	-0.00104
	(!A1 * A3 * !B1 * !C1 * !X)	0.00275	0.00277	0.00275
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00121	-0.00122	-0.00121
	(!A1 * !A3 * B1 * X)	0.00096	0.00097	0.00096
	(!A1 * !A3 * B1 * X)	-0.00220	-0.00221	-0.00220
	(!A1 * !A3 * !B1 * C1 * X)	0.00213	0.00214	0.00213
	(!A1 * !A3 * !B1 * C1 * X)	-0.00103	-0.00104	-0.00104
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00187	0.00188	0.00187
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00125	-0.00127	-0.00126

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00226	0.00212	0.00212
	(A1 * A3 * B1 * C1 * X)	-0.00194	-0.00208	-0.00209
	(A1 * A3 * B1 * !C1 * X)	0.00296	0.00254	0.00269
	(A1 * A3 * B1 * !C1 * X)	-0.00131	-0.00178	-0.00154
	(A1 * A3 * !B1 * C1 * X)	0.00325	0.00280	0.00323
	(A1 * A3 * !B1 * C1 * X)	-0.00109	-0.00160	-0.00104
	(A1 * !A3 * B1 * C1 * X)	0.00206	0.00208	0.00207
	(A1 * !A3 * B1 * C1 * X)	-0.00210	-0.00211	-0.00210
	(A1 * !A3 * B1 * !C1 * X)	0.00265	0.00267	0.00265
	(A1 * !A3 * B1 * !C1 * X)	-0.00152	-0.00154	-0.00152
	(A1 * !A3 * !B1 * C1 * X)	0.00322	0.00324	0.00323
	(A1 * !A3 * !B1 * C1 * X)	-0.00093	-0.00095	-0.00094
	(A1 * !A3 * !B1 * !C1 * !X)	0.00281	0.00281	0.00281
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00023	-0.00024	-0.00022
	(!A1 * A3 * B1 * X)	0.00206	0.00209	0.00206
	(!A1 * A3 * B1 * X)	-0.00210	-0.00211	-0.00210
	(!A1 * A3 * !B1 * C1 * X)	0.00323	0.00325	0.00323
	(!A1 * A3 * !B1 * C1 * X)	-0.00093	-0.00095	-0.00093
	(!A1 * A3 * !B1 * !C1 * !X)	0.00399	0.00402	0.00400
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00019	-0.00021	-0.00019
	(!A1 * !A3 * B1 * X)	0.00117	0.00118	0.00117
	(!A1 * !A3 * B1 * X)	-0.00210	-0.00211	-0.00210
	(!A1 * !A3 * !B1 * C1 * X)	0.00233	0.00235	0.00233
	(!A1 * !A3 * !B1 * C1 * X)	-0.00093	-0.00095	-0.00093
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00301	0.00300	0.00301
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00023	-0.00023	-0.00023

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00381	0.00362	0.00360
	(A1 * A3 * B1 * C1 * X)	-0.00406	-0.00430	-0.00430
	(A1 * A3 * B1 * !C1 * X)	0.00523	0.00443	0.00474
	(A1 * A3 * B1 * !C1 * X)	-0.00279	-0.00361	-0.00321
	(A1 * A3 * !B1 * C1 * X)	0.00577	0.00495	0.00581
	(A1 * A3 * !B1 * C1 * X)	-0.00239	-0.00324	-0.00220
	(A1 * !A3 * B1 * C1 * X)	0.00348	0.00351	0.00349
	(A1 * !A3 * B1 * C1 * X)	-0.00432	-0.00435	-0.00433
	(A1 * !A3 * B1 * !C1 * X)	0.00464	0.00467	0.00465
	(A1 * !A3 * B1 * !C1 * X)	-0.00315	-0.00319	-0.00317
	(A1 * !A3 * !B1 * C1 * X)	0.00581	0.00584	0.00582
	(A1 * !A3 * !B1 * C1 * X)	-0.00199	-0.00203	-0.00200
	(A1 * !A3 * !B1 * !C1 * !X)	0.00568	0.00570	0.00571
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00022	-0.00025	-0.00020
	(!A1 * A3 * B1 * X)	0.00347	0.00352	0.00349
	(!A1 * A3 * B1 * X)	-0.00431	-0.00435	-0.00433
	(!A1 * A3 * !B1 * C1 * X)	0.00583	0.00584	0.00583
	(!A1 * A3 * !B1 * C1 * X)	-0.00201	-0.00202	-0.00200
	(!A1 * A3 * !B1 * !C1 * !X)	0.00775	0.00777	0.00776
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00011	-0.00013	-0.00012
	(!A1 * !A3 * B1 * X)	0.00211	0.00212	0.00210
	(!A1 * !A3 * B1 * X)	-0.00432	-0.00435	-0.00433
	(!A1 * !A3 * !B1 * C1 * X)	0.00444	0.00445	0.00443
	(!A1 * !A3 * !B1 * C1 * X)	-0.00200	-0.00202	-0.00200
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00613	0.00613	0.00613
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00023	-0.00024	-0.00023

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)**	-0.00158	-0.00158	-0.00158
	(A1 * A3 * B1 * C1 * X)	0.00238	0.00238	0.00238
	(A1 * A3 * B1 * !C1 * X)	-0.00104	-0.00106	-0.00113
	(A1 * A3 * B1 * !C1 * X)	0.00298	0.00299	0.00289
	(A1 * A3 * !B1 * C1 * X)	-0.00043	-0.00046	-0.00064
	(A1 * A3 * !B1 * C1 * X)	0.00363	0.00363	0.00343
	(A1 * !A3 * B1 * C1 * X)	-0.00155	-0.00157	-0.00156
	(A1 * !A3 * B1 * C1 * X)	0.00237	0.00241	0.00238
	(A1 * !A3 * B1 * !C1 * X)	-0.00097	-0.00100	-0.00098
	(A1 * !A3 * B1 * !C1 * X)	0.00295	0.00298	0.00296
	(A1 * !A3 * !B1 * C1 * X)	-0.00039	-0.00041	-0.00040
	(A1 * !A3 * !B1 * C1 * X)	0.00354	0.00357	0.00354
	(A1 * !A3 * !B1 * !C1 * !X)	0.00063	0.00062	0.00061
	(A1 * !A3 * !B1 * !C1 * !X)	0.00361	0.00363	0.00356
	(!A1 * A3 * B1 * X)	-0.00156	-0.00157	-0.00156
	(!A1 * A3 * B1 * X)	0.00238	0.00241	0.00238
	(!A1 * A3 * !B1 * C1 * X)	-0.00039	-0.00041	-0.00040
	(!A1 * A3 * !B1 * C1 * X)	0.00355	0.00357	0.00354
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00014	-0.00036	-0.00036
	(!A1 * A3 * !B1 * !C1 * !X)	0.00384	0.00364	0.00358
	(!A1 * !A3 * B1 * X)	-0.00089	-0.00090	-0.00084
	(!A1 * !A3 * B1 * X)	0.00237	0.00239	0.00238
	(!A1 * !A3 * !B1 * C1 * X)	0.00027	0.00027	0.00033
	(!A1 * !A3 * !B1 * C1 * X)	0.00354	0.00356	0.00354
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00040	0.00040	0.00037
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00364	0.00366	0.00357

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00188	-0.00189	-0.00188
	(A1 * A3 * B1 * C1 * X)	0.00233	0.00235	0.00233
	(A1 * A3 * B1 * !C1 * X)	-0.00134	-0.00136	-0.00142
	(A1 * A3 * B1 * !C1 * X)	0.00292	0.00294	0.00284
	(A1 * A3 * !B1 * C1 * X)	-0.00073	-0.00076	-0.00094
	(A1 * A3 * !B1 * C1 * X)	0.00358	0.00357	0.00338
	(A1 * !A3 * B1 * C1 * X)	-0.00184	-0.00187	-0.00185
	(A1 * !A3 * B1 * C1 * X)	0.00231	0.00235	0.00233
	(A1 * !A3 * B1 * !C1 * X)	-0.00127	-0.00129	-0.00127
	(A1 * !A3 * B1 * !C1 * X)	0.00290	0.00293	0.00290
	(A1 * !A3 * !B1 * C1 * X)	-0.00068	-0.00071	-0.00069
	(A1 * !A3 * !B1 * C1 * X)	0.00349	0.00351	0.00349
	(A1 * !A3 * !B1 * !C1 * !X)	0.00151	0.00150	0.00149
	(A1 * !A3 * !B1 * !C1 * !X)	0.00457	0.00459	0.00452
	(!A1 * A3 * B1 * X)	-0.00184	-0.00187	-0.00186
	(!A1 * A3 * B1 * X)	0.00231	0.00235	0.00232
	(!A1 * A3 * !B1 * C1 * X)	-0.00067	-0.00071	-0.00069
	(!A1 * A3 * !B1 * C1 * X)	0.00348	0.00351	0.00349
	(!A1 * A3 * !B1 * !C1 * !X)	0.00060	0.00034	0.00033
	(!A1 * A3 * !B1 * !C1 * !X)	0.00479	0.00458	0.00452
	(!A1 * !A3 * B1 * X)	-0.00108	-0.00108	-0.00101
	(!A1 * !A3 * B1 * X)	0.00234	0.00234	0.00233
	(!A1 * !A3 * !B1 * C1 * X)	0.00008	0.00009	0.00016
	(!A1 * !A3 * !B1 * C1 * X)	0.00350	0.00350	0.00349
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00123	0.00124	0.00122
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00462	0.00463	0.00453

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00311	-0.00312	-0.00312
	(A1 * A3 * B1 * C1 * X)	0.00476	0.00479	0.00478
	(A1 * A3 * B1 * !C1 * X)	-0.00205	-0.00209	-0.00222
	(A1 * A3 * B1 * !C1 * X)	0.00595	0.00598	0.00579
	(A1 * A3 * !B1 * C1 * X)	-0.00083	-0.00090	-0.00123
	(A1 * A3 * !B1 * C1 * X)	0.00726	0.00726	0.00688
	(A1 * !A3 * B1 * C1 * X)	-0.00305	-0.00309	-0.00308
	(A1 * !A3 * B1 * C1 * X)	0.00476	0.00482	0.00477
	(A1 * !A3 * B1 * !C1 * X)	-0.00190	-0.00194	-0.00193
	(A1 * !A3 * B1 * !C1 * X)	0.00592	0.00597	0.00593
	(A1 * !A3 * !B1 * C1 * X)	-0.00073	-0.00077	-0.00076
	(A1 * !A3 * !B1 * C1 * X)	0.00709	0.00714	0.00709
	(A1 * !A3 * !B1 * !C1 * !X)	0.00316	0.00313	0.00309
	(A1 * !A3 * !B1 * !C1 * !X)	0.00911	0.00920	0.00899
	(!A1 * A3 * B1 * X)	-0.00303	-0.00309	-0.00308
	(!A1 * A3 * B1 * X)	0.00476	0.00477	0.00477
	(!A1 * A3 * !B1 * C1 * X)	-0.00071	-0.00077	-0.00076
	(!A1 * A3 * !B1 * C1 * X)	0.00708	0.00709	0.00709
	(!A1 * A3 * !B1 * !C1 * !X)	0.00191	0.00119	0.00116
	(!A1 * A3 * !B1 * !C1 * !X)	0.00980	0.00909	0.00902
	(!A1 * !A3 * B1 * X)	-0.00189	-0.00190	-0.00177
	(!A1 * !A3 * B1 * X)	0.00476	0.00482	0.00478
	(!A1 * !A3 * !B1 * C1 * X)	0.00044	0.00042	0.00055
	(!A1 * !A3 * !B1 * C1 * X)	0.00708	0.00714	0.00710
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00261	0.00260	0.00252
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00919	0.00926	0.00903

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)**	0.00207	0.00197	0.00193
	(A1 * A2 * B1 * C1 * X)	-0.00202	-0.00216	-0.00215
	(A1 * A2 * B1 * !C1 * X)	0.00275	0.00236	0.00250
	(A1 * A2 * B1 * !C1 * X)	-0.00141	-0.00182	-0.00160
	(A1 * A2 * !B1 * C1 * X)	0.00303	0.00262	0.00304
	(A1 * A2 * !B1 * C1 * X)	-0.00117	-0.00164	-0.00110
	(A1 * !A2 * !B1 * !C1 * !X)	0.00276	0.00279	0.00277
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00132	-0.00131
	(!A2 * B1 * X)	0.00189	0.00191	0.00189
	(!A2 * B1 * X)	-0.00215	-0.00217	-0.00216
	(!A2 * !B1 * C1 * X)	0.00305	0.00308	0.00306
	(!A2 * !B1 * C1 * X)	-0.00099	-0.00101	-0.00099
	(!A1 * A2 * B1 * X)	0.00185	0.00188	0.00186
	(!A1 * A2 * B1 * X)	-0.00216	-0.00217	-0.00216
	(!A1 * A2 * !B1 * C1 * X)	0.00302	0.00304	0.00302
	(!A1 * A2 * !B1 * C1 * X)	-0.00099	-0.00101	-0.00099
	(!A1 * A2 * !B1 * !C1 * !X)	0.00275	0.00276	0.00275
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00129
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00271	0.00272	0.00271
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00134	-0.00135	-0.00134

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00253	0.00239	0.00240
	(A1 * A2 * B1 * C1 * X)	-0.00193	-0.00207	-0.00207
	(A1 * A2 * B1 * !C1 * X)	0.00322	0.00282	0.00297
	(A1 * A2 * B1 * !C1 * X)	-0.00131	-0.00177	-0.00153
	(A1 * A2 * !B1 * C1 * X)	0.00351	0.00307	0.00350
	(A1 * A2 * !B1 * C1 * X)	-0.00108	-0.00158	-0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	0.00402	0.00404	0.00402
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00044	-0.00045	-0.00043
	(!A2 * B1 * X)	0.00233	0.00236	0.00234
	(!A2 * B1 * X)	-0.00208	-0.00210	-0.00209
	(!A2 * !B1 * C1 * X)	0.00350	0.00352	0.00351
	(!A2 * !B1 * C1 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * A2 * B1 * X)	0.00232	0.00233	0.00232
	(!A1 * A2 * B1 * X)	-0.00209	-0.00209	-0.00209
	(!A1 * A2 * !B1 * C1 * X)	0.00348	0.00350	0.00349
	(!A1 * A2 * !B1 * C1 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * A2 * !B1 * !C1 * !X)	0.00399	0.00400	0.00399
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00043	-0.00044	-0.00043
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00397	0.00399	0.00397
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00045	-0.00047	-0.00046

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00429	0.00409	0.00407
	(A1 * A2 * B1 * C1 * X)	-0.00392	-0.00418	-0.00417
	(A1 * A2 * B1 * !C1 * X)	0.00575	0.00491	0.00521
	(A1 * A2 * B1 * !C1 * X)	-0.00261	-0.00349	-0.00308
	(A1 * A2 * !B1 * C1 * X)	0.00632	0.00544	0.00628
	(A1 * A2 * !B1 * C1 * X)	-0.00219	-0.00312	-0.00207
	(A1 * !A2 * !B1 * !C1 * !X)	0.00779	0.00785	0.00780
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00041	-0.00045	-0.00042
	(!A2 * B1 * X)	0.00395	0.00401	0.00396
	(!A2 * B1 * X)	-0.00419	-0.00423	-0.00420
	(!A2 * !B1 * C1 * X)	0.00628	0.00633	0.00629
	(!A2 * !B1 * C1 * X)	-0.00186	-0.00190	-0.00187
	(!A1 * A2 * B1 * X)	0.00391	0.00393	0.00390
	(!A1 * A2 * B1 * X)	-0.00421	-0.00422	-0.00420
	(!A1 * A2 * !B1 * C1 * X)	0.00626	0.00627	0.00625
	(!A1 * A2 * !B1 * C1 * X)	-0.00188	-0.00189	-0.00187
	(!A1 * A2 * !B1 * !C1 * !X)	0.00776	0.00782	0.00779
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00037	-0.00041	-0.00039
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00767	0.00773	0.00768
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00047	-0.00051	-0.00048

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)**	-0.00174	-0.00175	-0.00174
	(A1 * A2 * B1 * C1 * X)	0.00234	0.00236	0.00234
	(A1 * A2 * B1 * !C1 * X)	-0.00120	-0.00122	-0.00129
	(A1 * A2 * B1 * !C1 * X)	0.00294	0.00295	0.00285
	(A1 * A2 * !B1 * C1 * X)	-0.00059	-0.00062	-0.00080
	(A1 * A2 * !B1 * C1 * X)	0.00359	0.00358	0.00339
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00023	-0.00038	-0.00040
	(A1 * !A2 * !B1 * !C1 * !X)	0.00385	0.00371	0.00365
	(!A2 * B1 * X)	-0.00172	-0.00173	-0.00172
	(!A2 * B1 * X)	0.00234	0.00234	0.00233
	(!A2 * !B1 * C1 * X)	-0.00055	-0.00056	-0.00056
	(!A2 * !B1 * C1 * X)	0.00350	0.00351	0.00350
	(!A1 * A2 * B1 * X)	-0.00161	-0.00169	-0.00171
	(!A1 * A2 * B1 * X)	0.00233	0.00235	0.00233
	(!A1 * A2 * !B1 * C1 * X)	-0.00045	-0.00053	-0.00054
	(!A1 * A2 * !B1 * C1 * X)	0.00349	0.00352	0.00350
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00015	-0.00035	-0.00038
	(!A1 * A2 * !B1 * !C1 * !X)	0.00389	0.00374	0.00366
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00038	-0.00043	-0.00044
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00364	0.00362	0.00361

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00216	-0.00217	-0.00216
	(A1 * A2 * B1 * C1 * X)	0.00232	0.00233	0.00231
	(A1 * A2 * B1 * !C1 * X)	-0.00161	-0.00163	-0.00170
	(A1 * A2 * B1 * !C1 * X)	0.00290	0.00290	0.00282
	(A1 * A2 * !B1 * C1 * X)	-0.00101	-0.00104	-0.00121
	(A1 * A2 * !B1 * C1 * X)	0.00356	0.00355	0.00337
	(A1 * !A2 * !B1 * !C1 * !X)	0.00048	0.00033	0.00031
	(A1 * !A2 * !B1 * !C1 * !X)	0.00493	0.00480	0.00475
	(!A2 * B1 * X)	-0.00213	-0.00214	-0.00213
	(!A2 * B1 * X)	0.00231	0.00232	0.00231
	(!A2 * !B1 * C1 * X)	-0.00096	-0.00097	-0.00097
	(!A2 * !B1 * C1 * X)	0.00348	0.00348	0.00347
	(!A1 * A2 * B1 * X)	-0.00200	-0.00210	-0.00211
	(!A1 * A2 * B1 * X)	0.00230	0.00233	0.00231
	(!A1 * A2 * !B1 * C1 * X)	-0.00083	-0.00093	-0.00095
	(!A1 * A2 * !B1 * C1 * X)	0.00347	0.00349	0.00347
	(!A1 * A2 * !B1 * !C1 * !X)	0.00058	0.00036	0.00032
	(!A1 * A2 * !B1 * !C1 * !X)	0.00496	0.00482	0.00475
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00034	0.00029	0.00029
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00474	0.00473	0.00472

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00357	-0.00360	-0.00359
	(A1 * A2 * B1 * C1 * X)	0.00463	0.00467	0.00465
	(A1 * A2 * B1 * !C1 * X)	-0.00252	-0.00256	-0.00269
	(A1 * A2 * B1 * !C1 * X)	0.00584	0.00584	0.00566
	(A1 * A2 * !B1 * C1 * X)	-0.00131	-0.00137	-0.00170
	(A1 * A2 * !B1 * C1 * X)	0.00714	0.00713	0.00675
	(A1 * !A2 * !B1 * !C1 * !X)	0.00144	0.00114	0.00108
	(A1 * !A2 * !B1 * !C1 * !X)	0.00963	0.00944	0.00928
	(!A2 * B1 * X)	-0.00351	-0.00356	-0.00355
	(!A2 * B1 * X)	0.00463	0.00467	0.00465
	(!A2 * !B1 * C1 * X)	-0.00119	-0.00124	-0.00123
	(!A2 * !B1 * C1 * X)	0.00695	0.00699	0.00697
	(!A1 * A2 * B1 * X)	-0.00333	-0.00349	-0.00352
	(!A1 * A2 * B1 * X)	0.00465	0.00469	0.00465
	(!A1 * A2 * !B1 * C1 * X)	-0.00101	-0.00117	-0.00121
	(!A1 * A2 * !B1 * C1 * X)	0.00697	0.00701	0.00696
	(!A1 * A2 * !B1 * !C1 * !X)	0.00158	0.00118	0.00110
	(!A1 * A2 * !B1 * !C1 * !X)	0.00974	0.00945	0.00928
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00100	0.00100
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00918	0.00923	0.00918

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)**	0.00237	0.00230	0.00235
	(A1 * A2 * A3 * C1 * X)	-0.00119	-0.00128	-0.00116
	(A1 * A2 * A3 * !C1 * X)	0.00227	0.00228	0.00234
	(A1 * A2 * A3 * !C1 * X)	-0.00062	-0.00062	-0.00053
	(A1 * A2 * !A3 * C1 * X)	0.00279	0.00234	0.00304
	(A1 * A2 * !A3 * C1 * X)	-0.00134	-0.00182	-0.00106
	(A1 * !A2 * C1 * X)	0.00279	0.00234	0.00304
	(A1 * !A2 * C1 * X)	-0.00133	-0.00183	-0.00106
	(!A1 * C1 * X)	0.00277	0.00234	0.00304
	(!A1 * C1 * X)	-0.00135	-0.00182	-0.00106
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00269	0.00264	0.00269
	(A1 * A2 * A3 * C1 * X)	-0.00115	-0.00124	-0.00114
	(A1 * A2 * A3 * !C1 * X)	0.00264	0.00267	0.00270
	(A1 * A2 * A3 * !C1 * X)	-0.00061	-0.00061	-0.00050
	(A1 * A2 * !A3 * C1 * X)	0.00315	0.00267	0.00336
	(A1 * A2 * !A3 * C1 * X)	-0.00130	-0.00177	-0.00103
	(A1 * !A2 * C1 * X)	0.00315	0.00267	0.00336
	(A1 * !A2 * C1 * X)	-0.00130	-0.00177	-0.00103
	(!A1 * C1 * X)	0.00310	0.00266	0.00336
	(!A1 * C1 * X)	-0.00130	-0.00178	-0.00103
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00462	0.00449	0.00449
	(A1 * A2 * A3 * C1 * X)	-0.00250	-0.00266	-0.00254
	(A1 * A2 * A3 * !C1 * X)	0.00452	0.00456	0.00463
	(A1 * A2 * A3 * !C1 * X)	-0.00119	-0.00121	-0.00106
	(A1 * A2 * !A3 * C1 * X)	0.00580	0.00463	0.00591
	(A1 * A2 * !A3 * C1 * X)	-0.00233	-0.00360	-0.00220
	(A1 * !A2 * C1 * X)	0.00580	0.00463	0.00590
	(A1 * !A2 * C1 * X)	-0.00233	-0.00360	-0.00220
	(!A1 * C1 * X)	0.00579	0.00463	0.00590
	(!A1 * C1 * X)	-0.00234	-0.00360	-0.00220

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)	-0.00187	-0.00187	-0.00183
	(A1 * A2 * A3 * C1 * X)	0.00162	0.00163	0.00161
	(A1 * A2 * A3 * !C1 * X)	-0.00009	-0.00015	-0.00094
	(A1 * A2 * A3 * !C1 * X)	0.00283	0.00279	0.00202
	(A1 * A2 * !A3 * C1 * X)	-0.00065	-0.00069	-0.00090
	(A1 * A2 * !A3 * C1 * X)	0.00347	0.00346	0.00323
	(A1 * !A2 * C1 * X)	-0.00065	-0.00069	-0.00090
	(A1 * !A2 * C1 * X)	0.00347	0.00346	0.00323
	(!A1 * C1 * X)	-0.00065	-0.00069	-0.00090
	(!A1 * C1 * X)	0.00347	0.00346	0.00323
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00216	-0.00217	-0.00212
	(A1 * A2 * A3 * C1 * X)	0.00165	0.00166	0.00163
	(A1 * A2 * A3 * !C1 * X)	-0.00039	-0.00045	-0.00124
	(A1 * A2 * A3 * !C1 * X)	0.00285	0.00281	0.00204
	(A1 * A2 * !A3 * C1 * X)	-0.00092	-0.00097	-0.00117
	(A1 * A2 * !A3 * C1 * X)	0.00350	0.00348	0.00325
	(A1 * !A2 * C1 * X)	-0.00092	-0.00097	-0.00117
	(A1 * !A2 * C1 * X)	0.00350	0.00348	0.00325
	(!A1 * C1 * X)	-0.00092	-0.00095	-0.00116
	(!A1 * C1 * X)	0.00350	0.00346	0.00325

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00342	-0.00344	-0.00333
	(A1 * A2 * A3 * C1 * X)	0.00354	0.00357	0.00355
	(A1 * A2 * A3 * !C1 * X)	0.00000	-0.00011	-0.00171
	(A1 * A2 * A3 * !C1 * X)	0.00579	0.00572	0.00416
	(A1 * A2 * !A3 * C1 * X)	-0.00099	-0.00109	-0.00150
	(A1 * A2 * !A3 * C1 * X)	0.00715	0.00713	0.00666
	(A1 * !A2 * C1 * X)	-0.00099	-0.00109	-0.00149
	(A1 * !A2 * C1 * X)	0.00715	0.00713	0.00666
	(!A1 * C1 * X)	-0.00099	-0.00109	-0.00149
	(!A1 * C1 * X)	0.00715	0.00713	0.00666

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)	0.00231	0.00232	0.00232
	(A1 * A2 * B1 * X)	-0.00087	-0.00087	-0.00086
	(A1 * A2 * A3 * !B1 * X)	0.00235	0.00237	0.00247
	(A1 * A2 * A3 * !B1 * X)	-0.00049	-0.00049	-0.00039
	(A1 * !A2 * B1 * X)	0.00231	0.00233	0.00238
	(A1 * !A2 * B1 * X)	-0.00086	-0.00086	-0.00080
	(!A1 * B1 * X)	0.00231	0.00233	0.00238
	(!A1 * B1 * X)	-0.00086	-0.00086	-0.00080
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00230	0.00234	0.00231
	(A1 * A2 * B1 * X)	-0.00092	-0.00093	-0.00090
	(A1 * A2 * A3 * !B1 * X)	0.00236	0.00241	0.00248
	(A1 * A2 * A3 * !B1 * X)	-0.00054	-0.00055	-0.00043
	(A1 * !A2 * B1 * X)	0.00230	0.00235	0.00237
	(A1 * !A2 * B1 * X)	-0.00090	-0.00091	-0.00084
	(!A1 * B1 * X)	0.00230	0.00235	0.00237
	(!A1 * B1 * X)	-0.00090	-0.00091	-0.00084
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00385	0.00390	0.00385
	(A1 * A2 * B1 * X)	-0.00201	-0.00203	-0.00198
	(A1 * A2 * A3 * !B1 * X)	0.00391	0.00394	0.00412
	(A1 * A2 * A3 * !B1 * X)	-0.00129	-0.00129	-0.00111
	(A1 * !A2 * B1 * X)	0.00383	0.00392	0.00393
	(A1 * !A2 * B1 * X)	-0.00194	-0.00199	-0.00187
	(!A1 * B1 * X)	0.00383	0.00392	0.00393
	(!A1 * B1 * X)	-0.00194	-0.00199	-0.00187

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)	-0.00194	-0.00196	-0.00205
	(A1 * A2 * B1 * X)	0.00123	0.00124	0.00115
	(A1 * A2 * A3 * !B1 * X)	-0.00007	-0.00011	-0.00074
	(A1 * A2 * A3 * !B1 * X)	0.00292	0.00289	0.00227
	(A1 * !A2 * B1 * X)	-0.00146	-0.00149	-0.00181
	(A1 * !A2 * B1 * X)	0.00173	0.00171	0.00139
	(!A1 * B1 * X)	-0.00147	-0.00149	-0.00181
	(!A1 * B1 * X)	0.00173	0.00171	0.00139
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00188	-0.00190	-0.00199
	(A1 * A2 * B1 * X)	0.00132	0.00133	0.00124
	(A1 * A2 * A3 * !B1 * X)	-0.00002	-0.00007	-0.00070
	(A1 * A2 * A3 * !B1 * X)	0.00301	0.00298	0.00236
	(A1 * !A2 * B1 * X)	-0.00139	-0.00143	-0.00175
	(A1 * !A2 * B1 * X)	0.00182	0.00181	0.00148
	(!A1 * B1 * X)	-0.00139	-0.00143	-0.00175
	(!A1 * B1 * X)	0.00182	0.00181	0.00148
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00294	-0.00298	-0.00324
	(A1 * A2 * B1 * X)	0.00284	0.00286	0.00264
	(A1 * A2 * A3 * !B1 * X)	0.00082	0.00071	-0.00054
	(A1 * A2 * A3 * !B1 * X)	0.00626	0.00624	0.00499
	(A1 * !A2 * B1 * X)	-0.00194	-0.00199	-0.00261
	(A1 * !A2 * B1 * X)	0.00388	0.00386	0.00325
	(!A1 * B1 * X)	-0.00194	-0.00201	-0.00261
	(!A1 * B1 * X)	0.00388	0.00388	0.00325

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00286	0.00297	0.00286	0.00290	0.85472
sky130_fd_sc_hs__a31oi_2	0.00547	0.00538	0.00573	0.00434	1.59486
sky130_fd_sc_hs__a31oi_4	0.01108	0.01062	0.01060	0.00875	2.45530

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	66.98000	188.95000
sky130_fd_sc_hs__a31oi_2	0.00000	132.71400	377.87100
sky130_fd_sc_hs__a31oi_4	0.00000	265.15500	755.55100

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)	0.04838	0.64625	8.28419
	A2->Y (FR)	0.06170	0.67758	8.55807
	A3->Y (FR)	0.06768	0.67755	8.47262
	B1->Y (FR)	0.04556	0.72554	9.46519
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.04390	0.55227	8.35631
	A2->Y (FR)	0.05335	0.55672	8.31371
	A3->Y (FR)	0.06029	0.55231	8.10463
	B1->Y (FR)	0.03501	0.59521	9.07546
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.04492	0.46001	7.65019
	A2->Y (FR)	0.05767	0.45998	7.51038
	A3->Y (FR)	0.07090	0.48530	7.71062
	B1->Y (FR)	0.05156	0.54174	8.74382

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.03176	0.42498	5.35366
	A2->Y (RF)	0.03745	0.39447	4.84746
	A3->Y (RF)	0.03974	0.34828	4.15700
	B1->Y (RF)	0.01465	0.26021	3.30772
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.03146	0.39690	5.92807
	A2->Y (RF)	0.03516	0.32571	4.81069
	A3->Y (RF)	0.03905	0.29037	4.22533
	B1->Y (RF)	0.01787	0.37395	5.82680
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.03374	0.34270	5.63138
	A2->Y (RF)	0.03957	0.28017	4.58410
	A3->Y (RF)	0.04304	0.22720	3.71069
	B1->Y (RF)	0.01642	0.26625	4.68299

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00011	0.00451	0.08417
	A1	0.00776	0.01217	0.09162
	A2	0.00093	0.00522	0.08720
	A2	0.01012	0.01439	0.09613
	A3	0.00128	0.00580	0.09178
	A3	0.01198	0.01648	0.10220
	B1	-0.00052	0.00883	0.14242
	B1	0.00566	0.01505	0.14859
sky130_fd_sc_hs__a31oi_2	A1	0.00014	0.00900	0.15047
	A1	0.01455	0.02341	0.16627
	A2	0.00158	0.01106	0.16771
	A2	0.01882	0.02830	0.18436
	A3	0.00290	0.01228	0.17414
	A3	0.02329	0.03264	0.19429
	B1	0.00071	0.01440	0.18722
	B1	0.00958	0.02324	0.19732
sky130_fd_sc_hs__a31oi_4	A1	-0.00166	0.01644	0.28102
	A1	0.02786	0.04596	0.31047
	A2	0.00263	0.02151	0.31898
	A2	0.03781	0.05678	0.35397
	A3	0.00564	0.02544	0.33526
	A3	0.04687	0.06656	0.37656
	B1	-0.00039	0.02873	0.37299
	B1	0.01825	0.04756	0.39227

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.01361	0.01751	0.08219
	A1	0.00597	0.00986	0.07457
	A2	0.01497	0.01835	0.08200
	A2	0.00579	0.00908	0.07267
	A3	0.01626	0.01993	0.09384
	A3	0.00555	0.00923	0.08249
	B1	0.00784	0.01457	0.11169
	B1	0.00167	0.00834	0.10533
sky130_fd_sc_hs__a31oi_2	A1	0.02627	0.03386	0.14442
	A1	0.01186	0.01936	0.12828
	A2	0.02843	0.03618	0.16082
	A2	0.01123	0.01887	0.14307
	A3	0.03153	0.03970	0.18479
	A3	0.01111	0.01912	0.16311
	B1	0.01151	0.02083	0.13597
	B1	0.00266	0.01186	0.12629
sky130_fd_sc_hs__a31oi_4	A1	0.05267	0.06723	0.27313
	A1	0.02315	0.03744	0.24291
	A2	0.05697	0.07221	0.30887
	A2	0.02180	0.03696	0.27177
	A3	0.06243	0.07943	0.36331
	A3	0.02115	0.03806	0.32022
	B1	0.02303	0.04420	0.28628
	B1	0.00439	0.02547	0.26744

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)**	0.00306	0.00258	0.00301
	(A2 * A3 * B1 * !Y)	-0.00143	-0.00195	-0.00145
	(A2 * !A3 * B1 * !Y)	0.00298	0.00298	0.00298
	(A2 * !A3 * B1 * !Y)	-0.00139	-0.00139	-0.00139
	(A2 * !A3 * !B1 * Y)	0.00061	0.00062	0.00057
	(A2 * !A3 * !B1 * Y)	-0.00274	-0.00277	-0.00287
	(!A2 * B1 * !Y)	0.00301	0.00303	0.00301
	(!A2 * B1 * !Y)	-0.00139	-0.00141	-0.00139
	(!A2 * !B1 * Y)	0.00063	0.00063	0.00060
	(!A2 * !B1 * Y)	-0.00282	-0.00284	-0.00287
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00632	0.00522	0.00606
	(A2 * A3 * B1 * !Y)	-0.00280	-0.00395	-0.00299
	(A2 * !A3 * B1 * !Y)	0.00592	0.00594	0.00591
	(A2 * !A3 * B1 * !Y)	-0.00289	-0.00291	-0.00288
	(A2 * !A3 * !B1 * Y)	0.00119	0.00119	0.00109
	(A2 * !A3 * !B1 * Y)	-0.00564	-0.00568	-0.00592
	(!A2 * B1 * !Y)	0.00600	0.00603	0.00601
	(!A2 * B1 * !Y)	-0.00287	-0.00291	-0.00288
	(!A2 * !B1 * Y)	0.00115	0.00115	0.00110
	(!A2 * !B1 * Y)	-0.00581	-0.00585	-0.00596
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.01303	0.01071	0.01238
	(A2 * A3 * B1 * !Y)	-0.00537	-0.00777	-0.00588
	(A2 * !A3 * B1 * !Y)	0.01204	0.01209	0.01206
	(A2 * !A3 * B1 * !Y)	-0.00559	-0.00567	-0.00564
	(A2 * !A3 * !B1 * Y)	0.00254	0.00254	0.00229
	(A2 * !A3 * !B1 * Y)	-0.01131	-0.01136	-0.01185
	(!A2 * B1 * !Y)	0.01232	0.01236	0.01231
	(!A2 * B1 * !Y)	-0.00564	-0.00569	-0.00564
	(!A2 * !B1 * Y)	0.00260	0.00259	0.00244
	(!A2 * !B1 * Y)	-0.01165	-0.01168	-0.01191

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)	-0.00096	-0.00099	-0.00113
	(A2 * A3 * B1 * !Y)	0.00352	0.00352	0.00336
	(A2 * !A3 * B1 * !Y)	-0.00078	-0.00090	-0.00091
	(A2 * !A3 * B1 * !Y)	0.00346	0.00350	0.00348
	(A2 * !A3 * !B1 * Y)	-0.00050	-0.00050	-0.00049
	(A2 * !A3 * !B1 * Y)	0.00293	0.00296	0.00294
	(!A2 * B1 * !Y)	-0.00091	-0.00093	-0.00093
	(!A2 * B1 * !Y)	0.00347	0.00348	0.00347
	(!A2 * !B1 * Y)	-0.00053	-0.00054	-0.00052
	(!A2 * !B1 * Y)	0.00294	0.00299	0.00294
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00197	-0.00204	-0.00231
	(A2 * A3 * B1 * !Y)	0.00713	0.00713	0.00681
	(A2 * !A3 * B1 * !Y)	-0.00155	-0.00185	-0.00185
	(A2 * !A3 * B1 * !Y)	0.00704	0.00708	0.00705
	(A2 * !A3 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(A2 * !A3 * !B1 * Y)	0.00601	0.00606	0.00602
	(!A2 * B1 * !Y)	-0.00184	-0.00189	-0.00189
	(!A2 * B1 * !Y)	0.00703	0.00709	0.00705
	(!A2 * !B1 * Y)	-0.00099	-0.00101	-0.00099
	(!A2 * !B1 * Y)	0.00602	0.00615	0.00605

sky130_fd_sc_hs__a31oi_4	(A2 * A3 * B1 * !Y)	-0.00424	-0.00435	-0.00489
	(A2 * A3 * B1 * !Y)	0.01416	0.01413	0.01348
	(A2 * !A3 * B1 * !Y)	-0.00336	-0.00395	-0.00399
	(A2 * !A3 * B1 * !Y)	0.01397	0.01399	0.01395
	(A2 * !A3 * !B1 * Y)	-0.00208	-0.00209	-0.00208
	(A2 * !A3 * !B1 * Y)	0.01201	0.01208	0.01206
	(!A2 * B1 * !Y)	-0.00399	-0.00408	-0.00406
	(!A2 * B1 * !Y)	0.01396	0.01405	0.01396
	(!A2 * !B1 * Y)	-0.00223	-0.00223	-0.00222
	(!A2 * !B1 * Y)	0.01205	0.01207	0.01209

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)	0.00318	0.00272	0.00314
	(A1 * A3 * B1 * !Y)	-0.00143	-0.00195	-0.00145
	(A1 * !A3 * B1 * !Y)	0.00311	0.00313	0.00312
	(A1 * !A3 * B1 * !Y)	-0.00138	-0.00140	-0.00139
	(A1 * !A3 * !B1 * Y)	0.00071	0.00072	0.00072
	(A1 * !A3 * !B1 * Y)	-0.00266	-0.00268	-0.00266
	(!A1 * A3 * B1 * !Y)	0.00311	0.00314	0.00313
	(!A1 * A3 * B1 * !Y)	-0.00138	-0.00140	-0.00139
	(!A1 * A3 * !B1 * Y)	0.00190	0.00193	0.00191
	(!A1 * A3 * !B1 * Y)	-0.00263	-0.00265	-0.00264
	(!A1 * !A3 * B1 * !Y)	0.00224	0.00224	0.00224
	(!A1 * !A3 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A1 * !A3 * !B1 * Y)	0.00092	0.00093	0.00092
	(!A1 * !A3 * !B1 * Y)	-0.00267	-0.00267	-0.00267

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00595	0.00498	0.00577
	(A1 * A3 * B1 * !Y)	-0.00290	-0.00397	-0.00302
	(A1 * !A3 * B1 * !Y)	0.00571	0.00575	0.00572
	(A1 * !A3 * B1 * !Y)	-0.00290	-0.00294	-0.00291
	(A1 * !A3 * !B1 * Y)	0.00140	0.00142	0.00140
	(A1 * !A3 * !B1 * Y)	-0.00497	-0.00502	-0.00498
	(!A1 * A3 * B1 * !Y)	0.00572	0.00575	0.00572
	(!A1 * A3 * B1 * !Y)	-0.00292	-0.00294	-0.00291
	(!A1 * A3 * !B1 * Y)	0.00376	0.00381	0.00377
	(!A1 * A3 * !B1 * Y)	-0.00491	-0.00495	-0.00492
	(!A1 * !A3 * B1 * !Y)	0.00397	0.00399	0.00397
	(!A1 * !A3 * B1 * !Y)	-0.00290	-0.00294	-0.00291
	(!A1 * !A3 * !B1 * Y)	0.00179	0.00181	0.00179
	(!A1 * !A3 * !B1 * Y)	-0.00502	-0.00506	-0.00503
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.01249	0.01028	0.01198
	(A1 * A3 * B1 * !Y)	-0.00569	-0.00798	-0.00608
	(A1 * !A3 * B1 * !Y)	0.01181	0.01185	0.01182
	(A1 * !A3 * B1 * !Y)	-0.00584	-0.00591	-0.00586
	(A1 * !A3 * !B1 * Y)	0.00301	0.00306	0.00306
	(A1 * !A3 * !B1 * Y)	-0.01004	-0.01012	-0.01004
	(!A1 * A3 * B1 * !Y)	0.01189	0.01192	0.01189
	(!A1 * A3 * B1 * !Y)	-0.00586	-0.00590	-0.00586
	(!A1 * A3 * !B1 * Y)	0.00792	0.00792	0.00793
	(!A1 * A3 * !B1 * Y)	-0.00995	-0.00992	-0.00992
	(!A1 * !A3 * B1 * !Y)	0.00834	0.00840	0.00834
	(!A1 * !A3 * B1 * !Y)	-0.00584	-0.00593	-0.00587
	(!A1 * !A3 * !B1 * Y)	0.00397	0.00402	0.00397
	(!A1 * !A3 * !B1 * Y)	-0.01010	-0.01017	-0.01011

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)	-0.00109	-0.00113	-0.00126
	(A1 * A3 * B1 * !Y)	0.00352	0.00353	0.00335
	(A1 * !A3 * B1 * !Y)	-0.00104	-0.00108	-0.00105
	(A1 * !A3 * B1 * !Y)	0.00347	0.00351	0.00347
	(A1 * !A3 * !B1 * Y)	-0.00061	-0.00062	-0.00063
	(A1 * !A3 * !B1 * Y)	0.00280	0.00283	0.00275
	(!A1 * A3 * B1 * !Y)	-0.00105	-0.00107	-0.00106
	(!A1 * A3 * B1 * !Y)	0.00348	0.00350	0.00347
	(!A1 * A3 * !B1 * Y)	-0.00153	-0.00178	-0.00178
	(!A1 * A3 * !B1 * Y)	0.00304	0.00282	0.00275
	(!A1 * !A3 * B1 * !Y)	-0.00029	-0.00029	-0.00022
	(!A1 * !A3 * B1 * !Y)	0.00347	0.00349	0.00348
	(!A1 * !A3 * !B1 * Y)	-0.00089	-0.00088	-0.00091
	(!A1 * !A3 * !B1 * Y)	0.00284	0.00287	0.00276
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00169	-0.00174	-0.00202
	(A1 * A3 * B1 * !Y)	0.00718	0.00715	0.00684
	(A1 * !A3 * B1 * !Y)	-0.00156	-0.00159	-0.00159
	(A1 * !A3 * B1 * !Y)	0.00708	0.00709	0.00708
	(A1 * !A3 * !B1 * Y)	-0.00124	-0.00124	-0.00126
	(A1 * !A3 * !B1 * Y)	0.00526	0.00526	0.00512
	(!A1 * A3 * B1 * !Y)	-0.00156	-0.00163	-0.00159
	(!A1 * A3 * B1 * !Y)	0.00709	0.00714	0.00708
	(!A1 * A3 * !B1 * Y)	-0.00305	-0.00358	-0.00358
	(!A1 * A3 * !B1 * Y)	0.00568	0.00523	0.00510
	(!A1 * !A3 * B1 * !Y)	-0.00008	-0.00009	0.00006
	(!A1 * !A3 * B1 * !Y)	0.00707	0.00712	0.00708
	(!A1 * !A3 * !B1 * Y)	-0.00175	-0.00175	-0.00179
	(!A1 * !A3 * !B1 * Y)	0.00534	0.00540	0.00518

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00382	-0.00391	-0.00448
	(A1 * A3 * B1 * !Y)	0.01439	0.01431	0.01370
	(A1 * !A3 * B1 * !Y)	-0.00351	-0.00359	-0.00360
	(A1 * !A3 * B1 * !Y)	0.01415	0.01422	0.01418
	(A1 * !A3 * !B1 * Y)	-0.00268	-0.00272	-0.00280
	(A1 * !A3 * !B1 * Y)	0.01051	0.01062	0.01032
	(!A1 * A3 * B1 * !Y)	-0.00355	-0.00373	-0.00365
	(!A1 * A3 * B1 * !Y)	0.01416	0.01431	0.01418
	(!A1 * A3 * !B1 * Y)	-0.00617	-0.00750	-0.00755
	(!A1 * A3 * !B1 * Y)	0.01170	0.01040	0.01028
	(!A1 * !A3 * B1 * !Y)	-0.00057	-0.00061	-0.00030
	(!A1 * !A3 * B1 * !Y)	0.01415	0.01427	0.01420
	(!A1 * !A3 * !B1 * Y)	-0.00385	-0.00387	-0.00397
	(!A1 * !A3 * !B1 * Y)	0.01073	0.01089	0.01042

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)**	0.00324	0.00279	0.00321
	(A1 * A2 * B1 * !Y)	-0.00153	-0.00203	-0.00153
	(A1 * !A2 * !B1 * Y)	0.00208	0.00211	0.00208
	(A1 * !A2 * !B1 * Y)	-0.00262	-0.00263	-0.00262
	(!A2 * B1 * !Y)	0.00320	0.00321	0.00320
	(!A2 * B1 * !Y)	-0.00146	-0.00147	-0.00146
	(!A1 * A2 * B1 * !Y)	0.00318	0.00318	0.00318
	(!A1 * A2 * B1 * !Y)	-0.00146	-0.00147	-0.00146
	(!A1 * A2 * !B1 * Y)	0.00206	0.00206	0.00206
	(!A1 * A2 * !B1 * Y)	-0.00260	-0.00261	-0.00260
	(!A1 * !A2 * !B1 * Y)	0.00204	0.00207	0.00204
	(!A1 * !A2 * !B1 * Y)	-0.00262	-0.00264	-0.00263

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00637	0.00529	0.00615
	(A1 * A2 * B1 * !Y)	-0.00284	-0.00391	-0.00298
	(A1 * !A2 * !B1 * Y)	0.00402	0.00405	0.00404
	(A1 * !A2 * !B1 * Y)	-0.00490	-0.00492	-0.00490
	(!A2 * B1 * !Y)	0.00610	0.00615	0.00611
	(!A2 * B1 * !Y)	-0.00285	-0.00289	-0.00286
	(!A1 * A2 * B1 * !Y)	0.00605	0.00608	0.00606
	(!A1 * A2 * B1 * !Y)	-0.00284	-0.00288	-0.00286
	(!A1 * A2 * !B1 * Y)	0.00408	0.00407	0.00408
	(!A1 * A2 * !B1 * Y)	-0.00487	-0.00487	-0.00487
	(!A1 * !A2 * !B1 * Y)	0.00397	0.00403	0.00398
	(!A1 * !A2 * !B1 * Y)	-0.00492	-0.00495	-0.00492
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.01237	0.01022	0.01191
	(A1 * A2 * B1 * !Y)	-0.00579	-0.00796	-0.00605
	(A1 * !A2 * !B1 * Y)	0.00788	0.00792	0.00789
	(A1 * !A2 * !B1 * Y)	-0.00984	-0.00986	-0.00983
	(!A2 * B1 * !Y)	0.01179	0.01187	0.01178
	(!A2 * B1 * !Y)	-0.00582	-0.00588	-0.00582
	(!A1 * A2 * B1 * !Y)	0.01177	0.01178	0.01174
	(!A1 * A2 * B1 * !Y)	-0.00583	-0.00585	-0.00582
	(!A1 * A2 * !B1 * Y)	0.00781	0.00788	0.00780
	(!A1 * A2 * !B1 * Y)	-0.00986	-0.00989	-0.00982
	(!A1 * !A2 * !B1 * Y)	0.00765	0.00778	0.00768
	(!A1 * !A2 * !B1 * Y)	-0.00991	-0.00998	-0.00992

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)**	-0.00117	-0.00120	-0.00134
	(A1 * A2 * B1 * !Y)	0.00359	0.00358	0.00343
	(A1 * !A2 * !B1 * Y)	-0.00180	-0.00194	-0.00196
	(A1 * !A2 * !B1 * Y)	0.00289	0.00276	0.00272
	(!A2 * B1 * !Y)	-0.00113	-0.00113	-0.00113
	(!A2 * B1 * !Y)	0.00355	0.00356	0.00355
	(!A1 * A2 * B1 * !Y)	-0.00100	-0.00109	-0.00112
	(!A1 * A2 * B1 * !Y)	0.00354	0.00355	0.00355
	(!A1 * A2 * !B1 * Y)	-0.00170	-0.00192	-0.00195
	(!A1 * A2 * !B1 * Y)	0.00291	0.00278	0.00271
	(!A1 * !A2 * !B1 * Y)	-0.00193	-0.00198	-0.00198
	(!A1 * !A2 * !B1 * Y)	0.00270	0.00268	0.00269
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00207	-0.00213	-0.00239
	(A1 * A2 * B1 * !Y)	0.00712	0.00713	0.00679
	(A1 * !A2 * !B1 * Y)	-0.00343	-0.00384	-0.00386
	(A1 * !A2 * !B1 * Y)	0.00550	0.00524	0.00509
	(!A2 * B1 * !Y)	-0.00193	-0.00198	-0.00198
	(!A2 * B1 * !Y)	0.00700	0.00705	0.00703
	(!A1 * A2 * B1 * !Y)	-0.00167	-0.00187	-0.00192
	(!A1 * A2 * B1 * !Y)	0.00702	0.00708	0.00703
	(!A1 * A2 * !B1 * Y)	-0.00331	-0.00381	-0.00391
	(!A1 * A2 * !B1 * Y)	0.00555	0.00521	0.00504
	(!A1 * !A2 * !B1 * Y)	-0.00375	-0.00391	-0.00393
	(!A1 * !A2 * !B1 * Y)	0.00506	0.00504	0.00500

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00376	-0.00388	-0.00442
	(A1 * A2 * B1 * !Y)	0.01434	0.01435	0.01366
	(A1 * !A2 * !B1 * Y)	-0.00662	-0.00742	-0.00751
	(A1 * !A2 * !B1 * Y)	0.01101	0.01039	0.01020
	(!A2 * B1 * !Y)	-0.00346	-0.00356	-0.00355
	(!A2 * B1 * !Y)	0.01411	0.01420	0.01414
	(!A1 * A2 * B1 * !Y)	-0.00296	-0.00341	-0.00349
	(!A1 * A2 * B1 * !Y)	0.01416	0.01417	0.01414
	(!A1 * A2 * !B1 * Y)	-0.00622	-0.00726	-0.00747
	(!A1 * A2 * !B1 * Y)	0.01125	0.01049	0.01016
	(!A1 * !A2 * !B1 * Y)	-0.00729	-0.00759	-0.00761
	(!A1 * !A2 * !B1 * Y)	0.01010	0.01012	0.01007

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)**	0.00253	0.00256	0.00262
	(A1 * A2 * A3 * !Y)	-0.00077	-0.00078	-0.00066
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00268	0.00272	0.00288
	(A1 * A2 * A3 * !Y)	-0.00155	-0.00156	-0.00133
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00557	0.00571	0.00601
	(A1 * A2 * A3 * !Y)	-0.00313	-0.00319	-0.00271

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)	-0.00025	-0.00030	-0.00106
	(A1 * A2 * A3 * !Y)	0.00307	0.00303	0.00228
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	0.00187	0.00177	0.00026
	(A1 * A2 * A3 * !Y)	0.00617	0.00609	0.00463
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	0.00344	0.00323	0.00022
	(A1 * A2 * A3 * !Y)	0.01240	0.01225	0.00926

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00257	0.00256	0.00256	0.00276	1.69296
sky130_fd_sc_hs__a31o_2	0.00284	0.00276	0.00279	0.00268	3.17831
sky130_fd_sc_hs__a31o_4	0.00504	0.00495	0.00494	0.00502	6.28445

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	132.40500	202.28400
sky130_fd_sc_hs__a31o_2	0.00000	184.80900	244.60600
sky130_fd_sc_hs__a31o_4	0.00000	372.42600	498.87400

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)	0.06305	0.45277	6.00606
	A2->X (RR)	0.06800	0.44254	5.80798
	A3->X (RR)	0.07094	0.41981	5.47842
	B1->X (RR)	0.04157	0.37876	5.02003
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.06627	0.37648	5.62939
	A2->X (RR)	0.07101	0.36368	5.41875
	A3->X (RR)	0.07388	0.34153	5.15075
	B1->X (RR)	0.04091	0.29956	4.69385
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.07947	0.35337	6.08295
	A2->X (RR)	0.08491	0.33060	5.79057
	A3->X (RR)	0.08872	0.30564	5.52876
	B1->X (RR)	0.04085	0.24372	4.87506

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.07393	0.42721	5.22202
	A2->X (FF)	0.08610	0.45264	5.39966
	A3->X (FF)	0.09216	0.46798	5.58307
	B1->X (FF)	0.07128	0.48849	6.16990
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.09528	0.42489	5.24459
	A2->X (FF)	0.11089	0.45359	5.44006
	A3->X (FF)	0.11427	0.46079	5.56137
	B1->X (FF)	0.09352	0.49099	6.12361
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.09497	0.38221	5.33304
	A2->X (FF)	0.10684	0.40931	5.58776
	A3->X (FF)	0.11766	0.43200	5.84415
	B1->X (FF)	0.09927	0.46560	6.29156

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.01848	0.02926	0.22394
	A1	0.01165	0.02246	0.21790
	A2	0.01963	0.02927	0.22109
	A2	0.01163	0.02129	0.21314
	A3	0.02087	0.02926	0.20292
	A3	0.01157	0.01996	0.19402
	B1	0.01337	0.02947	0.28224
	B1	0.00763	0.02374	0.27679
sky130_fd_sc_hs__a31o_2	A1	0.02390	0.03381	0.22691
	A1	0.01652	0.02647	0.22020
	A2	0.02518	0.03392	0.22506
	A2	0.01649	0.02523	0.21690
	A3	0.02659	0.03429	0.21024
	A3	0.01640	0.02416	0.19981
	B1	0.01728	0.03286	0.27995
	B1	0.01141	0.02701	0.27385
sky130_fd_sc_hs__a31o_4	A1	0.04952	0.06858	0.44383
	A1	0.03579	0.05488	0.43194
	A2	0.05197	0.06871	0.44754
	A2	0.03571	0.05257	0.43157
	A3	0.05460	0.07077	0.47014
	A3	0.03563	0.05189	0.45265
	B1	0.03201	0.06549	0.58650
	B1	0.02166	0.05512	0.57562

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00723	0.01642	0.19423
	A1	0.01406	0.02323	0.20015
	A2	0.00827	0.01726	0.19298
	A2	0.01628	0.02514	0.20000
	A3	0.00866	0.01722	0.19680
	A3	0.01795	0.02647	0.20505
	B1	0.00590	0.02211	0.28041
	B1	0.01164	0.02785	0.28606
sky130_fd_sc_hs__a31o_2	A1	0.01608	0.02207	0.19534
	A1	0.02346	0.02916	0.20124
	A2	0.01831	0.02292	0.19620
	A2	0.02702	0.03159	0.20343
	A3	0.01887	0.02330	0.20536
	A3	0.02904	0.03345	0.21330
	B1	0.01358	0.02755	0.28027
	B1	0.01946	0.03322	0.28403
sky130_fd_sc_hs__a31o_4	A1	0.03355	0.04430	0.40954
	A1	0.04730	0.05787	0.41912
	A2	0.03704	0.04633	0.41282
	A2	0.05328	0.06256	0.42905
	A3	0.04057	0.04880	0.44461
	A3	0.05949	0.06754	0.45564
	B1	0.02847	0.05623	0.57072
	B1	0.03886	0.06653	0.57337

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)**	0.00280	0.00232	0.00288
	(A2 * A3 * B1 * X)	-0.00126	-0.00176	-0.00113
	(A2 * !A3 * B1 * X)	0.00288	0.00290	0.00289
	(A2 * !A3 * B1 * X)	-0.00103	-0.00105	-0.00103
	(A2 * !A3 * !B1 * !X)	0.00157	0.00157	0.00153
	(A2 * !A3 * !B1 * !X)	-0.00149	-0.00150	-0.00159
	(!A2 * B1 * X)	0.00292	0.00292	0.00292
	(!A2 * B1 * X)	-0.00102	-0.00103	-0.00103
	(!A2 * !B1 * !X)	0.00159	0.00159	0.00155
	(!A2 * !B1 * !X)	-0.00154	-0.00156	-0.00160
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00323	0.00272	0.00332
	(A2 * A3 * B1 * X)	-0.00114	-0.00165	-0.00102
	(A2 * !A3 * B1 * X)	0.00330	0.00332	0.00330
	(A2 * !A3 * B1 * X)	-0.00092	-0.00094	-0.00093
	(A2 * !A3 * !B1 * !X)	0.00270	0.00270	0.00266
	(A2 * !A3 * !B1 * !X)	-0.00054	-0.00054	-0.00066
	(!A2 * B1 * X)	0.00335	0.00336	0.00335
	(!A2 * B1 * X)	-0.00091	-0.00094	-0.00092
	(!A2 * !B1 * !X)	0.00272	0.00272	0.00268
	(!A2 * !B1 * !X)	-0.00062	-0.00063	-0.00067
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00608	0.00497	0.00606
	(A2 * A3 * B1 * X)	-0.00227	-0.00341	-0.00221
	(A2 * !A3 * B1 * X)	0.00605	0.00607	0.00605
	(A2 * !A3 * B1 * X)	-0.00202	-0.00206	-0.00203
	(A2 * !A3 * !B1 * !X)	0.00541	0.00541	0.00530
	(A2 * !A3 * !B1 * !X)	-0.00091	-0.00092	-0.00119
	(!A2 * B1 * X)	0.00608	0.00610	0.00608
	(!A2 * B1 * X)	-0.00202	-0.00206	-0.00203
	(!A2 * !B1 * !X)	0.00542	0.00542	0.00534
	(!A2 * !B1 * !X)	-0.00109	-0.00112	-0.00122

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)	-0.00044	-0.00048	-0.00067
	(A2 * A3 * B1 * X)	0.00359	0.00358	0.00337
	(A2 * !A3 * B1 * X)	-0.00029	-0.00038	-0.00039
	(A2 * !A3 * B1 * X)	0.00354	0.00357	0.00354
	(A2 * !A3 * !B1 * !X)	0.00069	0.00069	0.00069
	(A2 * !A3 * !B1 * !X)	0.00379	0.00380	0.00379
	(!A2 * B1 * X)	-0.00040	-0.00041	-0.00041
	(!A2 * B1 * X)	0.00354	0.00356	0.00354
	(!A2 * !B1 * !X)	0.00065	0.00064	0.00066
	(!A2 * !B1 * !X)	0.00379	0.00383	0.00379
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00083	-0.00088	-0.00106
	(A2 * A3 * B1 * X)	0.00353	0.00353	0.00331
	(A2 * !A3 * B1 * X)	-0.00064	-0.00075	-0.00078
	(A2 * !A3 * B1 * X)	0.00347	0.00351	0.00349
	(A2 * !A3 * !B1 * !X)	0.00158	0.00158	0.00158
	(A2 * !A3 * !B1 * !X)	0.00489	0.00490	0.00490
	(!A2 * B1 * X)	-0.00078	-0.00080	-0.00080
	(!A2 * B1 * X)	0.00348	0.00350	0.00348
	(!A2 * !B1 * !X)	0.00155	0.00154	0.00155
	(!A2 * !B1 * !X)	0.00490	0.00492	0.00490

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00107	-0.00114	-0.00152
	(A2 * A3 * B1 * X)	0.00725	0.00723	0.00681
	(A2 * !A3 * B1 * X)	-0.00071	-0.00094	-0.00096
	(A2 * !A3 * B1 * X)	0.00714	0.00721	0.00715
	(A2 * !A3 * !B1 * !X)	0.00330	0.00328	0.00330
	(A2 * !A3 * !B1 * !X)	0.00975	0.00981	0.00977
	(!A2 * B1 * X)	-0.00097	-0.00100	-0.00100
	(!A2 * B1 * X)	0.00717	0.00718	0.00715
	(!A2 * !B1 * !X)	0.00324	0.00322	0.00325
	(!A2 * !B1 * !X)	0.00977	0.00981	0.00977

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)**	0.00277	0.00230	0.00286
	(A1 * A3 * B1 * X)	-0.00126	-0.00176	-0.00112
	(A1 * !A3 * B1 * X)	0.00288	0.00289	0.00288
	(A1 * !A3 * B1 * X)	-0.00102	-0.00104	-0.00103
	(A1 * !A3 * !B1 * !X)	0.00165	0.00166	0.00165
	(A1 * !A3 * !B1 * !X)	-0.00126	-0.00129	-0.00127
	(!A1 * A3 * B1 * X)	0.00289	0.00291	0.00289
	(!A1 * A3 * B1 * X)	-0.00101	-0.00104	-0.00102
	(!A1 * A3 * !B1 * !X)	0.00271	0.00273	0.00271
	(!A1 * A3 * !B1 * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * !A3 * B1 * X)	0.00211	0.00211	0.00210
	(!A1 * !A3 * B1 * X)	-0.00102	-0.00104	-0.00102
	(!A1 * !A3 * !B1 * !X)	0.00182	0.00182	0.00182
	(!A1 * !A3 * !B1 * !X)	-0.00127	-0.00127	-0.00128

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00315	0.00264	0.00324
	(A1 * A3 * B1 * X)	-0.00115	-0.00165	-0.00102
	(A1 * !A3 * B1 * X)	0.00327	0.00329	0.00327
	(A1 * !A3 * B1 * X)	-0.00092	-0.00094	-0.00093
	(A1 * !A3 * !B1 * !X)	0.00279	0.00280	0.00280
	(A1 * !A3 * !B1 * !X)	-0.00026	-0.00028	-0.00026
	(!A1 * A3 * B1 * X)	0.00328	0.00330	0.00328
	(!A1 * A3 * B1 * X)	-0.00091	-0.00093	-0.00092
	(!A1 * A3 * !B1 * !X)	0.00398	0.00399	0.00398
	(!A1 * A3 * !B1 * !X)	-0.00023	-0.00024	-0.00024
	(!A1 * !A3 * B1 * X)	0.00239	0.00240	0.00239
	(!A1 * !A3 * B1 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * !A3 * !B1 * !X)	0.00301	0.00301	0.00301
	(!A1 * !A3 * !B1 * !X)	-0.00026	-0.00028	-0.00027
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00607	0.00494	0.00602
	(A1 * A3 * B1 * X)	-0.00231	-0.00344	-0.00225
	(A1 * !A3 * B1 * X)	0.00601	0.00603	0.00601
	(A1 * !A3 * B1 * X)	-0.00206	-0.00210	-0.00208
	(A1 * !A3 * !B1 * !X)	0.00569	0.00571	0.00570
	(A1 * !A3 * !B1 * !X)	-0.00042	-0.00046	-0.00042
	(!A1 * A3 * B1 * X)	0.00605	0.00608	0.00605
	(!A1 * A3 * B1 * X)	-0.00208	-0.00210	-0.00208
	(!A1 * A3 * !B1 * !X)	0.00787	0.00793	0.00788
	(!A1 * A3 * !B1 * !X)	-0.00028	-0.00033	-0.00031
	(!A1 * !A3 * B1 * X)	0.00451	0.00451	0.00451
	(!A1 * !A3 * B1 * X)	-0.00207	-0.00207	-0.00208
	(!A1 * !A3 * !B1 * !X)	0.00608	0.00610	0.00608
	(!A1 * !A3 * !B1 * !X)	-0.00044	-0.00047	-0.00045

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)	-0.00042	-0.00045	-0.00065
	(A1 * A3 * B1 * X)	0.00359	0.00357	0.00336
	(A1 * !A3 * B1 * X)	-0.00037	-0.00039	-0.00038
	(A1 * !A3 * B1 * X)	0.00354	0.00357	0.00354
	(A1 * !A3 * !B1 * !X)	0.00058	0.00058	0.00057
	(A1 * !A3 * !B1 * !X)	0.00354	0.00356	0.00349
	(!A1 * A3 * B1 * X)	-0.00036	-0.00039	-0.00038
	(!A1 * A3 * B1 * X)	0.00352	0.00356	0.00354
	(!A1 * A3 * !B1 * !X)	-0.00018	-0.00041	-0.00041
	(!A1 * A3 * !B1 * !X)	0.00374	0.00357	0.00351
	(!A1 * !A3 * B1 * X)	0.00030	0.00030	0.00036
	(!A1 * !A3 * B1 * X)	0.00354	0.00356	0.00354
	(!A1 * !A3 * !B1 * !X)	0.00035	0.00035	0.00033
	(!A1 * !A3 * !B1 * !X)	0.00355	0.00358	0.00349
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00076	-0.00080	-0.00099
	(A1 * A3 * B1 * X)	0.00353	0.00353	0.00331
	(A1 * !A3 * B1 * X)	-0.00071	-0.00073	-0.00072
	(A1 * !A3 * B1 * X)	0.00348	0.00351	0.00348
	(A1 * !A3 * !B1 * !X)	0.00147	0.00146	0.00145
	(A1 * !A3 * !B1 * !X)	0.00455	0.00458	0.00451
	(!A1 * A3 * B1 * X)	-0.00071	-0.00074	-0.00072
	(!A1 * A3 * B1 * X)	0.00349	0.00351	0.00348
	(!A1 * A3 * !B1 * !X)	0.00056	0.00031	0.00030
	(!A1 * A3 * !B1 * !X)	0.00479	0.00458	0.00451
	(!A1 * !A3 * B1 * X)	0.00004	0.00004	0.00011
	(!A1 * !A3 * B1 * X)	0.00348	0.00350	0.00349
	(!A1 * !A3 * !B1 * !X)	0.00119	0.00119	0.00117
	(!A1 * !A3 * !B1 * !X)	0.00460	0.00462	0.00452

sky130_fd_sc_hs__a31o_4	(A1 * A3 * B1 * X)	-0.00104	-0.00111	-0.00149
	(A1 * A3 * B1 * X)	0.00732	0.00729	0.00685
	(A1 * !A3 * B1 * X)	-0.00090	-0.00095	-0.00094
	(A1 * !A3 * B1 * X)	0.00719	0.00719	0.00719
	(A1 * !A3 * !B1 * !X)	0.00296	0.00294	0.00291
	(A1 * !A3 * !B1 * !X)	0.00912	0.00917	0.00902
	(!A1 * A3 * B1 * X)	-0.00092	-0.00099	-0.00095
	(!A1 * A3 * B1 * X)	0.00719	0.00725	0.00719
	(!A1 * A3 * !B1 * !X)	0.00140	0.00085	0.00087
	(!A1 * A3 * !B1 * !X)	0.00961	0.00914	0.00903
	(!A1 * !A3 * B1 * X)	0.00036	0.00037	0.00050
	(!A1 * !A3 * B1 * X)	0.00723	0.00724	0.00721
	(!A1 * !A3 * !B1 * !X)	0.00246	0.00246	0.00240
	(!A1 * !A3 * !B1 * !X)	0.00928	0.00929	0.00908

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)	0.00287	0.00245	0.00302
	(A1 * A2 * B1 * X)	-0.00126	-0.00173	-0.00109
	(A1 * !A2 * !B1 * !X)	0.00273	0.00275	0.00273
	(A1 * !A2 * !B1 * !X)	-0.00133	-0.00134	-0.00133
	(!A2 * B1 * X)	0.00306	0.00307	0.00305
	(!A2 * B1 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * A2 * B1 * X)	0.00303	0.00305	0.00303
	(!A1 * A2 * B1 * X)	-0.00098	-0.00100	-0.00099
	(!A1 * A2 * !B1 * !X)	0.00272	0.00274	0.00272
	(!A1 * A2 * !B1 * !X)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * !B1 * !X)	0.00267	0.00269	0.00268
	(!A1 * !A2 * !B1 * !X)	-0.00136	-0.00137	-0.00136

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00323	0.00282	0.00339
	(A1 * A2 * B1 * X)	-0.00118	-0.00164	-0.00100
	(A1 * !A2 * !B1 * !X)	0.00400	0.00400	0.00399
	(A1 * !A2 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A2 * B1 * X)	0.00342	0.00344	0.00342
	(!A2 * B1 * X)	-0.00089	-0.00091	-0.00090
	(!A1 * A2 * B1 * X)	0.00340	0.00342	0.00340
	(!A1 * A2 * B1 * X)	-0.00090	-0.00091	-0.00090
	(!A1 * A2 * !B1 * !X)	0.00394	0.00397	0.00395
	(!A1 * A2 * !B1 * !X)	-0.00033	-0.00035	-0.00033
	(!A1 * !A2 * !B1 * !X)	0.00395	0.00398	0.00395
	(!A1 * !A2 * !B1 * !X)	-0.00035	-0.00037	-0.00036
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00600	0.00490	0.00599
	(A1 * A2 * B1 * X)	-0.00233	-0.00346	-0.00226
	(A1 * !A2 * !B1 * !X)	0.00781	0.00784	0.00782
	(A1 * !A2 * !B1 * !X)	-0.00032	-0.00034	-0.00032
	(!A2 * B1 * X)	0.00598	0.00602	0.00599
	(!A2 * B1 * X)	-0.00206	-0.00212	-0.00209
	(!A1 * A2 * B1 * X)	0.00597	0.00598	0.00597
	(!A1 * A2 * B1 * X)	-0.00208	-0.00210	-0.00209
	(!A1 * A2 * !B1 * !X)	0.00779	0.00783	0.00780
	(!A1 * A2 * !B1 * !X)	-0.00031	-0.00033	-0.00031
	(!A1 * !A2 * !B1 * !X)	0.00766	0.00772	0.00768
	(!A1 * !A2 * !B1 * !X)	-0.00039	-0.00043	-0.00040

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)**	-0.00058	-0.00062	-0.00081
	(A1 * A2 * B1 * X)	0.00356	0.00355	0.00333
	(A1 * !A2 * !B1 * !X)	-0.00030	-0.00044	-0.00046
	(A1 * !A2 * !B1 * !X)	0.00377	0.00365	0.00359
	(!A2 * B1 * X)	-0.00054	-0.00055	-0.00054
	(!A2 * B1 * X)	0.00351	0.00351	0.00350
	(!A1 * A2 * B1 * X)	-0.00044	-0.00052	-0.00053
	(!A1 * A2 * B1 * X)	0.00350	0.00352	0.00350
	(!A1 * A2 * !B1 * !X)	-0.00022	-0.00041	-0.00044
	(!A1 * A2 * !B1 * !X)	0.00381	0.00367	0.00360
	(!A1 * !A2 * !B1 * !X)	-0.00045	-0.00049	-0.00049
	(!A1 * !A2 * !B1 * !X)	0.00357	0.00354	0.00355
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00090	-0.00094	-0.00113
	(A1 * A2 * B1 * X)	0.00350	0.00350	0.00328
	(A1 * !A2 * !B1 * !X)	0.00045	0.00031	0.00029
	(A1 * !A2 * !B1 * !X)	0.00478	0.00465	0.00461
	(!A2 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A2 * B1 * X)	0.00346	0.00346	0.00346
	(!A1 * A2 * B1 * X)	-0.00073	-0.00083	-0.00085
	(!A1 * A2 * B1 * X)	0.00345	0.00347	0.00346
	(!A1 * A2 * !B1 * !X)	0.00054	0.00033	0.00030
	(!A1 * A2 * !B1 * !X)	0.00480	0.00467	0.00460
	(!A1 * !A2 * !B1 * !X)	0.00032	0.00026	0.00026
	(!A1 * !A2 * !B1 * !X)	0.00460	0.00458	0.00458

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00100	-0.00106	-0.00145
	(A1 * A2 * B1 * X)	0.00733	0.00728	0.00687
	(A1 * !A2 * !B1 * !X)	0.00134	0.00092	0.00090
	(A1 * !A2 * !B1 * !X)	0.00946	0.00916	0.00902
	(!A2 * B1 * X)	-0.00086	-0.00091	-0.00091
	(!A2 * B1 * X)	0.00719	0.00723	0.00721
	(!A1 * A2 * B1 * X)	-0.00065	-0.00083	-0.00087
	(!A1 * A2 * B1 * X)	0.00720	0.00725	0.00721
	(!A1 * A2 * !B1 * !X)	0.00151	0.00102	0.00093
	(!A1 * A2 * !B1 * !X)	0.00957	0.00921	0.00903
	(!A1 * !A2 * !B1 * !X)	0.00098	0.00080	0.00082
	(!A1 * !A2 * !B1 * !X)	0.00895	0.00898	0.00893

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)**	0.00252	0.00253	0.00265
	(A1 * A2 * A3 * X)	-0.00068	-0.00068	-0.00056
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00243	0.00245	0.00255
	(A1 * A2 * A3 * X)	-0.00066	-0.00066	-0.00053
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00419	0.00427	0.00442
	(A1 * A2 * A3 * X)	-0.00146	-0.00148	-0.00122

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)	-0.00015	-0.00021	-0.00107
	(A1 * A2 * A3 * X)	0.00310	0.00306	0.00220
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00000	-0.00006	-0.00092
	(A1 * A2 * A3 * X)	0.00313	0.00307	0.00222
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	0.00070	0.00057	-0.00110
	(A1 * A2 * A3 * X)	0.00644	0.00637	0.00471

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00292	0.00294	0.00267	0.00298	0.00276	0.83608
sky130_fd_sc_hs__a32oi_2	0.00551	0.00542	0.00532	0.00555	0.00542	1.49358
sky130_fd_sc_hs__a32oi_4	0.01089	0.01068	0.01064	0.01108	0.01075	2.21505

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	72.76070	238.52100
sky130_fd_sc_hs__a32oi_2	0.00000	145.41800	476.68000
sky130_fd_sc_hs__a32oi_4	0.00000	290.30700	951.58000

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)	0.06797	0.68169	8.48086
	A2->Y (FR)	0.06691	0.68235	8.50184
	A3->Y (FR)	0.07410	0.68513	8.45217
	B1->Y (FR)	0.04804	0.72323	9.34511
	B2->Y (FR)	0.04556	0.72360	9.37015
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.06120	0.54483	7.83321
	A2->Y (FR)	0.07914	0.58815	8.29209
	A3->Y (FR)	0.08629	0.59008	8.19638
	B1->Y (FR)	0.04159	0.60803	9.03455
	B2->Y (FR)	0.05557	0.63095	9.20312
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.07304	0.48806	7.54119
	A2->Y (FR)	0.08740	0.49772	7.49349
	A3->Y (FR)	0.09904	0.51099	7.53495
	B1->Y (FR)	0.05942	0.54215	8.39921
	B2->Y (FR)	0.07861	0.58212	8.78452

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.04146	0.43190	5.26862
	A2->Y (RF)	0.04606	0.40204	4.79533
	A3->Y (RF)	0.04850	0.35400	4.08030
	B1->Y (RF)	0.01986	0.33675	4.28296
	B2->Y (RF)	0.02232	0.29968	3.72445
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.04374	0.40231	5.70999
	A2->Y (RF)	0.05167	0.37191	5.15437
	A3->Y (RF)	0.05406	0.29718	4.02296
	B1->Y (RF)	0.01725	0.28993	4.41652
	B2->Y (RF)	0.02194	0.25037	3.73756
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.04347	0.32910	5.00373
	A2->Y (RF)	0.05040	0.29166	4.34742
	A3->Y (RF)	0.05270	0.21818	3.20717
	B1->Y (RF)	0.01779	0.22307	3.79664
	B2->Y (RF)	0.02171	0.16796	2.85046

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00042	0.00502	0.09259
	A1	0.00970	0.01437	0.10166
	A2	0.00098	0.00555	0.09609
	A2	0.01174	0.01629	0.10716
	A3	0.00172	0.00651	0.10166
	A3	0.01374	0.01851	0.11343
	B1	0.00025	0.00852	0.12974
	B1	0.00640	0.01471	0.13574
	B2	0.00076	0.00907	0.13292
	B2	0.00830	0.01652	0.14026
sky130_fd_sc_hs__a32oi_2	A1	-0.00095	0.00834	0.16274
	A1	0.01721	0.02652	0.18136
	A2	0.00171	0.01011	0.16416
	A2	0.02284	0.03124	0.18468
	A3	0.00262	0.01204	0.18080
	A3	0.02667	0.03605	0.20420
	B1	-0.00122	0.01519	0.23019
	B1	0.01038	0.02685	0.24272
	B2	0.00093	0.01719	0.23685
	B2	0.01561	0.03194	0.25136

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00165	0.01728	0.31884
	A1	0.03475	0.05363	0.35437
	A2	0.00236	0.02173	0.34583
	A2	0.04459	0.06390	0.38741
	A3	0.00439	0.02577	0.38303
	A3	0.05262	0.07404	0.43214
	B1	-0.00241	0.03078	0.44497
	B1	0.02128	0.05457	0.46875
	B2	0.00135	0.03367	0.45302
	B2	0.03091	0.06321	0.48278

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.01725	0.02139	0.09287
	A1	0.00797	0.01212	0.08322
	A2	0.01855	0.02217	0.09241
	A2	0.00780	0.01135	0.08139
	A3	0.01964	0.02360	0.10586
	A3	0.00759	0.01157	0.09248
	B1	0.01005	0.01566	0.09777
	B1	0.00391	0.00943	0.09111
	B2	0.01116	0.01620	0.09845
	B2	0.00364	0.00863	0.09088

sky130_fd_sc_hs__a32oi_2	**A1**	0.03428	0.04279	0.17031
	A1	0.01611	0.02449	0.15059
	A2	0.03699	0.04385	0.16605
	A2	0.01583	0.02262	0.14405
	A3	0.03949	0.04807	0.20502
	A3	0.01536	0.02382	0.18021
	B1	0.01928	0.03105	0.18113
	B1	0.00768	0.01937	0.16901
	B2	0.02188	0.03248	0.18562
	B2	0.00715	0.01775	0.17048
sky130_fd_sc_hs__a32oi_4	**A1**	0.06616	0.08203	0.32046
	A1	0.02976	0.04564	0.28292
	A2	0.07102	0.08582	0.33647
	A2	0.02875	0.04344	0.29339
	A3	0.07598	0.09426	0.41869
	A3	0.02762	0.04591	0.36986
	B1	0.03777	0.06182	0.35558
	B1	0.01412	0.03804	0.33058
	B2	0.04272	0.06588	0.37609
	B2	0.01308	0.03623	0.34602

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)**	0.00351	0.00300	0.00400
	(A2 * A3 * B1 * B2 * !Y)	-0.00113	-0.00167	-0.00057
	(A2 * !A3 * B1 * B2 * !Y)	0.00409	0.00410	0.00409
	(A2 * !A3 * B1 * B2 * !Y)	-0.00035	-0.00037	-0.00036
	(A2 * !A3 * B1 * !B2 * Y)	0.00064	0.00065	0.00060
	(A2 * !A3 * B1 * !B2 * Y)	-0.00278	-0.00282	-0.00291
	(A2 * !A3 * !B1 * Y)	0.00065	0.00066	0.00061
	(A2 * !A3 * !B1 * Y)	-0.00280	-0.00281	-0.00291
	(!A2 * B1 * B2 * !Y)	0.00410	0.00412	0.00411
	(!A2 * B1 * B2 * !Y)	-0.00035	-0.00037	-0.00036
	(!A2 * B1 * !B2 * Y)	0.00063	0.00063	0.00060
	(!A2 * B1 * !B2 * Y)	-0.00287	-0.00289	-0.00292
	(!A2 * !B1 * Y)	0.00063	0.00064	0.00061
	(!A2 * !B1 * Y)	-0.00287	-0.00288	-0.00291
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00693	0.00587	0.00796
	(A2 * A3 * B1 * B2 * !Y)	-0.00225	-0.00335	-0.00114
	(A2 * !A3 * B1 * B2 * !Y)	0.00805	0.00808	0.00805
	(A2 * !A3 * B1 * B2 * !Y)	-0.00071	-0.00075	-0.00071
	(A2 * !A3 * B1 * !B2 * Y)	0.00135	0.00136	0.00123
	(A2 * !A3 * B1 * !B2 * Y)	-0.00548	-0.00552	-0.00577
	(A2 * !A3 * !B1 * Y)	0.00137	0.00137	0.00124
	(A2 * !A3 * !B1 * Y)	-0.00546	-0.00550	-0.00576
	(!A2 * B1 * B2 * !Y)	0.00817	0.00818	0.00818
	(!A2 * B1 * B2 * !Y)	-0.00070	-0.00073	-0.00071
	(!A2 * B1 * !B2 * Y)	0.00138	0.00139	0.00130
	(!A2 * B1 * !B2 * Y)	-0.00563	-0.00566	-0.00580
	(!A2 * !B1 * Y)	0.00140	0.00141	0.00132
	(!A2 * !B1 * Y)	-0.00561	-0.00564	-0.00578

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.01402	0.01159	0.01579
	(A2 * A3 * B1 * B2 * !Y)	-0.00430	-0.00684	-0.00233
	(A2 * !A3 * B1 * B2 * !Y)	0.01600	0.01598	0.01598
	(A2 * !A3 * B1 * B2 * !Y)	-0.00147	-0.00151	-0.00146
	(A2 * !A3 * B1 * !B2 * Y)	0.00241	0.00241	0.00220
	(A2 * !A3 * B1 * !B2 * Y)	-0.01113	-0.01119	-0.01167
	(A2 * !A3 * !B1 * Y)	0.00243	0.00244	0.00223
	(A2 * !A3 * !B1 * Y)	-0.01110	-0.01116	-0.01165
	(!A2 * B1 * B2 * !Y)	0.01620	0.01621	0.01621
	(!A2 * B1 * B2 * !Y)	-0.00143	-0.00150	-0.00146
	(!A2 * B1 * !B2 * Y)	0.00247	0.00248	0.00234
	(!A2 * B1 * !B2 * Y)	-0.01145	-0.01151	-0.01174
	(!A2 * !B1 * Y)	0.00250	0.00251	0.00237
	(!A2 * !B1 * Y)	-0.01142	-0.01147	-0.01171

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)**	-0.00002	-0.00009	-0.00043
	(A2 * A3 * B1 * B2 * !Y)	0.00457	0.00457	0.00418
	(A2 * !A3 * B1 * B2 * !Y)	0.00018	0.00003	0.00004
	(A2 * !A3 * B1 * B2 * !Y)	0.00451	0.00454	0.00451
	(A2 * !A3 * B1 * !B2 * Y)	-0.00054	-0.00054	-0.00053
	(A2 * !A3 * B1 * !B2 * Y)	0.00298	0.00301	0.00297
	(A2 * !A3 * !B1 * Y)	-0.00053	-0.00053	-0.00053
	(A2 * !A3 * !B1 * Y)	0.00298	0.00301	0.00298
	(!A2 * B1 * B2 * !Y)	0.00004	-0.00000	0.00003
	(!A2 * B1 * B2 * !Y)	0.00450	0.00455	0.00451
	(!A2 * B1 * !B2 * Y)	-0.00054	-0.00055	-0.00054
	(!A2 * B1 * !B2 * Y)	0.00297	0.00302	0.00298
	(!A2 * !B1 * Y)	-0.00054	-0.00055	-0.00053
	(!A2 * !B1 * Y)	0.00297	0.00303	0.00298
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00001	-0.00013	-0.00083
	(A2 * A3 * B1 * B2 * !Y)	0.00915	0.00911	0.00835
	(A2 * !A3 * B1 * B2 * !Y)	0.00046	0.00016	0.00012
	(A2 * !A3 * B1 * B2 * !Y)	0.00900	0.00904	0.00900
	(A2 * !A3 * B1 * !B2 * Y)	-0.00110	-0.00110	-0.00109
	(A2 * !A3 * B1 * !B2 * Y)	0.00591	0.00595	0.00591
	(A2 * !A3 * !B1 * Y)	-0.00110	-0.00110	-0.00109
	(A2 * !A3 * !B1 * Y)	0.00592	0.00596	0.00591
	(!A2 * B1 * B2 * !Y)	0.00015	0.00011	0.00008
	(!A2 * B1 * B2 * !Y)	0.00899	0.00901	0.00900
	(!A2 * B1 * !B2 * Y)	-0.00116	-0.00119	-0.00117
	(!A2 * B1 * !B2 * Y)	0.00588	0.00601	0.00591
	(!A2 * !B1 * Y)	-0.00117	-0.00119	-0.00117
	(!A2 * !B1 * Y)	0.00589	0.00601	0.00592

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00004	-0.00021	-0.00161
	(A2 * A3 * B1 * B2 * !Y)	0.01829	0.01823	0.01669
	(A2 * !A3 * B1 * B2 * !Y)	0.00098	0.00042	0.00032
	(A2 * !A3 * B1 * B2 * !Y)	0.01799	0.01808	0.01800
	(A2 * !A3 * B1 * !B2 * Y)	-0.00194	-0.00195	-0.00193
	(A2 * !A3 * B1 * !B2 * Y)	0.01192	0.01201	0.01194
	(A2 * !A3 * !B1 * Y)	-0.00193	-0.00194	-0.00192
	(A2 * !A3 * !B1 * Y)	0.01194	0.01202	0.01195
	(!A2 * B1 * B2 * !Y)	0.00035	0.00027	0.00025
	(!A2 * B1 * B2 * !Y)	0.01800	0.01805	0.01800
	(!A2 * B1 * !B2 * Y)	-0.00207	-0.00212	-0.00207
	(!A2 * B1 * !B2 * Y)	0.01192	0.01216	0.01197
	(!A2 * !B1 * Y)	-0.00207	-0.00211	-0.00206
	(!A2 * !B1 * Y)	0.01193	0.01217	0.01198

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)**	0.00357	0.00306	0.00406
	(A1 * A3 * B1 * B2 * !Y)	-0.00113	-0.00168	-0.00057
	(A1 * !A3 * B1 * B2 * !Y)	0.00416	0.00416	0.00417
	(A1 * !A3 * B1 * B2 * !Y)	-0.00036	-0.00036	-0.00036
	(A1 * !A3 * B1 * !B2 * Y)	0.00085	0.00086	0.00085
	(A1 * !A3 * B1 * !B2 * Y)	-0.00253	-0.00256	-0.00254
	(A1 * !A3 * !B1 * Y)	0.00085	0.00087	0.00085
	(A1 * !A3 * !B1 * Y)	-0.00252	-0.00255	-0.00253
	(!A1 * A3 * B1 * B2 * !Y)	0.00417	0.00419	0.00417
	(!A1 * A3 * B1 * B2 * !Y)	-0.00035	-0.00037	-0.00036
	(!A1 * A3 * B1 * !B2 * Y)	0.00203	0.00206	0.00204
	(!A1 * A3 * B1 * !B2 * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * A3 * !B1 * Y)	0.00204	0.00207	0.00204
	(!A1 * A3 * !B1 * Y)	-0.00251	-0.00253	-0.00252
	(!A1 * !A3 * B1 * B2 * !Y)	0.00326	0.00327	0.00326
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00035	-0.00037	-0.00036
	(!A1 * !A3 * B1 * !B2 * Y)	0.00105	0.00105	0.00105
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00254	-0.00254	-0.00254
	(!A1 * !A3 * !B1 * Y)	0.00105	0.00106	0.00105
	(!A1 * !A3 * !B1 * Y)	-0.00253	-0.00255	-0.00254

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00697	0.00575	0.00781
	(A1 * A3 * B1 * B2 * !Y)	-0.00222	-0.00349	-0.00130
	(A1 * !A3 * B1 * B2 * !Y)	0.00798	0.00800	0.00799
	(A1 * !A3 * B1 * B2 * !Y)	-0.00088	-0.00092	-0.00089
	(A1 * !A3 * B1 * !B2 * Y)	0.00154	0.00157	0.00158
	(A1 * !A3 * B1 * !B2 * Y)	-0.00506	-0.00510	-0.00505
	(A1 * !A3 * !B1 * Y)	0.00155	0.00158	0.00159
	(A1 * !A3 * !B1 * Y)	-0.00504	-0.00509	-0.00504
	(!A1 * A3 * B1 * B2 * !Y)	0.00800	0.00801	0.00801
	(!A1 * A3 * B1 * B2 * !Y)	-0.00087	-0.00090	-0.00088
	(!A1 * A3 * B1 * !B2 * Y)	0.00393	0.00398	0.00395
	(!A1 * A3 * B1 * !B2 * Y)	-0.00498	-0.00502	-0.00499
	(!A1 * A3 * !B1 * Y)	0.00393	0.00399	0.00395
	(!A1 * A3 * !B1 * Y)	-0.00497	-0.00501	-0.00498
	(!A1 * !A3 * B1 * B2 * !Y)	0.00632	0.00634	0.00632
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00090	-0.00093	-0.00090
	(!A1 * !A3 * B1 * !B2 * Y)	0.00205	0.00208	0.00205
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00509	-0.00513	-0.00509
	(!A1 * !A3 * !B1 * Y)	0.00207	0.00210	0.00207
	(!A1 * !A3 * !B1 * Y)	-0.00508	-0.00512	-0.00508

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.01384	0.01144	0.01561
	(A1 * A3 * B1 * B2 * !Y)	-0.00453	-0.00705	-0.00257
	(A1 * !A3 * B1 * B2 * !Y)	0.01593	0.01600	0.01596
	(A1 * !A3 * B1 * B2 * !Y)	-0.00168	-0.00180	-0.00173
	(A1 * !A3 * B1 * !B2 * Y)	0.00295	0.00299	0.00300
	(A1 * !A3 * B1 * !B2 * Y)	-0.01002	-0.01009	-0.01001
	(A1 * !A3 * !B1 * Y)	0.00298	0.00302	0.00302
	(A1 * !A3 * !B1 * Y)	-0.01000	-0.01007	-0.00999
	(!A1 * A3 * B1 * B2 * !Y)	0.01602	0.01606	0.01602
	(!A1 * A3 * B1 * B2 * !Y)	-0.00168	-0.00177	-0.00172
	(!A1 * A3 * B1 * !B2 * Y)	0.00795	0.00798	0.00795
	(!A1 * A3 * B1 * !B2 * Y)	-0.00991	-0.00992	-0.00989
	(!A1 * A3 * !B1 * Y)	0.00796	0.00800	0.00797
	(!A1 * A3 * !B1 * Y)	-0.00990	-0.00990	-0.00987
	(!A1 * !A3 * B1 * B2 * !Y)	0.01236	0.01238	0.01234
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00170	-0.00176	-0.00171
	(!A1 * !A3 * B1 * !B2 * Y)	0.00384	0.00385	0.00383
	(!A1 * !A3 * B1 * !B2 * Y)	-0.01009	-0.01012	-0.01009
	(!A1 * !A3 * !B1 * Y)	0.00386	0.00388	0.00386
	(!A1 * !A3 * !B1 * Y)	-0.01007	-0.01010	-0.01007

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)**	-0.00008	-0.00014	-0.00050
	(A1 * A3 * B1 * B2 * !Y)	0.00458	0.00455	0.00418
	(A1 * !A3 * B1 * B2 * !Y)	-0.00002	-0.00004	-0.00004
	(A1 * !A3 * B1 * B2 * !Y)	0.00451	0.00451	0.00451
	(A1 * !A3 * B1 * !B2 * Y)	-0.00075	-0.00076	-0.00077
	(A1 * !A3 * B1 * !B2 * Y)	0.00265	0.00268	0.00261
	(A1 * !A3 * !B1 * Y)	-0.00074	-0.00075	-0.00076
	(A1 * !A3 * !B1 * Y)	0.00266	0.00268	0.00262
	(!A1 * A3 * B1 * B2 * !Y)	-0.00002	-0.00005	-0.00003
	(!A1 * A3 * B1 * B2 * !Y)	0.00450	0.00454	0.00451
	(!A1 * A3 * B1 * !B2 * Y)	-0.00167	-0.00192	-0.00192
	(!A1 * A3 * B1 * !B2 * Y)	0.00288	0.00270	0.00263
	(!A1 * A3 * !B1 * Y)	-0.00167	-0.00191	-0.00192
	(!A1 * A3 * !B1 * Y)	0.00288	0.00270	0.00263
	(!A1 * !A3 * B1 * B2 * !Y)	0.00076	0.00076	0.00083
	(!A1 * !A3 * B1 * B2 * !Y)	0.00451	0.00453	0.00452
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00100	-0.00101	-0.00104
	(!A1 * !A3 * B1 * !B2 * Y)	0.00273	0.00274	0.00263
	(!A1 * !A3 * !B1 * Y)	-0.00100	-0.00101	-0.00104
	(!A1 * !A3 * !B1 * Y)	0.00273	0.00274	0.00263

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00014	0.00002	-0.00069
	(A1 * A3 * B1 * B2 * !Y)	0.00932	0.00928	0.00851
	(A1 * !A3 * B1 * B2 * !Y)	0.00031	0.00029	0.00026
	(A1 * !A3 * B1 * B2 * !Y)	0.00917	0.00916	0.00918
	(A1 * !A3 * B1 * !B2 * Y)	-0.00134	-0.00137	-0.00141
	(A1 * !A3 * B1 * !B2 * Y)	0.00533	0.00540	0.00523
	(A1 * !A3 * !B1 * Y)	-0.00134	-0.00136	-0.00141
	(A1 * !A3 * !B1 * Y)	0.00534	0.00541	0.00524
	(!A1 * A3 * B1 * B2 * !Y)	0.00031	0.00021	0.00025
	(!A1 * A3 * B1 * B2 * !Y)	0.00918	0.00925	0.00918
	(!A1 * A3 * B1 * !B2 * Y)	-0.00299	-0.00373	-0.00373
	(!A1 * A3 * B1 * !B2 * Y)	0.00596	0.00534	0.00520
	(!A1 * A3 * !B1 * Y)	-0.00298	-0.00372	-0.00372
	(!A1 * A3 * !B1 * Y)	0.00597	0.00535	0.00521
	(!A1 * !A3 * B1 * B2 * !Y)	0.00170	0.00170	0.00185
	(!A1 * !A3 * B1 * B2 * !Y)	0.00922	0.00925	0.00921
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00198	-0.00196	-0.00204
	(!A1 * !A3 * B1 * !B2 * Y)	0.00550	0.00552	0.00528
	(!A1 * !A3 * !B1 * Y)	-0.00198	-0.00196	-0.00204
	(!A1 * !A3 * !B1 * Y)	0.00550	0.00552	0.00529

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00022	0.00004	-0.00141
	(A1 * A3 * B1 * B2 * !Y)	0.01860	0.01840	0.01694
	(A1 * !A3 * B1 * B2 * !Y)	0.00058	0.00051	0.00050
	(A1 * !A3 * B1 * B2 * !Y)	0.01825	0.01831	0.01826
	(A1 * !A3 * B1 * !B2 * Y)	-0.00259	-0.00261	-0.00267
	(A1 * !A3 * B1 * !B2 * Y)	0.01057	0.01063	0.01034
	(A1 * !A3 * !B1 * Y)	-0.00258	-0.00259	-0.00266
	(A1 * !A3 * !B1 * Y)	0.01059	0.01065	0.01036
	(!A1 * A3 * B1 * B2 * !Y)	0.00053	0.00044	0.00045
	(!A1 * A3 * B1 * B2 * !Y)	0.01830	0.01828	0.01827
	(!A1 * A3 * B1 * !B2 * Y)	-0.00608	-0.00745	-0.00751
	(!A1 * A3 * B1 * !B2 * Y)	0.01184	0.01047	0.01031
	(!A1 * A3 * !B1 * Y)	-0.00606	-0.00743	-0.00749
	(!A1 * A3 * !B1 * Y)	0.01185	0.01049	0.01033
	(!A1 * !A3 * B1 * B2 * !Y)	0.00369	0.00366	0.00396
	(!A1 * !A3 * B1 * B2 * !Y)	0.01825	0.01837	0.01829
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00367	-0.00370	-0.00381
	(!A1 * !A3 * B1 * !B2 * Y)	0.01073	0.01088	0.01043
	(!A1 * !A3 * !B1 * Y)	-0.00366	-0.00369	-0.00380
	(!A1 * !A3 * !B1 * Y)	0.01074	0.01089	0.01045

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)**	0.00340	0.00292	0.00393
	(A1 * A2 * B1 * B2 * !Y)	-0.00117	-0.00170	-0.00060
	(A1 * !A2 * B1 * !B2 * Y)	0.00203	0.00206	0.00203
	(A1 * !A2 * B1 * !B2 * Y)	-0.00242	-0.00244	-0.00242
	(A1 * !A2 * !B1 * Y)	0.00203	0.00206	0.00204
	(A1 * !A2 * !B1 * Y)	-0.00241	-0.00243	-0.00242
	(!A2 * B1 * B2 * !Y)	0.00404	0.00407	0.00405
	(!A2 * B1 * B2 * !Y)	-0.00037	-0.00040	-0.00038
	(!A1 * A2 * B1 * B2 * !Y)	0.00402	0.00402	0.00402
	(!A1 * A2 * B1 * B2 * !Y)	-0.00038	-0.00039	-0.00038
	(!A1 * A2 * B1 * !B2 * Y)	0.00198	0.00200	0.00199
	(!A1 * A2 * B1 * !B2 * Y)	-0.00241	-0.00242	-0.00241
	(!A1 * A2 * !B1 * Y)	0.00199	0.00200	0.00199
	(!A1 * A2 * !B1 * Y)	-0.00240	-0.00241	-0.00240
	(!A1 * !A2 * B1 * !B2 * Y)	0.00199	0.00202	0.00200
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00243	-0.00245	-0.00244
	(!A1 * !A2 * !B1 * Y)	0.00199	0.00202	0.00200
	(!A1 * !A2 * !B1 * Y)	-0.00242	-0.00245	-0.00243

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00696	0.00584	0.00789
	(A1 * A2 * B1 * B2 * !Y)	-0.00226	-0.00345	-0.00124
	(A1 * !A2 * B1 * !B2 * Y)	0.00405	0.00408	0.00407
	(A1 * !A2 * B1 * !B2 * Y)	-0.00489	-0.00492	-0.00490
	(A1 * !A2 * !B1 * Y)	0.00405	0.00412	0.00408
	(A1 * !A2 * !B1 * Y)	-0.00488	-0.00492	-0.00490
	(!A2 * B1 * B2 * !Y)	0.00809	0.00814	0.00810
	(!A2 * B1 * B2 * !Y)	-0.00081	-0.00086	-0.00083
	(!A1 * A2 * B1 * B2 * !Y)	0.00803	0.00804	0.00801
	(!A1 * A2 * B1 * B2 * !Y)	-0.00083	-0.00085	-0.00083
	(!A1 * A2 * B1 * !B2 * Y)	0.00397	0.00403	0.00400
	(!A1 * A2 * B1 * !B2 * Y)	-0.00486	-0.00490	-0.00487
	(!A1 * A2 * !B1 * Y)	0.00398	0.00404	0.00401
	(!A1 * A2 * !B1 * Y)	-0.00485	-0.00489	-0.00487
	(!A1 * !A2 * B1 * !B2 * Y)	0.00398	0.00404	0.00399
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00492	-0.00496	-0.00493
	(!A1 * !A2 * !B1 * Y)	0.00398	0.00405	0.00400
	(!A1 * !A2 * !B1 * Y)	-0.00491	-0.00495	-0.00492

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.01354	0.01135	0.01553
	(A1 * A2 * B1 * B2 * !Y)	-0.00478	-0.00708	-0.00262
	(A1 * !A2 * B1 * !B2 * Y)	0.00791	0.00792	0.00791
	(A1 * !A2 * B1 * !B2 * Y)	-0.00988	-0.00988	-0.00987
	(A1 * !A2 * !B1 * Y)	0.00792	0.00795	0.00793
	(A1 * !A2 * !B1 * Y)	-0.00986	-0.00987	-0.00985
	(!A2 * B1 * B2 * !Y)	0.01592	0.01599	0.01590
	(!A2 * B1 * B2 * !Y)	-0.00177	-0.00185	-0.00177
	(!A1 * A2 * B1 * B2 * !Y)	0.01580	0.01589	0.01584
	(!A1 * A2 * B1 * B2 * !Y)	-0.00171	-0.00183	-0.00177
	(!A1 * A2 * B1 * !B2 * Y)	0.00777	0.00789	0.00781
	(!A1 * A2 * B1 * !B2 * Y)	-0.00985	-0.00993	-0.00986
	(!A1 * A2 * !B1 * Y)	0.00779	0.00790	0.00783
	(!A1 * A2 * !B1 * Y)	-0.00983	-0.00991	-0.00984
	(!A1 * !A2 * B1 * !B2 * Y)	0.00771	0.00776	0.00771
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00997	-0.01000	-0.00996
	(!A1 * !A2 * !B1 * Y)	0.00768	0.00779	0.00773
	(!A1 * !A2 * !B1 * Y)	-0.00991	-0.00998	-0.00995

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)**	0.00005	-0.00001	-0.00036
	(A1 * A2 * B1 * B2 * !Y)	0.00460	0.00457	0.00421
	(A1 * !A2 * B1 * !B2 * Y)	-0.00175	-0.00190	-0.00193
	(A1 * !A2 * B1 * !B2 * Y)	0.00269	0.00253	0.00251
	(A1 * !A2 * !B1 * Y)	-0.00174	-0.00190	-0.00192
	(A1 * !A2 * !B1 * Y)	0.00270	0.00253	0.00252
	(!A2 * B1 * B2 * !Y)	0.00011	0.00010	0.00009
	(!A2 * B1 * B2 * !Y)	0.00454	0.00454	0.00453
	(!A1 * A2 * B1 * B2 * !Y)	0.00023	0.00013	0.00011
	(!A1 * A2 * B1 * B2 * !Y)	0.00453	0.00455	0.00453
	(!A1 * A2 * B1 * !B2 * Y)	-0.00166	-0.00188	-0.00191
	(!A1 * A2 * B1 * !B2 * Y)	0.00271	0.00257	0.00251
	(!A1 * A2 * !B1 * Y)	-0.00166	-0.00188	-0.00191
	(!A1 * A2 * !B1 * Y)	0.00272	0.00257	0.00252
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00188	-0.00194	-0.00195
	(!A1 * !A2 * B1 * !B2 * Y)	0.00250	0.00248	0.00249
	(!A1 * !A2 * !B1 * Y)	-0.00188	-0.00193	-0.00194
	(!A1 * !A2 * !B1 * Y)	0.00251	0.00248	0.00249

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00005	-0.00005	-0.00077
	(A1 * A2 * B1 * B2 * !Y)	0.00927	0.00919	0.00845
	(A1 * !A2 * B1 * !B2 * Y)	-0.00349	-0.00384	-0.00387
	(A1 * !A2 * B1 * !B2 * Y)	0.00540	0.00516	0.00509
	(A1 * !A2 * !B1 * Y)	-0.00348	-0.00383	-0.00386
	(A1 * !A2 * !B1 * Y)	0.00540	0.00517	0.00510
	(!A2 * B1 * B2 * !Y)	0.00023	0.00016	0.00017
	(!A2 * B1 * B2 * !Y)	0.00910	0.00915	0.00912
	(!A1 * A2 * B1 * B2 * !Y)	0.00045	0.00024	0.00020
	(!A1 * A2 * B1 * B2 * !Y)	0.00911	0.00918	0.00912
	(!A1 * A2 * B1 * !B2 * Y)	-0.00334	-0.00376	-0.00384
	(!A1 * A2 * B1 * !B2 * Y)	0.00547	0.00523	0.00508
	(!A1 * A2 * !B1 * Y)	-0.00333	-0.00375	-0.00384
	(!A1 * A2 * !B1 * Y)	0.00548	0.00524	0.00509
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00377	-0.00391	-0.00391
	(!A1 * !A2 * B1 * !B2 * Y)	0.00502	0.00506	0.00503
	(!A1 * !A2 * !B1 * Y)	-0.00376	-0.00390	-0.00390
	(!A1 * !A2 * !B1 * Y)	0.00503	0.00507	0.00504

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00030	0.00011	-0.00134
	(A1 * A2 * B1 * B2 * !Y)	0.01864	0.01847	0.01699
	(A1 * !A2 * B1 * !B2 * Y)	-0.00666	-0.00737	-0.00747
	(A1 * !A2 * B1 * !B2 * Y)	0.01103	0.01050	0.01030
	(A1 * !A2 * !B1 * Y)	-0.00665	-0.00735	-0.00745
	(A1 * !A2 * !B1 * Y)	0.01105	0.01052	0.01032
	(!A2 * B1 * B2 * !Y)	0.00066	0.00057	0.00057
	(!A2 * B1 * B2 * !Y)	0.01829	0.01837	0.01832
	(!A1 * A2 * B1 * B2 * !Y)	0.00113	0.00075	0.00063
	(!A1 * A2 * B1 * B2 * !Y)	0.01835	0.01843	0.01832
	(!A1 * A2 * B1 * !B2 * Y)	-0.00633	-0.00722	-0.00743
	(!A1 * A2 * B1 * !B2 * Y)	0.01122	0.01059	0.01027
	(!A1 * A2 * !B1 * Y)	-0.00632	-0.00721	-0.00741
	(!A1 * A2 * !B1 * Y)	0.01124	0.01060	0.01029
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00727	-0.00754	-0.00756
	(!A1 * !A2 * B1 * !B2 * Y)	0.01019	0.01022	0.01017
	(!A1 * !A2 * !B1 * Y)	-0.00725	-0.00752	-0.00755
	(!A1 * !A2 * !B1 * Y)	0.01020	0.01023	0.01019

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)**	0.00242	0.00246	0.00251
	(A1 * A2 * A3 * B2 * !Y)	-0.00075	-0.00076	-0.00066
	(A1 * A2 * A3 * !B2 * !Y)	0.00403	0.00407	0.00403
	(A1 * A2 * A3 * !B2 * !Y)	0.00073	0.00071	0.00073
	(A1 * A2 * !A3 * !B2 * Y)	0.00062	0.00062	0.00060
	(A1 * A2 * !A3 * !B2 * Y)	-0.00294	-0.00295	-0.00299
	(A1 * !A2 * !B2 * Y)	0.00062	0.00062	0.00060
	(A1 * !A2 * !B2 * Y)	-0.00293	-0.00294	-0.00299
	(!A1 * !B2 * Y)	0.00063	0.00063	0.00060
	(!A1 * !B2 * Y)	-0.00293	-0.00294	-0.00298
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00456	0.00466	0.00476
	(A1 * A2 * A3 * B2 * !Y)	-0.00148	-0.00151	-0.00131
	(A1 * A2 * A3 * !B2 * !Y)	0.00782	0.00787	0.00783
	(A1 * A2 * A3 * !B2 * !Y)	0.00147	0.00145	0.00146
	(A1 * A2 * !A3 * !B2 * Y)	0.00131	0.00131	0.00123
	(A1 * A2 * !A3 * !B2 * Y)	-0.00567	-0.00569	-0.00581
	(A1 * !A2 * !B2 * Y)	0.00132	0.00131	0.00123
	(A1 * !A2 * !B2 * Y)	-0.00567	-0.00569	-0.00581
	(!A1 * !B2 * Y)	0.00134	0.00133	0.00125
	(!A1 * !B2 * Y)	-0.00565	-0.00567	-0.00579
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00923	0.00929	0.00964
	(A1 * A2 * A3 * B2 * !Y)	-0.00299	-0.00298	-0.00261
	(A1 * A2 * A3 * !B2 * !Y)	0.01575	0.01591	0.01576
	(A1 * A2 * A3 * !B2 * !Y)	0.00288	0.00279	0.00286
	(A1 * A2 * !A3 * !B2 * Y)	0.00250	0.00250	0.00235
	(A1 * A2 * !A3 * !B2 * Y)	-0.01154	-0.01158	-0.01180
	(A1 * !A2 * !B2 * Y)	0.00250	0.00250	0.00235
	(A1 * !A2 * !B2 * Y)	-0.01154	-0.01158	-0.01180
	(!A1 * !B2 * Y)	0.00253	0.00253	0.00238
	(!A1 * !B2 * Y)	-0.01151	-0.01155	-0.01177

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)	-0.00008	-0.00014	-0.00086
	(A1 * A2 * A3 * B2 * !Y)	0.00314	0.00311	0.00240
	(A1 * A2 * A3 * !B2 * !Y)	-0.00064	-0.00067	-0.00077
	(A1 * A2 * A3 * !B2 * !Y)	0.00266	0.00266	0.00256
	(A1 * A2 * !A3 * !B2 * Y)	-0.00054	-0.00055	-0.00053
	(A1 * A2 * !A3 * !B2 * Y)	0.00303	0.00308	0.00304
	(A1 * !A2 * !B2 * Y)	-0.00054	-0.00055	-0.00053
	(A1 * !A2 * !B2 * Y)	0.00303	0.00308	0.00304
	(!A1 * !B2 * Y)	-0.00053	-0.00054	-0.00053
	(!A1 * !B2 * Y)	0.00304	0.00309	0.00305
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	0.00007	-0.00004	-0.00149
	(A1 * A2 * A3 * B2 * !Y)	0.00626	0.00620	0.00477
	(A1 * A2 * A3 * !B2 * !Y)	-0.00104	-0.00111	-0.00132
	(A1 * A2 * A3 * !B2 * !Y)	0.00531	0.00531	0.00511
	(A1 * A2 * !A3 * !B2 * Y)	-0.00110	-0.00112	-0.00109
	(A1 * A2 * !A3 * !B2 * Y)	0.00591	0.00601	0.00592
	(A1 * !A2 * !B2 * Y)	-0.00110	-0.00112	-0.00109
	(A1 * !A2 * !B2 * Y)	0.00591	0.00601	0.00592
	(!A1 * !B2 * Y)	-0.00110	-0.00112	-0.00109
	(!A1 * !B2 * Y)	0.00591	0.00602	0.00593

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00003	-0.00025	-0.00318
	(A1 * A2 * A3 * B2 * !Y)	0.01248	0.01237	0.00946
	(A1 * A2 * A3 * !B2 * !Y)	-0.00218	-0.00231	-0.00273
	(A1 * A2 * A3 * !B2 * !Y)	0.01067	0.01068	0.01028
	(A1 * A2 * !A3 * !B2 * Y)	-0.00207	-0.00208	-0.00208
	(A1 * A2 * !A3 * !B2 * Y)	0.01196	0.01200	0.01202
	(A1 * !A2 * !B2 * Y)	-0.00207	-0.00208	-0.00207
	(A1 * !A2 * !B2 * Y)	0.01197	0.01200	0.01202
	(!A1 * !B2 * Y)	-0.00207	-0.00207	-0.00207
	(!A1 * !B2 * Y)	0.01198	0.01200	0.01204

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)**	0.00234	0.00235	0.00242
	(A1 * A2 * A3 * B1 * !Y)	-0.00083	-0.00082	-0.00072
	(A1 * A2 * A3 * !B1 * !Y)	0.00401	0.00405	0.00400
	(A1 * A2 * A3 * !B1 * !Y)	0.00071	0.00069	0.00071
	(A1 * A2 * !A3 * !B1 * Y)	0.00205	0.00206	0.00204
	(A1 * A2 * !A3 * !B1 * Y)	-0.00250	-0.00251	-0.00250
	(A1 * !A2 * !B1 * Y)	0.00205	0.00206	0.00204
	(A1 * !A2 * !B1 * Y)	-0.00250	-0.00251	-0.00250
	(!A1 * !B1 * Y)	0.00205	0.00207	0.00205
	(!A1 * !B1 * Y)	-0.00250	-0.00251	-0.00250

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00455	0.00465	0.00475
	(A1 * A2 * A3 * B1 * !Y)	-0.00155	-0.00158	-0.00137
	(A1 * A2 * A3 * !B1 * !Y)	0.00787	0.00790	0.00786
	(A1 * A2 * A3 * !B1 * !Y)	0.00143	0.00142	0.00143
	(A1 * A2 * !A3 * !B1 * Y)	0.00402	0.00409	0.00404
	(A1 * A2 * !A3 * !B1 * Y)	-0.00488	-0.00492	-0.00489
	(A1 * !A2 * !B1 * Y)	0.00402	0.00409	0.00404
	(A1 * !A2 * !B1 * Y)	-0.00488	-0.00492	-0.00489
	(!A1 * !B1 * Y)	0.00403	0.00410	0.00405
	(!A1 * !B1 * Y)	-0.00487	-0.00491	-0.00488
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00903	0.00925	0.00945
	(A1 * A2 * A3 * B1 * !Y)	-0.00301	-0.00308	-0.00264
	(A1 * A2 * A3 * !B1 * !Y)	0.01560	0.01570	0.01561
	(A1 * A2 * A3 * !B1 * !Y)	0.00288	0.00283	0.00286
	(A1 * A2 * !A3 * !B1 * Y)	0.00795	0.00804	0.00798
	(A1 * A2 * !A3 * !B1 * Y)	-0.00977	-0.00983	-0.00979
	(A1 * !A2 * !B1 * Y)	0.00795	0.00806	0.00797
	(A1 * !A2 * !B1 * Y)	-0.00978	-0.00984	-0.00978
	(!A1 * !B1 * Y)	0.00795	0.00797	0.00799
	(!A1 * !B1 * Y)	-0.00975	-0.00976	-0.00976

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)**	-0.00002	-0.00006	-0.00079
	(A1 * A2 * A3 * B1 * !Y)	0.00319	0.00316	0.00244
	(A1 * A2 * A3 * !B1 * !Y)	-0.00062	-0.00063	-0.00073
	(A1 * A2 * A3 * !B1 * !Y)	0.00269	0.00268	0.00258
	(A1 * A2 * !A3 * !B1 * Y)	-0.00174	-0.00189	-0.00192
	(A1 * A2 * !A3 * !B1 * Y)	0.00282	0.00267	0.00260
	(A1 * !A2 * !B1 * Y)	-0.00174	-0.00189	-0.00192
	(A1 * !A2 * !B1 * Y)	0.00282	0.00267	0.00260
	(!A1 * !B1 * Y)	-0.00173	-0.00189	-0.00192
	(!A1 * !B1 * Y)	0.00282	0.00268	0.00261
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00006	-0.00004	-0.00150
	(A1 * A2 * A3 * B1 * !Y)	0.00631	0.00625	0.00481
	(A1 * A2 * A3 * !B1 * !Y)	-0.00107	-0.00114	-0.00134
	(A1 * A2 * A3 * !B1 * !Y)	0.00534	0.00534	0.00514
	(A1 * A2 * !A3 * !B1 * Y)	-0.00328	-0.00378	-0.00382
	(A1 * A2 * !A3 * !B1 * Y)	0.00564	0.00525	0.00510
	(A1 * !A2 * !B1 * Y)	-0.00328	-0.00378	-0.00381
	(A1 * !A2 * !B1 * Y)	0.00564	0.00525	0.00510
	(!A1 * !B1 * Y)	-0.00327	-0.00376	-0.00381
	(!A1 * !B1 * Y)	0.00565	0.00527	0.00511
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00012	-0.00005	-0.00301
	(A1 * A2 * A3 * B1 * !Y)	0.01252	0.01235	0.00947
	(A1 * A2 * A3 * !B1 * !Y)	-0.00204	-0.00216	-0.00255
	(A1 * A2 * A3 * !B1 * !Y)	0.01068	0.01068	0.01029
	(A1 * A2 * !A3 * !B1 * Y)	-0.00648	-0.00749	-0.00751
	(A1 * A2 * !A3 * !B1 * Y)	0.01127	0.01047	0.01020
	(A1 * !A2 * !B1 * Y)	-0.00648	-0.00748	-0.00750
	(A1 * !A2 * !B1 * Y)	0.01127	0.01047	0.01020
	(!A1 * !B1 * Y)	-0.00646	-0.00745	-0.00749
	(!A1 * !B1 * Y)	0.01129	0.01050	0.01022

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00262	0.00260	0.00270	0.00261	0.00244	1.68448
sky130_fd_sc_hs__a32o_2	0.00279	0.00276	0.00285	0.00275	0.00262	2.72267
sky130_fd_sc_hs__a32o_4	0.00480	0.00543	0.00489	0.00498	0.00568	6.03103

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	164.08900	284.93900
sky130_fd_sc_hs__a32o_2	0.00000	241.94700	287.69800
sky130_fd_sc_hs__a32o_4	0.00000	486.76300	574.98200

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)	0.07854	0.48960	6.17153
	A2->X (RR)	0.08359	0.47825	5.98349
	A3->X (RR)	0.08692	0.45390	5.64708
	B1->X (RR)	0.05327	0.42194	5.36077
	B2->X (RR)	0.05567	0.40787	5.17166
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.08039	0.41894	5.67929
	A2->X (RR)	0.08558	0.40530	5.48669
	A3->X (RR)	0.08912	0.37702	5.01200
	B1->X (RR)	0.05638	0.35342	4.80032
	B2->X (RR)	0.05938	0.33713	4.60829
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.09197	0.37501	6.12513
	A2->X (RR)	0.09922	0.36884	5.99702
	A3->X (RR)	0.10310	0.34093	5.71178
	B1->X (RR)	0.05659	0.29301	5.21202
	B2->X (RR)	0.05992	0.28070	5.07823

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.09999	0.47191	5.34698
	A2->X (FF)	0.11021	0.49333	5.49683
	A3->X (FF)	0.11376	0.50020	5.61459
	B1->X (FF)	0.07885	0.50410	6.14036
	B2->X (FF)	0.08639	0.52603	6.27715
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.11920	0.44360	4.77453
	A2->X (FF)	0.13046	0.46656	4.93958
	A3->X (FF)	0.13821	0.48261	5.10920
	B1->X (FF)	0.10529	0.48984	5.50958
	B2->X (FF)	0.11560	0.51638	5.67297
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.10516	0.39336	5.33463
	A2->X (FF)	0.11323	0.41022	5.42504
	A3->X (FF)	0.12627	0.43651	5.70547
	B1->X (FF)	0.10545	0.46588	5.92823
	B2->X (FF)	0.11052	0.47904	6.01488

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.02273	0.03208	0.22237
	A1	0.01425	0.02360	0.21437
	A2	0.02386	0.03197	0.21930
	A2	0.01422	0.02233	0.21042
	A3	0.02513	0.03184	0.19331
	A3	0.01413	0.02086	0.18258
	B1	0.01752	0.03138	0.25690
	B1	0.01192	0.02581	0.25148
	B2	0.01868	0.03144	0.25044
	B2	0.01185	0.02462	0.24401
sky130_fd_sc_hs__a32o_2	A1	0.02799	0.03712	0.23069
	A1	0.01928	0.02842	0.22233
	A2	0.02932	0.03709	0.22854
	A2	0.01925	0.02700	0.21917
	A3	0.03081	0.03601	0.17205
	A3	0.01916	0.02440	0.16019
	B1	0.02183	0.03497	0.25021
	B1	0.01598	0.02920	0.24417
	B2	0.02325	0.03505	0.24229
	B2	0.01591	0.02774	0.23478

sky130_fd_sc_hs__a32o_4	**A1**	0.05729	0.07534	0.46640
	A1	0.04102	0.05917	0.45193
	A2	0.06031	0.07540	0.45992
	A2	0.04098	0.05609	0.44352
	A3	0.05785	0.07282	0.46551
	A3	0.03831	0.05328	0.44744
	B1	0.04223	0.06979	0.52057
	B1	0.03164	0.05930	0.51145
	B2	0.04577	0.07227	0.53775
	B2	0.03143	0.05798	0.52435

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00772	0.01606	0.18180
	A1	0.01623	0.02454	0.18836
	A2	0.00869	0.01692	0.18074
	A2	0.01836	0.02657	0.18932
	A3	0.00878	0.01668	0.18273
	A3	0.01980	0.02768	0.19365
	B1	0.00708	0.02142	0.25698
	B1	0.01271	0.02698	0.26262
	B2	0.00762	0.02173	0.25272
	B2	0.01445	0.02847	0.25957

sky130_fd_sc_hs__a32o_2	**A1**	0.01519	0.02146	0.18456
	A1	0.02393	0.03010	0.19230
	A2	0.01695	0.02269	0.18619
	A2	0.02704	0.03252	0.19617
	A3	0.01717	0.02139	0.18055
	A3	0.02881	0.03300	0.19148
	B1	0.01363	0.02576	0.25680
	B1	0.01949	0.03160	0.26226
	B2	0.01499	0.02660	0.25435
	B2	0.02235	0.03372	0.25940
sky130_fd_sc_hs__a32o_4	**A1**	0.03197	0.04438	0.42321
	A1	0.04823	0.06050	0.43948
	A2	0.03352	0.04576	0.42501
	A2	0.05284	0.06485	0.44169
	A3	0.03758	0.04808	0.44856
	A3	0.05929	0.06978	0.46713
	B1	0.02896	0.05111	0.47417
	B1	0.03954	0.06148	0.48464
	B2	0.02903	0.05279	0.49785
	B2	0.04337	0.06700	0.50876

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)**	0.00326	0.00273	0.00404
	(A2 * A3 * B1 * B2 * X)	-0.00091	-0.00141	-0.00005
	(A2 * !A3 * B1 * B2 * X)	0.00422	0.00423	0.00422
	(A2 * !A3 * B1 * B2 * X)	0.00027	0.00025	0.00027
	(A2 * !A3 * B1 * !B2 * !X)	0.00163	0.00163	0.00159
	(A2 * !A3 * B1 * !B2 * !X)	-0.00148	-0.00150	-0.00158
	(A2 * !A3 * !B1 * !X)	0.00164	0.00164	0.00160
	(A2 * !A3 * !B1 * !X)	-0.00147	-0.00149	-0.00157
	(!A2 * B1 * B2 * X)	0.00427	0.00427	0.00426
	(!A2 * B1 * B2 * X)	0.00028	0.00025	0.00027
	(!A2 * B1 * !B2 * !X)	0.00164	0.00165	0.00161
	(!A2 * B1 * !B2 * !X)	-0.00153	-0.00155	-0.00159
	(!A2 * !B1 * !X)	0.00165	0.00166	0.00162
	(!A2 * !B1 * !X)	-0.00152	-0.00154	-0.00158
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00350	0.00298	0.00430
	(A2 * A3 * B1 * B2 * X)	-0.00089	-0.00139	-0.00002
	(A2 * !A3 * B1 * B2 * X)	0.00448	0.00448	0.00448
	(A2 * !A3 * B1 * B2 * X)	0.00030	0.00028	0.00029
	(A2 * !A3 * B1 * !B2 * !X)	0.00269	0.00269	0.00264
	(A2 * !A3 * B1 * !B2 * !X)	-0.00051	-0.00052	-0.00062
	(A2 * !A3 * !B1 * !X)	0.00269	0.00270	0.00265
	(A2 * !A3 * !B1 * !X)	-0.00050	-0.00052	-0.00061
	(!A2 * B1 * B2 * X)	0.00450	0.00451	0.00450
	(!A2 * B1 * B2 * X)	0.00031	0.00027	0.00029
	(!A2 * B1 * !B2 * !X)	0.00270	0.00271	0.00267
	(!A2 * B1 * !B2 * !X)	-0.00057	-0.00059	-0.00063
	(!A2 * !B1 * !X)	0.00271	0.00271	0.00267
	(!A2 * !B1 * !X)	-0.00057	-0.00058	-0.00063

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00616	0.00521	0.00781
	(A2 * A3 * B1 * B2 * X)	-0.00181	-0.00279	-0.00005
	(A2 * !A3 * B1 * B2 * X)	0.00815	0.00815	0.00816
	(A2 * !A3 * B1 * B2 * X)	0.00059	0.00056	0.00058
	(A2 * !A3 * B1 * !B2 * !X)	0.00527	0.00528	0.00516
	(A2 * !A3 * B1 * !B2 * !X)	-0.00058	-0.00061	-0.00086
	(A2 * !A3 * !B1 * !X)	0.00529	0.00530	0.00518
	(A2 * !A3 * !B1 * !X)	-0.00056	-0.00059	-0.00084
	(!A2 * B1 * B2 * X)	0.00822	0.00823	0.00822
	(!A2 * B1 * B2 * X)	0.00060	0.00055	0.00059
	(!A2 * B1 * !B2 * !X)	0.00522	0.00524	0.00516
	(!A2 * B1 * !B2 * !X)	-0.00076	-0.00081	-0.00090
	(!A2 * !B1 * !X)	0.00524	0.00526	0.00518
	(!A2 * !B1 * !X)	-0.00074	-0.00079	-0.00088

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)**	0.00063	0.00056	0.00010
	(A2 * A3 * B1 * B2 * X)	0.00478	0.00473	0.00424
	(A2 * !A3 * B1 * B2 * X)	0.00081	0.00071	0.00070
	(A2 * !A3 * B1 * B2 * X)	0.00469	0.00472	0.00469
	(A2 * !A3 * B1 * !B2 * !X)	0.00061	0.00061	0.00061
	(A2 * !A3 * B1 * !B2 * !X)	0.00376	0.00376	0.00376
	(A2 * !A3 * !B1 * !X)	0.00062	0.00062	0.00062
	(A2 * !A3 * !B1 * !X)	0.00377	0.00377	0.00377
	(!A2 * B1 * B2 * X)	0.00070	0.00067	0.00068
	(!A2 * B1 * B2 * X)	0.00468	0.00472	0.00468
	(!A2 * B1 * !B2 * !X)	0.00058	0.00057	0.00058
	(!A2 * B1 * !B2 * !X)	0.00376	0.00379	0.00377
	(!A2 * !B1 * !X)	0.00059	0.00058	0.00059
	(!A2 * !B1 * !X)	0.00377	0.00382	0.00378
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00043	0.00035	-0.00011
	(A2 * A3 * B1 * B2 * X)	0.00478	0.00475	0.00426
	(A2 * !A3 * B1 * B2 * X)	0.00064	0.00051	0.00050
	(A2 * !A3 * B1 * B2 * X)	0.00470	0.00474	0.00471
	(A2 * !A3 * B1 * !B2 * !X)	0.00159	0.00158	0.00159
	(A2 * !A3 * B1 * !B2 * !X)	0.00484	0.00485	0.00484
	(A2 * !A3 * !B1 * !X)	0.00159	0.00159	0.00159
	(A2 * !A3 * !B1 * !X)	0.00484	0.00486	0.00485
	(!A2 * B1 * B2 * X)	0.00050	0.00047	0.00048
	(!A2 * B1 * B2 * X)	0.00471	0.00473	0.00470
	(!A2 * B1 * !B2 * !X)	0.00156	0.00155	0.00156
	(!A2 * B1 * !B2 * !X)	0.00484	0.00487	0.00485
	(!A2 * !B1 * !X)	0.00156	0.00155	0.00156
	(!A2 * !B1 * !X)	0.00485	0.00487	0.00485

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00163	0.00150	0.00056
	(A2 * A3 * B1 * B2 * X)	0.00956	0.00947	0.00852
	(A2 * !A3 * B1 * B2 * X)	0.00204	0.00179	0.00177
	(A2 * !A3 * B1 * B2 * X)	0.00940	0.00941	0.00941
	(A2 * !A3 * B1 * !B2 * !X)	0.00340	0.00339	0.00341
	(A2 * !A3 * B1 * !B2 * !X)	0.00941	0.00943	0.00939
	(A2 * !A3 * !B1 * !X)	0.00342	0.00341	0.00343
	(A2 * !A3 * !B1 * !X)	0.00943	0.00945	0.00942
	(!A2 * B1 * B2 * X)	0.00178	0.00174	0.00174
	(!A2 * B1 * B2 * X)	0.00941	0.00939	0.00941
	(!A2 * B1 * !B2 * !X)	0.00338	0.00336	0.00338
	(!A2 * B1 * !B2 * !X)	0.00938	0.00944	0.00941
	(!A2 * !B1 * !X)	0.00340	0.00338	0.00340
	(!A2 * !B1 * !X)	0.00941	0.00946	0.00943

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)**	0.00322	0.00270	0.00401
	(A1 * A3 * B1 * B2 * X)	-0.00091	-0.00142	-0.00005
	(A1 * !A3 * B1 * B2 * X)	0.00421	0.00423	0.00422
	(A1 * !A3 * B1 * B2 * X)	0.00027	0.00025	0.00026
	(A1 * !A3 * B1 * !B2 * !X)	0.00169	0.00170	0.00170
	(A1 * !A3 * B1 * !B2 * !X)	-0.00128	-0.00130	-0.00128
	(A1 * !A3 * !B1 * !X)	0.00171	0.00171	0.00171
	(A1 * !A3 * !B1 * !X)	-0.00128	-0.00129	-0.00127
	(!A1 * A3 * B1 * B2 * X)	0.00423	0.00424	0.00423
	(!A1 * A3 * B1 * B2 * X)	0.00028	0.00025	0.00027
	(!A1 * A3 * B1 * !B2 * !X)	0.00275	0.00276	0.00275
	(!A1 * A3 * B1 * !B2 * !X)	-0.00123	-0.00124	-0.00124
	(!A1 * A3 * !B1 * !X)	0.00276	0.00277	0.00276
	(!A1 * A3 * !B1 * !X)	-0.00122	-0.00124	-0.00123
	(!A1 * !A3 * B1 * B2 * X)	0.00346	0.00347	0.00346
	(!A1 * !A3 * B1 * B2 * X)	0.00028	0.00026	0.00027
	(!A1 * !A3 * B1 * !B2 * !X)	0.00187	0.00186	0.00186
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00129	-0.00129	-0.00129
	(!A1 * !A3 * !B1 * !X)	0.00188	0.00189	0.00187
	(!A1 * !A3 * !B1 * !X)	-0.00128	-0.00130	-0.00128

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00346	0.00294	0.00426
	(A1 * A3 * B1 * B2 * X)	-0.00090	-0.00139	-0.00002
	(A1 * !A3 * B1 * B2 * X)	0.00446	0.00447	0.00446
	(A1 * !A3 * B1 * B2 * X)	0.00030	0.00028	0.00029
	(A1 * !A3 * B1 * !B2 * !X)	0.00279	0.00279	0.00279
	(A1 * !A3 * B1 * !B2 * !X)	-0.00026	-0.00027	-0.00025
	(A1 * !A3 * !B1 * !X)	0.00279	0.00279	0.00279
	(A1 * !A3 * !B1 * !X)	-0.00026	-0.00027	-0.00025
	(!A1 * A3 * B1 * B2 * X)	0.00447	0.00448	0.00447
	(!A1 * A3 * B1 * B2 * X)	0.00031	0.00028	0.00030
	(!A1 * A3 * B1 * !B2 * !X)	0.00397	0.00399	0.00397
	(!A1 * A3 * B1 * !B2 * !X)	-0.00024	-0.00025	-0.00023
	(!A1 * A3 * !B1 * !X)	0.00397	0.00399	0.00397
	(!A1 * A3 * !B1 * !X)	-0.00023	-0.00024	-0.00023
	(!A1 * !A3 * B1 * B2 * X)	0.00359	0.00360	0.00359
	(!A1 * !A3 * B1 * B2 * X)	0.00031	0.00029	0.00030
	(!A1 * !A3 * B1 * !B2 * !X)	0.00300	0.00300	0.00300
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00026	-0.00027	-0.00026
	(!A1 * !A3 * !B1 * !X)	0.00300	0.00300	0.00300
	(!A1 * !A3 * !B1 * !X)	-0.00026	-0.00026	-0.00026

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00667	0.00551	0.00805
	(A1 * A3 * B1 * B2 * X)	-0.00189	-0.00310	-0.00039
	(A1 * !A3 * B1 * B2 * X)	0.00839	0.00842	0.00840
	(A1 * !A3 * B1 * B2 * X)	0.00022	0.00014	0.00019
	(A1 * !A3 * B1 * !B2 * !X)	0.00556	0.00558	0.00553
	(A1 * !A3 * B1 * !B2 * !X)	-0.00081	-0.00085	-0.00081
	(A1 * !A3 * !B1 * !X)	0.00558	0.00560	0.00555
	(A1 * !A3 * !B1 * !X)	-0.00079	-0.00082	-0.00079
	(!A1 * A3 * B1 * B2 * X)	0.00844	0.00844	0.00842
	(!A1 * A3 * B1 * B2 * X)	0.00021	0.00015	0.00019
	(!A1 * A3 * B1 * !B2 * !X)	0.00757	0.00761	0.00758
	(!A1 * A3 * B1 * !B2 * !X)	-0.00069	-0.00073	-0.00071
	(!A1 * A3 * !B1 * !X)	0.00759	0.00763	0.00760
	(!A1 * A3 * !B1 * !X)	-0.00067	-0.00071	-0.00069
	(!A1 * !A3 * B1 * B2 * X)	0.00706	0.00705	0.00703
	(!A1 * !A3 * B1 * B2 * X)	0.00019	0.00017	0.00020
	(!A1 * !A3 * B1 * !B2 * !X)	0.00595	0.00596	0.00595
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00083	-0.00085	-0.00083
	(!A1 * !A3 * !B1 * !X)	0.00597	0.00598	0.00597
	(!A1 * !A3 * !B1 * !X)	-0.00081	-0.00083	-0.00081

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)**	0.00067	0.00060	0.00014
	(A1 * A3 * B1 * B2 * X)	0.00476	0.00473	0.00424
	(A1 * !A3 * B1 * B2 * X)	0.00074	0.00071	0.00073
	(A1 * !A3 * B1 * B2 * X)	0.00469	0.00472	0.00469
	(A1 * !A3 * B1 * !B2 * !X)	0.00052	0.00052	0.00051
	(A1 * !A3 * B1 * !B2 * !X)	0.00353	0.00355	0.00348
	(A1 * !A3 * !B1 * !X)	0.00053	0.00053	0.00052
	(A1 * !A3 * !B1 * !X)	0.00354	0.00356	0.00349
	(!A1 * A3 * B1 * B2 * X)	0.00073	0.00071	0.00072
	(!A1 * A3 * B1 * B2 * X)	0.00469	0.00471	0.00468
	(!A1 * A3 * B1 * !B2 * !X)	-0.00025	-0.00047	-0.00047
	(!A1 * A3 * B1 * !B2 * !X)	0.00376	0.00356	0.00350
	(!A1 * A3 * !B1 * !X)	-0.00024	-0.00046	-0.00046
	(!A1 * A3 * !B1 * !X)	0.00377	0.00357	0.00351
	(!A1 * !A3 * B1 * B2 * X)	0.00140	0.00139	0.00145
	(!A1 * !A3 * B1 * B2 * X)	0.00469	0.00471	0.00469
	(!A1 * !A3 * B1 * !B2 * !X)	0.00029	0.00029	0.00027
	(!A1 * !A3 * B1 * !B2 * !X)	0.00355	0.00358	0.00349
	(!A1 * !A3 * !B1 * !X)	0.00030	0.00030	0.00028
	(!A1 * !A3 * !B1 * !X)	0.00356	0.00359	0.00350

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00046	0.00039	-0.00007
	(A1 * A3 * B1 * B2 * X)	0.00478	0.00475	0.00426
	(A1 * !A3 * B1 * B2 * X)	0.00053	0.00050	0.00052
	(A1 * !A3 * B1 * B2 * X)	0.00471	0.00474	0.00470
	(A1 * !A3 * B1 * !B2 * !X)	0.00147	0.00146	0.00145
	(A1 * !A3 * B1 * !B2 * !X)	0.00454	0.00456	0.00449
	(A1 * !A3 * !B1 * !X)	0.00148	0.00147	0.00145
	(A1 * !A3 * !B1 * !X)	0.00455	0.00457	0.00450
	(!A1 * A3 * B1 * B2 * X)	0.00054	0.00050	0.00051
	(!A1 * A3 * B1 * B2 * X)	0.00470	0.00473	0.00470
	(!A1 * A3 * B1 * !B2 * !X)	0.00058	0.00031	0.00031
	(!A1 * A3 * B1 * !B2 * !X)	0.00477	0.00456	0.00450
	(!A1 * A3 * !B1 * !X)	0.00058	0.00031	0.00031
	(!A1 * A3 * !B1 * !X)	0.00477	0.00457	0.00450
	(!A1 * !A3 * B1 * B2 * X)	0.00129	0.00128	0.00135
	(!A1 * !A3 * B1 * B2 * X)	0.00471	0.00473	0.00471
	(!A1 * !A3 * B1 * !B2 * !X)	0.00119	0.00119	0.00117
	(!A1 * !A3 * B1 * !B2 * !X)	0.00459	0.00461	0.00450
	(!A1 * !A3 * !B1 * !X)	0.00119	0.00120	0.00117
	(!A1 * !A3 * !B1 * !X)	0.00460	0.00461	0.00451

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00144	0.00130	0.00035
	(A1 * A3 * B1 * B2 * X)	0.00996	0.00988	0.00889
	(A1 * !A3 * B1 * B2 * X)	0.00162	0.00155	0.00155
	(A1 * !A3 * B1 * B2 * X)	0.00980	0.00982	0.00980
	(A1 * !A3 * B1 * !B2 * !X)	0.00309	0.00306	0.00304
	(A1 * !A3 * B1 * !B2 * !X)	0.00944	0.00951	0.00936
	(A1 * !A3 * !B1 * !X)	0.00310	0.00308	0.00306
	(A1 * !A3 * !B1 * !X)	0.00947	0.00953	0.00938
	(!A1 * A3 * B1 * B2 * X)	0.00158	0.00152	0.00154
	(!A1 * A3 * B1 * B2 * X)	0.00981	0.00986	0.00979
	(!A1 * A3 * B1 * !B2 * !X)	0.00164	0.00111	0.00113
	(!A1 * A3 * B1 * !B2 * !X)	0.00995	0.00951	0.00939
	(!A1 * A3 * !B1 * !X)	0.00166	0.00113	0.00115
	(!A1 * A3 * !B1 * !X)	0.00997	0.00953	0.00941
	(!A1 * !A3 * B1 * B2 * X)	0.00274	0.00274	0.00287
	(!A1 * !A3 * B1 * B2 * X)	0.00983	0.00985	0.00982
	(!A1 * !A3 * B1 * !B2 * !X)	0.00259	0.00256	0.00250
	(!A1 * !A3 * B1 * !B2 * !X)	0.00968	0.00965	0.00944
	(!A1 * !A3 * !B1 * !X)	0.00261	0.00259	0.00252
	(!A1 * !A3 * !B1 * !X)	0.00970	0.00967	0.00946

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)**	0.00335	0.00293	0.00422
	(A1 * A2 * B1 * B2 * X)	-0.00092	-0.00140	-0.00002
	(A1 * !A2 * B1 * !B2 * !X)	0.00276	0.00278	0.00276
	(A1 * !A2 * B1 * !B2 * !X)	-0.00140	-0.00142	-0.00141
	(A1 * !A2 * !B1 * !X)	0.00277	0.00279	0.00277
	(A1 * !A2 * !B1 * !X)	-0.00139	-0.00141	-0.00140
	(!A2 * B1 * B2 * X)	0.00443	0.00445	0.00443
	(!A2 * B1 * B2 * X)	0.00030	0.00028	0.00030
	(!A1 * A2 * B1 * B2 * X)	0.00438	0.00438	0.00438
	(!A1 * A2 * B1 * B2 * X)	0.00030	0.00030	0.00030
	(!A1 * A2 * B1 * !B2 * !X)	0.00273	0.00275	0.00274
	(!A1 * A2 * B1 * !B2 * !X)	-0.00139	-0.00140	-0.00139
	(!A1 * A2 * !B1 * !X)	0.00274	0.00276	0.00275
	(!A1 * A2 * !B1 * !X)	-0.00138	-0.00139	-0.00138
	(!A1 * !A2 * B1 * !B2 * !X)	0.00270	0.00272	0.00270
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00143	-0.00145	-0.00144
	(!A1 * !A2 * !B1 * !X)	0.00271	0.00273	0.00271
	(!A1 * !A2 * !B1 * !X)	-0.00142	-0.00144	-0.00143

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00363	0.00319	0.00448
	(A1 * A2 * B1 * B2 * X)	-0.00089	-0.00139	-0.00001
	(A1 * !A2 * B1 * !B2 * !X)	0.00400	0.00403	0.00400
	(A1 * !A2 * B1 * !B2 * !X)	-0.00039	-0.00041	-0.00039
	(A1 * !A2 * !B1 * !X)	0.00400	0.00403	0.00401
	(A1 * !A2 * !B1 * !X)	-0.00038	-0.00040	-0.00039
	(!A2 * B1 * B2 * X)	0.00468	0.00469	0.00468
	(!A2 * B1 * B2 * X)	0.00032	0.00030	0.00031
	(!A1 * A2 * B1 * B2 * X)	0.00467	0.00468	0.00467
	(!A1 * A2 * B1 * B2 * X)	0.00032	0.00030	0.00031
	(!A1 * A2 * B1 * !B2 * !X)	0.00398	0.00399	0.00398
	(!A1 * A2 * B1 * !B2 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * A2 * !B1 * !X)	0.00398	0.00400	0.00398
	(!A1 * A2 * !B1 * !X)	-0.00039	-0.00040	-0.00038
	(!A1 * !A2 * B1 * !B2 * !X)	0.00395	0.00397	0.00396
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !A2 * !B1 * !X)	0.00395	0.00398	0.00396
	(!A1 * !A2 * !B1 * !X)	-0.00040	-0.00042	-0.00041

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00654	0.00544	0.00800
	(A1 * A2 * B1 * B2 * X)	-0.00183	-0.00295	-0.00025
	(A1 * !A2 * B1 * !B2 * !X)	0.00772	0.00776	0.00773
	(A1 * !A2 * B1 * !B2 * !X)	-0.00034	-0.00037	-0.00035
	(A1 * !A2 * !B1 * !X)	0.00774	0.00778	0.00775
	(A1 * !A2 * !B1 * !X)	-0.00032	-0.00035	-0.00033
	(!A2 * B1 * B2 * X)	0.00840	0.00840	0.00840
	(!A2 * B1 * B2 * X)	0.00037	0.00034	0.00036
	(!A1 * A2 * B1 * B2 * X)	0.00834	0.00836	0.00833
	(!A1 * A2 * B1 * B2 * X)	0.00037	0.00032	0.00035
	(!A1 * A2 * B1 * !B2 * !X)	0.00771	0.00774	0.00771
	(!A1 * A2 * B1 * !B2 * !X)	-0.00033	-0.00035	-0.00033
	(!A1 * A2 * !B1 * !X)	0.00773	0.00776	0.00773
	(!A1 * A2 * !B1 * !X)	-0.00031	-0.00033	-0.00031
	(!A1 * !A2 * B1 * !B2 * !X)	0.00760	0.00766	0.00762
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00040	-0.00045	-0.00042
	(!A1 * !A2 * !B1 * !X)	0.00762	0.00768	0.00764
	(!A1 * !A2 * !B1 * !X)	-0.00038	-0.00043	-0.00040

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)**	0.00046	0.00039	-0.00007
	(A1 * A2 * B1 * B2 * X)	0.00473	0.00470	0.00421
	(A1 * !A2 * B1 * !B2 * !X)	-0.00035	-0.00049	-0.00051
	(A1 * !A2 * B1 * !B2 * !X)	0.00383	0.00370	0.00364
	(A1 * !A2 * !B1 * !X)	-0.00034	-0.00048	-0.00050
	(A1 * !A2 * !B1 * !X)	0.00384	0.00371	0.00365
	(!A2 * B1 * B2 * X)	0.00052	0.00051	0.00051
	(!A2 * B1 * B2 * X)	0.00466	0.00467	0.00465
	(!A1 * A2 * B1 * B2 * X)	0.00063	0.00054	0.00053
	(!A1 * A2 * B1 * B2 * X)	0.00465	0.00468	0.00465
	(!A1 * A2 * B1 * !B2 * !X)	-0.00025	-0.00045	-0.00049
	(!A1 * A2 * B1 * !B2 * !X)	0.00388	0.00373	0.00365
	(!A1 * A2 * !B1 * !X)	-0.00024	-0.00044	-0.00048
	(!A1 * A2 * !B1 * !X)	0.00389	0.00374	0.00366
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00049	-0.00054	-0.00054
	(!A1 * !A2 * B1 * !B2 * !X)	0.00362	0.00361	0.00360
	(!A1 * !A2 * !B1 * !X)	-0.00048	-0.00053	-0.00053
	(!A1 * !A2 * !B1 * !X)	0.00363	0.00362	0.00361

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00025	0.00018	-0.00029
	(A1 * A2 * B1 * B2 * X)	0.00476	0.00472	0.00424
	(A1 * !A2 * B1 * !B2 * !X)	0.00045	0.00029	0.00027
	(A1 * !A2 * B1 * !B2 * !X)	0.00482	0.00470	0.00466
	(A1 * !A2 * !B1 * !X)	0.00046	0.00029	0.00027
	(A1 * !A2 * !B1 * !X)	0.00483	0.00471	0.00466
	(!A2 * B1 * B2 * X)	0.00032	0.00030	0.00030
	(!A2 * B1 * B2 * X)	0.00468	0.00470	0.00468
	(!A1 * A2 * B1 * B2 * X)	0.00044	0.00034	0.00032
	(!A1 * A2 * B1 * B2 * X)	0.00469	0.00471	0.00469
	(!A1 * A2 * B1 * !B2 * !X)	0.00054	0.00032	0.00028
	(!A1 * A2 * B1 * !B2 * !X)	0.00486	0.00472	0.00465
	(!A1 * A2 * !B1 * !X)	0.00054	0.00033	0.00028
	(!A1 * A2 * !B1 * !X)	0.00487	0.00473	0.00465
	(!A1 * !A2 * B1 * !B2 * !X)	0.00031	0.00024	0.00024
	(!A1 * !A2 * B1 * !B2 * !X)	0.00463	0.00464	0.00462
	(!A1 * !A2 * !B1 * !X)	0.00031	0.00025	0.00025
	(!A1 * !A2 * !B1 * !X)	0.00463	0.00464	0.00463

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00146	0.00133	0.00038
	(A1 * A2 * B1 * B2 * X)	0.00979	0.00968	0.00873
	(A1 * !A2 * B1 * !B2 * !X)	0.00143	0.00103	0.00093
	(A1 * !A2 * B1 * !B2 * !X)	0.00947	0.00918	0.00899
	(A1 * !A2 * !B1 * !X)	0.00145	0.00105	0.00095
	(A1 * !A2 * !B1 * !X)	0.00949	0.00920	0.00901
	(!A2 * B1 * B2 * X)	0.00165	0.00159	0.00158
	(!A2 * B1 * B2 * X)	0.00963	0.00967	0.00964
	(!A1 * A2 * B1 * B2 * X)	0.00185	0.00167	0.00161
	(!A1 * A2 * B1 * B2 * X)	0.00964	0.00969	0.00963
	(!A1 * A2 * B1 * !B2 * !X)	0.00161	0.00107	0.00097
	(!A1 * A2 * B1 * !B2 * !X)	0.00961	0.00919	0.00900
	(!A1 * A2 * !B1 * !X)	0.00163	0.00109	0.00099
	(!A1 * A2 * !B1 * !X)	0.00963	0.00921	0.00902
	(!A1 * !A2 * B1 * !B2 * !X)	0.00104	0.00088	0.00085
	(!A1 * !A2 * B1 * !B2 * !X)	0.00893	0.00895	0.00890
	(!A1 * !A2 * !B1 * !X)	0.00106	0.00090	0.00087
	(!A1 * !A2 * !B1 * !X)	0.00895	0.00897	0.00892

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)**	0.00206	0.00210	0.00217
	(A1 * A2 * A3 * B2 * X)	-0.00066	-0.00066	-0.00055
	(A1 * A2 * A3 * !B2 * X)	0.00379	0.00382	0.00379
	(A1 * A2 * A3 * !B2 * X)	0.00093	0.00090	0.00092
	(A1 * A2 * !A3 * !B2 * !X)	0.00161	0.00161	0.00158
	(A1 * A2 * !A3 * !B2 * !X)	-0.00151	-0.00152	-0.00156
	(A1 * !A2 * !B2 * !X)	0.00161	0.00161	0.00158
	(A1 * !A2 * !B2 * !X)	-0.00151	-0.00152	-0.00156
	(!A1 * !B2 * !X)	0.00162	0.00162	0.00159
	(!A1 * !B2 * !X)	-0.00150	-0.00150	-0.00155
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00230	0.00233	0.00241
	(A1 * A2 * A3 * B2 * X)	-0.00064	-0.00064	-0.00053
	(A1 * A2 * A3 * !B2 * X)	0.00400	0.00402	0.00401
	(A1 * A2 * A3 * !B2 * X)	0.00093	0.00092	0.00093
	(A1 * A2 * !A3 * !B2 * !X)	0.00273	0.00273	0.00270
	(A1 * A2 * !A3 * !B2 * !X)	-0.00048	-0.00049	-0.00055
	(A1 * !A2 * !B2 * !X)	0.00273	0.00273	0.00270
	(A1 * !A2 * !B2 * !X)	-0.00049	-0.00049	-0.00055
	(!A1 * !B2 * !X)	0.00274	0.00273	0.00270
	(!A1 * !B2 * !X)	-0.00048	-0.00049	-0.00055
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00414	0.00421	0.00434
	(A1 * A2 * A3 * B2 * X)	-0.00127	-0.00127	-0.00105
	(A1 * A2 * A3 * !B2 * X)	0.00759	0.00761	0.00759
	(A1 * A2 * A3 * !B2 * X)	0.00185	0.00183	0.00186
	(A1 * A2 * !A3 * !B2 * !X)	0.00520	0.00518	0.00512
	(A1 * A2 * !A3 * !B2 * !X)	-0.00101	-0.00102	-0.00112
	(A1 * !A2 * !B2 * !X)	0.00521	0.00519	0.00513
	(A1 * !A2 * !B2 * !X)	-0.00101	-0.00102	-0.00111
	(!A1 * !B2 * !X)	0.00523	0.00521	0.00514
	(!A1 * !B2 * !X)	-0.00099	-0.00100	-0.00110

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)	0.00038	0.00032	-0.00050
	(A1 * A2 * A3 * B2 * X)	0.00315	0.00312	0.00230
	(A1 * A2 * A3 * !B2 * X)	-0.00016	-0.00019	-0.00028
	(A1 * A2 * A3 * !B2 * X)	0.00271	0.00272	0.00260
	(A1 * A2 * !A3 * !B2 * !X)	0.00061	0.00059	0.00061
	(A1 * A2 * !A3 * !B2 * !X)	0.00373	0.00376	0.00373
	(A1 * !A2 * !B2 * !X)	0.00061	0.00059	0.00061
	(A1 * !A2 * !B2 * !X)	0.00373	0.00377	0.00373
	(!A1 * !B2 * !X)	0.00062	0.00060	0.00062
	(!A1 * !B2 * !X)	0.00374	0.00378	0.00374
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	0.00018	0.00013	-0.00068
	(A1 * A2 * A3 * B2 * X)	0.00320	0.00315	0.00234
	(A1 * A2 * A3 * !B2 * X)	-0.00032	-0.00036	-0.00046
	(A1 * A2 * A3 * !B2 * X)	0.00275	0.00276	0.00264
	(A1 * A2 * !A3 * !B2 * !X)	0.00154	0.00152	0.00153
	(A1 * A2 * !A3 * !B2 * !X)	0.00477	0.00478	0.00476
	(A1 * !A2 * !B2 * !X)	0.00154	0.00152	0.00153
	(A1 * !A2 * !B2 * !X)	0.00477	0.00478	0.00477
	(!A1 * !B2 * !X)	0.00154	0.00152	0.00153
	(!A1 * !B2 * !X)	0.00477	0.00478	0.00477

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00087	0.00075	-0.00088
	(A1 * A2 * A3 * B2 * X)	0.00637	0.00630	0.00469
	(A1 * A2 * A3 * !B2 * X)	-0.00022	-0.00025	-0.00049
	(A1 * A2 * A3 * !B2 * X)	0.00552	0.00550	0.00529
	(A1 * A2 * !A3 * !B2 * !X)	0.00343	0.00339	0.00342
	(A1 * A2 * !A3 * !B2 * !X)	0.00964	0.00965	0.00962
	(A1 * !A2 * !B2 * !X)	0.00343	0.00339	0.00342
	(A1 * !A2 * !B2 * !X)	0.00964	0.00965	0.00962
	(!A1 * !B2 * !X)	0.00346	0.00341	0.00344
	(!A1 * !B2 * !X)	0.00967	0.00968	0.00965

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)**	0.00203	0.00204	0.00213
	(A1 * A2 * A3 * B1 * X)	-0.00072	-0.00072	-0.00061
	(A1 * A2 * A3 * !B1 * X)	0.00380	0.00384	0.00380
	(A1 * A2 * A3 * !B1 * X)	0.00091	0.00089	0.00090
	(A1 * A2 * !A3 * !B1 * !X)	0.00288	0.00290	0.00287
	(A1 * A2 * !A3 * !B1 * !X)	-0.00112	-0.00114	-0.00113
	(A1 * !A2 * !B1 * !X)	0.00288	0.00290	0.00288
	(A1 * !A2 * !B1 * !X)	-0.00112	-0.00114	-0.00113
	(!A1 * !B1 * !X)	0.00289	0.00291	0.00289
	(!A1 * !B1 * !X)	-0.00111	-0.00113	-0.00112

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00233	0.00235	0.00243
	(A1 * A2 * A3 * B1 * X)	-0.00071	-0.00071	-0.00060
	(A1 * A2 * A3 * !B1 * X)	0.00409	0.00411	0.00409
	(A1 * A2 * A3 * !B1 * X)	0.00093	0.00091	0.00092
	(A1 * A2 * !A3 * !B1 * !X)	0.00414	0.00417	0.00414
	(A1 * A2 * !A3 * !B1 * !X)	-0.00014	-0.00016	-0.00014
	(A1 * !A2 * !B1 * !X)	0.00414	0.00417	0.00414
	(A1 * !A2 * !B1 * !X)	-0.00014	-0.00016	-0.00014
	(!A1 * !B1 * !X)	0.00414	0.00417	0.00415
	(!A1 * !B1 * !X)	-0.00013	-0.00015	-0.00014
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00515	0.00519	0.00537
	(A1 * A2 * A3 * B1 * X)	-0.00134	-0.00134	-0.00114
	(A1 * A2 * A3 * !B1 * X)	0.00865	0.00869	0.00865
	(A1 * A2 * A3 * !B1 * X)	0.00179	0.00177	0.00179
	(A1 * A2 * !A3 * !B1 * !X)	0.00865	0.00864	0.00864
	(A1 * A2 * !A3 * !B1 * !X)	-0.00044	-0.00045	-0.00047
	(A1 * !A2 * !B1 * !X)	0.00866	0.00865	0.00865
	(A1 * !A2 * !B1 * !X)	-0.00044	-0.00045	-0.00046
	(!A1 * !B1 * !X)	0.00868	0.00867	0.00867
	(!A1 * !B1 * !X)	-0.00042	-0.00043	-0.00045

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)**	0.00040	0.00035	-0.00047
	(A1 * A2 * A3 * B1 * X)	0.00320	0.00315	0.00234
	(A1 * A2 * A3 * !B1 * X)	-0.00016	-0.00017	-0.00028
	(A1 * A2 * A3 * !B1 * X)	0.00274	0.00273	0.00262
	(A1 * A2 * !A3 * !B1 * !X)	-0.00044	-0.00059	-0.00060
	(A1 * A2 * !A3 * !B1 * !X)	0.00358	0.00344	0.00339
	(A1 * !A2 * !B1 * !X)	-0.00044	-0.00058	-0.00060
	(A1 * !A2 * !B1 * !X)	0.00359	0.00345	0.00339
	(!A1 * !B1 * !X)	-0.00043	-0.00057	-0.00059
	(!A1 * !B1 * !X)	0.00360	0.00346	0.00340
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00014	0.00009	-0.00073
	(A1 * A2 * A3 * B1 * X)	0.00323	0.00318	0.00237
	(A1 * A2 * A3 * !B1 * X)	-0.00040	-0.00043	-0.00053
	(A1 * A2 * A3 * !B1 * X)	0.00278	0.00277	0.00266
	(A1 * A2 * !A3 * !B1 * !X)	0.00034	0.00017	0.00013
	(A1 * A2 * !A3 * !B1 * !X)	0.00464	0.00444	0.00440
	(A1 * !A2 * !B1 * !X)	0.00034	0.00017	0.00013
	(A1 * !A2 * !B1 * !X)	0.00464	0.00444	0.00440
	(!A1 * !B1 * !X)	0.00035	0.00017	0.00014
	(!A1 * !B1 * !X)	0.00464	0.00445	0.00441
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00017	-0.00031	-0.00192
	(A1 * A2 * A3 * B1 * X)	0.00645	0.00639	0.00477
	(A1 * A2 * A3 * !B1 * X)	-0.00128	-0.00137	-0.00154
	(A1 * A2 * A3 * !B1 * X)	0.00558	0.00559	0.00536
	(A1 * A2 * !A3 * !B1 * !X)	0.00049	0.00003	0.00008
	(A1 * A2 * !A3 * !B1 * !X)	0.00960	0.00925	0.00914
	(A1 * !A2 * !B1 * !X)	0.00048	0.00003	0.00007
	(A1 * !A2 * !B1 * !X)	0.00960	0.00925	0.00914
	(!A1 * !B1 * !X)	0.00051	0.00005	0.00010
	(!A1 * !B1 * !X)	0.00962	0.00927	0.00917

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00287	0.00294	0.00289	0.00292	0.00292	0.76355
sky130_fd_sc_hs__a41oi_2	0.00556	0.00549	0.00538	0.00538	0.00427	1.41629
sky130_fd_sc_hs__a41oi_4	0.01086	0.01063	0.01075	0.01065	0.00843	2.37973

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	66.08020	245.96500
sky130_fd_sc_hs__a41oi_2	0.00000	130.81400	491.92300
sky130_fd_sc_hs__a41oi_4	0.00000	261.42700	983.68800

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)	0.05813	0.66755	8.17306
	A2->Y (FR)	0.07200	0.69498	8.37276
	A3->Y (FR)	0.07862	0.68182	8.12444
	A4->Y (FR)	0.07833	0.64931	7.72486
	B1->Y (FR)	0.04968	0.74938	9.45436
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.04794	0.56282	8.16831
	A2->Y (FR)	0.05982	0.55098	7.83480
	A3->Y (FR)	0.07001	0.56699	7.93780
	A4->Y (FR)	0.08002	0.58340	7.99581
	B1->Y (FR)	0.05603	0.61878	8.80712
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.04443	0.45370	7.47085
	A2->Y (FR)	0.05966	0.45142	7.22078
	A3->Y (FR)	0.07315	0.47532	7.44603
	A4->Y (FR)	0.08613	0.50274	7.70563
	B1->Y (FR)	0.06264	0.56445	8.85881

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.04044	0.47153	5.68843
	A2->Y (RF)	0.04781	0.44856	5.26875
	A3->Y (RF)	0.05238	0.41057	4.67728
	A4->Y (RF)	0.05573	0.37429	4.11181
	B1->Y (RF)	0.01482	0.24312	2.94714
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.03954	0.45263	6.49063
	A2->Y (RF)	0.04961	0.43178	6.06180
	A3->Y (RF)	0.05507	0.37233	5.11279
	A4->Y (RF)	0.05939	0.34074	4.55411
	B1->Y (RF)	0.01681	0.34584	5.21051
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.03861	0.38562	6.26615
	A2->Y (RF)	0.05052	0.36190	5.75657
	A3->Y (RF)	0.05681	0.30854	4.85985
	A4->Y (RF)	0.06007	0.26498	4.12813
	B1->Y (RF)	0.01578	0.27039	4.71422

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	0.00420	0.07836
	A1	0.00862	0.01236	0.08631
	A2	0.00140	0.00513	0.08125
	A2	0.01090	0.01455	0.09040
	A3	0.00218	0.00602	0.08698
	A3	0.01301	0.01682	0.09759
	A4	0.00262	0.00663	0.09144
	A4	0.01489	0.01889	0.10346
	B1	-0.00010	0.00988	0.15505
	B1	0.00616	0.01618	0.16172
sky130_fd_sc_hs__a41oi_2	A1	-0.00090	0.00642	0.12943
	A1	0.01405	0.02132	0.14371
	A2	0.00158	0.00897	0.14150
	A2	0.01954	0.02686	0.15925
	A3	0.00301	0.01055	0.15143
	A3	0.02361	0.03112	0.17169
	A4	0.00482	0.01232	0.15766
	A4	0.02845	0.03627	0.18074
	B1	-0.00028	0.01414	0.19883
	B1	0.00879	0.02323	0.20772

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00267	0.01462	0.26910
	A1	0.02713	0.04434	0.29802
	A2	0.00306	0.02000	0.29488
	A2	0.03871	0.05557	0.32865
	A3	0.00583	0.02287	0.31244
	A3	0.04750	0.06449	0.35311
	A4	0.00866	0.02620	0.33144
	A4	0.05600	0.07346	0.37817
	B1	-0.00100	0.03001	0.40445
	B1	0.01696	0.04793	0.42252

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.01606	0.01928	0.07760
	A1	0.00789	0.01106	0.06915
	A2	0.01720	0.01992	0.07633
	A2	0.00770	0.01038	0.06665
	A3	0.01834	0.02147	0.08589
	A3	0.00751	0.01039	0.07485
	A4	0.01976	0.02307	0.10038
	A4	0.00743	0.01067	0.08741
	B1	0.00753	0.01460	0.11974
	B1	0.00127	0.00833	0.11327

sky130_fd_sc_hs__a41oi_2	**A1**	0.03149	0.03751	0.13362
	A1	0.01655	0.02248	0.11813
	A2	0.03401	0.03916	0.13598
	A2	0.01607	0.02123	0.11785
	A3	0.03632	0.04212	0.15909
	A3	0.01567	0.02142	0.13798
	A4	0.03919	0.04542	0.17921
	A4	0.01540	0.02149	0.15425
	B1	0.01141	0.02124	0.14684
	B1	0.00234	0.01209	0.13650
sky130_fd_sc_hs__a41oi_4	**A1**	0.06112	0.07501	0.27258
	A1	0.03135	0.04520	0.24289
	A2	0.06602	0.07816	0.28264
	A2	0.03039	0.04248	0.24562
	A3	0.07125	0.08455	0.32644
	A3	0.02951	0.04270	0.28353
	A4	0.07655	0.09153	0.37642
	A4	0.02895	0.04376	0.32797
	B1	0.02238	0.04582	0.32703
	B1	0.00445	0.02785	0.30459

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)**	0.00325	0.00271	0.00308
	(A2 * A3 * A4 * B1 * !Y)	-0.00139	-0.00196	-0.00153
	(A2 * A3 * !A4 * B1 * !Y)	0.00302	0.00304	0.00302
	(A2 * A3 * !A4 * B1 * !Y)	-0.00148	-0.00149	-0.00148
	(A2 * A3 * !A4 * !B1 * Y)	0.00072	0.00073	0.00065
	(A2 * A3 * !A4 * !B1 * Y)	-0.00274	-0.00276	-0.00293
	(A2 * !A3 * B1 * !Y)	0.00304	0.00306	0.00304
	(A2 * !A3 * B1 * !Y)	-0.00148	-0.00149	-0.00148
	(A2 * !A3 * !B1 * Y)	0.00072	0.00071	0.00066
	(A2 * !A3 * !B1 * Y)	-0.00282	-0.00282	-0.00294
	(!A2 * B1 * !Y)	0.00306	0.00308	0.00306
	(!A2 * B1 * !Y)	-0.00147	-0.00150	-0.00148
	(!A2 * !B1 * Y)	0.00071	0.00071	0.00068
	(!A2 * !B1 * Y)	-0.00289	-0.00289	-0.00295
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00659	0.00542	0.00614
	(A2 * A3 * A4 * B1 * !Y)	-0.00257	-0.00380	-0.00295
	(A2 * A3 * !A4 * B1 * !Y)	0.00596	0.00596	0.00596
	(A2 * A3 * !A4 * B1 * !Y)	-0.00285	-0.00285	-0.00284
	(A2 * A3 * !A4 * !B1 * Y)	0.00132	0.00133	0.00114
	(A2 * A3 * !A4 * !B1 * Y)	-0.00544	-0.00549	-0.00588
	(A2 * !A3 * B1 * !Y)	0.00597	0.00598	0.00597
	(A2 * !A3 * B1 * !Y)	-0.00285	-0.00286	-0.00284
	(A2 * !A3 * !B1 * Y)	0.00126	0.00127	0.00114
	(A2 * !A3 * !B1 * Y)	-0.00563	-0.00567	-0.00591
	(!A2 * B1 * !Y)	0.00608	0.00610	0.00608
	(!A2 * B1 * !Y)	-0.00285	-0.00286	-0.00284
	(!A2 * !B1 * Y)	0.00126	0.00127	0.00119
	(!A2 * !B1 * Y)	-0.00579	-0.00582	-0.00595

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.01301	0.01075	0.01228
	(A2 * A3 * A4 * B1 * !Y)	-0.00526	-0.00757	-0.00583
	(A2 * A3 * !A4 * B1 * !Y)	0.01189	0.01189	0.01186
	(A2 * A3 * !A4 * B1 * !Y)	-0.00561	-0.00564	-0.00559
	(A2 * A3 * !A4 * !B1 * Y)	0.00266	0.00267	0.00232
	(A2 * A3 * !A4 * !B1 * Y)	-0.01069	-0.01078	-0.01154
	(A2 * !A3 * B1 * !Y)	0.01191	0.01194	0.01193
	(A2 * !A3 * B1 * !Y)	-0.00554	-0.00562	-0.00559
	(A2 * !A3 * !B1 * Y)	0.00256	0.00256	0.00232
	(A2 * !A3 * !B1 * Y)	-0.01104	-0.01110	-0.01161
	(!A2 * B1 * !Y)	0.01215	0.01220	0.01216
	(!A2 * B1 * !Y)	-0.00557	-0.00563	-0.00559
	(!A2 * !B1 * Y)	0.00267	0.00268	0.00251
	(!A2 * !B1 * Y)	-0.01135	-0.01141	-0.01167

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)**	-0.00103	-0.00107	-0.00119
	(A2 * A3 * A4 * B1 * !Y)	0.00361	0.00362	0.00346
	(A2 * A3 * !A4 * B1 * !Y)	-0.00073	-0.00095	-0.00097
	(A2 * A3 * !A4 * B1 * !Y)	0.00355	0.00360	0.00356
	(A2 * A3 * !A4 * !B1 * Y)	-0.00058	-0.00058	-0.00058
	(A2 * A3 * !A4 * !B1 * Y)	0.00300	0.00305	0.00301
	(A2 * !A3 * B1 * !Y)	-0.00083	-0.00098	-0.00098
	(A2 * !A3 * B1 * !Y)	0.00355	0.00360	0.00356
	(A2 * !A3 * !B1 * Y)	-0.00058	-0.00058	-0.00058
	(A2 * !A3 * !B1 * Y)	0.00301	0.00301	0.00301
	(!A2 * B1 * !Y)	-0.00097	-0.00101	-0.00099
	(!A2 * B1 * !Y)	0.00356	0.00359	0.00356
	(!A2 * !B1 * Y)	-0.00061	-0.00062	-0.00060
	(!A2 * !B1 * Y)	0.00301	0.00306	0.00302
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00204	-0.00208	-0.00235
	(A2 * A3 * A4 * B1 * !Y)	0.00710	0.00706	0.00680
	(A2 * A3 * !A4 * B1 * !Y)	-0.00134	-0.00188	-0.00191
	(A2 * A3 * !A4 * B1 * !Y)	0.00699	0.00703	0.00701
	(A2 * A3 * !A4 * !B1 * Y)	-0.00102	-0.00104	-0.00102
	(A2 * A3 * !A4 * !B1 * Y)	0.00599	0.00608	0.00602
	(A2 * !A3 * B1 * !Y)	-0.00161	-0.00191	-0.00193
	(A2 * !A3 * B1 * !Y)	0.00699	0.00702	0.00701
	(A2 * !A3 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(A2 * !A3 * !B1 * Y)	0.00600	0.00607	0.00602
	(!A2 * B1 * !Y)	-0.00190	-0.00197	-0.00196
	(!A2 * B1 * !Y)	0.00699	0.00706	0.00701
	(!A2 * !B1 * Y)	-0.00108	-0.00111	-0.00108
	(!A2 * !B1 * Y)	0.00601	0.00614	0.00604

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00410	-0.00420	-0.00473
	(A2 * A3 * A4 * B1 * !Y)	0.01410	0.01408	0.01350
	(A2 * A3 * !A4 * B1 * !Y)	-0.00264	-0.00373	-0.00382
	(A2 * A3 * !A4 * B1 * !Y)	0.01390	0.01396	0.01391
	(A2 * A3 * !A4 * !B1 * Y)	-0.00212	-0.00212	-0.00212
	(A2 * A3 * !A4 * !B1 * Y)	0.01177	0.01181	0.01182
	(A2 * !A3 * B1 * !Y)	-0.00321	-0.00384	-0.00386
	(A2 * !A3 * B1 * !Y)	0.01392	0.01397	0.01391
	(A2 * !A3 * !B1 * Y)	-0.00212	-0.00214	-0.00211
	(A2 * !A3 * !B1 * Y)	0.01179	0.01191	0.01183
	(!A2 * B1 * !Y)	-0.00382	-0.00395	-0.00394
	(!A2 * B1 * !Y)	0.01388	0.01402	0.01392
	(!A2 * !B1 * Y)	-0.00229	-0.00234	-0.00229
	(!A2 * !B1 * Y)	0.01180	0.01204	0.01185

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)**	0.00318	0.00263	0.00300
	(A1 * A3 * A4 * B1 * !Y)	-0.00141	-0.00196	-0.00153
	(A1 * A3 * !A4 * B1 * !Y)	0.00295	0.00297	0.00296
	(A1 * A3 * !A4 * B1 * !Y)	-0.00147	-0.00149	-0.00148
	(A1 * A3 * !A4 * !B1 * Y)	0.00070	0.00071	0.00072
	(A1 * A3 * !A4 * !B1 * Y)	-0.00260	-0.00262	-0.00260
	(A1 * !A3 * B1 * !Y)	0.00297	0.00300	0.00298
	(A1 * !A3 * B1 * !Y)	-0.00147	-0.00149	-0.00148
	(A1 * !A3 * !B1 * Y)	0.00075	0.00076	0.00076
	(A1 * !A3 * !B1 * Y)	-0.00260	-0.00263	-0.00261
	(!A1 * A3 * A4 * B1 * !Y)	0.00298	0.00300	0.00298
	(!A1 * A3 * A4 * B1 * !Y)	-0.00147	-0.00149	-0.00148
	(!A1 * A3 * A4 * !B1 * Y)	0.00189	0.00191	0.00190
	(!A1 * A3 * A4 * !B1 * Y)	-0.00258	-0.00259	-0.00258
	(!A1 * A3 * !A4 * B1 * !Y)	0.00211	0.00212	0.00211
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00147	-0.00149	-0.00148
	(!A1 * A3 * !A4 * !B1 * Y)	0.00096	0.00096	0.00095
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00262	-0.00263	-0.00261
	(!A1 * !A3 * B1 * !Y)	0.00217	0.00216	0.00216
	(!A1 * !A3 * B1 * !Y)	-0.00148	-0.00148	-0.00148
	(!A1 * !A3 * !B1 * Y)	0.00099	0.00100	0.00099
	(!A1 * !A3 * !B1 * Y)	-0.00263	-0.00263	-0.00262

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00646	0.00532	0.00605
	(A1 * A3 * A4 * B1 * !Y)	-0.00270	-0.00388	-0.00304
	(A1 * A3 * !A4 * B1 * !Y)	0.00589	0.00591	0.00589
	(A1 * A3 * !A4 * B1 * !Y)	-0.00294	-0.00297	-0.00294
	(A1 * A3 * !A4 * !B1 * Y)	0.00154	0.00156	0.00157
	(A1 * A3 * !A4 * !B1 * Y)	-0.00503	-0.00507	-0.00504
	(A1 * !A3 * B1 * !Y)	0.00597	0.00601	0.00598
	(A1 * !A3 * B1 * !Y)	-0.00292	-0.00297	-0.00294
	(A1 * !A3 * !B1 * Y)	0.00163	0.00166	0.00165
	(A1 * !A3 * !B1 * Y)	-0.00505	-0.00509	-0.00505
	(!A1 * A3 * A4 * B1 * !Y)	0.00600	0.00601	0.00601
	(!A1 * A3 * A4 * B1 * !Y)	-0.00292	-0.00295	-0.00294
	(!A1 * A3 * A4 * !B1 * Y)	0.00397	0.00402	0.00399
	(!A1 * A3 * A4 * !B1 * Y)	-0.00498	-0.00502	-0.00499
	(!A1 * A3 * !A4 * B1 * !Y)	0.00425	0.00425	0.00425
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00292	-0.00294	-0.00294
	(!A1 * A3 * !A4 * !B1 * Y)	0.00207	0.00206	0.00207
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00507	-0.00505	-0.00506
	(!A1 * !A3 * B1 * !Y)	0.00433	0.00435	0.00433
	(!A1 * !A3 * B1 * !Y)	-0.00293	-0.00296	-0.00294
	(!A1 * !A3 * !B1 * Y)	0.00211	0.00213	0.00211
	(!A1 * !A3 * !B1 * Y)	-0.00508	-0.00512	-0.00509

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.01266	0.01048	0.01198
	(A1 * A3 * A4 * B1 * !Y)	-0.00549	-0.00775	-0.00602
	(A1 * A3 * !A4 * B1 * !Y)	0.01157	0.01159	0.01156
	(A1 * A3 * !A4 * B1 * !Y)	-0.00580	-0.00585	-0.00581
	(A1 * A3 * !A4 * !B1 * Y)	0.00290	0.00295	0.00301
	(A1 * A3 * !A4 * !B1 * Y)	-0.00993	-0.01000	-0.00993
	(A1 * !A3 * B1 * !Y)	0.01183	0.01193	0.01185
	(A1 * !A3 * B1 * !Y)	-0.00577	-0.00588	-0.00581
	(A1 * !A3 * !B1 * Y)	0.00302	0.00306	0.00308
	(A1 * !A3 * !B1 * Y)	-0.00994	-0.01002	-0.00993
	(!A1 * A3 * A4 * B1 * !Y)	0.01185	0.01194	0.01186
	(!A1 * A3 * A4 * B1 * !Y)	-0.00578	-0.00586	-0.00581
	(!A1 * A3 * A4 * !B1 * Y)	0.00789	0.00796	0.00792
	(!A1 * A3 * A4 * !B1 * Y)	-0.00985	-0.00990	-0.00985
	(!A1 * A3 * !A4 * B1 * !Y)	0.00827	0.00830	0.00827
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00578	-0.00585	-0.00581
	(!A1 * A3 * !A4 * !B1 * Y)	0.00400	0.00402	0.00399
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00998	-0.01002	-0.00997
	(!A1 * !A3 * B1 * !Y)	0.00836	0.00837	0.00834
	(!A1 * !A3 * B1 * !Y)	-0.00580	-0.00584	-0.00581
	(!A1 * !A3 * !B1 * Y)	0.00402	0.00403	0.00401
	(!A1 * !A3 * !B1 * Y)	-0.01000	-0.01002	-0.01000

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)**	-0.00095	-0.00098	-0.00111
	(A1 * A3 * A4 * B1 * !Y)	0.00360	0.00361	0.00345
	(A1 * A3 * !A4 * B1 * !Y)	-0.00075	-0.00089	-0.00090
	(A1 * A3 * !A4 * B1 * !Y)	0.00355	0.00355	0.00356
	(A1 * A3 * !A4 * !B1 * Y)	-0.00061	-0.00063	-0.00064
	(A1 * A3 * !A4 * !B1 * Y)	0.00273	0.00278	0.00269
	(A1 * !A3 * B1 * !Y)	-0.00090	-0.00094	-0.00091
	(A1 * !A3 * B1 * !Y)	0.00356	0.00359	0.00356
	(A1 * !A3 * !B1 * Y)	-0.00065	-0.00065	-0.00067
	(A1 * !A3 * !B1 * Y)	0.00275	0.00277	0.00270
	(!A1 * A3 * A4 * B1 * !Y)	-0.00090	-0.00094	-0.00092
	(!A1 * A3 * A4 * B1 * !Y)	0.00356	0.00359	0.00356
	(!A1 * A3 * A4 * !B1 * Y)	-0.00147	-0.00178	-0.00178
	(!A1 * A3 * A4 * !B1 * Y)	0.00302	0.00276	0.00269
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00023	-0.00023	-0.00013
	(!A1 * A3 * !A4 * B1 * !Y)	0.00355	0.00358	0.00356
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00083	-0.00087	-0.00090
	(!A1 * A3 * !A4 * !B1 * Y)	0.00294	0.00292	0.00279
	(!A1 * !A3 * B1 * !Y)	-0.00021	-0.00021	-0.00015
	(!A1 * !A3 * B1 * !Y)	0.00356	0.00358	0.00356
	(!A1 * !A3 * !B1 * Y)	-0.00094	-0.00094	-0.00097
	(!A1 * !A3 * !B1 * Y)	0.00282	0.00283	0.00272

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00194	-0.00200	-0.00226
	(A1 * A3 * A4 * B1 * !Y)	0.00719	0.00719	0.00689
	(A1 * A3 * !A4 * B1 * !Y)	-0.00150	-0.00181	-0.00183
	(A1 * A3 * !A4 * B1 * !Y)	0.00708	0.00713	0.00710
	(A1 * A3 * !A4 * !B1 * Y)	-0.00139	-0.00141	-0.00144
	(A1 * A3 * !A4 * !B1 * Y)	0.00528	0.00532	0.00518
	(A1 * !A3 * B1 * !Y)	-0.00182	-0.00185	-0.00186
	(A1 * !A3 * B1 * !Y)	0.00708	0.00709	0.00710
	(A1 * !A3 * !B1 * Y)	-0.00146	-0.00147	-0.00151
	(A1 * !A3 * !B1 * Y)	0.00531	0.00534	0.00519
	(!A1 * A3 * A4 * B1 * !Y)	-0.00181	-0.00187	-0.00186
	(!A1 * A3 * A4 * B1 * !Y)	0.00709	0.00713	0.00710
	(!A1 * A3 * A4 * !B1 * Y)	-0.00293	-0.00374	-0.00380
	(!A1 * A3 * A4 * !B1 * Y)	0.00604	0.00531	0.00517
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00052	-0.00051	-0.00029
	(!A1 * A3 * !A4 * B1 * !Y)	0.00709	0.00714	0.00711
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00181	-0.00193	-0.00200
	(!A1 * A3 * !A4 * !B1 * Y)	0.00578	0.00567	0.00540
	(!A1 * !A3 * B1 * !Y)	-0.00045	-0.00044	-0.00030
	(!A1 * !A3 * B1 * !Y)	0.00713	0.00714	0.00711
	(!A1 * !A3 * !B1 * Y)	-0.00205	-0.00205	-0.00211
	(!A1 * !A3 * !B1 * Y)	0.00543	0.00548	0.00524

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00378	-0.00389	-0.00443
	(A1 * A3 * A4 * B1 * !Y)	0.01431	0.01430	0.01371
	(A1 * A3 * !A4 * B1 * !Y)	-0.00289	-0.00344	-0.00353
	(A1 * A3 * !A4 * B1 * !Y)	0.01410	0.01419	0.01412
	(A1 * A3 * !A4 * !B1 * Y)	-0.00265	-0.00270	-0.00276
	(A1 * A3 * !A4 * !B1 * Y)	0.01039	0.01058	0.01020
	(A1 * !A3 * B1 * !Y)	-0.00352	-0.00360	-0.00359
	(A1 * !A3 * B1 * !Y)	0.01409	0.01418	0.01413
	(A1 * !A3 * !B1 * Y)	-0.00269	-0.00273	-0.00281
	(A1 * !A3 * !B1 * Y)	0.01043	0.01056	0.01022
	(!A1 * A3 * A4 * B1 * !Y)	-0.00352	-0.00361	-0.00364
	(!A1 * A3 * A4 * B1 * !Y)	0.01409	0.01414	0.01413
	(!A1 * A3 * A4 * !B1 * Y)	-0.00574	-0.00738	-0.00756
	(!A1 * A3 * A4 * !B1 * Y)	0.01202	0.01053	0.01021
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00081	-0.00080	-0.00035
	(!A1 * A3 * !A4 * B1 * !Y)	0.01411	0.01421	0.01413
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00349	-0.00371	-0.00386
	(!A1 * A3 * !A4 * !B1 * Y)	0.01137	0.01119	0.01063
	(!A1 * !A3 * B1 * !Y)	-0.00063	-0.00062	-0.00031
	(!A1 * !A3 * B1 * !Y)	0.01418	0.01421	0.01414
	(!A1 * !A3 * !B1 * Y)	-0.00396	-0.00392	-0.00401
	(!A1 * !A3 * !B1 * Y)	0.01070	0.01077	0.01030

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)**	0.00311	0.00262	0.00297
	(A1 * A2 * A4 * B1 * !Y)	-0.00145	-0.00197	-0.00153
	(A1 * A2 * !A4 * B1 * !Y)	0.00295	0.00295	0.00295
	(A1 * A2 * !A4 * B1 * !Y)	-0.00148	-0.00148	-0.00148
	(A1 * A2 * !A4 * !B1 * Y)	0.00073	0.00074	0.00075
	(A1 * A2 * !A4 * !B1 * Y)	-0.00252	-0.00254	-0.00252
	(A1 * !A2 * A4 * !B1 * Y)	0.00189	0.00191	0.00190
	(A1 * !A2 * A4 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(A1 * !A2 * !A4 * !B1 * Y)	0.00093	0.00093	0.00093
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00257	-0.00258	-0.00258
	(!A2 * A4 * B1 * !Y)	0.00294	0.00296	0.00294
	(!A2 * A4 * B1 * !Y)	-0.00147	-0.00149	-0.00148
	(!A2 * !A4 * B1 * !Y)	0.00207	0.00208	0.00206
	(!A2 * !A4 * B1 * !Y)	-0.00147	-0.00149	-0.00148
	(!A1 * A2 * A4 * B1 * !Y)	0.00293	0.00292	0.00293
	(!A1 * A2 * A4 * B1 * !Y)	-0.00147	-0.00147	-0.00148
	(!A1 * A2 * A4 * !B1 * Y)	0.00186	0.00186	0.00186
	(!A1 * A2 * A4 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(!A1 * A2 * !A4 * B1 * !Y)	0.00207	0.00208	0.00207
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00147	-0.00149	-0.00147
	(!A1 * A2 * !A4 * !B1 * Y)	0.00093	0.00094	0.00093
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00258	-0.00259	-0.00258
	(!A1 * !A2 * A4 * !B1 * Y)	0.00185	0.00187	0.00185
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00257	-0.00258	-0.00257
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00095	0.00095	0.00094
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00258	-0.00259	-0.00258

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00637	0.00525	0.00597
	(A1 * A2 * A4 * B1 * !Y)	-0.00270	-0.00387	-0.00301
	(A1 * A2 * !A4 * B1 * !Y)	0.00588	0.00590	0.00589
	(A1 * A2 * !A4 * B1 * !Y)	-0.00289	-0.00293	-0.00291
	(A1 * A2 * !A4 * !B1 * Y)	0.00162	0.00164	0.00163
	(A1 * A2 * !A4 * !B1 * Y)	-0.00486	-0.00490	-0.00484
	(A1 * !A2 * A4 * !B1 * Y)	0.00393	0.00399	0.00395
	(A1 * !A2 * A4 * !B1 * Y)	-0.00492	-0.00496	-0.00493
	(A1 * !A2 * !A4 * !B1 * Y)	0.00203	0.00205	0.00202
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00496	-0.00499	-0.00496
	(!A2 * A4 * B1 * !Y)	0.00591	0.00596	0.00592
	(!A2 * A4 * B1 * !Y)	-0.00289	-0.00294	-0.00291
	(!A2 * !A4 * B1 * !Y)	0.00416	0.00418	0.00416
	(!A2 * !A4 * B1 * !Y)	-0.00291	-0.00294	-0.00291
	(!A1 * A2 * A4 * B1 * !Y)	0.00583	0.00583	0.00583
	(!A1 * A2 * A4 * B1 * !Y)	-0.00291	-0.00291	-0.00291
	(!A1 * A2 * A4 * !B1 * Y)	0.00386	0.00389	0.00387
	(!A1 * A2 * A4 * !B1 * Y)	-0.00492	-0.00494	-0.00491
	(!A1 * A2 * !A4 * B1 * !Y)	0.00416	0.00418	0.00416
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00290	-0.00293	-0.00291
	(!A1 * A2 * !A4 * !B1 * Y)	0.00201	0.00204	0.00201
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00498	-0.00502	-0.00499
	(!A1 * !A2 * A4 * !B1 * Y)	0.00385	0.00392	0.00387
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00495	-0.00499	-0.00496
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00206	0.00206	0.00206
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00496	-0.00497	-0.00496

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.01256	0.01041	0.01190
	(A1 * A2 * A4 * B1 * !Y)	-0.00560	-0.00786	-0.00612
	(A1 * A2 * !A4 * B1 * !Y)	0.01180	0.01179	0.01178
	(A1 * A2 * !A4 * B1 * !Y)	-0.00594	-0.00594	-0.00592
	(A1 * A2 * !A4 * !B1 * Y)	0.00308	0.00312	0.00307
	(A1 * A2 * !A4 * !B1 * Y)	-0.00982	-0.00989	-0.00976
	(A1 * !A2 * A4 * !B1 * Y)	0.00784	0.00790	0.00784
	(A1 * !A2 * A4 * !B1 * Y)	-0.00997	-0.01000	-0.00995
	(A1 * !A2 * !A4 * !B1 * Y)	0.00375	0.00380	0.00376
	(A1 * !A2 * !A4 * !B1 * Y)	-0.01000	-0.01008	-0.01002
	(!A2 * A4 * B1 * !Y)	0.01173	0.01184	0.01175
	(!A2 * A4 * B1 * !Y)	-0.00588	-0.00598	-0.00592
	(!A2 * !A4 * B1 * !Y)	0.00804	0.00806	0.00803
	(!A2 * !A4 * B1 * !Y)	-0.00590	-0.00596	-0.00592
	(!A1 * A2 * A4 * B1 * !Y)	0.01160	0.01165	0.01160
	(!A1 * A2 * A4 * B1 * !Y)	-0.00590	-0.00596	-0.00591
	(!A1 * A2 * A4 * !B1 * Y)	0.00772	0.00781	0.00775
	(!A1 * A2 * A4 * !B1 * Y)	-0.00992	-0.00997	-0.00991
	(!A1 * A2 * !A4 * B1 * !Y)	0.00816	0.00818	0.00816
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00589	-0.00596	-0.00592
	(!A1 * A2 * !A4 * !B1 * Y)	0.00390	0.00392	0.00389
	(!A1 * A2 * !A4 * !B1 * Y)	-0.01005	-0.01008	-0.01004
	(!A1 * !A2 * A4 * !B1 * Y)	0.00762	0.00773	0.00765
	(!A1 * !A2 * A4 * !B1 * Y)	-0.01001	-0.01007	-0.01001
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00383	0.00387	0.00382
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.01002	-0.01008	-0.01002

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)**	-0.00092	-0.00095	-0.00108
	(A1 * A2 * A4 * B1 * !Y)	0.00360	0.00361	0.00345
	(A1 * A2 * !A4 * B1 * !Y)	-0.00086	-0.00088	-0.00087
	(A1 * A2 * !A4 * B1 * !Y)	0.00355	0.00358	0.00356
	(A1 * A2 * !A4 * !B1 * Y)	-0.00061	-0.00061	-0.00063
	(A1 * A2 * !A4 * !B1 * Y)	0.00273	0.00275	0.00267
	(A1 * !A2 * A4 * !B1 * Y)	-0.00155	-0.00178	-0.00178
	(A1 * !A2 * A4 * !B1 * Y)	0.00287	0.00271	0.00266
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00091	-0.00090	-0.00092
	(A1 * !A2 * !A4 * !B1 * Y)	0.00274	0.00276	0.00267
	(!A2 * A4 * B1 * !Y)	-0.00086	-0.00090	-0.00088
	(!A2 * A4 * B1 * !Y)	0.00355	0.00359	0.00356
	(!A2 * !A4 * B1 * !Y)	-0.00012	-0.00012	-0.00005
	(!A2 * !A4 * B1 * !Y)	0.00356	0.00358	0.00356
	(!A1 * A2 * A4 * B1 * !Y)	-0.00073	-0.00085	-0.00086
	(!A1 * A2 * A4 * B1 * !Y)	0.00355	0.00359	0.00356
	(!A1 * A2 * A4 * !B1 * Y)	-0.00142	-0.00174	-0.00177
	(!A1 * A2 * A4 * !B1 * Y)	0.00295	0.00272	0.00265
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00020	-0.00020	-0.00010
	(!A1 * A2 * !A4 * B1 * !Y)	0.00355	0.00357	0.00356
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00091	-0.00089	-0.00092
	(!A1 * A2 * !A4 * !B1 * Y)	0.00280	0.00285	0.00271
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00172	-0.00182	-0.00181
	(!A1 * !A2 * A4 * !B1 * Y)	0.00264	0.00266	0.00263
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00095	-0.00095	-0.00094
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00272	0.00274	0.00268

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00188	-0.00193	-0.00218
	(A1 * A2 * A4 * B1 * !Y)	0.00718	0.00717	0.00686
	(A1 * A2 * !A4 * B1 * !Y)	-0.00173	-0.00177	-0.00178
	(A1 * A2 * !A4 * B1 * !Y)	0.00707	0.00709	0.00707
	(A1 * A2 * !A4 * !B1 * Y)	-0.00137	-0.00139	-0.00143
	(A1 * A2 * !A4 * !B1 * Y)	0.00525	0.00530	0.00511
	(A1 * !A2 * A4 * !B1 * Y)	-0.00326	-0.00380	-0.00378
	(A1 * !A2 * A4 * !B1 * Y)	0.00554	0.00518	0.00509
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00197	-0.00198	-0.00202
	(A1 * !A2 * !A4 * !B1 * Y)	0.00535	0.00536	0.00514
	(!A2 * A4 * B1 * !Y)	-0.00176	-0.00183	-0.00179
	(!A2 * A4 * B1 * !Y)	0.00708	0.00714	0.00707
	(!A2 * !A4 * B1 * !Y)	-0.00029	-0.00029	-0.00013
	(!A2 * !A4 * B1 * !Y)	0.00709	0.00713	0.00708
	(!A1 * A2 * A4 * B1 * !Y)	-0.00147	-0.00178	-0.00176
	(!A1 * A2 * A4 * B1 * !Y)	0.00708	0.00714	0.00707
	(!A1 * A2 * A4 * !B1 * Y)	-0.00295	-0.00377	-0.00375
	(!A1 * A2 * A4 * !B1 * Y)	0.00576	0.00519	0.00508
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00044	-0.00044	-0.00021
	(!A1 * A2 * !A4 * B1 * !Y)	0.00706	0.00713	0.00708
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00201	-0.00193	-0.00201
	(!A1 * A2 * !A4 * !B1 * Y)	0.00541	0.00557	0.00523
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00366	-0.00386	-0.00382
	(!A1 * !A2 * A4 * !B1 * Y)	0.00508	0.00510	0.00503
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00206	-0.00206	-0.00206
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00523	0.00529	0.00514

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00373	-0.00381	-0.00435
	(A1 * A2 * A4 * B1 * !Y)	0.01446	0.01440	0.01381
	(A1 * A2 * !A4 * B1 * !Y)	-0.00344	-0.00353	-0.00354
	(A1 * A2 * !A4 * B1 * !Y)	0.01421	0.01428	0.01424
	(A1 * A2 * !A4 * !B1 * Y)	-0.00258	-0.00259	-0.00268
	(A1 * A2 * !A4 * !B1 * Y)	0.01069	0.01071	0.01031
	(A1 * !A2 * A4 * !B1 * Y)	-0.00627	-0.00752	-0.00746
	(A1 * !A2 * A4 * !B1 * Y)	0.01146	0.01051	0.01030
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00361	-0.00369	-0.00376
	(A1 * !A2 * !A4 * !B1 * Y)	0.01070	0.01080	0.01036
	(!A2 * A4 * B1 * !Y)	-0.00345	-0.00352	-0.00350
	(!A2 * A4 * B1 * !Y)	0.01422	0.01419	0.01423
	(!A2 * !A4 * B1 * !Y)	-0.00026	-0.00029	0.00002
	(!A2 * !A4 * B1 * !Y)	0.01419	0.01431	0.01424
	(!A1 * A2 * A4 * B1 * !Y)	-0.00285	-0.00344	-0.00345
	(!A1 * A2 * A4 * B1 * !Y)	0.01426	0.01423	0.01423
	(!A1 * A2 * A4 * !B1 * Y)	-0.00560	-0.00740	-0.00744
	(!A1 * A2 * A4 * !B1 * Y)	0.01192	0.01034	0.01026
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00073	-0.00072	-0.00027
	(!A1 * A2 * !A4 * B1 * !Y)	0.01423	0.01432	0.01424
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00390	-0.00373	-0.00389
	(!A1 * A2 * !A4 * !B1 * Y)	0.01091	0.01118	0.01050
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00716	-0.00764	-0.00757
	(!A1 * !A2 * A4 * !B1 * Y)	0.01028	0.01029	0.01016
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00383	-0.00387	-0.00382
	(!A1 * !A2 * !A4 * !B1 * Y)	0.01066	0.01065	0.01036

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)**	0.00324	0.00275	0.00309
	(A1 * A2 * A3 * B1 * !Y)	-0.00141	-0.00195	-0.00152
	(A1 * A2 * !A3 * !B1 * Y)	0.00193	0.00195	0.00192
	(A1 * A2 * !A3 * !B1 * Y)	-0.00265	-0.00266	-0.00265
	(A1 * !A2 * A3 * !B1 * Y)	0.00190	0.00191	0.00190
	(A1 * !A2 * A3 * !B1 * Y)	-0.00265	-0.00265	-0.00264
	(A1 * !A2 * !A3 * !B1 * Y)	0.00188	0.00191	0.00189
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00265	-0.00266	-0.00265
	(!A3 * B1 * !Y)	0.00308	0.00309	0.00307
	(!A3 * B1 * !Y)	-0.00147	-0.00147	-0.00146
	(!A2 * A3 * B1 * !Y)	0.00306	0.00306	0.00306
	(!A2 * A3 * B1 * !Y)	-0.00147	-0.00147	-0.00146
	(!A1 * A2 * A3 * B1 * !Y)	0.00303	0.00304	0.00304
	(!A1 * A2 * A3 * B1 * !Y)	-0.00145	-0.00146	-0.00146
	(!A1 * A2 * A3 * !B1 * Y)	0.00187	0.00190	0.00188
	(!A1 * A2 * A3 * !B1 * Y)	-0.00262	-0.00264	-0.00262
	(!A1 * !A3 * !B1 * Y)	0.00189	0.00192	0.00190
	(!A1 * !A3 * !B1 * Y)	-0.00265	-0.00267	-0.00265
	(!A1 * !A2 * A3 * !B1 * Y)	0.00187	0.00188	0.00187
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00265	-0.00266	-0.00265

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00636	0.00526	0.00600
	(A1 * A2 * A3 * B1 * !Y)	-0.00274	-0.00388	-0.00303
	(A1 * A2 * !A3 * !B1 * Y)	0.00394	0.00397	0.00395
	(A1 * A2 * !A3 * !B1 * Y)	-0.00497	-0.00499	-0.00497
	(A1 * !A2 * A3 * !B1 * Y)	0.00386	0.00390	0.00387
	(A1 * !A2 * A3 * !B1 * Y)	-0.00496	-0.00498	-0.00496
	(A1 * !A2 * !A3 * !B1 * Y)	0.00386	0.00392	0.00388
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00497	-0.00500	-0.00498
	(!A3 * B1 * !Y)	0.00593	0.00597	0.00593
	(!A3 * B1 * !Y)	-0.00292	-0.00295	-0.00292
	(!A2 * A3 * B1 * !Y)	0.00584	0.00588	0.00584
	(!A2 * A3 * B1 * !Y)	-0.00292	-0.00295	-0.00292
	(!A1 * A2 * A3 * B1 * !Y)	0.00582	0.00588	0.00583
	(!A1 * A2 * A3 * B1 * !Y)	-0.00291	-0.00295	-0.00292
	(!A1 * A2 * A3 * !B1 * Y)	0.00384	0.00386	0.00386
	(!A1 * A2 * A3 * !B1 * Y)	-0.00493	-0.00493	-0.00492
	(!A1 * !A3 * !B1 * Y)	0.00386	0.00392	0.00388
	(!A1 * !A3 * !B1 * Y)	-0.00497	-0.00500	-0.00498
	(!A1 * !A2 * A3 * !B1 * Y)	0.00379	0.00382	0.00380
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00497	-0.00499	-0.00498

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.01254	0.01044	0.01192
	(A1 * A2 * A3 * B1 * !Y)	-0.00568	-0.00781	-0.00607
	(A1 * A2 * !A3 * !B1 * Y)	0.00782	0.00787	0.00783
	(A1 * A2 * !A3 * !B1 * Y)	-0.00995	-0.00998	-0.00994
	(A1 * !A2 * A3 * !B1 * Y)	0.00766	0.00770	0.00766
	(A1 * !A2 * A3 * !B1 * Y)	-0.00995	-0.00996	-0.00992
	(A1 * !A2 * !A3 * !B1 * Y)	0.00766	0.00778	0.00769
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00994	-0.01001	-0.00995
	(!A3 * B1 * !Y)	0.01179	0.01187	0.01178
	(!A3 * B1 * !Y)	-0.00585	-0.00591	-0.00585
	(!A2 * A3 * B1 * !Y)	0.01173	0.01177	0.01171
	(!A2 * A3 * B1 * !Y)	-0.00587	-0.00590	-0.00585
	(!A1 * A2 * A3 * B1 * !Y)	0.01167	0.01173	0.01164
	(!A1 * A2 * A3 * B1 * !Y)	-0.00586	-0.00592	-0.00585
	(!A1 * A2 * A3 * !B1 * Y)	0.00771	0.00772	0.00771
	(!A1 * A2 * A3 * !B1 * Y)	-0.00988	-0.00987	-0.00985
	(!A1 * !A3 * !B1 * Y)	0.00765	0.00778	0.00769
	(!A1 * !A3 * !B1 * Y)	-0.00993	-0.01001	-0.00995
	(!A1 * !A2 * A3 * !B1 * Y)	0.00759	0.00762	0.00760
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00995	-0.00997	-0.00995

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)**	-0.00104	-0.00108	-0.00120
	(A1 * A2 * A3 * B1 * !Y)	0.00359	0.00360	0.00344
	(A1 * A2 * !A3 * !B1 * Y)	-0.00168	-0.00181	-0.00182
	(A1 * A2 * !A3 * !B1 * Y)	0.00284	0.00275	0.00273
	(A1 * !A2 * A3 * !B1 * Y)	-0.00161	-0.00178	-0.00181
	(A1 * !A2 * A3 * !B1 * Y)	0.00283	0.00277	0.00273
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00179	-0.00183	-0.00184
	(A1 * !A2 * !A3 * !B1 * Y)	0.00271	0.00272	0.00271
	(!A3 * B1 * !Y)	-0.00100	-0.00101	-0.00100
	(!A3 * B1 * !Y)	0.00355	0.00355	0.00355
	(!A2 * A3 * B1 * !Y)	-0.00088	-0.00097	-0.00099
	(!A2 * A3 * B1 * !Y)	0.00354	0.00357	0.00355
	(!A1 * A2 * A3 * B1 * !Y)	-0.00081	-0.00096	-0.00098
	(!A1 * A2 * A3 * B1 * !Y)	0.00354	0.00357	0.00355
	(!A1 * A2 * A3 * !B1 * Y)	-0.00156	-0.00177	-0.00180
	(!A1 * A2 * A3 * !B1 * Y)	0.00287	0.00278	0.00273
	(!A1 * !A3 * !B1 * Y)	-0.00178	-0.00183	-0.00184
	(!A1 * !A3 * !B1 * Y)	0.00272	0.00270	0.00271
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00169	-0.00180	-0.00182
	(!A1 * !A2 * A3 * !B1 * Y)	0.00270	0.00273	0.00271

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00190	-0.00195	-0.00221
	(A1 * A2 * A3 * B1 * !Y)	0.00719	0.00718	0.00688
	(A1 * A2 * !A3 * !B1 * Y)	-0.00340	-0.00376	-0.00380
	(A1 * A2 * !A3 * !B1 * Y)	0.00534	0.00518	0.00510
	(A1 * !A2 * A3 * !B1 * Y)	-0.00321	-0.00370	-0.00377
	(A1 * !A2 * A3 * !B1 * Y)	0.00541	0.00517	0.00509
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00367	-0.00383	-0.00384
	(A1 * !A2 * !A3 * !B1 * Y)	0.00502	0.00510	0.00504
	(!A3 * B1 * !Y)	-0.00175	-0.00181	-0.00180
	(!A3 * B1 * !Y)	0.00707	0.00711	0.00709
	(!A2 * A3 * B1 * !Y)	-0.00149	-0.00172	-0.00177
	(!A2 * A3 * B1 * !Y)	0.00708	0.00714	0.00709
	(!A1 * A2 * A3 * B1 * !Y)	-0.00135	-0.00169	-0.00175
	(!A1 * A2 * A3 * B1 * !Y)	0.00709	0.00714	0.00709
	(!A1 * A2 * A3 * !B1 * Y)	-0.00312	-0.00366	-0.00375
	(!A1 * A2 * A3 * !B1 * Y)	0.00549	0.00522	0.00509
	(!A1 * !A3 * !B1 * Y)	-0.00366	-0.00382	-0.00384
	(!A1 * !A3 * !B1 * Y)	0.00503	0.00510	0.00504
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00346	-0.00375	-0.00380
	(!A1 * !A2 * A3 * !B1 * Y)	0.00504	0.00510	0.00504

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00375	-0.00386	-0.00437
	(A1 * A2 * A3 * B1 * !Y)	0.01439	0.01440	0.01375
	(A1 * A2 * !A3 * !B1 * Y)	-0.00676	-0.00746	-0.00752
	(A1 * A2 * !A3 * !B1 * Y)	0.01070	0.01031	0.01021
	(A1 * !A2 * A3 * !B1 * Y)	-0.00644	-0.00733	-0.00746
	(A1 * !A2 * A3 * !B1 * Y)	0.01080	0.01033	0.01017
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00729	-0.00758	-0.00761
	(A1 * !A2 * !A3 * !B1 * Y)	0.01006	0.01014	0.01009
	(!A3 * B1 * !Y)	-0.00346	-0.00356	-0.00354
	(!A3 * B1 * !Y)	0.01414	0.01422	0.01417
	(!A2 * A3 * B1 * !Y)	-0.00294	-0.00334	-0.00346
	(!A2 * A3 * B1 * !Y)	0.01418	0.01428	0.01417
	(!A1 * A2 * A3 * B1 * !Y)	-0.00267	-0.00330	-0.00344
	(!A1 * A2 * A3 * B1 * !Y)	0.01419	0.01427	0.01417
	(!A1 * A2 * A3 * !B1 * Y)	-0.00626	-0.00726	-0.00743
	(!A1 * A2 * A3 * !B1 * Y)	0.01092	0.01041	0.01019
	(!A1 * !A3 * !B1 * Y)	-0.00728	-0.00758	-0.00761
	(!A1 * !A3 * !B1 * Y)	0.01007	0.01014	0.01009
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00689	-0.00740	-0.00753
	(!A1 * !A2 * A3 * !B1 * Y)	0.01011	0.01019	0.01009

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)	0.00248	0.00252	0.00261
	(A1 * A2 * A3 * A4 * !Y)	-0.00071	-0.00072	-0.00057
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00270	0.00274	0.00296
	(A1 * A2 * A3 * A4 * !Y)	-0.00150	-0.00150	-0.00121
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00531	0.00544	0.00588
	(A1 * A2 * A3 * A4 * !Y)	-0.00282	-0.00288	-0.00229

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)	0.00048	0.00042	-0.00057
	(A1 * A2 * A3 * A4 * !Y)	0.00374	0.00369	0.00272
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00321	0.00309	0.00112
	(A1 * A2 * A3 * A4 * !Y)	0.00753	0.00742	0.00550
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00641	0.00616	0.00221
	(A1 * A2 * A3 * A4 * !Y)	0.01491	0.01469	0.01081

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00270	0.00269	0.00272	0.00266	0.00277	1.73361
sky130_fd_sc_hs__a41o_2	0.00266	0.00276	0.00282	0.00265	0.00280	3.23815
sky130_fd_sc_hs__a41o_4	0.00525	0.00513	0.00530	0.00510	0.00518	5.09524

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	134.22800	261.96500
sky130_fd_sc_hs__a41o_2	0.00000	191.71900	264.76300
sky130_fd_sc_hs__a41o_4	0.00000	383.17700	529.46800

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)	0.07430	0.48029	6.21494
	A2->X (RR)	0.08097	0.47378	6.05786
	A3->X (RR)	0.08620	0.46041	5.89109
	A4->X (RR)	0.08921	0.44094	5.66507
	B1->X (RR)	0.04127	0.38172	5.01535
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.08104	0.42156	6.13458
	A2->X (RR)	0.08858	0.41331	5.96183
	A3->X (RR)	0.09363	0.39723	5.78749
	A4->X (RR)	0.09623	0.37528	5.56228
	B1->X (RR)	0.04049	0.31390	4.92883
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.09713	0.39979	6.06366
	A2->X (RR)	0.10731	0.40010	6.11734
	A3->X (RR)	0.11216	0.36185	5.74500
	A4->X (RR)	0.11588	0.34163	5.52221
	B1->X (RR)	0.03823	0.25605	4.61839

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.08089	0.43571	5.31878
	A2->X (FF)	0.09526	0.46130	5.48627
	A3->X (FF)	0.10470	0.48020	5.66961
	A4->X (FF)	0.11395	0.50052	5.89781
	B1->X (FF)	0.09532	0.53136	6.15084
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.09327	0.41187	5.15111
	A2->X (FF)	0.10861	0.43784	5.32542
	A3->X (FF)	0.11687	0.45444	5.49833
	A4->X (FF)	0.12497	0.47275	5.71483
	B1->X (FF)	0.10725	0.50949	5.97551
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.09896	0.36200	4.51850
	A2->X (FF)	0.11298	0.38597	4.65632
	A3->X (FF)	0.12312	0.41203	5.02601
	A4->X (FF)	0.13365	0.43281	5.25998
	B1->X (FF)	0.11346	0.48472	5.67827

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.02307	0.03286	0.21962
	A1	0.01587	0.02567	0.21294
	A2	0.02447	0.03331	0.21787
	A2	0.01586	0.02471	0.20977
	A3	0.02584	0.03465	0.22932
	A3	0.01582	0.02465	0.21925
	A4	0.02728	0.03606	0.24091
	A4	0.01577	0.02458	0.22962
	B1	0.01423	0.03082	0.29558
	B1	0.00875	0.02535	0.29039
sky130_fd_sc_hs__a41o_2	A1	0.02785	0.03696	0.22734
	A1	0.02065	0.02977	0.22115
	A2	0.02931	0.03710	0.22568
	A2	0.02063	0.02843	0.21859
	A3	0.03073	0.03836	0.23660
	A3	0.02060	0.02830	0.22662
	A4	0.03207	0.03960	0.24745
	A4	0.02054	0.02817	0.23675
	B1	0.01700	0.03366	0.30050
	B1	0.01147	0.02816	0.29582

sky130_fd_sc_hs__a41o_4	**A1**	0.05708	0.06952	0.36943
	A1	0.04266	0.05523	0.35658
	A2	0.05988	0.07168	0.41796
	A2	0.04269	0.05459	0.40232
	A3	0.06293	0.07496	0.45519
	A3	0.04257	0.05474	0.43522
	A4	0.06570	0.07722	0.48011
	A4	0.04249	0.05399	0.45811
	B1	0.03178	0.06243	0.54142
	B1	0.02120	0.05189	0.53051

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00731	0.01629	0.20106
	A1	0.01451	0.02342	0.20776
	A2	0.00841	0.01687	0.20189
	A2	0.01701	0.02539	0.20857
	A3	0.00953	0.01803	0.21178
	A3	0.01952	0.02780	0.22096
	A4	0.01047	0.01872	0.22202
	A4	0.02189	0.03010	0.23339
	B1	0.00639	0.02267	0.26455
	B1	0.01186	0.02814	0.27002

sky130_fd_sc_hs__a41o_2	**A1**	0.01587	0.02179	0.20874
	A1	0.02307	0.02889	0.21244
	A2	0.01798	0.02298	0.20804
	A2	0.02663	0.03128	0.21405
	A3	0.01943	0.02380	0.21999
	A3	0.02952	0.03376	0.22664
	A4	0.02072	0.02464	0.22710
	A4	0.03217	0.03599	0.23850
	B1	0.01327	0.02795	0.27143
	B1	0.01880	0.03346	0.27357
sky130_fd_sc_hs__a41o_4	**A1**	0.03154	0.03977	0.36301
	A1	0.04595	0.05406	0.37741
	A2	0.03635	0.04364	0.38044
	A2	0.05351	0.06071	0.39763
	A3	0.03939	0.04633	0.42074
	A3	0.05965	0.06634	0.43722
	A4	0.04341	0.04903	0.44590
	A4	0.06639	0.07179	0.46555
	B1	0.02661	0.05316	0.51730
	B1	0.03721	0.06370	0.52177

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)**	0.00314	0.00265	0.00312
	(A2 * A3 * A4 * B1 * X)	-0.00117	-0.00169	-0.00113
	(A2 * A3 * !A4 * B1 * X)	0.00309	0.00311	0.00310
	(A2 * A3 * !A4 * B1 * X)	-0.00104	-0.00106	-0.00104
	(A2 * A3 * !A4 * !B1 * !X)	0.00168	0.00168	0.00161
	(A2 * A3 * !A4 * !B1 * !X)	-0.00140	-0.00142	-0.00160
	(A2 * !A3 * B1 * X)	0.00311	0.00312	0.00311
	(A2 * !A3 * B1 * X)	-0.00104	-0.00106	-0.00104
	(A2 * !A3 * !B1 * !X)	0.00166	0.00166	0.00161
	(A2 * !A3 * !B1 * !X)	-0.00149	-0.00151	-0.00161
	(!A2 * B1 * X)	0.00312	0.00313	0.00312
	(!A2 * B1 * X)	-0.00103	-0.00105	-0.00104
	(!A2 * !B1 * !X)	0.00165	0.00165	0.00162
	(!A2 * !B1 * !X)	-0.00157	-0.00158	-0.00162
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00314	0.00266	0.00313
	(A2 * A3 * A4 * B1 * X)	-0.00116	-0.00168	-0.00111
	(A2 * A3 * !A4 * B1 * X)	0.00308	0.00309	0.00309
	(A2 * A3 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00103
	(A2 * A3 * !A4 * !B1 * !X)	0.00273	0.00273	0.00266
	(A2 * A3 * !A4 * !B1 * !X)	-0.00037	-0.00037	-0.00055
	(A2 * !A3 * B1 * X)	0.00312	0.00313	0.00312
	(A2 * !A3 * B1 * X)	-0.00102	-0.00104	-0.00103
	(A2 * !A3 * !B1 * !X)	0.00272	0.00272	0.00266
	(A2 * !A3 * !B1 * !X)	-0.00044	-0.00045	-0.00056
	(!A2 * B1 * X)	0.00315	0.00315	0.00315
	(!A2 * B1 * X)	-0.00102	-0.00103	-0.00103
	(!A2 * !B1 * !X)	0.00272	0.00272	0.00269
	(!A2 * !B1 * !X)	-0.00051	-0.00052	-0.00057

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00650	0.00549	0.00647
	(A2 * A3 * A4 * B1 * X)	-0.00234	-0.00339	-0.00230
	(A2 * A3 * !A4 * B1 * X)	0.00632	0.00633	0.00632
	(A2 * A3 * !A4 * B1 * X)	-0.00212	-0.00214	-0.00213
	(A2 * A3 * !A4 * !B1 * !X)	0.00558	0.00559	0.00541
	(A2 * A3 * !A4 * !B1 * !X)	-0.00078	-0.00081	-0.00122
	(A2 * !A3 * B1 * X)	0.00633	0.00636	0.00634
	(A2 * !A3 * B1 * X)	-0.00212	-0.00216	-0.00213
	(A2 * !A3 * !B1 * !X)	0.00550	0.00551	0.00539
	(A2 * !A3 * !B1 * !X)	-0.00097	-0.00099	-0.00126
	(!A2 * B1 * X)	0.00645	0.00646	0.00646
	(!A2 * B1 * X)	-0.00211	-0.00215	-0.00213
	(!A2 * !B1 * !X)	0.00555	0.00557	0.00548
	(!A2 * !B1 * !X)	-0.00112	-0.00118	-0.00129

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

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

sky130_fd_sc_hs__a41o_1	**(A2 * A3 * A4 * B1 * X)**	-0.00067	-0.00071	-0.00089
	(A2 * A3 * A4 * B1 * X)	0.00361	0.00361	0.00340
	(A2 * A3 * !A4 * B1 * X)	-0.00039	-0.00058	-0.00060
	(A2 * A3 * !A4 * B1 * X)	0.00355	0.00358	0.00355
	(A2 * A3 * !A4 * !B1 * !X)	0.00056	0.00055	0.00056
	(A2 * A3 * !A4 * !B1 * !X)	0.00375	0.00379	0.00376
	(A2 * !A3 * B1 * X)	-0.00048	-0.00059	-0.00061
	(A2 * !A3 * B1 * X)	0.00355	0.00358	0.00355
	(A2 * !A3 * !B1 * !X)	0.00055	0.00055	0.00055
	(A2 * !A3 * !B1 * !X)	0.00376	0.00377	0.00376
	(!A2 * B1 * X)	-0.00061	-0.00063	-0.00063
	(!A2 * B1 * X)	0.00355	0.00356	0.00355
	(!A2 * !B1 * !X)	0.00053	0.00053	0.00054
	(!A2 * !B1 * !X)	0.00376	0.00379	0.00377
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00063	-0.00067	-0.00085
	(A2 * A3 * A4 * B1 * X)	0.00364	0.00365	0.00343
	(A2 * A3 * !A4 * B1 * X)	-0.00035	-0.00053	-0.00056
	(A2 * A3 * !A4 * B1 * X)	0.00358	0.00362	0.00359
	(A2 * A3 * !A4 * !B1 * !X)	0.00157	0.00157	0.00158
	(A2 * A3 * !A4 * !B1 * !X)	0.00481	0.00483	0.00479
	(A2 * !A3 * B1 * X)	-0.00044	-0.00055	-0.00057
	(A2 * !A3 * B1 * X)	0.00358	0.00361	0.00359
	(A2 * !A3 * !B1 * !X)	0.00157	0.00157	0.00158
	(A2 * !A3 * !B1 * !X)	0.00479	0.00481	0.00479
	(!A2 * B1 * X)	-0.00057	-0.00059	-0.00059
	(!A2 * B1 * X)	0.00359	0.00360	0.00359
	(!A2 * !B1 * !X)	0.00155	0.00154	0.00155
	(!A2 * !B1 * !X)	0.00479	0.00482	0.00480

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00146	-0.00154	-0.00189
	(A2 * A3 * A4 * B1 * X)	0.00736	0.00735	0.00694
	(A2 * A3 * !A4 * B1 * X)	-0.00079	-0.00131	-0.00133
	(A2 * A3 * !A4 * B1 * X)	0.00724	0.00726	0.00724
	(A2 * A3 * !A4 * !B1 * !X)	0.00308	0.00306	0.00308
	(A2 * A3 * !A4 * !B1 * !X)	0.00970	0.00977	0.00972
	(A2 * !A3 * B1 * X)	-0.00103	-0.00133	-0.00134
	(A2 * !A3 * B1 * X)	0.00724	0.00725	0.00724
	(A2 * !A3 * !B1 * !X)	0.00307	0.00308	0.00308
	(A2 * !A3 * !B1 * !X)	0.00972	0.00971	0.00972
	(!A2 * B1 * X)	-0.00134	-0.00142	-0.00138
	(!A2 * B1 * X)	0.00726	0.00730	0.00724
	(!A2 * !B1 * !X)	0.00300	0.00297	0.00299
	(!A2 * !B1 * !X)	0.00972	0.00978	0.00974

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)**	0.00316	0.00268	0.00316
	(A1 * A3 * A4 * B1 * X)	-0.00114	-0.00168	-0.00111
	(A1 * A3 * !A4 * B1 * X)	0.00314	0.00315	0.00314
	(A1 * A3 * !A4 * B1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * A3 * !A4 * !B1 * !X)	0.00180	0.00181	0.00181
	(A1 * A3 * !A4 * !B1 * !X)	-0.00122	-0.00124	-0.00123
	(A1 * !A3 * B1 * X)	0.00315	0.00316	0.00315
	(A1 * !A3 * B1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * !A3 * !B1 * !X)	0.00183	0.00184	0.00183
	(A1 * !A3 * !B1 * !X)	-0.00122	-0.00124	-0.00123
	(!A1 * A3 * A4 * B1 * X)	0.00315	0.00318	0.00316
	(!A1 * A3 * A4 * B1 * X)	-0.00101	-0.00104	-0.00103
	(!A1 * A3 * A4 * !B1 * !X)	0.00300	0.00302	0.00300
	(!A1 * A3 * A4 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(!A1 * A3 * !A4 * B1 * X)	0.00228	0.00229	0.00228
	(!A1 * A3 * !A4 * B1 * X)	-0.00102	-0.00104	-0.00103
	(!A1 * A3 * !A4 * !B1 * !X)	0.00205	0.00206	0.00205
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00122	-0.00123	-0.00122
	(!A1 * !A3 * B1 * X)	0.00228	0.00230	0.00228
	(!A1 * !A3 * B1 * X)	-0.00102	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * !X)	0.00205	0.00206	0.00205
	(!A1 * !A3 * !B1 * !X)	-0.00122	-0.00124	-0.00123

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00322	0.00273	0.00320
	(A1 * A3 * A4 * B1 * X)	-0.00114	-0.00166	-0.00110
	(A1 * A3 * !A4 * B1 * X)	0.00318	0.00320	0.00318
	(A1 * A3 * !A4 * B1 * X)	-0.00101	-0.00103	-0.00101
	(A1 * A3 * !A4 * !B1 * !X)	0.00285	0.00286	0.00287
	(A1 * A3 * !A4 * !B1 * !X)	-0.00019	-0.00021	-0.00019
	(A1 * !A3 * B1 * X)	0.00320	0.00320	0.00320
	(A1 * !A3 * B1 * X)	-0.00101	-0.00102	-0.00101
	(A1 * !A3 * !B1 * !X)	0.00290	0.00291	0.00291
	(A1 * !A3 * !B1 * !X)	-0.00019	-0.00021	-0.00019
	(!A1 * A3 * A4 * B1 * X)	0.00320	0.00321	0.00320
	(!A1 * A3 * A4 * B1 * X)	-0.00100	-0.00102	-0.00101
	(!A1 * A3 * A4 * !B1 * !X)	0.00405	0.00407	0.00406
	(!A1 * A3 * A4 * !B1 * !X)	-0.00017	-0.00019	-0.00018
	(!A1 * A3 * !A4 * B1 * X)	0.00233	0.00233	0.00232
	(!A1 * A3 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A1 * A3 * !A4 * !B1 * !X)	0.00312	0.00312	0.00311
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00020	-0.00021	-0.00019
	(!A1 * !A3 * B1 * X)	0.00237	0.00237	0.00237
	(!A1 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00101
	(!A1 * !A3 * !B1 * !X)	0.00315	0.00316	0.00315
	(!A1 * !A3 * !B1 * !X)	-0.00019	-0.00021	-0.00020

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00638	0.00539	0.00637
	(A1 * A3 * A4 * B1 * X)	-0.00229	-0.00331	-0.00222
	(A1 * A3 * !A4 * B1 * X)	0.00623	0.00626	0.00624
	(A1 * A3 * !A4 * B1 * X)	-0.00205	-0.00208	-0.00206
	(A1 * A3 * !A4 * !B1 * !X)	0.00562	0.00565	0.00566
	(A1 * A3 * !A4 * !B1 * !X)	-0.00040	-0.00044	-0.00040
	(A1 * !A3 * B1 * X)	0.00635	0.00635	0.00636
	(A1 * !A3 * B1 * X)	-0.00204	-0.00205	-0.00205
	(A1 * !A3 * !B1 * !X)	0.00564	0.00567	0.00567
	(A1 * !A3 * !B1 * !X)	-0.00041	-0.00045	-0.00041
	(!A1 * A3 * A4 * B1 * X)	0.00636	0.00636	0.00636
	(!A1 * A3 * A4 * B1 * X)	-0.00204	-0.00206	-0.00205
	(!A1 * A3 * A4 * !B1 * !X)	0.00810	0.00813	0.00811
	(!A1 * A3 * A4 * !B1 * !X)	-0.00035	-0.00038	-0.00036
	(!A1 * A3 * !A4 * B1 * X)	0.00458	0.00458	0.00457
	(!A1 * A3 * !A4 * B1 * X)	-0.00207	-0.00208	-0.00206
	(!A1 * A3 * !A4 * !B1 * !X)	0.00616	0.00616	0.00615
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00043	-0.00044	-0.00042
	(!A1 * !A3 * B1 * X)	0.00457	0.00459	0.00456
	(!A1 * !A3 * B1 * X)	-0.00206	-0.00209	-0.00206
	(!A1 * !A3 * !B1 * !X)	0.00612	0.00612	0.00612
	(!A1 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00044

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)**	-0.00070	-0.00074	-0.00092
	(A1 * A3 * A4 * B1 * X)	0.00359	0.00359	0.00338
	(A1 * A3 * !A4 * B1 * X)	-0.00051	-0.00065	-0.00064
	(A1 * A3 * !A4 * B1 * X)	0.00354	0.00357	0.00354
	(A1 * A3 * !A4 * !B1 * !X)	0.00037	0.00036	0.00036
	(A1 * A3 * !A4 * !B1 * !X)	0.00342	0.00347	0.00339
	(A1 * !A3 * B1 * X)	-0.00064	-0.00068	-0.00066
	(A1 * !A3 * B1 * X)	0.00354	0.00357	0.00354
	(A1 * !A3 * !B1 * !X)	0.00035	0.00035	0.00034
	(A1 * !A3 * !B1 * !X)	0.00344	0.00346	0.00339
	(!A1 * A3 * A4 * B1 * X)	-0.00065	-0.00068	-0.00066
	(!A1 * A3 * A4 * B1 * X)	0.00353	0.00357	0.00354
	(!A1 * A3 * A4 * !B1 * !X)	-0.00050	-0.00080	-0.00080
	(!A1 * A3 * A4 * !B1 * !X)	0.00372	0.00347	0.00340
	(!A1 * A3 * !A4 * B1 * X)	0.00002	0.00002	0.00013
	(!A1 * A3 * !A4 * B1 * X)	0.00353	0.00355	0.00354
	(!A1 * A3 * !A4 * !B1 * !X)	0.00014	0.00010	0.00007
	(!A1 * A3 * !A4 * !B1 * !X)	0.00364	0.00361	0.00350
	(!A1 * !A3 * B1 * X)	0.00010	0.00009	0.00016
	(!A1 * !A3 * B1 * X)	0.00354	0.00356	0.00354
	(!A1 * !A3 * !B1 * !X)	0.00008	0.00008	0.00005
	(!A1 * !A3 * !B1 * !X)	0.00351	0.00351	0.00341

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00070	-0.00074	-0.00092
	(A1 * A3 * A4 * B1 * X)	0.00363	0.00363	0.00342
	(A1 * A3 * !A4 * B1 * X)	-0.00050	-0.00064	-0.00064
	(A1 * A3 * !A4 * B1 * X)	0.00356	0.00360	0.00357
	(A1 * A3 * !A4 * !B1 * !X)	0.00140	0.00138	0.00137
	(A1 * A3 * !A4 * !B1 * !X)	0.00449	0.00453	0.00444
	(A1 * !A3 * B1 * X)	-0.00064	-0.00067	-0.00066
	(A1 * !A3 * B1 * X)	0.00357	0.00360	0.00357
	(A1 * !A3 * !B1 * !X)	0.00136	0.00136	0.00134
	(A1 * !A3 * !B1 * !X)	0.00450	0.00452	0.00444
	(!A1 * A3 * A4 * B1 * X)	-0.00064	-0.00068	-0.00066
	(!A1 * A3 * A4 * B1 * X)	0.00357	0.00360	0.00357
	(!A1 * A3 * A4 * !B1 * !X)	0.00055	0.00022	0.00022
	(!A1 * A3 * A4 * !B1 * !X)	0.00479	0.00452	0.00445
	(!A1 * A3 * !A4 * B1 * X)	0.00004	0.00003	0.00014
	(!A1 * A3 * !A4 * B1 * X)	0.00356	0.00359	0.00358
	(!A1 * A3 * !A4 * !B1 * !X)	0.00116	0.00114	0.00110
	(!A1 * A3 * !A4 * !B1 * !X)	0.00472	0.00467	0.00454
	(!A1 * !A3 * B1 * X)	0.00005	0.00005	0.00012
	(!A1 * !A3 * B1 * X)	0.00357	0.00359	0.00358
	(!A1 * !A3 * !B1 * !X)	0.00107	0.00106	0.00103
	(!A1 * !A3 * !B1 * !X)	0.00456	0.00457	0.00446

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00136	-0.00143	-0.00179
	(A1 * A3 * A4 * B1 * X)	0.00728	0.00726	0.00687
	(A1 * A3 * !A4 * B1 * X)	-0.00092	-0.00120	-0.00124
	(A1 * A3 * !A4 * B1 * X)	0.00716	0.00720	0.00717
	(A1 * A3 * !A4 * !B1 * !X)	0.00288	0.00286	0.00284
	(A1 * A3 * !A4 * !B1 * !X)	0.00902	0.00907	0.00890
	(A1 * !A3 * B1 * X)	-0.00124	-0.00128	-0.00127
	(A1 * !A3 * B1 * X)	0.00718	0.00722	0.00717
	(A1 * !A3 * !B1 * !X)	0.00288	0.00286	0.00282
	(A1 * !A3 * !B1 * !X)	0.00903	0.00907	0.00891
	(!A1 * A3 * A4 * B1 * X)	-0.00124	-0.00129	-0.00129
	(!A1 * A3 * A4 * B1 * X)	0.00717	0.00722	0.00717
	(!A1 * A3 * A4 * !B1 * !X)	0.00128	0.00051	0.00044
	(!A1 * A3 * A4 * !B1 * !X)	0.00977	0.00903	0.00890
	(!A1 * A3 * !A4 * B1 * X)	0.00011	0.00011	0.00034
	(!A1 * A3 * !A4 * B1 * X)	0.00717	0.00723	0.00718
	(!A1 * A3 * !A4 * !B1 * !X)	0.00247	0.00233	0.00228
	(!A1 * A3 * !A4 * !B1 * !X)	0.00951	0.00939	0.00912
	(!A1 * !A3 * B1 * X)	0.00028	0.00026	0.00042
	(!A1 * !A3 * B1 * X)	0.00716	0.00723	0.00718
	(!A1 * !A3 * !B1 * !X)	0.00230	0.00229	0.00223
	(!A1 * !A3 * !B1 * !X)	0.00912	0.00919	0.00895

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)**	0.00314	0.00266	0.00312
	(A1 * A2 * A4 * B1 * X)	-0.00117	-0.00171	-0.00115
	(A1 * A2 * !A4 * B1 * X)	0.00312	0.00313	0.00312
	(A1 * A2 * !A4 * B1 * X)	-0.00107	-0.00109	-0.00107
	(A1 * A2 * !A4 * !B1 * !X)	0.00185	0.00186	0.00186
	(A1 * A2 * !A4 * !B1 * !X)	-0.00121	-0.00123	-0.00121
	(A1 * !A2 * A4 * !B1 * !X)	0.00297	0.00300	0.00298
	(A1 * !A2 * A4 * !B1 * !X)	-0.00123	-0.00125	-0.00124
	(A1 * !A2 * !A4 * !B1 * !X)	0.00207	0.00208	0.00207
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * A4 * B1 * X)	0.00311	0.00314	0.00312
	(!A2 * A4 * B1 * X)	-0.00106	-0.00109	-0.00107
	(!A2 * !A4 * B1 * X)	0.00229	0.00229	0.00229
	(!A2 * !A4 * B1 * X)	-0.00107	-0.00107	-0.00107
	(!A1 * A2 * A4 * B1 * X)	0.00311	0.00311	0.00311
	(!A1 * A2 * A4 * B1 * X)	-0.00107	-0.00108	-0.00107
	(!A1 * A2 * A4 * !B1 * !X)	0.00295	0.00297	0.00296
	(!A1 * A2 * A4 * !B1 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * !A4 * B1 * X)	0.00227	0.00227	0.00226
	(!A1 * A2 * !A4 * B1 * X)	-0.00107	-0.00109	-0.00107
	(!A1 * A2 * !A4 * !B1 * !X)	0.00204	0.00204	0.00204
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00126	-0.00127	-0.00126
	(!A1 * !A2 * A4 * !B1 * !X)	0.00293	0.00295	0.00293
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00126	-0.00128	-0.00126
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00208	0.00209	0.00208
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00126	-0.00128	-0.00126

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00323	0.00276	0.00323
	(A1 * A2 * A4 * B1 * X)	-0.00114	-0.00167	-0.00111
	(A1 * A2 * !A4 * B1 * X)	0.00322	0.00324	0.00323
	(A1 * A2 * !A4 * B1 * X)	-0.00102	-0.00104	-0.00103
	(A1 * A2 * !A4 * !B1 * !X)	0.00292	0.00294	0.00294
	(A1 * A2 * !A4 * !B1 * !X)	-0.00015	-0.00017	-0.00015
	(A1 * !A2 * A4 * !B1 * !X)	0.00409	0.00412	0.00410
	(A1 * !A2 * A4 * !B1 * !X)	-0.00018	-0.00019	-0.00018
	(A1 * !A2 * !A4 * !B1 * !X)	0.00312	0.00313	0.00312
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00020	-0.00022	-0.00021
	(!A2 * A4 * B1 * X)	0.00322	0.00323	0.00323
	(!A2 * A4 * B1 * X)	-0.00102	-0.00104	-0.00103
	(!A2 * !A4 * B1 * X)	0.00233	0.00233	0.00232
	(!A2 * !A4 * B1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * A2 * A4 * B1 * X)	0.00322	0.00323	0.00321
	(!A1 * A2 * A4 * B1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * A2 * A4 * !B1 * !X)	0.00407	0.00409	0.00408
	(!A1 * A2 * A4 * !B1 * !X)	-0.00018	-0.00019	-0.00018
	(!A1 * A2 * !A4 * B1 * X)	0.00235	0.00235	0.00234
	(!A1 * A2 * !A4 * B1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * A2 * !A4 * !B1 * !X)	0.00313	0.00314	0.00313
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00019	-0.00021	-0.00020
	(!A1 * !A2 * A4 * !B1 * !X)	0.00404	0.00408	0.00405
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00019	-0.00022	-0.00020
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00314	0.00314	0.00313
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00021	-0.00021	-0.00021

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00648	0.00553	0.00645
	(A1 * A2 * A4 * B1 * X)	-0.00232	-0.00337	-0.00228
	(A1 * A2 * !A4 * B1 * X)	0.00641	0.00645	0.00642
	(A1 * A2 * !A4 * B1 * X)	-0.00210	-0.00215	-0.00212
	(A1 * A2 * !A4 * !B1 * !X)	0.00578	0.00581	0.00578
	(A1 * A2 * !A4 * !B1 * !X)	-0.00037	-0.00042	-0.00035
	(A1 * !A2 * A4 * !B1 * !X)	0.00815	0.00821	0.00817
	(A1 * !A2 * A4 * !B1 * !X)	-0.00041	-0.00045	-0.00042
	(A1 * !A2 * !A4 * !B1 * !X)	0.00615	0.00616	0.00616
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00047	-0.00048	-0.00048
	(!A2 * A4 * B1 * X)	0.00641	0.00645	0.00642
	(!A2 * A4 * B1 * X)	-0.00210	-0.00214	-0.00212
	(!A2 * !A4 * B1 * X)	0.00461	0.00462	0.00460
	(!A2 * !A4 * B1 * X)	-0.00212	-0.00214	-0.00212
	(!A1 * A2 * A4 * B1 * X)	0.00638	0.00640	0.00639
	(!A1 * A2 * A4 * B1 * X)	-0.00210	-0.00212	-0.00211
	(!A1 * A2 * A4 * !B1 * !X)	0.00810	0.00814	0.00812
	(!A1 * A2 * A4 * !B1 * !X)	-0.00042	-0.00044	-0.00041
	(!A1 * A2 * !A4 * B1 * X)	0.00460	0.00461	0.00460
	(!A1 * A2 * !A4 * B1 * X)	-0.00211	-0.00212	-0.00212
	(!A1 * A2 * !A4 * !B1 * !X)	0.00617	0.00619	0.00617
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00049	-0.00051	-0.00049
	(!A1 * !A2 * A4 * !B1 * !X)	0.00805	0.00811	0.00807
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00045	-0.00049	-0.00046
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00619	0.00621	0.00619
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00047	-0.00050	-0.00048

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

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

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A4 * B1 * X)**	-0.00067	-0.00071	-0.00089
	(A1 * A2 * A4 * B1 * X)	0.00364	0.00364	0.00343
	(A1 * A2 * !A4 * B1 * X)	-0.00061	-0.00063	-0.00063
	(A1 * A2 * !A4 * B1 * X)	0.00358	0.00358	0.00358
	(A1 * A2 * !A4 * !B1 * !X)	0.00036	0.00036	0.00034
	(A1 * A2 * !A4 * !B1 * !X)	0.00350	0.00352	0.00343
	(A1 * !A2 * A4 * !B1 * !X)	-0.00054	-0.00078	-0.00078
	(A1 * !A2 * A4 * !B1 * !X)	0.00365	0.00348	0.00343
	(A1 * !A2 * !A4 * !B1 * !X)	0.00004	0.00005	0.00002
	(A1 * !A2 * !A4 * !B1 * !X)	0.00352	0.00353	0.00343
	(!A2 * A4 * B1 * X)	-0.00060	-0.00064	-0.00063
	(!A2 * A4 * B1 * X)	0.00357	0.00361	0.00358
	(!A2 * !A4 * B1 * X)	0.00009	0.00009	0.00016
	(!A2 * !A4 * B1 * X)	0.00359	0.00360	0.00359
	(!A1 * A2 * A4 * B1 * X)	-0.00047	-0.00059	-0.00061
	(!A1 * A2 * A4 * B1 * X)	0.00358	0.00361	0.00359
	(!A1 * A2 * A4 * !B1 * !X)	-0.00041	-0.00073	-0.00077
	(!A1 * A2 * A4 * !B1 * !X)	0.00373	0.00350	0.00343
	(!A1 * A2 * !A4 * B1 * X)	0.00005	0.00005	0.00015
	(!A1 * A2 * !A4 * B1 * X)	0.00358	0.00360	0.00359
	(!A1 * A2 * !A4 * !B1 * !X)	0.00008	0.00010	0.00006
	(!A1 * A2 * !A4 * !B1 * !X)	0.00357	0.00362	0.00347
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00071	-0.00082	-0.00081
	(!A1 * !A2 * A4 * !B1 * !X)	0.00342	0.00343	0.00340
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00002	-0.00003	-0.00001
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00349	0.00350	0.00344

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00073	-0.00077	-0.00095
	(A1 * A2 * A4 * B1 * X)	0.00364	0.00365	0.00343
	(A1 * A2 * !A4 * B1 * X)	-0.00067	-0.00071	-0.00068
	(A1 * A2 * !A4 * B1 * X)	0.00359	0.00362	0.00359
	(A1 * A2 * !A4 * !B1 * !X)	0.00136	0.00136	0.00134
	(A1 * A2 * !A4 * !B1 * !X)	0.00453	0.00454	0.00446
	(A1 * !A2 * A4 * !B1 * !X)	0.00042	0.00018	0.00018
	(A1 * !A2 * A4 * !B1 * !X)	0.00467	0.00451	0.00446
	(A1 * !A2 * !A4 * !B1 * !X)	0.00106	0.00107	0.00105
	(A1 * !A2 * !A4 * !B1 * !X)	0.00453	0.00454	0.00446
	(!A2 * A4 * B1 * X)	-0.00066	-0.00070	-0.00068
	(!A2 * A4 * B1 * X)	0.00358	0.00362	0.00359
	(!A2 * !A4 * B1 * X)	0.00010	0.00010	0.00017
	(!A2 * !A4 * B1 * X)	0.00359	0.00361	0.00359
	(!A1 * A2 * A4 * B1 * X)	-0.00053	-0.00065	-0.00067
	(!A1 * A2 * A4 * B1 * X)	0.00358	0.00362	0.00359
	(!A1 * A2 * A4 * !B1 * !X)	0.00056	0.00022	0.00019
	(!A1 * A2 * A4 * !B1 * !X)	0.00476	0.00452	0.00445
	(!A1 * A2 * !A4 * B1 * X)	0.00000	0.00000	0.00011
	(!A1 * A2 * !A4 * B1 * X)	0.00359	0.00361	0.00359
	(!A1 * A2 * !A4 * !B1 * !X)	0.00105	0.00108	0.00104
	(!A1 * A2 * !A4 * !B1 * !X)	0.00459	0.00464	0.00449
	(!A1 * !A2 * A4 * !B1 * !X)	0.00024	0.00014	0.00015
	(!A1 * !A2 * A4 * !B1 * !X)	0.00443	0.00445	0.00443
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00100	0.00100	0.00102
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00451	0.00452	0.00446

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00145	-0.00151	-0.00187
	(A1 * A2 * A4 * B1 * X)	0.00736	0.00733	0.00693
	(A1 * A2 * !A4 * B1 * X)	-0.00130	-0.00134	-0.00136
	(A1 * A2 * !A4 * B1 * X)	0.00722	0.00725	0.00723
	(A1 * A2 * !A4 * !B1 * !X)	0.00283	0.00283	0.00278
	(A1 * A2 * !A4 * !B1 * !X)	0.00918	0.00918	0.00899
	(A1 * !A2 * A4 * !B1 * !X)	0.00090	0.00036	0.00039
	(A1 * !A2 * A4 * !B1 * !X)	0.00948	0.00907	0.00898
	(A1 * !A2 * !A4 * !B1 * !X)	0.00229	0.00225	0.00219
	(A1 * !A2 * !A4 * !B1 * !X)	0.00922	0.00925	0.00901
	(!A2 * A4 * B1 * X)	-0.00131	-0.00138	-0.00134
	(!A2 * A4 * B1 * X)	0.00723	0.00729	0.00723
	(!A2 * !A4 * B1 * X)	0.00024	0.00022	0.00038
	(!A2 * !A4 * B1 * X)	0.00723	0.00728	0.00725
	(!A1 * A2 * A4 * B1 * X)	-0.00102	-0.00131	-0.00131
	(!A1 * A2 * A4 * B1 * X)	0.00725	0.00729	0.00723
	(!A1 * A2 * A4 * !B1 * !X)	0.00120	0.00043	0.00041
	(!A1 * A2 * A4 * !B1 * !X)	0.00966	0.00908	0.00895
	(!A1 * A2 * !A4 * B1 * X)	0.00007	0.00008	0.00031
	(!A1 * A2 * !A4 * B1 * X)	0.00724	0.00727	0.00724
	(!A1 * A2 * !A4 * !B1 * !X)	0.00220	0.00228	0.00220
	(!A1 * A2 * !A4 * !B1 * !X)	0.00928	0.00941	0.00909
	(!A1 * !A2 * A4 * !B1 * !X)	0.00051	0.00030	0.00034
	(!A1 * !A2 * A4 * !B1 * !X)	0.00895	0.00896	0.00890
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00213	0.00210	0.00213
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00912	0.00916	0.00901

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)**	0.00325	0.00278	0.00324
	(A1 * A2 * A3 * B1 * X)	-0.00118	-0.00171	-0.00115
	(A1 * A2 * !A3 * !B1 * !X)	0.00309	0.00312	0.00310
	(A1 * A2 * !A3 * !B1 * !X)	-0.00125	-0.00127	-0.00125
	(A1 * !A2 * A3 * !B1 * !X)	0.00307	0.00308	0.00307
	(A1 * !A2 * A3 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * !A3 * !B1 * !X)	0.00305	0.00308	0.00306
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00125	-0.00127	-0.00125
	(!A3 * B1 * X)	0.00324	0.00327	0.00325
	(!A3 * B1 * X)	-0.00106	-0.00108	-0.00106
	(!A2 * A3 * B1 * X)	0.00323	0.00325	0.00323
	(!A2 * A3 * B1 * X)	-0.00106	-0.00108	-0.00106
	(!A1 * A2 * A3 * B1 * X)	0.00322	0.00324	0.00322
	(!A1 * A2 * A3 * B1 * X)	-0.00106	-0.00108	-0.00106
	(!A1 * A2 * A3 * !B1 * !X)	0.00306	0.00308	0.00306
	(!A1 * A2 * A3 * !B1 * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * !A3 * !B1 * !X)	0.00305	0.00308	0.00306
	(!A1 * !A3 * !B1 * !X)	-0.00125	-0.00127	-0.00125
	(!A1 * !A2 * A3 * !B1 * !X)	0.00304	0.00305	0.00304
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00326	0.00279	0.00326
	(A1 * A2 * A3 * B1 * X)	-0.00116	-0.00169	-0.00113
	(A1 * A2 * !A3 * !B1 * !X)	0.00412	0.00415	0.00412
	(A1 * A2 * !A3 * !B1 * !X)	-0.00022	-0.00023	-0.00022
	(A1 * !A2 * A3 * !B1 * !X)	0.00409	0.00410	0.00409
	(A1 * !A2 * A3 * !B1 * !X)	-0.00021	-0.00022	-0.00021
	(A1 * !A2 * !A3 * !B1 * !X)	0.00409	0.00411	0.00409
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00021	-0.00023	-0.00022
	(!A3 * B1 * X)	0.00328	0.00328	0.00327
	(!A3 * B1 * X)	-0.00104	-0.00105	-0.00104
	(!A2 * A3 * B1 * X)	0.00324	0.00324	0.00324
	(!A2 * A3 * B1 * X)	-0.00104	-0.00105	-0.00104
	(!A1 * A2 * A3 * B1 * X)	0.00323	0.00326	0.00324
	(!A1 * A2 * A3 * B1 * X)	-0.00103	-0.00106	-0.00104
	(!A1 * A2 * A3 * !B1 * !X)	0.00407	0.00409	0.00407
	(!A1 * A2 * A3 * !B1 * !X)	-0.00019	-0.00021	-0.00019
	(!A1 * !A3 * !B1 * !X)	0.00409	0.00411	0.00409
	(!A1 * !A3 * !B1 * !X)	-0.00021	-0.00023	-0.00022
	(!A1 * !A2 * A3 * !B1 * !X)	0.00406	0.00408	0.00406
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00022	-0.00022	-0.00022

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00632	0.00538	0.00639
	(A1 * A2 * A3 * B1 * X)	-0.00234	-0.00327	-0.00219
	(A1 * A2 * !A3 * !B1 * !X)	0.00808	0.00814	0.00810
	(A1 * A2 * !A3 * !B1 * !X)	-0.00035	-0.00038	-0.00035
	(A1 * !A2 * A3 * !B1 * !X)	0.00800	0.00805	0.00801
	(A1 * !A2 * A3 * !B1 * !X)	-0.00034	-0.00037	-0.00034
	(A1 * !A2 * !A3 * !B1 * !X)	0.00803	0.00808	0.00804
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00035	-0.00038	-0.00036
	(!A3 * B1 * X)	0.00637	0.00641	0.00638
	(!A3 * B1 * X)	-0.00198	-0.00203	-0.00201
	(!A2 * A3 * B1 * X)	0.00629	0.00632	0.00629
	(!A2 * A3 * B1 * X)	-0.00200	-0.00203	-0.00201
	(!A1 * A2 * A3 * B1 * X)	0.00626	0.00631	0.00627
	(!A1 * A2 * A3 * B1 * X)	-0.00199	-0.00204	-0.00201
	(!A1 * A2 * A3 * !B1 * !X)	0.00798	0.00802	0.00800
	(!A1 * A2 * A3 * !B1 * !X)	-0.00030	-0.00032	-0.00030
	(!A1 * !A3 * !B1 * !X)	0.00803	0.00808	0.00804
	(!A1 * !A3 * !B1 * !X)	-0.00035	-0.00038	-0.00036
	(!A1 * !A2 * A3 * !B1 * !X)	0.00793	0.00797	0.00794
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00036	-0.00038	-0.00036

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)**	-0.00079	-0.00082	-0.00101
	(A1 * A2 * A3 * B1 * X)	0.00363	0.00362	0.00342
	(A1 * A2 * !A3 * !B1 * !X)	-0.00076	-0.00091	-0.00091
	(A1 * A2 * !A3 * !B1 * !X)	0.00352	0.00345	0.00342
	(A1 * !A2 * A3 * !B1 * !X)	-0.00069	-0.00088	-0.00090
	(A1 * !A2 * A3 * !B1 * !X)	0.00353	0.00344	0.00342
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00088	-0.00094	-0.00093
	(A1 * !A2 * !A3 * !B1 * !X)	0.00340	0.00342	0.00339
	(!A3 * B1 * X)	-0.00074	-0.00075	-0.00075
	(!A3 * B1 * X)	0.00358	0.00359	0.00358
	(!A2 * A3 * B1 * X)	-0.00062	-0.00072	-0.00073
	(!A2 * A3 * B1 * X)	0.00357	0.00359	0.00358
	(!A1 * A2 * A3 * B1 * X)	-0.00055	-0.00071	-0.00072
	(!A1 * A2 * A3 * B1 * X)	0.00357	0.00359	0.00358
	(!A1 * A2 * A3 * !B1 * !X)	-0.00063	-0.00087	-0.00089
	(!A1 * A2 * A3 * !B1 * !X)	0.00355	0.00345	0.00342
	(!A1 * !A3 * !B1 * !X)	-0.00087	-0.00094	-0.00093
	(!A1 * !A3 * !B1 * !X)	0.00340	0.00342	0.00339
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00078	-0.00090	-0.00092
	(!A1 * !A2 * A3 * !B1 * !X)	0.00338	0.00341	0.00339

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00075	-0.00079	-0.00097
	(A1 * A2 * A3 * B1 * X)	0.00365	0.00365	0.00345
	(A1 * A2 * !A3 * !B1 * !X)	0.00028	0.00016	0.00015
	(A1 * A2 * !A3 * !B1 * !X)	0.00456	0.00448	0.00446
	(A1 * !A2 * A3 * !B1 * !X)	0.00036	0.00018	0.00016
	(A1 * !A2 * A3 * !B1 * !X)	0.00456	0.00448	0.00446
	(A1 * !A2 * !A3 * !B1 * !X)	0.00017	0.00013	0.00013
	(A1 * !A2 * !A3 * !B1 * !X)	0.00444	0.00443	0.00444
	(!A3 * B1 * X)	-0.00070	-0.00071	-0.00071
	(!A3 * B1 * X)	0.00361	0.00361	0.00360
	(!A2 * A3 * B1 * X)	-0.00058	-0.00068	-0.00069
	(!A2 * A3 * B1 * X)	0.00359	0.00362	0.00360
	(!A1 * A2 * A3 * B1 * X)	-0.00052	-0.00068	-0.00069
	(!A1 * A2 * A3 * B1 * X)	0.00360	0.00362	0.00360
	(!A1 * A2 * A3 * !B1 * !X)	0.00042	0.00018	0.00017
	(!A1 * A2 * A3 * !B1 * !X)	0.00459	0.00449	0.00446
	(!A1 * !A3 * !B1 * !X)	0.00018	0.00013	0.00013
	(!A1 * !A3 * !B1 * !X)	0.00444	0.00443	0.00444
	(!A1 * !A2 * A3 * !B1 * !X)	0.00028	0.00016	0.00014
	(!A1 * !A2 * A3 * !B1 * !X)	0.00443	0.00445	0.00444

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00140	-0.00147	-0.00182
	(A1 * A2 * A3 * B1 * X)	0.00725	0.00723	0.00683
	(A1 * A2 * !A3 * !B1 * !X)	0.00079	0.00045	0.00041
	(A1 * A2 * !A3 * !B1 * !X)	0.00906	0.00892	0.00885
	(A1 * !A2 * A3 * !B1 * !X)	0.00094	0.00051	0.00045
	(A1 * !A2 * A3 * !B1 * !X)	0.00914	0.00892	0.00884
	(A1 * !A2 * !A3 * !B1 * !X)	0.00054	0.00038	0.00037
	(A1 * !A2 * !A3 * !B1 * !X)	0.00877	0.00884	0.00879
	(!A3 * B1 * X)	-0.00125	-0.00131	-0.00131
	(!A3 * B1 * X)	0.00710	0.00715	0.00712
	(!A2 * A3 * B1 * X)	-0.00101	-0.00121	-0.00127
	(!A2 * A3 * B1 * X)	0.00713	0.00718	0.00712
	(!A1 * A2 * A3 * B1 * X)	-0.00088	-0.00118	-0.00125
	(!A1 * A2 * A3 * B1 * X)	0.00713	0.00718	0.00712
	(!A1 * A2 * A3 * !B1 * !X)	0.00102	0.00055	0.00046
	(!A1 * A2 * A3 * !B1 * !X)	0.00919	0.00896	0.00884
	(!A1 * !A3 * !B1 * !X)	0.00055	0.00038	0.00037
	(!A1 * !A3 * !B1 * !X)	0.00877	0.00884	0.00879
	(!A1 * !A2 * A3 * !B1 * !X)	0.00072	0.00046	0.00041
	(!A1 * !A2 * A3 * !B1 * !X)	0.00880	0.00884	0.00879

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)	0.00238	0.00242	0.00251
	(A1 * A2 * A3 * A4 * X)	-0.00065	-0.00064	-0.00049
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00242	0.00246	0.00256
	(A1 * A2 * A3 * A4 * X)	-0.00063	-0.00064	-0.00048
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00460	0.00471	0.00490
	(A1 * A2 * A3 * A4 * X)	-0.00128	-0.00132	-0.00101

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)	0.00075	0.00068	-0.00041
	(A1 * A2 * A3 * A4 * X)	0.00383	0.00378	0.00270
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00074	0.00066	-0.00043
	(A1 * A2 * A3 * A4 * X)	0.00386	0.00380	0.00272
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00172	0.00157	-0.00059
	(A1 * A2 * A3 * A4 * X)	0.00779	0.00768	0.00553

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00259	0.00247	1.74976
sky130_fd_sc_hs__and2b_2	0.00234	0.00286	2.74405
sky130_fd_sc_hs__and2b_4	0.00261	0.00515	6.02218

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	456.12800	729.29700
sky130_fd_sc_hs__and2b_2	0.00000	434.56200	603.48300
sky130_fd_sc_hs__and2b_4	0.00000	801.34800	1464.12000

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)	0.07378	0.56738	7.79518
	B->X (RR)	0.04618	0.39521	5.74444
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.08285	0.51305	7.62718
	B->X (RR)	0.04989	0.32067	5.02674
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.08325	0.45108	7.72500
	B->X (RR)	0.05098	0.26515	5.51734

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)	0.06618	0.27776	2.94381
	B->X (FF)	0.04787	0.41883	5.46283
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.07394	0.22412	2.31550
	B->X (FF)	0.05496	0.38204	4.90888
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.07269	0.18982	2.46192
	B->X (FF)	0.05514	0.35695	5.38566

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	0.02755	0.04592	0.33723
	A_N	0.03224	0.05060	0.34250
	B	0.02902	0.04256	0.27284
	B	0.02437	0.03794	0.26832
sky130_fd_sc_hs__and2b_2	A_N	0.02073	0.03824	0.33530
	A_N	0.02496	0.04243	0.33985
	B	0.02200	0.03278	0.21559
	B	0.01655	0.02733	0.20994
sky130_fd_sc_hs__and2b_4	A_N	0.06403	0.08340	0.42803
	A_N	0.06854	0.08790	0.43488
	B	0.06585	0.09504	0.59127
	B	0.05625	0.08551	0.58308

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.02164	0.03914	0.32967
	A_N	0.01698	0.03438	0.32450
	B	0.00681	0.02280	0.25315
	B	0.01148	0.02745	0.25788
sky130_fd_sc_hs__and2b_2	A_N	0.02682	0.04170	0.32368
	A_N	0.02261	0.03744	0.31954
	B	0.01275	0.02620	0.24893
	B	0.01822	0.03158	0.25444
sky130_fd_sc_hs__and2b_4	A_N	0.03998	0.05876	0.40944
	A_N	0.03548	0.05415	0.40496
	B	0.02738	0.05801	0.56263
	B	0.03698	0.06759	0.57220

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.01201	0.02822	0.28956
	(!B * !X)	0.00684	0.02304	0.28439
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.01282	0.02865	0.28347
	(!B * !X)	0.00801	0.02381	0.27864
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.01497	0.03287	0.32125
	(!B * !X)	0.00946	0.02734	0.31575

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00092	0.01823	0.28247
	(!B * !X)	0.00610	0.02342	0.28765
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00227	0.01905	0.27670
	(!B * !X)	0.00712	0.02389	0.28154
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00473	0.02290	0.31222
	(!B * !X)	0.01024	0.02843	0.31773

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00605	0.00607	0.00604
	(A_N * !X)	0.00205	0.00203	0.00204
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00742	0.00744	0.00743
	(A_N * !X)	0.00278	0.00276	0.00277
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00932	0.00938	0.00933
	(A_N * !X)	0.00107	0.00102	0.00105

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00263	0.00250	0.00246
	(A_N * !X)	0.00666	0.00652	0.00646
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00329	0.00314	0.00310
	(A_N * !X)	0.00796	0.00780	0.00775
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00207	0.00175	0.00168
	(A_N * !X)	0.01032	0.01007	0.00995

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00251	0.00247	1.68967
sky130_fd_sc_hs__and2_2	0.00272	0.00301	3.08742
sky130_fd_sc_hs__and2_4	0.00445	0.00495	6.13886

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	273.73400	726.85900
sky130_fd_sc_hs__and2_2	0.00000	252.73400	288.58100
sky130_fd_sc_hs__and2_4	0.00000	727.93000	1458.82000

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)	0.04272	0.41657	6.07913
	B->X (RR)	0.04641	0.39832	5.67250
sky130_fd_sc_hs__and2_2	A->X (RR)	0.04513	0.34169	5.71319
	B->X (RR)	0.04913	0.32129	5.29820
sky130_fd_sc_hs__and2_4	A->X (RR)	0.04517	0.27719	5.79995
	B->X (RR)	0.05122	0.26777	5.56787

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.04424	0.39652	5.19485
	B->X (FF)	0.04923	0.41745	5.34903
sky130_fd_sc_hs__and2_2	A->X (FF)	0.04773	0.36332	4.95485
	B->X (FF)	0.05378	0.38501	5.15696
sky130_fd_sc_hs__and2_4	A->X (FF)	0.05095	0.34190	5.29918
	B->X (FF)	0.05653	0.35684	5.39985

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.02823	0.04451	0.30479
	A	0.02322	0.03954	0.30026
	B	0.02898	0.04142	0.25399
	B	0.02302	0.03550	0.24826
sky130_fd_sc_hs__and2_2	A	0.02066	0.03627	0.29815
	A	0.01520	0.03089	0.29302
	B	0.02226	0.03425	0.24520
	B	0.01519	0.02721	0.23858
sky130_fd_sc_hs__and2_4	A	0.06260	0.09638	0.63267
	A	0.05397	0.08785	0.62441
	B	0.06557	0.09563	0.59862
	B	0.05362	0.08376	0.58811

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00583	0.02183	0.25405
	A	0.01083	0.02672	0.25754
	B	0.00663	0.02187	0.24223
	B	0.01263	0.02784	0.24752
sky130_fd_sc_hs__and2_2	A	0.01254	0.02726	0.25391
	A	0.01798	0.03270	0.25706
	B	0.01304	0.02708	0.24497
	B	0.02012	0.03407	0.24942
sky130_fd_sc_hs__and2_4	A	0.02590	0.05703	0.57488
	A	0.03452	0.06557	0.57973
	B	0.02664	0.05871	0.58405
	B	0.03862	0.07061	0.59152

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00199	0.00199	0.00195
	(!B * !X)	-0.00123	-0.00126	-0.00130
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00273	0.00273	0.00270
	(!B * !X)	-0.00061	-0.00062	-0.00065
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00517	0.00517	0.00509
	(!B * !X)	-0.00027	-0.00030	-0.00040

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00015	0.00015	0.00017
	(!B * !X)	0.00340	0.00344	0.00340
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00148	0.00148	0.00149
	(!B * !X)	0.00483	0.00485	0.00483
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00330	0.00329	0.00331
	(!B * !X)	0.00876	0.00880	0.00877

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00272	0.00273	0.00271
	(!A * !X)	-0.00113	-0.00114	-0.00113
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00397	0.00400	0.00397
	(!A * !X)	-0.00055	-0.00058	-0.00056
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00803	0.00809	0.00804
	(!A * !X)	0.00014	0.00011	0.00013

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00033	-0.00051	-0.00051
	(!A * !X)	0.00353	0.00338	0.00332
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00045	0.00030	0.00027
	(!A * !X)	0.00501	0.00485	0.00478
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00091	0.00060	0.00053
	(!A * !X)	0.00882	0.00859	0.00841

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00229	0.00241	0.00241	1.65646
sky130_fd_sc_hs__and3b_2	0.00236	0.00288	0.00278	2.72068
sky130_fd_sc_hs__and3b_4	0.00264	0.00494	0.00509	6.03772

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	424.26200	1087.29000
sky130_fd_sc_hs__and3b_2	0.00000	445.94200	603.93700
sky130_fd_sc_hs__and3b_4	0.00000	602.51000	864.41200

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)	0.08365	0.58061	7.67873
	B->X (RR)	0.05920	0.44202	6.07058
	C->X (RR)	0.06262	0.41933	5.70910
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.09418	0.52473	7.47162
	B->X (RR)	0.06523	0.37989	5.71562
	C->X (RR)	0.06903	0.34815	5.13102
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.10645	0.48717	7.87155
	B->X (RR)	0.07800	0.35013	6.38051
	C->X (RR)	0.08123	0.31144	5.95656

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)	0.06846	0.26763	2.67394
	B->X (FF)	0.05428	0.41601	5.14024
	C->X (FF)	0.05629	0.42600	5.28901
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.07276	0.21534	2.02312
	B->X (FF)	0.05642	0.36710	4.47877
	C->X (FF)	0.06251	0.39174	4.74999
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.07266	0.18883	2.38109
	B->X (FF)	0.05450	0.33146	4.81646
	C->X (FF)	0.05727	0.35248	5.19698

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	0.03867	0.05672	0.34635
	A_N	0.04260	0.06063	0.35086
	B	0.03959	0.05295	0.29356
	B	0.03488	0.04828	0.28932
	C	0.04058	0.05185	0.26210
	C	0.03477	0.04605	0.25656
sky130_fd_sc_hs__and3b_2	A_N	0.02655	0.04330	0.32771
	A_N	0.03065	0.04761	0.33205
	B	0.02810	0.04078	0.28595
	B	0.02259	0.03530	0.28080
	C	0.02939	0.03820	0.21293
	C	0.02267	0.03154	0.20603
sky130_fd_sc_hs__and3b_4	A_N	0.05301	0.06988	0.41026
	A_N	0.05709	0.07412	0.41639
	B	0.05614	0.07879	0.54091
	B	0.04634	0.06906	0.53259
	C	0.05875	0.08186	0.56360
	C	0.04627	0.06952	0.55398

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.02045	0.03860	0.33474
	A_N	0.01653	0.03467	0.33064
	B	0.00720	0.02238	0.25582
	B	0.01190	0.02703	0.25934
	C	0.00747	0.02242	0.25953
	C	0.01328	0.02822	0.26496
sky130_fd_sc_hs__and3b_2	A_N	0.02617	0.04226	0.32609
	A_N	0.02208	0.03810	0.32168
	B	0.01313	0.02658	0.25283
	B	0.01866	0.03210	0.25610
	C	0.01375	0.02594	0.24207
	C	0.02047	0.03247	0.24683
sky130_fd_sc_hs__and3b_4	A_N	0.04125	0.05895	0.39926
	A_N	0.03718	0.05484	0.39338
	B	0.02879	0.05451	0.49756
	B	0.03859	0.06421	0.50307
	C	0.02998	0.05725	0.54488
	C	0.04247	0.06970	0.55418

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)	0.01103	0.02774	0.28985
	(B * !C * !X)	0.00633	0.02302	0.28515
	(!B * !X)	0.01097	0.02768	0.28981
	(!B * !X)	0.00633	0.02303	0.28518
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.01264	0.02863	0.28416
	(B * !C * !X)	0.00778	0.02374	0.27928
	(!B * !X)	0.01258	0.02859	0.28412
	(!B * !X)	0.00778	0.02376	0.27930
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.01570	0.03348	0.32160
	(B * !C * !X)	0.01025	0.02801	0.31617
	(!B * !X)	0.01555	0.03333	0.32147
	(!B * !X)	0.01026	0.02802	0.31619

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)	0.00100	0.01858	0.28353
	(B * !C * !X)	0.00573	0.02333	0.28825
	(!B * !X)	0.00099	0.01857	0.28354
	(!B * !X)	0.00561	0.02323	0.28818
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00217	0.01905	0.27739
	(B * !C * !X)	0.00711	0.02401	0.28230
	(!B * !X)	0.00215	0.01905	0.27741
	(!B * !X)	0.00697	0.02387	0.28222
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00457	0.02253	0.31157
	(B * !C * !X)	0.01013	0.02810	0.31707
	(!B * !X)	0.00461	0.02258	0.31165
	(!B * !X)	0.00992	0.02790	0.31694

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)	0.00606	0.00607	0.00605
	(A_N * C * !X)	0.00220	0.00219	0.00220
	(A_N * !C * !X)	0.00529	0.00530	0.00529
	(A_N * !C * !X)	0.00215	0.00214	0.00216
	(!A_N * !C * !X)	0.00169	0.00169	0.00167
	(!A_N * !C * !X)	-0.00124	-0.00125	-0.00126
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00747	0.00747	0.00746
	(A_N * C * !X)	0.00284	0.00284	0.00285
	(A_N * !C * !X)	0.00661	0.00662	0.00661
	(A_N * !C * !X)	0.00284	0.00282	0.00283
	(!A_N * !C * !X)	0.00293	0.00293	0.00291
	(!A_N * !C * !X)	-0.00061	-0.00062	-0.00063
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00902	0.00904	0.00902
	(A_N * C * !X)	0.00089	0.00086	0.00088
	(A_N * !C * !X)	0.00751	0.00753	0.00751
	(A_N * !C * !X)	0.00075	0.00072	0.00075
	(!A_N * !C * !X)	0.00555	0.00555	0.00555
	(!A_N * !C * !X)	-0.00070	-0.00072	-0.00071

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)	0.00268	0.00247	0.00246
	(A_N * C * !X)	0.00651	0.00635	0.00630
	(A_N * !C * !X)	0.00313	0.00312	0.00308
	(A_N * !C * !X)	0.00636	0.00638	0.00629
	(!A_N * !C * !X)	0.00051	0.00050	0.00050
	(!A_N * !C * !X)	0.00345	0.00348	0.00343
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00333	0.00309	0.00307
	(A_N * C * !X)	0.00793	0.00776	0.00768
	(A_N * !C * !X)	0.00388	0.00386	0.00381
	(A_N * !C * !X)	0.00778	0.00779	0.00768
	(!A_N * !C * !X)	0.00134	0.00133	0.00132
	(!A_N * !C * !X)	0.00489	0.00491	0.00487
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00267	0.00200	0.00199
	(A_N * C * !X)	0.01081	0.01025	0.01013
	(A_N * !C * !X)	0.00334	0.00333	0.00322
	(A_N * !C * !X)	0.01030	0.01036	0.01015
	(!A_N * !C * !X)	0.00302	0.00299	0.00297
	(!A_N * !C * !X)	0.00931	0.00940	0.00924

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)	0.00587	0.00588	0.00587
	(A_N * B * !X)	0.00212	0.00211	0.00213
	(A_N * !B * !X)	0.00581	0.00584	0.00582
	(A_N * !B * !X)	0.00208	0.00207	0.00208
	(!A_N * !B * !X)	0.00273	0.00275	0.00274
	(!A_N * !B * !X)	-0.00101	-0.00103	-0.00102
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00725	0.00727	0.00725
	(A_N * B * !X)	0.00286	0.00284	0.00286
	(A_N * !B * !X)	0.00722	0.00725	0.00722
	(A_N * !B * !X)	0.00283	0.00282	0.00283
	(!A_N * !B * !X)	0.00412	0.00415	0.00412
	(!A_N * !B * !X)	-0.00028	-0.00030	-0.00029
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00888	0.00889	0.00890
	(A_N * B * !X)	0.00074	0.00073	0.00074
	(A_N * !B * !X)	0.00878	0.00882	0.00879
	(A_N * !B * !X)	0.00066	0.00062	0.00064
	(!A_N * !B * !X)	0.00772	0.00777	0.00773
	(!A_N * !B * !X)	-0.00047	-0.00051	-0.00048

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)	0.00285	0.00266	0.00263
	(A_N * B * !X)	0.00659	0.00644	0.00637
	(A_N * !B * !X)	0.00262	0.00257	0.00258
	(A_N * !B * !X)	0.00635	0.00635	0.00632
	(!A_N * !B * !X)	-0.00035	-0.00052	-0.00052
	(!A_N * !B * !X)	0.00342	0.00329	0.00322
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00352	0.00331	0.00328
	(A_N * B * !X)	0.00787	0.00773	0.00767
	(A_N * !B * !X)	0.00329	0.00323	0.00325
	(A_N * !B * !X)	0.00766	0.00768	0.00764
	(!A_N * !B * !X)	0.00031	0.00015	0.00013
	(!A_N * !B * !X)	0.00473	0.00460	0.00453
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00260	0.00218	0.00209
	(A_N * B * !X)	0.01075	0.01045	0.01027
	(A_N * !B * !X)	0.00209	0.00199	0.00200
	(A_N * !B * !X)	0.01018	0.01019	0.01017
	(!A_N * !B * !X)	0.00128	0.00094	0.00089
	(!A_N * !B * !X)	0.00947	0.00920	0.00908

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00258	0.00239	0.00236	1.70423
sky130_fd_sc_hs__and3_2	0.00256	0.00235	0.00239	3.21328
sky130_fd_sc_hs__and3_4	0.00466	0.00454	0.00470	6.08205

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3_1	0.00000	242.02700	1085.38000
sky130_fd_sc_hs__and3_2	0.00000	346.92000	1088.02000
sky130_fd_sc_hs__and3_4	0.00000	693.73400	2175.99000

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)	0.05181	0.43897	6.17586
	B->X (RR)	0.05675	0.43127	5.99353
	C->X (RR)	0.05968	0.41452	5.77566
sky130_fd_sc_hs__and3_2	A->X (RR)	0.06061	0.38552	6.14651
	B->X (RR)	0.06552	0.37510	5.96153
	C->X (RR)	0.06846	0.34973	5.56706
sky130_fd_sc_hs__and3_4	A->X (RR)	0.06757	0.35681	6.59691
	B->X (RR)	0.07516	0.35073	6.45760
	C->X (RR)	0.07852	0.31020	5.98480

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.04806	0.39496	5.06233
	B->X (FF)	0.05370	0.41678	5.21662
	C->X (FF)	0.05416	0.42340	5.33744
sky130_fd_sc_hs__and3_2	A->X (FF)	0.05677	0.37219	4.92965
	B->X (FF)	0.06192	0.39122	5.08788
	C->X (FF)	0.06398	0.40237	5.26171
sky130_fd_sc_hs__and3_4	A->X (FF)	0.05292	0.31839	4.71376
	B->X (FF)	0.05871	0.33750	4.86244
	C->X (FF)	0.06207	0.36093	5.26173

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.03867	0.05300	0.29357
	A	0.03343	0.04782	0.28885
	B	0.03927	0.05264	0.29313
	B	0.03336	0.04673	0.28765
	C	0.04035	0.05322	0.29135
	C	0.03315	0.04604	0.28430
sky130_fd_sc_hs__and3_2	A	0.04335	0.05725	0.30153
	A	0.03815	0.05215	0.29733
	B	0.04394	0.05662	0.30053
	B	0.03808	0.05087	0.29446
	C	0.04495	0.05570	0.26888
	C	0.03776	0.04858	0.26251
sky130_fd_sc_hs__and3_4	A	0.08795	0.11374	0.58435
	A	0.07834	0.10416	0.57516
	B	0.09037	0.11393	0.58702
	B	0.07832	0.10194	0.57620
	C	0.09270	0.11587	0.59514
	C	0.07785	0.10109	0.58196

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00574	0.02071	0.24931
	A	0.01097	0.02584	0.25358
	B	0.00709	0.02201	0.25224
	B	0.01299	0.02790	0.25620
	C	0.00745	0.02310	0.26794
	C	0.01464	0.03028	0.27348
sky130_fd_sc_hs__and3_2	A	0.01276	0.02635	0.25987
	A	0.01797	0.03147	0.26227
	B	0.01439	0.02790	0.26333
	B	0.02027	0.03371	0.26491
	C	0.01457	0.02797	0.26511
	C	0.02176	0.03507	0.26956
sky130_fd_sc_hs__and3_4	A	0.02652	0.05333	0.51524
	A	0.03613	0.06292	0.52087
	B	0.02930	0.05599	0.52525
	B	0.04138	0.06794	0.53102
	C	0.03070	0.05841	0.56641
	C	0.04550	0.07316	0.57425

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00206	0.00206	0.00201
	(B * !C * !X)	-0.00117	-0.00118	-0.00128
	(!B * !X)	0.00206	0.00206	0.00203
	(!B * !X)	-0.00122	-0.00123	-0.00129
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00311	0.00311	0.00307
	(B * !C * !X)	-0.00010	-0.00011	-0.00021
	(!B * !X)	0.00312	0.00314	0.00309
	(!B * !X)	-0.00015	-0.00018	-0.00022
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00533	0.00532	0.00520
	(B * !C * !X)	-0.00034	-0.00033	-0.00060
	(!B * !X)	0.00538	0.00538	0.00528
	(!B * !X)	-0.00048	-0.00051	-0.00063

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00011	0.00011	0.00012
	(B * !C * !X)	0.00338	0.00340	0.00339
	(!B * !X)	0.00007	0.00007	0.00009
	(!B * !X)	0.00340	0.00343	0.00339
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00114	0.00113	0.00114
	(B * !C * !X)	0.00439	0.00441	0.00440
	(!B * !X)	0.00110	0.00108	0.00111
	(!B * !X)	0.00440	0.00444	0.00440
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00321	0.00319	0.00321
	(B * !C * !X)	0.00897	0.00902	0.00899
	(!B * !X)	0.00311	0.00311	0.00313
	(!B * !X)	0.00902	0.00904	0.00900

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00164	0.00164	0.00164
	(A * !C * !X)	-0.00099	-0.00100	-0.00098
	(!A * C * !X)	0.00267	0.00269	0.00267
	(!A * C * !X)	-0.00094	-0.00096	-0.00095
	(!A * !C * !X)	0.00182	0.00183	0.00182
	(!A * !C * !X)	-0.00099	-0.00100	-0.00099
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00266	0.00266	0.00265
	(A * !C * !X)	0.00008	0.00008	0.00009
	(!A * C * !X)	0.00370	0.00372	0.00370
	(!A * C * !X)	0.00013	0.00012	0.00012
	(!A * !C * !X)	0.00283	0.00284	0.00283
	(!A * !C * !X)	0.00009	0.00008	0.00009
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00556	0.00557	0.00557
	(A * !C * !X)	0.00019	0.00018	0.00021
	(!A * C * !X)	0.00768	0.00770	0.00769
	(!A * C * !X)	0.00030	0.00029	0.00029
	(!A * !C * !X)	0.00598	0.00599	0.00598
	(!A * !C * !X)	0.00019	0.00017	0.00018

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00052	0.00051	0.00050
	(A * !C * !X)	0.00316	0.00318	0.00311
	(!A * C * !X)	-0.00024	-0.00046	-0.00047
	(!A * C * !X)	0.00340	0.00320	0.00314
	(!A * !C * !X)	0.00028	0.00027	0.00024
	(!A * !C * !X)	0.00319	0.00321	0.00312
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00158	0.00157	0.00156
	(A * !C * !X)	0.00416	0.00418	0.00412
	(!A * C * !X)	0.00081	0.00059	0.00058
	(!A * C * !X)	0.00440	0.00421	0.00414
	(!A * !C * !X)	0.00134	0.00134	0.00131
	(!A * !C * !X)	0.00418	0.00420	0.00412
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00292	0.00290	0.00286
	(A * !C * !X)	0.00832	0.00836	0.00821
	(!A * C * !X)	0.00154	0.00086	0.00087
	(!A * C * !X)	0.00894	0.00835	0.00824
	(!A * !C * !X)	0.00235	0.00237	0.00231
	(!A * !C * !X)	0.00842	0.00845	0.00825

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00271	0.00273	0.00271
	(A * !B * !X)	-0.00100	-0.00102	-0.00101
	(!A * B * !X)	0.00269	0.00270	0.00270
	(!A * B * !X)	-0.00099	-0.00100	-0.00099
	(!A * !B * !X)	0.00265	0.00267	0.00266
	(!A * !B * !X)	-0.00104	-0.00105	-0.00104
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00373	0.00375	0.00373
	(A * !B * !X)	0.00002	0.00000	0.00002
	(!A * B * !X)	0.00371	0.00373	0.00371
	(!A * B * !X)	0.00003	0.00002	0.00003
	(!A * !B * !X)	0.00367	0.00369	0.00368
	(!A * !B * !X)	-0.00001	-0.00003	-0.00002
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00765	0.00770	0.00766
	(A * !B * !X)	0.00009	0.00005	0.00008
	(!A * B * !X)	0.00762	0.00763	0.00764
	(!A * B * !X)	0.00011	0.00010	0.00009
	(!A * !B * !X)	0.00752	0.00757	0.00753
	(!A * !B * !X)	0.00001	-0.00002	0.00001

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00037	-0.00052	-0.00053
	(A * !B * !X)	0.00337	0.00324	0.00317
	(!A * B * !X)	-0.00028	-0.00049	-0.00051
	(!A * B * !X)	0.00340	0.00325	0.00318
	(!A * !B * !X)	-0.00052	-0.00056	-0.00057
	(!A * !B * !X)	0.00315	0.00312	0.00313
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00069	0.00055	0.00053
	(A * !B * !X)	0.00441	0.00427	0.00423
	(!A * B * !X)	0.00077	0.00057	0.00055
	(!A * B * !X)	0.00447	0.00429	0.00424
	(!A * !B * !X)	0.00054	0.00050	0.00050
	(!A * !B * !X)	0.00421	0.00418	0.00419
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00125	0.00087	0.00088
	(A * !B * !X)	0.00883	0.00856	0.00844
	(!A * B * !X)	0.00140	0.00099	0.00090
	(!A * B * !X)	0.00891	0.00861	0.00844
	(!A * !B * !X)	0.00091	0.00077	0.00079
	(!A * !B * !X)	0.00835	0.00839	0.00834

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00234	0.00237	0.00249	0.00243	1.46773
sky130_fd_sc_hs__and4bb_2	0.00237	0.00225	0.00273	0.00279	3.05135
sky130_fd_sc_hs__and4bb_4	0.00255	0.00271	0.00507	0.00493	5.82775

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4bb_1	0.00000	567.61400	1447.98000
sky130_fd_sc_hs__and4bb_2	0.00000	624.88200	964.08200
sky130_fd_sc_hs__and4bb_4	0.00000	668.44500	1151.09000

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)	0.10063	0.62100	7.88978
	B_N->X (FR)	0.10498	0.61598	7.59013
	C->X (RR)	0.07997	0.48707	6.25445
	D->X (RR)	0.08291	0.46924	6.04144
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.09980	0.52137	7.54925
	B_N->X (FR)	0.11094	0.53170	7.58317
	C->X (RR)	0.08424	0.39528	5.98231
	D->X (RR)	0.08828	0.36917	5.55122
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.13060	0.51779	7.82553
	B_N->X (FR)	0.14487	0.53509	7.85888
	C->X (RR)	0.10907	0.37808	6.51438
	D->X (RR)	0.11272	0.34655	6.12320

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)	0.07277	0.26405	2.51261
	B_N->X (RF)	0.07523	0.27181	2.43621
	C->X (FF)	0.06019	0.41519	4.87877
	D->X (FF)	0.06439	0.43289	5.11875
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.07386	0.23561	2.59630
	B_N->X (RF)	0.08107	0.25312	2.79400
	C->X (FF)	0.06298	0.39611	4.93282
	D->X (FF)	0.06673	0.41143	5.14463
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.08202	0.20256	2.32077
	B_N->X (RF)	0.08342	0.20732	2.30521
	C->X (FF)	0.05820	0.33334	4.64449
	D->X (FF)	0.06096	0.35287	4.98395

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	0.04951	0.06663	0.35565
	A_N	0.05355	0.07068	0.36010
	B_N	0.05025	0.06751	0.35717
	B_N	0.05476	0.07206	0.36173
	C	0.05124	0.06412	0.31110
	C	0.04659	0.05945	0.30684
	D	0.05229	0.06545	0.32674
	D	0.04664	0.05980	0.32154
sky130_fd_sc_hs__and4bb_2	A_N	0.03110	0.04731	0.33487
	A_N	0.03492	0.05112	0.33895
	B_N	0.03330	0.04817	0.33212
	B_N	0.03727	0.05219	0.33609
	C	0.03438	0.04428	0.27889
	C	0.02897	0.03890	0.27425
	D	0.03575	0.04356	0.24491
	D	0.02901	0.03688	0.23889
sky130_fd_sc_hs__and4bb_4	A_N	0.06745	0.07966	0.40727
	A_N	0.07094	0.08313	0.41311
	B_N	0.07041	0.08198	0.41063
	B_N	0.07452	0.08605	0.41693
	C	0.07267	0.08968	0.54244
	C	0.06257	0.07962	0.53324
	D	0.07490	0.09095	0.54501
	D	0.06249	0.07855	0.53436

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.02112	0.03703	0.32185
	A_N	0.01710	0.03302	0.31758
	B_N	0.02154	0.03932	0.33372
	B_N	0.01703	0.03478	0.32889
	C	0.00858	0.02381	0.27462
	C	0.01324	0.02837	0.27871
	D	0.00926	0.02481	0.29085
	D	0.01488	0.03043	0.29518
sky130_fd_sc_hs__and4bb_2	A_N	0.02739	0.04297	0.32809
	A_N	0.02357	0.03906	0.32296
	B_N	0.02870	0.04356	0.32663
	B_N	0.02474	0.03952	0.32161
	C	0.01521	0.02740	0.23434
	C	0.02061	0.03266	0.23859
	D	0.01577	0.02745	0.23730
	D	0.02250	0.03392	0.24128
sky130_fd_sc_hs__and4bb_4	A_N	0.04179	0.05855	0.39260
	A_N	0.03830	0.05505	0.38705
	B_N	0.04420	0.06093	0.40101
	B_N	0.04010	0.05681	0.39476
	C	0.02976	0.05349	0.49097
	C	0.03989	0.06345	0.49763
	D	0.03205	0.05570	0.52581
	D	0.04446	0.06795	0.53446

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)	0.01412	0.03016	0.28519
	(B_N * !X)	0.00969	0.02570	0.28075
	(!B_N * C * !D * !X)	0.01135	0.02738	0.28240
	(!B_N * C * !D * !X)	0.00684	0.02284	0.27788
	(!B_N * !C * !X)	0.01134	0.02736	0.28239
	(!B_N * !C * !X)	0.00688	0.02287	0.27791
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.01527	0.03176	0.29387
	(B_N * !X)	0.01078	0.02724	0.28938
	(!B_N * C * !D * !X)	0.01246	0.02895	0.29103
	(!B_N * C * !D * !X)	0.00791	0.02437	0.28647
	(!B_N * !C * !X)	0.01247	0.02896	0.29103
	(!B_N * !C * !X)	0.00795	0.02440	0.28650
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.01628	0.03339	0.31396
	(B_N * !X)	0.01163	0.02873	0.30931
	(!B_N * C * !D * !X)	0.01575	0.03285	0.31352
	(!B_N * C * !D * !X)	0.01097	0.02805	0.30874
	(!B_N * !C * !X)	0.01575	0.03283	0.31350
	(!B_N * !C * !X)	0.01104	0.02811	0.30880

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)	0.00461	0.02156	0.27941
	(B_N * !X)	0.00907	0.02602	0.28385
	(!B_N * C * !D * !X)	0.00121	0.01814	0.27597
	(!B_N * C * !D * !X)	0.00580	0.02273	0.28052
	(!B_N * !C * !X)	0.00119	0.01813	0.27596
	(!B_N * !C * !X)	0.00568	0.02259	0.28044
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00547	0.02298	0.28796
	(B_N * !X)	0.00997	0.02750	0.29246
	(!B_N * C * !D * !X)	0.00209	0.01959	0.28450
	(!B_N * C * !D * !X)	0.00675	0.02426	0.28913
	(!B_N * !C * !X)	0.00206	0.01957	0.28450
	(!B_N * !C * !X)	0.00661	0.02413	0.28904
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00686	0.02408	0.30544
	(B_N * !X)	0.01152	0.02875	0.31010
	(!B_N * C * !D * !X)	0.00516	0.02240	0.30383
	(!B_N * C * !D * !X)	0.01011	0.02736	0.30872
	(!B_N * !C * !X)	0.00510	0.02235	0.30381
	(!B_N * !C * !X)	0.00984	0.02709	0.30853

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)	0.01430	0.03034	0.29107
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00937	0.02538	0.28612
	(!C * !X)	0.01427	0.03058	0.29146
	(!C * !X)	0.00922	0.02551	0.28641
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01544	0.03123	0.29177
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01080	0.02658	0.28713
	(!C * !X)	0.01540	0.03155	0.29228
	(!C * !X)	0.01065	0.02677	0.28751
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01669	0.03332	0.31958
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01141	0.02804	0.31431
	(!C * !X)	0.01650	0.03378	0.32043
	(!C * !X)	0.01100	0.02827	0.31494

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)	0.00557	0.02274	0.28655
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01050	0.02767	0.29148
	(!C * !X)	0.00481	0.02214	0.28595
	(!C * !X)	0.00986	0.02720	0.29100
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00717	0.02425	0.28791
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01181	0.02890	0.29255
	(!C * !X)	0.00631	0.02349	0.28718
	(!C * !X)	0.01109	0.02826	0.29194
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00954	0.02686	0.31433
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01479	0.03214	0.31959
	(!C * !X)	0.00790	0.02539	0.31311
	(!C * !X)	0.01337	0.03089	0.31861

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)**	0.00935	0.00937	0.00935
	(A_N * B_N * D * !X)	0.00537	0.00535	0.00537
	(A_N * B_N * !D * !X)	0.00870	0.00871	0.00870
	(A_N * B_N * !D * !X)	0.00536	0.00535	0.00536
	(A_N * !B_N * D * !X)	0.00586	0.00587	0.00587
	(A_N * !B_N * D * !X)	0.00187	0.00186	0.00187
	(A_N * !B_N * !D * !X)	0.00508	0.00508	0.00507
	(A_N * !B_N * !D * !X)	0.00154	0.00152	0.00154
	(!A_N * B_N * D * !X)	0.00626	0.00630	0.00627
	(!A_N * B_N * D * !X)	0.00228	0.00226	0.00227
	(!A_N * B_N * !D * !X)	0.00556	0.00557	0.00555
	(!A_N * B_N * !D * !X)	0.00223	0.00222	0.00224
	(!A_N * !B_N * !D * !X)	0.00174	0.00175	0.00174
	(!A_N * !B_N * !D * !X)	-0.00135	-0.00137	-0.00136
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.01050	0.01053	0.01051
	(A_N * B_N * D * !X)	0.00607	0.00606	0.00607
	(A_N * B_N * !D * !X)	0.00975	0.00976	0.00974
	(A_N * B_N * !D * !X)	0.00606	0.00606	0.00607
	(A_N * !B_N * D * !X)	0.00710	0.00711	0.00710
	(A_N * !B_N * D * !X)	0.00265	0.00264	0.00265
	(A_N * !B_N * !D * !X)	0.00621	0.00622	0.00621
	(A_N * !B_N * !D * !X)	0.00230	0.00228	0.00230
	(!A_N * B_N * D * !X)	0.00739	0.00743	0.00740
	(!A_N * B_N * D * !X)	0.00297	0.00294	0.00296
	(!A_N * B_N * !D * !X)	0.00660	0.00661	0.00659
	(!A_N * B_N * !D * !X)	0.00293	0.00292	0.00293
	(!A_N * !B_N * !D * !X)	0.00283	0.00283	0.00283
	(!A_N * !B_N * !D * !X)	-0.00058	-0.00058	-0.00058

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.01023	0.01026	0.01023
	(A_N * B_N * D * !X)	0.00182	0.00181	0.00183
	(A_N * B_N * !D * !X)	0.00881	0.00884	0.00881
	(A_N * B_N * !D * !X)	0.00181	0.00177	0.00180
	(A_N * !B_N * D * !X)	0.00902	0.00904	0.00903
	(A_N * !B_N * D * !X)	0.00062	0.00059	0.00060
	(A_N * !B_N * !D * !X)	0.00736	0.00736	0.00735
	(A_N * !B_N * !D * !X)	-0.00011	-0.00012	-0.00011
	(!A_N * B_N * D * !X)	0.00912	0.00915	0.00913
	(!A_N * B_N * D * !X)	0.00072	0.00069	0.00070
	(!A_N * B_N * !D * !X)	0.00759	0.00761	0.00758
	(!A_N * B_N * !D * !X)	0.00061	0.00058	0.00061
	(!A_N * !B_N * !D * !X)	0.00574	0.00576	0.00574
	(!A_N * !B_N * !D * !X)	-0.00076	-0.00080	-0.00080

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)**	0.00539	0.00533	0.00534
	(A_N * B_N * D * !X)	0.00937	0.00936	0.00933
	(A_N * B_N * !D * !X)	0.00595	0.00593	0.00594
	(A_N * B_N * !D * !X)	0.00939	0.00941	0.00936
	(A_N * !B_N * D * !X)	0.00296	0.00268	0.00265
	(A_N * !B_N * D * !X)	0.00694	0.00672	0.00665
	(A_N * !B_N * !D * !X)	0.00331	0.00335	0.00331
	(A_N * !B_N * !D * !X)	0.00699	0.00706	0.00695
	(!A_N * B_N * D * !X)	0.00248	0.00226	0.00225
	(!A_N * B_N * D * !X)	0.00648	0.00630	0.00624
	(!A_N * B_N * !D * !X)	0.00288	0.00287	0.00283
	(!A_N * B_N * !D * !X)	0.00630	0.00632	0.00623
	(!A_N * !B_N * !D * !X)	0.00050	0.00049	0.00048
	(!A_N * !B_N * !D * !X)	0.00362	0.00365	0.00359
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00632	0.00626	0.00628
	(A_N * B_N * D * !X)	0.01074	0.01075	0.01072
	(A_N * B_N * !D * !X)	0.00697	0.00696	0.00697
	(A_N * B_N * !D * !X)	0.01080	0.01081	0.01075
	(A_N * !B_N * D * !X)	0.00379	0.00349	0.00347
	(A_N * !B_N * D * !X)	0.00823	0.00799	0.00792
	(A_N * !B_N * !D * !X)	0.00424	0.00429	0.00424
	(A_N * !B_N * !D * !X)	0.00836	0.00842	0.00830
	(!A_N * B_N * D * !X)	0.00340	0.00316	0.00316
	(!A_N * B_N * D * !X)	0.00784	0.00767	0.00761
	(!A_N * B_N * !D * !X)	0.00389	0.00389	0.00385
	(!A_N * B_N * !D * !X)	0.00770	0.00771	0.00761
	(!A_N * !B_N * !D * !X)	0.00148	0.00148	0.00146
	(!A_N * !B_N * !D * !X)	0.00492	0.00494	0.00488

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	0.00312	0.00299	0.00303
	(A_N * B_N * D * !X)	0.01148	0.01150	0.01144
	(A_N * B_N * !D * !X)	0.00436	0.00436	0.00438
	(A_N * B_N * !D * !X)	0.01168	0.01168	0.01155
	(A_N * !B_N * D * !X)	0.00278	0.00205	0.00205
	(A_N * !B_N * D * !X)	0.01119	0.01058	0.01049
	(A_N * !B_N * !D * !X)	0.00347	0.00357	0.00347
	(A_N * !B_N * !D * !X)	0.01121	0.01141	0.01118
	(!A_N * B_N * D * !X)	0.00245	0.00193	0.00193
	(!A_N * B_N * D * !X)	0.01084	0.01047	0.01035
	(!A_N * B_N * !D * !X)	0.00336	0.00333	0.00323
	(!A_N * B_N * !D * !X)	0.01054	0.01059	0.01038
	(!A_N * !B_N * !D * !X)	0.00297	0.00295	0.00292
	(!A_N * !B_N * !D * !X)	0.00955	0.00960	0.00948

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)	0.00917	0.00918	0.00917
	(A_N * B_N * C * !X)	0.00542	0.00541	0.00541
	(A_N * !C * !X)	0.00919	0.00922	0.00919
	(A_N * !C * !X)	0.00541	0.00540	0.00541
	(A_N * !B_N * C * !X)	0.00585	0.00588	0.00587
	(A_N * !B_N * C * !X)	0.00209	0.00206	0.00208
	(!A_N * B_N * C * !X)	0.00609	0.00610	0.00610
	(!A_N * B_N * C * !X)	0.00232	0.00231	0.00232
	(!A_N * B_N * !C * !X)	0.00606	0.00608	0.00606
	(!A_N * B_N * !C * !X)	0.00228	0.00227	0.00228
	(!A_N * !B_N * !C * !X)	0.00275	0.00277	0.00276
	(!A_N * !B_N * !C * !X)	-0.00104	-0.00106	-0.00105

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.01031	0.01032	0.01031
	(A_N * B_N * C * !X)	0.00594	0.00593	0.00593
	(A_N * !C * !X)	0.01031	0.01035	0.01032
	(A_N * !C * !X)	0.00594	0.00592	0.00593
	(A_N * !B_N * C * !X)	0.00711	0.00714	0.00712
	(A_N * !B_N * C * !X)	0.00272	0.00270	0.00272
	(!A_N * B_N * C * !X)	0.00718	0.00718	0.00718
	(!A_N * B_N * C * !X)	0.00281	0.00281	0.00281
	(!A_N * B_N * !C * !X)	0.00718	0.00721	0.00719
	(!A_N * B_N * !C * !X)	0.00279	0.00278	0.00279
	(!A_N * !B_N * !C * !X)	0.00399	0.00402	0.00400
	(!A_N * !B_N * !C * !X)	-0.00040	-0.00042	-0.00041
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00989	0.00992	0.00989
	(A_N * B_N * C * !X)	0.00187	0.00185	0.00187
	(A_N * !C * !X)	0.00991	0.00993	0.00991
	(A_N * !C * !X)	0.00187	0.00185	0.00187
	(A_N * !B_N * C * !X)	0.00880	0.00883	0.00881
	(A_N * !B_N * C * !X)	0.00072	0.00071	0.00073
	(!A_N * B_N * C * !X)	0.00878	0.00878	0.00880
	(!A_N * B_N * C * !X)	0.00075	0.00074	0.00073
	(!A_N * B_N * !C * !X)	0.00871	0.00876	0.00872
	(!A_N * B_N * !C * !X)	0.00069	0.00066	0.00068
	(!A_N * !B_N * !C * !X)	0.00763	0.00768	0.00764
	(!A_N * !B_N * !C * !X)	-0.00044	-0.00048	-0.00045

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)**	0.00559	0.00551	0.00550
	(A_N * B_N * C * !X)	0.00928	0.00930	0.00929
	(A_N * !C * !X)	0.00552	0.00550	0.00550
	(A_N * !C * !X)	0.00929	0.00928	0.00928
	(A_N * !B_N * C * !X)	0.00285	0.00264	0.00263
	(A_N * !B_N * C * !X)	0.00665	0.00646	0.00643
	(!A_N * B_N * C * !X)	0.00262	0.00242	0.00241
	(!A_N * B_N * C * !X)	0.00638	0.00624	0.00619
	(!A_N * B_N * !C * !X)	0.00239	0.00237	0.00237
	(!A_N * B_N * !C * !X)	0.00617	0.00615	0.00616
	(!A_N * !B_N * !C * !X)	-0.00037	-0.00050	-0.00052
	(!A_N * !B_N * !C * !X)	0.00346	0.00333	0.00327
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00656	0.00648	0.00647
	(A_N * B_N * C * !X)	0.01085	0.01088	0.01086
	(A_N * !C * !X)	0.00650	0.00646	0.00646
	(A_N * !C * !X)	0.01084	0.01084	0.01085
	(A_N * !B_N * C * !X)	0.00368	0.00346	0.00344
	(A_N * !B_N * C * !X)	0.00803	0.00789	0.00785
	(!A_N * B_N * C * !X)	0.00354	0.00336	0.00335
	(!A_N * B_N * C * !X)	0.00789	0.00778	0.00774
	(!A_N * B_N * !C * !X)	0.00336	0.00330	0.00332
	(!A_N * B_N * !C * !X)	0.00771	0.00776	0.00772
	(!A_N * !B_N * !C * !X)	0.00045	0.00028	0.00029
	(!A_N * !B_N * !C * !X)	0.00483	0.00475	0.00469

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00351	0.00336	0.00334
	(A_N * B_N * C * !X)	0.01139	0.01144	0.01140
	(A_N * !C * !X)	0.00341	0.00332	0.00332
	(A_N * !C * !X)	0.01136	0.01144	0.01139
	(A_N * !B_N * C * !X)	0.00270	0.00232	0.00225
	(A_N * !B_N * C * !X)	0.01076	0.01048	0.01035
	(!A_N * B_N * C * !X)	0.00263	0.00227	0.00222
	(!A_N * B_N * C * !X)	0.01066	0.01042	0.01029
	(!A_N * B_N * !C * !X)	0.00224	0.00214	0.00214
	(!A_N * B_N * !C * !X)	0.01019	0.01026	0.01021
	(!A_N * !B_N * !C * !X)	0.00138	0.00109	0.00103
	(!A_N * !B_N * !C * !X)	0.00951	0.00928	0.00911

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00260	0.00250	0.00244	1.61194
sky130_fd_sc_hs__and4b_2	0.00230	0.00278	0.00277	0.00286	2.72512
sky130_fd_sc_hs__and4b_4	0.00251	0.00515	0.00554	0.00513	5.08388

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	385.78400	1446.05000
sky130_fd_sc_hs__and4b_2	0.00000	442.28900	603.49500
sky130_fd_sc_hs__and4b_4	0.00000	594.82000	1145.42000

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)	0.09150	0.59147	7.68369
	B->X (RR)	0.07175	0.48358	6.45575
	C->X (RR)	0.07626	0.47168	6.29014
	D->X (RR)	0.08030	0.44402	5.83768
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.10644	0.54325	7.66844
	B->X (RR)	0.07728	0.41001	5.96919
	C->X (RR)	0.08255	0.39524	5.78409
	D->X (RR)	0.08610	0.36594	5.25072
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.13344	0.53728	7.97690
	B->X (RR)	0.09280	0.38801	6.37604
	C->X (RR)	0.10385	0.36784	5.99323
	D->X (RR)	0.10413	0.34605	5.84520

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)	0.06838	0.26953	2.65000
	B->X (FF)	0.05497	0.40077	4.72917
	C->X (FF)	0.05961	0.41834	4.90899
	D->X (FF)	0.06279	0.43578	5.14045
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.07876	0.23077	2.26227
	B->X (FF)	0.06141	0.37456	4.44418
	C->X (FF)	0.06677	0.39232	4.64302
	D->X (FF)	0.06921	0.40436	4.82374
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.08956	0.20738	1.91882
	B->X (FF)	0.06121	0.32804	4.22102
	C->X (FF)	0.06605	0.34651	4.44684
	D->X (FF)	0.07497	0.37912	4.82395

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	0.04844	0.06569	0.34903
	A_N	0.05231	0.06954	0.35351
	B	0.05005	0.06134	0.28191
	B	0.04464	0.05593	0.27683
	C	0.05125	0.06274	0.29483
	C	0.04481	0.05630	0.28896
	D	0.05186	0.06100	0.26097
	D	0.04437	0.05353	0.25355
sky130_fd_sc_hs__and4b_2	A_N	0.03116	0.04676	0.33255
	A_N	0.03482	0.05050	0.33737
	B	0.03240	0.04294	0.26654
	B	0.02663	0.03717	0.26157
	C	0.03372	0.04417	0.27952
	C	0.02683	0.03729	0.27277
	D	0.03505	0.04232	0.21751
	D	0.02660	0.03388	0.20941
sky130_fd_sc_hs__and4b_4	A_N	0.06554	0.07994	0.42409
	A_N	0.06971	0.08446	0.42948
	B	0.06715	0.08686	0.51790
	B	0.05654	0.07630	0.50871
	C	0.07042	0.08731	0.48459
	C	0.05690	0.07385	0.47263
	D	0.07235	0.09058	0.55102
	D	0.05708	0.07531	0.53598

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.02049	0.03788	0.32850
	A_N	0.01663	0.03398	0.32416
	B	0.00724	0.02085	0.22511
	B	0.01264	0.02615	0.22947
	C	0.00762	0.02161	0.23682
	C	0.01406	0.02804	0.24155
	D	0.00838	0.02179	0.23565
	D	0.01583	0.02920	0.24236
sky130_fd_sc_hs__and4b_2	A_N	0.02742	0.04162	0.31781
	A_N	0.02378	0.03794	0.31373
	B	0.01423	0.02594	0.23327
	B	0.02002	0.03163	0.23845
	C	0.01539	0.02712	0.24491
	C	0.02225	0.03394	0.25135
	D	0.01542	0.02612	0.24000
	D	0.02383	0.03451	0.24832
sky130_fd_sc_hs__and4b_4	A_N	0.04360	0.05832	0.38755
	A_N	0.03943	0.05407	0.38301
	B	0.02760	0.05076	0.47928
	B	0.03824	0.06136	0.48708
	C	0.02912	0.05188	0.49681
	C	0.04262	0.06528	0.50561
	D	0.03379	0.05456	0.51374
	D	0.04899	0.06962	0.52522

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)	0.01118	0.02775	0.29015
	(B * C * !D * !X)	0.00612	0.02266	0.28508
	(B * !C * !X)	0.01119	0.02775	0.29015
	(B * !C * !X)	0.00613	0.02266	0.28508
	(!B * !X)	0.01111	0.02770	0.29015
	(!B * !X)	0.00613	0.02268	0.28515
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.01297	0.02882	0.28375
	(B * C * !D * !X)	0.00816	0.02397	0.27892
	(B * !C * !X)	0.01297	0.02881	0.28374
	(B * !C * !X)	0.00817	0.02397	0.27891
	(!B * !X)	0.01291	0.02875	0.28369
	(!B * !X)	0.00817	0.02398	0.27892
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.01749	0.03426	0.31267
	(B * C * !D * !X)	0.01162	0.02838	0.30681
	(B * !C * !X)	0.01747	0.03423	0.31263
	(B * !C * !X)	0.01162	0.02838	0.30680
	(!B * !X)	0.01731	0.03406	0.31249
	(!B * !X)	0.01162	0.02838	0.30683

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)	0.00111	0.01864	0.28387
	(B * C * !D * !X)	0.00627	0.02382	0.28900
	(B * !C * !X)	0.00108	0.01861	0.28386
	(B * !C * !X)	0.00619	0.02374	0.28895
	(!B * !X)	0.00108	0.01863	0.28393
	(!B * !X)	0.00611	0.02365	0.28894
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00223	0.01901	0.27674
	(B * C * !D * !X)	0.00720	0.02397	0.28165
	(B * !C * !X)	0.00222	0.01900	0.27674
	(B * !C * !X)	0.00712	0.02388	0.28161
	(!B * !X)	0.00222	0.01900	0.27677
	(!B * !X)	0.00699	0.02377	0.28153
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00480	0.02162	0.30075
	(B * C * !D * !X)	0.01086	0.02773	0.30674
	(B * !C * !X)	0.00479	0.02161	0.30077
	(B * !C * !X)	0.01072	0.02758	0.30666
	(!B * !X)	0.00479	0.02162	0.30084
	(!B * !X)	0.01045	0.02732	0.30651

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)**	0.00611	0.00613	0.00611
	(A_N * C * D * !X)	0.00201	0.00200	0.00200
	(A_N * C * !D * !X)	0.00535	0.00536	0.00535
	(A_N * C * !D * !X)	0.00196	0.00194	0.00196
	(A_N * !C * !X)	0.00534	0.00535	0.00534
	(A_N * !C * !X)	0.00195	0.00194	0.00196
	(!A_N * C * !D * !X)	0.00172	0.00172	0.00171
	(!A_N * C * !D * !X)	-0.00143	-0.00144	-0.00146
	(!A_N * !C * !X)	0.00172	0.00172	0.00171
	(!A_N * !C * !X)	-0.00146	-0.00147	-0.00147
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00736	0.00739	0.00737
	(A_N * C * D * !X)	0.00292	0.00290	0.00292
	(A_N * C * !D * !X)	0.00650	0.00651	0.00650
	(A_N * C * !D * !X)	0.00288	0.00288	0.00289
	(A_N * !C * !X)	0.00656	0.00657	0.00655
	(A_N * !C * !X)	0.00288	0.00287	0.00288
	(!A_N * C * !D * !X)	0.00277	0.00278	0.00278
	(!A_N * C * !D * !X)	-0.00055	-0.00056	-0.00058
	(!A_N * !C * !X)	0.00282	0.00282	0.00281
	(!A_N * !C * !X)	-0.00058	-0.00059	-0.00059
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00981	0.00985	0.00982
	(A_N * C * D * !X)	0.00103	0.00101	0.00102
	(A_N * C * !D * !X)	0.00825	0.00825	0.00826
	(A_N * C * !D * !X)	0.00095	0.00094	0.00094
	(A_N * !C * !X)	0.00839	0.00843	0.00840
	(A_N * !C * !X)	0.00093	0.00090	0.00093
	(!A_N * C * !D * !X)	0.00583	0.00585	0.00583
	(!A_N * C * !D * !X)	-0.00095	-0.00099	-0.00105
	(!A_N * !C * !X)	0.00591	0.00593	0.00590
	(!A_N * !C * !X)	-0.00102	-0.00106	-0.00108

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)	0.00267	0.00239	0.00239
	(A_N * C * D * !X)	0.00678	0.00655	0.00650
	(A_N * C * !D * !X)	0.00314	0.00311	0.00308
	(A_N * C * !D * !X)	0.00672	0.00667	0.00658
	(A_N * !C * !X)	0.00307	0.00306	0.00302
	(A_N * !C * !X)	0.00654	0.00656	0.00648
	(!A_N * C * !D * !X)	0.00047	0.00046	0.00045
	(!A_N * C * !D * !X)	0.00365	0.00368	0.00363
	(!A_N * !C * !X)	0.00047	0.00046	0.00045
	(!A_N * !C * !X)	0.00366	0.00369	0.00363
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	0.00347	0.00316	0.00316
	(A_N * C * D * !X)	0.00792	0.00767	0.00761
	(A_N * C * !D * !X)	0.00406	0.00402	0.00397
	(A_N * C * !D * !X)	0.00784	0.00782	0.00770
	(A_N * !C * !X)	0.00391	0.00390	0.00386
	(A_N * !C * !X)	0.00772	0.00773	0.00762
	(!A_N * C * !D * !X)	0.00147	0.00145	0.00145
	(!A_N * C * !D * !X)	0.00485	0.00490	0.00483
	(!A_N * !C * !X)	0.00144	0.00143	0.00142
	(!A_N * !C * !X)	0.00486	0.00489	0.00483

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00174	0.00126	0.00118
	(A_N * C * D * !X)	0.01051	0.01014	0.00997
	(A_N * C * !D * !X)	0.00277	0.00268	0.00260
	(A_N * C * !D * !X)	0.01039	0.01034	0.01015
	(A_N * !C * !X)	0.00251	0.00247	0.00236
	(A_N * !C * !X)	0.01018	0.01020	0.01000
	(!A_N * C * !D * !X)	0.00272	0.00271	0.00268
	(!A_N * C * !D * !X)	0.00961	0.00965	0.00957
	(!A_N * !C * !X)	0.00266	0.00263	0.00262
	(!A_N * !C * !X)	0.00963	0.00970	0.00959

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)**	0.00615	0.00618	0.00616
	(A_N * B * D * !X)	0.00223	0.00221	0.00223
	(A_N * B * !D * !X)	0.00539	0.00540	0.00539
	(A_N * B * !D * !X)	0.00217	0.00217	0.00217
	(A_N * !B * D * !X)	0.00610	0.00612	0.00611
	(A_N * !B * D * !X)	0.00218	0.00217	0.00218
	(A_N * !B * !D * !X)	0.00535	0.00537	0.00535
	(A_N * !B * !D * !X)	0.00217	0.00216	0.00217
	(!A_N * B * !D * !X)	0.00204	0.00204	0.00203
	(!A_N * B * !D * !X)	-0.00098	-0.00098	-0.00097
	(!A_N * !B * D * !X)	0.00302	0.00304	0.00302
	(!A_N * !B * D * !X)	-0.00093	-0.00095	-0.00094
	(!A_N * !B * !D * !X)	0.00220	0.00219	0.00219
	(!A_N * !B * !D * !X)	-0.00099	-0.00099	-0.00099

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00709	0.00711	0.00710
	(A_N * B * D * !X)	0.00294	0.00293	0.00294
	(A_N * B * !D * !X)	0.00623	0.00623	0.00622
	(A_N * B * !D * !X)	0.00291	0.00290	0.00291
	(A_N * !B * D * !X)	0.00707	0.00710	0.00707
	(A_N * !B * D * !X)	0.00292	0.00290	0.00292
	(A_N * !B * !D * !X)	0.00616	0.00617	0.00616
	(A_N * !B * !D * !X)	0.00291	0.00290	0.00291
	(!A_N * B * !D * !X)	0.00281	0.00281	0.00281
	(!A_N * B * !D * !X)	-0.00024	-0.00024	-0.00022
	(!A_N * !B * D * !X)	0.00396	0.00398	0.00396
	(!A_N * !B * D * !X)	-0.00021	-0.00023	-0.00021
	(!A_N * !B * !D * !X)	0.00299	0.00300	0.00299
	(!A_N * !B * !D * !X)	-0.00024	-0.00026	-0.00025
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00957	0.00962	0.00960
	(A_N * B * D * !X)	0.00077	0.00074	0.00077
	(A_N * B * !D * !X)	0.00803	0.00806	0.00804
	(A_N * B * !D * !X)	0.00067	0.00064	0.00066
	(A_N * !B * D * !X)	0.00948	0.00953	0.00950
	(A_N * !B * D * !X)	0.00069	0.00065	0.00067
	(A_N * !B * !D * !X)	0.00801	0.00803	0.00802
	(A_N * !B * !D * !X)	0.00067	0.00065	0.00066
	(!A_N * B * !D * !X)	0.00632	0.00634	0.00635
	(!A_N * B * !D * !X)	-0.00054	-0.00056	-0.00052
	(!A_N * !B * D * !X)	0.00836	0.00840	0.00838
	(!A_N * !B * D * !X)	-0.00048	-0.00051	-0.00049
	(!A_N * !B * !D * !X)	0.00670	0.00672	0.00670
	(!A_N * !B * !D * !X)	-0.00060	-0.00062	-0.00061

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)	0.00267	0.00233	0.00234
	(A_N * B * D * !X)	0.00661	0.00633	0.00627
	(A_N * B * !D * !X)	0.00300	0.00302	0.00297
	(A_N * B * !D * !X)	0.00638	0.00644	0.00631
	(A_N * !B * D * !X)	0.00235	0.00227	0.00229
	(A_N * !B * D * !X)	0.00625	0.00625	0.00623
	(A_N * !B * !D * !X)	0.00299	0.00297	0.00300
	(A_N * !B * !D * !X)	0.00630	0.00633	0.00627
	(!A_N * B * !D * !X)	0.00019	0.00018	0.00016
	(!A_N * B * !D * !X)	0.00322	0.00325	0.00317
	(!A_N * !B * D * !X)	-0.00059	-0.00081	-0.00080
	(!A_N * !B * D * !X)	0.00336	0.00320	0.00315
	(!A_N * !B * !D * !X)	-0.00006	-0.00008	-0.00010
	(!A_N * !B * !D * !X)	0.00323	0.00325	0.00315
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	0.00375	0.00344	0.00341
	(A_N * B * D * !X)	0.00787	0.00765	0.00758
	(A_N * B * !D * !X)	0.00420	0.00422	0.00418
	(A_N * B * !D * !X)	0.00772	0.00777	0.00763
	(A_N * !B * D * !X)	0.00344	0.00336	0.00338
	(A_N * !B * D * !X)	0.00756	0.00758	0.00755
	(A_N * !B * !D * !X)	0.00422	0.00422	0.00425
	(A_N * !B * !D * !X)	0.00764	0.00765	0.00760
	(!A_N * B * !D * !X)	0.00147	0.00147	0.00145
	(!A_N * B * !D * !X)	0.00456	0.00457	0.00450
	(!A_N * !B * D * !X)	0.00053	0.00029	0.00030
	(!A_N * !B * D * !X)	0.00470	0.00453	0.00447
	(!A_N * !B * !D * !X)	0.00118	0.00118	0.00117
	(!A_N * !B * !D * !X)	0.00456	0.00457	0.00448

sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00210	0.00146	0.00138
	(A_N * B * D * !X)	0.01090	0.01038	0.01022
	(A_N * B * !D * !X)	0.00274	0.00278	0.00269
	(A_N * B * !D * !X)	0.01046	0.01057	0.01029
	(A_N * !B * D * !X)	0.00143	0.00129	0.00128
	(A_N * !B * D * !X)	0.01016	0.01016	0.01012
	(A_N * !B * !D * !X)	0.00269	0.00268	0.00270
	(A_N * !B * !D * !X)	0.01031	0.01036	0.01022
	(!A_N * B * !D * !X)	0.00229	0.00227	0.00221
	(!A_N * B * !D * !X)	0.00926	0.00930	0.00913
	(!A_N * !B * D * !X)	0.00076	0.00031	0.00022
	(!A_N * !B * D * !X)	0.00962	0.00926	0.00908
	(!A_N * !B * !D * !X)	0.00172	0.00172	0.00166
	(!A_N * !B * !D * !X)	0.00927	0.00933	0.00913

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)**	0.00584	0.00586	0.00584
	(A_N * B * C * !X)	0.00205	0.00204	0.00206
	(A_N * !C * !X)	0.00581	0.00583	0.00582
	(A_N * !C * !X)	0.00201	0.00200	0.00201
	(A_N * !B * C * !X)	0.00578	0.00579	0.00578
	(A_N * !B * C * !X)	0.00201	0.00200	0.00201
	(!A_N * B * !C * !X)	0.00271	0.00274	0.00272
	(!A_N * B * !C * !X)	-0.00111	-0.00113	-0.00111
	(!A_N * !B * C * !X)	0.00269	0.00271	0.00270
	(!A_N * !B * C * !X)	-0.00110	-0.00111	-0.00110
	(!A_N * !B * !C * !X)	0.00267	0.00269	0.00268
	(!A_N * !B * !C * !X)	-0.00113	-0.00114	-0.00113

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00711	0.00712	0.00712
	(A_N * B * C * !X)	0.00276	0.00276	0.00276
	(A_N * !C * !X)	0.00710	0.00713	0.00711
	(A_N * !C * !X)	0.00274	0.00272	0.00274
	(A_N * !B * C * !X)	0.00707	0.00707	0.00707
	(A_N * !B * C * !X)	0.00274	0.00273	0.00274
	(!A_N * B * !C * !X)	0.00398	0.00400	0.00398
	(!A_N * B * !C * !X)	-0.00041	-0.00043	-0.00041
	(!A_N * !B * C * !X)	0.00395	0.00396	0.00396
	(!A_N * !B * C * !X)	-0.00041	-0.00041	-0.00041
	(!A_N * !B * !C * !X)	0.00394	0.00394	0.00394
	(!A_N * !B * !C * !X)	-0.00041	-0.00042	-0.00042
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00895	0.00895	0.00893
	(A_N * B * C * !X)	0.00077	0.00077	0.00079
	(A_N * !C * !X)	0.00875	0.00879	0.00877
	(A_N * !C * !X)	0.00072	0.00068	0.00070
	(A_N * !B * C * !X)	0.00883	0.00881	0.00881
	(A_N * !B * C * !X)	0.00068	0.00069	0.00070
	(!A_N * B * !C * !X)	0.00760	0.00764	0.00760
	(!A_N * B * !C * !X)	-0.00053	-0.00057	-0.00053
	(!A_N * !B * C * !X)	0.00763	0.00768	0.00765
	(!A_N * !B * C * !X)	-0.00046	-0.00049	-0.00046
	(!A_N * !B * !C * !X)	0.00751	0.00756	0.00753
	(!A_N * !B * !C * !X)	-0.00052	-0.00056	-0.00054

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)**	0.00289	0.00266	0.00264
	(A_N * B * C * !X)	0.00663	0.00649	0.00644
	(A_N * !C * !X)	0.00264	0.00258	0.00259
	(A_N * !C * !X)	0.00640	0.00642	0.00639
	(A_N * !B * C * !X)	0.00271	0.00262	0.00260
	(A_N * !B * C * !X)	0.00639	0.00641	0.00639
	(!A_N * B * !C * !X)	-0.00035	-0.00051	-0.00052
	(!A_N * B * !C * !X)	0.00347	0.00335	0.00330
	(!A_N * !B * C * !X)	-0.00029	-0.00048	-0.00050
	(!A_N * !B * C * !X)	0.00348	0.00335	0.00329
	(!A_N * !B * !C * !X)	-0.00050	-0.00056	-0.00055
	(!A_N * !B * !C * !X)	0.00327	0.00328	0.00325
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00363	0.00342	0.00340
	(A_N * B * C * !X)	0.00789	0.00780	0.00776
	(A_N * !C * !X)	0.00340	0.00336	0.00336
	(A_N * !C * !X)	0.00774	0.00773	0.00773
	(A_N * !B * C * !X)	0.00349	0.00339	0.00337
	(A_N * !B * C * !X)	0.00773	0.00775	0.00773
	(!A_N * B * !C * !X)	0.00041	0.00029	0.00027
	(!A_N * B * !C * !X)	0.00478	0.00468	0.00465
	(!A_N * !B * C * !X)	0.00049	0.00031	0.00028
	(!A_N * !B * C * !X)	0.00478	0.00469	0.00465
	(!A_N * !B * !C * !X)	0.00030	0.00026	0.00025
	(!A_N * !B * !C * !X)	0.00463	0.00462	0.00462

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00269	0.00212	0.00205
	(A_N * B * C * !X)	0.01073	0.01034	0.01020
	(A_N * !C * !X)	0.00213	0.00202	0.00201
	(A_N * !C * !X)	0.01010	0.01013	0.01010
	(A_N * !B * C * !X)	0.00223	0.00201	0.00196
	(A_N * !B * C * !X)	0.01010	0.01014	0.01010
	(!A_N * B * !C * !X)	0.00139	0.00106	0.00100
	(!A_N * B * !C * !X)	0.00952	0.00928	0.00911
	(!A_N * !B * C * !X)	0.00148	0.00098	0.00090
	(!A_N * !B * C * !X)	0.00956	0.00920	0.00905
	(!A_N * !B * !C * !X)	0.00101	0.00089	0.00088
	(!A_N * !B * !C * !X)	0.00900	0.00901	0.00897

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00262	0.00259	0.00249	0.00253	1.64032
sky130_fd_sc_hs__and4_2	0.00282	0.00289	0.00275	0.00272	2.71879
sky130_fd_sc_hs__and4_4	0.00488	0.00505	0.00554	0.00495	6.05176

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4_1	0.00000	203.51900	1444.22000
sky130_fd_sc_hs__and4_2	0.00000	260.41500	570.79400
sky130_fd_sc_hs__and4_4	0.00000	521.79400	1141.10000

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)	0.06441	0.48580	6.59156
	B->X (RR)	0.07060	0.48113	6.44105
	C->X (RR)	0.07435	0.46759	6.26813
	D->X (RR)	0.07892	0.44171	5.84254
sky130_fd_sc_hs__and4_2	A->X (RR)	0.07175	0.42774	6.23719
	B->X (RR)	0.07851	0.42003	6.06596
	C->X (RR)	0.08307	0.40426	5.88566
	D->X (RR)	0.08674	0.37210	5.27415
sky130_fd_sc_hs__and4_4	A->X (RR)	0.07835	0.37696	6.65231
	B->X (RR)	0.08785	0.38050	6.64056
	C->X (RR)	0.09746	0.36227	6.33548
	D->X (RR)	0.09731	0.34336	6.26299

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.04947	0.37959	4.64298
	B->X (FF)	0.05483	0.39888	4.77562
	C->X (FF)	0.05893	0.41684	4.97960
	D->X (FF)	0.06263	0.43263	5.19373
sky130_fd_sc_hs__and4_2	A->X (FF)	0.05295	0.34248	4.11592
	B->X (FF)	0.05949	0.36445	4.29163
	C->X (FF)	0.06384	0.38117	4.49232
	D->X (FF)	0.06958	0.40374	4.76141
sky130_fd_sc_hs__and4_4	A->X (FF)	0.05372	0.32218	4.72378
	B->X (FF)	0.05736	0.32757	4.72315
	C->X (FF)	0.06172	0.34626	4.95697
	D->X (FF)	0.06234	0.35957	5.19096

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.04906	0.06189	0.28985
	A	0.04366	0.05650	0.28462
	B	0.05002	0.06188	0.28815
	B	0.04361	0.05546	0.28213
	C	0.05111	0.06314	0.30042
	C	0.04353	0.05556	0.29328
	D	0.05206	0.06194	0.26899
	D	0.04313	0.05302	0.26014
sky130_fd_sc_hs__and4_2	A	0.03188	0.04353	0.27236
	A	0.02588	0.03756	0.26720
	B	0.03326	0.04379	0.26966
	B	0.02599	0.03651	0.26325
	C	0.03449	0.04496	0.28342
	C	0.02596	0.03643	0.27475
	D	0.03579	0.04275	0.21419
	D	0.02576	0.03273	0.20460
sky130_fd_sc_hs__and4_4	A	0.06419	0.08611	0.52159
	A	0.05385	0.07578	0.51131
	B	0.06690	0.08703	0.52717
	B	0.05372	0.07401	0.51407
	C	0.07013	0.08830	0.51418
	C	0.05364	0.07179	0.49922
	D	0.07175	0.09179	0.58300
	D	0.05373	0.07379	0.56644

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00648	0.02071	0.24163
	A	0.01188	0.02599	0.24649
	B	0.00719	0.02155	0.24278
	B	0.01361	0.02778	0.24734
	C	0.00777	0.02235	0.25351
	C	0.01535	0.02985	0.25974
	D	0.00816	0.02211	0.25424
	D	0.01707	0.03101	0.26201
sky130_fd_sc_hs__and4_2	A	0.01246	0.02486	0.23600
	A	0.01846	0.03085	0.24086
	B	0.01354	0.02573	0.23662
	B	0.02081	0.03295	0.24220
	C	0.01471	0.02711	0.24762
	C	0.02321	0.03556	0.25573
	D	0.01525	0.02596	0.23763
	D	0.02517	0.03588	0.24704
sky130_fd_sc_hs__and4_4	A	0.02661	0.05064	0.48190
	A	0.03696	0.06082	0.49145
	B	0.02729	0.05229	0.49273
	B	0.04052	0.06540	0.50518
	C	0.02885	0.05365	0.51668
	C	0.04530	0.07004	0.52712
	D	0.03200	0.05732	0.55311
	D	0.04996	0.07523	0.56706

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)	0.00164	0.00164	0.00158
	(B * C * !D * !X)	-0.00132	-0.00133	-0.00147
	(B * !C * !X)	0.00161	0.00161	0.00157
	(B * !C * !X)	-0.00138	-0.00140	-0.00148
	(!B * !X)	0.00161	0.00162	0.00158
	(!B * !X)	-0.00144	-0.00145	-0.00149
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00279	0.00279	0.00272
	(B * C * !D * !X)	-0.00058	-0.00060	-0.00077
	(B * !C * !X)	0.00276	0.00277	0.00271
	(B * !C * !X)	-0.00067	-0.00069	-0.00078
	(!B * !X)	0.00274	0.00275	0.00272
	(!B * !X)	-0.00074	-0.00076	-0.00079
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00519	0.00519	0.00505
	(B * C * !D * !X)	-0.00072	-0.00076	-0.00109
	(B * !C * !X)	0.00516	0.00517	0.00506
	(B * !C * !X)	-0.00086	-0.00088	-0.00112
	(!B * !X)	0.00512	0.00513	0.00506
	(!B * !X)	-0.00101	-0.00106	-0.00114

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)	0.00055	0.00055	0.00055
	(B * C * !D * !X)	0.00358	0.00360	0.00359
	(B * !C * !X)	0.00055	0.00054	0.00055
	(B * !C * !X)	0.00358	0.00362	0.00359
	(!B * !X)	0.00053	0.00052	0.00053
	(!B * !X)	0.00358	0.00361	0.00359
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00148	0.00147	0.00148
	(B * C * !D * !X)	0.00495	0.00500	0.00496
	(B * !C * !X)	0.00147	0.00147	0.00148
	(B * !C * !X)	0.00497	0.00498	0.00496
	(!B * !X)	0.00146	0.00146	0.00147
	(!B * !X)	0.00496	0.00499	0.00497
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00338	0.00338	0.00339
	(B * C * !D * !X)	0.00949	0.00951	0.00950
	(B * !C * !X)	0.00336	0.00334	0.00337
	(B * !C * !X)	0.00949	0.00959	0.00951
	(!B * !X)	0.00333	0.00332	0.00334
	(!B * !X)	0.00950	0.00955	0.00951

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)**	0.00168	0.00168	0.00167
	(A * C * !D * !X)	-0.00102	-0.00103	-0.00102
	(A * !C * !X)	0.00168	0.00169	0.00167
	(A * !C * !X)	-0.00102	-0.00103	-0.00102
	(!A * C * D * !X)	0.00275	0.00277	0.00275
	(!A * C * D * !X)	-0.00098	-0.00099	-0.00099
	(!A * C * !D * !X)	0.00185	0.00186	0.00185
	(!A * C * !D * !X)	-0.00101	-0.00102	-0.00101
	(!A * !C * !X)	0.00183	0.00183	0.00182
	(!A * !C * !X)	-0.00102	-0.00103	-0.00102
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00281	0.00282	0.00280
	(A * C * !D * !X)	-0.00037	-0.00038	-0.00036
	(A * !C * !X)	0.00284	0.00284	0.00283
	(A * !C * !X)	-0.00037	-0.00038	-0.00036
	(!A * C * D * !X)	0.00401	0.00403	0.00401
	(!A * C * D * !X)	-0.00034	-0.00036	-0.00035
	(!A * C * !D * !X)	0.00304	0.00304	0.00304
	(!A * C * !D * !X)	-0.00036	-0.00036	-0.00036
	(!A * !C * !X)	0.00303	0.00304	0.00303
	(!A * !C * !X)	-0.00036	-0.00038	-0.00037
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00576	0.00578	0.00575
	(A * C * !D * !X)	-0.00045	-0.00047	-0.00046
	(A * !C * !X)	0.00585	0.00586	0.00583
	(A * !C * !X)	-0.00047	-0.00050	-0.00047
	(!A * C * D * !X)	0.00795	0.00799	0.00795
	(!A * C * D * !X)	-0.00035	-0.00037	-0.00036
	(!A * C * !D * !X)	0.00614	0.00615	0.00614
	(!A * C * !D * !X)	-0.00047	-0.00048	-0.00047
	(!A * !C * !X)	0.00620	0.00622	0.00620
	(!A * !C * !X)	-0.00048	-0.00051	-0.00049

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)	0.00048	0.00047	0.00046
	(A * C * !D * !X)	0.00318	0.00320	0.00314
	(A * !C * !X)	0.00047	0.00046	0.00046
	(A * !C * !X)	0.00319	0.00321	0.00314
	(!A * C * D * !X)	-0.00030	-0.00056	-0.00054
	(!A * C * D * !X)	0.00345	0.00322	0.00317
	(!A * C * !D * !X)	0.00029	0.00025	0.00024
	(!A * C * !D * !X)	0.00336	0.00333	0.00324
	(!A * !C * !X)	0.00026	0.00026	0.00024
	(!A * !C * !X)	0.00323	0.00323	0.00314
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	0.00141	0.00140	0.00140
	(A * C * !D * !X)	0.00459	0.00463	0.00455
	(A * !C * !X)	0.00139	0.00138	0.00137
	(A * !C * !X)	0.00460	0.00462	0.00456
	(!A * C * D * !X)	0.00051	0.00022	0.00023
	(!A * C * D * !X)	0.00487	0.00463	0.00457
	(!A * C * !D * !X)	0.00116	0.00113	0.00111
	(!A * C * !D * !X)	0.00483	0.00478	0.00466
	(!A * !C * !X)	0.00112	0.00112	0.00110
	(!A * !C * !X)	0.00468	0.00468	0.00457

sky130_fd_sc_hs__and4_4	(A * C * !D * !X)	0.00271	0.00268	0.00268
	(A * C * !D * !X)	0.00894	0.00902	0.00886
	(A * !C * !X)	0.00264	0.00263	0.00261
	(A * !C * !X)	0.00896	0.00899	0.00888
	(!A * C * D * !X)	0.00113	0.00066	0.00061
	(!A * C * D * !X)	0.00944	0.00906	0.00889
	(!A * C * !D * !X)	0.00234	0.00225	0.00222
	(!A * C * !D * !X)	0.00934	0.00926	0.00910
	(!A * !C * !X)	0.00219	0.00216	0.00210
	(!A * !C * !X)	0.00913	0.00914	0.00896

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)	0.00180	0.00180	0.00179
	(A * B * !D * !X)	-0.00092	-0.00093	-0.00091
	(A * !B * D * !X)	0.00281	0.00283	0.00281
	(A * !B * D * !X)	-0.00091	-0.00092	-0.00091
	(A * !B * !D * !X)	0.00194	0.00195	0.00194
	(A * !B * !D * !X)	-0.00095	-0.00096	-0.00095
	(!A * B * D * !X)	0.00278	0.00279	0.00278
	(!A * B * D * !X)	-0.00090	-0.00091	-0.00090
	(!A * B * !D * !X)	0.00192	0.00192	0.00191
	(!A * B * !D * !X)	-0.00095	-0.00096	-0.00095
	(!A * !B * D * !X)	0.00275	0.00277	0.00275
	(!A * !B * D * !X)	-0.00095	-0.00096	-0.00095
	(!A * !B * !D * !X)	0.00196	0.00196	0.00195
	(!A * !B * !D * !X)	-0.00095	-0.00096	-0.00095

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00286	0.00287	0.00287
	(A * B * !D * !X)	-0.00018	-0.00019	-0.00017
	(A * !B * D * !X)	0.00400	0.00402	0.00400
	(A * !B * D * !X)	-0.00019	-0.00021	-0.00019
	(A * !B * !D * !X)	0.00308	0.00309	0.00308
	(A * !B * !D * !X)	-0.00021	-0.00023	-0.00022
	(!A * B * D * !X)	0.00398	0.00400	0.00398
	(!A * B * D * !X)	-0.00020	-0.00021	-0.00020
	(!A * B * !D * !X)	0.00304	0.00305	0.00304
	(!A * B * !D * !X)	-0.00021	-0.00023	-0.00022
	(!A * !B * D * !X)	0.00396	0.00398	0.00397
	(!A * !B * D * !X)	-0.00022	-0.00023	-0.00022
	(!A * !B * !D * !X)	0.00309	0.00311	0.00310
	(!A * !B * !D * !X)	-0.00021	-0.00023	-0.00022
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00627	0.00629	0.00629
	(A * B * !D * !X)	-0.00053	-0.00056	-0.00052
	(A * !B * D * !X)	0.00833	0.00836	0.00835
	(A * !B * D * !X)	-0.00051	-0.00053	-0.00052
	(A * !B * !D * !X)	0.00663	0.00665	0.00663
	(A * !B * !D * !X)	-0.00063	-0.00065	-0.00064
	(!A * B * D * !X)	0.00828	0.00833	0.00831
	(!A * B * D * !X)	-0.00050	-0.00053	-0.00051
	(!A * B * !D * !X)	0.00656	0.00659	0.00656
	(!A * B * !D * !X)	-0.00062	-0.00066	-0.00063
	(!A * !B * D * !X)	0.00821	0.00826	0.00823
	(!A * !B * D * !X)	-0.00059	-0.00062	-0.00060
	(!A * !B * !D * !X)	0.00667	0.00670	0.00667
	(!A * !B * !D * !X)	-0.00063	-0.00067	-0.00064

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)	0.00039	0.00038	0.00036
	(A * B * !D * !X)	0.00314	0.00316	0.00307
	(A * !B * D * !X)	-0.00043	-0.00062	-0.00062
	(A * !B * D * !X)	0.00331	0.00315	0.00308
	(A * !B * !D * !X)	0.00015	0.00014	0.00012
	(A * !B * !D * !X)	0.00314	0.00315	0.00306
	(!A * B * D * !X)	-0.00028	-0.00057	-0.00060
	(!A * B * D * !X)	0.00341	0.00317	0.00309
	(!A * B * !D * !X)	0.00014	0.00018	0.00015
	(!A * B * !D * !X)	0.00319	0.00322	0.00310
	(!A * !B * D * !X)	-0.00057	-0.00066	-0.00066
	(!A * !B * D * !X)	0.00306	0.00306	0.00304
	(!A * !B * !D * !X)	0.00009	0.00007	0.00009
	(!A * !B * !D * !X)	0.00310	0.00312	0.00307
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	0.00138	0.00137	0.00136
	(A * B * !D * !X)	0.00449	0.00450	0.00442
	(A * !B * D * !X)	0.00047	0.00022	0.00022
	(A * !B * D * !X)	0.00464	0.00447	0.00442
	(A * !B * !D * !X)	0.00107	0.00106	0.00104
	(A * !B * !D * !X)	0.00450	0.00451	0.00442
	(!A * B * D * !X)	0.00060	0.00027	0.00024
	(!A * B * D * !X)	0.00472	0.00449	0.00442
	(!A * B * !D * !X)	0.00109	0.00113	0.00109
	(!A * B * !D * !X)	0.00457	0.00460	0.00446
	(!A * !B * D * !X)	0.00030	0.00019	0.00020
	(!A * !B * D * !X)	0.00441	0.00442	0.00439
	(!A * !B * !D * !X)	0.00099	0.00099	0.00100
	(!A * !B * !D * !X)	0.00447	0.00448	0.00442

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	0.00224	0.00222	0.00218
	(A * B * !D * !X)	0.00919	0.00921	0.00904
	(A * !B * D * !X)	0.00069	0.00025	0.00016
	(A * !B * D * !X)	0.00954	0.00919	0.00903
	(A * !B * !D * !X)	0.00170	0.00170	0.00164
	(A * !B * !D * !X)	0.00919	0.00925	0.00905
	(!A * B * D * !X)	0.00093	0.00028	0.00021
	(!A * B * D * !X)	0.00972	0.00919	0.00904
	(!A * B * !D * !X)	0.00175	0.00179	0.00173
	(!A * B * !D * !X)	0.00928	0.00938	0.00912
	(!A * !B * D * !X)	0.00030	0.00012	0.00009
	(!A * !B * D * !X)	0.00900	0.00898	0.00894
	(!A * !B * !D * !X)	0.00155	0.00154	0.00157
	(!A * !B * !D * !X)	0.00913	0.00917	0.00905

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)	0.00274	0.00276	0.00275
	(A * B * !C * !X)	-0.00115	-0.00116	-0.00115
	(A * !B * C * !X)	0.00273	0.00275	0.00273
	(A * !B * C * !X)	-0.00113	-0.00114	-0.00113
	(A * !B * !C * !X)	0.00270	0.00273	0.00271
	(A * !B * !C * !X)	-0.00115	-0.00117	-0.00116
	(!A * B * C * !X)	0.00273	0.00274	0.00273
	(!A * B * C * !X)	-0.00111	-0.00112	-0.00111
	(!A * !C * !X)	0.00270	0.00273	0.00271
	(!A * !C * !X)	-0.00115	-0.00117	-0.00116
	(!A * !B * C * !X)	0.00268	0.00269	0.00268
	(!A * !B * C * !X)	-0.00115	-0.00116	-0.00116

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00403	0.00406	0.00404
	(A * B * !C * !X)	-0.00029	-0.00031	-0.00030
	(A * !B * C * !X)	0.00401	0.00403	0.00401
	(A * !B * C * !X)	-0.00029	-0.00030	-0.00029
	(A * !B * !C * !X)	0.00400	0.00402	0.00401
	(A * !B * !C * !X)	-0.00029	-0.00031	-0.00030
	(!A * B * C * !X)	0.00399	0.00400	0.00399
	(!A * B * C * !X)	-0.00027	-0.00028	-0.00027
	(!A * !C * !X)	0.00400	0.00402	0.00401
	(!A * !C * !X)	-0.00029	-0.00031	-0.00030
	(!A * !B * C * !X)	0.00397	0.00399	0.00397
	(!A * !B * C * !X)	-0.00030	-0.00031	-0.00030
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00747	0.00748	0.00748
	(A * B * !C * !X)	-0.00048	-0.00049	-0.00049
	(A * !B * C * !X)	0.00750	0.00751	0.00750
	(A * !B * C * !X)	-0.00045	-0.00046	-0.00044
	(A * !B * !C * !X)	0.00739	0.00739	0.00740
	(A * !B * !C * !X)	-0.00049	-0.00049	-0.00050
	(!A * B * C * !X)	0.00750	0.00753	0.00750
	(!A * B * C * !X)	-0.00041	-0.00043	-0.00041
	(!A * !C * !X)	0.00738	0.00741	0.00738
	(!A * !C * !X)	-0.00049	-0.00051	-0.00049
	(!A * !B * C * !X)	0.00739	0.00742	0.00739
	(!A * !B * C * !X)	-0.00050	-0.00052	-0.00050

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)**	-0.00042	-0.00059	-0.00058
	(A * B * !C * !X)	0.00345	0.00335	0.00329
	(A * !B * C * !X)	-0.00036	-0.00054	-0.00057
	(A * !B * C * !X)	0.00345	0.00334	0.00328
	(A * !B * !C * !X)	-0.00056	-0.00062	-0.00062
	(A * !B * !C * !X)	0.00325	0.00328	0.00325
	(!A * B * C * !X)	-0.00032	-0.00053	-0.00055
	(!A * B * C * !X)	0.00348	0.00335	0.00329
	(!A * !C * !X)	-0.00056	-0.00062	-0.00062
	(!A * !C * !X)	0.00325	0.00328	0.00325
	(!A * !B * C * !X)	-0.00048	-0.00059	-0.00060
	(!A * !B * C * !X)	0.00324	0.00326	0.00325
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00033	0.00018	0.00018
	(A * B * !C * !X)	0.00460	0.00452	0.00449
	(A * !B * C * !X)	0.00041	0.00021	0.00019
	(A * !B * C * !X)	0.00460	0.00452	0.00449
	(A * !B * !C * !X)	0.00021	0.00015	0.00016
	(A * !B * !C * !X)	0.00447	0.00449	0.00447
	(!A * B * C * !X)	0.00045	0.00022	0.00020
	(!A * B * C * !X)	0.00465	0.00452	0.00449
	(!A * !C * !X)	0.00022	0.00015	0.00016
	(!A * !C * !X)	0.00447	0.00449	0.00447
	(!A * !B * C * !X)	0.00031	0.00019	0.00017
	(!A * !B * C * !X)	0.00446	0.00448	0.00447

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00140	0.00107	0.00103
	(A * B * !C * !X)	0.00930	0.00906	0.00895
	(A * !B * C * !X)	0.00153	0.00106	0.00098
	(A * !B * C * !X)	0.00935	0.00904	0.00892
	(A * !B * !C * !X)	0.00105	0.00093	0.00093
	(A * !B * !C * !X)	0.00882	0.00886	0.00884
	(!A * B * C * !X)	0.00162	0.00109	0.00102
	(!A * B * C * !X)	0.00942	0.00908	0.00893
	(!A * !C * !X)	0.00108	0.00095	0.00094
	(!A * !C * !X)	0.00883	0.00886	0.00884
	(!A * !B * C * !X)	0.00122	0.00097	0.00092
	(!A * !B * C * !X)	0.00884	0.00889	0.00884

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	1.64234
sky130_fd_sc_hs__buf_16	0.01633	25.17757
sky130_fd_sc_hs__buf_2	0.00272	2.89227
sky130_fd_sc_hs__buf_4	0.00369	6.10419
sky130_fd_sc_hs__buf_8	0.00836	11.45772
sky130_fd_sc_hs__bufbuf_16	0.00299	25.00634
sky130_fd_sc_hs__bufbuf_8	0.00236	11.84058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	243.42600	365.31700
sky130_fd_sc_hs__buf_16	0.00000	1344.89000	1928.52000
sky130_fd_sc_hs__buf_2	0.00000	195.66200	244.25900
sky130_fd_sc_hs__buf_4	0.00000	608.14200	735.53200
sky130_fd_sc_hs__buf_8	0.00000	672.36900	964.09100
sky130_fd_sc_hs__bufbuf_16	0.00000	1589.47000	2289.71000
sky130_fd_sc_hs__bufbuf_8	0.00000	915.89200	1085.65000

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)	0.03755	0.39278	5.62212
sky130_fd_sc_hs__buf_16	A->X (RR)	0.03991	0.17495	5.75556
sky130_fd_sc_hs__buf_2	A->X (RR)	0.04022	0.30542	4.98668
sky130_fd_sc_hs__buf_4	A->X (RR)	0.04918	0.31535	6.16983
sky130_fd_sc_hs__buf_8	A->X (RR)	0.03957	0.21204	5.45478
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.11281	0.24881	5.45548
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.11540	0.27009	5.29286

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.04147	0.38595	5.08354
sky130_fd_sc_hs__buf_16	A->X (FF)	0.04961	0.29288	5.42100
sky130_fd_sc_hs__buf_2	A->X (FF)	0.04905	0.36767	4.89080
sky130_fd_sc_hs__buf_4	A->X (FF)	0.04837	0.30857	4.66184
sky130_fd_sc_hs__buf_8	A->X (FF)	0.05005	0.31876	5.34893
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.12550	0.36510	5.05821
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.11373	0.35688	4.98117

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.01795	0.03147	0.24683
	A	0.01317	0.02671	0.24242
sky130_fd_sc_hs__buf_16	A	0.11180	0.22754	1.95140
	A	0.08089	0.19661	1.92243
sky130_fd_sc_hs__buf_2	A	0.01668	0.02963	0.22493
	A	0.01157	0.02454	0.21963
sky130_fd_sc_hs__buf_4	A	0.04119	0.06708	0.48495
	A	0.03422	0.06011	0.47980
sky130_fd_sc_hs__buf_8	A	0.05568	0.10962	0.94367
	A	0.03984	0.09382	0.93019
sky130_fd_sc_hs__bufbuf_16	A	0.13598	0.16032	0.58575
	A	0.13032	0.15487	0.58610
sky130_fd_sc_hs__bufbuf_8	A	0.07669	0.09188	0.38291
	A	0.07221	0.08745	0.38005

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00584	0.02181	0.25674
	A	0.01063	0.02645	0.25956
sky130_fd_sc_hs__buf_16	A	0.10881	0.20893	1.91101
	A	0.13982	0.23989	1.92787
sky130_fd_sc_hs__buf_2	A	0.01200	0.02582	0.24366
	A	0.01712	0.03081	0.24755
sky130_fd_sc_hs__buf_4	A	0.02639	0.05115	0.44052
	A	0.03338	0.05801	0.44253
sky130_fd_sc_hs__buf_8	A	0.05338	0.10286	0.92527
	A	0.06922	0.11857	0.94117
sky130_fd_sc_hs__bufbuf_16	A	0.15814	0.17172	0.58399
	A	0.16380	0.17718	0.57966
sky130_fd_sc_hs__bufbuf_8	A	0.07375	0.08637	0.38524
	A	0.07823	0.09083	0.38101

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00270	1.67080
sky130_fd_sc_hs__clkbuf_16	0.00910	25.45917
sky130_fd_sc_hs__clkbuf_2	0.00271	2.68037
sky130_fd_sc_hs__clkbuf_4	0.00249	6.19361
sky130_fd_sc_hs__clkbuf_8	0.00467	11.61279

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	120.32500	120.33900
sky130_fd_sc_hs__clkbuf_16	0.00000	1202.95000	1914.97000
sky130_fd_sc_hs__clkbuf_2	0.00000	180.45600	239.81000
sky130_fd_sc_hs__clkbuf_4	0.00000	300.77100	478.76800
sky130_fd_sc_hs__clkbuf_8	0.00000	601.46200	957.40000

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)	0.04133	0.43694	6.28060
sky130_fd_sc_hs__clkbuf_16	A->X (RR)	0.05877	0.26765	6.57308
sky130_fd_sc_hs__clkbuf_2	A->X (RR)	0.04692	0.37593	5.77891
sky130_fd_sc_hs__clkbuf_4	A->X (RR)	0.06157	0.35956	6.44792
sky130_fd_sc_hs__clkbuf_8	A->X (RR)	0.05823	0.30277	6.30043

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (FF)	0.04177	0.51176	7.43903
sky130_fd_sc_hs__clkbuf_16	A->X (FF)	0.06071	0.33902	7.79036
sky130_fd_sc_hs__clkbuf_2	A->X (FF)	0.04661	0.41985	6.32075
sky130_fd_sc_hs__clkbuf_4	A->X (FF)	0.05959	0.41823	7.32969
sky130_fd_sc_hs__clkbuf_8	A->X (FF)	0.05800	0.36423	7.19188

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.01142	0.02345	0.21624
	A	0.00634	0.01840	0.21170
sky130_fd_sc_hs__clkbuf_16	A	0.09273	0.14643	1.04813
	A	0.07548	0.12927	1.03124
sky130_fd_sc_hs__clkbuf_2	A	0.01482	0.02495	0.18672
	A	0.00989	0.02004	0.18177
sky130_fd_sc_hs__clkbuf_4	A	0.02360	0.03511	0.24304
	A	0.01891	0.03041	0.23916
sky130_fd_sc_hs__clkbuf_8	A	0.04581	0.07128	0.51534
	A	0.03699	0.06241	0.50875

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00600	0.02057	0.24088
	A	0.01108	0.02565	0.24588
sky130_fd_sc_hs__clkbuf_16	A	0.10978	0.15814	1.04561
	A	0.12699	0.17534	1.05784
sky130_fd_sc_hs__clkbuf_2	A	0.01065	0.02331	0.22144
	A	0.01561	0.02816	0.22526
sky130_fd_sc_hs__clkbuf_4	A	0.02584	0.03795	0.24714
	A	0.03053	0.04262	0.25179
sky130_fd_sc_hs__clkbuf_8	A	0.05207	0.07728	0.52118
	A	0.06091	0.08593	0.53004

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00255	1.70601
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00258	1.70156
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00261	1.69912
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00254	1.71734
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00257	1.71645
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00261	1.71375

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	191.51800	239.84200
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	120.55200	239.34200
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	120.49100	239.34300
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	333.88900	382.22600
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	120.99700	239.78300
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	120.81300	239.66100

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)**	0.06268	0.51034	6.98459
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.07120	0.52299	6.88610
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.08427	0.54588	6.85716
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.11557	0.56467	7.05133
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.15918	0.61546	7.04788
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.26630	0.73420	7.14635

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.06732	0.48189	6.50962
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.08795	0.52434	6.67704
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.13764	0.60678	6.88943
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.11941	0.53349	6.54467
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.17746	0.61553	6.78770
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.32847	0.80194	7.13673

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.01048	0.02724	0.29194
	A	0.01532	0.03205	0.29672
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00727	0.02267	0.27103
	A	0.01217	0.02761	0.27591
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00838	0.02248	0.26586
	A	0.01332	0.02749	0.27072
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.02249	0.03904	0.30611
	A	0.02732	0.04387	0.31096
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01680	0.03166	0.27983
	A	0.02168	0.03657	0.28450
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.02114	0.03440	0.27728
	A	0.02608	0.03934	0.28222

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.01726	0.03313	0.29701
	A	0.01241	0.02828	0.29191
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.01832	0.03258	0.27816
	A	0.01342	0.02766	0.27310
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.02128	0.03427	0.27540
	A	0.01634	0.02932	0.26962
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.02869	0.04443	0.31087
	A	0.02387	0.03959	0.30584
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.02757	0.04138	0.28706
	A	0.02269	0.03648	0.28212
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.03393	0.04626	0.28598
	A	0.02899	0.04130	0.28095

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00325	1.77047
sky130_fd_sc_hs__clkinv_16	0.04824	26.14946
sky130_fd_sc_hs__clkinv_2	0.00620	3.49872
sky130_fd_sc_hs__clkinv_4	0.01230	6.76688
sky130_fd_sc_hs__clkinv_8	0.02463	12.73329

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkinv_1	0.00000	362.43400	724.05100
sky130_fd_sc_hs__clkinv_16	0.00000	1440.01000	2866.97000
sky130_fd_sc_hs__clkinv_2	0.00000	179.99200	358.35200
sky130_fd_sc_hs__clkinv_4	0.00000	359.96800	716.67400
sky130_fd_sc_hs__clkinv_8	0.00000	719.87200	1433.21000

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)	0.01413	0.45984	7.40639
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.00997	0.23226	7.30421
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.01316	0.41062	7.80214
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.01163	0.34258	7.69915
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.01196	0.28986	7.64048

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.02059	0.59189	9.57611
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.01436	0.28926	9.37790
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.01805	0.49142	9.48004
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.01583	0.41126	9.43344
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.01617	0.34364	9.25751

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00044	0.00935	0.12678
	A	0.00571	0.01553	0.13207
sky130_fd_sc_hs__clkinv_16	A	-0.01507	0.17572	1.50617
	A	0.07619	0.26705	1.59551
sky130_fd_sc_hs__clkinv_2	A	-0.00133	0.01573	0.18826
	A	0.01039	0.02763	0.20151
sky130_fd_sc_hs__clkinv_4	A	-0.00289	0.03627	0.38823
	A	0.02033	0.05968	0.41195
sky130_fd_sc_hs__clkinv_8	A	-0.00568	0.08263	0.84826
	A	0.04087	0.12948	0.89860

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.02457	0.02939	0.08241
	A	0.01843	0.02323	0.07614
sky130_fd_sc_hs__clkinv_16	A	0.14297	0.28108	1.14466
	A	0.05174	0.18944	1.05003
sky130_fd_sc_hs__clkinv_2	A	0.01893	0.03017	0.13798
	A	0.00721	0.01838	0.12594
sky130_fd_sc_hs__clkinv_4	A	0.03633	0.06292	0.28727
	A	0.01310	0.03924	0.26337
sky130_fd_sc_hs__clkinv_8	A	0.07203	0.13301	0.63448
	A	0.02551	0.08612	0.58570

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00168	1.70528
sky130_fd_sc_hs__dlymetal6s4s_1	0.00167	1.70800
sky130_fd_sc_hs__dlymetal6s6s_1	0.00167	1.69602

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	223.64200	361.04600
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	223.64200	361.04600
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	223.64200	361.04600

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)**	0.04606	0.38794	5.27411
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.09037	0.43308	5.20810
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.12946	0.46886	5.20443

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.05959	0.44940	5.59449
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.11667	0.50221	5.55044
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.16906	0.55493	5.57723

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.02439	0.03746	0.27260
	A	0.02123	0.03430	0.26962
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.02438	0.04134	0.33419
	A	0.02121	0.03818	0.33092
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.02431	0.03385	0.18906
	A	0.02115	0.03070	0.18578

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.02609	0.03585	0.20432
	A	0.02926	0.03901	0.20653
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.02611	0.03868	0.26057
	A	0.02928	0.04183	0.26343
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.02600	0.03484	0.18218
	A	0.02918	0.03798	0.18515

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00181	0.00177	0.00544	0.00299	1.68399	1.55951
sky130_fd_sc_hs__dfbbn_2	0.00182	0.00179	0.00541	0.00300	3.16148	3.07058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	990.82300	1892.30000
sky130_fd_sc_hs__dfbbn_2	0.00000	982.27400	1793.55000

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)	0.23879	0.74311	7.83609
	SET_B->Q (FR)	0.12356	0.66631	8.10228
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.26089	0.67925	7.76305
	SET_B->Q (FR)	0.13724	0.59747	7.99501

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)	0.23420	0.59854	5.29496
	RESET_B->Q (FF)	0.15270	0.53580	5.29230
	SET_B->Q (RF)	0.09710	0.31606	2.63112
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.25964	0.56996	5.08769
	RESET_B->Q (FF)	0.17685	0.50836	5.12750
	SET_B->Q (RF)	0.12062	0.30271	2.53989

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)	0.21363	0.74454	7.94679
	RESET_B->Q_N (FR)	0.13320	0.68508	7.95707
	SET_B->Q_N (RR)	0.07635	0.47497	5.78061
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.22012	0.65965	7.76764
	RESET_B->Q_N (FR)	0.13840	0.59953	7.81355
	SET_B->Q_N (RR)	0.08155	0.39724	5.62061

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)	0.19247	0.58470	5.04341
	SET_B->Q_N (FF)	0.08062	0.50997	5.61995
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.20786	0.56055	4.90461
	SET_B->Q_N (FF)	0.08765	0.47932	5.49159

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)	-0.00572	0.04914	2.52678
	setup	CLK_N (F)	0.06159	-0.00452	-2.51841
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.00531	0.04950	2.53761
	setup	CLK_N (F)	0.05762	-0.00772	-2.53256

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)	-0.07636	-0.11955	-0.83795
	setup	CLK_N (F)	0.09089	0.13049	0.84642
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.07825	-0.12085	-0.84609
	setup	CLK_N (F)	0.09202	0.13049	0.85488

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)	-0.00572	0.04914	2.52678
	setup	CLK_N (F)	0.06159	-0.00452	-2.51841
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.00531	0.04950	2.53761
	setup	CLK_N (F)	0.05762	-0.00772	-2.53256

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)	-0.07636	-0.11955	-0.83795
	setup	CLK_N (F)	0.09089	0.13049	0.84642
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.07825	-0.12085	-0.84609
	setup	CLK_N (F)	0.09202	0.13049	0.85488

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)	0.05559	-0.00817	-2.20036
	removal	CLK_N (F)	0.00827	0.06987	2.28892
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.05254	-0.00972	-2.20946
	removal	CLK_N (F)	0.00883	0.06879	2.29804

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)	0.05559	-0.00817	-2.20036
	removal	CLK_N (F)	0.00827	0.06987	2.28892
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.05254	-0.00972	-2.20946
	removal	CLK_N (F)	0.00883	0.06879	2.29804

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 ()	0.12209	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.11107	0.58472	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.13310	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.11768	0.58472	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)	-0.01054	-0.08724	-2.08784
	removal	CLK_N (F)	0.01675	0.09517	2.21003
	hold	RESET_B (R)	-0.03376	-0.05546	-0.45229
	setup	RESET_B (R)	0.06474	0.08633	0.91802
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.01048	-0.08724	-1.90162
	removal	CLK_N (F)	0.01675	0.09517	2.21295
	hold	RESET_B (R)	-0.04932	-0.07808	-0.61759
	setup	RESET_B (R)	0.07460	0.10436	0.94941

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)	-0.01054	-0.08724	-2.08784
	removal	CLK_N (F)	0.01675	0.09517	2.21003
	hold	RESET_B (R)	-0.03376	-0.05546	-0.46641
	hold	RESET_B (R)	-0.03454	-0.05605	-0.45229
	setup	RESET_B (R)	0.06474	0.08633	0.65470
	setup	RESET_B (R)	0.05198	0.08208	0.91802
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.01048	-0.08724	-1.90162
	removal	CLK_N (F)	0.01675	0.09517	2.21295
	hold	RESET_B (R)	-0.05240	-0.08258	-0.62933
	hold	RESET_B (R)	-0.04932	-0.07808	-0.61759
	setup	RESET_B (R)	0.07460	0.10436	0.83719
	setup	RESET_B (R)	0.06257	0.09844	0.94941

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 ()	0.09125	0.58472	16.50020
	min_pulse_width	SET_B ()	0.08244	0.58472	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.10667	0.58472	16.50020
	min_pulse_width	SET_B ()	0.09125	0.58472	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 ()	0.10226	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.09345	0.58472	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.09345	0.58472	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 ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.11768	0.58472	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.11107	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.12429	0.58472	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	0.03283	0.04169	0.21375
	CLK_N	0.03560	0.04447	0.21518
	SET_B	0.03079	0.04566	0.31624
	SET_B	0.03605	0.05090	0.32077
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.03954	0.04549	0.21976
	CLK_N	0.04234	0.04831	0.21975
	SET_B	0.03632	0.04949	0.32538
	SET_B	0.04156	0.05471	0.32843

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.03153	0.04127	0.20920
	CLK_N	0.03410	0.04384	0.21059
	RESET_B	0.02814	0.03412	0.14647
	RESET_B	0.02971	0.03568	0.14769
	SET_B	0.03022	0.04322	0.31818
	SET_B	0.02497	0.03794	0.31269
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.03775	0.04615	0.21316
	CLK_N	0.04029	0.04867	0.21470
	RESET_B	0.03435	0.03909	0.15438
	RESET_B	0.03592	0.04065	0.15422
	SET_B	0.03642	0.04843	0.32506
	SET_B	0.03119	0.04317	0.31973

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.03903	0.04877	0.21748
	CLK_N	0.04160	0.05134	0.21889
	RESET_B	0.03318	0.03919	0.15283
	RESET_B	0.03475	0.04075	0.15343
	SET_B	0.03466	0.04766	0.32321
	SET_B	0.02941	0.04240	0.31789
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.04610	0.05450	0.22416
	CLK_N	0.04864	0.05703	0.22430
	RESET_B	0.04018	0.04502	0.16164
	RESET_B	0.04176	0.04651	0.16074
	SET_B	0.04164	0.05369	0.33193
	SET_B	0.03641	0.04842	0.32639

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.02728	0.03616	0.20588
	CLK_N	0.03005	0.03894	0.20865
	SET_B	0.02635	0.04123	0.31057
	SET_B	0.03160	0.04645	0.31564
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.03423	0.04018	0.21294
	CLK_N	0.03703	0.04299	0.21370
	SET_B	0.03217	0.04541	0.31836
	SET_B	0.03741	0.05059	0.32303

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)	0.02016	0.02797	0.16915
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01731	0.02512	0.16630
	(CLK_N * !SET_B * Q * !Q_N)	0.01619	0.02245	0.14139
	(CLK_N * !SET_B * Q * !Q_N)	0.01269	0.01895	0.13790
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.01585	0.02206	0.14040
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.01240	0.01862	0.13696
	!CLK_N	0.01751	0.02458	0.14515
	!CLK_N	0.01405	0.02112	0.14171
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.02131	0.02915	0.17056
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01845	0.02627	0.16770
	(CLK_N * !SET_B * Q * !Q_N)	0.01535	0.02165	0.14089
	(CLK_N * !SET_B * Q * !Q_N)	0.01186	0.01814	0.13740
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.01692	0.02317	0.14181
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.01347	0.01972	0.13835
	!CLK_N	0.01861	0.02570	0.14658
	!CLK_N	0.01514	0.02225	0.14313

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)	0.02604	0.03309	0.16559
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.02889	0.03594	0.16843
	(CLK_N * !SET_B * Q * !Q_N)	0.01046	0.01691	0.13574
	(CLK_N * !SET_B * Q * !Q_N)	0.01397	0.02042	0.13924
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.01112	0.01771	0.13743
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.01456	0.02114	0.14088
	!CLK_N	0.01404	0.02134	0.14216
	!CLK_N	0.01749	0.02480	0.14560
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.02710	0.03420	0.16692
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.02997	0.03706	0.16978
	(CLK_N * !SET_B * Q * !Q_N)	0.00952	0.01599	0.13512
	(CLK_N * !SET_B * Q * !Q_N)	0.01302	0.01950	0.13862
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.01219	0.01881	0.13883
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.01564	0.02225	0.14228
	!CLK_N	0.01511	0.02244	0.14355
	!CLK_N	0.01856	0.02590	0.14700

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)	0.02159	0.03182	0.22599
	(CLK_N * D * SET_B * !Q * Q_N)	0.01826	0.02849	0.22265
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.02127	0.03033	0.20219
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01734	0.02638	0.19825
	(!SET_B * Q * !Q_N)	0.01631	0.02581	0.19950
	(!SET_B * Q * !Q_N)	0.01228	0.02177	0.19546
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.02276	0.03304	0.22876
	(CLK_N * D * SET_B * !Q * Q_N)	0.01937	0.02964	0.22536
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.02236	0.03152	0.20493
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01837	0.02753	0.20095
	(!SET_B * Q * !Q_N)	0.01547	0.02503	0.19954
	(!SET_B * Q * !Q_N)	0.01139	0.02094	0.19546

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)	0.02192	0.03266	0.22492
	(CLK_N * D * SET_B * !Q * Q_N)	0.02526	0.03602	0.22826
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01156	0.02175	0.19870
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01549	0.02569	0.20264
	(!SET_B * Q * !Q_N)	0.00851	0.01871	0.19376
	(!SET_B * Q * !Q_N)	0.01256	0.02276	0.19780
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.02307	0.03388	0.22764
	(CLK_N * D * SET_B * !Q * Q_N)	0.02646	0.03729	0.23104
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01271	0.02298	0.20147
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01668	0.02697	0.20545
	(!SET_B * Q * !Q_N)	0.00765	0.01790	0.19378
	(!SET_B * Q * !Q_N)	0.01175	0.02200	0.19787

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)	0.01176	0.01180	0.01177
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00262	0.00259	0.00261
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.03034	0.04208	0.27682
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.02040	0.03206	0.26684
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.01086	0.01090	0.01087
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00179	0.00177	0.00178
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.02948	0.04121	0.27561
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01962	0.03128	0.26572

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)	0.00367	0.00331	0.00322
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.01286	0.01256	0.01237
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00935	0.02383	0.26749
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01934	0.03381	0.27747
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00285	0.00248	0.00240
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.01197	0.01166	0.01148
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00845	0.02287	0.26624
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01836	0.03281	0.27613

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)**	0.03195	0.05180	0.39379
	(D * RESET_B * SET_B * !Q * Q_N)	0.02720	0.04701	0.38903
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.02319	0.04241	0.37644
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01782	0.03703	0.37107
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02747	0.04699	0.38431
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02213	0.04160	0.37894
	(!D * SET_B * !Q * Q_N)	0.02736	0.04648	0.38020
	(!D * SET_B * !Q * Q_N)	0.02202	0.04110	0.37485
	(!D * RESET_B * SET_B * Q * !Q_N)	0.04322	0.06269	0.40366
	(!D * RESET_B * SET_B * Q * !Q_N)	0.03726	0.05673	0.39771
	(!D * !SET_B * Q * !Q_N)	0.02379	0.04359	0.38773
	(!D * !SET_B * Q * !Q_N)	0.01846	0.03824	0.38239

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.03312	0.05294	0.39496
	(D * RESET_B * SET_B * !Q * Q_N)	0.02837	0.04814	0.39018
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.02232	0.04155	0.37557
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01695	0.03617	0.37020
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02858	0.04811	0.38543
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02324	0.04272	0.38006
	(!D * SET_B * !Q * Q_N)	0.02848	0.04760	0.38132
	(!D * SET_B * !Q * Q_N)	0.02314	0.04222	0.37594
	(!D * RESET_B * SET_B * Q * !Q_N)	0.04237	0.06185	0.40284
	(!D * RESET_B * SET_B * Q * !Q_N)	0.03642	0.05589	0.39688
	(!D * !SET_B * Q * !Q_N)	0.02286	0.04266	0.38684
	(!D * !SET_B * Q * !Q_N)	0.01754	0.03732	0.38151

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)	0.02071	0.04056	0.37231
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.02606	0.04591	0.37768
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02402	0.04379	0.37645
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02937	0.04918	0.38183
	(!D * SET_B * !Q * Q_N)	0.02547	0.04529	0.37725
	(!D * SET_B * !Q * Q_N)	0.03081	0.05068	0.38261
	(!D * !SET_B * Q * !Q_N)	0.02556	0.04594	0.38660
	(!D * !SET_B * Q * !Q_N)	0.03088	0.05128	0.39195
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01987	0.03972	0.37147
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.02522	0.04507	0.37684
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02508	0.04485	0.37752
	(D * !RESET_B * SET_B * !Q * Q_N)	0.03043	0.05024	0.38289
	(!D * SET_B * !Q * Q_N)	0.02655	0.04637	0.37833
	(!D * SET_B * !Q * Q_N)	0.03189	0.05176	0.38369
	(!D * !SET_B * Q * !Q_N)	0.02477	0.04515	0.38583
	(!D * !SET_B * Q * !Q_N)	0.03008	0.05049	0.39118

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00160	0.00193	0.00622	0.00296	1.70451	1.51241

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	991.14800	1892.19000

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)	0.23486	0.59837	5.55810
	SET_B->Q (FR)	0.11117	0.64701	8.11633

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.18455	0.40569	2.95314
	RESET_B->Q (FF)	0.14951	0.53365	5.36846
	SET_B->Q (RF)	0.09887	0.31537	2.74100

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)	0.16471	0.54536	5.42919
	RESET_B->Q_N (FR)	0.13050	0.67718	7.86206
	SET_B->Q_N (RR)	0.07906	0.46903	5.67817

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)	0.18990	0.43025	2.55701
	SET_B->Q_N (FF)	0.07204	0.48185	5.40511

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)	-0.02937	-0.05155	-0.40643
	setup	CLK (R)	0.04316	0.06345	0.40976

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)	-0.04460	-0.13944	-2.95339
	setup	CLK (R)	0.07147	0.17195	2.96797

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)	-0.02937	-0.05155	-0.40643
	setup	CLK (R)	0.04316	0.06345	0.40976

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)	-0.04460	-0.13944	-2.95339
	setup	CLK (R)	0.07147	0.17195	2.96797

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)	0.04563	0.04863	0.14855
	removal	CLK (R)	-0.02170	-0.02776	-0.04019

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)	0.04563	0.04863	0.14855
	removal	CLK (R)	-0.02170	-0.02776	-0.04019

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 ()	0.10887	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.11107	0.58472	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)	0.00405	0.00917	1.03714
	removal	CLK (R)	0.03544	0.05552	-0.08786
	hold	RESET_B (R)	-0.03685	-0.06157	-0.55236
	setup	RESET_B (R)	0.06217	0.09077	0.92250

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)	0.00405	0.00917	1.03714
	removal	CLK (R)	0.03544	0.05552	-0.08786
	hold	RESET_B (R)	-0.03860	-0.06246	-0.56419
	hold	RESET_B (R)	-0.03685	-0.06157	-0.55236
	setup	RESET_B (R)	0.06217	0.09077	0.92250
	setup	RESET_B (R)	0.06160	0.08641	0.75458

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 ()	0.07362	0.58472	16.50020
	min_pulse_width	SET_B ()	0.08023	0.58472	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 ()	0.06922	0.58472	16.50020
	min_pulse_width	CLK ()	0.08023	0.58472	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 ()	0.08904	0.58472	16.50020
	min_pulse_width	CLK ()	0.11548	0.58472	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	0.03511	0.04396	0.21587
	CLK	0.03239	0.04121	0.21284
	SET_B	0.03018	0.04605	0.32363
	SET_B	0.03587	0.05175	0.32860

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.03210	0.04285	0.22770
	CLK	0.02915	0.03986	0.22450
	RESET_B	0.02649	0.03248	0.14482
	RESET_B	0.02794	0.03391	0.14603
	SET_B	0.02929	0.04219	0.32058
	SET_B	0.02359	0.03646	0.31468

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.03937	0.05016	0.23590
	CLK	0.03642	0.04714	0.23281
	RESET_B	0.03137	0.03737	0.15172
	RESET_B	0.03282	0.03881	0.15182
	SET_B	0.03358	0.04652	0.32577
	SET_B	0.02789	0.04079	0.31998

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.02923	0.03805	0.20898
	CLK	0.02651	0.03534	0.20619
	SET_B	0.02546	0.04134	0.31774
	SET_B	0.03115	0.04703	0.32303

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01602	0.02420	0.14831
	CLK	0.01299	0.02115	0.14527
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01938	0.02773	0.17187
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01662	0.02495	0.16910
	(!CLK * !SET_B * Q * !Q_N)	0.01492	0.02180	0.14432
	(!CLK * !SET_B * Q * !Q_N)	0.01155	0.01842	0.14095
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.01444	0.02129	0.14321
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.01110	0.01793	0.13986

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01218	0.02056	0.14502
	CLK	0.01522	0.02360	0.14805
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.02292	0.03059	0.16660
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.02569	0.03336	0.16937
	(!CLK * !SET_B * Q * !Q_N)	0.00940	0.01645	0.13897
	(!CLK * !SET_B * Q * !Q_N)	0.01277	0.01984	0.14235
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.01014	0.01733	0.14078
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.01348	0.02069	0.14414

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)	0.02100	0.03025	0.20284
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.01728	0.02652	0.19912
	(!SET_B * Q * !Q_N)	0.01744	0.02716	0.20155
	(!SET_B * Q * !Q_N)	0.01362	0.02333	0.19773
	(!CLK * D * SET_B * !Q * Q_N)	0.02167	0.03196	0.22650
	(!CLK * D * SET_B * !Q * Q_N)	0.01854	0.02882	0.22337

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)	0.01189	0.02219	0.19983
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.01560	0.02592	0.20355
	(!SET_B * Q * !Q_N)	0.00902	0.01937	0.19510
	(!SET_B * Q * !Q_N)	0.01285	0.02322	0.19893
	(!CLK * D * SET_B * !Q * Q_N)	0.01998	0.03074	0.22305
	(!CLK * D * SET_B * !Q * Q_N)	0.02311	0.03388	0.22619

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)	0.01313	0.01313	0.01312
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00269	0.00270	0.00270
	(!CLK * !D * RESET_B * Q * !Q_N)	0.02811	0.03997	0.27371
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01692	0.02873	0.26251

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)	0.00488	0.00448	0.00444
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.01526	0.01489	0.01486
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01058	0.02511	0.26758
	(!CLK * !D * RESET_B * Q * !Q_N)	0.02175	0.03635	0.27879

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)	0.02706	0.04711	0.39157
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.02142	0.04142	0.38592
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02904	0.04973	0.40545
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02372	0.04437	0.40010
	(!D * SET_B * !Q * Q_N)	0.03095	0.05113	0.39622
	(!D * SET_B * !Q * Q_N)	0.02531	0.04545	0.39056
	(!D * !SET_B * Q * !Q_N)	0.03202	0.05216	0.39578
	(!D * !SET_B * Q * !Q_N)	0.02604	0.04614	0.38977

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)	0.02654	0.04825	0.40437
	(D * RESET_B * SET_B * !Q * Q_N)	0.03247	0.05419	0.41031
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01717	0.03803	0.38266
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.02285	0.04371	0.38833
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02115	0.04249	0.39547
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02649	0.04785	0.40082
	(!D * SET_B * !Q * Q_N)	0.02224	0.04300	0.38667
	(!D * SET_B * !Q * Q_N)	0.02791	0.04866	0.39232
	(!D * RESET_B * SET_B * Q * !Q_N)	0.03781	0.05894	0.41232
	(!D * RESET_B * SET_B * Q * !Q_N)	0.04323	0.06436	0.41774
	(!D * !SET_B * Q * !Q_N)	0.02035	0.04183	0.39102
	(!D * !SET_B * Q * !Q_N)	0.02637	0.04785	0.39703

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00188	0.00584	0.00302	1.75943	1.71684
sky130_fd_sc_hs__dfrbp_2	0.00173	0.00562	0.00302	3.33821	3.28759

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	549.34400	951.93000
sky130_fd_sc_hs__dfrbp_2	0.00000	598.72400	849.70300

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)	0.14196	0.50167	5.45932
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.16295	0.44962	5.75513

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.13878	0.34962	2.73748
	RESET_B->Q (FF)	0.18797	0.58636	5.58975
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.15879	0.32781	2.78153
	RESET_B->Q (FF)	0.22322	0.58495	5.69325

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)	0.11817	0.48979	5.43273
	RESET_B->Q_N (FR)	0.16674	0.72167	8.26275
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.11690	0.40541	5.26382
	RESET_B->Q_N (FR)	0.18147	0.65988	8.16412

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)	0.10905	0.35591	2.69113
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.10861	0.33034	2.70550

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)	-0.04082	-0.09914	-0.88806
	setup	CLK (R)	0.07555	0.12690	0.90283
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04021	-0.09914	-0.94105
	setup	CLK (R)	0.09004	0.13713	0.95188

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)	-0.03768	-0.13234	-2.85696
	setup	CLK (R)	0.08157	0.18695	2.89664
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04309	-0.14575	-2.85723
	setup	CLK (R)	0.09244	0.20024	2.89268

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)	-0.04082	-0.09914	-0.88806
	setup	CLK (R)	0.07555	0.12690	0.90283
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04021	-0.09914	-0.94105
	setup	CLK (R)	0.09004	0.13713	0.95188

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)	-0.03768	-0.13234	-2.85696
	setup	CLK (R)	0.08157	0.18695	2.89664
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04309	-0.14575	-2.85723
	setup	CLK (R)	0.09244	0.20024	2.89268

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)	0.08364	0.13070	1.63529
	removal	CLK (R)	-0.07041	-0.12293	-1.63235
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.09763	0.14276	1.62042
	removal	CLK (R)	-0.07550	-0.12690	-1.61734

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)	0.08364	0.13070	1.63529
	removal	CLK (R)	-0.07041	-0.12293	-1.63235
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.09763	0.14276	1.62042
	removal	CLK (R)	-0.07550	-0.12690	-1.61734

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 ()	0.09345	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.08244	0.58472	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.10226	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.09345	0.58472	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 ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.05820	0.58472	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.09786	0.58472	16.50020
	min_pulse_width	CLK ()	0.06922	0.58472	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 ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.11107	0.58472	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.11548	0.58472	16.50020
	min_pulse_width	CLK ()	0.11328	0.58472	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	0.03067	0.03895	0.20929
	CLK	0.02783	0.03611	0.20611
sky130_fd_sc_hs__dfrbp_2	CLK	0.03577	0.04162	0.21047
	CLK	0.03295	0.03875	0.20740

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.02297	0.03208	0.19786
	CLK	0.02006	0.02915	0.19473
	RESET_B	0.01917	0.02932	0.17630
	RESET_B	0.02506	0.03516	0.18176
sky130_fd_sc_hs__dfrbp_2	CLK	0.02850	0.03639	0.19982
	CLK	0.02570	0.03359	0.19690
	RESET_B	0.02608	0.03488	0.18266
	RESET_B	0.03160	0.04032	0.18795

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.02507	0.03416	0.20092
	CLK	0.02216	0.03125	0.19781
	RESET_B	0.02125	0.03141	0.17913
	RESET_B	0.02714	0.03726	0.18446
sky130_fd_sc_hs__dfrbp_2	CLK	0.03121	0.03917	0.20452
	CLK	0.02841	0.03633	0.20112
	RESET_B	0.02877	0.03756	0.18758
	RESET_B	0.03428	0.04300	0.19170

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.02651	0.03479	0.20399
	CLK	0.02366	0.03194	0.20091
sky130_fd_sc_hs__dfrbp_2	CLK	0.03195	0.03773	0.20564
	CLK	0.02914	0.03489	0.20253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.01151	0.01806	0.13001
	(CLK * RESET_B)	0.00762	0.01413	0.12610
	(CLK * !RESET_B)	0.00393	0.00393	0.00392
	(CLK * !RESET_B)	0.00173	0.00171	0.00170
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.02118	0.02972	0.17290
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01709	0.02562	0.16882
	(!CLK * !RESET_B)	0.00406	0.00406	0.00405
	(!CLK * !RESET_B)	0.00186	0.00185	0.00183
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.01135	0.01766	0.12928
	(CLK * RESET_B)	0.00791	0.01421	0.12584
	(CLK * !RESET_B)	0.00509	0.00510	0.00508
	(CLK * !RESET_B)	0.00305	0.00304	0.00302
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.02312	0.03144	0.17464
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01988	0.02819	0.17140
	(!CLK * !RESET_B)	0.00522	0.00523	0.00521
	(!CLK * !RESET_B)	0.00318	0.00317	0.00315

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00698	0.01385	0.12591
	(CLK * RESET_B)	0.01090	0.01776	0.12982
	(CLK * !RESET_B)	0.00294	0.00294	0.00295
	(CLK * !RESET_B)	0.00517	0.00519	0.00516
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01914	0.02735	0.16676
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.02323	0.03144	0.17084
	(!CLK * !RESET_B)	0.00308	0.00308	0.00308
	(!CLK * !RESET_B)	0.00530	0.00531	0.00530
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00655	0.01316	0.12494
	(CLK * RESET_B)	0.01000	0.01661	0.12838
	(CLK * !RESET_B)	0.00396	0.00396	0.00397
	(CLK * !RESET_B)	0.00603	0.00605	0.00602
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01973	0.02736	0.16147
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.02298	0.03059	0.16471
	(!CLK * !RESET_B)	0.00410	0.00410	0.00410
	(!CLK * !RESET_B)	0.00616	0.00617	0.00616

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)	0.01349	0.01974	0.13339
	(CLK * D * !Q * Q_N)	0.00197	0.00819	0.12186
	(CLK * !D * !Q * Q_N)	0.00799	0.00806	0.00800
	(CLK * !D * !Q * Q_N)	-0.00160	-0.00165	-0.00161
	(!CLK * D * !Q * Q_N)	0.02393	0.03415	0.23254
	(!CLK * D * !Q * Q_N)	0.01225	0.02241	0.22085
	(!CLK * !D * !Q * Q_N)	0.00800	0.00805	0.00802
	(!CLK * !D * !Q * Q_N)	-0.00158	-0.00162	-0.00159
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.01568	0.02178	0.13640
	(CLK * D * !Q * Q_N)	0.00464	0.01072	0.12535
	(CLK * !D * !Q * Q_N)	0.00946	0.00953	0.00948
	(CLK * !D * !Q * Q_N)	0.00007	0.00002	0.00005
	(!CLK * D * !Q * Q_N)	0.02813	0.03780	0.23413
	(!CLK * D * !Q * Q_N)	0.01731	0.02698	0.22329
	(!CLK * !D * !Q * Q_N)	0.00951	0.00959	0.00954
	(!CLK * !D * !Q * Q_N)	0.00014	0.00009	0.00012

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)	0.00090	0.00772	0.12178
	(CLK * D * !Q * Q_N)	0.01241	0.01930	0.13326
	(CLK * !D * !Q * Q_N)	-0.00076	-0.00110	-0.00108
	(CLK * !D * !Q * Q_N)	0.00883	0.00863	0.00853
	(!CLK * D * !Q * Q_N)	0.01102	0.02241	0.22575
	(!CLK * D * !Q * Q_N)	0.02270	0.03414	0.23744
	(!CLK * !D * !Q * Q_N)	-0.00061	-0.00082	-0.00085
	(!CLK * !D * !Q * Q_N)	0.00897	0.00886	0.00876
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00191	0.00875	0.12387
	(CLK * D * !Q * Q_N)	0.01291	0.01985	0.13486
	(CLK * !D * !Q * Q_N)	-0.00007	-0.00040	-0.00038
	(CLK * !D * !Q * Q_N)	0.00932	0.00914	0.00904
	(!CLK * D * !Q * Q_N)	0.01338	0.02369	0.22192
	(!CLK * D * !Q * Q_N)	0.02418	0.03454	0.23275
	(!CLK * !D * !Q * Q_N)	0.00007	-0.00022	-0.00019
	(!CLK * !D * !Q * Q_N)	0.00945	0.00932	0.00923

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)	0.02407	0.04184	0.36031
	(D * RESET_B * Q * !Q_N)	0.01833	0.03607	0.35455
	(D * !RESET_B * !Q * Q_N)	0.02119	0.03894	0.35743
	(D * !RESET_B * !Q * Q_N)	0.01545	0.03317	0.35167
	(!D * !Q * Q_N)	0.02120	0.03894	0.35745
	(!D * !Q * Q_N)	0.01546	0.03318	0.35169
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.02166	0.03951	0.35554
	(D * RESET_B * Q * !Q_N)	0.01604	0.03389	0.34991
	(D * !RESET_B * !Q * Q_N)	0.02027	0.03812	0.35409
	(D * !RESET_B * !Q * Q_N)	0.01466	0.03248	0.34847
	(!D * !Q * Q_N)	0.02027	0.03813	0.35411
	(!D * !Q * Q_N)	0.01467	0.03249	0.34850

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)	0.01618	0.03531	0.35463
	(D * RESET_B * Q * !Q_N)	0.02192	0.04109	0.36040
	(D * RESET_B * !Q * Q_N)	0.02295	0.04293	0.37977
	(D * RESET_B * !Q * Q_N)	0.02853	0.04853	0.38536
	(D * !RESET_B * !Q * Q_N)	0.01259	0.03176	0.35112
	(D * !RESET_B * !Q * Q_N)	0.01835	0.03754	0.35689
	(!D * RESET_B * Q * !Q_N)	0.02941	0.04911	0.37850
	(!D * RESET_B * Q * !Q_N)	0.03533	0.05506	0.38444
	(!D * !Q * Q_N)	0.01260	0.03177	0.35156
	(!D * !Q * Q_N)	0.01836	0.03755	0.35733
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01530	0.03435	0.35131
	(D * RESET_B * Q * !Q_N)	0.02094	0.03998	0.35694
	(D * RESET_B * !Q * Q_N)	0.02754	0.04727	0.37861
	(D * RESET_B * !Q * Q_N)	0.03331	0.05308	0.38441
	(D * !RESET_B * !Q * Q_N)	0.01431	0.03338	0.35079
	(D * !RESET_B * !Q * Q_N)	0.01991	0.03901	0.35641
	(!D * RESET_B * Q * !Q_N)	0.02971	0.04922	0.37837
	(!D * RESET_B * Q * !Q_N)	0.03515	0.05467	0.38379
	(!D * !Q * Q_N)	0.01432	0.03339	0.35080
	(!D * !Q * Q_N)	0.01992	0.03903	0.35641

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00185	0.00555	0.00290	1.62084

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	506.26900	828.62800

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)	0.15046	0.67548	7.87240

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)	0.12734	0.48805	4.98751
	RESET_B->Q (FF)	0.17106	0.55786	5.26871

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)	0.00112	0.04103	2.09017
	setup	CLK_N (F)	0.04877	0.00779	-2.03484

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)	-0.03455	-0.06334	-0.32583
	setup	CLK_N (F)	0.09262	0.11398	0.36729

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)	0.00112	0.04103	2.09017
	setup	CLK_N (F)	0.04877	0.00779	-2.03484

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)	-0.03455	-0.06334	-0.32583
	setup	CLK_N (F)	0.09262	0.11398	0.36729

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)	0.05656	0.00288	-1.54473
	removal	CLK_N (F)	-0.03966	0.00793	1.55081

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)	0.05656	0.00288	-1.54473
	removal	CLK_N (F)	-0.03966	0.00793	1.55081

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 ()	0.07362	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.09125	0.58472	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 ()	0.08464	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.10226	0.58472	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 ()	0.08464	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.07803	0.58472	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	0.04834	0.06872	0.40159
	CLK_N	0.05373	0.07413	0.40754

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.03446	0.05543	0.39766
	CLK_N	0.03971	0.06069	0.40142
	RESET_B	0.03360	0.05401	0.34596
	RESET_B	0.04461	0.06489	0.35478

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)	0.02006	0.02854	0.17129
	(CLK_N * RESET_B)	0.01646	0.02493	0.16768
	(CLK_N * !RESET_B)	0.00404	0.00404	0.00403
	(CLK_N * !RESET_B)	0.00185	0.00184	0.00182
	(!CLK_N * RESET_B)	0.01033	0.01688	0.12880
	(!CLK_N * RESET_B)	0.00662	0.01315	0.12509
	(!CLK_N * !RESET_B)	0.00391	0.00391	0.00390
	(!CLK_N * !RESET_B)	0.00172	0.00170	0.00169

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)	0.01926	0.02725	0.16547
	(CLK_N * RESET_B)	0.02287	0.03087	0.16906
	(CLK_N * !RESET_B)	0.00306	0.00305	0.00305
	(CLK_N * !RESET_B)	0.00525	0.00527	0.00526
	(!CLK_N * RESET_B)	0.00604	0.01289	0.12493
	(!CLK_N * RESET_B)	0.00976	0.01661	0.12864
	(!CLK_N * !RESET_B)	0.00292	0.00291	0.00292
	(!CLK_N * !RESET_B)	0.00512	0.00515	0.00512

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)	0.02378	0.03394	0.23139
	(CLK_N * D * !Q)	0.01288	0.02302	0.22047
	(CLK_N * !D * !Q)	0.00831	0.00836	0.00833
	(CLK_N * !D * !Q)	-0.00097	-0.00100	-0.00097
	(!CLK_N * D * !Q)	0.01309	0.01935	0.13288
	(!CLK_N * D * !Q)	0.00205	0.00830	0.12184
	(!CLK_N * !D * !Q)	0.00809	0.00811	0.00810
	(!CLK_N * !D * !Q)	-0.00120	-0.00122	-0.00120

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)	0.01201	0.02321	0.22503
	(CLK_N * D * !Q)	0.02289	0.03416	0.23593
	(CLK_N * !D * !Q)	-0.00095	-0.00123	-0.00120
	(CLK_N * !D * !Q)	0.00830	0.00818	0.00809
	(!CLK_N * D * !Q)	0.00115	0.00792	0.12196
	(!CLK_N * D * !Q)	0.01215	0.01900	0.13294
	(!CLK_N * !D * !Q)	-0.00089	-0.00123	-0.00122
	(!CLK_N * !D * !Q)	0.00836	0.00817	0.00807

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)	0.02219	0.04149	0.37101
	(D * RESET_B * Q)	0.01686	0.03614	0.36568
	(D * RESET_B * !Q)	0.03152	0.05134	0.39177
	(D * RESET_B * !Q)	0.02630	0.04610	0.38652
	(D * !RESET_B * !Q)	0.02008	0.03942	0.36970
	(D * !RESET_B * !Q)	0.01476	0.03407	0.36436
	(!D * RESET_B * Q)	0.03463	0.05444	0.39500
	(!D * RESET_B * Q)	0.02920	0.04898	0.38955
	(!D * !Q)	0.02009	0.03940	0.36881
	(!D * !Q)	0.01476	0.03405	0.36347

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)	0.01793	0.03774	0.36442
	(D * RESET_B * Q)	0.02324	0.04310	0.36976
	(D * !RESET_B * !Q)	0.01576	0.03560	0.36334
	(D * !RESET_B * !Q)	0.02107	0.04097	0.36868
	(!D * !Q)	0.01574	0.03556	0.36243
	(!D * !Q)	0.02105	0.04088	0.36778

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00186	0.00580	0.00304	1.74470
sky130_fd_sc_hs__dfrtp_2	0.00185	0.00570	0.00302	3.23437
sky130_fd_sc_hs__dfrtp_4	0.00187	0.00590	0.00302	6.46059

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	506.29800	828.71800
sky130_fd_sc_hs__dfrtp_2	0.00000	587.31200	831.19300
sky130_fd_sc_hs__dfrtp_4	0.00000	869.51400	1202.34000

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)	0.12841	0.48473	5.35222
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.12682	0.39933	5.19025
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.16438	0.37994	5.30569

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.13209	0.34297	2.70970
	RESET_B->Q (FF)	0.17569	0.57386	5.55536
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.14559	0.30922	2.47073
	RESET_B->Q (FF)	0.18806	0.53865	5.30484
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.14598	0.28278	2.70520
	RESET_B->Q (FF)	0.19331	0.51494	5.54122

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)	-0.04589	-0.10311	-0.90402
	setup	CLK (R)	0.08032	0.13313	0.91736
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04448	-0.10311	-0.89990
	setup	CLK (R)	0.07824	0.13329	0.91532
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04802	-0.10311	-0.90947
	setup	CLK (R)	0.08261	0.13278	0.92451

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)	-0.03750	-0.12900	-2.86873
	setup	CLK (R)	0.08029	0.18568	2.90263
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.03743	-0.12900	-2.86548
	setup	CLK (R)	0.07994	0.18303	2.90544
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04507	-0.13735	-2.86185
	setup	CLK (R)	0.08579	0.18912	2.91572

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)	-0.04589	-0.10311	-0.90402
	setup	CLK (R)	0.08032	0.13313	0.91736
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04448	-0.10311	-0.89990
	setup	CLK (R)	0.07824	0.13329	0.91532
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04802	-0.10311	-0.90947
	setup	CLK (R)	0.08261	0.13278	0.92451

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)	-0.03750	-0.12900	-2.86873
	setup	CLK (R)	0.08029	0.18568	2.90263
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.03743	-0.12900	-2.86548
	setup	CLK (R)	0.07994	0.18303	2.90544
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04507	-0.13735	-2.86185
	setup	CLK (R)	0.08579	0.18912	2.91572

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)	0.08864	0.13740	1.63974
	removal	CLK (R)	-0.07074	-0.12293	-1.63407
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.08573	0.13638	1.63516
	removal	CLK (R)	-0.06792	-0.12293	-1.63146
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.09047	0.13567	1.63304
	removal	CLK (R)	-0.07453	-0.12293	-1.62973

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)	0.08864	0.13740	1.63974
	removal	CLK (R)	-0.07074	-0.12293	-1.63407
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.08573	0.13638	1.63516
	removal	CLK (R)	-0.06792	-0.12293	-1.63146
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.09047	0.13567	1.63304
	removal	CLK (R)	-0.07453	-0.12293	-1.62973

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 ()	0.09125	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.07362	0.58472	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.09345	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.07803	0.58472	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.09565	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.08023	0.58472	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 ()	0.06261	0.58472	16.50020
	min_pulse_width	CLK ()	0.05380	0.58472	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.06481	0.58472	16.50020
	min_pulse_width	CLK ()	0.05600	0.58472	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.08684	0.58472	16.50020
	min_pulse_width	CLK ()	0.05820	0.58472	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 ()	0.10447	0.58472	16.50020
	min_pulse_width	CLK ()	0.10887	0.58472	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.10447	0.58472	16.50020
	min_pulse_width	CLK ()	0.10887	0.58472	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.11328	0.58472	16.50020
	min_pulse_width	CLK ()	0.11548	0.58472	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	0.05091	0.07018	0.41207
	CLK	0.04523	0.06457	0.40666
sky130_fd_sc_hs__dfrtp_2	CLK	0.05529	0.07428	0.41664
	CLK	0.04963	0.06867	0.41182
sky130_fd_sc_hs__dfrtp_4	CLK	0.07844	0.09481	0.43587
	CLK	0.07257	0.08896	0.43096

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.04264	0.06132	0.39241
	CLK	0.03665	0.05534	0.38599
	RESET_B	0.03441	0.05526	0.34693
	RESET_B	0.04611	0.06686	0.35809
sky130_fd_sc_hs__dfrtp_2	CLK	0.04889	0.06594	0.39710
	CLK	0.04295	0.05989	0.38944
	RESET_B	0.04090	0.06015	0.35260
	RESET_B	0.05243	0.07153	0.36125
sky130_fd_sc_hs__dfrtp_4	CLK	0.06667	0.08224	0.41493
	CLK	0.06051	0.07601	0.40625
	RESET_B	0.05831	0.07654	0.36689
	RESET_B	0.07017	0.08796	0.37866

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.01041	0.01697	0.12892
	(CLK * RESET_B)	0.00653	0.01307	0.12504
	(CLK * !RESET_B)	0.00389	0.00390	0.00388
	(CLK * !RESET_B)	0.00173	0.00172	0.00170
	(!CLK * RESET_B)	0.02046	0.02900	0.17225
	(!CLK * RESET_B)	0.01635	0.02489	0.16814
	(!CLK * !RESET_B)	0.00403	0.00403	0.00401
	(!CLK * !RESET_B)	0.00186	0.00185	0.00184
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.01031	0.01690	0.12891
	(CLK * RESET_B)	0.00647	0.01305	0.12508
	(CLK * !RESET_B)	0.00494	0.00494	0.00493
	(CLK * !RESET_B)	0.00278	0.00276	0.00275
	(!CLK * RESET_B)	0.02004	0.02863	0.17204
	(!CLK * RESET_B)	0.01602	0.02461	0.16802
	(!CLK * !RESET_B)	0.00507	0.00508	0.00506
	(!CLK * !RESET_B)	0.00291	0.00290	0.00288
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.01366	0.02020	0.13208
	(CLK * RESET_B)	0.00979	0.01631	0.12821
	(CLK * !RESET_B)	0.00703	0.00703	0.00702
	(CLK * !RESET_B)	0.00485	0.00484	0.00482
	(!CLK * RESET_B)	0.02475	0.03302	0.17509
	(!CLK * RESET_B)	0.02066	0.02892	0.17099
	(!CLK * !RESET_B)	0.00716	0.00717	0.00715
	(!CLK * !RESET_B)	0.00498	0.00497	0.00495

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00590	0.01278	0.12485
	(CLK * RESET_B)	0.00980	0.01667	0.12873
	(CLK * !RESET_B)	0.00293	0.00293	0.00294
	(CLK * !RESET_B)	0.00512	0.00514	0.00511
	(!CLK * RESET_B)	0.01851	0.02664	0.16543
	(!CLK * RESET_B)	0.02261	0.03075	0.16953
	(!CLK * !RESET_B)	0.00306	0.00306	0.00307
	(!CLK * !RESET_B)	0.00525	0.00526	0.00524
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00592	0.01284	0.12496
	(CLK * RESET_B)	0.00977	0.01668	0.12879
	(CLK * !RESET_B)	0.00398	0.00397	0.00398
	(CLK * !RESET_B)	0.00617	0.00619	0.00616
	(!CLK * RESET_B)	0.01857	0.02674	0.16559
	(!CLK * RESET_B)	0.02260	0.03077	0.16961
	(!CLK * !RESET_B)	0.00411	0.00411	0.00412
	(!CLK * !RESET_B)	0.00630	0.00631	0.00629
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00914	0.01601	0.12800
	(CLK * RESET_B)	0.01302	0.01988	0.13187
	(CLK * !RESET_B)	0.00605	0.00604	0.00605
	(CLK * !RESET_B)	0.00825	0.00828	0.00825
	(!CLK * RESET_B)	0.02194	0.02988	0.16721
	(!CLK * RESET_B)	0.02604	0.03396	0.17129
	(!CLK * !RESET_B)	0.00618	0.00618	0.00619
	(!CLK * !RESET_B)	0.00839	0.00839	0.00838

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)	0.01343	0.01970	0.13336
	(CLK * D * !Q)	0.00194	0.00816	0.12185
	(CLK * !D * !Q)	0.00796	0.00802	0.00797
	(CLK * !D * !Q)	-0.00160	-0.00164	-0.00160
	(!CLK * D * !Q)	0.02428	0.03450	0.23263
	(!CLK * D * !Q)	0.01258	0.02277	0.22092
	(!CLK * !D * !Q)	0.00793	0.00798	0.00794
	(!CLK * !D * !Q)	-0.00163	-0.00166	-0.00163
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.01429	0.02060	0.13430
	(CLK * D * !Q)	0.00296	0.00922	0.12295
	(CLK * !D * !Q)	0.00897	0.00901	0.00898
	(CLK * !D * !Q)	-0.00049	-0.00052	-0.00049
	(!CLK * D * !Q)	0.02478	0.03512	0.23334
	(!CLK * D * !Q)	0.01326	0.02355	0.22181
	(!CLK * !D * !Q)	0.00895	0.00900	0.00896
	(!CLK * !D * !Q)	-0.00050	-0.00053	-0.00050
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.01679	0.02306	0.13663
	(CLK * D * !Q)	0.00517	0.01138	0.12498
	(CLK * !D * !Q)	0.01132	0.01135	0.01134
	(CLK * !D * !Q)	0.00160	0.00158	0.00159
	(!CLK * D * !Q)	0.02832	0.03832	0.23500
	(!CLK * D * !Q)	0.01649	0.02642	0.22318
	(!CLK * !D * !Q)	0.01107	0.01113	0.01109
	(!CLK * !D * !Q)	0.00136	0.00132	0.00135

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)	0.00086	0.00770	0.12175
	(CLK * D * !Q)	0.01235	0.01926	0.13321
	(CLK * !D * !Q)	-0.00078	-0.00112	-0.00109
	(CLK * !D * !Q)	0.00878	0.00858	0.00847
	(!CLK * D * !Q)	0.01125	0.02250	0.22473
	(!CLK * D * !Q)	0.02295	0.03427	0.23644
	(!CLK * !D * !Q)	-0.00058	-0.00080	-0.00082
	(!CLK * !D * !Q)	0.00896	0.00878	0.00875
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00195	0.00885	0.12291
	(CLK * D * !Q)	0.01328	0.02024	0.13422
	(CLK * !D * !Q)	0.00031	-0.00003	-0.00001
	(CLK * !D * !Q)	0.00976	0.00956	0.00945
	(!CLK * D * !Q)	0.01235	0.02369	0.22593
	(!CLK * D * !Q)	0.02386	0.03528	0.23743
	(!CLK * !D * !Q)	0.00049	0.00022	0.00025
	(!CLK * !D * !Q)	0.00993	0.00981	0.00971
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00377	0.01060	0.12458
	(CLK * D * !Q)	0.01540	0.02230	0.13618
	(CLK * !D * !Q)	0.00211	0.00177	0.00180
	(CLK * !D * !Q)	0.01184	0.01164	0.01153
	(!CLK * D * !Q)	0.01477	0.02574	0.22639
	(!CLK * D * !Q)	0.02661	0.03764	0.23824
	(!CLK * !D * !Q)	0.00252	0.00230	0.00229
	(!CLK * !D * !Q)	0.01224	0.01206	0.01202

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)	0.02357	0.04123	0.35963
	(D * RESET_B * Q)	0.01775	0.03539	0.35380
	(D * !RESET_B * !Q)	0.02194	0.03958	0.35795
	(D * !RESET_B * !Q)	0.01612	0.03372	0.35212
	(!D * !Q)	0.02195	0.03959	0.35798
	(!D * !Q)	0.01613	0.03372	0.35215
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.02349	0.04116	0.35946
	(D * RESET_B * Q)	0.01771	0.03534	0.35367
	(D * !RESET_B * !Q)	0.02289	0.04053	0.35881
	(D * !RESET_B * !Q)	0.01710	0.03470	0.35301
	(!D * !Q)	0.02289	0.04054	0.35884
	(!D * !Q)	0.01711	0.03472	0.35304
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.02770	0.04518	0.36326
	(D * RESET_B * Q)	0.02167	0.03911	0.35725
	(D * !RESET_B * !Q)	0.02584	0.04328	0.36132
	(D * !RESET_B * !Q)	0.01980	0.03721	0.35528
	(!D * !Q)	0.02584	0.04326	0.36135
	(!D * !Q)	0.01981	0.03725	0.35531

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)**	0.01517	0.03423	0.35390
	(D * RESET_B * Q)	0.02099	0.04010	0.35973
	(D * RESET_B * !Q)	0.02337	0.04325	0.38004
	(D * RESET_B * !Q)	0.02898	0.04887	0.38567
	(D * !RESET_B * !Q)	0.01252	0.03159	0.35124
	(D * !RESET_B * !Q)	0.01835	0.03744	0.35707
	(!D * RESET_B * Q)	0.02887	0.04847	0.37743
	(!D * RESET_B * Q)	0.03492	0.05453	0.38350
	(!D * !Q)	0.01253	0.03161	0.35124
	(!D * !Q)	0.01836	0.03746	0.35708
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.01522	0.03428	0.35386
	(D * RESET_B * Q)	0.02101	0.04012	0.35966
	(D * RESET_B * !Q)	0.02413	0.04385	0.38079
	(D * RESET_B * !Q)	0.02974	0.04951	0.38642
	(D * !RESET_B * !Q)	0.01360	0.03267	0.35178
	(D * !RESET_B * !Q)	0.01940	0.03850	0.35760
	(!D * RESET_B * Q)	0.02896	0.04856	0.37739
	(!D * RESET_B * Q)	0.03494	0.05458	0.38339
	(!D * !Q)	0.01361	0.03269	0.35223
	(!D * !Q)	0.01941	0.03851	0.35804
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.01882	0.03785	0.35667
	(D * RESET_B * Q)	0.02482	0.04389	0.36270
	(D * RESET_B * !Q)	0.02818	0.04792	0.38326
	(D * RESET_B * !Q)	0.03397	0.05375	0.38906
	(D * !RESET_B * !Q)	0.01622	0.03516	0.35405
	(D * !RESET_B * !Q)	0.02222	0.04118	0.36008
	(!D * RESET_B * Q)	0.03263	0.05209	0.38141
	(!D * RESET_B * Q)	0.03885	0.05832	0.38766
	(!D * !Q)	0.01622	0.03517	0.35453
	(!D * !Q)	0.02223	0.04119	0.36055

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00184	0.00346	0.00299	1.63868	1.56855
sky130_fd_sc_hs__dfsbp_2	0.00184	0.00343	0.00300	3.33950	3.24043

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	590.68700	691.90000
sky130_fd_sc_hs__dfsbp_2	0.00000	566.72800	593.17700

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)	0.16584	0.51760	5.24983
	SET_B->Q (FR)	0.15707	0.71891	8.22386
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.19357	0.45225	5.26276
	SET_B->Q (FR)	0.18847	0.66292	8.24288

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.16156	0.36227	2.47285
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.18321	0.34144	2.57313

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)	0.14119	0.52261	5.36946
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.14378	0.43266	5.32946

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)	0.12834	0.36878	2.45156
	SET_B->Q_N (FF)	0.11672	0.56470	5.38506
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.13832	0.34481	2.55022
	SET_B->Q_N (FF)	0.13009	0.54989	5.49694

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)	-0.04210	-0.09517	-0.60659
	setup	CLK (R)	0.06423	0.11504	0.60077
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04173	-0.09517	-0.60064
	setup	CLK (R)	0.06015	0.11104	0.59288

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)	-0.03556	-0.13207	-3.24472
	setup	CLK (R)	0.08816	0.20175	3.24759
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.03628	-0.13558	-3.23855
	setup	CLK (R)	0.08786	0.20058	3.24025

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)	-0.04210	-0.09517	-0.60659
	setup	CLK (R)	0.06423	0.11504	0.60077
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04173	-0.09517	-0.60064
	setup	CLK (R)	0.06015	0.11104	0.59288

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)	-0.03556	-0.13207	-3.24472
	setup	CLK (R)	0.08816	0.20175	3.24759
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.03628	-0.13558	-3.23855
	setup	CLK (R)	0.08786	0.20058	3.24025

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)	-0.05985	-0.08861	-0.22260
	removal	CLK (R)	0.08128	0.11104	0.39790
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.06153	-0.08872	-0.25073
	removal	CLK (R)	0.08082	0.11104	0.35694

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)	-0.05985	-0.08861	-0.22260
	removal	CLK (R)	0.08128	0.11104	0.39790
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.06153	-0.08872	-0.25073
	removal	CLK (R)	0.08082	0.11104	0.35694

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 ()	0.12870	0.58472	16.50020
	min_pulse_width	SET_B ()	0.11989	0.58472	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.13531	0.58472	16.50020
	min_pulse_width	SET_B ()	0.14632	0.58472	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 ()	0.09786	0.58472	16.50020
	min_pulse_width	CLK ()	0.07583	0.58472	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.08684	0.58472	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 ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.12870	0.58472	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.09786	0.58472	16.50020
	min_pulse_width	CLK ()	0.12649	0.58472	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	0.03110	0.03882	0.20912
	CLK	0.02827	0.03592	0.20603
	SET_B	0.02290	0.02861	0.13432
	SET_B	0.02614	0.03181	0.13712
sky130_fd_sc_hs__dfsbp_2	CLK	0.03762	0.04217	0.21340
	CLK	0.03476	0.03925	0.21014
	SET_B	0.02991	0.03265	0.14225
	SET_B	0.03311	0.03583	0.14417

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02395	0.03253	0.19375
	CLK	0.02127	0.02981	0.19087
sky130_fd_sc_hs__dfsbp_2	CLK	0.03019	0.03747	0.19846
	CLK	0.02744	0.03471	0.19533

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02623	0.03487	0.19689
	CLK	0.02355	0.03210	0.19411
sky130_fd_sc_hs__dfsbp_2	CLK	0.03311	0.04038	0.20241
	CLK	0.03036	0.03764	0.19929

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02728	0.03496	0.20406
	CLK	0.02445	0.03209	0.20107
	SET_B	0.01932	0.02505	0.13031
	SET_B	0.02255	0.02825	0.13307
sky130_fd_sc_hs__dfsbp_2	CLK	0.03438	0.03889	0.20879
	CLK	0.03152	0.03601	0.20569
	SET_B	0.02692	0.02965	0.13873
	SET_B	0.03012	0.03282	0.14075

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01032	0.01782	0.13983
	CLK	0.00683	0.01432	0.13633
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01930	0.02624	0.15657
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01548	0.02244	0.15274
	(!CLK * !SET_B * Q * !Q_N)	0.01629	0.02235	0.14130
	(!CLK * !SET_B * Q * !Q_N)	0.01231	0.01837	0.13732
sky130_fd_sc_hs__dfsbp_2	CLK	0.00944	0.01696	0.13897
	CLK	0.00596	0.01344	0.13547
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01832	0.02532	0.15567
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01437	0.02135	0.15172
	(!CLK * !SET_B * Q * !Q_N)	0.01541	0.02149	0.14051
	(!CLK * !SET_B * Q * !Q_N)	0.01133	0.01740	0.13642

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00617	0.01393	0.13573
	CLK	0.00966	0.01742	0.13922
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01624	0.02323	0.15275
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.02007	0.02705	0.15658
	(!CLK * !SET_B * Q * !Q_N)	0.01079	0.01700	0.13595
	(!CLK * !SET_B * Q * !Q_N)	0.01478	0.02099	0.13993
sky130_fd_sc_hs__dfsbp_2	CLK	0.00531	0.01307	0.13488
	CLK	0.00881	0.01657	0.13838
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01500	0.02201	0.15146
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01895	0.02597	0.15541
	(!CLK * !SET_B * Q * !Q_N)	0.00975	0.01597	0.13498
	(!CLK * !SET_B * Q * !Q_N)	0.01384	0.02008	0.13907

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)	0.00932	0.00936	0.00933
	(CLK * Q * !Q_N)	0.00306	0.00305	0.00306
	(!CLK * D * Q * !Q_N)	0.00946	0.00949	0.00948
	(!CLK * D * Q * !Q_N)	0.00320	0.00319	0.00320
	(!CLK * !D * Q * !Q_N)	0.01318	0.01945	0.13257
	(!CLK * !D * Q * !Q_N)	0.00666	0.01288	0.12602
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00852	0.00855	0.00852
	(CLK * Q * !Q_N)	0.00227	0.00226	0.00228
	(!CLK * D * Q * !Q_N)	0.00856	0.00863	0.00859
	(!CLK * D * Q * !Q_N)	0.00236	0.00233	0.00235
	(!CLK * !D * Q * !Q_N)	0.01207	0.01839	0.13165
	(!CLK * !D * Q * !Q_N)	0.00560	0.01189	0.12516

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)	0.00273	0.00262	0.00260
	(CLK * Q * !Q_N)	0.00897	0.00892	0.00887
	(!CLK * D * Q * !Q_N)	0.00234	0.00217	0.00214
	(!CLK * D * Q * !Q_N)	0.00859	0.00848	0.00841
	(!CLK * !D * Q * !Q_N)	0.00526	0.01227	0.12577
	(!CLK * !D * Q * !Q_N)	0.01177	0.01884	0.13232
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00182	0.00171	0.00170
	(CLK * Q * !Q_N)	0.00802	0.00798	0.00793
	(!CLK * D * Q * !Q_N)	0.00151	0.00134	0.00131
	(!CLK * D * Q * !Q_N)	0.00772	0.00761	0.00755
	(!CLK * !D * Q * !Q_N)	0.00444	0.01151	0.12512
	(!CLK * !D * Q * !Q_N)	0.01090	0.01803	0.13160

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)	0.02461	0.04221	0.36307
	(D * Q * !Q_N)	0.01910	0.03667	0.35756
	(!D * SET_B * !Q * Q_N)	0.02178	0.03924	0.36015
	(!D * SET_B * !Q * Q_N)	0.01627	0.03371	0.35464
	(!D * !SET_B * Q * !Q_N)	0.04427	0.06234	0.38355
	(!D * !SET_B * Q * !Q_N)	0.03827	0.05631	0.37755
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.02353	0.04120	0.36227
	(D * Q * !Q_N)	0.01793	0.03557	0.35666
	(!D * SET_B * !Q * Q_N)	0.02279	0.04032	0.36143
	(!D * SET_B * !Q * Q_N)	0.01719	0.03469	0.35583
	(!D * !SET_B * Q * !Q_N)	0.04269	0.06084	0.38247
	(!D * !SET_B * Q * !Q_N)	0.03651	0.05465	0.37627

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)	0.02323	0.04326	0.38522
	(D * SET_B * !Q * Q_N)	0.02844	0.04847	0.39041
	(D * Q * !Q_N)	0.01638	0.03573	0.35982
	(D * Q * !Q_N)	0.02192	0.04127	0.36535
	(!D * SET_B * Q * !Q_N)	0.02863	0.04850	0.37728
	(!D * SET_B * Q * !Q_N)	0.03450	0.05437	0.38312
	(!D * SET_B * !Q * Q_N)	0.01389	0.03332	0.35755
	(!D * SET_B * !Q * Q_N)	0.01942	0.03884	0.36306
	(!D * !SET_B * Q * !Q_N)	0.02323	0.04305	0.37171
	(!D * !SET_B * Q * !Q_N)	0.02926	0.04909	0.37773
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.02402	0.04409	0.38620
	(D * SET_B * !Q * Q_N)	0.02921	0.04927	0.39137
	(D * Q * !Q_N)	0.01537	0.03476	0.35901
	(D * Q * !Q_N)	0.02099	0.04038	0.36463
	(!D * SET_B * Q * !Q_N)	0.02718	0.04709	0.37618
	(!D * SET_B * Q * !Q_N)	0.03325	0.05316	0.38224
	(!D * SET_B * !Q * Q_N)	0.01472	0.03419	0.35858
	(!D * SET_B * !Q * Q_N)	0.02035	0.03981	0.36418
	(!D * !SET_B * Q * !Q_N)	0.02196	0.04184	0.37082
	(!D * !SET_B * Q * !Q_N)	0.02818	0.04805	0.37702

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00183	0.00356	0.00298	1.69901
sky130_fd_sc_hs__dfstp_2	0.00183	0.00336	0.00300	3.38291
sky130_fd_sc_hs__dfstp_4	0.00183	0.00340	0.00301	6.19004

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfstp_1	0.00000	510.17600	572.49500
sky130_fd_sc_hs__dfstp_2	0.00000	405.54600	587.26100
sky130_fd_sc_hs__dfstp_4	0.00000	877.04000	943.28100

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)	0.14026	0.48819	5.20971
	SET_B->Q (FR)	0.13048	0.67832	8.13217
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.14547	0.41277	5.29389
	SET_B->Q (FR)	0.13584	0.60483	8.22040
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.17482	0.38054	5.18604
	SET_B->Q (FR)	0.16518	0.57973	8.14262

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.14904	0.35299	2.59233
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.15794	0.32034	2.62655
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.16173	0.28636	2.44395

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)	-0.04055	-0.09117	-0.59262
	setup	CLK (R)	0.06224	0.11104	0.59028
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04361	-0.09517	-0.60199
	setup	CLK (R)	0.06021	0.11104	0.59862
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.03921	-0.09117	-0.59658
	setup	CLK (R)	0.05684	0.10707	0.58851

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)	-0.03306	-0.12993	-3.22731
	setup	CLK (R)	0.08623	0.19896	3.23833
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.03322	-0.13182	-3.23428
	setup	CLK (R)	0.08821	0.20035	3.24359
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.03790	-0.13327	-3.23436
	setup	CLK (R)	0.08407	0.19788	3.23754

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)	-0.04055	-0.09117	-0.59262
	setup	CLK (R)	0.06224	0.11104	0.59028
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04361	-0.09517	-0.60199
	setup	CLK (R)	0.06021	0.11104	0.59862
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.03921	-0.09117	-0.59658
	setup	CLK (R)	0.05684	0.10707	0.58851

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)	-0.03306	-0.12993	-3.22731
	setup	CLK (R)	0.08623	0.19896	3.23833
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.03322	-0.13182	-3.23428
	setup	CLK (R)	0.08821	0.20035	3.24359
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.03790	-0.13327	-3.23436
	setup	CLK (R)	0.08407	0.19788	3.23754

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)	-0.06116	-0.09117	-0.23316
	removal	CLK (R)	0.07879	0.11104	0.49874
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.06137	-0.09117	-0.23209
	removal	CLK (R)	0.08082	0.11104	0.44686
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.06056	-0.09117	-0.22146
	removal	CLK (R)	0.07578	0.10707	0.40693

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)	-0.06116	-0.09117	-0.23316
	removal	CLK (R)	0.07879	0.11104	0.49874
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.06137	-0.09117	-0.23209
	removal	CLK (R)	0.08082	0.11104	0.44686
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.06056	-0.09117	-0.22146
	removal	CLK (R)	0.07578	0.10707	0.40693

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 ()	0.11548	0.58472	16.50020
	min_pulse_width	SET_B ()	0.09345	0.58472	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.11989	0.58472	16.50020
	min_pulse_width	SET_B ()	0.09786	0.58472	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.12429	0.58472	16.50020
	min_pulse_width	SET_B ()	0.11328	0.58472	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 ()	0.07362	0.58472	16.50020
	min_pulse_width	CLK ()	0.06481	0.58472	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.06701	0.58472	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.09565	0.58472	16.50020
	min_pulse_width	CLK ()	0.06922	0.58472	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 ()	0.09786	0.58472	16.50020
	min_pulse_width	CLK ()	0.12649	0.58472	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.09786	0.58472	16.50020
	min_pulse_width	CLK ()	0.12649	0.58472	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.09565	0.58472	16.50020
	min_pulse_width	CLK ()	0.12429	0.58472	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	0.04938	0.06762	0.40891
	CLK	0.04394	0.06219	0.40338
	SET_B	0.03266	0.04727	0.25712
	SET_B	0.03954	0.05408	0.26411
sky130_fd_sc_hs__dfstp_2	CLK	0.04907	0.06697	0.41048
	CLK	0.04339	0.06133	0.40532
	SET_B	0.03242	0.04682	0.26284
	SET_B	0.03878	0.05321	0.26921
sky130_fd_sc_hs__dfstp_4	CLK	0.07666	0.09220	0.43537
	CLK	0.07092	0.08650	0.42912
	SET_B	0.06061	0.07329	0.28885
	SET_B	0.06700	0.07965	0.29570

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.04293	0.06039	0.38221
	CLK	0.03723	0.05472	0.37594
sky130_fd_sc_hs__dfstp_2	CLK	0.04976	0.06621	0.38730
	CLK	0.04424	0.06071	0.38116
sky130_fd_sc_hs__dfstp_4	CLK	0.06567	0.08092	0.40181
	CLK	0.06013	0.07533	0.39626

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00929	0.01677	0.13877
	CLK	0.00581	0.01328	0.13528
	(!CLK * SET_B)	0.01812	0.02510	0.15545
	(!CLK * SET_B)	0.01431	0.02129	0.15165
	(!CLK * !SET_B * Q)	0.01519	0.02127	0.14031
	(!CLK * !SET_B * Q)	0.01120	0.01727	0.13631
sky130_fd_sc_hs__dfstp_2	CLK	0.00742	0.01490	0.13689
	CLK	0.00393	0.01139	0.13339
	(!CLK * SET_B)	0.01620	0.02317	0.15339
	(!CLK * SET_B)	0.01238	0.01934	0.14958
	(!CLK * !SET_B * Q)	0.01327	0.01934	0.13831
	(!CLK * !SET_B * Q)	0.00926	0.01531	0.13429
sky130_fd_sc_hs__dfstp_4	CLK	0.01254	0.02001	0.14199
	CLK	0.00906	0.01652	0.13850
	(!CLK * SET_B)	0.02127	0.02826	0.15853
	(!CLK * SET_B)	0.01743	0.02441	0.15468
	(!CLK * !SET_B * Q)	0.01831	0.02440	0.14345
	(!CLK * !SET_B * Q)	0.01431	0.02038	0.13945

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00523	0.01295	0.13474
	CLK	0.00871	0.01644	0.13823
	(!CLK * SET_B)	0.01481	0.02182	0.15130
	(!CLK * SET_B)	0.01862	0.02563	0.15510
	(!CLK * !SET_B * Q)	0.00956	0.01579	0.13482
	(!CLK * !SET_B * Q)	0.01356	0.01980	0.13882
sky130_fd_sc_hs__dfstp_2	CLK	0.00331	0.01102	0.13281
	CLK	0.00680	0.01453	0.13631
	(!CLK * SET_B)	0.01317	0.02015	0.14946
	(!CLK * SET_B)	0.01699	0.02397	0.15328
	(!CLK * !SET_B * Q)	0.00792	0.01412	0.13307
	(!CLK * !SET_B * Q)	0.01194	0.01815	0.13708
sky130_fd_sc_hs__dfstp_4	CLK	0.00847	0.01617	0.13795
	CLK	0.01194	0.01966	0.14143
	(!CLK * SET_B)	0.01791	0.02492	0.15433
	(!CLK * SET_B)	0.02175	0.02877	0.15818
	(!CLK * !SET_B * Q)	0.01277	0.01901	0.13807
	(!CLK * !SET_B * Q)	0.01679	0.02303	0.14207

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00816	0.00819	0.00816
	(CLK * Q)	0.00177	0.00176	0.00178
	(!CLK * D * Q)	0.00824	0.00829	0.00825
	(!CLK * D * Q)	0.00187	0.00185	0.00186
	(!CLK * !D * Q)	0.01185	0.01813	0.13120
	(!CLK * !D * Q)	0.00517	0.01143	0.12452
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00619	0.00624	0.00620
	(CLK * Q)	0.00012	0.00010	0.00012
	(!CLK * D * Q)	0.00627	0.00632	0.00629
	(!CLK * D * Q)	0.00022	0.00019	0.00021
	(!CLK * !D * Q)	0.00989	0.01616	0.12928
	(!CLK * !D * Q)	0.00352	0.00976	0.12289
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.01148	0.01151	0.01148
	(CLK * Q)	0.00530	0.00529	0.00530
	(!CLK * D * Q)	0.01155	0.01156	0.01154
	(!CLK * D * Q)	0.00534	0.00535	0.00536
	(!CLK * !D * Q)	0.01504	0.02133	0.13446
	(!CLK * !D * Q)	0.00860	0.01486	0.12800

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00182	0.00171	0.00170
	(CLK * Q)	0.00817	0.00812	0.00807
	(!CLK * D * Q)	0.00149	0.00131	0.00129
	(!CLK * D * Q)	0.00785	0.00773	0.00767
	(!CLK * !D * Q)	0.00435	0.01140	0.12484
	(!CLK * !D * Q)	0.01106	0.01811	0.13152
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00002	-0.00013	-0.00015
	(CLK * Q)	0.00603	0.00598	0.00593
	(!CLK * D * Q)	-0.00035	-0.00053	-0.00055
	(!CLK * D * Q)	0.00570	0.00559	0.00553
	(!CLK * !D * Q)	0.00254	0.00957	0.12305
	(!CLK * !D * Q)	0.00896	0.01599	0.12943
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00495	0.00484	0.00482
	(CLK * Q)	0.01110	0.01105	0.01100
	(!CLK * D * Q)	0.00466	0.00448	0.00445
	(!CLK * D * Q)	0.01080	0.01070	0.01063
	(!CLK * !D * Q)	0.00761	0.01465	0.12815
	(!CLK * !D * Q)	0.01410	0.02114	0.13458

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.02336	0.04095	0.36163
	(D * Q)	0.01782	0.03538	0.35608
	(!D * SET_B * !Q)	0.02173	0.03918	0.35990
	(!D * SET_B * !Q)	0.01618	0.03361	0.35435
	(!D * !SET_B * Q)	0.04188	0.06006	0.38116
	(!D * !SET_B * Q)	0.03583	0.05399	0.37511
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.02172	0.03934	0.36041
	(D * Q)	0.01613	0.03372	0.35482
	(!D * SET_B * !Q)	0.02288	0.04037	0.36150
	(!D * SET_B * !Q)	0.01729	0.03475	0.35590
	(!D * !SET_B * Q)	0.04018	0.05824	0.37966
	(!D * !SET_B * Q)	0.03408	0.05210	0.37356
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.02663	0.04428	0.36540
	(D * Q)	0.02101	0.03862	0.35977
	(!D * SET_B * !Q)	0.02494	0.04242	0.36362
	(!D * SET_B * !Q)	0.01931	0.03676	0.35799
	(!D * !SET_B * Q)	0.04569	0.06396	0.38549
	(!D * !SET_B * Q)	0.03954	0.05779	0.37934

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)**	0.02312	0.04310	0.38456
	(D * SET_B * !Q)	0.02839	0.04837	0.38982
	(D * Q)	0.01539	0.03477	0.35835
	(D * Q)	0.02096	0.04034	0.36390
	(!D * SET_B * Q)	0.02703	0.04697	0.37541
	(!D * SET_B * Q)	0.03292	0.05286	0.38130
	(!D * SET_B * !Q)	0.01374	0.03313	0.35691
	(!D * SET_B * !Q)	0.01932	0.03870	0.36248
	(!D * !SET_B * Q)	0.02183	0.04171	0.37008
	(!D * !SET_B * Q)	0.02792	0.04780	0.37613
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.02407	0.04412	0.38611
	(D * SET_B * !Q)	0.02937	0.04940	0.39140
	(D * Q)	0.01331	0.03268	0.35690
	(D * Q)	0.01892	0.03829	0.36251
	(!D * SET_B * Q)	0.02526	0.04516	0.37426
	(!D * SET_B * Q)	0.03120	0.05109	0.38018
	(!D * SET_B * !Q)	0.01482	0.03427	0.35863
	(!D * SET_B * !Q)	0.02044	0.03987	0.36422
	(!D * !SET_B * Q)	0.02007	0.03992	0.36893
	(!D * !SET_B * Q)	0.02621	0.04606	0.37505
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.02603	0.04610	0.38822
	(D * SET_B * !Q)	0.03133	0.05138	0.39351
	(D * Q)	0.01851	0.03789	0.36215
	(D * Q)	0.02416	0.04354	0.36780
	(!D * SET_B * Q)	0.02995	0.04987	0.37898
	(!D * SET_B * Q)	0.03597	0.05587	0.38499
	(!D * SET_B * !Q)	0.01673	0.03618	0.36059
	(!D * SET_B * !Q)	0.02238	0.04183	0.36622
	(!D * !SET_B * Q)	0.02489	0.04475	0.37378
	(!D * !SET_B * Q)	0.03107	0.05093	0.37994

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00187	0.00299	1.67921	1.65412
sky130_fd_sc_hs__dfxbp_2	0.00182	0.00300	2.73991	3.22411

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	807.27100	1111.06000
sky130_fd_sc_hs__dfxbp_2	0.00000	1110.92000	1829.09000

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)	0.13095	0.49900	5.53667
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.15092	0.44476	5.20915

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.14037	0.36773	2.84535
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.13583	0.29395	2.09084

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)	0.16613	0.53421	5.51086
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.17534	0.45247	5.35367

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)	0.15388	0.36253	2.68190
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.18619	0.35313	2.68209

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)	-0.01536	-0.03966	-0.33074
	setup	CLK (R)	0.04878	0.07272	0.35088
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.01133	-0.03172	-0.30936
	setup	CLK (R)	0.03770	0.06345	0.32671

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)	-0.02383	-0.10821	-2.94711
	setup	CLK (R)	0.06383	0.16248	3.00157
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.02500	-0.10577	-2.95032
	setup	CLK (R)	0.06060	0.15877	3.00609

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 ()	0.06261	0.58472	16.50020
	min_pulse_width	CLK ()	0.05380	0.58472	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.08244	0.58472	16.50020
	min_pulse_width	CLK ()	0.05380	0.58472	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 ()	0.08684	0.58472	16.50020
	min_pulse_width	CLK ()	0.10447	0.58472	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.08244	0.58472	16.50020
	min_pulse_width	CLK ()	0.10447	0.58472	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	0.02466	0.03447	0.21519
	CLK	0.02203	0.03182	0.21232
sky130_fd_sc_hs__dfxbp_2	CLK	0.03944	0.04843	0.22803
	CLK	0.03678	0.04573	0.22527

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.02737	0.03698	0.20906
	CLK	0.02474	0.03432	0.20625
sky130_fd_sc_hs__dfxbp_2	CLK	0.03123	0.04066	0.21540
	CLK	0.02857	0.03799	0.21275

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.03259	0.04229	0.21566
	CLK	0.02996	0.03956	0.21275
sky130_fd_sc_hs__dfxbp_2	CLK	0.03687	0.04632	0.22273
	CLK	0.03421	0.04362	0.21976

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.02218	0.03199	0.21152
	CLK	0.01955	0.02933	0.20883
sky130_fd_sc_hs__dfxbp_2	CLK	0.03316	0.04214	0.22072
	CLK	0.03050	0.03942	0.21770

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00704	0.01480	0.13419
	CLK	0.00350	0.01125	0.13064
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01554	0.02469	0.17220
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01201	0.02114	0.16866
sky130_fd_sc_hs__dfxbp_2	CLK	0.01300	0.02080	0.13965
	CLK	0.00955	0.01733	0.13620
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.02146	0.03063	0.17761
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01802	0.02717	0.17416

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00355	0.01159	0.13084
	CLK	0.00711	0.01515	0.13437
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01776	0.02596	0.16403
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.02131	0.02951	0.16758
sky130_fd_sc_hs__dfxbp_2	CLK	0.00968	0.01772	0.13646
	CLK	0.01314	0.02118	0.13990
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.02354	0.03177	0.16923
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.02700	0.03522	0.17269

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)	0.02035	0.03929	0.37269
	(D * Q * !Q_N)	0.01509	0.03402	0.36743
	(!D * !Q * Q_N)	0.02524	0.04417	0.37763
	(!D * !Q * Q_N)	0.01997	0.03890	0.37237
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.02662	0.04555	0.37944
	(D * Q * !Q_N)	0.02129	0.04019	0.37410
	(!D * !Q * Q_N)	0.02430	0.04322	0.37717
	(!D * !Q * Q_N)	0.01896	0.03787	0.37183

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)	0.01616	0.03593	0.36793
	(D * Q * !Q_N)	0.02142	0.04120	0.37319
	(D * !Q * Q_N)	0.02942	0.05003	0.40253
	(D * !Q * Q_N)	0.03468	0.05532	0.40778
	(!D * Q * !Q_N)	0.03234	0.05254	0.39373
	(!D * Q * !Q_N)	0.03760	0.05782	0.39899
	(!D * !Q * Q_N)	0.02070	0.04037	0.37248
	(!D * !Q * Q_N)	0.02596	0.04564	0.37772
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.02230	0.04198	0.37450
	(D * Q * !Q_N)	0.02764	0.04730	0.37983
	(D * !Q * Q_N)	0.02870	0.04935	0.40220
	(D * !Q * Q_N)	0.03404	0.05471	0.40754
	(!D * Q * !Q_N)	0.03801	0.05808	0.40044
	(!D * Q * !Q_N)	0.04335	0.06343	0.40577
	(!D * !Q * Q_N)	0.02000	0.03970	0.37222
	(!D * !Q * Q_N)	0.02534	0.04505	0.37755

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00183	0.00299	1.68493
sky130_fd_sc_hs__dfxtp_2	0.00187	0.00299	3.37372
sky130_fd_sc_hs__dfxtp_4	0.00186	0.00300	6.13705

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	673.32400	1212.34000
sky130_fd_sc_hs__dfxtp_2	0.00000	623.34600	989.07800
sky130_fd_sc_hs__dfxtp_4	0.00000	1037.60000	1590.72000

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)**	0.11870	0.48716	5.51387
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.12683	0.40860	5.49151
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.15226	0.37568	5.44263

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.13317	0.35644	2.82319
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.13760	0.31707	2.84440
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.14105	0.28301	2.70841

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)	-0.01183	-0.03569	-0.30474
	setup	CLK (R)	0.04872	0.07375	0.32455
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.01290	-0.03569	-0.32310
	setup	CLK (R)	0.04447	0.07060	0.34064
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01146	-0.03569	-0.31529
	setup	CLK (R)	0.03884	0.06745	0.33579

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)	-0.02401	-0.11101	-2.99133
	setup	CLK (R)	0.06556	0.16598	3.03432
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.02027	-0.10406	-2.95789
	setup	CLK (R)	0.06277	0.15934	3.00726
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.02038	-0.10446	-2.94365
	setup	CLK (R)	0.06244	0.15896	2.99609

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 ()	0.05600	0.58472	16.50020
	min_pulse_width	CLK ()	0.05159	0.58472	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.06261	0.58472	16.50020
	min_pulse_width	CLK ()	0.05380	0.58472	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.08244	0.58472	16.50020
	min_pulse_width	CLK ()	0.05600	0.58472	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 ()	0.08904	0.58472	16.50020
	min_pulse_width	CLK ()	0.10887	0.58472	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.08684	0.58472	16.50020
	min_pulse_width	CLK ()	0.10667	0.58472	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.08464	0.58472	16.50020
	min_pulse_width	CLK ()	0.10667	0.58472	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	0.04295	0.06281	0.42079
	CLK	0.03764	0.05750	0.41586
sky130_fd_sc_hs__dfxtp_2	CLK	0.04190	0.06135	0.42169
	CLK	0.03655	0.05603	0.41710
sky130_fd_sc_hs__dfxtp_4	CLK	0.06855	0.08570	0.44443
	CLK	0.06327	0.08044	0.44055

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.04031	0.06019	0.40901
	CLK	0.03500	0.05481	0.40361
sky130_fd_sc_hs__dfxtp_2	CLK	0.04727	0.06585	0.41363
	CLK	0.04193	0.06047	0.40662
sky130_fd_sc_hs__dfxtp_4	CLK	0.06317	0.08034	0.43082
	CLK	0.05788	0.07507	0.42277

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00766	0.01540	0.13484
	CLK	0.00420	0.01192	0.13138
	!CLK	0.01625	0.02539	0.17290
	!CLK	0.01278	0.02192	0.16943
sky130_fd_sc_hs__dfxtp_2	CLK	0.00594	0.01374	0.13319
	CLK	0.00239	0.01018	0.12963
	!CLK	0.01422	0.02344	0.17086
	!CLK	0.01068	0.01987	0.16731
sky130_fd_sc_hs__dfxtp_4	CLK	0.01091	0.01873	0.13800
	CLK	0.00738	0.01519	0.13446
	!CLK	0.01937	0.02853	0.17575
	!CLK	0.01585	0.02499	0.17222

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00479	0.01273	0.13201
	CLK	0.00825	0.01621	0.13548
	!CLK	0.01906	0.02721	0.16511
	!CLK	0.02254	0.03068	0.16858
sky130_fd_sc_hs__dfxtp_2	CLK	0.00243	0.01049	0.12980
	CLK	0.00598	0.01406	0.13335
	!CLK	0.01676	0.02497	0.16298
	!CLK	0.02032	0.02853	0.16653
sky130_fd_sc_hs__dfxtp_4	CLK	0.00763	0.01570	0.13484
	CLK	0.01116	0.01924	0.13836
	!CLK	0.02189	0.03009	0.16780
	!CLK	0.02543	0.03363	0.17134

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.02129	0.04015	0.37387
	(D * Q)	0.01596	0.03481	0.36854
	(!D * !Q)	0.02242	0.04127	0.37504
	(!D * !Q)	0.01709	0.03593	0.36972
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01944	0.03833	0.37209
	(D * Q)	0.01408	0.03296	0.36673
	(!D * !Q)	0.02336	0.04225	0.37607
	(!D * !Q)	0.01800	0.03688	0.37071
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.02445	0.04326	0.37637
	(D * Q)	0.01915	0.03794	0.37107
	(!D * !Q)	0.02532	0.04413	0.37728
	(!D * !Q)	0.02002	0.03881	0.37199

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01753	0.03726	0.36925
	(D * Q)	0.02283	0.04261	0.37457
	(D * !Q)	0.02672	0.04746	0.39948
	(D * !Q)	0.03202	0.05278	0.40481
	(!D * Q)	0.03368	0.05382	0.39522
	(!D * Q)	0.03899	0.05915	0.40055
	(!D * !Q)	0.01779	0.03757	0.36953
	(!D * !Q)	0.02309	0.04292	0.37484
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01536	0.03511	0.36716
	(D * Q)	0.02070	0.04050	0.37251
	(D * !Q)	0.02729	0.04805	0.40009
	(D * !Q)	0.03262	0.05341	0.40546
	(!D * Q)	0.03155	0.05175	0.39314
	(!D * Q)	0.03689	0.05709	0.39850
	(!D * !Q)	0.01872	0.03851	0.37053
	(!D * !Q)	0.02405	0.04389	0.37588
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.02097	0.04059	0.37186
	(D * Q)	0.02625	0.04592	0.37715
	(D * !Q)	0.02986	0.05050	0.40167
	(D * !Q)	0.03513	0.05580	0.40697
	(!D * Q)	0.03727	0.05733	0.39843
	(!D * Q)	0.04255	0.06264	0.40374
	(!D * !Q)	0.02123	0.04089	0.37213
	(!D * !Q)	0.02650	0.04621	0.37742

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00452	1.71963
sky130_fd_sc_hs__dlclkp_2	0.00266	0.00485	3.22379
sky130_fd_sc_hs__dlclkp_4	0.00264	0.00510	6.43408

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	797.17400	1256.21000
sky130_fd_sc_hs__dlclkp_2	0.00000	729.76400	818.19200
sky130_fd_sc_hs__dlclkp_4	0.00000	876.13300	971.44700

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)**	0.04676	0.39623	5.71290
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.04916	0.31768	5.37359
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.07044	0.31774	5.84097

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.04958	0.42648	5.65514
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.05407	0.39641	5.52043
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.06952	0.38842	5.46215

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)	-0.02289	-0.05155	-0.76046
	setup	CLK (R)	0.08626	0.15336	0.81117
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.02276	-0.05155	-0.76911
	setup	CLK (R)	0.09246	0.14774	0.82444
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.02237	-0.04759	-0.71198
	setup	CLK (R)	0.08531	0.12090	0.75082

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)	-0.01994	-0.08724	-2.21563
	setup	CLK (R)	0.05989	0.15069	2.40648
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.01891	-0.08328	-2.17157
	setup	CLK (R)	0.05502	0.13483	2.36324
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.02045	-0.08328	-2.22080
	setup	CLK (R)	0.04139	0.10707	2.41740

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 ()	0.03397	0.58472	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.04058	0.58472	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.06261	0.58472	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 ()	0.11328	0.58472	16.50020
	min_pulse_width	CLK ()	0.09565	0.58472	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09565	0.58472	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.11548	0.58472	16.50020
	min_pulse_width	CLK ()	0.09565	0.58472	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	0.04996	0.08526	0.66712
	CLK	0.04143	0.07673	0.65876
sky130_fd_sc_hs__dlclkp_2	CLK	0.04342	0.07758	0.65545
	CLK	0.03426	0.06843	0.64683
sky130_fd_sc_hs__dlclkp_4	CLK	0.05377	0.08561	0.67094
	CLK	0.04438	0.07629	0.66164

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.02284	0.06008	0.64141
	CLK	0.03134	0.06859	0.64901
sky130_fd_sc_hs__dlclkp_2	CLK	0.02993	0.06480	0.63764
	CLK	0.03910	0.07394	0.64310
sky130_fd_sc_hs__dlclkp_4	CLK	0.04771	0.07858	0.65527
	CLK	0.05713	0.08782	0.66230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01253	0.01220	0.01291
	CLK	0.00808	0.00771	0.00845
	(!CLK * !GCLK)	0.02042	0.03333	0.26774
	(!CLK * !GCLK)	0.01567	0.02853	0.26295
sky130_fd_sc_hs__dlclkp_2	CLK	0.00821	0.00822	0.00821
	CLK	0.00374	0.00374	0.00374
	(!CLK * !GCLK)	0.02157	0.03440	0.26834
	(!CLK * !GCLK)	0.01684	0.02966	0.26359
sky130_fd_sc_hs__dlclkp_4	CLK	0.01024	0.01025	0.01024
	CLK	0.00583	0.00582	0.00582
	(!CLK * !GCLK)	0.02328	0.03607	0.27006
	(!CLK * !GCLK)	0.01879	0.03155	0.26554

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00886	0.00880	0.00861
	CLK	0.01331	0.01331	0.01308
	(!CLK * !GCLK)	0.01633	0.02864	0.25906
	(!CLK * !GCLK)	0.02111	0.03344	0.26384
sky130_fd_sc_hs__dlclkp_2	CLK	0.00474	0.00459	0.00456
	CLK	0.00923	0.00911	0.00903
	(!CLK * !GCLK)	0.01779	0.03015	0.26031
	(!CLK * !GCLK)	0.02254	0.03490	0.26506
sky130_fd_sc_hs__dlclkp_4	CLK	0.00687	0.00673	0.00670
	CLK	0.01130	0.01119	0.01111
	(!CLK * !GCLK)	0.02061	0.03286	0.26297
	(!CLK * !GCLK)	0.02513	0.03740	0.26748

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.01844	0.03886	0.36839
	(!GATE * !GCLK)	0.01020	0.03056	0.36012
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.02014	0.04053	0.37065
	(!GATE * !GCLK)	0.01129	0.03170	0.36178
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.02211	0.04173	0.36334
	(!GATE * !GCLK)	0.01298	0.03258	0.35419

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.02332	0.04567	0.45034
	(GATE * !GCLK)	0.03162	0.05398	0.45862
	(!GATE * !GCLK)	0.01176	0.03239	0.35808
	(!GATE * !GCLK)	0.02002	0.04068	0.36635
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.02501	0.04724	0.45172
	(GATE * !GCLK)	0.03393	0.05621	0.46061
	(!GATE * !GCLK)	0.01319	0.03381	0.35969
	(!GATE * !GCLK)	0.02206	0.04269	0.36852
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.02640	0.04817	0.44386
	(GATE * !GCLK)	0.03575	0.05761	0.45320
	(!GATE * !GCLK)	0.01485	0.03484	0.35344
	(!GATE * !GCLK)	0.02398	0.04396	0.36257

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00236	0.00259	0.00288	1.67078	1.67396
sky130_fd_sc_hs__dlrbn_2	0.00237	0.00258	0.00299	2.68236	3.17352

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	1052.05000	1376.51000
sky130_fd_sc_hs__dlrbn_2	0.00000	1019.87000	1276.22000

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)	0.15995	0.50815	5.56082
	GATE_N->Q (-R)	0.18501	0.71103	8.14427
	RESET_B->Q (RR)	0.06032	0.43096	5.70676
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.16741	0.44096	5.15671
	GATE_N->Q (-R)	0.19451	0.65350	7.86279
	RESET_B->Q (RR)	0.06711	0.37052	5.19703

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.12724	0.47517	4.92126
	GATE_N->Q (-F)	0.13339	0.51410	5.32943
	RESET_B->Q (FF)	0.05593	0.43140	5.20938
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.13828	0.43620	4.36297
	GATE_N->Q (-F)	0.14474	0.47454	4.75760
	RESET_B->Q (FF)	0.06388	0.39886	4.67473

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)	0.15528	0.64403	7.58967
	GATE_N->Q_N (-R)	0.16153	0.68290	7.99785
	RESET_B->Q_N (FR)	0.08610	0.59063	7.62624
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.18038	0.59645	7.76621
	GATE_N->Q_N (-R)	0.18691	0.63466	8.16120
	RESET_B->Q_N (FR)	0.10820	0.54818	7.81858

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)	0.18212	0.37386	2.82509
	GATE_N->Q_N (-F)	0.20716	0.57684	5.40700
	RESET_B->Q_N (RF)	0.08251	0.28782	2.57966
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.21000	0.37250	3.07459
	GATE_N->Q_N (-F)	0.23715	0.58501	5.77889
	RESET_B->Q_N (RF)	0.10951	0.29975	2.84843

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 ()**	0.06922	0.58472	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.08684	0.58472	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	0.03049	0.03844	0.18505
	D	0.02818	0.03610	0.18249
	GATE_N	0.03166	0.04129	0.20337
	GATE_N	0.03388	0.04350	0.20492
	RESET_B	0.02476	0.03191	0.15595
	RESET_B	0.02204	0.02915	0.15311
sky130_fd_sc_hs__dlrbn_2	D	0.03687	0.04366	0.18629
	D	0.03459	0.04136	0.18391
	GATE_N	0.03816	0.04661	0.20642
	GATE_N	0.04038	0.04881	0.20648
	RESET_B	0.03131	0.03679	0.14289
	RESET_B	0.02853	0.03397	0.14001

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.02033	0.02924	0.17563
	D	0.02264	0.03154	0.17730
	GATE_N	0.02332	0.03390	0.20141
	GATE_N	0.02579	0.03635	0.20259
	RESET_B	0.01684	0.02540	0.15874
	RESET_B	0.01956	0.02811	0.16084
sky130_fd_sc_hs__dlrbn_2	D	0.02413	0.03211	0.17594
	D	0.02642	0.03428	0.17745
	GATE_N	0.02714	0.03647	0.19931
	GATE_N	0.02958	0.03890	0.20130
	RESET_B	0.02004	0.02757	0.15794
	RESET_B	0.02282	0.03033	0.16017

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.02533	0.03424	0.18053
	D	0.02763	0.03653	0.18253
	GATE_N	0.02831	0.03886	0.20659
	GATE_N	0.03079	0.04132	0.20798
	RESET_B	0.02326	0.03181	0.16687
	RESET_B	0.02597	0.03452	0.16792
sky130_fd_sc_hs__dlrbn_2	D	0.02950	0.03742	0.18363
	D	0.03178	0.03962	0.18347
	GATE_N	0.03250	0.04199	0.20574
	GATE_N	0.03495	0.04432	0.20716
	RESET_B	0.02713	0.03476	0.16747
	RESET_B	0.02992	0.03740	0.16755

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.02461	0.03252	0.17833
	D	0.02230	0.03021	0.17585
	GATE_N	0.02578	0.03542	0.19642
	GATE_N	0.02800	0.03762	0.19845
	RESET_B	0.01868	0.02579	0.14917
	RESET_B	0.01597	0.02306	0.14633
sky130_fd_sc_hs__dlrbn_2	D	0.03095	0.03769	0.18023
	D	0.02866	0.03541	0.17744
	GATE_N	0.03224	0.04069	0.19801
	GATE_N	0.03446	0.04289	0.19950
	RESET_B	0.02522	0.03054	0.13561
	RESET_B	0.02244	0.02776	0.13241

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)	0.01654	0.03259	0.29607
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.01216	0.02820	0.29169
	(!GATE_N * !RESET_B * !Q * Q_N)	0.02325	0.03984	0.32790
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01915	0.03573	0.32379
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)	0.01760	0.03323	0.28951
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.01324	0.02887	0.28516
	(!GATE_N * !RESET_B * !Q * Q_N)	0.02177	0.03798	0.31902
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01768	0.03390	0.31495

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)	0.00829	0.02555	0.29210
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.01267	0.02994	0.29647
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01770	0.03561	0.32508
	(!GATE_N * !RESET_B * !Q * Q_N)	0.02182	0.03972	0.32920
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)	0.00927	0.02604	0.28538
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.01362	0.03040	0.28973
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01709	0.03453	0.31684
	(!GATE_N * !RESET_B * !Q * Q_N)	0.02117	0.03861	0.32093

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)	0.02141	0.04146	0.36774
	(D * RESET_B * Q * !Q_N)	0.01673	0.03677	0.36307
	(D * !RESET_B * !Q * Q_N)	0.03069	0.05066	0.37422
	(D * !RESET_B * !Q * Q_N)	0.02575	0.04569	0.36926
	(!D * !Q * Q_N)	0.02029	0.04033	0.36689
	(!D * !Q * Q_N)	0.01562	0.03563	0.36222
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.02252	0.04206	0.35984
	(D * RESET_B * Q * !Q_N)	0.01789	0.03739	0.35518
	(D * !RESET_B * !Q * Q_N)	0.03006	0.04949	0.36443
	(D * !RESET_B * !Q * Q_N)	0.02515	0.04456	0.35950
	(!D * !Q * Q_N)	0.01931	0.03883	0.35712
	(!D * !Q * Q_N)	0.01467	0.03417	0.35246

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)	0.01918	0.03940	0.36153
	(D * RESET_B * Q * !Q_N)	0.02388	0.04411	0.36622
	(D * !RESET_B * !Q * Q_N)	0.02405	0.04404	0.36528
	(D * !RESET_B * !Q * Q_N)	0.02902	0.04901	0.37022
	(!D * !Q * Q_N)	0.01689	0.03726	0.35974
	(!D * !Q * Q_N)	0.02159	0.04196	0.36443
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.02016	0.03983	0.35339
	(D * RESET_B * Q * !Q_N)	0.02482	0.04449	0.35804
	(D * !RESET_B * !Q * Q_N)	0.02264	0.04204	0.35459
	(D * !RESET_B * !Q * Q_N)	0.02757	0.04698	0.35950
	(!D * !Q * Q_N)	0.01605	0.03585	0.35001
	(!D * !Q * Q_N)	0.02072	0.04051	0.35466

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)	0.01404	0.01405	0.01404
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00930	0.00930	0.00930
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.01330	0.01330	0.01329
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00840	0.00840	0.00841

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)	0.01014	0.00999	0.00995
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.01489	0.01472	0.01468
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00914	0.00899	0.00895
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.01405	0.01388	0.01383

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00219	0.00248	0.00297	1.67273	1.65992
sky130_fd_sc_hs__dlrbp_2	0.00220	0.00248	0.00297	3.29960	3.35261

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	1051.71000	1376.62000
sky130_fd_sc_hs__dlrbp_2	0.00000	1020.26000	1277.94000

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)	0.15615	0.50179	5.54758
	GATE->Q (-R)	0.14046	0.47941	5.14382
	RESET_B->Q (RR)	0.06128	0.43623	5.77608
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.16265	0.42416	5.47877
	GATE->Q (-R)	0.14575	0.39943	5.07214
	RESET_B->Q (RR)	0.06588	0.36865	5.79393

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.12607	0.47847	5.00578
	GATE->Q (-F)	0.13832	0.32686	2.34515
	RESET_B->Q (FF)	0.05674	0.43457	5.23288
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.13698	0.45485	5.08780
	GATE->Q (-F)	0.14890	0.30177	2.41570
	RESET_B->Q (FF)	0.06146	0.40929	5.31414

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)	0.15572	0.65400	7.74912
	GATE->Q_N (-R)	0.16802	0.50238	5.09026
	RESET_B->Q_N (FR)	0.08859	0.59999	7.72083
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.17748	0.58364	7.70419
	GATE->Q_N (-R)	0.18944	0.43066	5.03465
	RESET_B->Q_N (FR)	0.10227	0.52784	7.65420

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)	0.17944	0.36321	2.70060
	GATE->Q_N (-F)	0.16375	0.34070	2.29776
	RESET_B->Q_N (RF)	0.08460	0.28896	2.54146
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.20039	0.34407	2.82560
	GATE->Q_N (-F)	0.18354	0.31929	2.41970
	RESET_B->Q_N (RF)	0.10342	0.28349	2.78659

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 ()**	0.06922	0.58472	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.08023	0.58472	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	0.02980	0.03753	0.17982
	D	0.02763	0.03533	0.17740
	GATE	0.03152	0.04143	0.21233
	GATE	0.02910	0.03900	0.20991
	RESET_B	0.02500	0.03207	0.15582
	RESET_B	0.02220	0.02920	0.15295
sky130_fd_sc_hs__dlrbp_2	D	0.03667	0.04333	0.18551
	D	0.03450	0.04117	0.18281
	GATE	0.03833	0.04724	0.21751
	GATE	0.03591	0.04480	0.21499
	RESET_B	0.03170	0.03835	0.17334
	RESET_B	0.02890	0.03554	0.17031

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.02085	0.02951	0.17072
	D	0.02301	0.03167	0.17285
	GATE	0.02479	0.03456	0.19187
	GATE	0.02267	0.03242	0.18959
	RESET_B	0.01713	0.02568	0.15768
	RESET_B	0.01993	0.02843	0.16043
sky130_fd_sc_hs__dlrbp_2	D	0.02561	0.03312	0.17632
	D	0.02777	0.03528	0.17725
	GATE	0.02962	0.03823	0.19591
	GATE	0.02747	0.03607	0.19367
	RESET_B	0.02166	0.02993	0.16958
	RESET_B	0.02445	0.03265	0.17145

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.02585	0.03454	0.17783
	D	0.02801	0.03668	0.17851
	GATE	0.02978	0.03956	0.19745
	GATE	0.02767	0.03742	0.19531
	RESET_B	0.02353	0.03206	0.16647
	RESET_B	0.02633	0.03482	0.16775
sky130_fd_sc_hs__dlrbp_2	D	0.02992	0.03743	0.18305
	D	0.03208	0.03959	0.18259
	GATE	0.03393	0.04251	0.20131
	GATE	0.03178	0.04037	0.19907
	RESET_B	0.02733	0.03549	0.17809
	RESET_B	0.03013	0.03828	0.17816

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.02364	0.03139	0.17295
	D	0.02147	0.02916	0.17059
	GATE	0.02536	0.03530	0.20536
	GATE	0.02294	0.03284	0.20283
	RESET_B	0.01865	0.02564	0.14857
	RESET_B	0.01585	0.02283	0.14577
sky130_fd_sc_hs__dlrbp_2	D	0.03012	0.03678	0.17835
	D	0.02794	0.03460	0.17551
	GATE	0.03177	0.04065	0.21039
	GATE	0.02935	0.03822	0.20776
	RESET_B	0.02495	0.03163	0.16633
	RESET_B	0.02214	0.02881	0.16302

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)	0.02158	0.03783	0.31759
	(GATE * !RESET_B * !Q * Q_N)	0.01784	0.03406	0.31382
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.01632	0.03209	0.28870
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.01230	0.02803	0.28465
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.02082	0.03705	0.31689
	(GATE * !RESET_B * !Q * Q_N)	0.01708	0.03327	0.31313
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.01742	0.03316	0.28988
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.01336	0.02907	0.28580

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)	0.01808	0.03557	0.31666
	(GATE * !RESET_B * !Q * Q_N)	0.02184	0.03935	0.32043
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00786	0.02481	0.28447
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.01190	0.02886	0.28851
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.01734	0.03482	0.31603
	(GATE * !RESET_B * !Q * Q_N)	0.02112	0.03860	0.31981
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00907	0.02598	0.28578
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.01315	0.03007	0.28985

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)	0.02185	0.04156	0.35988
	(D * RESET_B * Q * !Q_N)	0.01732	0.03701	0.35534
	(D * !RESET_B * !Q * Q_N)	0.02488	0.04551	0.38375
	(D * !RESET_B * !Q * Q_N)	0.02063	0.04123	0.37948
	(!D * !Q * Q_N)	0.02037	0.04006	0.35862
	(!D * !Q * Q_N)	0.01584	0.03550	0.35408
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.02296	0.04269	0.36109
	(D * RESET_B * Q * !Q_N)	0.01839	0.03811	0.35653
	(D * !RESET_B * !Q * Q_N)	0.02401	0.04466	0.38292
	(D * !RESET_B * !Q * Q_N)	0.01975	0.04039	0.37865
	(!D * !Q * Q_N)	0.01949	0.03921	0.35787
	(!D * !Q * Q_N)	0.01492	0.03462	0.35331

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)	0.01777	0.03750	0.35200
	(D * RESET_B * Q * !Q_N)	0.02232	0.04206	0.35655
	(D * !RESET_B * !Q * Q_N)	0.02622	0.04677	0.37603
	(D * !RESET_B * !Q * Q_N)	0.03050	0.05104	0.38031
	(!D * !Q * Q_N)	0.01567	0.03557	0.35120
	(!D * !Q * Q_N)	0.02023	0.04013	0.35575
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.01881	0.03855	0.35313
	(D * RESET_B * Q * !Q_N)	0.02338	0.04313	0.35770
	(D * !RESET_B * !Q * Q_N)	0.02527	0.04582	0.37516
	(D * !RESET_B * !Q * Q_N)	0.02954	0.05008	0.37943
	(!D * !Q * Q_N)	0.01482	0.03473	0.35044
	(!D * !Q * Q_N)	0.01939	0.03931	0.35502

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)	0.01408	0.01409	0.01407
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00924	0.00923	0.00924
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.01324	0.01325	0.01324
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00839	0.00838	0.00839

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)	0.01011	0.00996	0.00992
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.01496	0.01479	0.01474
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00923	0.00907	0.00903
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.01409	0.01392	0.01388

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00218	0.00251	0.00283	1.68929
sky130_fd_sc_hs__dlrtn_2	0.00220	0.00249	0.00293	3.30996
sky130_fd_sc_hs__dlrtn_4	0.00220	0.00250	0.00477	6.05575

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	773.02600	1017.84000
sky130_fd_sc_hs__dlrtn_2	0.00000	844.28800	1130.57000
sky130_fd_sc_hs__dlrtn_4	0.00000	1378.82000	2191.11000

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)	0.14687	0.49147	5.52862
	GATE_N->Q (-R)	0.16605	0.68103	7.99332
	RESET_B->Q (RR)	0.05224	0.40251	5.52201
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.15513	0.42186	5.58394
	GATE_N->Q (-R)	0.17427	0.61162	8.04550
	RESET_B->Q (RR)	0.05705	0.34357	5.65065
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.16982	0.37722	5.50765
	GATE_N->Q (-R)	0.18895	0.56715	7.96616
	RESET_B->Q (RR)	0.06157	0.29234	5.76462

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.12020	0.46533	4.93121
	GATE_N->Q (-F)	0.12269	0.49715	5.28818
	RESET_B->Q (FF)	0.05249	0.42909	5.36737
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.12296	0.42171	4.85048
	GATE_N->Q (-F)	0.12513	0.45331	5.20694
	RESET_B->Q (FF)	0.05450	0.38782	5.28278
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.13281	0.40015	4.81326
	GATE_N->Q (-F)	0.13713	0.43592	5.18311
	RESET_B->Q (FF)	0.05904	0.36415	5.40555

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 ()**	0.06481	0.58472	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.07362	0.58472	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.08684	0.58472	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	0.04894	0.06498	0.35355
	D	0.04466	0.06070	0.34968
	GATE_N	0.05090	0.07049	0.39177
	GATE_N	0.05521	0.07481	0.39642
	RESET_B	0.03946	0.05201	0.27978
	RESET_B	0.03412	0.04667	0.27484
sky130_fd_sc_hs__dlrtn_2	D	0.05249	0.06801	0.35703
	D	0.04823	0.06376	0.35358
	GATE_N	0.05441	0.07362	0.39615
	GATE_N	0.05872	0.07802	0.40103
	RESET_B	0.04261	0.05544	0.28854
	RESET_B	0.03709	0.04997	0.28358
sky130_fd_sc_hs__dlrtn_4	D	0.09819	0.11225	0.39942
	D	0.09372	0.10778	0.39639
	GATE_N	0.10173	0.11926	0.43585
	GATE_N	0.10583	0.12343	0.44118
	RESET_B	0.08856	0.11561	0.60383
	RESET_B	0.07954	0.10673	0.59523

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.02765	0.04580	0.33855
	D	0.03194	0.04998	0.34076
	GATE_N	0.03178	0.05339	0.38876
	GATE_N	0.03663	0.05824	0.39206
	RESET_B	0.01981	0.03523	0.27210
	RESET_B	0.02516	0.04052	0.27632
sky130_fd_sc_hs__dlrtn_2	D	0.03473	0.05199	0.34515
	D	0.03900	0.05610	0.34599
	GATE_N	0.03902	0.05971	0.39709
	GATE_N	0.04379	0.06443	0.39752
	RESET_B	0.02668	0.04245	0.30797
	RESET_B	0.03218	0.04796	0.31086
sky130_fd_sc_hs__dlrtn_4	D	0.05141	0.06734	0.36939
	D	0.05590	0.07150	0.36843
	GATE_N	0.05591	0.07539	0.42247
	GATE_N	0.06089	0.08009	0.42226
	RESET_B	0.04197	0.07143	0.59930
	RESET_B	0.05099	0.08039	0.60545

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)	0.01543	0.03135	0.29144
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.01141	0.02733	0.28744
	(!GATE_N * !RESET_B * !Q)	0.01822	0.03474	0.31987
	(!GATE_N * !RESET_B * !Q)	0.01449	0.03100	0.31614
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.01512	0.03104	0.29118
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.01107	0.02698	0.28714
	(!GATE_N * !RESET_B * !Q)	0.01931	0.03581	0.32099
	(!GATE_N * !RESET_B * !Q)	0.01554	0.03204	0.31723
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.02566	0.04164	0.30195
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.02166	0.03760	0.29792
	(!GATE_N * !RESET_B * !Q)	0.02196	0.03839	0.32322
	(!GATE_N * !RESET_B * !Q)	0.01824	0.03469	0.31950

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)	0.00772	0.02485	0.28800
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.01171	0.02887	0.29201
	(!GATE_N * !RESET_B * !Q)	0.01551	0.03330	0.31991
	(!GATE_N * !RESET_B * !Q)	0.01923	0.03702	0.32365
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00733	0.02446	0.28766
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.01136	0.02852	0.29171
	(!GATE_N * !RESET_B * !Q)	0.01665	0.03444	0.32112
	(!GATE_N * !RESET_B * !Q)	0.02040	0.03822	0.32489
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.01784	0.03499	0.29838
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.02185	0.03903	0.30239
	(!GATE_N * !RESET_B * !Q)	0.02034	0.03807	0.32452
	(!GATE_N * !RESET_B * !Q)	0.02405	0.04181	0.32825

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)	0.02055	0.04073	0.36608
	(D * RESET_B * Q)	0.01597	0.03612	0.36148
	(D * !RESET_B * !Q)	0.02731	0.04741	0.36992
	(D * !RESET_B * !Q)	0.02247	0.04253	0.36506
	(!D * !Q)	0.01616	0.03634	0.36201
	(!D * !Q)	0.01159	0.03173	0.35742
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.02013	0.04034	0.36579
	(D * RESET_B * Q)	0.01561	0.03577	0.36125
	(D * !RESET_B * !Q)	0.02844	0.04858	0.37121
	(D * !RESET_B * !Q)	0.02363	0.04374	0.36638
	(!D * !Q)	0.01711	0.03731	0.36306
	(!D * !Q)	0.01259	0.03275	0.35851
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.03081	0.05099	0.37663
	(D * RESET_B * Q)	0.02626	0.04642	0.37206
	(D * !RESET_B * !Q)	0.03219	0.05232	0.37517
	(D * !RESET_B * !Q)	0.02734	0.04744	0.37032
	(!D * !Q)	0.01930	0.03948	0.36534
	(!D * !Q)	0.01476	0.03490	0.36078

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)	0.01697	0.03733	0.35976
	(D * RESET_B * Q)	0.02158	0.04194	0.36436
	(D * !RESET_B * !Q)	0.01876	0.03892	0.35981
	(D * !RESET_B * !Q)	0.02364	0.04381	0.36468
	(!D * !Q)	0.01294	0.03343	0.35618
	(!D * !Q)	0.01755	0.03803	0.36076
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.01670	0.03713	0.35958
	(D * RESET_B * Q)	0.02126	0.04167	0.36413
	(D * !RESET_B * !Q)	0.01992	0.04011	0.36105
	(D * !RESET_B * !Q)	0.02476	0.04496	0.36588
	(!D * !Q)	0.01411	0.03461	0.35744
	(!D * !Q)	0.01867	0.03917	0.36197
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.02733	0.04768	0.37036
	(D * RESET_B * Q)	0.03190	0.05225	0.37493
	(D * !RESET_B * !Q)	0.02257	0.04278	0.36358
	(D * !RESET_B * !Q)	0.02746	0.04766	0.36846
	(!D * !Q)	0.01634	0.03681	0.35977
	(!D * !Q)	0.02091	0.04138	0.36432

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)	0.01089	0.01091	0.01089
	(D * GATE_N * !Q) + (!D * !Q)	0.00628	0.00627	0.00629
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.01198	0.01199	0.01197
	(D * GATE_N * !Q) + (!D * !Q)	0.00714	0.00713	0.00714
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.01560	0.01564	0.01561
	(D * GATE_N * !Q) + (!D * !Q)	0.00783	0.00780	0.00781

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)	0.00693	0.00679	0.00674
	(D * GATE_N * !Q) + (!D * !Q)	0.01155	0.01141	0.01133
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00792	0.00778	0.00773
	(D * GATE_N * !Q) + (!D * !Q)	0.01277	0.01261	0.01256
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00892	0.00853	0.00841
	(D * GATE_N * !Q) + (!D * !Q)	0.01667	0.01640	0.01620

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00235	0.00253	0.00288	1.71416
sky130_fd_sc_hs__dlrtp_2	0.00232	0.00248	0.00298	3.24880
sky130_fd_sc_hs__dlrtp_4	0.00231	0.00247	0.00455	5.99547

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	772.73700	1015.87000
sky130_fd_sc_hs__dlrtp_2	0.00000	843.96600	1130.76000
sky130_fd_sc_hs__dlrtp_4	0.00000	1378.41000	2188.05000

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)	0.14600	0.48500	5.49123
	GATE->Q (-R)	0.12995	0.46191	5.07893
	RESET_B->Q (RR)	0.05256	0.40481	5.59539
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.15455	0.41100	5.35788
	GATE->Q (-R)	0.13781	0.38682	4.95413
	RESET_B->Q (RR)	0.05668	0.34421	5.64879
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.16958	0.37071	5.33736
	GATE->Q (-R)	0.15452	0.35000	4.95253
	RESET_B->Q (RR)	0.06139	0.29066	5.70264

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.12523	0.48600	5.22100
	GATE->Q (-F)	0.13737	0.33659	2.58399
	RESET_B->Q (FF)	0.05307	0.43520	5.43169
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.12852	0.43738	4.99888
	GATE->Q (-F)	0.13919	0.28353	2.32558
	RESET_B->Q (FF)	0.05279	0.38216	5.18878
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.13708	0.40903	4.86031
	GATE->Q (-F)	0.14757	0.26054	2.26613
	RESET_B->Q (FF)	0.05838	0.36237	5.36395

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 ()**	0.06481	0.58472	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.06922	0.58472	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.08464	0.58472	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	0.04893	0.06434	0.34709
	D	0.04420	0.05962	0.34272
	GATE	0.05260	0.07248	0.41377
	GATE	0.04764	0.06754	0.40870
	RESET_B	0.03898	0.05096	0.27219
	RESET_B	0.03356	0.04553	0.26714
sky130_fd_sc_hs__dlrtp_2	D	0.05278	0.06776	0.35091
	D	0.04805	0.06305	0.34670
	GATE	0.05612	0.07566	0.41704
	GATE	0.05119	0.07085	0.41196
	RESET_B	0.04241	0.05594	0.30586
	RESET_B	0.03678	0.05032	0.30089
sky130_fd_sc_hs__dlrtp_4	D	0.09755	0.11110	0.39044
	D	0.09278	0.10633	0.38655
	GATE	0.10055	0.11860	0.45704
	GATE	0.09561	0.11370	0.45164
	RESET_B	0.08756	0.11532	0.61801
	RESET_B	0.07893	0.10685	0.61040

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.02757	0.04525	0.33102
	D	0.03230	0.04992	0.33499
	GATE	0.03644	0.05634	0.37411
	GATE	0.03204	0.05190	0.36957
	RESET_B	0.02057	0.03552	0.25279
	RESET_B	0.02602	0.04089	0.25806
sky130_fd_sc_hs__dlrtp_2	D	0.03411	0.05081	0.33596
	D	0.03885	0.05538	0.33927
	GATE	0.04244	0.06137	0.37831
	GATE	0.03815	0.05695	0.37269
	RESET_B	0.02641	0.04239	0.30186
	RESET_B	0.03203	0.04801	0.30581
sky130_fd_sc_hs__dlrtp_4	D	0.05123	0.06629	0.35560
	D	0.05600	0.07072	0.35995
	GATE	0.05905	0.07591	0.39172
	GATE	0.05482	0.07157	0.38749
	RESET_B	0.04220	0.07221	0.60720
	RESET_B	0.05084	0.08072	0.61105

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)	0.01885	0.03502	0.31488
	(GATE * !RESET_B * !Q)	0.01473	0.03089	0.31074
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.01598	0.03167	0.28828
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.01153	0.02720	0.28382
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.02004	0.03616	0.31585
	(GATE * !RESET_B * !Q)	0.01590	0.03201	0.31171
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.01567	0.03131	0.28794
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.01124	0.02688	0.28352
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.02252	0.03837	0.31542
	(GATE * !RESET_B * !Q)	0.01839	0.03424	0.31130
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.02622	0.04169	0.29596
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.02179	0.03726	0.29154

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)	0.01474	0.03216	0.31334
	(GATE * !RESET_B * !Q)	0.01889	0.03631	0.31749
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00714	0.02401	0.28372
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.01160	0.02848	0.28818
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.01603	0.03342	0.31451
	(GATE * !RESET_B * !Q)	0.02018	0.03756	0.31866
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00687	0.02371	0.28344
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.01130	0.02815	0.28786
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01966	0.03685	0.31541
	(GATE * !RESET_B * !Q)	0.02379	0.04100	0.31954
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.01737	0.03406	0.29145
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.02180	0.03848	0.29586

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)	0.02170	0.04139	0.36075
	(D * RESET_B * Q)	0.01703	0.03670	0.35607
	(D * !RESET_B * !Q)	0.02232	0.04296	0.38253
	(D * !RESET_B * !Q)	0.01797	0.03858	0.37816
	(!D * !Q)	0.01756	0.03723	0.35686
	(!D * !Q)	0.01289	0.03254	0.35217
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.02109	0.04077	0.35914
	(D * RESET_B * Q)	0.01648	0.03615	0.35452
	(D * !RESET_B * !Q)	0.02318	0.04377	0.38224
	(D * !RESET_B * !Q)	0.01887	0.03944	0.37791
	(!D * !Q)	0.01831	0.03798	0.35659
	(!D * !Q)	0.01371	0.03336	0.35200
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.03152	0.05100	0.36698
	(D * RESET_B * Q)	0.02693	0.04638	0.36238
	(D * !RESET_B * !Q)	0.02566	0.04591	0.38171
	(D * !RESET_B * !Q)	0.02137	0.04159	0.37739
	(!D * !Q)	0.02035	0.03983	0.35597
	(!D * !Q)	0.01576	0.03521	0.35136

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)	0.01706	0.03681	0.35243
	(D * RESET_B * Q)	0.02176	0.04151	0.35712
	(D * !RESET_B * !Q)	0.02302	0.04362	0.37417
	(D * !RESET_B * !Q)	0.02742	0.04798	0.37855
	(!D * !Q)	0.01265	0.03257	0.34932
	(!D * !Q)	0.01735	0.03726	0.35401
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.01674	0.03644	0.35091
	(D * RESET_B * Q)	0.02135	0.04106	0.35553
	(D * !RESET_B * !Q)	0.02431	0.04481	0.37415
	(D * !RESET_B * !Q)	0.02864	0.04914	0.37848
	(!D * !Q)	0.01375	0.03361	0.34925
	(!D * !Q)	0.01836	0.03823	0.35387
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.02725	0.04685	0.35905
	(D * RESET_B * Q)	0.03187	0.05146	0.36365
	(D * !RESET_B * !Q)	0.02796	0.04822	0.37534
	(D * !RESET_B * !Q)	0.03230	0.05256	0.37967
	(!D * !Q)	0.01576	0.03551	0.34894
	(!D * !Q)	0.02038	0.04014	0.35354

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)	0.01088	0.01091	0.01089
	(D * !GATE * !Q) + (!D * !Q)	0.00622	0.00620	0.00622
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.01195	0.01195	0.01194
	(D * !GATE * !Q) + (!D * !Q)	0.00709	0.00708	0.00709
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.01550	0.01554	0.01552
	(D * !GATE * !Q) + (!D * !Q)	0.00802	0.00800	0.00800

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)	0.00695	0.00679	0.00674
	(D * !GATE * !Q) + (!D * !Q)	0.01160	0.01148	0.01140
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00796	0.00781	0.00777
	(D * !GATE * !Q) + (!D * !Q)	0.01283	0.01266	0.01261
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00900	0.00862	0.00851
	(D * !GATE * !Q) + (!D * !Q)	0.01648	0.01621	0.01601

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00233	0.00253	1.68704	1.70185
sky130_fd_sc_hs__dlxbn_2	0.00221	0.00251	2.71186	3.18563

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	959.38800	1376.17000
sky130_fd_sc_hs__dlxbn_2	0.00000	972.77100	1277.46000

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)	0.14791	0.50484	5.69165
	GATE_N->Q (-R)	0.16805	0.69659	8.16286
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.15384	0.43156	5.27227
	GATE_N->Q (-R)	0.17377	0.62254	7.73376

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.12612	0.48166	5.07577
	GATE_N->Q (-F)	0.12909	0.51499	5.43923
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.12967	0.41945	4.30664
	GATE_N->Q (-F)	0.13298	0.45285	4.67132

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)	0.15582	0.67386	8.15003
	GATE_N->Q_N (-R)	0.15887	0.70722	8.51416
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.17041	0.58128	7.69644
	GATE_N->Q_N (-R)	0.17379	0.61467	8.06226

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)	0.17082	0.37970	3.14402
	GATE_N->Q_N (-F)	0.19096	0.57123	5.61451
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.19365	0.36109	3.14137
	GATE_N->Q_N (-F)	0.21365	0.55172	5.60206

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.02838	0.03696	0.18360
	D	0.02625	0.03483	0.18114
	GATE_N	0.02924	0.03962	0.20257
	GATE_N	0.03156	0.04194	0.20425
sky130_fd_sc_hs__dlxbn_2	D	0.03450	0.04235	0.18889
	D	0.03247	0.04027	0.18659
	GATE_N	0.03545	0.04516	0.21053
	GATE_N	0.03776	0.04742	0.21039

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.02118	0.03034	0.17602
	D	0.02330	0.03246	0.17758
	GATE_N	0.02348	0.03440	0.20148
	GATE_N	0.02580	0.03671	0.20333
sky130_fd_sc_hs__dlxbn_2	D	0.02433	0.03275	0.17791
	D	0.02638	0.03471	0.17984
	GATE_N	0.02660	0.03665	0.20363
	GATE_N	0.02892	0.03895	0.20581

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.02648	0.03563	0.18176
	D	0.02860	0.03776	0.18326
	GATE_N	0.02879	0.03973	0.20700
	GATE_N	0.03111	0.04203	0.20895
sky130_fd_sc_hs__dlxbn_2	D	0.02971	0.03805	0.18700
	D	0.03176	0.04006	0.18641
	GATE_N	0.03198	0.04213	0.21132
	GATE_N	0.03430	0.04435	0.21200

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.02329	0.03195	0.17762
	D	0.02116	0.02974	0.17526
	GATE_N	0.02416	0.03452	0.19633
	GATE_N	0.02648	0.03683	0.19853
sky130_fd_sc_hs__dlxbn_2	D	0.02900	0.03685	0.18318
	D	0.02696	0.03477	0.18045
	GATE_N	0.02997	0.03964	0.20137
	GATE_N	0.03228	0.04192	0.20352

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)	0.01541	0.03135	0.29199
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.01114	0.02706	0.28772
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.01636	0.03233	0.29301
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.01229	0.02823	0.28892

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)	0.00706	0.02420	0.28790
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.01133	0.02849	0.29215
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00823	0.02541	0.28914
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.01230	0.02950	0.29323

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)	0.02056	0.04066	0.36620
	(D * Q * !Q_N)	0.01592	0.03602	0.36155
	(!D * !Q * Q_N)	0.01960	0.03971	0.36549
	(!D * !Q * Q_N)	0.01497	0.03505	0.36084
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.02162	0.04174	0.36726
	(D * Q * !Q_N)	0.01701	0.03712	0.36265
	(!D * !Q * Q_N)	0.01871	0.03883	0.36459
	(!D * !Q * Q_N)	0.01411	0.03420	0.35997

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)	0.01674	0.03711	0.35975
	(D * Q * !Q_N)	0.02139	0.04177	0.36440
	(!D * !Q * Q_N)	0.01635	0.03681	0.35984
	(!D * !Q * Q_N)	0.02100	0.04146	0.36447
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.01779	0.03814	0.36083
	(D * Q * !Q_N)	0.02242	0.04278	0.36546
	(!D * !Q * Q_N)	0.01544	0.03588	0.35895
	(!D * !Q * Q_N)	0.02007	0.04051	0.36356

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00254	1.68699	1.68047

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	959.09500	1376.31000

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)	0.14578	0.49605	5.57583
	GATE->Q (-R)	0.12979	0.47227	5.16582

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.13030	0.49393	5.18587
	GATE->Q (-F)	0.13942	0.33794	2.51062

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)	0.16045	0.68175	8.17550
	GATE->Q_N (-R)	0.16959	0.52596	5.50320

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)	0.16878	0.36957	2.98304
	GATE->Q_N (-F)	0.15279	0.34561	2.57330

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.02832	0.03672	0.18043
	D	0.02621	0.03460	0.17790
	GATE	0.02991	0.04056	0.21244
	GATE	0.02759	0.03820	0.21003

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.02104	0.02997	0.17207
	D	0.02315	0.03207	0.17403
	GATE	0.02489	0.03489	0.19286
	GATE	0.02257	0.03254	0.19030

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.02622	0.03513	0.17810
	D	0.02833	0.03724	0.17966
	GATE	0.03008	0.04013	0.19929
	GATE	0.02775	0.03774	0.19672

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.02318	0.03157	0.17420
	D	0.02106	0.02944	0.17197
	GATE	0.02476	0.03540	0.20667
	GATE	0.02244	0.03305	0.20414

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)	0.01558	0.03126	0.28800
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.01137	0.02700	0.28376

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)	0.00688	0.02372	0.28353
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.01112	0.02798	0.28777

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)	0.02072	0.04038	0.35874
	(D * Q * !Q_N)	0.01608	0.03572	0.35408
	(!D * !Q * Q_N)	0.02035	0.04000	0.35859
	(!D * !Q * Q_N)	0.01571	0.03533	0.35394

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)	0.01655	0.03624	0.35090
	(D * Q * !Q_N)	0.02120	0.04091	0.35556
	(!D * !Q * Q_N)	0.01542	0.03529	0.35108
	(!D * !Q * Q_N)	0.02008	0.03995	0.35574

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00231	0.00256	1.70687
sky130_fd_sc_hs__dlxtn_2	0.00237	0.00256	2.99725
sky130_fd_sc_hs__dlxtn_4	0.00236	0.00255	6.12420

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	728.34500	1013.54000
sky130_fd_sc_hs__dlxtn_2	0.00000	777.23600	1130.62000
sky130_fd_sc_hs__dlxtn_4	0.00000	1206.42000	1469.02000

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)	0.13715	0.48623	5.59403
	GATE_N->Q (-R)	0.15698	0.67620	8.06101
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.14013	0.40106	5.22317
	GATE_N->Q (-R)	0.15903	0.58956	7.68502
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.15342	0.35679	5.48401
	GATE_N->Q (-R)	0.17117	0.54396	7.93879

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.11806	0.46273	4.94226
	GATE_N->Q (-F)	0.12210	0.49645	5.30370
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.12015	0.41062	4.54822
	GATE_N->Q (-F)	0.12330	0.44359	4.90920
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.13200	0.40175	4.92040
	GATE_N->Q (-F)	0.13709	0.43838	5.29560

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.04490	0.06156	0.35208
	D	0.04049	0.05716	0.34803
	GATE_N	0.04644	0.06662	0.38982
	GATE_N	0.05118	0.07137	0.39485
sky130_fd_sc_hs__dlxtn_2	D	0.04830	0.06466	0.35572
	D	0.04381	0.06020	0.35204
	GATE_N	0.04967	0.06967	0.39337
	GATE_N	0.05438	0.07445	0.39946
sky130_fd_sc_hs__dlxtn_4	D	0.07761	0.09246	0.38265
	D	0.07314	0.08803	0.37955
	GATE_N	0.07969	0.09804	0.41822
	GATE_N	0.08441	0.10287	0.42455

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.02738	0.04546	0.33811
	D	0.03181	0.04975	0.34040
	GATE_N	0.03195	0.05365	0.38906
	GATE_N	0.03669	0.05837	0.39223
sky130_fd_sc_hs__dlxtn_2	D	0.03311	0.05044	0.34016
	D	0.03762	0.05467	0.34464
	GATE_N	0.03768	0.05854	0.39371
	GATE_N	0.04238	0.06307	0.39615
sky130_fd_sc_hs__dlxtn_4	D	0.05089	0.06663	0.36586
	D	0.05539	0.07088	0.36534
	GATE_N	0.05557	0.07498	0.41721
	GATE_N	0.06031	0.07964	0.41921

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.01456	0.03033	0.29052
	GATE_N	0.01016	0.02590	0.28610
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.01441	0.03019	0.29052
	GATE_N	0.00994	0.02568	0.28602
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.01976	0.03551	0.29586
	GATE_N	0.01529	0.03101	0.29137

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00658	0.02357	0.28681
	GATE_N	0.01098	0.02800	0.29122
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00639	0.02340	0.28678
	GATE_N	0.01087	0.02791	0.29128
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.01174	0.02873	0.29216
	GATE_N	0.01621	0.03324	0.29665

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.02023	0.04024	0.36604
	(D * Q)	0.01549	0.03548	0.36128
	(!D * !Q)	0.01695	0.03696	0.36301
	(!D * !Q)	0.01222	0.03219	0.35825
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.01977	0.03986	0.36547
	(D * Q)	0.01506	0.03512	0.36074
	(!D * !Q)	0.01763	0.03771	0.36357
	(!D * !Q)	0.01293	0.03297	0.35885
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.02521	0.04527	0.37105
	(D * Q)	0.02050	0.04052	0.36631
	(!D * !Q)	0.01989	0.03992	0.36591
	(!D * !Q)	0.01516	0.03518	0.36118

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.01597	0.03624	0.35912
	(D * Q)	0.02074	0.04101	0.36388
	(!D * !Q)	0.01333	0.03369	0.35694
	(!D * !Q)	0.01810	0.03845	0.36168
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.01570	0.03602	0.35874
	(D * Q)	0.02044	0.04077	0.36347
	(!D * !Q)	0.01430	0.03470	0.35779
	(!D * !Q)	0.01904	0.03943	0.36250
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.02109	0.04135	0.36430
	(D * Q)	0.02584	0.04609	0.36903
	(!D * !Q)	0.01650	0.03688	0.36010
	(!D * !Q)	0.02124	0.04162	0.36482

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00227	0.00262	1.65846

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	715.36000	1011.58000

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)	0.16327	0.51132	5.63880
	GATE->Q (-R)	0.13244	0.47668	5.24758

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.12751	0.47985	5.03086
	GATE->Q (-F)	0.13812	0.34038	2.61998

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.04689	0.06309	0.35184
	D	0.04235	0.05857	0.34744
	GATE	0.05042	0.06832	0.34820
	GATE	0.04549	0.06338	0.34347

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.03019	0.04799	0.33745
	D	0.03471	0.05252	0.34188
	GATE	0.03846	0.05772	0.39165
	GATE	0.03399	0.05310	0.38716

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.01521	0.03144	0.29286
	!GATE	0.01092	0.02711	0.28854

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00682	0.02397	0.28910
	!GATE	0.01115	0.02831	0.29342

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.02069	0.04094	0.36661
	(D * Q)	0.01599	0.03619	0.36188
	(!D * !Q)	0.01776	0.03792	0.36340
	(!D * !Q)	0.01304	0.03318	0.35867

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.01451	0.03490	0.35732
	(D * Q)	0.01925	0.03965	0.36205
	(!D * !Q)	0.01198	0.03245	0.35524
	(!D * !Q)	0.01672	0.03719	0.35997

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00188	1.70765
sky130_fd_sc_hs__dlygate4sd2_1	0.00189	1.69960
sky130_fd_sc_hs__dlygate4sd3_1	0.00191	1.71716

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	85.99510	131.79700
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	74.99320	120.79600
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	74.87070	120.67400

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)**	0.10589	0.44557	5.16976
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.13214	0.48256	5.25107
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.22785	0.60350	5.58344

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.12030	0.50913	5.61481
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.14769	0.54442	5.63396
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.22630	0.65075	5.79314

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01717	0.02411	0.15793
	A	0.01362	0.02055	0.15427
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01794	0.02405	0.15156
	A	0.01436	0.02047	0.14839
sky130_fd_sc_hs__dlygate4sd3_1	A	0.02133	0.02667	0.15012
	A	0.01771	0.02305	0.14686

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01437	0.02188	0.15361
	A	0.01794	0.02540	0.15706
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01531	0.02189	0.14744
	A	0.01891	0.02546	0.15095
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01973	0.02435	0.14535
	A	0.02337	0.02797	0.14897

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00236	0.00438	0.90399
sky130_fd_sc_hs__ebufn_2	0.00257	0.00574	1.44203
sky130_fd_sc_hs__ebufn_4	0.00282	0.00879	2.80384
sky130_fd_sc_hs__ebufn_8	0.00542	0.01462	4.65839

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	444.95800	723.31800
sky130_fd_sc_hs__ebufn_2	0.00000	211.64200	283.33900
sky130_fd_sc_hs__ebufn_4	0.00000	226.25500	481.76800
sky130_fd_sc_hs__ebufn_8	0.00000	371.75400	959.29100

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)	0.04914	0.49417	5.58468
	TE_B->Z (RR)	0.02227	0.37031	5.34314
	TE_B->Z (FR)	0.03532	0.60639	7.90077
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.04825	0.41134	5.30979
	TE_B->Z (RR)	0.02459	0.37121	5.34402
	TE_B->Z (FR)	0.03610	0.52116	7.75408
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.05497	0.35462	5.33501
	TE_B->Z (RR)	0.03236	0.37349	5.34634
	TE_B->Z (FR)	0.03415	0.40927	7.49788
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.05907	0.30627	5.31916
	TE_B->Z (RR)	0.05581	0.37854	5.35143
	TE_B->Z (FR)	0.03876	0.32739	7.04601

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.04998	0.40532	4.61554
	TE_B->Z (RF)	0.02221	0.37032	5.34313
	TE_B->Z (FF)	0.04062	0.38138	4.43951
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.05628	0.38682	4.56456
	TE_B->Z (RF)	0.02447	0.37124	5.34401
	TE_B->Z (FF)	0.04319	0.35400	4.38028
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.07162	0.39133	4.68364
	TE_B->Z (RF)	0.03201	0.37355	5.34630
	TE_B->Z (FF)	0.04858	0.34014	4.42909
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.07252	0.36365	4.68299
	TE_B->Z (RF)	0.05519	0.37869	5.35131
	TE_B->Z (FF)	0.06585	0.35250	4.46130

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.01808	0.03429	0.29369
	A	0.01349	0.02970	0.28921
	TE_B	0.01401	0.03123	0.28980
	TE_B	0.02220	0.03948	0.29836
sky130_fd_sc_hs__ebufn_2	A	0.01683	0.03491	0.32280
	A	0.01195	0.03003	0.31768
	TE_B	0.01219	0.03009	0.30998
	TE_B	0.02290	0.04086	0.32138
sky130_fd_sc_hs__ebufn_4	A	0.02486	0.04409	0.35660
	A	0.01947	0.03872	0.35070
	TE_B	0.01998	0.03867	0.33903
	TE_B	0.03645	0.05516	0.35591
sky130_fd_sc_hs__ebufn_8	A	0.04867	0.08790	0.71798
	A	0.03820	0.07743	0.70634
	TE_B	0.04073	0.05804	0.35559
	TE_B	0.06822	0.08557	0.38349

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00626	0.02320	0.28110
	A	0.01085	0.02776	0.28559
	TE_B	0.00628	0.02362	0.28190
	TE_B	0.01435	0.03166	0.28929
sky130_fd_sc_hs__ebufn_2	A	0.01261	0.02978	0.31123
	A	0.01750	0.03458	0.31594
	TE_B	0.01251	0.03034	0.30829
	TE_B	0.02283	0.04064	0.31812
sky130_fd_sc_hs__ebufn_4	A	0.02696	0.04323	0.34451
	A	0.03233	0.04847	0.34941
	TE_B	0.02548	0.04361	0.33974
	TE_B	0.04139	0.05947	0.35544
sky130_fd_sc_hs__ebufn_8	A	0.05307	0.08694	0.69785
	A	0.06355	0.09726	0.70668
	TE_B	0.05190	0.06807	0.36311
	TE_B	0.07832	0.09448	0.38656

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.01223	0.02836	0.28165
	(TE_B * Z)	0.00759	0.02368	0.27699
	(TE_B * !Z)	0.01234	0.02840	0.28168
	(TE_B * !Z)	0.00772	0.02375	0.27704
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.01092	0.02816	0.30639
	(TE_B * Z)	0.00581	0.02305	0.30128
	(TE_B * !Z)	0.01071	0.02792	0.30606
	(TE_B * !Z)	0.00569	0.02287	0.30103
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.01453	0.03187	0.33077
	(TE_B * Z)	0.00884	0.02616	0.32509
	(TE_B * !Z)	0.01432	0.03157	0.33033
	(TE_B * !Z)	0.00878	0.02602	0.32478
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.02629	0.06193	0.66728
	(TE_B * Z)	0.01525	0.05086	0.65621
	(TE_B * !Z)	0.02605	0.06171	0.66641
	(TE_B * !Z)	0.01528	0.05091	0.65559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00379	0.02081	0.27700
	(TE_B * Z)	0.00843	0.02546	0.28166
	(TE_B * !Z)	0.00391	0.02103	0.27747
	(TE_B * !Z)	0.00854	0.02569	0.28210
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00270	0.02023	0.29952
	(TE_B * Z)	0.00780	0.02537	0.30466
	(TE_B * !Z)	0.00324	0.02102	0.30073
	(TE_B * !Z)	0.00830	0.02609	0.30580
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00391	0.02220	0.32231
	(TE_B * Z)	0.00957	0.02792	0.32805
	(TE_B * !Z)	0.00484	0.02347	0.32428
	(TE_B * !Z)	0.01043	0.02905	0.32988
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00588	0.04375	0.65122
	(TE_B * Z)	0.01690	0.05485	0.66238
	(TE_B * !Z)	0.00775	0.04626	0.65523
	(TE_B * !Z)	0.01863	0.05715	0.66615

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.01129	0.02739	0.28209
	(A * Z)	0.00324	0.01927	0.27399
	(!A * !Z)	0.00842	0.02446	0.28018
	(!A * !Z)	0.00033	0.01635	0.27208
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00818	0.02513	0.30249
	(A * Z)	-0.00219	0.01471	0.29213
	(!A * !Z)	0.00773	0.02440	0.30306
	(!A * !Z)	-0.00268	0.01394	0.29266
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00916	0.02597	0.32356
	(A * Z)	-0.00674	0.00997	0.30757
	(!A * !Z)	0.00930	0.02568	0.32568
	(!A * !Z)	-0.00670	0.00959	0.30967
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.01256	0.02684	0.32133
	(A * Z)	-0.01385	0.00024	0.29476
	(!A * !Z)	0.01250	0.02630	0.32732
	(!A * !Z)	-0.01409	-0.00043	0.30070

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00443	0.02183	0.27956
	(A * Z)	0.01253	0.02995	0.28766
	(!A * !Z)	0.00237	0.01969	0.27788
	(!A * !Z)	0.01048	0.02782	0.28599
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00443	0.02268	0.30123
	(A * Z)	0.01478	0.03312	0.31164
	(!A * !Z)	0.00540	0.02335	0.30216
	(!A * !Z)	0.01580	0.03381	0.31255
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00782	0.02705	0.32601
	(A * Z)	0.02375	0.04312	0.34202
	(!A * !Z)	0.01135	0.03006	0.32921
	(!A * !Z)	0.02736	0.04619	0.34528
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.01611	0.03384	0.33057
	(A * Z)	0.04260	0.06049	0.35719
	(!A * !Z)	0.02330	0.04074	0.33865
	(!A * !Z)	0.04990	0.06742	0.36538

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00191	0.00377	0.00295	1.71928	1.73347

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	658.43400	1005.75000

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)	0.12731	0.49186	5.40310

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.11213	0.35931	2.82751

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)	0.16377	0.51803	5.41452

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)	0.16944	0.38779	2.76307

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)	-0.07259	-0.13417	-0.53392
	setup	CLK (R)	0.08800	0.14673	0.52784

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)	-0.14222	-0.26106	-3.56267
	setup	CLK (R)	0.18526	0.30727	3.58362

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)	-0.07259	-0.13417	-0.53392
	setup	CLK (R)	0.08800	0.14673	0.52784

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)	-0.14222	-0.26106	-3.56267
	setup	CLK (R)	0.18526	0.30727	3.58362

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)	-0.00420	0.01190	0.58709
	setup	CLK (R)	0.20868	0.22396	0.50662

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)	-0.10884	-0.20957	-2.80605
	setup	CLK (R)	0.16245	0.25598	3.48297

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)	-0.00420	0.01190	0.58709
	hold	CLK (R)	-0.08496	-0.09354	-0.34379
	setup	CLK (R)	0.08881	0.13013	0.43937
	setup	CLK (R)	0.20868	0.22396	0.50662

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)	-0.15161	-0.24395	-3.47588
	hold	CLK (R)	-0.10884	-0.20957	-2.80605
	setup	CLK (R)	0.16245	0.25598	3.48297
	setup	CLK (R)	0.11843	0.21626	2.81278

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 ()	0.06481	0.58472	16.50020
	min_pulse_width	CLK ()	0.08684	0.58472	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 ()	0.09786	0.58472	16.50020
	min_pulse_width	CLK ()	0.13090	0.58472	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	0.02833	0.03749	0.20444
	CLK	0.02569	0.03485	0.20155

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.02900	0.03803	0.21495
	CLK	0.02614	0.03513	0.21193

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.03376	0.04281	0.22050
	CLK	0.03090	0.03991	0.21740

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.02528	0.03454	0.20042
	CLK	0.02264	0.03182	0.19750

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.01573	0.02005	0.10712
	(CLK * DE)	0.01188	0.01618	0.10325
	(CLK * !DE)	0.00702	0.00703	0.00702
	(CLK * !DE)	0.00465	0.00463	0.00462
	(!CLK * DE * Q * !Q_N)	0.02304	0.02998	0.14942
	(!CLK * DE * Q * !Q_N)	0.01923	0.02615	0.14560
	(!CLK * DE * !Q * Q_N)	0.02289	0.02977	0.14852
	(!CLK * DE * !Q * Q_N)	0.01904	0.02589	0.14465
	(!CLK * !DE)	0.00698	0.00698	0.00696
	(!CLK * !DE)	0.00461	0.00459	0.00456

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.01087	0.01547	0.10282
	(CLK * DE)	0.01472	0.01934	0.10669
	(CLK * !DE)	0.00610	0.00610	0.00611
	(CLK * !DE)	0.00851	0.00853	0.00851
	(!CLK * DE * Q * !Q_N)	0.02572	0.03127	0.14163
	(!CLK * DE * Q * !Q_N)	0.02953	0.03509	0.14545
	(!CLK * DE * !Q * Q_N)	0.02666	0.03248	0.14362
	(!CLK * DE * !Q * Q_N)	0.03051	0.03635	0.14749
	(!CLK * !DE)	0.00613	0.00612	0.00612
	(!CLK * !DE)	0.00854	0.00852	0.00852

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.02115	0.03586	0.29900
	CLK	0.01243	0.02710	0.29029
	(!CLK * D * Q * !Q_N)	0.01138	0.02192	0.19693
	(!CLK * D * Q * !Q_N)	0.00434	0.01487	0.18988
	(!CLK * D * !Q * Q_N)	0.02828	0.04487	0.33818
	(!CLK * D * !Q * Q_N)	0.01957	0.03613	0.32945
	(!CLK * !D * Q * !Q_N)	0.03402	0.04447	0.22934
	(!CLK * !D * Q * !Q_N)	0.02847	0.03887	0.22376
	(!CLK * !D * !Q * Q_N)	0.01508	0.02563	0.20083
	(!CLK * !D * !Q * Q_N)	0.00807	0.01861	0.19381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01035	0.02579	0.29088
	CLK	0.01907	0.03451	0.29960
	(!CLK * D * Q * !Q_N)	0.00262	0.01368	0.19030
	(!CLK * D * Q * !Q_N)	0.00967	0.02075	0.19736
	(!CLK * D * !Q * Q_N)	0.02581	0.04177	0.32851
	(!CLK * D * !Q * Q_N)	0.03453	0.05051	0.33721
	(!CLK * !D * Q * !Q_N)	0.02108	0.03225	0.22119
	(!CLK * !D * Q * !Q_N)	0.02666	0.03783	0.22678
	(!CLK * !D * !Q * Q_N)	0.00630	0.01749	0.19422
	(!CLK * !D * !Q * Q_N)	0.01332	0.02455	0.20125

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)	0.02391	0.04340	0.37471
	(D * Q * !Q_N)	0.01842	0.03785	0.36920
	(D * !DE * !Q * Q_N)	0.02512	0.04467	0.37634
	(D * !DE * !Q * Q_N)	0.01961	0.03914	0.37083
	(!D * !Q * Q_N)	0.02668	0.04623	0.37790
	(!D * !Q * Q_N)	0.02117	0.04069	0.37239
	(!D * !DE * Q * !Q_N)	0.02248	0.04198	0.37328
	(!D * !DE * Q * !Q_N)	0.01699	0.03642	0.36777

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)	0.01443	0.03437	0.36374
	(D * Q * !Q_N)	0.01991	0.03988	0.36925
	(D * DE * !Q * Q_N)	0.02630	0.04695	0.38621
	(D * DE * !Q * Q_N)	0.03182	0.05248	0.39173
	(D * !DE * !Q * Q_N)	0.01738	0.03721	0.36599
	(D * !DE * !Q * Q_N)	0.02289	0.04273	0.37150
	(!D * DE * Q * !Q_N)	0.03391	0.05419	0.39121
	(!D * DE * Q * !Q_N)	0.03939	0.05972	0.39674
	(!D * !Q * Q_N)	0.01893	0.03876	0.36755
	(!D * !Q * Q_N)	0.02445	0.04429	0.37306
	(!D * !DE * Q * !Q_N)	0.01300	0.03294	0.36231
	(!D * !DE * Q * !Q_N)	0.01848	0.03845	0.36782

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00195	0.00363	0.00289	1.70933

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	614.45300	1041.64000

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)	0.12111	0.48261	5.36075

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.10513	0.34103	2.69082

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)	-0.07236	-0.13483	-0.53432
	setup	CLK (R)	0.08827	0.14673	0.53275

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)	-0.14150	-0.25912	-3.54984
	setup	CLK (R)	0.18602	0.31044	3.57718

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)	-0.00171	0.01190	0.58708
	setup	CLK (R)	0.20762	0.22493	0.50352

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)	-0.10852	-0.21018	-2.82071
	setup	CLK (R)	0.16093	0.25598	3.47587

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)	-0.00171	0.01190	0.58708
	hold	CLK (R)	-0.08150	-0.09204	-0.33103
	setup	CLK (R)	0.08372	0.12890	0.43718
	setup	CLK (R)	0.20762	0.22493	0.50352

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)	-0.15175	-0.24543	-3.46517
	hold	CLK (R)	-0.10852	-0.21018	-2.82071
	setup	CLK (R)	0.16093	0.25598	3.47587
	setup	CLK (R)	0.11854	0.21811	2.82606

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 ()	0.05820	0.58472	16.50020
	min_pulse_width	CLK ()	0.08244	0.58472	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 ()	0.09565	0.58472	16.50020
	min_pulse_width	CLK ()	0.13310	0.58472	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	0.04613	0.06581	0.40010
	CLK	0.04093	0.06070	0.39521

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.05019	0.06935	0.42107
	CLK	0.04461	0.06379	0.41552

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.01587	0.02022	0.10735
	(CLK * DE)	0.01198	0.01631	0.10344
	(CLK * !DE)	0.00732	0.00733	0.00731
	(CLK * !DE)	0.00492	0.00490	0.00488
	(!CLK * DE * Q)	0.02187	0.02886	0.14827
	(!CLK * DE * Q)	0.01803	0.02499	0.14442
	(!CLK * DE * !Q)	0.02296	0.02989	0.14883
	(!CLK * DE * !Q)	0.01907	0.02598	0.14494
	(!CLK * !DE)	0.00728	0.00728	0.00726
	(!CLK * !DE)	0.00487	0.00485	0.00483

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.01108	0.01573	0.10313
	(CLK * DE)	0.01497	0.01962	0.10704
	(CLK * !DE)	0.00643	0.00644	0.00644
	(CLK * !DE)	0.00887	0.00887	0.00887
	(!CLK * DE * Q)	0.02403	0.02963	0.14012
	(!CLK * DE * Q)	0.02788	0.03348	0.14398
	(!CLK * DE * !Q)	0.02643	0.03227	0.14418
	(!CLK * DE * !Q)	0.03031	0.03618	0.14808
	(!CLK * !DE)	0.00647	0.00644	0.00646
	(!CLK * !DE)	0.00890	0.00891	0.00888

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.02110	0.03594	0.29889
	CLK	0.01264	0.02745	0.29042
	(!CLK * D * Q)	0.01012	0.02071	0.19579
	(!CLK * D * Q)	0.00332	0.01389	0.18900
	(!CLK * D * !Q)	0.02816	0.04496	0.33840
	(!CLK * D * !Q)	0.01970	0.03646	0.32992
	(!CLK * !D * Q)	0.03219	0.04271	0.22750
	(!CLK * !D * Q)	0.02689	0.03738	0.22219
	(!CLK * !D * !Q)	0.01524	0.02590	0.20112
	(!CLK * !D * !Q)	0.00847	0.01912	0.19435

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01061	0.02601	0.29086
	CLK	0.01907	0.03449	0.29933
	(!CLK * D * Q)	0.00160	0.01264	0.18927
	(!CLK * D * Q)	0.00837	0.01944	0.19607
	(!CLK * D * !Q)	0.02563	0.04156	0.32796
	(!CLK * D * !Q)	0.03409	0.05002	0.33639
	(!CLK * !D * Q)	0.01994	0.03109	0.22012
	(!CLK * !D * Q)	0.02526	0.03643	0.22544
	(!CLK * !D * !Q)	0.00665	0.01782	0.19457
	(!CLK * !D * !Q)	0.01340	0.02461	0.20135

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.02203	0.04156	0.37323
	(D * Q)	0.01664	0.03613	0.36783
	(D * !DE * !Q)	0.02523	0.04481	0.37685
	(D * !DE * !Q)	0.01983	0.03940	0.37145
	(!D * !Q)	0.02678	0.04637	0.37841
	(!D * !Q)	0.02139	0.04095	0.37300
	(!D * !DE * Q)	0.02060	0.04013	0.37180
	(!D * !DE * Q)	0.01521	0.03470	0.36640

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01335	0.03338	0.36313
	(D * Q)	0.01874	0.03881	0.36854
	(D * DE * !Q)	0.02601	0.04679	0.38696
	(D * DE * !Q)	0.03140	0.05221	0.39237
	(D * !DE * !Q)	0.01710	0.03703	0.36617
	(D * !DE * !Q)	0.02249	0.04245	0.37158
	(!D * DE * Q)	0.03225	0.05260	0.38871
	(!D * DE * Q)	0.03764	0.05801	0.39412
	(!D * !Q)	0.01866	0.03858	0.36773
	(!D * !Q)	0.02404	0.04401	0.37313
	(!D * !DE * Q)	0.01192	0.03195	0.36167
	(!D * !DE * Q)	0.01731	0.03739	0.36708

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00286	0.00325	0.90446
sky130_fd_sc_hs__einvn_2	0.00538	0.00490	1.60957
sky130_fd_sc_hs__einvn_4	0.01073	0.00874	3.01938
sky130_fd_sc_hs__einvn_8	0.02146	0.01456	5.03935

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	141.65600	182.56200
sky130_fd_sc_hs__einvn_2	0.00000	162.79700	239.14500
sky130_fd_sc_hs__einvn_4	0.00000	165.23600	479.17400
sky130_fd_sc_hs__einvn_8	0.00000	249.68000	954.44800

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)	0.02909	0.67927	9.19214
	TE_B->Z (RR)	0.02412	0.36994	5.34275
	TE_B->Z (FR)	0.03474	0.60908	7.94191
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.02068	0.58644	9.13402
	TE_B->Z (RR)	0.03193	0.37195	5.34475
	TE_B->Z (FR)	0.03195	0.50412	7.80817
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.01945	0.50748	9.10901
	TE_B->Z (RR)	0.03299	0.37356	5.34641
	TE_B->Z (FR)	0.03090	0.39677	7.49745
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.02120	0.44270	8.85703
	TE_B->Z (RR)	0.05440	0.38093	5.35384
	TE_B->Z (FR)	0.03724	0.31283	6.92204

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.01670	0.34221	4.50856
	TE_B->Z (RF)	0.02387	0.36994	5.34273
	TE_B->Z (FF)	0.03970	0.37039	4.17793
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01390	0.28867	4.57800
	TE_B->Z (RF)	0.03163	0.37198	5.34474
	TE_B->Z (FF)	0.04419	0.35232	4.33903
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01340	0.23543	4.57132
	TE_B->Z (RF)	0.03247	0.37363	5.34637
	TE_B->Z (FF)	0.04463	0.32067	4.37843
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01518	0.20655	4.68190
	TE_B->Z (RF)	0.05351	0.38111	5.35368
	TE_B->Z (FF)	0.06026	0.33349	4.46023

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00060	0.00638	0.10547
	A	0.00464	0.01112	0.11088
	TE_B	0.00267	0.01440	0.19502
	TE_B	0.01076	0.02254	0.20345
sky130_fd_sc_hs__einvn_2	A	-0.00237	0.01173	0.18921
	A	0.00777	0.02190	0.19965
	TE_B	0.00418	0.01571	0.19760
	TE_B	0.01742	0.02897	0.21158
sky130_fd_sc_hs__einvn_4	A	-0.00461	0.02518	0.35989
	A	0.01565	0.04545	0.38068
	TE_B	0.00878	0.02879	0.34546
	TE_B	0.03325	0.05338	0.37035
sky130_fd_sc_hs__einvn_8	A	-0.00860	0.04819	0.65031
	A	0.03209	0.08884	0.69101
	TE_B	0.01828	0.03701	0.35169
	TE_B	0.06186	0.08060	0.39566

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00696	0.01186	0.07979
	A	0.00171	0.00651	0.07453
	TE_B	0.00673	0.01820	0.18824
	TE_B	0.01095	0.02238	0.19188
sky130_fd_sc_hs__einvn_2	A	0.01240	0.02292	0.14780
	A	0.00226	0.01270	0.13693
	TE_B	0.01219	0.02360	0.20345
	TE_B	0.01778	0.02917	0.20879
sky130_fd_sc_hs__einvn_4	A	0.02509	0.04733	0.28616
	A	0.00485	0.02699	0.26307
	TE_B	0.02515	0.04502	0.35738
	TE_B	0.03406	0.05391	0.36596
sky130_fd_sc_hs__einvn_8	A	0.05054	0.09422	0.53226
	A	0.00997	0.05346	0.48589
	TE_B	0.05139	0.06983	0.38037
	TE_B	0.06353	0.08186	0.38826

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00257	0.00258	0.00257
	(TE_B * Z)	-0.00024	-0.00025	-0.00018
	(TE_B * !Z)	0.00269	0.00270	0.00271
	(TE_B * !Z)	0.00029	0.00027	0.00031
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00347	0.00348	0.00341
	(TE_B * Z)	-0.00198	-0.00201	-0.00191
	(TE_B * !Z)	0.00400	0.00400	0.00400
	(TE_B * !Z)	-0.00063	-0.00064	-0.00061
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00450	0.00453	0.00440
	(TE_B * Z)	-0.00596	-0.00602	-0.00581
	(TE_B * !Z)	0.00546	0.00548	0.00548
	(TE_B * !Z)	-0.00344	-0.00347	-0.00339
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00765	0.00774	0.00747
	(TE_B * Z)	-0.01271	-0.01291	-0.01245
	(TE_B * !Z)	0.00955	0.00959	0.00959
	(TE_B * !Z)	-0.00793	-0.00799	-0.00779

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00060	0.00059	0.00059
	(TE_B * Z)	0.00331	0.00332	0.00327
	(TE_B * !Z)	0.00064	0.00064	0.00059
	(TE_B * !Z)	0.00344	0.00342	0.00329
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00021	-0.00022	-0.00021
	(TE_B * Z)	0.00507	0.00509	0.00499
	(TE_B * !Z)	-0.00042	-0.00052	-0.00053
	(TE_B * !Z)	0.00492	0.00487	0.00468
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00217	-0.00220	-0.00220
	(TE_B * Z)	0.00794	0.00798	0.00778
	(TE_B * !Z)	-0.00257	-0.00277	-0.00277
	(TE_B * !Z)	0.00791	0.00781	0.00734
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00513	-0.00515	-0.00515
	(TE_B * Z)	0.01475	0.01476	0.01435
	(TE_B * !Z)	-0.00588	-0.00626	-0.00632
	(TE_B * !Z)	0.01481	0.01462	0.01362

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00540	0.01661	0.19890
	(A * !Z)	-0.00047	0.01059	0.19301
	(!A * Z)	0.00512	0.01642	0.19825
	(!A * Z)	-0.00078	0.01041	0.19226
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00656	0.01683	0.19701
	(A * !Z)	-0.00227	0.00777	0.18820
	(!A * Z)	0.00581	0.01639	0.19559
	(!A * Z)	-0.00306	0.00729	0.18654
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00927	0.02701	0.34237
	(A * !Z)	-0.00616	0.01104	0.32688
	(!A * Z)	0.00790	0.02616	0.33964
	(!A * Z)	-0.00772	0.01010	0.32370
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.01158	0.02684	0.34195
	(A * !Z)	-0.01381	0.00051	0.31659
	(!A * Z)	0.00913	0.02519	0.33640
	(!A * Z)	-0.01663	-0.00128	0.31009

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00289	0.01483	0.19807
	(A * !Z)	0.00891	0.02086	0.20408
	(!A * Z)	0.00182	0.01394	0.19734
	(!A * Z)	0.00781	0.01996	0.20331
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00548	0.01689	0.19769
	(A * !Z)	0.01453	0.02598	0.20678
	(!A * Z)	0.00329	0.01499	0.19601
	(!A * Z)	0.01232	0.02407	0.20508
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.01119	0.03104	0.34569
	(A * !Z)	0.02716	0.04704	0.36171
	(!A * Z)	0.00675	0.02723	0.34220
	(!A * Z)	0.02266	0.04324	0.35815
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.02301	0.04155	0.35348
	(A * !Z)	0.04931	0.06793	0.37993
	(!A * Z)	0.01415	0.03328	0.34673
	(!A * Z)	0.04035	0.05952	0.37306

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00287	0.00292	0.79042
sky130_fd_sc_hs__einvp_2	0.00530	0.00448	1.63816
sky130_fd_sc_hs__einvp_4	0.01072	0.00802	3.00808
sky130_fd_sc_hs__einvp_8	0.02148	0.01265	4.98753

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	34.02580	167.06800
sky130_fd_sc_hs__einvp_2	0.00000	102.98100	418.64800
sky130_fd_sc_hs__einvp_4	0.00000	126.32500	595.93300
sky130_fd_sc_hs__einvp_8	0.00000	210.72500	1070.96000

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)	0.03290	0.71721	9.31914
	TE->Z (FR)	0.05647	0.36981	5.34261
	TE->Z (RR)	0.05411	0.49198	4.95587
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.02037	0.58084	9.09590
	TE->Z (FR)	0.05794	0.37097	5.34375
	TE->Z (RR)	0.05282	0.40167	5.32242
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.01955	0.50529	9.06204
	TE->Z (FR)	0.06773	0.37294	5.34571
	TE->Z (RR)	0.05143	0.31459	5.14917
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.02117	0.44372	8.85389
	TE->Z (FR)	0.11673	0.37954	5.35181
	TE->Z (RR)	0.06525	0.29409	4.98633

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.01695	0.31905	3.99133
	TE->Z (FF)	0.05722	0.36977	5.34259
	TE->Z (RF)	0.01692	0.26547	3.18055
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01345	0.27750	4.42686
	TE->Z (FF)	0.05848	0.37087	5.34370
	TE->Z (RF)	0.01563	0.21463	3.44349
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01361	0.23879	4.61740
	TE->Z (FF)	0.06799	0.37271	5.34561
	TE->Z (RF)	0.01668	0.15478	3.25057
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01534	0.21522	4.83383
	TE->Z (FF)	0.11716	0.37895	5.35157
	TE->Z (RF)	0.02119	0.10304	2.86031

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00017	0.00634	0.10277
	A	0.00519	0.01171	0.10822
	TE	0.00945	0.01638	0.13229
	TE	0.00632	0.01325	0.12926
sky130_fd_sc_hs__einvp_2	A	0.00263	0.01722	0.20189
	A	0.01262	0.02710	0.21224
	TE	0.01835	0.02906	0.20909
	TE	0.01448	0.02519	0.20522
sky130_fd_sc_hs__einvp_4	A	-0.00116	0.02846	0.36430
	A	0.01906	0.04892	0.38409
	TE	0.02929	0.04756	0.36185
	TE	0.02344	0.04174	0.35603
sky130_fd_sc_hs__einvp_8	A	-0.00533	0.04911	0.61654
	A	0.03537	0.08977	0.65698
	TE	0.04918	0.06571	0.37746
	TE	0.04396	0.06055	0.37267

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00778	0.01228	0.07805
	A	0.00242	0.00682	0.07237
	TE	0.01375	0.02101	0.14409
	TE	0.00640	0.01360	0.13621
sky130_fd_sc_hs__einvp_2	A	0.01545	0.02606	0.15438
	A	0.00545	0.01595	0.14440
	TE	0.02475	0.03540	0.21459
	TE	0.01288	0.02347	0.20181
sky130_fd_sc_hs__einvp_4	A	0.02697	0.04918	0.28933
	A	0.00675	0.02882	0.26610
	TE	0.04424	0.06245	0.37389
	TE	0.02209	0.04025	0.35101
sky130_fd_sc_hs__einvp_8	A	0.05308	0.09524	0.51162
	A	0.01249	0.05447	0.46951
	TE	0.08053	0.09686	0.40362
	TE	0.04241	0.05866	0.36360

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00084	0.00085	0.00085
	(!TE * Z)	-0.00181	-0.00182	-0.00176
	(!TE * !Z)	0.00094	0.00095	0.00096
	(!TE * !Z)	-0.00136	-0.00137	-0.00132
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00156	0.00156	0.00151
	(!TE * Z)	-0.00371	-0.00373	-0.00366
	(!TE * !Z)	0.00193	0.00194	0.00193
	(!TE * !Z)	-0.00240	-0.00242	-0.00239
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00297	0.00298	0.00288
	(!TE * Z)	-0.00740	-0.00746	-0.00726
	(!TE * !Z)	0.00372	0.00373	0.00372
	(!TE * !Z)	-0.00484	-0.00488	-0.00481
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00577	0.00581	0.00563
	(!TE * Z)	-0.01434	-0.01434	-0.01403
	(!TE * !Z)	0.00718	0.00719	0.00717
	(!TE * !Z)	-0.00938	-0.00942	-0.00928

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00081	-0.00081	-0.00081
	(!TE * Z)	0.00181	0.00182	0.00176
	(!TE * !Z)	-0.00076	-0.00077	-0.00083
	(!TE * !Z)	0.00197	0.00197	0.00179
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00142	-0.00143	-0.00143
	(!TE * Z)	0.00371	0.00373	0.00366
	(!TE * !Z)	-0.00155	-0.00164	-0.00165
	(!TE * !Z)	0.00351	0.00347	0.00328
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00269	-0.00272	-0.00271
	(!TE * Z)	0.00740	0.00746	0.00726
	(!TE * !Z)	-0.00296	-0.00310	-0.00316
	(!TE * !Z)	0.00718	0.00704	0.00663
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00530	-0.00531	-0.00534
	(!TE * Z)	0.01434	0.01434	0.01403
	(!TE * !Z)	-0.00580	-0.00610	-0.00617
	(!TE * !Z)	0.01411	0.01387	0.01289

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00959	0.01709	0.14155
	(A * !Z)	0.00437	0.01183	0.13631
	(!A * Z)	0.00817	0.01563	0.14053
	(!A * Z)	0.00297	0.01042	0.13532
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.01657	0.02736	0.20610
	(A * !Z)	0.00852	0.01925	0.19802
	(!A * Z)	0.01397	0.02491	0.20418
	(!A * Z)	0.00608	0.01695	0.19625
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.02948	0.04786	0.35979
	(A * !Z)	0.01520	0.03350	0.34545
	(!A * Z)	0.02442	0.04312	0.35593
	(!A * Z)	0.01040	0.02902	0.34190
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.05149	0.06802	0.37619
	(A * !Z)	0.02932	0.04571	0.35393
	(!A * Z)	0.04174	0.05828	0.36907
	(!A * Z)	0.02002	0.03654	0.34729

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00158	0.00590	0.13135
	(A * !Z)	0.00357	0.01115	0.13644
	(!A * Z)	-0.00174	0.00575	0.13048
	(!A * Z)	0.00343	0.01094	0.13562
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00345	0.00740	0.18911
	(A * !Z)	0.00456	0.01549	0.19682
	(!A * Z)	-0.00402	0.00686	0.18742
	(!A * Z)	0.00384	0.01474	0.19520
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00626	0.01232	0.32821
	(A * !Z)	0.00785	0.02662	0.34186
	(!A * Z)	-0.00725	0.01135	0.32486
	(!A * Z)	0.00667	0.02528	0.33867
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.01197	0.00479	0.32044
	(A * !Z)	0.00984	0.02716	0.34149
	(!A * Z)	-0.01360	0.00304	0.31373
	(!A * Z)	0.00791	0.02463	0.33511

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00293	0.00699	0.00516	0.88143	1.68055

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	1812.04000	2090.56000

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)	0.11460	0.51129	4.01933
	B->COUT (RR)	0.09667	0.46214	4.34942
	CIN->COUT (FR)	0.04692	0.60978	7.82606

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.11038	0.51681	4.52033
	B->COUT (FF)	0.10657	0.49769	4.86272
	CIN->COUT (RF)	0.03070	0.35307	4.34556

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)	-	0.14165	0.67144	7.91832
	B->SUM (-R)	-	0.13784	0.67074	8.18620
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.06497	0.45748	5.78078
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.09396	0.59825	7.75380

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)	-	0.17996	0.58629	5.39846
	B->SUM (-F)	-	0.13796	0.53570	5.48455
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.07643	0.50853	5.92052
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.08467	0.30560	2.76696

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.04604	0.05515	0.23383
	A	0.04313	0.05219	0.23086
	B	0.04857	0.06243	0.34947
	B	0.04194	0.05580	0.34282
	CIN	0.03661	0.05062	0.27780
	CIN	0.04150	0.05544	0.28273

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.03338	0.04233	0.21897
	A	0.03602	0.04516	0.22152
	B	0.02817	0.04504	0.36085
	B	0.03481	0.05170	0.36797
	CIN	0.02775	0.04253	0.27964
	CIN	0.02286	0.03766	0.27521

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.08272	0.10063	0.45297
	A	-	0.07752	0.09544	0.44821
	B	-	0.07926	0.11431	0.81661
	B	-	0.06601	0.10115	0.80370
	CIN	(A * B) + (!A * !B)	0.05243	0.09012	0.68017
	CIN	(A * B) + (!A * !B)	0.06222	0.10005	0.69260
	CIN	(A * !B) + (!A * B)	0.03527	0.04978	0.28067
	CIN	(A * !B) + (!A * B)	0.03038	0.04493	0.27669

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.06819	0.08658	0.43552
	A	-	0.07340	0.09177	0.43971
	B	-	0.06359	0.10129	0.77401
	B	-	0.07687	0.11442	0.77759
	CIN	(A * B) + (!A * !B)	0.05678	0.09288	0.68103
	CIN	(A * B) + (!A * !B)	0.04699	0.08292	0.66944
	CIN	(A * !B) + (!A * B)	0.02677	0.04002	0.25437
	CIN	(A * !B) + (!A * B)	0.03166	0.04491	0.25871

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00291	0.00893	0.00519	0.91595	1.62376

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	1813.10000	2115.11000

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)	0.14070	0.62087	6.21055
	B->COUT_N (FR)	0.09746	0.64899	8.28177
	CI->COUT_N (FR)	0.04262	0.59748	7.81316

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)	0.10766	0.35575	2.15926
	B->COUT_N (RF)	0.06844	0.40610	4.95684
	CI->COUT_N (RF)	0.02993	0.35671	4.51294

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)	-	0.12858	0.65267	7.75146
	B->SUM (-R)	-	0.11400	0.63489	7.98918
	CI->SUM (RR)	(A * B) + (!A * !B)	0.06317	0.45223	5.67681
	CI->SUM (FR)	(A * !B) + (!A * B)	0.09373	0.60338	7.77305

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)	-	0.16467	0.56546	5.28390
	B->SUM (-F)	-	0.12060	0.49888	5.24101
	CI->SUM (FF)	(A * B) + (!A * !B)	0.07355	0.48637	5.63975
	CI->SUM (RF)	(A * !B) + (!A * B)	0.08842	0.31020	2.78258

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	0.04419	0.05289	0.22801
	A	0.04687	0.05558	0.23103
	B	0.02976	0.05319	0.47826
	B	0.03812	0.06153	0.48636
	CI	0.02710	0.04203	0.27779
	CI	0.03201	0.04691	0.28346

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.03409	0.04272	0.22165
	A	0.03141	0.04003	0.21946
	B	0.03916	0.06269	0.48796
	B	0.03080	0.05426	0.47908
	CI	0.03139	0.04573	0.28598
	CI	0.02647	0.04077	0.28096

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.08008	0.09875	0.45044
	A	-	0.07471	0.09338	0.44544
	B	-	0.09462	0.15195	1.09614
	B	-	0.07790	0.13511	1.07646
	CI	(A * B) + (!A * !B)	0.06900	0.10683	0.72354
	CI	(A * B) + (!A * !B)	0.05914	0.09696	0.71325
	CI	(A * !B) + (!A * B)	0.02672	0.04122	0.26613
	CI	(A * !B) + (!A * B)	0.03163	0.04614	0.27123

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.06682	0.08543	0.43363
	A	-	0.07220	0.09079	0.43814
	B	-	0.05987	0.11412	1.03932
	B	-	0.07660	0.13090	1.05575
	CI	(A * B) + (!A * !B)	0.05155	0.08953	0.69777
	CI	(A * B) + (!A * !B)	0.06138	0.09939	0.70821
	CI	(A * !B) + (!A * B)	0.02931	0.04341	0.27736
	CI	(A * !B) + (!A * B)	0.02438	0.03849	0.27240

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00491	0.00701	0.00260	1.41027	1.62423
sky130_fd_sc_hs__fah_2	0.00494	0.00794	0.00272	2.72517	3.13361
sky130_fd_sc_hs__fah_4	0.00487	0.00722	0.00262	5.00436	6.08531

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fah_1	0.00000	1812.61000	2128.79000
sky130_fd_sc_hs__fah_2	0.00000	1935.15000	2250.17000
sky130_fd_sc_hs__fah_4	0.00000	2183.03000	2502.86000

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)	0.15580	0.54164	5.50936
	B->COUT (RR)	0.12024	0.53825	5.54090
	CI->COUT (RR)	0.08937	0.53264	6.12786
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.15823	0.44396	5.17037
	B->COUT (RR)	0.11276	0.45426	5.97467
	CI->COUT (RR)	0.08200	0.40829	5.35520
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.17039	0.40553	5.40130
	B->COUT (RR)	0.13484	0.39746	5.39430
	CI->COUT (RR)	0.10662	0.41143	6.03482

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.15814	0.54226	5.04673
	B->COUT (FF)	0.13995	0.54049	5.29465
	CI->COUT (FF)	0.09635	0.53031	5.61546
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.16023	0.50531	4.68395
	B->COUT (FF)	0.14671	0.51669	5.28421
	CI->COUT (FF)	0.09775	0.48561	5.22260
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.17346	0.51538	4.85857
	B->COUT (FF)	0.15347	0.51556	5.34361
	CI->COUT (FF)	0.11542	0.48846	5.39608

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)	-	0.15119	0.71402	8.33183
	B->SUM (-R)	-	0.14156	0.68378	8.23400
	CI->SUM (RR)	(A * B) + (!A * !B)	0.08725	0.48787	5.58141
	CI->SUM (FR)	(A * !B) + (!A * B)	0.15876	0.73167	8.43468
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.15806	0.61381	7.87963
	B->SUM (-R)	-	0.14319	0.59297	8.06156
	CI->SUM (RR)	(A * B) + (!A * !B)	0.08358	0.40448	5.52035
	CI->SUM (FR)	(A * !B) + (!A * B)	0.15301	0.61764	8.00192
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.17377	0.57500	8.20318
	B->SUM (-R)	-	0.16274	0.56446	8.24217
	CI->SUM (RR)	(A * B) + (!A * !B)	0.11131	0.39884	5.64896
	CI->SUM (FR)	(A * !B) + (!A * B)	0.20478	0.63478	8.37578

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)	-	0.15645	0.55056	5.31817
	B->SUM (-F)	-	0.14634	0.55380	5.99518
	CI->SUM (FF)	(A * B) + (!A * !B)	0.09685	0.53055	5.49506
	CI->SUM (RF)	(A * !B) + (!A * B)	0.14320	0.44192	3.32818
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.16803	0.52124	5.08287
	B->SUM (-F)	-	0.15054	0.51625	5.17866
	CI->SUM (FF)	(A * B) + (!A * !B)	0.10293	0.49950	5.67491
	CI->SUM (RF)	(A * !B) + (!A * B)	0.12401	0.35603	2.63138
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.17376	0.52299	5.26922
	B->SUM (-F)	-	0.16243	0.52163	5.32716
	CI->SUM (FF)	(A * B) + (!A * !B)	0.12288	0.49989	5.52707
	CI->SUM (RF)	(A * !B) + (!A * B)	0.18641	0.45131	3.41206

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.05377	0.07096	0.38757
	A	0.04925	0.06639	0.38306
	B	0.05066	0.06718	0.41808
	B	0.04430	0.06074	0.41152
	CI	0.04381	0.05129	0.20462
	CI	0.04164	0.04899	0.20211
sky130_fd_sc_hs__fah_2	A	0.06170	0.07575	0.38569
	A	0.05693	0.07094	0.38086
	B	0.05990	0.07210	0.41277
	B	0.05262	0.06481	0.40532
	CI	0.04780	0.05268	0.19924
	CI	0.04524	0.05010	0.19656
sky130_fd_sc_hs__fah_4	A	0.08105	0.08732	0.39837
	A	0.07656	0.08276	0.39369
	B	0.07914	0.08458	0.43064
	B	0.07251	0.07795	0.42361
	CI	0.07156	0.07147	0.22978
	CI	0.06930	0.06906	0.22677

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.03650	0.05365	0.36826
	A	0.04083	0.05798	0.37249
	B	0.03217	0.04993	0.38337
	B	0.03835	0.05610	0.38948
	CI	0.02822	0.03610	0.18804
	CI	0.03040	0.03821	0.18974
sky130_fd_sc_hs__fah_2	A	0.04305	0.05792	0.36868
	A	0.04782	0.06258	0.37303
	B	0.03729	0.05202	0.36888
	B	0.04457	0.05929	0.37542
	CI	0.03254	0.03718	0.18395
	CI	0.03512	0.03968	0.18513
sky130_fd_sc_hs__fah_4	A	0.05955	0.06706	0.37726
	A	0.06395	0.07139	0.38090
	B	0.05615	0.06431	0.39261
	B	0.06271	0.07077	0.39667
	CI	0.05421	0.05272	0.20815
	CI	0.05648	0.05494	0.20815

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.08830	0.12193	0.74284
	A	-	0.07907	0.11271	0.73381
	B	-	0.09387	0.13284	0.86276
	B	-	0.08094	0.11991	0.85053
	CI	(A * B) + (!A * !B)	0.06486	0.07946	0.33205
	CI	(A * B) + (!A * !B)	0.05997	0.07456	0.32743
	CI	(A * !B) + (!A * B)	0.03803	0.04578	0.19745
	CI	(A * !B) + (!A * B)	0.04021	0.04795	0.19943
sky130_fd_sc_hs__fah_2	A	-	0.09661	0.12788	0.73742
	A	-	0.08703	0.11834	0.72835
	B	-	0.10194	0.13890	0.84436
	B	-	0.08735	0.12432	0.83003
	CI	(A * B) + (!A * !B)	0.06675	0.08432	0.39169
	CI	(A * B) + (!A * !B)	0.06159	0.07920	0.38381
	CI	(A * !B) + (!A * B)	0.04308	0.04772	0.19530
	CI	(A * !B) + (!A * B)	0.04566	0.05018	0.19593
sky130_fd_sc_hs__fah_4	A	-	0.11247	0.13998	0.75821
	A	-	0.10324	0.13078	0.74845
	B	-	0.12036	0.15926	0.90878
	B	-	0.10685	0.14586	0.89537
	CI	(A * B) + (!A * !B)	0.08491	0.09856	0.37895
	CI	(A * B) + (!A * !B)	0.07997	0.09367	0.37504
	CI	(A * !B) + (!A * B)	0.06642	0.06453	0.21664
	CI	(A * !B) + (!A * B)	0.06868	0.06674	0.21855

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.06237	0.09582	0.71011
	A	-	0.07198	0.10542	0.71809
	B	-	0.06622	0.10538	0.84039
	B	-	0.07952	0.11867	0.85302
	CI	(A * B) + (!A * !B)	0.05437	0.06855	0.31770
	CI	(A * B) + (!A * !B)	0.05927	0.07345	0.32248
	CI	(A * !B) + (!A * B)	0.03318	0.04055	0.19206
	CI	(A * !B) + (!A * B)	0.03101	0.03832	0.18939
sky130_fd_sc_hs__fah_2	A	-	0.07474	0.10320	0.70727
	A	-	0.08431	0.11269	0.71344
	B	-	0.06977	0.10344	0.75772
	B	-	0.08435	0.11789	0.76715
	CI	(A * B) + (!A * !B)	0.06303	0.07465	0.37145
	CI	(A * B) + (!A * !B)	0.06821	0.07980	0.37581
	CI	(A * !B) + (!A * B)	0.03575	0.04063	0.18533
	CI	(A * !B) + (!A * B)	0.03318	0.03801	0.18244
sky130_fd_sc_hs__fah_4	A	-	0.10051	0.11866	0.72012
	A	-	0.10973	0.12755	0.72909
	B	-	0.09969	0.12597	0.79918
	B	-	0.11339	0.13942	0.80879
	CI	(A * B) + (!A * !B)	0.09125	0.09249	0.35167
	CI	(A * B) + (!A * !B)	0.09620	0.09728	0.35257
	CI	(A * !B) + (!A * B)	0.05919	0.05872	0.21368
	CI	(A * !B) + (!A * B)	0.05693	0.05629	0.21028

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.01038	0.01000	0.00732	1.71375	1.73475
sky130_fd_sc_hs__fa_2	0.01097	0.01032	0.00778	2.73156	3.04416
sky130_fd_sc_hs__fa_4	0.01091	0.01076	0.00764	6.16586	6.11285

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fa_1	0.00000	327.07200	413.40400
sky130_fd_sc_hs__fa_2	0.00000	445.40000	531.46500
sky130_fd_sc_hs__fa_4	0.00000	690.06500	963.37600

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)	0.07526	0.44783	5.58350
	B->COUT (RR)	0.08926	0.48005	5.82535
	CIN->COUT (RR)	0.06777	0.46519	5.79484
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.07974	0.37928	5.15048
	B->COUT (RR)	0.08805	0.41080	5.33545
	CIN->COUT (RR)	0.07403	0.40254	5.27795
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.11410	0.36857	5.40406
	B->COUT (RR)	0.09787	0.38248	5.65202
	CIN->COUT (RR)	0.09583	0.38474	5.59440

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.11898	0.53141	6.04978
	B->COUT (FF)	0.13263	0.56414	6.26902
	CIN->COUT (FF)	0.09525	0.54688	6.18424
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.13973	0.50694	5.55983
	B->COUT (FF)	0.14865	0.54409	5.75465
	CIN->COUT (FF)	0.12484	0.53090	5.68116
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.19234	0.56165	6.14965
	B->COUT (FF)	0.17308	0.56986	6.27655
	CIN->COUT (FF)	0.17253	0.57916	6.28240

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.17519	0.68803	8.24654
	B->SUM (-R)	0.18774	0.71940	8.52603
	CIN->SUM (-R)	0.16515	0.70535	8.35188
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.22921	0.66179	8.27994
	B->SUM (-R)	0.23163	0.69596	8.55186
	CIN->SUM (-R)	0.21261	0.68125	8.40277
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.32539	0.70140	8.50753
	B->SUM (-R)	0.29540	0.70611	8.69687
	CIN->SUM (-R)	0.30438	0.71505	8.64366

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.13057	0.52071	6.21344
	B->SUM (-F)	0.13850	0.56946	6.45396
	CIN->SUM (-F)	0.10587	0.55479	6.54796
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.16192	0.51853	5.91354
	B->SUM (-F)	0.17445	0.56657	6.12025
	CIN->SUM (-F)	0.14265	0.55782	6.21696
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.23201	0.56977	6.24075
	B->SUM (-F)	0.20459	0.58129	6.42431
	CIN->SUM (-F)	0.19107	0.59465	6.56097

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.02039	0.02552	0.14294
	A	0.01058	0.01567	0.13281
	B	0.02002	0.02479	0.14349
	B	0.01100	0.01579	0.13429
	CIN	0.01948	0.02490	0.14032
	CIN	0.01388	0.01926	0.13459
sky130_fd_sc_hs__fa_2	A	0.02974	0.03104	0.14052
	A	0.01903	0.02020	0.12968
	B	0.02892	0.02968	0.14050
	B	0.01941	0.02017	0.13079
	CIN	0.02783	0.02895	0.13744
	CIN	0.02120	0.02233	0.13105
sky130_fd_sc_hs__fa_4	A	0.05136	0.04580	0.16157
	A	0.04019	0.03463	0.14947
	B	0.05091	0.04572	0.15997
	B	0.04185	0.03623	0.15003
	CIN	0.04969	0.04374	0.15478
	CIN	0.04345	0.03736	0.14799

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01051	0.01513	0.13099
	A	0.02029	0.02492	0.13908
	B	0.01168	0.01618	0.13080
	B	0.02067	0.02515	0.13946
	CIN	0.01205	0.01700	0.13296
	CIN	0.01833	0.02326	0.13686
sky130_fd_sc_hs__fa_2	A	0.01977	0.01972	0.12645
	A	0.03044	0.03039	0.13626
	B	0.02110	0.02147	0.12838
	B	0.03082	0.03119	0.13760
	CIN	0.02141	0.02252	0.12899
	CIN	0.02786	0.02894	0.13428
sky130_fd_sc_hs__fa_4	A	0.04417	0.03346	0.14171
	A	0.05529	0.04458	0.15043
	B	0.04540	0.03576	0.14241
	B	0.05463	0.04504	0.15088
	CIN	0.04730	0.03712	0.14164
	CIN	0.05335	0.04318	0.14545

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.02885	0.03637	0.22895
	A	0.00801	0.01552	0.20840
	B	0.02701	0.03569	0.21981
	B	0.00777	0.01645	0.20048
	CIN	0.02378	0.03207	0.21618
	CIN	0.01133	0.01960	0.20412
sky130_fd_sc_hs__fa_2	A	0.03538	0.04316	0.24633
	A	0.01359	0.02136	0.22195
	B	0.03336	0.04180	0.23493
	B	0.01384	0.02229	0.21317
	CIN	0.03012	0.03834	0.23113
	CIN	0.01702	0.02526	0.21556
sky130_fd_sc_hs__fa_4	A	0.04801	0.05197	0.25229
	A	0.02442	0.02837	0.22911
	B	0.04771	0.05253	0.24253
	B	0.02829	0.03309	0.22289
	CIN	0.04327	0.04860	0.24566
	CIN	0.03009	0.03563	0.23434

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00739	0.01325	0.20011
	A	0.02880	0.03466	0.21973
	B	0.00880	0.01729	0.17502
	B	0.02741	0.03591	0.19356
	CIN	0.01019	0.01790	0.17660
	CIN	0.02255	0.03021	0.18816
sky130_fd_sc_hs__fa_2	A	0.01932	0.02429	0.21992
	A	0.04109	0.04571	0.24156
	B	0.01942	0.02360	0.21079
	B	0.03830	0.04236	0.22784
	CIN	0.02049	0.02389	0.21140
	CIN	0.03350	0.03683	0.22125
sky130_fd_sc_hs__fa_4	A	0.05984	0.04211	0.22285
	A	0.08340	0.06573	0.23885
	B	0.04643	0.03768	0.19336
	B	0.06529	0.05643	0.21211
	CIN	0.04811	0.03979	0.19927
	CIN	0.06112	0.05273	0.20984

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00496	0.00455	1.63283	1.51589
sky130_fd_sc_hs__ha_2	0.00499	0.00503	2.68629	2.86644
sky130_fd_sc_hs__ha_4	0.00955	0.00853	5.07331	6.10394

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	572.83600	851.96000
sky130_fd_sc_hs__ha_2	0.00000	501.10000	530.25000
sky130_fd_sc_hs__ha_4	0.00000	1447.66000	1945.39000

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)	0.05743	0.42308	5.57204
	B->COUT (RR)	0.05333	0.44278	5.99919
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.06324	0.36708	5.31012
	B->COUT (RR)	0.06035	0.38397	5.54844
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.07917	0.31977	5.37056
	B->COUT (RR)	0.06799	0.33098	5.71566

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.06166	0.44455	5.31967
	B->COUT (FF)	0.05459	0.42043	5.13258
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.07237	0.42307	5.01243
	B->COUT (FF)	0.06710	0.40240	4.81511
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.08643	0.39910	5.03713
	B->COUT (FF)	0.07338	0.37126	4.85675

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	0.05996	0.42922	5.59002
	A->SUM (FR)	B	0.10087	0.63196	7.86561
	B->SUM (RR)	!A	0.05036	0.40248	5.29992
	B->SUM (FR)	A	0.10205	0.61388	7.53982
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.06468	0.34274	5.12091
	A->SUM (FR)	B	0.13414	0.58783	7.82566
	B->SUM (RR)	!A	0.05703	0.32438	4.91836
	B->SUM (FR)	A	0.13474	0.57324	7.54915
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.07408	0.30499	5.60980
	A->SUM (FR)	B	0.15353	0.53913	8.07995
	B->SUM (RR)	!A	0.06237	0.27802	5.33991
	B->SUM (FR)	A	0.14616	0.51749	7.78397

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	0.08117	0.44949	5.44957
	A->SUM (RF)	B	0.08465	0.27587	2.20538
	B->SUM (FF)	!A	0.07071	0.46935	5.69391
	B->SUM (RF)	A	0.08120	0.29800	2.63588
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.10485	0.45479	5.52946
	A->SUM (RF)	B	0.10160	0.26812	2.23189
	B->SUM (FF)	!A	0.09423	0.47614	5.73629
	B->SUM (RF)	A	0.09955	0.28722	2.52702
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.10901	0.42649	5.83579
	A->SUM (RF)	B	0.12778	0.27090	2.60763
	B->SUM (FF)	!A	0.09599	0.44902	6.08527
	B->SUM (RF)	A	0.11749	0.28615	2.98014

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.02163	0.02865	0.15069
	A	0.01624	0.02319	0.14519
	B	0.02107	0.03012	0.18406
	B	0.01700	0.02597	0.17973
sky130_fd_sc_hs__ha_2	A	0.02273	0.02920	0.17013
	A	0.01728	0.02373	0.16457
	B	0.02227	0.02922	0.17141
	B	0.01777	0.02471	0.16677
sky130_fd_sc_hs__ha_4	A	0.05686	0.06880	0.32649
	A	0.04684	0.05878	0.31620
	B	0.05519	0.06974	0.36346
	B	0.04800	0.06257	0.35602

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.01086	0.01918	0.14799
	A	0.01626	0.02457	0.15216
	B	0.01154	0.01998	0.15609
	B	0.01560	0.02403	0.15945
sky130_fd_sc_hs__ha_2	A	0.01645	0.02266	0.15877
	A	0.02189	0.02802	0.16409
	B	0.01655	0.02188	0.15531
	B	0.02104	0.02633	0.15969
sky130_fd_sc_hs__ha_4	A	0.03542	0.04884	0.33298
	A	0.04543	0.05880	0.34268
	B	0.03647	0.04944	0.34159
	B	0.04355	0.05652	0.34845

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	0.01428	0.02275	0.15229
	A	B	0.01968	0.02805	0.15635
	A	!B	0.03033	0.04185	0.25150
	A	!B	0.01985	0.03138	0.24135
	B	A	0.01457	0.02310	0.15912
	B	A	0.01863	0.02709	0.16297
	B	!A	0.02780	0.03988	0.24898
	B	!A	0.01999	0.03208	0.24140
sky130_fd_sc_hs__ha_2	A	B	0.01977	0.02587	0.16599
	A	B	0.02521	0.03130	0.16851
	A	!B	0.03287	0.04307	0.24725
	A	!B	0.02250	0.03275	0.23660
	B	A	0.01941	0.02470	0.15902
	B	A	0.02391	0.02917	0.16302
	B	!A	0.03088	0.04163	0.24500
	B	!A	0.02240	0.03320	0.23626
sky130_fd_sc_hs__ha_4	A	B	0.04471	0.05782	0.34516
	A	B	0.05472	0.06782	0.35235
	A	!B	0.07915	0.09857	0.49787
	A	!B	0.05762	0.07709	0.47732
	B	A	0.04482	0.05774	0.35568
	B	A	0.05190	0.06481	0.35766
	B	!A	0.07287	0.09408	0.48881
	B	!A	0.05717	0.07839	0.47382

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	0.01652	0.02350	0.14553
	A	B	0.01113	0.01810	0.14012
	A	!B	0.00805	0.01896	0.23163
	A	!B	0.01847	0.02935	0.24081
	B	A	0.01595	0.02496	0.17863
	B	A	0.01187	0.02087	0.17448
	B	!A	0.00946	0.02194	0.23542
	B	!A	0.01756	0.02998	0.24181
sky130_fd_sc_hs__ha_2	A	B	0.01963	0.02609	0.16612
	A	B	0.01418	0.02062	0.16049
	A	!B	0.02018	0.02617	0.22842
	A	!B	0.03050	0.03648	0.23696
	B	A	0.01919	0.02609	0.16609
	B	A	0.01467	0.02159	0.16142
	B	!A	0.02103	0.02881	0.23182
	B	!A	0.02985	0.03746	0.23934
sky130_fd_sc_hs__ha_4	A	B	0.04690	0.05864	0.31397
	A	B	0.03688	0.04860	0.30299
	A	!B	0.04244	0.05378	0.44779
	A	!B	0.06389	0.07521	0.46889
	B	A	0.04527	0.05969	0.34966
	B	A	0.03804	0.05246	0.34234
	B	!A	0.04559	0.06060	0.45269
	B	!A	0.06213	0.07695	0.46975

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00835	25.26292
sky130_fd_sc_hs__bufinv_8	0.00285	9.54467
sky130_fd_sc_hs__inv_1	0.00290	1.57010
sky130_fd_sc_hs__inv_16	0.04401	23.40764
sky130_fd_sc_hs__inv_2	0.00534	2.99355
sky130_fd_sc_hs__inv_4	0.01077	5.60244
sky130_fd_sc_hs__inv_8	0.02133	10.95187

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	1528.37000	2287.04000
sky130_fd_sc_hs__bufinv_8	0.00000	733.18500	1083.07000
sky130_fd_sc_hs__inv_1	0.00000	61.14550	119.51300
sky130_fd_sc_hs__inv_16	0.00000	978.07800	1911.74000
sky130_fd_sc_hs__inv_2	0.00000	122.28100	239.01100
sky130_fd_sc_hs__inv_4	0.00000	244.49800	477.89100
sky130_fd_sc_hs__inv_8	0.00000	488.99100	955.77300

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)	0.08157	0.35585	7.76544
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.10301	0.44590	7.69764
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.01798	0.58446	9.06401
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.01253	0.32595	9.00938
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.01437	0.49652	8.93565
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.01321	0.43110	8.90528
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.01313	0.37356	8.89978

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.07381	0.15188	2.64411
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.08962	0.20312	2.11676
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01250	0.34360	5.44872
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.00913	0.13210	5.37813
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01021	0.26929	5.25472
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.00950	0.22024	5.29162
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.00956	0.17354	5.26723

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.11274	0.17613	1.23699
	A	0.12861	0.19206	1.26222
sky130_fd_sc_hs__bufinv_8	A	0.05932	0.08245	0.51477
	A	0.06471	0.08782	0.51956
sky130_fd_sc_hs__inv_1	A	-0.00103	0.00848	0.12563
	A	0.00447	0.01398	0.13106
sky130_fd_sc_hs__inv_16	A	-0.01985	0.19826	1.91111
	A	0.06332	0.28183	1.99531
sky130_fd_sc_hs__inv_2	A	-0.00242	0.01888	0.25213
	A	0.00768	0.02899	0.26253
sky130_fd_sc_hs__inv_4	A	-0.00476	0.03943	0.46231
	A	0.01562	0.06000	0.48328
sky130_fd_sc_hs__inv_8	A	-0.00929	0.09009	1.00163
	A	0.03106	0.13100	1.04358

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.15527	0.20708	1.26978
	A	0.13944	0.19121	1.24943
sky130_fd_sc_hs__bufinv_8	A	0.07355	0.08851	0.50298
	A	0.06815	0.08307	0.49561
sky130_fd_sc_hs__inv_1	A	0.00707	0.01332	0.08658
	A	0.00158	0.00775	0.07933
sky130_fd_sc_hs__inv_16	A	0.10065	0.27189	1.36967
	A	0.01746	0.18839	1.26637
sky130_fd_sc_hs__inv_2	A	0.01231	0.02673	0.17053
	A	0.00221	0.01652	0.15818
sky130_fd_sc_hs__inv_4	A	0.02502	0.05703	0.33452
	A	0.00466	0.03657	0.30858
sky130_fd_sc_hs__inv_8	A	0.04942	0.12396	0.72830
	A	0.00911	0.08348	0.67827

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00542	0.00509	0.00529	1.68123
sky130_fd_sc_hs__maj3_2	0.00573	0.00545	0.00559	3.22344
sky130_fd_sc_hs__maj3_4	0.01056	0.00997	0.01039	6.05263

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	150.53300	291.86100
sky130_fd_sc_hs__maj3_2	0.00000	210.09900	294.67500
sky130_fd_sc_hs__maj3_4	0.00000	423.27600	589.10500

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)	0.07096	0.43622	5.42356
	B->X (RR)	0.06297	0.43362	5.40094
	C->X (RR)	0.07251	0.45954	5.73328
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.07822	0.36403	5.23354
	B->X (RR)	0.06444	0.36270	5.22309
	C->X (RR)	0.07203	0.38336	5.49045
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.07395	0.30423	5.37647
	B->X (RR)	0.06955	0.31168	5.39552
	C->X (RR)	0.07141	0.32097	5.51887

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.09543	0.49709	5.87498
	B->X (FF)	0.08692	0.50696	5.97715
	C->X (FF)	0.09926	0.52353	6.14420
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.10997	0.47656	5.71142
	B->X (FF)	0.09873	0.49536	5.80198
	C->X (FF)	0.11867	0.50855	5.96751
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.11468	0.43322	5.77861
	B->X (FF)	0.08923	0.44653	5.90184
	C->X (FF)	0.10937	0.46187	6.00655

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.02550	0.03500	0.23613
	A	0.01048	0.01998	0.22136
	B	0.02353	0.03304	0.23770
	B	0.01192	0.02144	0.22632
	C	0.02481	0.03462	0.24401
	C	0.01159	0.02143	0.23098
sky130_fd_sc_hs__maj3_2	A	0.03085	0.04112	0.25068
	A	0.01465	0.02500	0.23427
	B	0.02927	0.03895	0.24956
	B	0.01679	0.02652	0.23686
	C	0.03062	0.03994	0.24857
	C	0.01659	0.02602	0.23536
sky130_fd_sc_hs__maj3_4	A	0.05841	0.07731	0.49380
	A	0.02959	0.04853	0.46578
	B	0.05640	0.07722	0.49701
	B	0.03418	0.05504	0.47559
	C	0.05803	0.07704	0.49010
	C	0.03244	0.05148	0.46580

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00661	0.01546	0.21893
	A	0.02169	0.03052	0.23184
	B	0.00857	0.01794	0.22537
	B	0.02008	0.02944	0.23293
	C	0.00917	0.01874	0.22825
	C	0.02214	0.03173	0.23961
sky130_fd_sc_hs__maj3_2	A	0.01770	0.02298	0.22864
	A	0.03372	0.03885	0.24225
	B	0.01906	0.02434	0.22842
	B	0.03158	0.03677	0.23938
	C	0.01988	0.02509	0.23374
	C	0.03404	0.03926	0.24568
sky130_fd_sc_hs__maj3_4	A	0.03625	0.04595	0.45298
	A	0.06491	0.07439	0.47716
	B	0.03763	0.04904	0.45763
	B	0.05990	0.07113	0.47696
	C	0.03872	0.05011	0.45655
	C	0.06403	0.07526	0.47670

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00611	0.00545	0.00688
	(B * C * X)	-0.00285	-0.00357	-0.00205
	(!B * !C * !X)	0.00531	0.00537	0.00531
	(!B * !C * !X)	-0.00353	-0.00357	-0.00355
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00594	0.00533	0.00672
	(B * C * X)	-0.00347	-0.00417	-0.00266
	(!B * !C * !X)	0.00596	0.00601	0.00597
	(!B * !C * !X)	-0.00331	-0.00335	-0.00332
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.01141	0.01013	0.01284
	(B * C * X)	-0.00569	-0.00712	-0.00418
	(!B * !C * !X)	0.01169	0.01178	0.01172
	(!B * !C * !X)	-0.00513	-0.00518	-0.00516

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00201	-0.00208	-0.00249
	(B * C * X)	0.00695	0.00692	0.00648
	(!B * !C * !X)	-0.00265	-0.00294	-0.00298
	(!B * !C * !X)	0.00622	0.00601	0.00585
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00179	-0.00189	-0.00229
	(B * C * X)	0.00760	0.00762	0.00714
	(!B * !C * !X)	-0.00127	-0.00159	-0.00165
	(!B * !C * !X)	0.00800	0.00774	0.00761
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00295	-0.00309	-0.00395
	(B * C * X)	0.01410	0.01402	0.01317
	(!B * !C * !X)	-0.00215	-0.00286	-0.00290
	(!B * !C * !X)	0.01472	0.01421	0.01392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00387	0.00391	0.00401
	(A * C * X)	-0.00167	-0.00168	-0.00155
	(!A * !C * !X)	0.00195	0.00196	0.00190
	(!A * !C * !X)	-0.00413	-0.00416	-0.00424
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00452	0.00456	0.00466
	(A * C * X)	-0.00155	-0.00156	-0.00145
	(!A * !C * !X)	0.00316	0.00315	0.00310
	(!A * !C * !X)	-0.00324	-0.00324	-0.00333
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00774	0.00780	0.00796
	(A * C * X)	-0.00326	-0.00327	-0.00306
	(!A * !C * !X)	0.00630	0.00631	0.00614
	(!A * !C * !X)	-0.00590	-0.00598	-0.00620

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00208	-0.00215	-0.00279
	(A * C * X)	0.00349	0.00347	0.00282
	(!A * !C * !X)	0.00025	0.00023	0.00026
	(!A * !C * !X)	0.00639	0.00646	0.00638
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00267	-0.00273	-0.00337
	(A * C * X)	0.00345	0.00342	0.00278
	(!A * !C * !X)	0.00113	0.00109	0.00112
	(!A * !C * !X)	0.00753	0.00760	0.00753
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00400	-0.00409	-0.00534
	(A * C * X)	0.00712	0.00705	0.00579
	(!A * !C * !X)	0.00237	0.00229	0.00235
	(!A * !C * !X)	0.01461	0.01479	0.01464

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00476	0.00444	0.00519
	(A * B * X)	-0.00229	-0.00266	-0.00183
	(!A * !B * !X)	0.00318	0.00321	0.00316
	(!A * !B * !X)	-0.00407	-0.00411	-0.00414
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00535	0.00502	0.00577
	(A * B * X)	-0.00220	-0.00258	-0.00176
	(!A * !B * !X)	0.00459	0.00463	0.00457
	(!A * !B * !X)	-0.00300	-0.00304	-0.00306
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00961	0.00895	0.01040
	(A * B * X)	-0.00436	-0.00521	-0.00356
	(!A * !B * !X)	0.00891	0.00896	0.00886
	(!A * !B * !X)	-0.00553	-0.00559	-0.00569

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00178	-0.00186	-0.00239
	(A * B * X)	0.00524	0.00523	0.00468
	(!A * !B * !X)	-0.00074	-0.00093	-0.00090
	(!A * !B * !X)	0.00652	0.00643	0.00635
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00233	-0.00239	-0.00291
	(A * B * X)	0.00524	0.00520	0.00465
	(!A * !B * !X)	-0.00009	-0.00030	-0.00030
	(!A * !B * !X)	0.00751	0.00741	0.00731
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00347	-0.00362	-0.00466
	(A * B * X)	0.01053	0.01049	0.00939
	(!A * !B * !X)	0.00019	-0.00016	-0.00020
	(!A * !B * !X)	0.01469	0.01432	0.01429

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00290	0.00274	0.00512	0.81639
sky130_fd_sc_hs__mux2i_2	0.00543	0.00574	0.00830	1.28503
sky130_fd_sc_hs__mux2i_4	0.01075	0.01072	0.01445	2.31581

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	262.98900	550.61200
sky130_fd_sc_hs__mux2i_2	0.00000	234.62800	517.36600
sky130_fd_sc_hs__mux2i_4	0.00000	685.91700	1475.28000

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)	-	0.05184	0.71963	9.20670
	A1->Y (FR)	-	0.04652	0.71397	9.18735
	S->Y (RR)	(A0 * !A1)	0.07742	0.53024	5.39014
	S->Y (FR)	(!A0 * A1)	0.06041	0.67195	8.42290
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.06009	0.64463	9.05463
	A1->Y (FR)	-	0.05431	0.61113	8.61370
	S->Y (RR)	(A0 * !A1)	0.08385	0.41501	4.52579
	S->Y (FR)	(!A0 * A1)	0.06627	0.57760	8.01934
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.05668	0.56519	9.01122
	A1->Y (FR)	-	0.05665	0.57608	9.25233
	S->Y (RR)	(A0 * !A1)	0.09916	0.45138	6.00591
	S->Y (FR)	(!A0 * A1)	0.06389	0.48651	7.79529

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)	-	0.02511	0.34679	4.24469
	A1->Y (RF)	-	0.02657	0.37352	4.60088
	S->Y (FF)	(A0 * !A1)	0.05904	0.39283	4.14256
	S->Y (RF)	(!A0 * A1)	0.03046	0.31811	3.81283
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.03154	0.32865	4.49726
	A1->Y (RF)	-	0.02991	0.31557	4.34076
	S->Y (FF)	(A0 * !A1)	0.07134	0.38844	4.17877
	S->Y (RF)	(!A0 * A1)	0.03176	0.23698	3.18732
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.02917	0.26887	4.33958
	A1->Y (RF)	-	0.03386	0.30501	4.90347
	S->Y (FF)	(A0 * !A1)	0.07082	0.32101	3.56516
	S->Y (RF)	(!A0 * A1)	0.03480	0.19330	3.17656

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	-	0.00168	0.00794	0.10548
	A0	-	0.00919	0.01543	0.11312
	A1	-	0.01125	0.01727	0.11024
	A1	-	0.01810	0.02411	0.11723
	S	(A0 * !A1)	0.02115	0.03735	0.30346
	S	(A0 * !A1)	0.01544	0.03162	0.29761
	S	(!A0 * A1)	0.00249	0.02464	0.38384
	S	(!A0 * A1)	0.01612	0.03827	0.39732
sky130_fd_sc_hs__mux2i_2	A0	-	0.00367	0.01427	0.17161
	A0	-	0.01823	0.02886	0.18588
	A1	-	0.00709	0.01838	0.18507
	A1	-	0.02145	0.03276	0.19931
	S	(A0 * !A1)	0.02392	0.03906	0.29965
	S	(A0 * !A1)	0.01696	0.03203	0.29301
	S	(!A0 * A1)	0.00599	0.03353	0.49760
	S	(!A0 * A1)	0.02934	0.05682	0.52089
sky130_fd_sc_hs__mux2i_4	A0	-	0.00461	0.02684	0.32403
	A0	-	0.03347	0.05570	0.35248
	A1	-	0.02566	0.04535	0.30717
	A1	-	0.05304	0.07261	0.33453
	S	(A0 * !A1)	0.05480	0.08038	0.54408
	S	(A0 * !A1)	0.04432	0.06982	0.53353
	S	(!A0 * A1)	0.01000	0.05865	0.82522
	S	(!A0 * A1)	0.05239	0.10123	0.86772

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.01292	0.01733	0.08469
	A0	-	0.00557	0.00985	0.07664
	A1	-	0.01899	0.02309	0.08606
	A1	-	0.01176	0.01585	0.07853
	S	(A0 * !A1)	0.01047	0.02764	0.29314
	S	(A0 * !A1)	0.01615	0.03330	0.29879
	S	(!A0 * A1)	0.02632	0.04641	0.38431
	S	(!A0 * A1)	0.01267	0.03273	0.37044
sky130_fd_sc_hs__mux2i_2	A0	-	0.02635	0.03410	0.14505
	A0	-	0.01220	0.01981	0.13014
	A1	-	0.02780	0.03615	0.15518
	A1	-	0.01289	0.02112	0.13920
	S	(A0 * !A1)	0.02191	0.03762	0.28949
	S	(A0 * !A1)	0.02877	0.04446	0.29615
	S	(!A0 * A1)	0.03902	0.06490	0.50486
	S	(!A0 * A1)	0.01566	0.04139	0.48082
sky130_fd_sc_hs__mux2i_4	A0	-	0.04967	0.06570	0.27861
	A0	-	0.02147	0.03733	0.24758
	A1	-	0.06414	0.07827	0.26490
	A1	-	0.03552	0.04952	0.23570
	S	(A0 * !A1)	0.04241	0.07086	0.53442
	S	(A0 * !A1)	0.05276	0.08115	0.54478
	S	(!A0 * A1)	0.08229	0.12639	0.86386
	S	(!A0 * A1)	0.03987	0.08386	0.82128

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00667	0.00670	0.00672
	(A1 * S * !Y)	0.00322	0.00321	0.00325
	(!A1 * S * Y)	0.00412	0.00413	0.00409
	(!A1 * S * Y)	0.00026	0.00024	0.00021
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00781	0.00788	0.00789
	(A1 * S * !Y)	0.00154	0.00152	0.00164
	(!A1 * S * Y)	0.00273	0.00273	0.00262
	(!A1 * S * Y)	-0.00441	-0.00444	-0.00454
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.01911	0.01917	0.01931
	(A1 * S * !Y)	0.00667	0.00665	0.00684
	(!A1 * S * Y)	0.00914	0.00915	0.00897
	(!A1 * S * Y)	-0.00502	-0.00506	-0.00527

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00257	0.00253	0.00226
	(A1 * S * !Y)	0.00604	0.00604	0.00577
	(!A1 * S * Y)	0.00229	0.00228	0.00229
	(!A1 * S * Y)	0.00616	0.00617	0.00616
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00044	0.00038	-0.00017
	(A1 * S * !Y)	0.00676	0.00673	0.00619
	(!A1 * S * Y)	-0.00000	-0.00002	-0.00000
	(!A1 * S * Y)	0.00711	0.00715	0.00714
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00501	0.00488	0.00376
	(A1 * S * !Y)	0.01753	0.01750	0.01640
	(!A1 * S * Y)	0.00393	0.00393	0.00395
	(!A1 * S * Y)	0.01814	0.01815	0.01815

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00329	0.00332	0.00333
	(A0 * !S * !Y)	0.00002	0.00001	0.00006
	(!A0 * !S * Y)	0.00082	0.00082	0.00076
	(!A0 * !S * Y)	-0.00281	-0.00283	-0.00290
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00673	0.00675	0.00681
	(A0 * !S * !Y)	-0.00004	-0.00003	0.00005
	(!A0 * !S * Y)	0.00163	0.00163	0.00154
	(!A0 * !S * Y)	-0.00568	-0.00572	-0.00582
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.01277	0.01285	0.01294
	(A0 * !S * !Y)	0.00026	0.00025	0.00045
	(!A0 * !S * Y)	0.00255	0.00257	0.00240
	(!A0 * !S * Y)	-0.01120	-0.01126	-0.01155

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00031	-0.00038	-0.00066
	(A0 * !S * !Y)	0.00296	0.00295	0.00266
	(!A0 * !S * Y)	-0.00065	-0.00065	-0.00064
	(!A0 * !S * Y)	0.00300	0.00302	0.00300
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00086	-0.00090	-0.00149
	(A0 * !S * !Y)	0.00595	0.00589	0.00536
	(!A0 * !S * Y)	-0.00130	-0.00130	-0.00129
	(!A0 * !S * Y)	0.00603	0.00605	0.00605
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00112	-0.00132	-0.00246
	(A0 * !S * !Y)	0.01132	0.01131	0.01021
	(!A0 * !S * Y)	-0.00205	-0.00205	-0.00204
	(!A0 * !S * Y)	0.01184	0.01187	0.01187

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.01404	0.02982	0.29147
	(A0 * A1 * !Y)	0.00463	0.02035	0.28207
	(!A0 * !A1 * Y)	0.01253	0.02851	0.28979
	(!A0 * !A1 * Y)	0.00315	0.01907	0.28038
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01906	0.03478	0.31955
	(A0 * A1 * !Y)	0.00435	0.02000	0.30486
	(!A0 * !A1 * Y)	0.01561	0.03237	0.31640
	(!A0 * !A1 * Y)	0.00097	0.01766	0.30175
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.03857	0.06177	0.51675
	(A0 * A1 * !Y)	0.01301	0.03603	0.49129
	(!A0 * !A1 * Y)	0.03176	0.05661	0.51046
	(!A0 * !A1 * Y)	0.00640	0.03128	0.48510

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00113	0.01809	0.28253
	(A0 * A1 * !Y)	0.01053	0.02750	0.29196
	(!A0 * !A1 * Y)	-0.00060	0.01667	0.28097
	(!A0 * !A1 * Y)	0.00878	0.02609	0.29038
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00239	0.01907	0.30480
	(A0 * A1 * !Y)	0.01707	0.03378	0.31953
	(!A0 * !A1 * Y)	-0.00029	0.01654	0.30177
	(!A0 * !A1 * Y)	0.01435	0.03123	0.31643
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.00577	0.03312	0.49466
	(A0 * A1 * !Y)	0.03130	0.05860	0.52025
	(!A0 * !A1 * Y)	0.00035	0.02785	0.48851
	(!A0 * !A1 * Y)	0.02571	0.05341	0.51393

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00280	0.00326	0.00472	1.72524
sky130_fd_sc_hs__mux2_2	0.00258	0.00292	0.00556	2.72727
sky130_fd_sc_hs__mux2_4	0.00500	0.00501	0.00843	5.11515

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	335.91200	579.34300
sky130_fd_sc_hs__mux2_2	0.00000	396.81300	605.75700
sky130_fd_sc_hs__mux2_4	0.00000	506.05500	637.62600

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)	-	0.05212	0.40900	5.37005
	A1->X (RR)	-	0.05257	0.40746	5.28683
	S->X (RR)	(!A0 * A1)	0.05474	0.39505	5.24446
	S->X (FR)	(A0 * !A1)	0.09354	0.59117	7.73345
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.06525	0.37875	5.17336
	A1->X (RR)	-	0.06253	0.36359	4.99587
	S->X (RR)	(!A0 * A1)	0.06390	0.35068	5.09460
	S->X (FR)	(A0 * !A1)	0.10400	0.53394	7.55968
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.09464	0.35840	5.23093
	A1->X (RR)	-	0.09590	0.36578	5.38124
	S->X (RR)	(!A0 * A1)	0.09776	0.32569	5.17549
	S->X (FR)	(A0 * !A1)	0.14147	0.53892	7.85218

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)	-	0.07529	0.50738	5.92941
	A1->X (FF)	-	0.07291	0.50701	6.18111
	S->X (FF)	(!A0 * A1)	0.09619	0.50657	6.21980
	S->X (RF)	(A0 * !A1)	0.11128	0.33333	3.01046
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.09344	0.48071	5.41716
	A1->X (FF)	-	0.09605	0.49145	5.53392
	S->X (FF)	(!A0 * A1)	0.11332	0.45245	5.31745
	S->X (RF)	(A0 * !A1)	0.13651	0.30202	2.38348
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.12026	0.47263	5.30560
	A1->X (FF)	-	0.12187	0.47505	5.22075
	S->X (FF)	(!A0 * A1)	0.13640	0.43761	5.13049
	S->X (RF)	(A0 * !A1)	0.15830	0.29007	1.99038

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	-	0.01899	0.02944	0.22452
	A0	-	0.01185	0.02231	0.21764
	A1	-	0.02884	0.03903	0.21952
	A1	-	0.02113	0.03134	0.21222
	S	(A0 * !A1)	0.01811	0.03440	0.31199
	S	(A0 * !A1)	0.02268	0.03893	0.31719
	S	(!A0 * A1)	0.03655	0.06142	0.49625
	S	(!A0 * A1)	0.02366	0.04852	0.48324
sky130_fd_sc_hs__mux2_2	A0	-	0.02442	0.03462	0.22592
	A0	-	0.01737	0.02763	0.21867
	A1	-	0.03411	0.04446	0.23619
	A1	-	0.02676	0.03720	0.22858
	S	(A0 * !A1)	0.02296	0.03917	0.32258
	S	(A0 * !A1)	0.02857	0.04484	0.32825
	S	(!A0 * A1)	0.04204	0.06311	0.44082
	S	(!A0 * A1)	0.02809	0.04918	0.42668
sky130_fd_sc_hs__mux2_4	A0	-	0.05006	0.06505	0.37085
	A0	-	0.03713	0.05215	0.35855
	A1	-	0.05411	0.07017	0.41863
	A1	-	0.04100	0.05728	0.40645
	S	(A0 * !A1)	0.04769	0.06141	0.40191
	S	(A0 * !A1)	0.05563	0.06948	0.41017
	S	(!A0 * A1)	0.06687	0.09414	0.63079
	S	(!A0 * A1)	0.04448	0.07178	0.60805

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00846	0.01886	0.19238
	A0	-	0.01558	0.02598	0.19722
	A1	-	0.01450	0.02550	0.22773
	A1	-	0.02219	0.03315	0.23342
	S	(A0 * !A1)	0.02676	0.04132	0.32042
	S	(A0 * !A1)	0.02218	0.03660	0.31500
	S	(!A0 * A1)	0.01018	0.03513	0.47299
	S	(!A0 * A1)	0.02307	0.04799	0.48387
sky130_fd_sc_hs__mux2_2	A0	-	0.01848	0.02418	0.21239
	A0	-	0.02552	0.03106	0.21577
	A1	-	0.02433	0.02986	0.21831
	A1	-	0.03167	0.03709	0.22496
	S	(A0 * !A1)	0.03560	0.04479	0.31336
	S	(A0 * !A1)	0.03000	0.03905	0.30692
	S	(!A0 * A1)	0.01906	0.03898	0.45473
	S	(!A0 * A1)	0.03300	0.05288	0.46535
sky130_fd_sc_hs__mux2_4	A0	-	0.04323	0.04865	0.38394
	A0	-	0.05618	0.06155	0.38877
	A1	-	0.04641	0.05256	0.37889
	A1	-	0.05953	0.06528	0.38818
	S	(A0 * !A1)	0.06279	0.06625	0.37905
	S	(A0 * !A1)	0.05481	0.05814	0.37073
	S	(!A0 * A1)	0.04537	0.06532	0.66096
	S	(!A0 * A1)	0.06771	0.08764	0.68333

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00671	0.00671	0.00675
	(A1 * S * X)	0.00355	0.00356	0.00360
	(!A1 * S * !X)	0.00502	0.00502	0.00496
	(!A1 * S * !X)	0.00160	0.00159	0.00153
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00661	0.00665	0.00665
	(A1 * S * X)	0.00350	0.00348	0.00355
	(!A1 * S * !X)	0.00616	0.00615	0.00607
	(!A1 * S * !X)	0.00277	0.00275	0.00267
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00775	0.00779	0.00785
	(A1 * S * X)	0.00200	0.00198	0.00208
	(!A1 * S * !X)	0.00683	0.00682	0.00673
	(!A1 * S * !X)	0.00030	0.00027	0.00014

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00299	0.00294	0.00264
	(A1 * S * X)	0.00612	0.00612	0.00581
	(!A1 * S * !X)	0.00352	0.00350	0.00351
	(!A1 * S * !X)	0.00692	0.00693	0.00692
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00314	0.00308	0.00278
	(A1 * S * X)	0.00624	0.00624	0.00593
	(!A1 * S * !X)	0.00449	0.00446	0.00447
	(!A1 * S * !X)	0.00786	0.00786	0.00785
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00152	0.00145	0.00083
	(A1 * S * X)	0.00731	0.00729	0.00667
	(!A1 * S * !X)	0.00433	0.00429	0.00430
	(!A1 * S * !X)	0.01091	0.01087	0.01087

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00380	0.00382	0.00385
	(A0 * !S * X)	0.00019	0.00018	0.00024
	(!A0 * !S * !X)	0.00178	0.00178	0.00175
	(!A0 * !S * !X)	-0.00198	-0.00200	-0.00203
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00369	0.00370	0.00374
	(A0 * !S * X)	0.00044	0.00043	0.00047
	(!A0 * !S * !X)	0.00274	0.00273	0.00270
	(!A0 * !S * !X)	-0.00067	-0.00069	-0.00073
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00664	0.00666	0.00673
	(A0 * !S * X)	0.00081	0.00081	0.00091
	(!A0 * !S * !X)	0.00540	0.00538	0.00529
	(!A0 * !S * !X)	-0.00105	-0.00109	-0.00120

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00044	-0.00048	-0.00079
	(A0 * !S * X)	0.00318	0.00318	0.00285
	(!A0 * !S * !X)	0.00046	0.00043	0.00044
	(!A0 * !S * !X)	0.00422	0.00423	0.00421
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00022	-0.00025	-0.00055
	(A0 * !S * X)	0.00306	0.00305	0.00275
	(!A0 * !S * !X)	0.00159	0.00156	0.00157
	(!A0 * !S * !X)	0.00500	0.00499	0.00498
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00027	0.00019	-0.00044
	(A0 * !S * X)	0.00609	0.00607	0.00545
	(!A0 * !S * !X)	0.00342	0.00337	0.00339
	(!A0 * !S * !X)	0.00986	0.00986	0.00984

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.01448	0.02964	0.28649
	(A0 * A1 * X)	0.00591	0.02102	0.27792
	(!A0 * !A1 * !X)	0.01392	0.02944	0.28643
	(!A0 * !A1 * !X)	0.00536	0.02083	0.27786
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.01469	0.02986	0.28533
	(A0 * A1 * X)	0.00506	0.02016	0.27571
	(!A0 * !A1 * !X)	0.01448	0.02990	0.28388
	(!A0 * !A1 * !X)	0.00486	0.02026	0.27425
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01990	0.03558	0.31627
	(A0 * A1 * X)	0.00516	0.02077	0.30154
	(!A0 * !A1 * !X)	0.02060	0.03686	0.31432
	(!A0 * !A1 * !X)	0.00593	0.02209	0.29958

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00163	0.01813	0.27787
	(A0 * A1 * X)	0.01017	0.02674	0.28646
	(!A0 * !A1 * !X)	0.00077	0.01736	0.27750
	(!A0 * !A1 * !X)	0.00932	0.02596	0.28605
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00094	0.01748	0.27580
	(A0 * A1 * X)	0.01059	0.02714	0.28544
	(!A0 * !A1 * !X)	0.00158	0.01811	0.27516
	(!A0 * !A1 * !X)	0.01120	0.02779	0.28476
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00288	0.01917	0.30072
	(A0 * A1 * X)	0.01763	0.03394	0.31549
	(!A0 * !A1 * !X)	0.00363	0.02017	0.29861
	(!A0 * !A1 * !X)	0.01834	0.03495	0.31333

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00246	0.00257	0.00255	0.00282	0.00855	0.00547	1.58881
sky130_fd_sc_hs__mux4_2	0.00277	0.00262	0.00273	0.00267	0.00965	0.00564	3.20069
sky130_fd_sc_hs__mux4_4	0.00490	0.00472	0.00489	0.00491	0.01355	0.00843	6.04387

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	434.96800	772.09500
sky130_fd_sc_hs__mux4_2	0.00000	492.23700	886.08100
sky130_fd_sc_hs__mux4_4	0.00000	820.99000	1457.39000

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)	0.09407	0.47837	5.49174
	A1->X (RR)	0.09522	0.47687	5.42462
	A2->X (RR)	0.09533	0.48039	5.42714
	A3->X (RR)	0.09377	0.47435	5.38356
	S0->X (-R)	0.13714	0.65920	7.79252
	S1->X (-R)	0.07692	0.59021	7.90345
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.10119	0.40558	5.35088
	A1->X (RR)	0.09760	0.40426	5.34791
	A2->X (RR)	0.09404	0.39512	5.30524
	A3->X (RR)	0.08984	0.39166	5.30148
	S0->X (-R)	0.13176	0.57928	7.81443
	S1->X (-R)	0.08436	0.51588	7.80198
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.11758	0.36247	5.55526
	A1->X (RR)	0.12175	0.36731	5.62141
	A2->X (RR)	0.12240	0.36578	5.49948
	A3->X (RR)	0.11711	0.36338	5.51336
	S0->X (-R)	0.18307	0.57817	7.85423
	S1->X (-R)	0.09815	0.47980	7.85717

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.12390	0.53254	5.64284
	A1->X (FF)	0.13053	0.54701	5.72439
	A2->X (FF)	0.13312	0.55285	5.73817
	A3->X (FF)	0.13285	0.55242	5.75968
	S0->X (-F)	0.12441	0.57259	5.89214
	S1->X (-F)	0.05932	0.47677	5.79326
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.15295	0.54805	5.87683
	A1->X (FF)	0.15216	0.54299	5.86294
	A2->X (FF)	0.15191	0.54570	5.90325
	A3->X (FF)	0.14731	0.53586	5.87518
	S0->X (-F)	0.12889	0.55468	6.00093
	S1->X (-F)	0.07078	0.46709	5.94988
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.16026	0.50499	5.92777
	A1->X (FF)	0.15610	0.49718	5.88465
	A2->X (FF)	0.17636	0.52666	6.03295
	A3->X (FF)	0.16661	0.51388	5.96847
	S0->X (-F)	0.15807	0.56353	6.18345
	S1->X (-F)	0.07542	0.43302	5.88437

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.02674	0.03666	0.24658
	A0	0.01811	0.02804	0.23838
	A1	0.02824	0.03779	0.24111
	A1	0.01978	0.02932	0.23292
	A2	0.02797	0.03744	0.23939
	A2	0.01965	0.02911	0.23133
	A3	0.02987	0.03957	0.24404
	A3	0.02130	0.03100	0.23572
	S0	0.04999	0.09044	0.78553
	S0	0.03024	0.07070	0.76602
	S1	0.02926	0.05438	0.44609
	S1	0.01895	0.04408	0.43598
sky130_fd_sc_hs__mux4_2	A0	0.03344	0.04217	0.25244
	A0	0.02392	0.03266	0.24347
	A1	0.03487	0.04399	0.25638
	A1	0.02548	0.03462	0.24755
	A2	0.03337	0.04206	0.24592
	A2	0.02438	0.03312	0.23747
	A3	0.03520	0.04447	0.25431
	A3	0.02641	0.03575	0.24606
	S0	0.05754	0.09804	0.79880
	S0	0.03705	0.07757	0.77876
	S1	0.03386	0.05894	0.46005
	S1	0.02318	0.04829	0.44919

sky130_fd_sc_hs__mux4_4	**A0**	0.06501	0.07989	0.48740
	A0	0.04811	0.06300	0.47193
	A1	0.06460	0.07948	0.49350
	A1	0.04815	0.06306	0.47838
	A2	0.06490	0.07836	0.47362
	A2	0.04845	0.06191	0.45860
	A3	0.06466	0.07926	0.48540
	A3	0.04826	0.06288	0.47041
	S0	0.10190	0.15538	1.17776
	S0	0.06978	0.12341	1.14606
	S1	0.06001	0.08925	0.63669
	S1	0.04407	0.07333	0.62181

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.01550	0.02325	0.23141
	A0	0.02411	0.03185	0.23761
	A1	0.02019	0.02729	0.22622
	A1	0.02865	0.03574	0.23419
	A2	0.02152	0.02834	0.22818
	A2	0.02984	0.03666	0.23497
	A3	0.02521	0.03219	0.23438
	A3	0.03377	0.04076	0.24159
	S0	0.01863	0.05845	0.75095
	S0	0.03862	0.07844	0.77040
	S1	0.01305	0.03905	0.44936
	S1	0.02334	0.04935	0.45863

sky130_fd_sc_hs__mux4_2	**A0**	0.03152	0.03229	0.23499
	A0	0.04104	0.04180	0.24445
	A1	0.03541	0.03632	0.24065
	A1	0.04479	0.04569	0.25001
	A2	0.03522	0.03567	0.23188
	A2	0.04419	0.04463	0.24086
	A3	0.03825	0.03939	0.24176
	A3	0.04703	0.04815	0.25050
	S0	0.03208	0.06585	0.76136
	S0	0.05298	0.08678	0.78039
	S1	0.02515	0.04699	0.45652
	S1	0.03583	0.05733	0.46722
sky130_fd_sc_hs__mux4_4	**A0**	0.06324	0.06294	0.45734
	A0	0.08011	0.07982	0.47103
	A1	0.06899	0.06930	0.47000
	A1	0.08544	0.08571	0.48399
	A2	0.07308	0.06960	0.45671
	A2	0.08950	0.08593	0.46433
	A3	0.07562	0.07453	0.46628
	A3	0.09201	0.09089	0.48124
	S0	0.06516	0.10656	1.11739
	S0	0.09702	0.13841	1.14564
	S1	0.05144	0.07377	0.62806
	S1	0.06741	0.08941	0.63565

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)	0.01422	0.02539	0.23320
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00740	0.01856	0.22638
	(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)	0.00658	0.00619	0.00685
	(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)	0.00245	0.00203	0.00274
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01544	0.02627	0.23354
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00773	0.01853	0.22581
	(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)	0.00665	0.00630	0.00702
	(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)	0.00239	0.00201	0.00278
sky130_fd_sc_hs__mux4_4	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.02548	0.04675	0.44559
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01208	0.03333	0.43217
	(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)	0.01023	0.00948	0.01084
	(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)	0.00191	0.00112	0.00261

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)	0.00492	0.01634	0.22369
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01174	0.02316	0.23049
	(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)	0.00318	0.00313	0.00293
	(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)	0.00730	0.00729	0.00706
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00583	0.01705	0.22381
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01355	0.02479	0.23152
	(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)	0.00305	0.00299	0.00279
	(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)	0.00729	0.00729	0.00706
sky130_fd_sc_hs__mux4_4	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00882	0.03046	0.42835
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.02226	0.04391	0.44177
	(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)	0.00360	0.00352	0.00310
	(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)	0.01190	0.01184	0.01140

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)	0.01338	0.02414	0.22500
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00673	0.01746	0.21834
	(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)	0.00515	0.00477	0.00548
	(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)	0.00100	0.00060	0.00133
sky130_fd_sc_hs__mux4_2	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01472	0.02564	0.23436
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00715	0.01807	0.22680
	(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)	0.00541	0.00500	0.00565
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00122	0.00079	0.00147

sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.02246	0.04398	0.44929
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00955	0.03099	0.43635
	(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)	0.00892	0.00813	0.00947
	(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)	0.00094	0.00010	0.00152

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)**	0.00830	0.01921	0.21946
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01495	0.02590	0.22609
	(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)	0.00217	0.00211	0.00190
	(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)	0.00630	0.00629	0.00607

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00892	0.02011	0.22852
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01649	0.02770	0.23604
	(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)	0.00204	0.00200	0.00179
	(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)	0.00622	0.00621	0.00599
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01445	0.03624	0.44070
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.02739	0.04924	0.45358
	(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)	0.00299	0.00288	0.00246
	(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)	0.01094	0.01093	0.01047

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)	0.00663	0.00624	0.00693
	(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)	0.00245	0.00204	0.00278
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01327	0.02385	0.22448
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00644	0.01698	0.21763
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)	0.00686	0.00650	0.00721
	(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)	0.00242	0.00202	0.00279
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01364	0.02404	0.22465
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00628	0.01666	0.21728
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)	0.01013	0.00941	0.01080
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00200	0.00120	0.00271
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.02473	0.04501	0.43180
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01116	0.03139	0.41821

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)	0.00308	0.00303	0.00283
	(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)	0.00724	0.00724	0.00701
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00468	0.01544	0.21556
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01153	0.02230	0.22240
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)	0.00285	0.00281	0.00260
	(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)	0.00730	0.00728	0.00705
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00481	0.01560	0.21574
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01218	0.02298	0.22310
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)	0.00363	0.00354	0.00313
	(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)	0.01177	0.01175	0.01129
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00767	0.02852	0.41457
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.02124	0.04213	0.42814

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)	0.01292	0.02366	0.22689
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00585	0.01656	0.21981
	(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)	0.00562	0.00526	0.00597
	(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	0.00065	0.00140
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01336	0.02416	0.23033
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00621	0.01699	0.22319
	(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)	0.00550	0.00510	0.00577
	(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)	0.00126	0.00083	0.00153

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.02311	0.04416	0.44328
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00961	0.03061	0.42975
	(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)	0.00913	0.00835	0.00968
	(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)	0.00111	0.00029	0.00169

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)**	0.00738	0.01830	0.22106
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01446	0.02541	0.22811
	(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	0.00161	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)	0.00623	0.00623	0.00600

sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00735	0.01850	0.22443
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01451	0.02567	0.23152
	(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)	0.00193	0.00188	0.00167
	(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)	0.00616	0.00616	0.00593
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01218	0.03346	0.43177
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.02569	0.04701	0.44519
	(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	0.00264	0.00222
	(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)	0.01075	0.01072	0.01026

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)**	0.01600	0.03297	0.31946
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00260	0.01954	0.30602
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02137	0.03907	0.35144
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01013	0.02783	0.34021
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02145	0.05094	0.54279
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00566	0.03509	0.52693
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01815	0.03518	0.32177
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00444	0.02142	0.30798
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02161	0.03957	0.35066
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01029	0.02825	0.33934
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02058	0.03876	0.35106
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00885	0.02702	0.33932
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02216	0.05156	0.53602
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00636	0.03572	0.52017
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02491	0.05428	0.53802
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00886	0.03814	0.52189
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02025	0.03813	0.35165
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00862	0.02649	0.34002
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02422	0.05363	0.54473
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00801	0.03733	0.52842

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01729	0.03444	0.32309
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00410	0.02125	0.30988
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02257	0.04012	0.35442
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01194	0.02942	0.34372
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02277	0.05240	0.54357
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00699	0.03651	0.52769
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01983	0.03713	0.32581
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00647	0.02369	0.31239
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02441	0.04117	0.35358
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01423	0.03095	0.34336
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02399	0.04093	0.35457
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01356	0.03053	0.34408
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02404	0.05414	0.54557
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00784	0.03783	0.52931
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02698	0.05704	0.54797
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01067	0.04062	0.53158
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02182	0.03953	0.35509
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01099	0.02866	0.34421
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02669	0.05659	0.54691
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01072	0.04058	0.53082

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.02395	0.04168	0.35467
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00510	0.02271	0.33576
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03492	0.05295	0.40679
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02046	0.03852	0.39233
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.03511	0.07339	0.72502
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01153	0.04972	0.70122
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.02940	0.04723	0.36029
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	0.01008	0.02782	0.34092
	(A0 * !A1 * A2 * A3 * S1 * X)	0.03631	0.05457	0.40683
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02124	0.03948	0.39182
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.03570	0.05437	0.40914
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02001	0.03869	0.39345
	(!A0 * A1 * A2 * A3 * S1 * X)	0.03509	0.07489	0.74638
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01185	0.05153	0.72306
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.04139	0.08125	0.75119
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01783	0.05760	0.72749
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.03502	0.05340	0.40953
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01994	0.03834	0.39441
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.04242	0.08059	0.73078
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01815	0.05619	0.70620

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)**	0.00353	0.02107	0.30867
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01699	0.03454	0.32216
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01189	0.03031	0.34273
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02318	0.04156	0.35372
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00504	0.03554	0.52889
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02089	0.05144	0.54476
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00477	0.02199	0.30962
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01852	0.03576	0.32341
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01279	0.03090	0.34054
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02416	0.04217	0.35156
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01464	0.03251	0.34067
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02640	0.04415	0.35207
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00527	0.03552	0.52147
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02112	0.05143	0.53734
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00329	0.03352	0.52078
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01939	0.04965	0.53688
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01389	0.03200	0.34303
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02555	0.04364	0.35439
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00308	0.03355	0.52829
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01931	0.04986	0.54457

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00142	0.01948	0.30908
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01461	0.03273	0.32232
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00991	0.02855	0.34235
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02065	0.03923	0.35268
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00310	0.03381	0.52655
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01889	0.04969	0.54238
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00412	0.02203	0.31160
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01756	0.03549	0.32502
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01177	0.03045	0.34371
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02204	0.04063	0.35360
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01497	0.03335	0.34523
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02547	0.04375	0.35537
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00348	0.03441	0.52776
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01982	0.05077	0.54407
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00329	0.03416	0.52897
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01973	0.05060	0.54538
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01345	0.03184	0.34424
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02435	0.04268	0.35475
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00190	0.03264	0.52686
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01789	0.04871	0.54288

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00244	0.02205	0.33647
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.02144	0.04111	0.35550
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02017	0.04093	0.39365
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03479	0.05556	0.40735
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00556	0.04572	0.69942
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02927	0.06947	0.72314
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00763	0.02701	0.34132
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	0.02709	0.04657	0.36080
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01960	0.04014	0.39149
	(A0 * !A1 * A2 * A3 * S1 * X)	0.03481	0.05527	0.40595
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02584	0.04593	0.39432
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.04167	0.06168	0.40937
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00611	0.04919	0.72384
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02948	0.07261	0.74719
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00522	0.04834	0.72567
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02891	0.07200	0.74932
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02580	0.04602	0.39586
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.04100	0.06124	0.41015
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00376	0.04398	0.70042
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02816	0.06844	0.72479

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)	0.01187	0.03033	0.31587
	(A1 * A3 * S0 * X)	0.00336	0.02175	0.30733
	(A0 * A2 * !S0 * X)	0.01068	0.02914	0.31468
	(A0 * A2 * !S0 * X)	0.00217	0.02056	0.30614
	(!A1 * !A3 * S0 * !X)	0.01213	0.03068	0.31601
	(!A1 * !A3 * S0 * !X)	0.00321	0.02170	0.30707
	(!A0 * !A2 * !S0 * !X)	0.01094	0.02949	0.31478
	(!A0 * !A2 * !S0 * !X)	0.00202	0.02051	0.30584
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.01229	0.03070	0.31465
	(A1 * A3 * S0 * X)	0.00341	0.02180	0.30574
	(A0 * A2 * !S0 * X)	0.01110	0.02951	0.31346
	(A0 * A2 * !S0 * X)	0.00223	0.02062	0.30456
	(!A1 * !A3 * S0 * !X)	0.01317	0.03162	0.31536
	(!A1 * !A3 * S0 * !X)	0.00400	0.02247	0.30620
	(!A0 * !A2 * !S0 * !X)	0.01198	0.03044	0.31418
	(!A0 * !A2 * !S0 * !X)	0.00282	0.02128	0.30501
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.01706	0.03616	0.34828
	(A1 * A3 * S0 * X)	0.00454	0.02358	0.33578
	(A0 * A2 * !S0 * X)	0.01605	0.03514	0.34727
	(A0 * A2 * !S0 * X)	0.00352	0.02256	0.33476
	(!A1 * !A3 * S0 * !X)	0.01899	0.03814	0.34989
	(!A1 * !A3 * S0 * !X)	0.00568	0.02481	0.33659
	(!A0 * !A2 * !S0 * !X)	0.01798	0.03713	0.34886
	(!A0 * !A2 * !S0 * !X)	0.00466	0.02380	0.33559

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)	0.00149	0.02055	0.30719
	(A1 * A3 * S0 * X)	0.01003	0.02911	0.31573
	(A0 * A2 * !S0 * X)	0.00031	0.01936	0.30600
	(A0 * A2 * !S0 * X)	0.00884	0.02792	0.31454
	(!A1 * !A3 * S0 * !X)	0.00118	0.02014	0.30644
	(!A1 * !A3 * S0 * !X)	0.01010	0.02909	0.31538
	(!A0 * !A2 * !S0 * !X)	-0.00001	0.01894	0.30525
	(!A0 * !A2 * !S0 * !X)	0.00891	0.02790	0.31420
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00137	0.02029	0.30539
	(A1 * A3 * S0 * X)	0.01023	0.02918	0.31429
	(A0 * A2 * !S0 * X)	0.00018	0.01911	0.30421
	(A0 * A2 * !S0 * X)	0.00904	0.02799	0.31310
	(!A1 * !A3 * S0 * !X)	0.00217	0.02098	0.30578
	(!A1 * !A3 * S0 * !X)	0.01132	0.03018	0.31497
	(!A0 * !A2 * !S0 * !X)	0.00098	0.01978	0.30460
	(!A0 * !A2 * !S0 * !X)	0.01014	0.02901	0.31378
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00209	0.02261	0.33567
	(A1 * A3 * S0 * X)	0.01463	0.03517	0.34820
	(A0 * A2 * !S0 * X)	0.00108	0.02163	0.33466
	(A0 * A2 * !S0 * X)	0.01362	0.03411	0.34719
	(!A1 * !A3 * S0 * !X)	0.00414	0.02424	0.33681
	(!A1 * !A3 * S0 * !X)	0.01741	0.03751	0.35014
	(!A0 * !A2 * !S0 * !X)	0.00313	0.02322	0.33579
	(!A0 * !A2 * !S0 * !X)	0.01640	0.03649	0.34913

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00238	0.00283	1.52834
sky130_fd_sc_hs__nand2b_2	0.00267	0.00538	2.54175
sky130_fd_sc_hs__nand2b_4	0.00391	0.00825	3.24775

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	243.32600	365.29500
sky130_fd_sc_hs__nand2b_2	0.00000	195.43200	482.82000
sky130_fd_sc_hs__nand2b_4	0.00000	488.70500	736.14000

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)	0.04145	0.41434	5.79709
	B->Y (FR)	0.02405	0.58946	9.00852
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.04204	0.29856	4.57516
	B->Y (FR)	0.02310	0.50817	8.68513
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.05103	0.35829	5.95224
	B->Y (FR)	0.02849	0.52408	9.25886

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)	0.04893	0.46732	6.26889
	B->Y (RF)	0.02053	0.39675	6.14677
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.05276	0.42806	6.20962
	B->Y (RF)	0.02042	0.30834	5.59721
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.04050	0.29286	4.21828
	B->Y (RF)	0.01706	0.18654	3.82084

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	0.01867	0.03531	0.30112
	A_N	0.01406	0.03069	0.29637
	B	0.00022	0.00799	0.10774
	B	0.00541	0.01320	0.11268
sky130_fd_sc_hs__nand2b_2	A_N	0.01619	0.03190	0.27407
	A_N	0.01141	0.02709	0.26950
	B	0.00030	0.01696	0.20823
	B	0.01047	0.02711	0.21817
sky130_fd_sc_hs__nand2b_4	A_N	0.03502	0.06243	0.49977
	A_N	0.02818	0.05563	0.49290
	B	-0.00023	0.02449	0.30347
	B	0.01536	0.04005	0.31963

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00959	0.02657	0.27769
	A_N	0.01418	0.03117	0.28230
	B	0.01168	0.01610	0.07574
	B	0.00649	0.01087	0.07052
sky130_fd_sc_hs__nand2b_2	A_N	0.01822	0.03489	0.30779
	A_N	0.02302	0.03955	0.31250
	B	0.02267	0.03252	0.15335
	B	0.01246	0.02215	0.14028
sky130_fd_sc_hs__nand2b_4	A_N	0.02236	0.05203	0.50942
	A_N	0.02919	0.05885	0.51485
	B	0.03050	0.04664	0.23015
	B	0.01493	0.03096	0.21457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.01076	0.02732	0.29159
	(!B * Y)	0.00590	0.02242	0.28671
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.01195	0.02916	0.31294
	(!B * Y)	0.00654	0.02374	0.30754
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.01937	0.04722	0.50208
	(!B * Y)	0.01152	0.03931	0.49420

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	-0.00007	0.01745	0.28457
	(!B * Y)	0.00483	0.02236	0.28946
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00078	0.01823	0.30293
	(!B * Y)	0.00618	0.02368	0.30834
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00148	0.03143	0.49218
	(!B * Y)	0.00940	0.03941	0.50012

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00551	0.00553	0.00551
	(A_N * Y)	0.00075	0.00075	0.00076
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00532	0.00536	0.00534
	(A_N * Y)	-0.00366	-0.00369	-0.00366
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.01451	0.01456	0.01454
	(A_N * Y)	0.00119	0.00117	0.00118

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00107	0.00092	0.00087
	(A_N * Y)	0.00583	0.00567	0.00562
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00223	-0.00262	-0.00274
	(A_N * Y)	0.00675	0.00648	0.00626
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00057	-0.00154	-0.00163
	(A_N * Y)	0.01277	0.01197	0.01170

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00283	0.00275	1.55686
sky130_fd_sc_hs__nand2_2	0.00543	0.00540	3.00427
sky130_fd_sc_hs__nand2_4	0.00827	0.00806	3.19272
sky130_fd_sc_hs__nand2_8	0.01584	0.01593	5.44302

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	61.07040	238.95900
sky130_fd_sc_hs__nand2_2	0.00000	122.09800	477.75000
sky130_fd_sc_hs__nand2_4	0.00000	124.78200	477.84600
sky130_fd_sc_hs__nand2_8	0.00000	249.59300	955.82200

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)	0.01914	0.57728	8.93282
	B->Y (FR)	0.02337	0.58199	8.95208
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.01678	0.49329	8.90417
	B->Y (FR)	0.02219	0.49852	8.87961
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.02308	0.52226	9.36143
	B->Y (FR)	0.03393	0.53370	9.35944
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.01932	0.43859	8.84483
	B->Y (FR)	0.02833	0.43227	8.34882

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.01650	0.44009	6.90516
	B->Y (RF)	0.01913	0.39884	6.24449
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.01579	0.39556	7.49394
	B->Y (RF)	0.02026	0.35014	6.70006
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01414	0.24926	4.94106
	B->Y (RF)	0.01792	0.19353	3.90656
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01255	0.20814	4.96436
	B->Y (RF)	0.01619	0.13058	3.45525

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00067	0.00723	0.10475
	A	0.00473	0.01263	0.11001
	B	-0.00014	0.00795	0.10953
	B	0.00665	0.01457	0.11615
sky130_fd_sc_hs__nand2_2	A	-0.00181	0.01407	0.18396
	A	0.00867	0.02457	0.19392
	B	0.00033	0.01668	0.19538
	B	0.01383	0.03017	0.20884
sky130_fd_sc_hs__nand2_4	A	-0.00359	0.01929	0.27694
	A	0.01239	0.03520	0.29295
	B	0.00027	0.02384	0.29455
	B	0.02212	0.04578	0.31662
sky130_fd_sc_hs__nand2_8	A	-0.00768	0.04436	0.59735
	A	0.02333	0.07529	0.62905
	B	-0.00111	0.05305	0.61115
	B	0.04211	0.09653	0.65484

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.01033	0.01521	0.07453
	A	0.00492	0.00980	0.06822
	B	0.01151	0.01593	0.07531
	B	0.00472	0.00907	0.06852
sky130_fd_sc_hs__nand2_2	A	0.02149	0.03202	0.13742
	A	0.01101	0.02140	0.12611
	B	0.02410	0.03360	0.14416
	B	0.01058	0.02007	0.12851
sky130_fd_sc_hs__nand2_4	A	0.02708	0.04242	0.20685
	A	0.01113	0.02641	0.18935
	B	0.03243	0.04795	0.22875
	B	0.01057	0.02595	0.20517
sky130_fd_sc_hs__nand2_8	A	0.04715	0.08289	0.42457
	A	0.01619	0.05178	0.39122
	B	0.05793	0.09727	0.49173
	B	0.01472	0.05390	0.44852

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00065	0.00065	0.00063
	(!B * Y)	-0.00292	-0.00294	-0.00297
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00123	0.00124	0.00115
	(!B * Y)	-0.00567	-0.00572	-0.00583
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00239	0.00241	0.00225
	(!B * Y)	-0.00675	-0.00683	-0.00705
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00476	0.00476	0.00446
	(!B * Y)	-0.01310	-0.01317	-0.01360

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00060	-0.00061	-0.00060
	(!B * Y)	0.00298	0.00302	0.00299
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00109	-0.00111	-0.00109
	(!B * Y)	0.00583	0.00596	0.00587
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00214	-0.00218	-0.00213
	(!B * Y)	0.00710	0.00724	0.00712
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00423	-0.00424	-0.00423
	(!B * Y)	0.01366	0.01372	0.01373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00204	0.00206	0.00204
	(!A * Y)	-0.00252	-0.00253	-0.00252
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00392	0.00395	0.00393
	(!A * Y)	-0.00491	-0.00493	-0.00491
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00781	0.00793	0.00784
	(!A * Y)	-0.00508	-0.00512	-0.00509
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01558	0.01587	0.01568
	(!A * Y)	-0.01014	-0.01024	-0.01018

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	**(!A * Y)**	-0.00177	-0.00192	-0.00196
	(!A * Y)	0.00280	0.00266	0.00258
sky130_fd_sc_hs__nand2_2	**(!A * Y)**	-0.00326	-0.00369	-0.00379
	(!A * Y)	0.00557	0.00526	0.00505
sky130_fd_sc_hs__nand2_4	**(!A * Y)**	-0.00649	-0.00737	-0.00753
	(!A * Y)	0.00642	0.00564	0.00534
sky130_fd_sc_hs__nand2_8	**(!A * Y)**	-0.01316	-0.01509	-0.01506
	(!A * Y)	0.01277	0.01111	0.01068

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00223	0.00285	0.00277	1.57432
sky130_fd_sc_hs__nand3b_2	0.00263	0.00542	0.00539	2.61928
sky130_fd_sc_hs__nand3b_4	0.00371	0.00782	0.00790	2.63661

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	228.12000	365.40300
sky130_fd_sc_hs__nand3b_2	0.00000	164.95100	721.44500
sky130_fd_sc_hs__nand3b_4	0.00000	457.07100	735.29900

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)	0.04226	0.39091	5.46589
	B->Y (FR)	0.02729	0.59473	9.11898
	C->Y (FR)	0.03013	0.58815	8.95745
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.04385	0.28434	4.36607
	B->Y (FR)	0.02360	0.47173	8.09449
	C->Y (FR)	0.02736	0.48392	8.21178
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.05538	0.35958	5.44204
	B->Y (FR)	0.03338	0.49385	8.31113
	C->Y (FR)	0.04500	0.52880	8.69331

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)	0.05465	0.55950	7.84088
	B->Y (RF)	0.02927	0.50466	7.84333
	C->Y (RF)	0.03201	0.45506	7.07997
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.06243	0.52547	8.05728
	B->Y (RF)	0.02985	0.43671	7.87327
	C->Y (RF)	0.03229	0.36698	6.76074
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.05272	0.42623	6.53505
	B->Y (RF)	0.03292	0.39036	6.94971
	C->Y (RF)	0.03551	0.25221	4.75018

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	0.01799	0.03484	0.30405
	A_N	0.01390	0.03072	0.29972
	B	0.00065	0.00736	0.09241
	B	0.00595	0.01268	0.09751
	C	0.00119	0.00807	0.09757
	C	0.00761	0.01448	0.10335
sky130_fd_sc_hs__nand3b_2	A_N	0.01635	0.03432	0.32268
	A_N	0.01177	0.02973	0.31757
	B	0.00121	0.01507	0.17615
	B	0.01187	0.02563	0.18585
	C	0.00224	0.01669	0.18527
	C	0.01577	0.03024	0.19738
sky130_fd_sc_hs__nand3b_4	A_N	0.03517	0.06282	0.51030
	A_N	0.02835	0.05599	0.50171
	B	0.00169	0.01773	0.21469
	B	0.01689	0.03285	0.22810
	C	0.00318	0.02056	0.23350
	C	0.02476	0.04215	0.25322

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.01505	0.03231	0.28855
	A_N	0.01913	0.03639	0.29214
	B	0.01715	0.02056	0.06879
	B	0.01183	0.01526	0.06295
	C	0.01827	0.02203	0.07782
	C	0.01182	0.01550	0.07118
sky130_fd_sc_hs__nand3b_2	A_N	0.03013	0.04671	0.30573
	A_N	0.03472	0.05127	0.30967
	B	0.03409	0.04156	0.13549
	B	0.02345	0.03081	0.12363
	C	0.03647	0.04535	0.16132
	C	0.02287	0.03158	0.14742
sky130_fd_sc_hs__nand3b_4	A_N	0.03244	0.06032	0.48561
	A_N	0.03927	0.06714	0.49057
	B	0.04005	0.04840	0.15434
	B	0.02487	0.03309	0.13887
	C	0.04644	0.05848	0.22692
	C	0.02475	0.03673	0.20440

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)	0.01045	0.02726	0.29398
	(B * !C * Y)	0.00583	0.02261	0.28935
	(!B * Y)	0.01037	0.02720	0.29370
	(!B * Y)	0.00584	0.02264	0.28916
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.01242	0.02968	0.31471
	(B * !C * Y)	0.00659	0.02385	0.30889
	(!B * Y)	0.01220	0.02949	0.31427
	(!B * Y)	0.00660	0.02389	0.30868
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.01968	0.04638	0.48522
	(B * !C * Y)	0.01147	0.03813	0.47699
	(!B * Y)	0.01927	0.04611	0.48648
	(!B * Y)	0.01137	0.03817	0.47856

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)	0.00015	0.01790	0.28747
	(B * !C * Y)	0.00484	0.02260	0.29213
	(!B * Y)	0.00018	0.01791	0.28727
	(!B * Y)	0.00472	0.02248	0.29182
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00069	0.01813	0.30402
	(B * !C * Y)	0.00664	0.02412	0.30993
	(!B * Y)	0.00089	0.01830	0.30394
	(!B * Y)	0.00647	0.02392	0.30954
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00162	0.03030	0.47503
	(B * !C * Y)	0.01017	0.03886	0.48347
	(!B * Y)	0.00187	0.03068	0.47699
	(!B * Y)	0.00982	0.03863	0.48493

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)	0.00534	0.00536	0.00535
	(A_N * C * Y)	0.00070	0.00068	0.00069
	(A_N * !C * Y)	0.00450	0.00451	0.00450
	(A_N * !C * Y)	0.00067	0.00066	0.00067
	(!A_N * !C * Y)	0.00070	0.00070	0.00070
	(!A_N * !C * Y)	-0.00286	-0.00288	-0.00288
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00530	0.00534	0.00531
	(A_N * C * Y)	-0.00382	-0.00385	-0.00383
	(A_N * !C * Y)	0.00371	0.00371	0.00371
	(A_N * !C * Y)	-0.00388	-0.00388	-0.00389
	(!A_N * !C * Y)	0.00153	0.00155	0.00157
	(!A_N * !C * Y)	-0.00542	-0.00546	-0.00544
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.01454	0.01464	0.01459
	(A_N * C * Y)	0.00144	0.00139	0.00142
	(A_N * !C * Y)	0.01071	0.01074	0.01069
	(A_N * !C * Y)	0.00072	0.00070	0.00074
	(!A_N * !C * Y)	0.00276	0.00280	0.00285
	(!A_N * !C * Y)	-0.00596	-0.00601	-0.00598

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)	0.00130	0.00105	0.00103
	(A_N * C * Y)	0.00594	0.00576	0.00568
	(A_N * !C * Y)	0.00180	0.00181	0.00176
	(A_N * !C * Y)	0.00577	0.00579	0.00568
	(!A_N * !C * Y)	-0.00061	-0.00062	-0.00063
	(!A_N * !C * Y)	0.00298	0.00302	0.00296
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00198	-0.00270	-0.00272
	(A_N * C * Y)	0.00715	0.00656	0.00642
	(A_N * !C * Y)	-0.00125	-0.00123	-0.00134
	(A_N * !C * Y)	0.00667	0.00671	0.00646
	(!A_N * !C * Y)	-0.00132	-0.00134	-0.00139
	(!A_N * !C * Y)	0.00569	0.00577	0.00562
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00029	-0.00164	-0.00172
	(A_N * C * Y)	0.01345	0.01168	0.01143
	(A_N * !C * Y)	0.00202	0.00196	0.00177
	(A_N * !C * Y)	0.01258	0.01255	0.01210
	(!A_N * !C * Y)	-0.00256	-0.00259	-0.00265
	(!A_N * !C * Y)	0.00631	0.00638	0.00618

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)	0.00511	0.00513	0.00512
	(A_N * B * Y)	0.00073	0.00072	0.00073
	(A_N * !B * Y)	0.00507	0.00510	0.00508
	(A_N * !B * Y)	0.00071	0.00069	0.00071
	(!A_N * !B * Y)	0.00191	0.00194	0.00191
	(!A_N * !B * Y)	-0.00249	-0.00250	-0.00248
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00542	0.00541	0.00541
	(A_N * B * Y)	-0.00365	-0.00365	-0.00363
	(A_N * !B * Y)	0.00532	0.00536	0.00534
	(A_N * !B * Y)	-0.00368	-0.00371	-0.00369
	(!A_N * !B * Y)	0.00381	0.00387	0.00382
	(!A_N * !B * Y)	-0.00527	-0.00531	-0.00528
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.01444	0.01449	0.01442
	(A_N * B * Y)	0.00137	0.00137	0.00140
	(A_N * !B * Y)	0.01424	0.01432	0.01428
	(A_N * !B * Y)	0.00127	0.00125	0.00126
	(!A_N * !B * Y)	0.00757	0.00767	0.00759
	(!A_N * !B * Y)	-0.00549	-0.00553	-0.00550

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)	0.00149	0.00129	0.00126
	(A_N * B * Y)	0.00584	0.00570	0.00564
	(A_N * !B * Y)	0.00127	0.00124	0.00124
	(A_N * !B * Y)	0.00563	0.00561	0.00562
	(!A_N * !B * Y)	-0.00164	-0.00178	-0.00181
	(!A_N * !B * Y)	0.00276	0.00263	0.00258
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00237	-0.00279	-0.00285
	(A_N * B * Y)	0.00661	0.00634	0.00622
	(A_N * !B * Y)	-0.00282	-0.00292	-0.00289
	(A_N * !B * Y)	0.00620	0.00624	0.00618
	(!A_N * !B * Y)	-0.00326	-0.00362	-0.00362
	(!A_N * !B * Y)	0.00578	0.00557	0.00546
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00073	-0.00145	-0.00160
	(A_N * B * Y)	0.01218	0.01165	0.01144
	(A_N * !B * Y)	-0.00143	-0.00165	-0.00167
	(A_N * !B * Y)	0.01145	0.01144	0.01137
	(!A_N * !B * Y)	-0.00654	-0.00724	-0.00731
	(!A_N * !B * Y)	0.00652	0.00594	0.00574

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00287	0.00292	0.00284	1.61501
sky130_fd_sc_hs__nand3_2	0.00539	0.00585	0.00537	2.42628
sky130_fd_sc_hs__nand3_4	0.00802	0.00794	0.00798	3.14033

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	45.81000	358.26200
sky130_fd_sc_hs__nand3_2	0.00000	91.55440	716.00700
sky130_fd_sc_hs__nand3_4	0.00000	93.67820	716.60900

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)	0.02278	0.58380	9.07593
	B->Y (FR)	0.02753	0.58667	9.04648
	C->Y (FR)	0.03071	0.59259	9.08710
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.02163	0.52210	8.90366
	B->Y (FR)	0.02449	0.46779	7.85360
	C->Y (FR)	0.02877	0.47849	7.93528
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.02289	0.51438	9.20697
	B->Y (FR)	0.03445	0.52246	9.15438
	C->Y (FR)	0.04131	0.52625	9.05393

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.02396	0.54443	8.56697
	B->Y (RF)	0.02900	0.51237	8.03383
	C->Y (RF)	0.03131	0.46299	7.26927
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.02034	0.42544	7.52652
	B->Y (RF)	0.02705	0.40087	7.04026
	C->Y (RF)	0.03091	0.35366	6.26226
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.01571	0.31575	6.11803
	B->Y (RF)	0.02254	0.27335	5.29293
	C->Y (RF)	0.02521	0.21265	4.25027

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00048	0.00633	0.09080
	A	0.00524	0.01202	0.09631
	B	0.00033	0.00696	0.09128
	B	0.00744	0.01405	0.09759
	C	0.00075	0.00749	0.09473
	C	0.00936	0.01611	0.10310
sky130_fd_sc_hs__nand3_2	A	-0.00168	0.01156	0.16240
	A	0.00915	0.02232	0.17233
	B	0.00062	0.01498	0.18621
	B	0.01481	0.02920	0.19909
	C	0.00235	0.01748	0.20269
	C	0.01920	0.03441	0.21937
sky130_fd_sc_hs__nand3_4	A	-0.00338	0.01718	0.24365
	A	0.01267	0.03314	0.25957
	B	0.00081	0.02125	0.26048
	B	0.02275	0.04308	0.28237
	C	0.00310	0.02496	0.28010
	C	0.03126	0.05321	0.30716

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.01658	0.02074	0.07062
	A	0.01085	0.01497	0.06484
	B	0.01779	0.02121	0.06911
	B	0.01067	0.01410	0.06169
	C	0.01903	0.02274	0.07727
	C	0.01039	0.01411	0.06863
sky130_fd_sc_hs__nand3_2	A	0.02985	0.03854	0.13524
	A	0.01901	0.02768	0.12337
	B	0.03233	0.04064	0.14385
	B	0.01812	0.02633	0.12966
	C	0.03467	0.04382	0.16870
	C	0.01772	0.02674	0.15122
sky130_fd_sc_hs__nand3_4	A	0.03301	0.04595	0.18124
	A	0.01700	0.02975	0.16521
	B	0.03818	0.05022	0.19141
	B	0.01626	0.02816	0.16820
	C	0.04359	0.05736	0.23261
	C	0.01526	0.02890	0.20253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00061	0.00061	0.00057
	(B * !C * Y)	-0.00284	-0.00285	-0.00297
	(!B * Y)	0.00063	0.00063	0.00060
	(!B * Y)	-0.00291	-0.00294	-0.00298
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00121	0.00122	0.00109
	(B * !C * Y)	-0.00531	-0.00533	-0.00560
	(!B * Y)	0.00127	0.00128	0.00120
	(!B * Y)	-0.00546	-0.00550	-0.00561
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00224	0.00225	0.00203
	(B * !C * Y)	-0.00628	-0.00634	-0.00683
	(!B * Y)	0.00233	0.00235	0.00219
	(!B * Y)	-0.00660	-0.00667	-0.00689

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00054	-0.00055	-0.00054
	(B * !C * Y)	0.00299	0.00301	0.00299
	(!B * Y)	-0.00058	-0.00058	-0.00057
	(!B * Y)	0.00299	0.00302	0.00299
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00103	-0.00104	-0.00103
	(B * !C * Y)	0.00563	0.00573	0.00565
	(!B * Y)	-0.00113	-0.00115	-0.00114
	(!B * Y)	0.00561	0.00569	0.00565
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00192	-0.00196	-0.00192
	(B * !C * Y)	0.00691	0.00704	0.00693
	(!B * Y)	-0.00209	-0.00212	-0.00208
	(!B * Y)	0.00694	0.00707	0.00695

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00078	0.00079	0.00079
	(A * !C * Y)	-0.00253	-0.00255	-0.00253
	(!A * C * Y)	0.00197	0.00200	0.00198
	(!A * C * Y)	-0.00251	-0.00253	-0.00251
	(!A * !C * Y)	0.00099	0.00101	0.00099
	(!A * !C * Y)	-0.00253	-0.00255	-0.00254
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00157	0.00159	0.00160
	(A * !C * Y)	-0.00532	-0.00536	-0.00530
	(!A * C * Y)	0.00388	0.00392	0.00389
	(!A * C * Y)	-0.00523	-0.00526	-0.00523
	(!A * !C * Y)	0.00210	0.00213	0.00210
	(!A * !C * Y)	-0.00532	-0.00536	-0.00533
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00279	0.00283	0.00285
	(A * !C * Y)	-0.00522	-0.00526	-0.00521
	(!A * C * Y)	0.00771	0.00782	0.00775
	(!A * C * Y)	-0.00511	-0.00515	-0.00512
	(!A * !C * Y)	0.00370	0.00375	0.00370
	(!A * !C * Y)	-0.00526	-0.00530	-0.00527

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00073	-0.00074	-0.00075
	(A * !C * Y)	0.00262	0.00265	0.00257
	(!A * C * Y)	-0.00165	-0.00189	-0.00190
	(!A * C * Y)	0.00287	0.00265	0.00258
	(!A * !C * Y)	-0.00099	-0.00100	-0.00099
	(!A * !C * Y)	0.00266	0.00268	0.00258
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00145	-0.00147	-0.00151
	(A * !C * Y)	0.00548	0.00555	0.00539
	(!A * C * Y)	-0.00313	-0.00375	-0.00376
	(!A * C * Y)	0.00601	0.00550	0.00536
	(!A * !C * Y)	-0.00205	-0.00208	-0.00210
	(!A * !C * Y)	0.00563	0.00570	0.00545
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00259	-0.00261	-0.00268
	(A * !C * Y)	0.00560	0.00563	0.00537
	(!A * C * Y)	-0.00611	-0.00749	-0.00747
	(!A * C * Y)	0.00678	0.00557	0.00537
	(!A * !C * Y)	-0.00369	-0.00372	-0.00370
	(!A * !C * Y)	0.00577	0.00587	0.00545

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00209	0.00212	0.00209
	(A * !B * Y)	-0.00253	-0.00256	-0.00254
	(!A * B * Y)	0.00205	0.00205	0.00205
	(!A * B * Y)	-0.00253	-0.00253	-0.00252
	(!A * !B * Y)	0.00205	0.00206	0.00205
	(!A * !B * Y)	-0.00255	-0.00256	-0.00255
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00384	0.00389	0.00386
	(A * !B * Y)	-0.00496	-0.00499	-0.00497
	(!A * B * Y)	0.00384	0.00387	0.00384
	(!A * B * Y)	-0.00497	-0.00499	-0.00496
	(!A * !B * Y)	0.00375	0.00379	0.00376
	(!A * !B * Y)	-0.00500	-0.00503	-0.00501
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00788	0.00789	0.00789
	(A * !B * Y)	-0.00522	-0.00523	-0.00523
	(!A * B * Y)	0.00769	0.00782	0.00776
	(!A * B * Y)	-0.00516	-0.00521	-0.00517
	(!A * !B * Y)	0.00770	0.00780	0.00773
	(!A * !B * Y)	-0.00526	-0.00530	-0.00528

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00186	-0.00201	-0.00202
	(A * !B * Y)	0.00277	0.00261	0.00259
	(!A * B * Y)	-0.00175	-0.00199	-0.00201
	(!A * B * Y)	0.00278	0.00264	0.00259
	(!A * !B * Y)	-0.00200	-0.00204	-0.00204
	(!A * !B * Y)	0.00258	0.00256	0.00256
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00330	-0.00374	-0.00374
	(A * !B * Y)	0.00547	0.00520	0.00510
	(!A * B * Y)	-0.00309	-0.00362	-0.00372
	(!A * B * Y)	0.00559	0.00523	0.00508
	(!A * !B * Y)	-0.00362	-0.00379	-0.00376
	(!A * !B * Y)	0.00503	0.00510	0.00503
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00679	-0.00752	-0.00762
	(A * !B * Y)	0.00619	0.00560	0.00542
	(!A * B * Y)	-0.00643	-0.00740	-0.00756
	(!A * B * Y)	0.00641	0.00565	0.00541
	(!A * !B * Y)	-0.00740	-0.00768	-0.00770
	(!A * !B * Y)	0.00534	0.00534	0.00531

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00226	0.00219	0.00291	0.00294	1.26173
sky130_fd_sc_hs__nand4bb_2	0.00257	0.00254	0.00549	0.00543	1.95890
sky130_fd_sc_hs__nand4bb_4	0.00358	0.00369	0.01069	0.01073	3.03800

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	394.86300	724.51100
sky130_fd_sc_hs__nand4bb_2	0.00000	207.72700	964.49100
sky130_fd_sc_hs__nand4bb_4	0.00000	849.37400	1912.51000

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)	0.04880	0.38459	4.77869
	B_N->Y (RR)	0.05433	0.38764	4.74004
	C->Y (FR)	0.03521	0.55554	7.91305
	D->Y (FR)	0.03911	0.56301	7.95394
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.04682	0.25253	3.19180
	B_N->Y (RR)	0.05214	0.24302	2.89366
	C->Y (FR)	0.02821	0.42879	6.69950
	D->Y (FR)	0.03170	0.44027	6.78666
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.05747	0.25459	3.19489
	B_N->Y (RR)	0.06575	0.27161	3.35592
	C->Y (FR)	0.02736	0.36166	6.12458
	D->Y (FR)	0.03043	0.37509	6.23378

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)	0.06524	0.61508	8.09752
	B_N->Y (FF)	0.07274	0.62281	8.02241
	C->Y (RF)	0.04818	0.52918	7.48534
	D->Y (RF)	0.05234	0.49361	6.88306
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.07205	0.57641	8.25513
	B_N->Y (FF)	0.08676	0.59462	8.20628
	C->Y (RF)	0.04880	0.43194	6.97724
	D->Y (RF)	0.05290	0.39943	6.40697
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.07281	0.46163	7.01110
	B_N->Y (FF)	0.08348	0.47124	6.86633
	C->Y (RF)	0.05157	0.35523	6.47778
	D->Y (RF)	0.05493	0.31634	5.80298

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	0.01762	0.03433	0.30121
	A_N	0.01404	0.03070	0.29732
	B_N	0.01830	0.03483	0.30133
	B_N	0.01485	0.03141	0.29764
	C	0.00156	0.00756	0.09223
	C	0.00732	0.01329	0.09753
	D	0.00223	0.00847	0.09848
	D	0.00928	0.01548	0.10504
sky130_fd_sc_hs__nand4bb_2	A_N	0.01639	0.03439	0.32160
	A_N	0.01253	0.03044	0.31633
	B_N	0.01922	0.03679	0.32260
	B_N	0.01548	0.03292	0.31682
	C	0.00275	0.01559	0.18532
	C	0.01331	0.02609	0.19477
	D	0.00458	0.01757	0.19340
	D	0.01811	0.03097	0.20521
sky130_fd_sc_hs__nand4bb_4	A_N	0.03486	0.06261	0.52919
	A_N	0.02982	0.05735	0.52038
	B_N	0.03994	0.06804	0.54403
	B_N	0.03471	0.06263	0.53596
	C	0.00420	0.03347	0.40935
	C	0.02506	0.05435	0.42595
	D	0.00706	0.03743	0.43517
	D	0.03393	0.06406	0.45662

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.02017	0.03738	0.29959
	A_N	0.02374	0.04094	0.30293
	B_N	0.02201	0.03925	0.30105
	B_N	0.02545	0.04269	0.30421
	C	0.02411	0.02709	0.07898
	C	0.01833	0.02129	0.07278
	D	0.02538	0.02872	0.09303
	D	0.01830	0.02161	0.08233
sky130_fd_sc_hs__nand4bb_2	A_N	0.03883	0.05564	0.32904
	A_N	0.04267	0.05949	0.33290
	B_N	0.04197	0.05869	0.33045
	B_N	0.04569	0.06242	0.33407
	C	0.04554	0.05270	0.16382
	C	0.03497	0.04206	0.15325
	D	0.04825	0.05560	0.18268
	D	0.03462	0.04199	0.16884
sky130_fd_sc_hs__nand4bb_4	A_N	0.07616	0.10476	0.55110
	A_N	0.08120	0.10971	0.55615
	B_N	0.08140	0.11000	0.56704
	B_N	0.08662	0.11513	0.56677
	C	0.08950	0.10819	0.38836
	C	0.06860	0.08720	0.36619
	D	0.09488	0.11532	0.44449
	D	0.06786	0.08826	0.41677

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)	0.01312	0.02965	0.29081
	(B_N * Y)	0.00874	0.02525	0.28644
	(!B_N * C * !D * Y)	0.01067	0.02719	0.28865
	(!B_N * C * !D * Y)	0.00623	0.02273	0.28421
	(!B_N * !C * Y)	0.01068	0.02719	0.28864
	(!B_N * !C * Y)	0.00627	0.02278	0.28423
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.01275	0.02971	0.30808
	(B_N * Y)	0.00796	0.02492	0.30330
	(!B_N * C * !D * Y)	0.01238	0.02931	0.30787
	(!B_N * C * !D * Y)	0.00750	0.02442	0.30300
	(!B_N * !C * Y)	0.01238	0.02931	0.30786
	(!B_N * !C * Y)	0.00754	0.02446	0.30304
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.02938	0.05533	0.50276
	(B_N * Y)	0.02257	0.04848	0.49592
	(!B_N * C * !D * Y)	0.02430	0.05027	0.49830
	(!B_N * C * !D * Y)	0.01724	0.04317	0.49122
	(!B_N * !C * Y)	0.02431	0.05025	0.49825
	(!B_N * !C * Y)	0.01738	0.04328	0.49130

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)	0.00358	0.02093	0.28494
	(B_N * Y)	0.00796	0.02532	0.28932
	(!B_N * C * !D * Y)	-0.00014	0.01724	0.28153
	(!B_N * C * !D * Y)	0.00440	0.02178	0.28603
	(!B_N * !C * Y)	-0.00016	0.01721	0.28152
	(!B_N * !C * Y)	0.00426	0.02163	0.28593
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00266	0.01962	0.29881
	(B_N * Y)	0.00743	0.02441	0.30359
	(!B_N * C * !D * Y)	0.00078	0.01778	0.29710
	(!B_N * C * !D * Y)	0.00586	0.02289	0.30213
	(!B_N * !C * Y)	0.00073	0.01772	0.29709
	(!B_N * !C * Y)	0.00558	0.02260	0.30194
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00932	0.03753	0.49106
	(B_N * Y)	0.01614	0.04439	0.49791
	(!B_N * C * !D * Y)	0.00215	0.03041	0.48446
	(!B_N * C * !D * Y)	0.00967	0.03798	0.49189
	(!B_N * !C * Y)	0.00207	0.03033	0.48445
	(!B_N * !C * Y)	0.00909	0.03740	0.49147

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)	0.01319	0.02917	0.28968
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00895	0.02490	0.28542
	(!C * Y)	0.01315	0.02950	0.29020
	(!C * Y)	0.00878	0.02510	0.28581
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01287	0.02880	0.30506
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00821	0.02412	0.30042
	(!C * Y)	0.01272	0.02933	0.30601
	(!C * Y)	0.00782	0.02441	0.30109
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.02988	0.05404	0.49963
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.02286	0.04700	0.49261
	(!C * Y)	0.02994	0.05525	0.50179
	(!C * Y)	0.02242	0.04772	0.49425

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)	0.00479	0.02197	0.28562
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00904	0.02622	0.28988
	(!C * Y)	0.00395	0.02124	0.28491
	(!C * Y)	0.00833	0.02563	0.28930
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00512	0.02170	0.29917
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00976	0.02637	0.30383
	(!C * Y)	0.00353	0.02025	0.29795
	(!C * Y)	0.00841	0.02518	0.30286
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01359	0.04130	0.49415
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.02059	0.04834	0.50115
	(!C * Y)	0.01038	0.03835	0.49143
	(!C * Y)	0.01788	0.04588	0.49896

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)**	0.00837	0.00839	0.00838
	(A_N * B_N * D * Y)	0.00371	0.00369	0.00370
	(A_N * B_N * !D * Y)	0.00762	0.00763	0.00762
	(A_N * B_N * !D * Y)	0.00369	0.00367	0.00369
	(A_N * !B_N * D * Y)	0.00503	0.00505	0.00504
	(A_N * !B_N * D * Y)	0.00035	0.00033	0.00035
	(A_N * !B_N * !D * Y)	0.00416	0.00417	0.00416
	(A_N * !B_N * !D * Y)	0.00001	-0.00001	-0.00000
	(!A_N * B_N * D * Y)	0.00527	0.00529	0.00528
	(!A_N * B_N * D * Y)	0.00059	0.00058	0.00059
	(!A_N * B_N * !D * Y)	0.00448	0.00449	0.00447
	(!A_N * B_N * !D * Y)	0.00055	0.00054	0.00056
	(!A_N * !B_N * !D * Y)	0.00078	0.00078	0.00078
	(!A_N * !B_N * !D * Y)	-0.00287	-0.00289	-0.00288
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00639	0.00642	0.00639
	(A_N * B_N * D * Y)	-0.00264	-0.00266	-0.00263
	(A_N * B_N * !D * Y)	0.00480	0.00482	0.00480
	(A_N * B_N * !D * Y)	-0.00264	-0.00267	-0.00264
	(A_N * !B_N * D * Y)	0.00521	0.00523	0.00522
	(A_N * !B_N * D * Y)	-0.00384	-0.00386	-0.00384
	(A_N * !B_N * !D * Y)	0.00347	0.00347	0.00346
	(A_N * !B_N * !D * Y)	-0.00453	-0.00454	-0.00452
	(!A_N * B_N * D * Y)	0.00525	0.00531	0.00526
	(!A_N * B_N * D * Y)	-0.00379	-0.00382	-0.00379
	(!A_N * B_N * !D * Y)	0.00358	0.00361	0.00358
	(!A_N * B_N * !D * Y)	-0.00382	-0.00386	-0.00384
	(!A_N * !B_N * !D * Y)	0.00170	0.00172	0.00173
	(!A_N * !B_N * !D * Y)	-0.00513	-0.00516	-0.00516

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.02041	0.02054	0.02046
	(A_N * B_N * D * Y)	0.00267	0.00257	0.00262
	(A_N * B_N * !D * Y)	0.01722	0.01727	0.01722
	(A_N * B_N * !D * Y)	0.00261	0.00255	0.00261
	(A_N * !B_N * D * Y)	0.01410	0.01408	0.01411
	(A_N * !B_N * D * Y)	-0.00384	-0.00380	-0.00379
	(A_N * !B_N * !D * Y)	0.01051	0.01053	0.01048
	(A_N * !B_N * !D * Y)	-0.00520	-0.00525	-0.00518
	(!A_N * B_N * D * Y)	0.01427	0.01427	0.01431
	(!A_N * B_N * D * Y)	-0.00356	-0.00355	-0.00358
	(!A_N * B_N * !D * Y)	0.01086	0.01092	0.01087
	(!A_N * B_N * !D * Y)	-0.00368	-0.00375	-0.00369
	(!A_N * !B_N * !D * Y)	0.00311	0.00311	0.00316
	(!A_N * !B_N * !D * Y)	-0.01030	-0.01031	-0.01037

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)**	0.00426	0.00422	0.00424
	(A_N * B_N * D * Y)	0.00895	0.00895	0.00892
	(A_N * B_N * !D * Y)	0.00493	0.00492	0.00493
	(A_N * B_N * !D * Y)	0.00901	0.00903	0.00896
	(A_N * !B_N * D * Y)	0.00170	0.00140	0.00137
	(A_N * !B_N * D * Y)	0.00637	0.00613	0.00606
	(A_N * !B_N * !D * Y)	0.00214	0.00218	0.00214
	(A_N * !B_N * !D * Y)	0.00649	0.00656	0.00643
	(!A_N * B_N * D * Y)	0.00135	0.00113	0.00113
	(!A_N * B_N * D * Y)	0.00606	0.00587	0.00581
	(!A_N * B_N * !D * Y)	0.00186	0.00185	0.00181
	(!A_N * B_N * !D * Y)	0.00591	0.00594	0.00583
	(!A_N * !B_N * !D * Y)	-0.00062	-0.00063	-0.00064
	(!A_N * !B_N * !D * Y)	0.00305	0.00308	0.00302
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00140	-0.00150	-0.00147
	(A_N * B_N * D * Y)	0.00762	0.00765	0.00758
	(A_N * B_N * !D * Y)	0.00005	0.00002	0.00005
	(A_N * B_N * !D * Y)	0.00778	0.00783	0.00769
	(A_N * !B_N * D * Y)	-0.00183	-0.00255	-0.00256
	(A_N * !B_N * D * Y)	0.00723	0.00662	0.00651
	(A_N * !B_N * !D * Y)	-0.00099	-0.00087	-0.00099
	(A_N * !B_N * !D * Y)	0.00735	0.00756	0.00728
	(!A_N * B_N * D * Y)	-0.00208	-0.00261	-0.00260
	(!A_N * B_N * D * Y)	0.00697	0.00656	0.00646
	(!A_N * B_N * !D * Y)	-0.00101	-0.00103	-0.00111
	(!A_N * B_N * !D * Y)	0.00668	0.00673	0.00651
	(!A_N * !B_N * !D * Y)	-0.00132	-0.00134	-0.00139
	(!A_N * !B_N * !D * Y)	0.00559	0.00564	0.00552

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	0.00493	0.00469	0.00477
	(A_N * B_N * D * Y)	0.02279	0.02278	0.02264
	(A_N * B_N * !D * Y)	0.00782	0.00778	0.00782
	(A_N * B_N * !D * Y)	0.02302	0.02313	0.02284
	(A_N * !B_N * D * Y)	0.00030	-0.00127	-0.00124
	(A_N * !B_N * D * Y)	0.01822	0.01686	0.01667
	(A_N * !B_N * !D * Y)	0.00195	0.00220	0.00199
	(A_N * !B_N * !D * Y)	0.01838	0.01877	0.01821
	(!A_N * B_N * D * Y)	-0.00028	-0.00143	-0.00141
	(!A_N * B_N * D * Y)	0.01765	0.01669	0.01648
	(!A_N * B_N * !D * Y)	0.00182	0.00178	0.00162
	(!A_N * B_N * !D * Y)	0.01689	0.01701	0.01658
	(!A_N * !B_N * !D * Y)	-0.00266	-0.00270	-0.00279
	(!A_N * !B_N * !D * Y)	0.01093	0.01104	0.01080

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)	0.00814	0.00816	0.00814
	(A_N * B_N * C * Y)	0.00357	0.00355	0.00357
	(A_N * !C * Y)	0.00815	0.00818	0.00815
	(A_N * !C * Y)	0.00357	0.00355	0.00357
	(A_N * !B_N * C * Y)	0.00503	0.00505	0.00504
	(A_N * !B_N * C * Y)	0.00044	0.00043	0.00044
	(!A_N * B_N * C * Y)	0.00504	0.00506	0.00505
	(!A_N * B_N * C * Y)	0.00045	0.00044	0.00045
	(!A_N * B_N * !C * Y)	0.00501	0.00504	0.00502
	(!A_N * B_N * !C * Y)	0.00044	0.00042	0.00044
	(!A_N * !B_N * !C * Y)	0.00191	0.00195	0.00192
	(!A_N * !B_N * !C * Y)	-0.00268	-0.00270	-0.00268

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00634	0.00637	0.00635
	(A_N * B_N * C * Y)	-0.00252	-0.00253	-0.00252
	(A_N * !C * Y)	0.00633	0.00636	0.00634
	(A_N * !C * Y)	-0.00251	-0.00254	-0.00252
	(A_N * !B_N * C * Y)	0.00518	0.00522	0.00520
	(A_N * !B_N * C * Y)	-0.00371	-0.00373	-0.00371
	(!A_N * B_N * C * Y)	0.00520	0.00525	0.00521
	(!A_N * B_N * C * Y)	-0.00368	-0.00371	-0.00368
	(!A_N * B_N * !C * Y)	0.00516	0.00521	0.00517
	(!A_N * B_N * !C * Y)	-0.00369	-0.00373	-0.00370
	(!A_N * !B_N * !C * Y)	0.00402	0.00409	0.00405
	(!A_N * !B_N * !C * Y)	-0.00484	-0.00489	-0.00486
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.02028	0.02022	0.02026
	(A_N * B_N * C * Y)	0.00266	0.00272	0.00269
	(A_N * !C * Y)	0.02031	0.02036	0.02033
	(A_N * !C * Y)	0.00270	0.00266	0.00268
	(A_N * !B_N * C * Y)	0.01414	0.01421	0.01414
	(A_N * !B_N * C * Y)	-0.00365	-0.00367	-0.00361
	(!A_N * B_N * C * Y)	0.01418	0.01424	0.01416
	(!A_N * B_N * C * Y)	-0.00358	-0.00360	-0.00354
	(!A_N * B_N * !C * Y)	0.01403	0.01409	0.01406
	(!A_N * B_N * !C * Y)	-0.00357	-0.00361	-0.00359
	(!A_N * !B_N * !C * Y)	0.00794	0.00799	0.00794
	(!A_N * !B_N * !C * Y)	-0.00982	-0.00986	-0.00981

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)**	0.00455	0.00447	0.00446
	(A_N * B_N * C * Y)	0.00904	0.00908	0.00905
	(A_N * !C * Y)	0.00449	0.00445	0.00445
	(A_N * !C * Y)	0.00903	0.00906	0.00905
	(A_N * !B_N * C * Y)	0.00161	0.00138	0.00136
	(A_N * !B_N * C * Y)	0.00615	0.00602	0.00597
	(!A_N * B_N * C * Y)	0.00154	0.00136	0.00134
	(!A_N * B_N * C * Y)	0.00609	0.00599	0.00594
	(!A_N * B_N * !C * Y)	0.00136	0.00132	0.00132
	(!A_N * B_N * !C * Y)	0.00591	0.00593	0.00592
	(!A_N * !B_N * !C * Y)	-0.00163	-0.00181	-0.00180
	(!A_N * !B_N * !C * Y)	0.00295	0.00286	0.00280
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00119	-0.00139	-0.00143
	(A_N * B_N * C * Y)	0.00746	0.00752	0.00746
	(A_N * !C * Y)	-0.00135	-0.00144	-0.00144
	(A_N * !C * Y)	0.00744	0.00749	0.00746
	(A_N * !B_N * C * Y)	-0.00197	-0.00246	-0.00255
	(A_N * !B_N * C * Y)	0.00685	0.00652	0.00638
	(!A_N * B_N * C * Y)	-0.00210	-0.00253	-0.00258
	(!A_N * B_N * C * Y)	0.00670	0.00642	0.00632
	(!A_N * B_N * !C * Y)	-0.00252	-0.00262	-0.00262
	(!A_N * B_N * !C * Y)	0.00627	0.00633	0.00628
	(!A_N * !B_N * !C * Y)	-0.00337	-0.00371	-0.00376
	(!A_N * !B_N * !C * Y)	0.00552	0.00529	0.00515

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00529	0.00495	0.00487
	(A_N * B_N * C * Y)	0.02261	0.02268	0.02257
	(A_N * !C * Y)	0.00501	0.00484	0.00484
	(A_N * !C * Y)	0.02254	0.02262	0.02257
	(A_N * !B_N * C * Y)	-0.00019	-0.00111	-0.00128
	(A_N * !B_N * C * Y)	0.01740	0.01678	0.01650
	(!A_N * B_N * C * Y)	-0.00039	-0.00123	-0.00134
	(!A_N * B_N * C * Y)	0.01717	0.01660	0.01638
	(!A_N * B_N * !C * Y)	-0.00124	-0.00143	-0.00142
	(!A_N * B_N * !C * Y)	0.01630	0.01635	0.01630
	(!A_N * !B_N * !C * Y)	-0.00685	-0.00756	-0.00762
	(!A_N * !B_N * !C * Y)	0.01088	0.01033	0.01012

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00222	0.00286	0.00286	0.00277	1.28354
sky130_fd_sc_hs__nand4b_2	0.00278	0.00564	0.00548	0.00548	1.95812
sky130_fd_sc_hs__nand4b_4	0.00385	0.00803	0.00819	0.00787	3.00067

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	212.87700	479.41000
sky130_fd_sc_hs__nand4b_2	0.00000	134.47800	959.40000
sky130_fd_sc_hs__nand4b_4	0.00000	426.39700	957.80000

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)	0.04403	0.34589	4.25233
	B->Y (FR)	0.02866	0.55173	7.99427
	C->Y (FR)	0.03306	0.55704	8.00547
	D->Y (FR)	0.03460	0.55091	7.87368
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.04578	0.23645	2.87858
	B->Y (FR)	0.02554	0.42068	6.65171
	C->Y (FR)	0.02969	0.43583	6.81453
	D->Y (FR)	0.03268	0.44092	6.79066
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.05688	0.35511	5.61617
	B->Y (FR)	0.03447	0.50196	8.64869
	C->Y (FR)	0.04290	0.51327	8.67859
	D->Y (FR)	0.05184	0.53402	8.88170

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)	0.06125	0.60680	7.97377
	B->Y (RF)	0.03674	0.56015	8.11229
	C->Y (RF)	0.04218	0.52224	7.48760
	D->Y (RF)	0.04460	0.48498	6.89448
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.06713	0.55584	8.02234
	B->Y (RF)	0.04087	0.48926	7.91739
	C->Y (RF)	0.04627	0.42592	6.90104
	D->Y (RF)	0.05074	0.39392	6.34578
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.05149	0.41218	6.62350
	B->Y (RF)	0.03392	0.36829	6.85290
	C->Y (RF)	0.04014	0.31337	5.89367
	D->Y (RF)	0.04376	0.27253	5.15422

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	0.01656	0.03304	0.29802
	A_N	0.01277	0.02919	0.29312
	B	0.00072	0.00688	0.09039
	B	0.00627	0.01242	0.09543
	C	0.00148	0.00766	0.09371
	C	0.00819	0.01434	0.09987
	D	0.00199	0.00838	0.09885
	D	0.01001	0.01638	0.10645
sky130_fd_sc_hs__nand4b_2	A_N	0.01621	0.03272	0.29280
	A_N	0.01243	0.02882	0.28698
	B	0.00082	0.01356	0.17344
	B	0.01231	0.02508	0.18385
	C	0.00249	0.01530	0.18408
	C	0.01652	0.02921	0.19636
	D	0.00420	0.01736	0.19476
	D	0.02128	0.03432	0.21009
sky130_fd_sc_hs__nand4b_4	A_N	0.03516	0.06216	0.49563
	A_N	0.02974	0.05674	0.48886
	B	0.00097	0.01795	0.21757
	B	0.01734	0.03416	0.23193
	C	0.00380	0.02087	0.22983
	C	0.02599	0.04294	0.25009
	D	0.00676	0.02401	0.23869
	D	0.03457	0.05179	0.26471

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.01929	0.03593	0.28189
	A_N	0.02311	0.03972	0.28553
	B	0.02133	0.02435	0.07044
	B	0.01575	0.01876	0.06481
	C	0.02248	0.02558	0.07705
	C	0.01574	0.01880	0.06990
	D	0.02361	0.02696	0.08708
	D	0.01555	0.01887	0.07801
sky130_fd_sc_hs__nand4b_2	A_N	0.03768	0.05465	0.32985
	A_N	0.04147	0.05842	0.33365
	B	0.04278	0.04940	0.14149
	B	0.03126	0.03777	0.12975
	C	0.04486	0.05205	0.16253
	C	0.03077	0.03796	0.14839
	D	0.04760	0.05514	0.18262
	D	0.03035	0.03784	0.16510
sky130_fd_sc_hs__nand4b_4	A_N	0.04213	0.07123	0.51986
	A_N	0.04754	0.07664	0.52407
	B	0.05058	0.05988	0.17459
	B	0.03425	0.04340	0.15780
	C	0.05586	0.06585	0.20458
	C	0.03361	0.04359	0.18171
	D	0.06119	0.07192	0.23228
	D	0.03320	0.04383	0.20374

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)	0.01054	0.02704	0.29078
	(B * C * !D * Y)	0.00593	0.02240	0.28615
	(B * !C * Y)	0.01053	0.02703	0.29054
	(B * !C * Y)	0.00593	0.02240	0.28593
	(!B * Y)	0.01045	0.02696	0.29048
	(!B * Y)	0.00593	0.02241	0.28595
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.01235	0.02985	0.31747
	(B * C * !D * Y)	0.00661	0.02411	0.31174
	(B * !C * Y)	0.01235	0.02984	0.31745
	(B * !C * Y)	0.00661	0.02411	0.31172
	(!B * Y)	0.01224	0.02973	0.31735
	(!B * Y)	0.00663	0.02413	0.31176
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.01948	0.04727	0.49902
	(B * C * !D * Y)	0.01145	0.03917	0.49098
	(B * !C * Y)	0.01950	0.04725	0.49899
	(B * !C * Y)	0.01146	0.03915	0.49094
	(!B * Y)	0.01925	0.04701	0.49879
	(!B * Y)	0.01150	0.03920	0.49103

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)	0.00040	0.01784	0.28443
	(B * C * !D * Y)	0.00516	0.02261	0.28914
	(B * !C * Y)	0.00040	0.01781	0.28419
	(B * !C * Y)	0.00509	0.02250	0.28885
	(!B * Y)	0.00041	0.01784	0.28424
	(!B * Y)	0.00494	0.02239	0.28878
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00053	0.01819	0.30663
	(B * C * !D * Y)	0.00656	0.02423	0.31255
	(B * !C * Y)	0.00048	0.01814	0.30662
	(B * !C * Y)	0.00635	0.02402	0.31244
	(!B * Y)	0.00046	0.01813	0.30667
	(!B * Y)	0.00608	0.02376	0.31227
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00141	0.03115	0.48872
	(B * C * !D * Y)	0.01007	0.03984	0.49717
	(B * !C * Y)	0.00133	0.03107	0.48871
	(B * !C * Y)	0.00967	0.03944	0.49694
	(!B * Y)	0.00133	0.03110	0.48882
	(!B * Y)	0.00913	0.03895	0.49660

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)**	0.00532	0.00533	0.00532
	(A_N * C * D * Y)	0.00068	0.00067	0.00068
	(A_N * C * !D * Y)	0.00446	0.00446	0.00446
	(A_N * C * !D * Y)	0.00066	0.00066	0.00066
	(A_N * !C * Y)	0.00451	0.00453	0.00452
	(A_N * !C * Y)	0.00066	0.00065	0.00066
	(!A_N * C * !D * Y)	0.00068	0.00069	0.00070
	(!A_N * C * !D * Y)	-0.00280	-0.00283	-0.00285
	(!A_N * !C * Y)	0.00074	0.00074	0.00073
	(!A_N * !C * Y)	-0.00285	-0.00286	-0.00286
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00523	0.00528	0.00525
	(A_N * C * D * Y)	-0.00398	-0.00401	-0.00399
	(A_N * C * !D * Y)	0.00356	0.00358	0.00356
	(A_N * C * !D * Y)	-0.00406	-0.00410	-0.00407
	(A_N * !C * Y)	0.00369	0.00372	0.00370
	(A_N * !C * Y)	-0.00408	-0.00412	-0.00409
	(!A_N * C * !D * Y)	0.00149	0.00149	0.00151
	(!A_N * C * !D * Y)	-0.00548	-0.00547	-0.00559
	(!A_N * !C * Y)	0.00159	0.00161	0.00159
	(!A_N * !C * Y)	-0.00556	-0.00560	-0.00561
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.01398	0.01410	0.01402
	(A_N * C * D * Y)	0.00096	0.00090	0.00094
	(A_N * C * !D * Y)	0.01048	0.01052	0.01050
	(A_N * C * !D * Y)	0.00081	0.00077	0.00080
	(A_N * !C * Y)	0.01072	0.01078	0.01073
	(A_N * !C * Y)	0.00076	0.00072	0.00075
	(!A_N * C * !D * Y)	0.00270	0.00274	0.00275
	(!A_N * C * !D * Y)	-0.00575	-0.00581	-0.00596
	(!A_N * !C * Y)	0.00288	0.00292	0.00290
	(!A_N * !C * Y)	-0.00592	-0.00597	-0.00601

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)	0.00137	0.00106	0.00106
	(A_N * C * D * Y)	0.00601	0.00576	0.00570
	(A_N * C * !D * Y)	0.00194	0.00191	0.00186
	(A_N * C * !D * Y)	0.00595	0.00591	0.00578
	(A_N * !C * Y)	0.00180	0.00180	0.00175
	(A_N * !C * Y)	0.00579	0.00581	0.00570
	(!A_N * C * !D * Y)	-0.00062	-0.00061	-0.00063
	(!A_N * C * !D * Y)	0.00297	0.00295	0.00294
	(!A_N * !C * Y)	-0.00064	-0.00065	-0.00066
	(!A_N * !C * Y)	0.00297	0.00300	0.00294
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00186	-0.00256	-0.00265
	(A_N * C * D * Y)	0.00739	0.00672	0.00658
	(A_N * C * !D * Y)	-0.00084	-0.00098	-0.00107
	(A_N * C * !D * Y)	0.00718	0.00708	0.00682
	(A_N * !C * Y)	-0.00118	-0.00121	-0.00132
	(A_N * !C * Y)	0.00684	0.00692	0.00667
	(!A_N * C * !D * Y)	-0.00129	-0.00130	-0.00134
	(!A_N * C * !D * Y)	0.00583	0.00587	0.00578
	(!A_N * !C * Y)	-0.00136	-0.00138	-0.00141
	(!A_N * !C * Y)	0.00585	0.00592	0.00579

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00047	-0.00093	-0.00114
	(A_N * C * D * Y)	0.01357	0.01228	0.01193
	(A_N * C * !D * Y)	0.00260	0.00236	0.00216
	(A_N * C * !D * Y)	0.01308	0.01284	0.01236
	(A_N * !C * Y)	0.00193	0.00191	0.00171
	(A_N * !C * Y)	0.01240	0.01247	0.01205
	(!A_N * C * !D * Y)	-0.00248	-0.00253	-0.00256
	(!A_N * C * !D * Y)	0.00632	0.00643	0.00620
	(!A_N * !C * Y)	-0.00259	-0.00262	-0.00268
	(!A_N * !C * Y)	0.00634	0.00641	0.00623

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)**	0.00508	0.00510	0.00509
	(A_N * B * D * Y)	0.00069	0.00067	0.00069
	(A_N * B * !D * Y)	0.00420	0.00421	0.00420
	(A_N * B * !D * Y)	0.00067	0.00065	0.00067
	(A_N * !B * D * Y)	0.00505	0.00507	0.00505
	(A_N * !B * D * Y)	0.00066	0.00065	0.00066
	(A_N * !B * !D * Y)	0.00414	0.00415	0.00414
	(A_N * !B * !D * Y)	0.00066	0.00065	0.00066
	(!A_N * B * !D * Y)	0.00072	0.00073	0.00073
	(!A_N * B * !D * Y)	-0.00253	-0.00255	-0.00252
	(!A_N * !B * D * Y)	0.00188	0.00191	0.00189
	(!A_N * !B * D * Y)	-0.00251	-0.00253	-0.00252
	(!A_N * !B * !D * Y)	0.00090	0.00091	0.00090
	(!A_N * !B * !D * Y)	-0.00255	-0.00257	-0.00256

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00512	0.00516	0.00513
	(A_N * B * D * Y)	-0.00378	-0.00381	-0.00378
	(A_N * B * !D * Y)	0.00338	0.00338	0.00337
	(A_N * B * !D * Y)	-0.00388	-0.00388	-0.00387
	(A_N * !B * D * Y)	0.00505	0.00508	0.00506
	(A_N * !B * D * Y)	-0.00382	-0.00385	-0.00383
	(A_N * !B * !D * Y)	0.00330	0.00332	0.00330
	(A_N * !B * !D * Y)	-0.00383	-0.00387	-0.00384
	(!A_N * B * !D * Y)	0.00161	0.00164	0.00164
	(!A_N * B * !D * Y)	-0.00499	-0.00503	-0.00496
	(!A_N * !B * D * Y)	0.00396	0.00400	0.00396
	(!A_N * !B * D * Y)	-0.00499	-0.00501	-0.00498
	(!A_N * !B * !D * Y)	0.00206	0.00209	0.00207
	(!A_N * !B * !D * Y)	-0.00503	-0.00507	-0.00504
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.01415	0.01424	0.01419
	(A_N * B * D * Y)	0.00098	0.00094	0.00098
	(A_N * B * !D * Y)	0.01042	0.01045	0.01042
	(A_N * B * !D * Y)	0.00083	0.00080	0.00082
	(A_N * !B * D * Y)	0.01401	0.01411	0.01404
	(A_N * !B * D * Y)	0.00089	0.00084	0.00088
	(A_N * !B * !D * Y)	0.01022	0.01025	0.01022
	(A_N * !B * !D * Y)	0.00087	0.00084	0.00086
	(!A_N * B * !D * Y)	0.00310	0.00311	0.00312
	(!A_N * B * !D * Y)	-0.00538	-0.00539	-0.00531
	(!A_N * !B * D * Y)	0.00792	0.00803	0.00795
	(!A_N * !B * D * Y)	-0.00531	-0.00535	-0.00531
	(!A_N * !B * !D * Y)	0.00387	0.00389	0.00385
	(!A_N * !B * !D * Y)	-0.00545	-0.00547	-0.00544

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)	0.00164	0.00131	0.00129
	(A_N * B * D * Y)	0.00599	0.00576	0.00568
	(A_N * B * !D * Y)	0.00208	0.00210	0.00205
	(A_N * B * !D * Y)	0.00581	0.00587	0.00573
	(A_N * !B * D * Y)	0.00132	0.00124	0.00126
	(A_N * !B * D * Y)	0.00566	0.00569	0.00566
	(A_N * !B * !D * Y)	0.00210	0.00210	0.00213
	(A_N * !B * !D * Y)	0.00574	0.00576	0.00570
	(!A_N * B * !D * Y)	-0.00061	-0.00062	-0.00063
	(!A_N * B * !D * Y)	0.00270	0.00273	0.00265
	(!A_N * !B * D * Y)	-0.00157	-0.00180	-0.00179
	(!A_N * !B * D * Y)	0.00285	0.00267	0.00261
	(!A_N * !B * !D * Y)	-0.00089	-0.00089	-0.00090
	(!A_N * !B * !D * Y)	0.00270	0.00272	0.00263
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00180	-0.00254	-0.00256
	(A_N * B * D * Y)	0.00705	0.00649	0.00637
	(A_N * B * !D * Y)	-0.00097	-0.00088	-0.00099
	(A_N * B * !D * Y)	0.00670	0.00684	0.00652
	(A_N * !B * D * Y)	-0.00247	-0.00265	-0.00261
	(A_N * !B * D * Y)	0.00636	0.00638	0.00632
	(A_N * !B * !D * Y)	-0.00097	-0.00096	-0.00092
	(A_N * !B * !D * Y)	0.00657	0.00657	0.00643
	(!A_N * B * !D * Y)	-0.00134	-0.00135	-0.00140
	(!A_N * B * !D * Y)	0.00539	0.00542	0.00526
	(!A_N * !B * D * Y)	-0.00320	-0.00377	-0.00375
	(!A_N * !B * D * Y)	0.00573	0.00530	0.00519
	(!A_N * !B * !D * Y)	-0.00196	-0.00198	-0.00204
	(!A_N * !B * !D * Y)	0.00541	0.00548	0.00525

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	0.00036	-0.00137	-0.00134
	(A_N * B * D * Y)	0.01341	0.01204	0.01188
	(A_N * B * !D * Y)	0.00200	0.00218	0.00199
	(A_N * B * !D * Y)	0.01248	0.01273	0.01213
	(A_N * !B * D * Y)	-0.00112	-0.00153	-0.00144
	(A_N * !B * D * Y)	0.01194	0.01185	0.01178
	(A_N * !B * !D * Y)	0.00215	0.00213	0.00223
	(A_N * !B * !D * Y)	0.01218	0.01220	0.01196
	(!A_N * B * !D * Y)	-0.00269	-0.00271	-0.00280
	(!A_N * B * !D * Y)	0.00598	0.00602	0.00572
	(!A_N * !B * D * Y)	-0.00646	-0.00768	-0.00763
	(!A_N * !B * D * Y)	0.00680	0.00577	0.00561
	(!A_N * !B * !D * Y)	-0.00386	-0.00385	-0.00385
	(!A_N * !B * !D * Y)	0.00607	0.00607	0.00568

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)	0.00505	0.00507	0.00506
	(A_N * B * C * Y)	0.00075	0.00073	0.00075
	(A_N * !C * Y)	0.00507	0.00509	0.00508
	(A_N * !C * Y)	0.00072	0.00071	0.00072
	(A_N * !B * C * Y)	0.00503	0.00505	0.00503
	(A_N * !B * C * Y)	0.00072	0.00070	0.00072
	(!A_N * B * !C * Y)	0.00191	0.00193	0.00190
	(!A_N * B * !C * Y)	-0.00249	-0.00250	-0.00248
	(!A_N * !B * C * Y)	0.00186	0.00187	0.00186
	(!A_N * !B * C * Y)	-0.00248	-0.00249	-0.00248
	(!A_N * !B * !C * Y)	0.00187	0.00189	0.00187
	(!A_N * !B * !C * Y)	-0.00249	-0.00250	-0.00249

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00513	0.00516	0.00513
	(A_N * B * C * Y)	-0.00376	-0.00378	-0.00375
	(A_N * !C * Y)	0.00511	0.00516	0.00511
	(A_N * !C * Y)	-0.00380	-0.00383	-0.00380
	(A_N * !B * C * Y)	0.00505	0.00508	0.00505
	(A_N * !B * C * Y)	-0.00381	-0.00382	-0.00380
	(!A_N * B * !C * Y)	0.00399	0.00402	0.00400
	(!A_N * B * !C * Y)	-0.00496	-0.00498	-0.00496
	(!A_N * !B * C * Y)	0.00393	0.00396	0.00393
	(!A_N * !B * C * Y)	-0.00497	-0.00499	-0.00496
	(!A_N * !B * !C * Y)	0.00392	0.00397	0.00393
	(!A_N * !B * !C * Y)	-0.00499	-0.00501	-0.00499
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.01396	0.01404	0.01398
	(A_N * B * C * Y)	0.00138	0.00136	0.00140
	(A_N * !C * Y)	0.01396	0.01409	0.01399
	(A_N * !C * Y)	0.00130	0.00126	0.00129
	(A_N * !B * C * Y)	0.01383	0.01385	0.01384
	(A_N * !B * C * Y)	0.00129	0.00128	0.00129
	(!A_N * B * !C * Y)	0.00786	0.00789	0.00787
	(!A_N * B * !C * Y)	-0.00497	-0.00497	-0.00496
	(!A_N * !B * C * Y)	0.00766	0.00777	0.00770
	(!A_N * !B * C * Y)	-0.00493	-0.00497	-0.00494
	(!A_N * !B * !C * Y)	0.00767	0.00780	0.00771
	(!A_N * !B * !C * Y)	-0.00498	-0.00502	-0.00499

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)**	0.00153	0.00129	0.00127
	(A_N * B * C * Y)	0.00578	0.00567	0.00563
	(A_N * !C * Y)	0.00129	0.00125	0.00124
	(A_N * !C * Y)	0.00561	0.00562	0.00561
	(A_N * !B * C * Y)	0.00138	0.00128	0.00126
	(A_N * !B * C * Y)	0.00559	0.00563	0.00561
	(!A_N * B * !C * Y)	-0.00167	-0.00180	-0.00181
	(!A_N * B * !C * Y)	0.00269	0.00259	0.00256
	(!A_N * !B * C * Y)	-0.00157	-0.00177	-0.00179
	(!A_N * !B * C * Y)	0.00271	0.00261	0.00256
	(!A_N * !B * !C * Y)	-0.00176	-0.00182	-0.00183
	(!A_N * !B * !C * Y)	0.00252	0.00255	0.00254
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00199	-0.00250	-0.00259
	(A_N * B * C * Y)	0.00674	0.00646	0.00633
	(A_N * !C * Y)	-0.00251	-0.00265	-0.00266
	(A_N * !C * Y)	0.00627	0.00631	0.00628
	(A_N * !B * C * Y)	-0.00233	-0.00258	-0.00263
	(A_N * !B * C * Y)	0.00630	0.00634	0.00628
	(!A_N * B * !C * Y)	-0.00341	-0.00378	-0.00380
	(!A_N * B * !C * Y)	0.00545	0.00522	0.00515
	(!A_N * !B * C * Y)	-0.00322	-0.00371	-0.00378
	(!A_N * !B * C * Y)	0.00556	0.00525	0.00514
	(!A_N * !B * !C * Y)	-0.00369	-0.00384	-0.00385
	(!A_N * !B * !C * Y)	0.00509	0.00512	0.00510

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00014	-0.00119	-0.00125
	(A_N * B * C * Y)	0.01215	0.01162	0.01146
	(A_N * !C * Y)	-0.00109	-0.00144	-0.00139
	(A_N * !C * Y)	0.01135	0.01142	0.01136
	(A_N * !B * C * Y)	-0.00074	-0.00133	-0.00133
	(A_N * !B * C * Y)	0.01136	0.01142	0.01136
	(!A_N * B * !C * Y)	-0.00683	-0.00763	-0.00759
	(!A_N * B * !C * Y)	0.00578	0.00529	0.00517
	(!A_N * !B * C * Y)	-0.00650	-0.00754	-0.00754
	(!A_N * !B * C * Y)	0.00589	0.00529	0.00516
	(!A_N * !B * !C * Y)	-0.00736	-0.00772	-0.00768
	(!A_N * !B * !C * Y)	0.00508	0.00514	0.00507

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00279	0.00294	0.00290	0.00290	1.25936
sky130_fd_sc_hs__nand4_2	0.00544	0.00550	0.00556	0.00539	1.94375
sky130_fd_sc_hs__nand4_4	0.00814	0.00797	0.00799	0.00820	2.85577

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4_1	0.00000	30.57120	477.37800
sky130_fd_sc_hs__nand4_2	0.00000	61.10180	954.13500
sky130_fd_sc_hs__nand4_4	0.00000	62.61710	954.94400

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)	0.02403	0.53089	7.71255
	B->Y (FR)	0.03036	0.54970	7.91130
	C->Y (FR)	0.03452	0.55557	7.93172
	D->Y (FR)	0.03623	0.54892	7.78831
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.02047	0.41810	6.71176
	B->Y (FR)	0.02607	0.42073	6.65187
	C->Y (FR)	0.02996	0.42966	6.70654
	D->Y (FR)	0.03316	0.44098	6.78994
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.02550	0.48370	8.39256
	B->Y (FR)	0.03691	0.49373	8.39028
	C->Y (FR)	0.04776	0.52218	8.70323
	D->Y (FR)	0.05604	0.53536	8.77044

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.02936	0.56945	8.31080
	B->Y (RF)	0.03735	0.54791	7.86874
	C->Y (RF)	0.04213	0.50922	7.23298
	D->Y (RF)	0.04500	0.47099	6.62973
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.02768	0.50988	8.34799
	B->Y (RF)	0.03897	0.48862	7.90927
	C->Y (RF)	0.04462	0.42572	6.90781
	D->Y (RF)	0.04858	0.39269	6.32774
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.02109	0.38670	7.14957
	B->Y (RF)	0.03204	0.35838	6.54427
	C->Y (RF)	0.03830	0.30255	5.56769
	D->Y (RF)	0.04188	0.26153	4.83266

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00021	0.00607	0.08879
	A	0.00590	0.01218	0.09438
	B	0.00069	0.00682	0.09098
	B	0.00820	0.01433	0.09809
	C	0.00150	0.00774	0.09577
	C	0.01032	0.01653	0.10418
	D	0.00197	0.00842	0.10090
	D	0.01225	0.01869	0.11079
sky130_fd_sc_hs__nand4_2	A	-0.00143	0.01143	0.16503
	A	0.00993	0.02267	0.17529
	B	0.00103	0.01352	0.17494
	B	0.01541	0.02792	0.18822
	C	0.00223	0.01522	0.18686
	C	0.01973	0.03264	0.20303
	D	0.00412	0.01729	0.19484
	D	0.02442	0.03748	0.21317
sky130_fd_sc_hs__nand4_4	A	-0.00293	0.01528	0.21876
	A	0.01383	0.03200	0.23345
	B	0.00125	0.01883	0.23182
	B	0.02385	0.04136	0.25225
	C	0.00401	0.02135	0.23917
	C	0.03236	0.04962	0.26589
	D	0.00708	0.02472	0.25184
	D	0.04177	0.05933	0.28509

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.02031	0.02393	0.07332
	A	0.01419	0.01791	0.06718
	B	0.02154	0.02458	0.07196
	B	0.01400	0.01700	0.06425
	C	0.02262	0.02583	0.07977
	C	0.01376	0.01694	0.07081
	D	0.02385	0.02731	0.09001
	D	0.01349	0.01694	0.07927
sky130_fd_sc_hs__nand4_2	A	0.03974	0.04750	0.14140
	A	0.02838	0.03613	0.12945
	B	0.04225	0.04856	0.13982
	B	0.02783	0.03415	0.12514
	C	0.04465	0.05179	0.16155
	C	0.02708	0.03408	0.14393
	D	0.04719	0.05466	0.18119
	D	0.02668	0.03411	0.16042
sky130_fd_sc_hs__nand4_4	A	0.04461	0.05595	0.17553
	A	0.02783	0.03902	0.15860
	B	0.04976	0.05913	0.17915
	B	0.02716	0.03640	0.15433
	C	0.05494	0.06479	0.20216
	C	0.02643	0.03623	0.17372
	D	0.06064	0.07130	0.23576
	D	0.02564	0.03623	0.19849

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)	0.00070	0.00070	0.00063
	(B * C * !D * Y)	-0.00269	-0.00271	-0.00288
	(B * !C * Y)	0.00068	0.00069	0.00064
	(B * !C * Y)	-0.00276	-0.00277	-0.00289
	(!B * Y)	0.00068	0.00069	0.00066
	(!B * Y)	-0.00283	-0.00286	-0.00290
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00127	0.00127	0.00109
	(B * C * !D * Y)	-0.00532	-0.00535	-0.00576
	(B * !C * Y)	0.00119	0.00120	0.00108
	(B * !C * Y)	-0.00550	-0.00555	-0.00580
	(!B * Y)	0.00125	0.00126	0.00117
	(!B * Y)	-0.00566	-0.00572	-0.00583
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00245	0.00246	0.00214
	(B * C * !D * Y)	-0.00602	-0.00608	-0.00685
	(B * !C * Y)	0.00231	0.00233	0.00212
	(B * !C * Y)	-0.00638	-0.00644	-0.00692
	(!B * Y)	0.00239	0.00241	0.00226
	(!B * Y)	-0.00669	-0.00677	-0.00698

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)	-0.00060	-0.00061	-0.00060
	(B * C * !D * Y)	0.00290	0.00295	0.00291
	(B * !C * Y)	-0.00061	-0.00061	-0.00061
	(B * !C * Y)	0.00291	0.00295	0.00292
	(!B * Y)	-0.00063	-0.00064	-0.00063
	(!B * Y)	0.00291	0.00294	0.00292
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00103	-0.00104	-0.00103
	(B * C * !D * Y)	0.00583	0.00591	0.00585
	(B * !C * Y)	-0.00102	-0.00103	-0.00102
	(B * !C * Y)	0.00584	0.00587	0.00586
	(!B * Y)	-0.00111	-0.00112	-0.00111
	(!B * Y)	0.00584	0.00592	0.00587
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00202	-0.00202	-0.00201
	(B * C * !D * Y)	0.00701	0.00703	0.00701
	(B * !C * Y)	-0.00199	-0.00203	-0.00200
	(B * !C * Y)	0.00698	0.00708	0.00702
	(!B * Y)	-0.00217	-0.00220	-0.00215
	(!B * Y)	0.00704	0.00716	0.00704

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)**	0.00069	0.00070	0.00070
	(A * C * !D * Y)	-0.00262	-0.00265	-0.00263
	(A * !C * Y)	0.00074	0.00075	0.00074
	(A * !C * Y)	-0.00264	-0.00265	-0.00263
	(!A * C * D * Y)	0.00188	0.00188	0.00189
	(!A * C * D * Y)	-0.00260	-0.00260	-0.00260
	(!A * C * !D * Y)	0.00094	0.00094	0.00094
	(!A * C * !D * Y)	-0.00263	-0.00264	-0.00263
	(!A * !C * Y)	0.00097	0.00098	0.00097
	(!A * !C * Y)	-0.00263	-0.00265	-0.00264
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00145	0.00148	0.00150
	(A * C * !D * Y)	-0.00502	-0.00506	-0.00502
	(A * !C * Y)	0.00147	0.00150	0.00151
	(A * !C * Y)	-0.00503	-0.00507	-0.00503
	(!A * C * D * Y)	0.00393	0.00396	0.00394
	(!A * C * D * Y)	-0.00498	-0.00500	-0.00498
	(!A * C * !D * Y)	0.00201	0.00203	0.00201
	(!A * C * !D * Y)	-0.00505	-0.00507	-0.00504
	(!A * !C * Y)	0.00198	0.00199	0.00197
	(!A * !C * Y)	-0.00506	-0.00508	-0.00506
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00281	0.00283	0.00286
	(A * C * !D * Y)	-0.00526	-0.00528	-0.00525
	(A * !C * Y)	0.00288	0.00290	0.00291
	(A * !C * Y)	-0.00528	-0.00530	-0.00525
	(!A * C * D * Y)	0.00778	0.00788	0.00782
	(!A * C * D * Y)	-0.00516	-0.00519	-0.00516
	(!A * C * !D * Y)	0.00380	0.00382	0.00380
	(!A * C * !D * Y)	-0.00528	-0.00530	-0.00527
	(!A * !C * Y)	0.00376	0.00379	0.00374
	(!A * !C * Y)	-0.00532	-0.00535	-0.00531

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)	-0.00065	-0.00066	-0.00067
	(A * C * !D * Y)	0.00271	0.00275	0.00266
	(A * !C * Y)	-0.00068	-0.00069	-0.00070
	(A * !C * Y)	0.00272	0.00274	0.00267
	(!A * C * D * Y)	-0.00151	-0.00182	-0.00182
	(!A * C * D * Y)	0.00299	0.00273	0.00267
	(!A * C * !D * Y)	-0.00088	-0.00091	-0.00094
	(!A * C * !D * Y)	0.00294	0.00289	0.00277
	(!A * !C * Y)	-0.00097	-0.00097	-0.00097
	(!A * !C * Y)	0.00278	0.00280	0.00269
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00137	-0.00139	-0.00142
	(A * C * !D * Y)	0.00521	0.00530	0.00511
	(A * !C * Y)	-0.00136	-0.00139	-0.00143
	(A * !C * Y)	0.00523	0.00529	0.00512
	(!A * C * D * Y)	-0.00295	-0.00374	-0.00381
	(!A * C * D * Y)	0.00598	0.00524	0.00511
	(!A * C * !D * Y)	-0.00179	-0.00191	-0.00199
	(!A * C * !D * Y)	0.00572	0.00561	0.00533
	(!A * !C * Y)	-0.00197	-0.00198	-0.00197
	(!A * !C * Y)	0.00532	0.00540	0.00516

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00262	-0.00267	-0.00271
	(A * C * !D * Y)	0.00557	0.00566	0.00538
	(A * !C * Y)	-0.00265	-0.00268	-0.00275
	(A * !C * Y)	0.00563	0.00567	0.00541
	(!A * C * D * Y)	-0.00585	-0.00737	-0.00753
	(!A * C * D * Y)	0.00713	0.00576	0.00541
	(!A * C * !D * Y)	-0.00343	-0.00367	-0.00378
	(!A * C * !D * Y)	0.00657	0.00632	0.00583
	(!A * !C * Y)	-0.00376	-0.00376	-0.00374
	(!A * !C * Y)	0.00587	0.00590	0.00549

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)**	0.00071	0.00072	0.00072
	(A * B * !D * Y)	-0.00254	-0.00256	-0.00253
	(A * !B * D * Y)	0.00187	0.00189	0.00187
	(A * !B * D * Y)	-0.00257	-0.00258	-0.00257
	(A * !B * !D * Y)	0.00090	0.00090	0.00090
	(A * !B * !D * Y)	-0.00259	-0.00259	-0.00260
	(!A * B * D * Y)	0.00185	0.00187	0.00185
	(!A * B * D * Y)	-0.00256	-0.00257	-0.00256
	(!A * B * !D * Y)	0.00091	0.00092	0.00091
	(!A * B * !D * Y)	-0.00260	-0.00261	-0.00259
	(!A * !B * D * Y)	0.00183	0.00186	0.00184
	(!A * !B * D * Y)	-0.00258	-0.00260	-0.00258
	(!A * !B * !D * Y)	0.00092	0.00092	0.00092
	(!A * !B * !D * Y)	-0.00260	-0.00261	-0.00260

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00162	0.00162	0.00161
	(A * B * !D * Y)	-0.00493	-0.00494	-0.00491
	(A * !B * D * Y)	0.00396	0.00400	0.00398
	(A * !B * D * Y)	-0.00497	-0.00500	-0.00498
	(A * !B * !D * Y)	0.00198	0.00199	0.00198
	(A * !B * !D * Y)	-0.00503	-0.00505	-0.00503
	(!A * B * D * Y)	0.00392	0.00393	0.00393
	(!A * B * D * Y)	-0.00498	-0.00498	-0.00498
	(!A * B * !D * Y)	0.00203	0.00203	0.00203
	(!A * B * !D * Y)	-0.00504	-0.00505	-0.00505
	(!A * !B * D * Y)	0.00387	0.00392	0.00388
	(!A * !B * D * Y)	-0.00502	-0.00505	-0.00503
	(!A * !B * !D * Y)	0.00201	0.00203	0.00201
	(!A * !B * !D * Y)	-0.00503	-0.00506	-0.00503
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00297	0.00302	0.00296
	(A * B * !D * Y)	-0.00500	-0.00505	-0.00496
	(A * !B * D * Y)	0.00769	0.00770	0.00772
	(A * !B * D * Y)	-0.00507	-0.00507	-0.00508
	(A * !B * !D * Y)	0.00366	0.00368	0.00368
	(A * !B * !D * Y)	-0.00518	-0.00520	-0.00520
	(!A * B * D * Y)	0.00757	0.00767	0.00761
	(!A * B * D * Y)	-0.00509	-0.00512	-0.00509
	(!A * B * !D * Y)	0.00372	0.00374	0.00371
	(!A * B * !D * Y)	-0.00522	-0.00524	-0.00522
	(!A * !B * D * Y)	0.00751	0.00760	0.00753
	(!A * !B * D * Y)	-0.00519	-0.00522	-0.00519
	(!A * !B * !D * Y)	0.00373	0.00378	0.00374
	(!A * !B * !D * Y)	-0.00519	-0.00523	-0.00520

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)	-0.00063	-0.00064	-0.00066
	(A * B * !D * Y)	0.00270	0.00272	0.00263
	(A * !B * D * Y)	-0.00159	-0.00181	-0.00181
	(A * !B * D * Y)	0.00284	0.00267	0.00262
	(A * !B * !D * Y)	-0.00090	-0.00090	-0.00090
	(A * !B * !D * Y)	0.00270	0.00272	0.00264
	(!A * B * D * Y)	-0.00144	-0.00176	-0.00180
	(!A * B * D * Y)	0.00292	0.00269	0.00262
	(!A * B * !D * Y)	-0.00091	-0.00091	-0.00091
	(!A * B * !D * Y)	0.00276	0.00282	0.00267
	(!A * !B * D * Y)	-0.00176	-0.00184	-0.00183
	(!A * !B * D * Y)	0.00262	0.00262	0.00259
	(!A * !B * !D * Y)	-0.00092	-0.00092	-0.00092
	(!A * !B * !D * Y)	0.00268	0.00270	0.00265
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00139	-0.00140	-0.00145
	(A * B * !D * Y)	0.00531	0.00534	0.00513
	(A * !B * D * Y)	-0.00328	-0.00386	-0.00383
	(A * !B * D * Y)	0.00567	0.00523	0.00512
	(A * !B * !D * Y)	-0.00195	-0.00199	-0.00198
	(A * !B * !D * Y)	0.00538	0.00540	0.00516
	(!A * B * D * Y)	-0.00296	-0.00381	-0.00382
	(!A * B * D * Y)	0.00588	0.00523	0.00510
	(!A * B * !D * Y)	-0.00203	-0.00198	-0.00203
	(!A * B * !D * Y)	0.00544	0.00557	0.00524
	(!A * !B * D * Y)	-0.00370	-0.00392	-0.00388
	(!A * !B * D * Y)	0.00511	0.00512	0.00505
	(!A * !B * !D * Y)	-0.00201	-0.00203	-0.00201
	(!A * !B * !D * Y)	0.00527	0.00531	0.00516

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00257	-0.00259	-0.00268
	(A * B * !D * Y)	0.00568	0.00572	0.00536
	(A * !B * D * Y)	-0.00625	-0.00747	-0.00743
	(A * !B * D * Y)	0.00652	0.00551	0.00537
	(A * !B * !D * Y)	-0.00366	-0.00368	-0.00368
	(A * !B * !D * Y)	0.00585	0.00581	0.00540
	(!A * B * D * Y)	-0.00560	-0.00734	-0.00739
	(!A * B * D * Y)	0.00691	0.00539	0.00532
	(!A * B * !D * Y)	-0.00372	-0.00365	-0.00371
	(!A * B * !D * Y)	0.00596	0.00617	0.00557
	(!A * !B * D * Y)	-0.00708	-0.00760	-0.00752
	(!A * !B * D * Y)	0.00539	0.00530	0.00523
	(!A * !B * !D * Y)	-0.00373	-0.00378	-0.00374
	(!A * !B * !D * Y)	0.00566	0.00566	0.00541

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)	0.00190	0.00192	0.00189
	(A * B * !C * Y)	-0.00268	-0.00270	-0.00268
	(A * !B * C * Y)	0.00187	0.00189	0.00187
	(A * !B * C * Y)	-0.00268	-0.00269	-0.00268
	(A * !B * !C * Y)	0.00185	0.00188	0.00186
	(A * !B * !C * Y)	-0.00268	-0.00269	-0.00268
	(!A * B * C * Y)	0.00182	0.00184	0.00183
	(!A * B * C * Y)	-0.00265	-0.00267	-0.00266
	(!A * !C * Y)	0.00186	0.00188	0.00186
	(!A * !C * Y)	-0.00268	-0.00269	-0.00268
	(!A * !B * C * Y)	0.00180	0.00182	0.00180
	(!A * !B * C * Y)	-0.00268	-0.00270	-0.00269

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00396	0.00400	0.00396
	(A * B * !C * Y)	-0.00497	-0.00499	-0.00496
	(A * !B * C * Y)	0.00390	0.00395	0.00391
	(A * !B * C * Y)	-0.00496	-0.00498	-0.00496
	(A * !B * !C * Y)	0.00390	0.00394	0.00390
	(A * !B * !C * Y)	-0.00497	-0.00500	-0.00497
	(!A * B * C * Y)	0.00388	0.00391	0.00390
	(!A * B * C * Y)	-0.00491	-0.00494	-0.00492
	(!A * !C * Y)	0.00390	0.00394	0.00390
	(!A * !C * Y)	-0.00498	-0.00500	-0.00497
	(!A * !B * C * Y)	0.00385	0.00389	0.00385
	(!A * !B * C * Y)	-0.00497	-0.00499	-0.00497
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00798	0.00811	0.00802
	(A * B * !C * Y)	-0.00527	-0.00532	-0.00529
	(A * !B * C * Y)	0.00786	0.00794	0.00787
	(A * !B * C * Y)	-0.00527	-0.00529	-0.00526
	(A * !B * !C * Y)	0.00787	0.00793	0.00789
	(A * !B * !C * Y)	-0.00529	-0.00531	-0.00530
	(!A * B * C * Y)	0.00780	0.00788	0.00782
	(!A * B * C * Y)	-0.00520	-0.00523	-0.00519
	(!A * !C * Y)	0.00787	0.00793	0.00789
	(!A * !C * Y)	-0.00529	-0.00531	-0.00529
	(!A * !B * C * Y)	0.00773	0.00780	0.00774
	(!A * !B * C * Y)	-0.00530	-0.00532	-0.00529

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)**	-0.00169	-0.00181	-0.00183
	(A * B * !C * Y)	0.00282	0.00274	0.00272
	(A * !B * C * Y)	-0.00161	-0.00180	-0.00182
	(A * !B * C * Y)	0.00283	0.00275	0.00272
	(A * !B * !C * Y)	-0.00180	-0.00185	-0.00185
	(A * !B * !C * Y)	0.00270	0.00269	0.00269
	(!A * B * C * Y)	-0.00156	-0.00179	-0.00181
	(!A * B * C * Y)	0.00285	0.00276	0.00272
	(!A * !C * Y)	-0.00180	-0.00185	-0.00185
	(!A * !C * Y)	0.00270	0.00269	0.00269
	(!A * !B * C * Y)	-0.00170	-0.00182	-0.00180
	(!A * !B * C * Y)	0.00269	0.00272	0.00270
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00345	-0.00380	-0.00386
	(A * B * !C * Y)	0.00531	0.00514	0.00505
	(A * !B * C * Y)	-0.00328	-0.00376	-0.00383
	(A * !B * C * Y)	0.00538	0.00512	0.00503
	(A * !B * !C * Y)	-0.00373	-0.00389	-0.00390
	(A * !B * !C * Y)	0.00497	0.00505	0.00499
	(!A * B * C * Y)	-0.00318	-0.00372	-0.00381
	(!A * B * C * Y)	0.00545	0.00516	0.00504
	(!A * !C * Y)	-0.00372	-0.00388	-0.00390
	(!A * !C * Y)	0.00498	0.00505	0.00499
	(!A * !B * C * Y)	-0.00352	-0.00380	-0.00385
	(!A * !B * C * Y)	0.00499	0.00505	0.00499

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00693	-0.00770	-0.00778
	(A * B * !C * Y)	0.00599	0.00550	0.00542
	(A * !B * C * Y)	-0.00657	-0.00755	-0.00771
	(A * !B * C * Y)	0.00613	0.00554	0.00541
	(A * !B * !C * Y)	-0.00751	-0.00784	-0.00787
	(A * !B * !C * Y)	0.00530	0.00535	0.00532
	(!A * B * C * Y)	-0.00642	-0.00748	-0.00767
	(!A * B * C * Y)	0.00625	0.00563	0.00542
	(!A * !C * Y)	-0.00749	-0.00784	-0.00787
	(!A * !C * Y)	0.00532	0.00535	0.00532
	(!A * !B * C * Y)	-0.00709	-0.00765	-0.00774
	(!A * !B * C * Y)	0.00533	0.00538	0.00532

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00278	0.00227	0.92477
sky130_fd_sc_hs__nor2b_2	0.00549	0.00262	1.58603
sky130_fd_sc_hs__nor2b_4	0.00906	0.00375	3.04514

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	232.62600	431.49600
sky130_fd_sc_hs__nor2b_2	0.00000	174.01500	279.53000
sky130_fd_sc_hs__nor2b_4	0.00000	562.22400	1000.55000

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)	0.03968	0.66029	8.80147
	B_N->Y (RR)	0.05048	0.50331	5.76600
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.03922	0.56649	8.62728
	B_N->Y (RR)	0.04790	0.39735	5.38867
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.03058	0.43648	7.99463
	B_N->Y (RR)	0.04866	0.36255	6.02478

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.01594	0.27297	3.52886
	B_N->Y (FF)	0.04417	0.33894	3.78515
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01402	0.20770	3.17160
	B_N->Y (FF)	0.04824	0.31851	3.55504
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02128	0.31331	5.68705
	B_N->Y (FF)	0.05108	0.33882	4.75682

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.01127	0.01747	0.12018
	A	0.01645	0.02269	0.12551
	B_N	0.01827	0.03405	0.28521
	B_N	0.01404	0.02982	0.28114
sky130_fd_sc_hs__nor2b_2	A	0.00661	0.02028	0.22699
	A	0.01703	0.03068	0.23752
	B_N	0.01687	0.03579	0.33766
	B_N	0.01270	0.03168	0.33368
sky130_fd_sc_hs__nor2b_4	A	0.02457	0.04325	0.28182
	A	0.04161	0.06032	0.29933
	B_N	0.03868	0.06617	0.51469
	B_N	0.03255	0.06010	0.50981

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.01276	0.01865	0.10691
	A	0.00757	0.01338	0.10170
	B_N	0.00633	0.02368	0.28795
	B_N	0.01056	0.02790	0.29208
sky130_fd_sc_hs__nor2b_2	A	0.01651	0.02921	0.20643
	A	0.00612	0.01877	0.19575
	B_N	0.01235	0.02950	0.30013
	B_N	0.01652	0.03367	0.30392
sky130_fd_sc_hs__nor2b_4	A	0.03886	0.05622	0.26580
	A	0.02181	0.03918	0.24591
	B_N	0.02138	0.05079	0.51015
	B_N	0.02751	0.05685	0.51336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00275	0.00238	0.00297
	(!B_N * !Y)	-0.00202	-0.00244	-0.00179
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00608	0.00499	0.00606
	(!B_N * !Y)	-0.00313	-0.00424	-0.00311
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00827	0.00647	0.00883
	(!B_N * !Y)	-0.00696	-0.00876	-0.00633

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00092	-0.00097	-0.00112
	(!B_N * !Y)	0.00383	0.00385	0.00365
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00189	-0.00195	-0.00228
	(!B_N * !Y)	0.00727	0.00725	0.00691
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00071	-0.00083	-0.00147
	(!B_N * !Y)	0.01449	0.01449	0.01373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00924	0.02587	0.29089
	(A * !Y)	0.00463	0.02123	0.28626
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00953	0.02723	0.31803
	(A * !Y)	0.00433	0.02200	0.31282
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.01950	0.04675	0.49970
	(A * !Y)	0.01175	0.03899	0.49196

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00174	0.01957	0.28793
	(A * !Y)	0.00637	0.02421	0.29256
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00388	0.02233	0.31498
	(A * !Y)	0.00911	0.02757	0.32019
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00463	0.03477	0.49549
	(A * !Y)	0.01241	0.04255	0.50325

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00280	0.00287	0.90945
sky130_fd_sc_hs__nor2_2	0.00444	0.00422	1.54707
sky130_fd_sc_hs__nor2_4	0.00848	0.00842	2.89779
sky130_fd_sc_hs__nor2_8	0.01655	0.01662	5.20489

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor2_1	0.00000	50.34420	119.26200
sky130_fd_sc_hs__nor2_2	0.00000	99.24150	238.32500
sky130_fd_sc_hs__nor2_4	0.00000	198.41300	476.38500
sky130_fd_sc_hs__nor2_8	0.00000	396.58600	951.84100

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)	0.03866	0.65538	8.70207
	B->Y (FR)	0.03022	0.69223	9.33011
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.03199	0.53459	8.18372
	B->Y (FR)	0.01954	0.57095	8.83295
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.03159	0.44761	8.05841
	B->Y (FR)	0.01906	0.49604	8.86506
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.03203	0.37263	7.82178
	B->Y (FR)	0.02422	0.44543	8.94923

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.01630	0.27046	3.47305
	B->Y (RF)	0.01384	0.26290	3.42631
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.02254	0.36574	5.52332
	B->Y (RF)	0.01590	0.35306	5.49219
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.02179	0.29883	5.33402
	B->Y (RF)	0.01508	0.27963	5.22968
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02009	0.23780	4.98952
	B->Y (RF)	0.02141	0.22654	4.92529

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00065	0.00571	0.11042
	A	0.00649	0.01286	0.11764
	B	-0.00079	0.00732	0.12124
	B	0.00490	0.01303	0.12710
sky130_fd_sc_hs__nor2_2	A	-0.00117	0.00751	0.14152
	A	0.01070	0.01947	0.15352
	B	-0.00097	0.01077	0.15870
	B	0.00730	0.01905	0.16706
sky130_fd_sc_hs__nor2_4	A	-0.00016	0.01953	0.28621
	A	0.02294	0.04273	0.30986
	B	-0.00080	0.02466	0.30920
	B	0.01592	0.04139	0.32599
sky130_fd_sc_hs__nor2_8	A	-0.00118	0.04247	0.56846
	A	0.04424	0.08854	0.61596
	B	-0.00228	0.05140	0.61386
	B	0.03084	0.08450	0.64685

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00911	0.01505	0.10496
	A	0.00199	0.00786	0.09763
	B	0.00736	0.01311	0.09469
	B	0.00166	0.00735	0.08871
sky130_fd_sc_hs__nor2_2	A	0.01655	0.02476	0.13533
	A	0.00465	0.01268	0.12220
	B	0.01101	0.01958	0.12123
	B	0.00273	0.01119	0.11148
sky130_fd_sc_hs__nor2_4	A	0.03158	0.05011	0.27319
	A	0.00847	0.02702	0.24482
	B	0.02178	0.04099	0.24108
	B	0.00505	0.02414	0.22238
sky130_fd_sc_hs__nor2_8	A	0.06030	0.10169	0.54758
	A	0.01489	0.05626	0.49658
	B	0.04319	0.08351	0.48429
	B	0.01004	0.05013	0.44154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00290	0.00251	0.00310
	(B * !Y)	-0.00174	-0.00217	-0.00151
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00467	0.00353	0.00462
	(B * !Y)	-0.00305	-0.00419	-0.00302
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00829	0.00608	0.00828
	(B * !Y)	-0.00627	-0.00849	-0.00609
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.01554	0.01186	0.01620
	(B * !Y)	-0.01302	-0.01686	-0.01213

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00108	-0.00112	-0.00128
	(B * !Y)	0.00353	0.00353	0.00335
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00055	-0.00062	-0.00094
	(B * !Y)	0.00712	0.00714	0.00676
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00016	-0.00030	-0.00095
	(B * !Y)	0.01427	0.01434	0.01354
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00002	-0.00021	-0.00157
	(B * !Y)	0.02842	0.02832	0.02699

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00241	0.00244	0.00245
	(A * !Y)	-0.00094	-0.00094	-0.00087
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00268	0.00274	0.00276
	(A * !Y)	-0.00183	-0.00187	-0.00176
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00533	0.00545	0.00550
	(A * !Y)	-0.00365	-0.00372	-0.00349
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.01057	0.01080	0.01093
	(A * !Y)	-0.00716	-0.00731	-0.00684

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00161	-0.00163	-0.00192
	(A * !Y)	0.00172	0.00171	0.00143
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00102	-0.00107	-0.00162
	(A * !Y)	0.00354	0.00353	0.00299
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00209	-0.00218	-0.00329
	(A * !Y)	0.00703	0.00699	0.00588
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00408	-0.00428	-0.00651
	(A * !Y)	0.01382	0.01377	0.01159

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00275	0.00286	0.00221	0.63511
sky130_fd_sc_hs__nor3b_2	0.00538	0.00537	0.00262	1.09139
sky130_fd_sc_hs__nor3b_4	0.01080	0.01074	0.00367	1.78770

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	218.04700	431.28300
sky130_fd_sc_hs__nor3b_2	0.00000	144.97300	279.32100
sky130_fd_sc_hs__nor3b_4	0.00000	506.85400	1000.06000

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)	0.07201	0.73903	8.57065
	B->Y (FR)	0.06444	0.77694	9.19385
	C_N->Y (RR)	0.06380	0.59929	5.88112
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.06967	0.61655	8.30388
	B->Y (FR)	0.06103	0.67148	9.15834
	C_N->Y (RR)	0.05665	0.47397	5.55555
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.07360	0.52644	7.95169
	B->Y (FR)	0.06507	0.58487	8.85042
	C_N->Y (RR)	0.07426	0.46728	6.14700

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.01731	0.23089	2.43524
	B->Y (RF)	0.01826	0.23418	2.50845
	C_N->Y (FF)	0.04586	0.31084	3.14715
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01392	0.16513	2.04150
	B->Y (RF)	0.01444	0.15521	1.94708
	C_N->Y (FF)	0.04953	0.29504	2.95118
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01336	0.11966	1.75930
	B->Y (RF)	0.01379	0.10968	1.66093
	C_N->Y (FF)	0.05348	0.25261	2.32349

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.01243	0.01770	0.12618
	A	0.01910	0.02439	0.13286
	B	0.01236	0.01740	0.11046
	B	0.01789	0.02293	0.11614
	C_N	0.01907	0.03470	0.28508
	C_N	0.01545	0.03108	0.28147
sky130_fd_sc_hs__nor3b_2	A	0.00780	0.01918	0.24097
	A	0.02181	0.03324	0.25495
	B	0.00785	0.01881	0.20262
	B	0.01877	0.02971	0.21382
	C_N	0.01790	0.03665	0.33827
	C_N	0.01450	0.03325	0.33513
sky130_fd_sc_hs__nor3b_4	A	0.02691	0.05027	0.47323
	A	0.05498	0.07851	0.50197
	B	0.02752	0.04971	0.39615
	B	0.04961	0.07172	0.41860
	C_N	0.04500	0.07336	0.54543
	C_N	0.04098	0.06935	0.54194

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.01483	0.02002	0.11554
	A	0.00816	0.01331	0.10889
	B	0.01262	0.01768	0.10292
	B	0.00712	0.01217	0.09738
	C_N	0.00653	0.02375	0.28629
	C_N	0.01016	0.02736	0.28996
sky130_fd_sc_hs__nor3b_2	A	0.02228	0.03398	0.22872
	A	0.00827	0.01994	0.21466
	B	0.01686	0.02784	0.19709
	B	0.00599	0.01694	0.18618
	C_N	0.01282	0.02996	0.30192
	C_N	0.01623	0.03337	0.30538
sky130_fd_sc_hs__nor3b_4	A	0.04914	0.07307	0.44585
	A	0.02102	0.04483	0.41774
	B	0.03835	0.06047	0.37915
	B	0.01634	0.03831	0.35718
	C_N	0.02746	0.05616	0.52682
	C_N	0.03147	0.06021	0.53095

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)	0.00591	0.00550	0.00573
	(B * C_N * !Y)	0.00146	0.00103	0.00133
	(B * !C_N * !Y)	0.00222	0.00203	0.00199
	(B * !C_N * !Y)	-0.00219	-0.00241	-0.00239
	(!B * !C_N * !Y)	0.00303	0.00255	0.00292
	(!B * !C_N * !Y)	-0.00147	-0.00200	-0.00150
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00693	0.00600	0.00643
	(B * C_N * !Y)	-0.00223	-0.00312	-0.00262
	(B * !C_N * !Y)	0.00467	0.00422	0.00420
	(B * !C_N * !Y)	-0.00439	-0.00481	-0.00481
	(!B * !C_N * !Y)	0.00633	0.00532	0.00606
	(!B * !C_N * !Y)	-0.00292	-0.00393	-0.00303
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.01813	0.01632	0.01718
	(B * C_N * !Y)	-0.00026	-0.00208	-0.00102
	(B * !C_N * !Y)	0.00925	0.00835	0.00827
	(B * !C_N * !Y)	-0.00894	-0.00987	-0.00985
	(!B * !C_N * !Y)	0.01242	0.01046	0.01197
	(!B * !C_N * !Y)	-0.00624	-0.00822	-0.00631

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)	0.00174	0.00172	0.00165
	(B * C_N * !Y)	0.00616	0.00618	0.00607
	(B * !C_N * !Y)	-0.00180	-0.00181	-0.00181
	(B * !C_N * !Y)	0.00258	0.00260	0.00258
	(!B * !C_N * !Y)	-0.00085	-0.00088	-0.00102
	(!B * !C_N * !Y)	0.00362	0.00362	0.00346
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00164	-0.00168	-0.00183
	(B * C_N * !Y)	0.00746	0.00747	0.00729
	(B * !C_N * !Y)	-0.00378	-0.00380	-0.00379
	(B * !C_N * !Y)	0.00523	0.00526	0.00524
	(!B * !C_N * !Y)	-0.00188	-0.00192	-0.00220
	(!B * !C_N * !Y)	0.00730	0.00726	0.00698
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00013	0.00000	-0.00025
	(B * C_N * !Y)	0.01838	0.01848	0.01805
	(B * !C_N * !Y)	-0.00755	-0.00759	-0.00758
	(B * !C_N * !Y)	0.01053	0.01059	0.01056
	(!B * !C_N * !Y)	-0.00381	-0.00391	-0.00444
	(!B * !C_N * !Y)	0.01468	0.01468	0.01404

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)	0.00570	0.00570	0.00570
	(A * C_N * !Y)	0.00228	0.00229	0.00231
	(A * !C_N * !Y)	0.00225	0.00229	0.00221
	(A * !C_N * !Y)	-0.00170	-0.00170	-0.00175
	(!A * !C_N * !Y)	0.00298	0.00245	0.00299
	(!A * !C_N * !Y)	-0.00172	-0.00226	-0.00168
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00588	0.00597	0.00588
	(A * C_N * !Y)	-0.00048	-0.00053	-0.00049
	(A * !C_N * !Y)	0.00462	0.00472	0.00452
	(A * !C_N * !Y)	-0.00309	-0.00302	-0.00316
	(!A * !C_N * !Y)	0.00630	0.00502	0.00599
	(!A * !C_N * !Y)	-0.00272	-0.00411	-0.00306
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.01593	0.01611	0.01591
	(A * C_N * !Y)	0.00302	0.00293	0.00302
	(A * !C_N * !Y)	0.00921	0.00934	0.00897
	(A * !C_N * !Y)	-0.00607	-0.00606	-0.00629
	(!A * !C_N * !Y)	0.01253	0.00992	0.01197
	(!A * !C_N * !Y)	-0.00567	-0.00840	-0.00616

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)	0.00138	0.00136	0.00107
	(A * C_N * !Y)	0.00478	0.00477	0.00449
	(A * !C_N * !Y)	-0.00195	-0.00196	-0.00193
	(A * !C_N * !Y)	0.00195	0.00196	0.00194
	(!A * !C_N * !Y)	-0.00094	-0.00098	-0.00113
	(!A * !C_N * !Y)	0.00374	0.00374	0.00355
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00188	-0.00194	-0.00250
	(A * C_N * !Y)	0.00452	0.00452	0.00396
	(A * !C_N * !Y)	-0.00394	-0.00395	-0.00391
	(A * !C_N * !Y)	0.00357	0.00359	0.00356
	(!A * !C_N * !Y)	-0.00185	-0.00190	-0.00223
	(!A * !C_N * !Y)	0.00722	0.00717	0.00684
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00021	-0.00030	-0.00139
	(A * C_N * !Y)	0.01282	0.01277	0.01167
	(A * !C_N * !Y)	-0.00794	-0.00798	-0.00788
	(A * !C_N * !Y)	0.00702	0.00708	0.00699
	(!A * !C_N * !Y)	-0.00386	-0.00402	-0.00464
	(!A * !C_N * !Y)	0.01429	0.01429	0.01353

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00856	0.02512	0.28862
	(B * !Y)	0.00414	0.02067	0.28418
	(A * !B * !Y)	0.00920	0.02574	0.28902
	(A * !B * !Y)	0.00466	0.02117	0.28447
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00833	0.02608	0.31725
	(B * !Y)	0.00319	0.02094	0.31213
	(A * !B * !Y)	0.00961	0.02735	0.31837
	(A * !B * !Y)	0.00425	0.02199	0.31303
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.01747	0.04349	0.50111
	(B * !Y)	0.00980	0.03580	0.49345
	(A * !B * !Y)	0.02014	0.04612	0.50329
	(A * !B * !Y)	0.01200	0.03796	0.49517

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00181	0.01951	0.28597
	(B * !Y)	0.00622	0.02395	0.29039
	(A * !B * !Y)	0.00182	0.01951	0.28604
	(A * !B * !Y)	0.00641	0.02411	0.29058
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00378	0.02226	0.31465
	(B * !Y)	0.00887	0.02738	0.31974
	(A * !B * !Y)	0.00382	0.02228	0.31502
	(A * !B * !Y)	0.00922	0.02772	0.32035
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00895	0.03843	0.50268
	(B * !Y)	0.01658	0.04610	0.51033
	(A * !B * !Y)	0.00902	0.03848	0.50332
	(A * !B * !Y)	0.01733	0.04683	0.51149

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00284	0.00307	0.00291	0.62333
sky130_fd_sc_hs__nor3_2	0.00439	0.00461	0.00427	1.14999
sky130_fd_sc_hs__nor3_4	0.00960	0.00947	0.00911	1.70945

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	35.82610	119.00400
sky130_fd_sc_hs__nor3_2	0.00000	70.58250	237.83900
sky130_fd_sc_hs__nor3_4	0.00000	141.00100	474.67800

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)	0.07287	0.72517	8.36808
	B->Y (FR)	0.06626	0.76597	8.99306
	C->Y (FR)	0.04695	0.77776	9.35490
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.05856	0.58020	7.92252
	B->Y (FR)	0.04876	0.61626	8.57380
	C->Y (FR)	0.02489	0.62873	8.99011
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.06759	0.49859	7.38825
	B->Y (FR)	0.05457	0.53639	8.09862
	C->Y (FR)	0.03198	0.55887	8.62188

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.01804	0.22902	2.38579
	B->Y (RF)	0.01938	0.23092	2.43519
	C->Y (RF)	0.01601	0.22424	2.41211
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.02783	0.33433	4.41613
	B->Y (RF)	0.02565	0.32080	4.34141
	C->Y (RF)	0.01747	0.30662	4.30280
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.01836	0.24462	3.48942
	B->Y (RF)	0.02119	0.24016	3.53857
	C->Y (RF)	0.02321	0.23066	3.50423

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00012	0.00547	0.11691
	A	0.00945	0.01485	0.12623
	B	0.00019	0.00538	0.10046
	B	0.00808	0.01328	0.10847
	C	0.00007	0.00698	0.11271
	C	0.00651	0.01342	0.11922
sky130_fd_sc_hs__nor3_2	A	-0.00006	0.00701	0.14981
	A	0.01516	0.02223	0.16540
	B	0.00029	0.00768	0.13628
	B	0.01261	0.02001	0.14848
	C	0.00021	0.01106	0.15866
	C	0.00896	0.01984	0.16737
sky130_fd_sc_hs__nor3_4	A	-0.00050	0.01481	0.31731
	A	0.03191	0.04728	0.35049
	B	-0.00051	0.01632	0.28380
	B	0.02502	0.04186	0.30965
	C	-0.00130	0.02123	0.31602
	C	0.01839	0.04091	0.33544

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.01269	0.01800	0.11584
	A	0.00335	0.00861	0.10647
	B	0.01022	0.01536	0.10251
	B	0.00233	0.00743	0.09457
	C	0.00793	0.01318	0.09541
	C	0.00152	0.00673	0.08893
sky130_fd_sc_hs__nor3_2	A	0.02244	0.03000	0.15147
	A	0.00722	0.01476	0.13552
	B	0.01703	0.02473	0.13936
	B	0.00477	0.01243	0.12568
	C	0.01108	0.01929	0.12403
	C	0.00234	0.01047	0.11530
sky130_fd_sc_hs__nor3_4	A	0.04679	0.06058	0.30411
	A	0.01436	0.02809	0.27168
	B	0.03424	0.04935	0.28028
	B	0.00877	0.02379	0.25451
	C	0.02360	0.04101	0.26165
	C	0.00391	0.02128	0.24187

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00248	0.00228	0.00224
	(B * C * !Y)	-0.00217	-0.00239	-0.00237
	(B * !C * !Y)	0.00296	0.00256	0.00277
	(B * !C * !Y)	-0.00175	-0.00217	-0.00187
	(!B * C * !Y)	0.00327	0.00280	0.00317
	(!B * C * !Y)	-0.00148	-0.00200	-0.00149
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00317	0.00274	0.00268
	(B * C * !Y)	-0.00417	-0.00465	-0.00466
	(B * !C * !Y)	0.00432	0.00341	0.00376
	(B * !C * !Y)	-0.00318	-0.00413	-0.00363
	(!B * C * !Y)	0.00497	0.00384	0.00453
	(!B * C * !Y)	-0.00266	-0.00385	-0.00291
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00656	0.00538	0.00518
	(B * C * !Y)	-0.00869	-0.00995	-0.01002
	(B * !C * !Y)	0.00910	0.00685	0.00733
	(B * !C * !Y)	-0.00649	-0.00877	-0.00796
	(!B * C * !Y)	0.01038	0.00773	0.00891
	(!B * C * !Y)	-0.00542	-0.00818	-0.00648

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00208	-0.00210	-0.00209
	(B * C * !Y)	0.00252	0.00254	0.00253
	(B * !C * !Y)	-0.00161	-0.00164	-0.00171
	(B * !C * !Y)	0.00305	0.00305	0.00296
	(!B * C * !Y)	-0.00114	-0.00116	-0.00130
	(!B * C * !Y)	0.00358	0.00356	0.00342
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00239	-0.00241	-0.00238
	(B * C * !Y)	0.00495	0.00502	0.00497
	(B * !C * !Y)	-0.00147	-0.00150	-0.00165
	(B * !C * !Y)	0.00600	0.00601	0.00583
	(!B * C * !Y)	-0.00047	-0.00051	-0.00077
	(!B * C * !Y)	0.00710	0.00710	0.00679
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00451	-0.00455	-0.00450
	(B * C * !Y)	0.01067	0.01081	0.01071
	(B * !C * !Y)	-0.00266	-0.00274	-0.00306
	(B * !C * !Y)	0.01275	0.01278	0.01241
	(!B * C * !Y)	-0.00074	-0.00083	-0.00139
	(!B * C * !Y)	0.01491	0.01488	0.01425

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00249	0.00253	0.00246
	(A * C * !Y)	-0.00133	-0.00133	-0.00135
	(A * !C * !Y)	0.00253	0.00254	0.00252
	(A * !C * !Y)	-0.00085	-0.00084	-0.00082
	(!A * C * !Y)	0.00322	0.00268	0.00322
	(!A * C * !Y)	-0.00145	-0.00200	-0.00140
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00289	0.00294	0.00271
	(A * C * !Y)	-0.00295	-0.00291	-0.00302
	(A * !C * !Y)	0.00316	0.00321	0.00306
	(A * !C * !Y)	-0.00166	-0.00172	-0.00172
	(!A * C * !Y)	0.00462	0.00329	0.00422
	(!A * C * !Y)	-0.00282	-0.00423	-0.00318
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00648	0.00656	0.00620
	(A * C * !Y)	-0.00543	-0.00547	-0.00559
	(A * !C * !Y)	0.00655	0.00658	0.00648
	(A * !C * !Y)	-0.00307	-0.00309	-0.00310
	(!A * C * !Y)	0.00946	0.00705	0.00916
	(!A * C * !Y)	-0.00551	-0.00806	-0.00572

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00223	-0.00224	-0.00221
	(A * C * !Y)	0.00155	0.00156	0.00153
	(A * !C * !Y)	-0.00176	-0.00178	-0.00208
	(A * !C * !Y)	0.00160	0.00159	0.00131
	(!A * C * !Y)	-0.00120	-0.00125	-0.00140
	(!A * C * !Y)	0.00341	0.00343	0.00324
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00224	-0.00223	-0.00221
	(A * C * !Y)	0.00341	0.00339	0.00336
	(A * !C * !Y)	-0.00164	-0.00169	-0.00209
	(A * !C * !Y)	0.00325	0.00326	0.00278
	(!A * C * !Y)	-0.00015	-0.00021	-0.00054
	(!A * C * !Y)	0.00732	0.00732	0.00692
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00516	-0.00517	-0.00508
	(A * C * !Y)	0.00638	0.00639	0.00633
	(A * !C * !Y)	-0.00335	-0.00342	-0.00464
	(A * !C * !Y)	0.00641	0.00639	0.00524
	(!A * C * !Y)	-0.00109	-0.00125	-0.00188
	(!A * C * !Y)	0.01382	0.01384	0.01310

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00234	0.00236	0.00235
	(B * !Y)	-0.00097	-0.00098	-0.00097
	(A * !B * !Y)	0.00235	0.00237	0.00239
	(A * !B * !Y)	-0.00080	-0.00081	-0.00077
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00260	0.00262	0.00261
	(B * !Y)	-0.00194	-0.00195	-0.00193
	(A * !B * !Y)	0.00262	0.00268	0.00269
	(A * !B * !Y)	-0.00162	-0.00166	-0.00156
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00583	0.00587	0.00585
	(B * !Y)	-0.00403	-0.00406	-0.00402
	(A * !B * !Y)	0.00585	0.00599	0.00601
	(A * !B * !Y)	-0.00334	-0.00343	-0.00324

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00214	-0.00216	-0.00225
	(B * !Y)	0.00115	0.00115	0.00108
	(A * !B * !Y)	-0.00152	-0.00155	-0.00179
	(A * !B * !Y)	0.00169	0.00169	0.00147
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00223	-0.00224	-0.00248
	(B * !Y)	0.00229	0.00229	0.00211
	(A * !B * !Y)	-0.00090	-0.00095	-0.00151
	(A * !B * !Y)	0.00343	0.00344	0.00297
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00508	-0.00514	-0.00555
	(B * !Y)	0.00471	0.00474	0.00440
	(A * !B * !Y)	-0.00245	-0.00254	-0.00368
	(A * !B * !Y)	0.00695	0.00697	0.00602

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00288	0.00295	0.00234	0.00230	0.47813
sky130_fd_sc_hs__nor4bb_2	0.00538	0.00563	0.00270	0.00257	0.77562
sky130_fd_sc_hs__nor4bb_4	0.01062	0.01130	0.00372	0.00362	1.43934

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	388.67900	788.65500
sky130_fd_sc_hs__nor4bb_2	0.00000	195.13700	410.66700
sky130_fd_sc_hs__nor4bb_4	0.00000	824.01700	1703.51000

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)	0.11538	0.81402	8.43189
	B->Y (FR)	0.10804	0.84280	8.86541
	C_N->Y (RR)	0.11191	0.70715	5.79018
	D_N->Y (RR)	0.07435	0.66542	5.77526
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.12050	0.70444	8.30025
	B->Y (FR)	0.11006	0.72737	8.67474
	C_N->Y (RR)	0.11349	0.59649	5.61605
	D_N->Y (RR)	0.06928	0.55535	5.67033
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.12209	0.59903	8.17237
	B->Y (FR)	0.11163	0.62734	8.63131
	C_N->Y (RR)	0.11612	0.54075	6.19686
	D_N->Y (RR)	0.08021	0.51097	6.25730

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.01809	0.20541	1.74488
	B->Y (RF)	0.01866	0.19784	1.66310
	C_N->Y (FF)	0.05694	0.30351	2.74292
	D_N->Y (FF)	0.04755	0.28801	2.66386
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01479	0.13796	1.24996
	B->Y (RF)	0.01555	0.13598	1.23672
	C_N->Y (FF)	0.05955	0.29440	2.71739
	D_N->Y (FF)	0.05064	0.28288	2.69544
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.01547	0.12127	1.42900
	B->Y (RF)	0.01586	0.10734	1.24656
	C_N->Y (FF)	0.05913	0.24652	1.97827
	D_N->Y (FF)	0.05502	0.24518	2.08103

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.02468	0.02871	0.14177
	A	0.03185	0.03592	0.14894
	B	0.02475	0.02893	0.12731
	B	0.03061	0.03480	0.13327
	C_N	0.03178	0.04684	0.30012
	C_N	0.02805	0.04311	0.29645
	D_N	0.02924	0.04595	0.31653
	D_N	0.02591	0.04260	0.31325
sky130_fd_sc_hs__nor4bb_2	A	0.01662	0.02436	0.24223
	A	0.03076	0.03850	0.25634
	B	0.01661	0.02529	0.21560
	B	0.02790	0.03661	0.22684
	C_N	0.02688	0.04450	0.34647
	C_N	0.02355	0.04117	0.34334
	D_N	0.02334	0.04211	0.34647
	D_N	0.02038	0.03913	0.34365
sky130_fd_sc_hs__nor4bb_4	A	0.05784	0.07350	0.47520
	A	0.08524	0.10093	0.50273
	B	0.05787	0.07495	0.42997
	B	0.08036	0.09748	0.45231
	C_N	0.07336	0.09928	0.57139
	C_N	0.06957	0.09550	0.56810
	D_N	0.06672	0.09611	0.58340
	D_N	0.06319	0.09259	0.58033

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.02069	0.02527	0.12452
	A	0.01350	0.01806	0.11737
	B	0.01815	0.02277	0.11384
	B	0.01230	0.01691	0.10802
	C_N	0.01174	0.02852	0.29161
	C_N	0.01546	0.03225	0.29540
	D_N	0.01005	0.02723	0.28703
	D_N	0.01338	0.03058	0.29044
sky130_fd_sc_hs__nor4bb_2	A	0.02756	0.03689	0.23126
	A	0.01345	0.02275	0.21718
	B	0.02105	0.03077	0.20582
	B	0.00979	0.01942	0.19455
	C_N	0.01780	0.03581	0.33411
	C_N	0.02113	0.03916	0.33751
	D_N	0.01419	0.03253	0.32894
	D_N	0.01716	0.03551	0.33198
sky130_fd_sc_hs__nor4bb_4	A	0.06420	0.08371	0.45552
	A	0.03686	0.05633	0.42811
	B	0.05295	0.07310	0.41437
	B	0.03050	0.05057	0.39200
	C_N	0.03688	0.06471	0.50884
	C_N	0.04066	0.06855	0.51273
	D_N	0.03350	0.06276	0.53745
	D_N	0.03705	0.06633	0.54109

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)**	0.00933	0.00894	0.00910
	(B * C_N * D_N * !Y)	0.00463	0.00420	0.00444
	(B * !D_N * !Y)	0.00564	0.00547	0.00548
	(B * !D_N * !Y)	0.00097	0.00083	0.00083
	(B * !C_N * D_N * !Y)	0.00550	0.00535	0.00532
	(B * !C_N * D_N * !Y)	0.00082	0.00065	0.00067
	(!B * C_N * !D_N * !Y)	0.00651	0.00609	0.00639
	(!B * C_N * !D_N * !Y)	0.00179	0.00131	0.00172
	(!B * !C_N * D_N * !Y)	0.00620	0.00576	0.00584
	(!B * !C_N * D_N * !Y)	0.00149	0.00099	0.00118
	(!B * !C_N * !D_N * !Y)	0.00236	0.00222	0.00218
	(!B * !C_N * !D_N * !Y)	-0.00223	-0.00247	-0.00246
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00838	0.00730	0.00754
	(B * C_N * D_N * !Y)	-0.00070	-0.00180	-0.00145
	(B * !D_N * !Y)	0.00580	0.00543	0.00539
	(B * !D_N * !Y)	-0.00317	-0.00358	-0.00357
	(B * !C_N * D_N * !Y)	0.00586	0.00543	0.00540
	(B * !C_N * D_N * !Y)	-0.00311	-0.00358	-0.00356
	(!B * C_N * !D_N * !Y)	0.00774	0.00664	0.00723
	(!B * C_N * !D_N * !Y)	-0.00138	-0.00254	-0.00178
	(!B * !C_N * D_N * !Y)	0.00743	0.00630	0.00644
	(!B * !C_N * D_N * !Y)	-0.00167	-0.00287	-0.00255
	(!B * !C_N * !D_N * !Y)	0.00463	0.00424	0.00420
	(!B * !C_N * !D_N * !Y)	-0.00420	-0.00474	-0.00473

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.02411	0.02209	0.02261
	(B * C_N * D_N * !Y)	0.00648	0.00445	0.00518
	(B * !D_N * !Y)	0.01518	0.01446	0.01436
	(B * !D_N * !Y)	-0.00223	-0.00301	-0.00300
	(B * !C_N * D_N * !Y)	0.01525	0.01444	0.01435
	(B * !C_N * D_N * !Y)	-0.00217	-0.00302	-0.00301
	(!B * C_N * !D_N * !Y)	0.01899	0.01680	0.01801
	(!B * C_N * !D_N * !Y)	0.00124	-0.00102	0.00053
	(!B * !C_N * D_N * !Y)	0.01838	0.01617	0.01644
	(!B * !C_N * D_N * !Y)	0.00068	-0.00162	-0.00100
	(!B * !C_N * !D_N * !Y)	0.00898	0.00817	0.00805
	(!B * !C_N * !D_N * !Y)	-0.00819	-0.00925	-0.00926

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)**	0.00458	0.00456	0.00450
	(B * C_N * D_N * !Y)	0.00926	0.00928	0.00918
	(B * !D_N * !Y)	0.00100	0.00099	0.00100
	(B * !D_N * !Y)	0.00565	0.00567	0.00565
	(B * !C_N * D_N * !Y)	0.00117	0.00116	0.00117
	(B * !C_N * D_N * !Y)	0.00582	0.00584	0.00582
	(!B * C_N * !D_N * !Y)	0.00202	0.00198	0.00188
	(!B * C_N * !D_N * !Y)	0.00672	0.00673	0.00658
	(!B * !C_N * D_N * !Y)	0.00169	0.00168	0.00163
	(!B * !C_N * D_N * !Y)	0.00639	0.00639	0.00633
	(!B * !C_N * !D_N * !Y)	-0.00196	-0.00197	-0.00196
	(!B * !C_N * !D_N * !Y)	0.00266	0.00269	0.00267

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00044	-0.00047	-0.00061
	(B * C_N * D_N * !Y)	0.00857	0.00857	0.00844
	(B * !D_N * !Y)	-0.00255	-0.00257	-0.00256
	(B * !D_N * !Y)	0.00640	0.00646	0.00641
	(B * !C_N * D_N * !Y)	-0.00254	-0.00256	-0.00254
	(B * !C_N * D_N * !Y)	0.00641	0.00647	0.00642
	(!B * C_N * !D_N * !Y)	-0.00055	-0.00059	-0.00080
	(!B * C_N * !D_N * !Y)	0.00854	0.00852	0.00827
	(!B * !C_N * D_N * !Y)	-0.00150	-0.00153	-0.00162
	(!B * !C_N * D_N * !Y)	0.00755	0.00758	0.00744
	(!B * !C_N * !D_N * !Y)	-0.00371	-0.00373	-0.00371
	(!B * !C_N * !D_N * !Y)	0.00517	0.00520	0.00518
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00689	0.00680	0.00655
	(B * C_N * D_N * !Y)	0.02436	0.02441	0.02409
	(B * !D_N * !Y)	-0.00115	-0.00122	-0.00116
	(B * !D_N * !Y)	0.01619	0.01634	0.01623
	(B * !C_N * D_N * !Y)	-0.00113	-0.00119	-0.00113
	(B * !C_N * D_N * !Y)	0.01621	0.01633	0.01624
	(!B * C_N * !D_N * !Y)	0.00289	0.00282	0.00238
	(!B * C_N * !D_N * !Y)	0.02051	0.02047	0.01998
	(!B * !C_N * D_N * !Y)	0.00100	0.00093	0.00076
	(!B * !C_N * D_N * !Y)	0.01853	0.01857	0.01830
	(!B * !C_N * !D_N * !Y)	-0.00732	-0.00733	-0.00731
	(!B * !C_N * !D_N * !Y)	0.00987	0.00991	0.00990

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)**	0.00897	0.00899	0.00898
	(A * C_N * D_N * !Y)	0.00551	0.00550	0.00551
	(A * C_N * !D_N * !Y)	0.00616	0.00630	0.00617
	(A * C_N * !D_N * !Y)	0.00180	0.00189	0.00181
	(A * !C_N * D_N * !Y)	0.00558	0.00560	0.00547
	(A * !C_N * D_N * !Y)	0.00148	0.00150	0.00140
	(A * !C_N * !D_N * !Y)	0.00238	0.00239	0.00228
	(A * !C_N * !D_N * !Y)	-0.00179	-0.00179	-0.00184
	(!A * C_N * !D_N * !Y)	0.00676	0.00609	0.00651
	(!A * C_N * !D_N * !Y)	0.00198	0.00131	0.00177
	(!A * !C_N * D_N * !Y)	0.00629	0.00575	0.00592
	(!A * !C_N * D_N * !Y)	0.00151	0.00097	0.00118
	(!A * !C_N * !D_N * !Y)	0.00259	0.00231	0.00226
	(!A * !C_N * !D_N * !Y)	-0.00218	-0.00247	-0.00248
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00737	0.00740	0.00735
	(A * C_N * D_N * !Y)	0.00071	0.00069	0.00067
	(A * C_N * !D_N * !Y)	0.00674	0.00709	0.00680
	(A * C_N * !D_N * !Y)	-0.00184	-0.00154	-0.00172
	(A * !C_N * D_N * !Y)	0.00602	0.00605	0.00575
	(A * !C_N * D_N * !Y)	-0.00192	-0.00196	-0.00217
	(A * !C_N * !D_N * !Y)	0.00469	0.00468	0.00444
	(A * !C_N * !D_N * !Y)	-0.00344	-0.00345	-0.00356
	(!A * C_N * !D_N * !Y)	0.00783	0.00670	0.00744
	(!A * C_N * !D_N * !Y)	-0.00147	-0.00270	-0.00188
	(!A * !C_N * D_N * !Y)	0.00732	0.00630	0.00660
	(!A * !C_N * D_N * !Y)	-0.00199	-0.00310	-0.00272
	(!A * !C_N * !D_N * !Y)	0.00501	0.00447	0.00437
	(!A * !C_N * !D_N * !Y)	-0.00436	-0.00492	-0.00493

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.02250	0.02256	0.02230
	(A * C_N * D_N * !Y)	0.00931	0.00927	0.00914
	(A * C_N * !D_N * !Y)	0.01709	0.01765	0.01708
	(A * C_N * !D_N * !Y)	0.00040	0.00092	0.00047
	(A * !C_N * D_N * !Y)	0.01552	0.01568	0.01493
	(A * !C_N * D_N * !Y)	-0.00010	-0.00008	-0.00056
	(A * !C_N * !D_N * !Y)	0.00888	0.00897	0.00838
	(A * !C_N * !D_N * !Y)	-0.00701	-0.00705	-0.00728
	(!A * C_N * !D_N * !Y)	0.01977	0.01696	0.01839
	(!A * C_N * !D_N * !Y)	0.00140	-0.00155	0.00009
	(!A * !C_N * D_N * !Y)	0.01875	0.01613	0.01669
	(!A * !C_N * D_N * !Y)	0.00039	-0.00239	-0.00160
	(!A * !C_N * !D_N * !Y)	0.00983	0.00851	0.00831
	(!A * !C_N * !D_N * !Y)	-0.00840	-0.00994	-0.00995

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)**	0.00440	0.00438	0.00412
	(A * C_N * D_N * !Y)	0.00789	0.00788	0.00762
	(A * C_N * !D_N * !Y)	0.00051	0.00048	0.00051
	(A * C_N * !D_N * !Y)	0.00471	0.00473	0.00471
	(A * !C_N * D_N * !Y)	0.00105	0.00104	0.00106
	(A * !C_N * D_N * !Y)	0.00505	0.00506	0.00503
	(A * !C_N * !D_N * !Y)	-0.00210	-0.00211	-0.00210
	(A * !C_N * !D_N * !Y)	0.00194	0.00195	0.00192
	(!A * C_N * !D_N * !Y)	0.00190	0.00188	0.00174
	(!A * C_N * !D_N * !Y)	0.00665	0.00663	0.00649
	(!A * !C_N * D_N * !Y)	0.00159	0.00157	0.00150
	(!A * !C_N * D_N * !Y)	0.00635	0.00634	0.00625
	(!A * !C_N * !D_N * !Y)	-0.00202	-0.00203	-0.00203
	(!A * !C_N * !D_N * !Y)	0.00270	0.00272	0.00271
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00085	-0.00091	-0.00141
	(A * C_N * D_N * !Y)	0.00585	0.00585	0.00535
	(A * C_N * !D_N * !Y)	-0.00351	-0.00355	-0.00352
	(A * C_N * !D_N * !Y)	0.00465	0.00469	0.00467
	(A * !C_N * D_N * !Y)	-0.00279	-0.00282	-0.00277
	(A * !C_N * D_N * !Y)	0.00496	0.00500	0.00494
	(A * !C_N * !D_N * !Y)	-0.00399	-0.00402	-0.00399
	(A * !C_N * !D_N * !Y)	0.00383	0.00387	0.00380
	(!A * C_N * !D_N * !Y)	-0.00075	-0.00080	-0.00106
	(!A * C_N * !D_N * !Y)	0.00859	0.00856	0.00827
	(!A * !C_N * D_N * !Y)	-0.00170	-0.00175	-0.00190
	(!A * !C_N * D_N * !Y)	0.00759	0.00761	0.00744
	(!A * !C_N * !D_N * !Y)	-0.00384	-0.00388	-0.00387
	(!A * !C_N * !D_N * !Y)	0.00541	0.00548	0.00545

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	0.00585	0.00569	0.00500
	(A * C_N * D_N * !Y)	0.01906	0.01911	0.01828
	(A * C_N * !D_N * !Y)	-0.00305	-0.00311	-0.00305
	(A * C_N * !D_N * !Y)	0.01292	0.01298	0.01293
	(A * !C_N * D_N * !Y)	-0.00153	-0.00155	-0.00147
	(A * !C_N * D_N * !Y)	0.01365	0.01368	0.01360
	(A * !C_N * !D_N * !Y)	-0.00779	-0.00786	-0.00779
	(A * !C_N * !D_N * !Y)	0.00750	0.00760	0.00747
	(!A * C_N * !D_N * !Y)	0.00264	0.00252	0.00195
	(!A * C_N * !D_N * !Y)	0.02087	0.02082	0.02028
	(!A * !C_N * D_N * !Y)	0.00071	0.00059	0.00032
	(!A * !C_N * D_N * !Y)	0.01898	0.01906	0.01866
	(!A * !C_N * !D_N * !Y)	-0.00749	-0.00753	-0.00751
	(!A * !C_N * !D_N * !Y)	0.01072	0.01079	0.01076

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.01249	0.02844	0.29022
	(B * !Y)	0.00767	0.02362	0.28542
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01303	0.02896	0.29050
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00810	0.02402	0.28558
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00947	0.02705	0.31902
	(B * !Y)	0.00428	0.02184	0.31383
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01058	0.02812	0.31986
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00516	0.02269	0.31445
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.02348	0.04922	0.50072
	(B * !Y)	0.01614	0.04186	0.49342
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.02555	0.05123	0.50209
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01781	0.04346	0.49440

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00561	0.02285	0.28760
	(B * !Y)	0.01040	0.02765	0.29238
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00577	0.02298	0.28775
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01073	0.02796	0.29266
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00595	0.02430	0.31741
	(B * !Y)	0.01109	0.02948	0.32256
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00630	0.02464	0.31806
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01177	0.03014	0.32344
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.01486	0.04406	0.50183
	(B * !Y)	0.02213	0.05135	0.50909
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01591	0.04506	0.50326
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.02378	0.05294	0.51098

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)	0.01179	0.02829	0.29316
	(B * C_N * !Y)	0.00742	0.02388	0.28877
	(A * !B * C_N * !Y)	0.01238	0.02887	0.29369
	(A * !B * C_N * !Y)	0.00794	0.02440	0.28923
	(!C_N * !Y)	0.00904	0.02554	0.29044
	(!C_N * !Y)	0.00468	0.02114	0.28606
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00930	0.02702	0.31791
	(B * C_N * !Y)	0.00450	0.02223	0.31313
	(A * !B * C_N * !Y)	0.01054	0.02826	0.31902
	(A * !B * C_N * !Y)	0.00557	0.02330	0.31409
	(!C_N * !Y)	0.00849	0.02621	0.31719
	(!C_N * !Y)	0.00373	0.02146	0.31245
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.02289	0.04887	0.50376
	(B * C_N * !Y)	0.01593	0.04188	0.49684
	(A * !B * C_N * !Y)	0.02535	0.05129	0.50596
	(A * !B * C_N * !Y)	0.01810	0.04403	0.49878
	(!C_N * !Y)	0.01725	0.04326	0.49891
	(!C_N * !Y)	0.01039	0.03637	0.49206

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)	0.00531	0.02305	0.29089
	(B * C_N * !Y)	0.00969	0.02744	0.29528
	(A * !B * C_N * !Y)	0.00540	0.02314	0.29112
	(A * !B * C_N * !Y)	0.00987	0.02761	0.29557
	(!C_N * !Y)	0.00171	0.01946	0.28730
	(!C_N * !Y)	0.00608	0.02384	0.29168
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00537	0.02383	0.31603
	(B * C_N * !Y)	0.01010	0.02859	0.32077
	(A * !B * C_N * !Y)	0.00552	0.02397	0.31648
	(A * !B * C_N * !Y)	0.01047	0.02895	0.32138
	(!C_N * !Y)	0.00361	0.02209	0.31433
	(!C_N * !Y)	0.00832	0.02683	0.31906
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.01603	0.04553	0.50719
	(B * C_N * !Y)	0.02292	0.05246	0.51410
	(A * !B * C_N * !Y)	0.01636	0.04585	0.50807
	(A * !B * C_N * !Y)	0.02366	0.05318	0.51525
	(!C_N * !Y)	0.00867	0.03822	0.50048
	(!C_N * !Y)	0.01552	0.04510	0.50735

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00278	0.00288	0.00287	0.00224	0.48273
sky130_fd_sc_hs__nor4b_2	0.00548	0.00555	0.00558	0.00262	0.76413
sky130_fd_sc_hs__nor4b_4	0.01076	0.01081	0.01098	0.00390	1.40765

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	206.44100	431.19100
sky130_fd_sc_hs__nor4b_2	0.00000	121.75500	279.06500
sky130_fd_sc_hs__nor4b_4	0.00000	460.44800	999.51700

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)	0.11098	0.80676	8.41329
	B->Y (FR)	0.10334	0.83566	8.84764
	C->Y (FR)	0.08517	0.86045	9.32475
	D_N->Y (RR)	0.07652	0.67578	5.90855
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.12096	0.70245	8.22631
	B->Y (FR)	0.11071	0.72500	8.60749
	C->Y (FR)	0.09099	0.76447	9.28570
	D_N->Y (RR)	0.06959	0.54513	5.46917
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.12207	0.60159	8.18597
	B->Y (FR)	0.11207	0.62989	8.63264
	C->Y (FR)	0.09023	0.66792	9.33226
	D_N->Y (RR)	0.08099	0.51480	6.33378

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.01876	0.21361	1.85863
	B->Y (RF)	0.01977	0.20933	1.81369
	C->Y (RF)	0.01927	0.20225	1.77166
	D_N->Y (FF)	0.04841	0.29455	2.76104
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01456	0.13500	1.20404
	B->Y (RF)	0.01519	0.13326	1.19177
	C->Y (RF)	0.01721	0.13188	1.20470
	D_N->Y (FF)	0.05222	0.28301	2.59988
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01476	0.10481	1.21141
	B->Y (RF)	0.01473	0.09836	1.13030
	C->Y (RF)	0.01505	0.08247	0.96334
	D_N->Y (FF)	0.05371	0.23921	1.98121

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.01268	0.01649	0.12540
	A	0.02123	0.02506	0.13474
	B	0.01275	0.01673	0.11148
	B	0.01991	0.02391	0.11873
	C	0.01260	0.01702	0.10273
	C	0.01859	0.02300	0.10881
	D_N	0.01955	0.03524	0.28824
	D_N	0.01622	0.03190	0.28496
sky130_fd_sc_hs__nor4b_2	A	0.00888	0.01685	0.23879
	A	0.02720	0.03524	0.25718
	B	0.00897	0.01783	0.21237
	B	0.02419	0.03308	0.22757
	C	0.00888	0.01771	0.17883
	C	0.02121	0.03008	0.19136
	D_N	0.01902	0.03771	0.34034
	D_N	0.01679	0.03547	0.33823
sky130_fd_sc_hs__nor4b_4	A	0.02995	0.04637	0.46277
	A	0.06614	0.08252	0.49907
	B	0.03018	0.04824	0.41110
	B	0.06026	0.07841	0.44108
	C	0.03007	0.04871	0.35666
	C	0.05451	0.07313	0.38140
	D_N	0.04667	0.07507	0.55180
	D_N	0.04489	0.07329	0.55033

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.01792	0.02236	0.11888
	A	0.00937	0.01378	0.11036
	B	0.01537	0.01987	0.10811
	B	0.00821	0.01270	0.10098
	C	0.01273	0.01748	0.09913
	C	0.00675	0.01145	0.09319
	D_N	0.00719	0.02434	0.28630
	D_N	0.01050	0.02766	0.28967
sky130_fd_sc_hs__nor4b_2	A	0.02994	0.03929	0.23448
	A	0.01163	0.02094	0.21620
	B	0.02343	0.03312	0.20869
	B	0.00824	0.01784	0.19351
	C	0.01803	0.02745	0.18035
	C	0.00572	0.01510	0.16803
	D_N	0.01394	0.03126	0.30706
	D_N	0.01616	0.03350	0.30935
sky130_fd_sc_hs__nor4b_4	A	0.06350	0.08282	0.45294
	A	0.02735	0.04652	0.41691
	B	0.05095	0.07074	0.40187
	B	0.02093	0.04056	0.37189
	C	0.03952	0.05936	0.35263
	C	0.01514	0.03489	0.32833
	D_N	0.02851	0.05676	0.50169
	D_N	0.03026	0.05857	0.50355

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)**	0.00542	0.00523	0.00523
	(B * C * D_N * !Y)	0.00100	0.00082	0.00082
	(B * !D_N * !Y)	0.00205	0.00197	0.00198
	(B * !D_N * !Y)	-0.00236	-0.00242	-0.00243
	(B * !C * D_N * !Y)	0.00596	0.00557	0.00571
	(B * !C * D_N * !Y)	0.00147	0.00105	0.00129
	(!B * C * D_N * !Y)	0.00611	0.00566	0.00575
	(!B * C * D_N * !Y)	0.00162	0.00111	0.00132
	(!B * C * !D_N * !Y)	0.00220	0.00205	0.00201
	(!B * C * !D_N * !Y)	-0.00214	-0.00239	-0.00238
	(!B * !C * !D_N * !Y)	0.00311	0.00269	0.00295
	(!B * !C * !D_N * !Y)	-0.00144	-0.00192	-0.00151
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00589	0.00545	0.00542
	(B * C * D_N * !Y)	-0.00319	-0.00367	-0.00366
	(B * !D_N * !Y)	0.00434	0.00417	0.00416
	(B * !D_N * !Y)	-0.00471	-0.00493	-0.00492
	(B * !C * D_N * !Y)	0.00725	0.00617	0.00638
	(B * !C * D_N * !Y)	-0.00200	-0.00308	-0.00273
	(!B * C * D_N * !Y)	0.00745	0.00632	0.00647
	(!B * C * D_N * !Y)	-0.00180	-0.00300	-0.00265
	(!B * C * !D_N * !Y)	0.00466	0.00426	0.00422
	(!B * C * !D_N * !Y)	-0.00426	-0.00482	-0.00482
	(!B * !C * !D_N * !Y)	0.00669	0.00562	0.00611
	(!B * !C * !D_N * !Y)	-0.00267	-0.00382	-0.00307

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.01539	0.01457	0.01450
	(B * C * D_N * !Y)	-0.00245	-0.00337	-0.00334
	(B * !D_N * !Y)	0.00842	0.00812	0.00807
	(B * !D_N * !Y)	-0.00936	-0.00980	-0.00976
	(B * !C * D_N * !Y)	0.01799	0.01598	0.01642
	(B * !C * D_N * !Y)	-0.00019	-0.00224	-0.00148
	(!B * C * D_N * !Y)	0.01841	0.01626	0.01659
	(!B * C * D_N * !Y)	0.00017	-0.00205	-0.00133
	(!B * C * !D_N * !Y)	0.00907	0.00830	0.00820
	(!B * C * !D_N * !Y)	-0.00852	-0.00959	-0.00957
	(!B * !C * !D_N * !Y)	0.01297	0.01095	0.01195
	(!B * !C * !D_N * !Y)	-0.00551	-0.00764	-0.00607

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)**	0.00123	0.00122	0.00122
	(B * C * D_N * !Y)	0.00563	0.00564	0.00563
	(B * !D_N * !Y)	-0.00187	-0.00188	-0.00187
	(B * !D_N * !Y)	0.00254	0.00256	0.00254
	(B * !C * D_N * !Y)	0.00165	0.00163	0.00156
	(B * !C * D_N * !Y)	0.00610	0.00612	0.00603
	(!B * C * D_N * !Y)	0.00174	0.00173	0.00168
	(!B * C * D_N * !Y)	0.00621	0.00620	0.00615
	(!B * C * !D_N * !Y)	-0.00182	-0.00184	-0.00182
	(!B * C * !D_N * !Y)	0.00255	0.00257	0.00255
	(!B * !C * !D_N * !Y)	-0.00087	-0.00089	-0.00101
	(!B * !C * !D_N * !Y)	0.00363	0.00362	0.00350

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00265	-0.00268	-0.00266
	(B * C * D_N * !Y)	0.00641	0.00648	0.00642
	(B * !D_N * !Y)	-0.00390	-0.00392	-0.00391
	(B * !D_N * !Y)	0.00516	0.00520	0.00517
	(B * !C * D_N * !Y)	-0.00177	-0.00182	-0.00194
	(B * !C * D_N * !Y)	0.00739	0.00742	0.00725
	(!B * C * D_N * !Y)	-0.00161	-0.00165	-0.00174
	(!B * C * D_N * !Y)	0.00758	0.00760	0.00746
	(!B * C * !D_N * !Y)	-0.00382	-0.00385	-0.00383
	(!B * C * !D_N * !Y)	0.00516	0.00521	0.00518
	(!B * !C * !D_N * !Y)	-0.00192	-0.00196	-0.00219
	(!B * !C * !D_N * !Y)	0.00734	0.00733	0.00709
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00127	-0.00133	-0.00129
	(B * C * D_N * !Y)	0.01652	0.01663	0.01655
	(B * !D_N * !Y)	-0.00769	-0.00768	-0.00770
	(B * !D_N * !Y)	0.01012	0.01010	0.01013
	(B * !C * D_N * !Y)	0.00047	0.00036	0.00012
	(B * !C * D_N * !Y)	0.01848	0.01857	0.01819
	(!B * C * D_N * !Y)	0.00078	0.00073	0.00053
	(!B * C * D_N * !Y)	0.01888	0.01889	0.01861
	(!B * C * !D_N * !Y)	-0.00750	-0.00756	-0.00751
	(!B * C * !D_N * !Y)	0.01009	0.01020	0.01014
	(!B * !C * !D_N * !Y)	-0.00375	-0.00382	-0.00427
	(!B * !C * !D_N * !Y)	0.01451	0.01446	0.01397

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)**	0.00546	0.00547	0.00535
	(A * C * D_N * !Y)	0.00175	0.00176	0.00169
	(A * C * !D_N * !Y)	0.00216	0.00217	0.00207
	(A * C * !D_N * !Y)	-0.00159	-0.00160	-0.00163
	(A * !C * D_N * !Y)	0.00553	0.00555	0.00553
	(A * !C * D_N * !Y)	0.00234	0.00233	0.00234
	(A * !C * !D_N * !Y)	0.00235	0.00247	0.00228
	(A * !C * !D_N * !Y)	-0.00144	-0.00135	-0.00143
	(!A * C * D_N * !Y)	0.00615	0.00562	0.00580
	(!A * C * D_N * !Y)	0.00165	0.00111	0.00136
	(!A * C * !D_N * !Y)	0.00239	0.00211	0.00207
	(!A * C * !D_N * !Y)	-0.00206	-0.00235	-0.00236
	(!A * !C * !D_N * !Y)	0.00331	0.00264	0.00300
	(!A * !C * !D_N * !Y)	-0.00125	-0.00193	-0.00147
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00599	0.00598	0.00569
	(A * C * D_N * !Y)	-0.00176	-0.00177	-0.00193
	(A * C * !D_N * !Y)	0.00462	0.00461	0.00437
	(A * C * !D_N * !Y)	-0.00325	-0.00326	-0.00333
	(A * !C * D_N * !Y)	0.00611	0.00616	0.00606
	(A * !C * D_N * !Y)	-0.00046	-0.00050	-0.00051
	(A * !C * !D_N * !Y)	0.00492	0.00528	0.00486
	(A * !C * !D_N * !Y)	-0.00298	-0.00272	-0.00290
	(!A * C * D_N * !Y)	0.00728	0.00624	0.00653
	(!A * C * D_N * !Y)	-0.00194	-0.00307	-0.00264
	(!A * C * !D_N * !Y)	0.00490	0.00440	0.00430
	(!A * C * !D_N * !Y)	-0.00420	-0.00483	-0.00484
	(!A * !C * !D_N * !Y)	0.00670	0.00556	0.00616
	(!A * !C * !D_N * !Y)	-0.00264	-0.00388	-0.00305

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.01544	0.01553	0.01496
	(A * C * D_N * !Y)	0.00044	0.00041	0.00009
	(A * C * !D_N * !Y)	0.00884	0.00890	0.00843
	(A * C * !D_N * !Y)	-0.00642	-0.00648	-0.00661
	(A * !C * D_N * !Y)	0.01581	0.01586	0.01571
	(A * !C * D_N * !Y)	0.00294	0.00290	0.00288
	(A * !C * !D_N * !Y)	0.00953	0.01022	0.00939
	(A * !C * !D_N * !Y)	-0.00589	-0.00539	-0.00573
	(!A * C * D_N * !Y)	0.01830	0.01609	0.01672
	(!A * C * D_N * !Y)	0.00014	-0.00225	-0.00134
	(!A * C * !D_N * !Y)	0.00969	0.00854	0.00835
	(!A * C * !D_N * !Y)	-0.00831	-0.00964	-0.00965
	(!A * !C * !D_N * !Y)	0.01326	0.01084	0.01206
	(!A * !C * !D_N * !Y)	-0.00522	-0.00778	-0.00609

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)**	0.00114	0.00113	0.00114
	(A * C * D_N * !Y)	0.00475	0.00476	0.00472
	(A * C * !D_N * !Y)	-0.00192	-0.00193	-0.00193
	(A * C * !D_N * !Y)	0.00172	0.00173	0.00170
	(A * !C * D_N * !Y)	0.00154	0.00152	0.00125
	(A * !C * D_N * !Y)	0.00474	0.00473	0.00447
	(A * !C * !D_N * !Y)	-0.00194	-0.00195	-0.00193
	(A * !C * !D_N * !Y)	0.00164	0.00166	0.00164
	(!A * C * D_N * !Y)	0.00168	0.00165	0.00158
	(!A * C * D_N * !Y)	0.00614	0.00614	0.00605
	(!A * C * !D_N * !Y)	-0.00186	-0.00187	-0.00187
	(!A * C * !D_N * !Y)	0.00255	0.00257	0.00256
	(!A * !C * !D_N * !Y)	-0.00093	-0.00095	-0.00109
	(!A * !C * !D_N * !Y)	0.00358	0.00356	0.00342
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00281	-0.00284	-0.00279
	(A * C * D_N * !Y)	0.00467	0.00471	0.00464
	(A * C * !D_N * !Y)	-0.00402	-0.00405	-0.00401
	(A * C * !D_N * !Y)	0.00355	0.00358	0.00351
	(A * !C * D_N * !Y)	-0.00204	-0.00210	-0.00259
	(A * !C * D_N * !Y)	0.00458	0.00459	0.00409
	(A * !C * !D_N * !Y)	-0.00407	-0.00409	-0.00405
	(A * !C * !D_N * !Y)	0.00337	0.00340	0.00339
	(!A * C * D_N * !Y)	-0.00172	-0.00178	-0.00193
	(!A * C * D_N * !Y)	0.00745	0.00747	0.00730
	(!A * C * !D_N * !Y)	-0.00389	-0.00391	-0.00389
	(!A * C * !D_N * !Y)	0.00525	0.00530	0.00526
	(!A * !C * !D_N * !Y)	-0.00201	-0.00206	-0.00231
	(!A * !C * !D_N * !Y)	0.00730	0.00728	0.00698

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00157	-0.00160	-0.00154
	(A * C * D_N * !Y)	0.01305	0.01308	0.01298
	(A * C * !D_N * !Y)	-0.00790	-0.00797	-0.00789
	(A * C * !D_N * !Y)	0.00688	0.00696	0.00680
	(A * !C * D_N * !Y)	-0.00005	-0.00015	-0.00116
	(A * !C * D_N * !Y)	0.01290	0.01287	0.01186
	(A * !C * !D_N * !Y)	-0.00800	-0.00805	-0.00795
	(A * !C * !D_N * !Y)	0.00652	0.00658	0.00654
	(!A * C * D_N * !Y)	0.00059	0.00049	0.00018
	(!A * C * D_N * !Y)	0.01866	0.01869	0.01834
	(!A * C * !D_N * !Y)	-0.00762	-0.00768	-0.00766
	(!A * C * !D_N * !Y)	0.01032	0.01040	0.01036
	(!A * !C * !D_N * !Y)	-0.00390	-0.00401	-0.00453
	(!A * !C * !D_N * !Y)	0.01444	0.01440	0.01379

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)	0.00556	0.00559	0.00554
	(B * D_N * !Y)	0.00215	0.00214	0.00213
	(B * !D_N * !Y)	0.00231	0.00234	0.00224
	(B * !D_N * !Y)	-0.00170	-0.00170	-0.00177
	(A * !B * D_N * !Y)	0.00570	0.00575	0.00570
	(A * !B * D_N * !Y)	0.00244	0.00241	0.00243
	(A * !B * !D_N * !Y)	0.00255	0.00244	0.00243
	(A * !B * !D_N * !Y)	-0.00147	-0.00160	-0.00158
	(!A * !B * !D_N * !Y)	0.00301	0.00246	0.00299
	(!A * !B * !D_N * !Y)	-0.00170	-0.00226	-0.00169

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00587	0.00589	0.00578
	(B * D_N * !Y)	-0.00082	-0.00083	-0.00087
	(B * !D_N * !Y)	0.00493	0.00500	0.00477
	(B * !D_N * !Y)	-0.00307	-0.00304	-0.00319
	(A * !B * D_N * !Y)	0.00617	0.00623	0.00616
	(A * !B * D_N * !Y)	-0.00020	-0.00023	-0.00024
	(A * !B * !D_N * !Y)	0.00553	0.00516	0.00508
	(A * !B * !D_N * !Y)	-0.00244	-0.00283	-0.00282
	(!A * !B * !D_N * !Y)	0.00660	0.00517	0.00619
	(!A * !B * !D_N * !Y)	-0.00267	-0.00414	-0.00303
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.01535	0.01552	0.01524
	(B * D_N * !Y)	0.00226	0.00216	0.00212
	(B * !D_N * !Y)	0.00984	0.01001	0.00956
	(B * !D_N * !Y)	-0.00581	-0.00583	-0.00610
	(A * !B * D_N * !Y)	0.01601	0.01611	0.01596
	(A * !B * D_N * !Y)	0.00342	0.00337	0.00337
	(A * !B * !D_N * !Y)	0.01108	0.01018	0.01021
	(A * !B * !D_N * !Y)	-0.00470	-0.00535	-0.00535
	(!A * !B * !D_N * !Y)	0.01299	0.01025	0.01240
	(!A * !B * !D_N * !Y)	-0.00525	-0.00806	-0.00583

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)**	0.00094	0.00092	0.00088
	(B * D_N * !Y)	0.00432	0.00433	0.00430
	(B * !D_N * !Y)	-0.00195	-0.00195	-0.00194
	(B * !D_N * !Y)	0.00193	0.00194	0.00193
	(A * !B * D_N * !Y)	0.00146	0.00143	0.00110
	(A * !B * D_N * !Y)	0.00476	0.00477	0.00449
	(A * !B * !D_N * !Y)	-0.00195	-0.00195	-0.00191
	(A * !B * !D_N * !Y)	0.00188	0.00189	0.00189
	(!A * !B * !D_N * !Y)	-0.00094	-0.00097	-0.00113
	(!A * !B * !D_N * !Y)	0.00374	0.00371	0.00355
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00298	-0.00302	-0.00307
	(B * D_N * !Y)	0.00362	0.00365	0.00360
	(B * !D_N * !Y)	-0.00416	-0.00417	-0.00414
	(B * !D_N * !Y)	0.00351	0.00352	0.00352
	(A * !B * D_N * !Y)	-0.00193	-0.00199	-0.00272
	(A * !B * D_N * !Y)	0.00452	0.00453	0.00390
	(A * !B * !D_N * !Y)	-0.00412	-0.00413	-0.00403
	(A * !B * !D_N * !Y)	0.00345	0.00347	0.00349
	(!A * !B * !D_N * !Y)	-0.00204	-0.00213	-0.00244
	(!A * !B * !D_N * !Y)	0.00716	0.00715	0.00679
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00195	-0.00202	-0.00216
	(B * D_N * !Y)	0.01108	0.01113	0.01100
	(B * !D_N * !Y)	-0.00845	-0.00847	-0.00840
	(B * !D_N * !Y)	0.00662	0.00664	0.00664
	(A * !B * D_N * !Y)	0.00012	0.00003	-0.00140
	(A * !B * D_N * !Y)	0.01287	0.01287	0.01164
	(A * !B * !D_N * !Y)	-0.00839	-0.00841	-0.00822
	(A * !B * !D_N * !Y)	0.00649	0.00652	0.00655
	(!A * !B * !D_N * !Y)	-0.00430	-0.00446	-0.00507
	(!A * !B * !D_N * !Y)	0.01398	0.01393	0.01319

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00872	0.02507	0.28691
	(C * !Y)	0.00414	0.02046	0.28231
	(B * !C * !Y)	0.00885	0.02520	0.28694
	(B * !C * !Y)	0.00419	0.02050	0.28227
	(A * !B * !C * !Y)	0.00944	0.02576	0.28711
	(A * !B * !C * !Y)	0.00469	0.02098	0.28236
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00831	0.02604	0.31715
	(C * !Y)	0.00309	0.02081	0.31194
	(B * !C * !Y)	0.00859	0.02632	0.31735
	(B * !C * !Y)	0.00322	0.02094	0.31201
	(A * !B * !C * !Y)	0.00986	0.02758	0.31849
	(A * !B * !C * !Y)	0.00432	0.02202	0.31298
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.01704	0.04332	0.49947
	(C * !Y)	0.00935	0.03560	0.49180
	(B * !C * !Y)	0.01761	0.04389	0.49985
	(B * !C * !Y)	0.00964	0.03589	0.49195
	(A * !B * !C * !Y)	0.02008	0.04634	0.50207
	(A * !B * !C * !Y)	0.01177	0.03799	0.49382

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00180	0.01936	0.28416
	(C * !Y)	0.00638	0.02395	0.28874
	(B * !C * !Y)	0.00180	0.01935	0.28410
	(B * !C * !Y)	0.00642	0.02398	0.28872
	(A * !B * !C * !Y)	0.00182	0.01932	0.28392
	(A * !B * !C * !Y)	0.00661	0.02412	0.28865
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00378	0.02223	0.31452
	(C * !Y)	0.00895	0.02743	0.31972
	(B * !C * !Y)	0.00377	0.02221	0.31452
	(B * !C * !Y)	0.00901	0.02747	0.31977
	(A * !B * !C * !Y)	0.00381	0.02224	0.31491
	(A * !B * !C * !Y)	0.00937	0.02782	0.32036
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00793	0.03755	0.50015
	(C * !Y)	0.01556	0.04522	0.50778
	(B * !C * !Y)	0.00792	0.03753	0.50015
	(B * !C * !Y)	0.01567	0.04531	0.50788
	(A * !B * !C * !Y)	0.00799	0.03758	0.50082
	(A * !B * !C * !Y)	0.01641	0.04603	0.50902

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00272	0.00289	0.00288	0.00291	0.48768
sky130_fd_sc_hs__nor4_2	0.00421	0.00482	0.00478	0.00447	0.82881
sky130_fd_sc_hs__nor4_4	0.00833	0.00870	0.00849	0.00861	1.42945

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4_1	0.00000	24.22060	118.75300
sky130_fd_sc_hs__nor4_2	0.00000	47.71190	237.19300
sky130_fd_sc_hs__nor4_4	0.00000	95.33200	473.18100

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)	0.10767	0.80076	8.39156
	B->Y (FR)	0.10091	0.82932	8.81560
	C->Y (FR)	0.08305	0.85459	9.31150
	D->Y (FR)	0.05456	0.85382	9.54323
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.09464	0.64674	7.72902
	B->Y (FR)	0.08407	0.66819	8.16409
	C->Y (FR)	0.06054	0.68930	8.70464
	D->Y (FR)	0.03082	0.68249	8.91780
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.10525	0.54905	7.44898
	B->Y (FR)	0.09569	0.57908	8.00912
	C->Y (FR)	0.07401	0.61383	8.72587
	D->Y (FR)	0.03617	0.61333	9.06950

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.01810	0.20550	1.77799
	B->Y (RF)	0.02007	0.21088	1.84509
	C->Y (RF)	0.01983	0.20480	1.81615
	D->Y (RF)	0.01636	0.19386	1.75095
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.02604	0.29865	3.36045
	B->Y (RF)	0.02924	0.30192	3.45857
	C->Y (RF)	0.02688	0.28886	3.40533
	D->Y (RF)	0.02051	0.26523	3.21557
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.02637	0.23488	2.95120
	B->Y (RF)	0.02800	0.22783	2.92333
	C->Y (RF)	0.02755	0.22131	2.94549
	D->Y (RF)	0.01921	0.20285	2.87821

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00051	0.00454	0.11669
	A	0.01128	0.01535	0.12746
	B	0.00067	0.00474	0.10026
	B	0.00997	0.01405	0.10965
	C	0.00067	0.00516	0.09212
	C	0.00848	0.01296	0.10002
	D	0.00052	0.00687	0.10537
	D	0.00703	0.01334	0.11189
sky130_fd_sc_hs__nor4_2	A	0.00057	0.00550	0.15142
	A	0.01897	0.02395	0.17018
	B	0.00014	0.00553	0.13307
	B	0.01643	0.02183	0.14941
	C	0.00046	0.00702	0.12506
	C	0.01327	0.01981	0.13779
	D	0.00005	0.00990	0.14994
	D	0.00979	0.01964	0.15966
sky130_fd_sc_hs__nor4_4	A	0.00424	0.01510	0.30837
	A	0.04173	0.05269	0.34608
	B	0.00439	0.01647	0.27456
	B	0.03596	0.04806	0.30645
	C	0.00456	0.01791	0.24608
	C	0.02987	0.04323	0.27147
	D	0.00409	0.02344	0.28345
	D	0.02329	0.04266	0.30256

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01553	0.02029	0.12043
	A	0.00474	0.00949	0.10967
	B	0.01293	0.01752	0.10668
	B	0.00363	0.00819	0.09741
	C	0.01002	0.01482	0.09702
	C	0.00221	0.00697	0.08922
	D	0.00772	0.01287	0.09383
	D	0.00123	0.00633	0.08734
sky130_fd_sc_hs__nor4_2	A	0.02843	0.03428	0.16228
	A	0.01003	0.01582	0.14379
	B	0.02351	0.02947	0.14634
	B	0.00720	0.01314	0.12984
	C	0.01656	0.02320	0.13239
	C	0.00377	0.01036	0.11962
	D	0.01158	0.01921	0.12680
	D	0.00185	0.00942	0.11672
sky130_fd_sc_hs__nor4_4	A	0.05690	0.06981	0.33406
	A	0.01939	0.03226	0.29612
	B	0.04493	0.05825	0.29678
	B	0.01327	0.02657	0.26511
	C	0.03328	0.04714	0.25964
	C	0.00802	0.02177	0.23404
	D	0.02278	0.03854	0.23945
	D	0.00359	0.01934	0.22004

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00218	0.00209	0.00210
	(B * D * !Y)	-0.00234	-0.00242	-0.00242
	(B * C * !D * !Y)	0.00231	0.00214	0.00214
	(B * C * !D * !Y)	-0.00222	-0.00239	-0.00239
	(B * !C * !D * !Y)	0.00288	0.00249	0.00261
	(B * !C * !D * !Y)	-0.00175	-0.00216	-0.00192
	(!B * C * D * !Y)	0.00232	0.00217	0.00213
	(!B * C * D * !Y)	-0.00213	-0.00239	-0.00238
	(!B * C * !D * !Y)	0.00302	0.00258	0.00266
	(!B * C * !D * !Y)	-0.00160	-0.00210	-0.00189
	(!B * !C * D * !Y)	0.00323	0.00281	0.00307
	(!B * !C * D * !Y)	-0.00146	-0.00194	-0.00151
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00232	0.00215	0.00214
	(B * D * !Y)	-0.00448	-0.00473	-0.00472
	(B * C * !D * !Y)	0.00264	0.00224	0.00221
	(B * C * !D * !Y)	-0.00419	-0.00466	-0.00465
	(B * !C * !D * !Y)	0.00402	0.00298	0.00320
	(B * !C * !D * !Y)	-0.00304	-0.00409	-0.00370
	(!B * C * D * !Y)	0.00270	0.00224	0.00220
	(!B * C * D * !Y)	-0.00398	-0.00463	-0.00464
	(!B * C * !D * !Y)	0.00430	0.00311	0.00326
	(!B * C * !D * !Y)	-0.00276	-0.00402	-0.00366
	(!B * !C * D * !Y)	0.00473	0.00357	0.00408
	(!B * !C * D * !Y)	-0.00246	-0.00370	-0.00289

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00480	0.00449	0.00445
	(B * D * !Y)	-0.00926	-0.00975	-0.00971
	(B * C * !D * !Y)	0.00546	0.00466	0.00460
	(B * C * !D * !Y)	-0.00867	-0.00961	-0.00957
	(B * !C * !D * !Y)	0.00813	0.00612	0.00651
	(B * !C * !D * !Y)	-0.00645	-0.00846	-0.00772
	(!B * C * D * !Y)	0.00544	0.00465	0.00457
	(!B * C * D * !Y)	-0.00839	-0.00951	-0.00952
	(!B * C * !D * !Y)	0.00854	0.00640	0.00668
	(!B * C * !D * !Y)	-0.00608	-0.00829	-0.00756
	(!B * !C * D * !Y)	0.00935	0.00730	0.00833
	(!B * !C * D * !Y)	-0.00554	-0.00767	-0.00604

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00202	-0.00203	-0.00202
	(B * D * !Y)	0.00250	0.00253	0.00251
	(B * C * !D * !Y)	-0.00199	-0.00200	-0.00200
	(B * C * !D * !Y)	0.00252	0.00255	0.00254
	(B * !C * !D * !Y)	-0.00157	-0.00160	-0.00166
	(B * !C * !D * !Y)	0.00300	0.00301	0.00293
	(!B * C * D * !Y)	-0.00198	-0.00199	-0.00198
	(!B * C * D * !Y)	0.00251	0.00253	0.00251
	(!B * C * !D * !Y)	-0.00147	-0.00150	-0.00154
	(!B * C * !D * !Y)	0.00311	0.00313	0.00305
	(!B * !C * D * !Y)	-0.00102	-0.00106	-0.00117
	(!B * !C * D * !Y)	0.00360	0.00362	0.00347

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00198	-0.00199	-0.00198
	(B * D * !Y)	0.00487	0.00492	0.00489
	(B * C * !D * !Y)	-0.00194	-0.00196	-0.00194
	(B * C * !D * !Y)	0.00492	0.00499	0.00494
	(B * !C * !D * !Y)	-0.00110	-0.00114	-0.00126
	(B * !C * !D * !Y)	0.00586	0.00591	0.00573
	(!B * C * D * !Y)	-0.00189	-0.00189	-0.00189
	(!B * C * D * !Y)	0.00487	0.00489	0.00489
	(!B * C * !D * !Y)	-0.00087	-0.00090	-0.00100
	(!B * C * !D * !Y)	0.00609	0.00610	0.00599
	(!B * !C * D * !Y)	0.00001	-0.00004	-0.00026
	(!B * !C * D * !Y)	0.00708	0.00710	0.00683
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00412	-0.00414	-0.00413
	(B * D * !Y)	0.01002	0.01008	0.01004
	(B * C * !D * !Y)	-0.00400	-0.00402	-0.00401
	(B * C * !D * !Y)	0.01014	0.01023	0.01018
	(B * !C * !D * !Y)	-0.00228	-0.00236	-0.00261
	(B * !C * !D * !Y)	0.01210	0.01219	0.01181
	(!B * C * D * !Y)	-0.00394	-0.00398	-0.00395
	(!B * C * D * !Y)	0.00998	0.01010	0.01004
	(!B * C * !D * !Y)	-0.00193	-0.00199	-0.00219
	(!B * C * !D * !Y)	0.01246	0.01251	0.01224
	(!B * !C * D * !Y)	-0.00017	-0.00025	-0.00070
	(!B * !C * D * !Y)	0.01441	0.01441	0.01392

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)**	0.00215	0.00217	0.00206
	(A * C * D * !Y)	-0.00162	-0.00162	-0.00166
	(A * C * !D * !Y)	0.00222	0.00223	0.00209
	(A * C * !D * !Y)	-0.00150	-0.00148	-0.00156
	(A * !C * D * !Y)	0.00234	0.00247	0.00227
	(A * !C * D * !Y)	-0.00142	-0.00133	-0.00140
	(A * !C * !D * !Y)	0.00235	0.00237	0.00233
	(A * !C * !D * !Y)	-0.00088	-0.00090	-0.00089
	(!A * C * D * !Y)	0.00240	0.00211	0.00206
	(!A * C * D * !Y)	-0.00208	-0.00239	-0.00239
	(!A * C * !D * !Y)	0.00297	0.00243	0.00258
	(!A * C * !D * !Y)	-0.00157	-0.00212	-0.00189
	(!A * !C * D * !Y)	0.00332	0.00264	0.00299
	(!A * !C * D * !Y)	-0.00129	-0.00198	-0.00151
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00303	0.00304	0.00278
	(A * C * D * !Y)	-0.00332	-0.00330	-0.00338
	(A * C * !D * !Y)	0.00315	0.00323	0.00286
	(A * C * !D * !Y)	-0.00297	-0.00297	-0.00316
	(A * !C * D * !Y)	0.00337	0.00361	0.00320
	(A * !C * D * !Y)	-0.00286	-0.00267	-0.00283
	(A * !C * !D * !Y)	0.00350	0.00355	0.00334
	(A * !C * !D * !Y)	-0.00169	-0.00174	-0.00176
	(!A * C * D * !Y)	0.00352	0.00281	0.00271
	(!A * C * D * !Y)	-0.00416	-0.00489	-0.00491
	(!A * C * !D * !Y)	0.00484	0.00354	0.00376
	(!A * C * !D * !Y)	-0.00299	-0.00430	-0.00390
	(!A * !C * D * !Y)	0.00545	0.00401	0.00459
	(!A * !C * D * !Y)	-0.00245	-0.00396	-0.00313

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00531	0.00529	0.00482
	(A * C * D * !Y)	-0.00651	-0.00651	-0.00665
	(A * C * !D * !Y)	0.00561	0.00561	0.00498
	(A * C * !D * !Y)	-0.00594	-0.00592	-0.00623
	(A * !C * D * !Y)	0.00591	0.00651	0.00573
	(A * !C * D * !Y)	-0.00580	-0.00533	-0.00561
	(A * !C * !D * !Y)	0.00610	0.00609	0.00588
	(A * !C * !D * !Y)	-0.00351	-0.00350	-0.00351
	(!A * C * D * !Y)	0.00617	0.00490	0.00474
	(!A * C * D * !Y)	-0.00846	-0.00978	-0.00980
	(!A * C * !D * !Y)	0.00862	0.00627	0.00685
	(!A * C * !D * !Y)	-0.00632	-0.00867	-0.00777
	(!A * !C * D * !Y)	0.00975	0.00719	0.00845
	(!A * !C * D * !Y)	-0.00528	-0.00804	-0.00628

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)**	-0.00195	-0.00196	-0.00195
	(A * C * D * !Y)	0.00171	0.00172	0.00168
	(A * C * !D * !Y)	-0.00193	-0.00194	-0.00193
	(A * C * !D * !Y)	0.00169	0.00170	0.00166
	(A * !C * D * !Y)	-0.00196	-0.00198	-0.00195
	(A * !C * D * !Y)	0.00159	0.00161	0.00159
	(A * !C * !D * !Y)	-0.00159	-0.00161	-0.00186
	(A * !C * !D * !Y)	0.00166	0.00164	0.00139
	(!A * C * D * !Y)	-0.00189	-0.00189	-0.00190
	(!A * C * D * !Y)	0.00256	0.00256	0.00256
	(!A * C * !D * !Y)	-0.00143	-0.00145	-0.00152
	(!A * C * !D * !Y)	0.00308	0.00308	0.00298
	(!A * !C * D * !Y)	-0.00095	-0.00098	-0.00112
	(!A * !C * D * !Y)	0.00359	0.00358	0.00343
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00256	-0.00257	-0.00255
	(A * C * D * !Y)	0.00349	0.00350	0.00344
	(A * C * !D * !Y)	-0.00253	-0.00254	-0.00250
	(A * C * !D * !Y)	0.00341	0.00343	0.00339
	(A * !C * D * !Y)	-0.00256	-0.00257	-0.00253
	(A * !C * D * !Y)	0.00323	0.00327	0.00323
	(A * !C * !D * !Y)	-0.00194	-0.00199	-0.00232
	(A * !C * !D * !Y)	0.00327	0.00327	0.00285
	(!A * C * D * !Y)	-0.00235	-0.00237	-0.00236
	(!A * C * D * !Y)	0.00524	0.00527	0.00526
	(!A * C * !D * !Y)	-0.00141	-0.00147	-0.00160
	(!A * C * !D * !Y)	0.00629	0.00634	0.00614
	(!A * !C * D * !Y)	-0.00050	-0.00054	-0.00082
	(!A * !C * D * !Y)	0.00733	0.00728	0.00701

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00434	-0.00438	-0.00433
	(A * C * D * !Y)	0.00689	0.00697	0.00681
	(A * C * !D * !Y)	-0.00428	-0.00429	-0.00423
	(A * C * !D * !Y)	0.00677	0.00679	0.00671
	(A * !C * D * !Y)	-0.00443	-0.00444	-0.00436
	(A * !C * D * !Y)	0.00643	0.00646	0.00641
	(A * !C * !D * !Y)	-0.00290	-0.00299	-0.00395
	(A * !C * !D * !Y)	0.00662	0.00662	0.00564
	(!A * C * D * !Y)	-0.00408	-0.00411	-0.00409
	(!A * C * D * !Y)	0.01042	0.01049	0.01046
	(!A * C * !D * !Y)	-0.00224	-0.00233	-0.00261
	(!A * C * !D * !Y)	0.01252	0.01258	0.01216
	(!A * !C * D * !Y)	-0.00032	-0.00043	-0.00097
	(!A * !C * D * !Y)	0.01459	0.01460	0.01398

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00234	0.00235	0.00226
	(B * D * !Y)	-0.00136	-0.00137	-0.00142
	(B * !D * !Y)	0.00212	0.00214	0.00208
	(B * !D * !Y)	-0.00101	-0.00102	-0.00104
	(A * !B * D * !Y)	0.00258	0.00246	0.00244
	(A * !B * D * !Y)	-0.00115	-0.00129	-0.00125
	(A * !B * !D * !Y)	0.00231	0.00235	0.00229
	(A * !B * !D * !Y)	-0.00072	-0.00075	-0.00074
	(!A * !B * D * !Y)	0.00305	0.00248	0.00300
	(!A * !B * D * !Y)	-0.00142	-0.00201	-0.00143

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00335	0.00330	0.00315
	(B * D * !Y)	-0.00272	-0.00275	-0.00282
	(B * !D * !Y)	0.00277	0.00279	0.00268
	(B * !D * !Y)	-0.00205	-0.00207	-0.00211
	(A * !B * D * !Y)	0.00376	0.00344	0.00345
	(A * !B * D * !Y)	-0.00235	-0.00264	-0.00254
	(A * !B * !D * !Y)	0.00318	0.00319	0.00313
	(A * !B * !D * !Y)	-0.00149	-0.00151	-0.00151
	(!A * !B * D * !Y)	0.00460	0.00342	0.00451
	(!A * !B * D * !Y)	-0.00297	-0.00416	-0.00296
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00567	0.00571	0.00530
	(B * D * !Y)	-0.00562	-0.00557	-0.00580
	(B * !D * !Y)	0.00476	0.00480	0.00454
	(B * !D * !Y)	-0.00419	-0.00424	-0.00435
	(A * !B * D * !Y)	0.00691	0.00610	0.00601
	(A * !B * D * !Y)	-0.00455	-0.00529	-0.00517
	(A * !B * !D * !Y)	0.00575	0.00579	0.00558
	(A * !B * !D * !Y)	-0.00291	-0.00295	-0.00299
	(!A * !B * D * !Y)	0.00901	0.00615	0.00822
	(!A * !B * D * !Y)	-0.00547	-0.00834	-0.00603

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00199	-0.00200	-0.00198
	(B * D * !Y)	0.00155	0.00155	0.00155
	(B * !D * !Y)	-0.00194	-0.00196	-0.00198
	(B * !D * !Y)	0.00117	0.00118	0.00115
	(A * !B * D * !Y)	-0.00199	-0.00200	-0.00196
	(A * !B * D * !Y)	0.00152	0.00153	0.00153
	(A * !B * !D * !Y)	-0.00145	-0.00147	-0.00183
	(A * !B * !D * !Y)	0.00162	0.00162	0.00134
	(!A * !B * D * !Y)	-0.00099	-0.00102	-0.00118
	(!A * !B * D * !Y)	0.00346	0.00344	0.00327
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00255	-0.00257	-0.00252
	(B * D * !Y)	0.00312	0.00315	0.00314
	(B * !D * !Y)	-0.00242	-0.00244	-0.00249
	(B * !D * !Y)	0.00237	0.00239	0.00234
	(A * !B * D * !Y)	-0.00253	-0.00253	-0.00244
	(A * !B * D * !Y)	0.00311	0.00312	0.00313
	(A * !B * !D * !Y)	-0.00139	-0.00143	-0.00223
	(A * !B * !D * !Y)	0.00331	0.00332	0.00271
	(!A * !B * D * !Y)	-0.00049	-0.00054	-0.00088
	(!A * !B * D * !Y)	0.00703	0.00697	0.00664
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00426	-0.00430	-0.00422
	(B * D * !Y)	0.00630	0.00638	0.00633
	(B * !D * !Y)	-0.00406	-0.00410	-0.00412
	(B * !D * !Y)	0.00482	0.00488	0.00484
	(A * !B * D * !Y)	-0.00422	-0.00421	-0.00406
	(A * !B * D * !Y)	0.00628	0.00629	0.00632
	(A * !B * !D * !Y)	-0.00220	-0.00228	-0.00378
	(A * !B * !D * !Y)	0.00653	0.00656	0.00540
	(!A * !B * D * !Y)	-0.00013	-0.00028	-0.00094
	(!A * !B * D * !Y)	0.01418	0.01415	0.01342

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00231	0.00233	0.00231
	(C * !Y)	-0.00099	-0.00100	-0.00099
	(B * !C * !Y)	0.00230	0.00236	0.00232
	(B * !C * !Y)	-0.00097	-0.00099	-0.00097
	(A * !B * !C * !Y)	0.00232	0.00234	0.00236
	(A * !B * !C * !Y)	-0.00080	-0.00081	-0.00078
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00279	0.00280	0.00281
	(C * !Y)	-0.00195	-0.00196	-0.00196
	(B * !C * !Y)	0.00280	0.00282	0.00282
	(B * !C * !Y)	-0.00190	-0.00191	-0.00190
	(A * !B * !C * !Y)	0.00284	0.00289	0.00290
	(A * !B * !C * !Y)	-0.00157	-0.00160	-0.00151
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00529	0.00534	0.00530
	(C * !Y)	-0.00391	-0.00394	-0.00390
	(B * !C * !Y)	0.00531	0.00534	0.00530
	(B * !C * !Y)	-0.00387	-0.00388	-0.00383
	(A * !B * !C * !Y)	0.00535	0.00538	0.00547
	(A * !B * !C * !Y)	-0.00318	-0.00317	-0.00304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00213	-0.00214	-0.00224
	(C * !Y)	0.00116	0.00116	0.00108
	(B * !C * !Y)	-0.00203	-0.00204	-0.00222
	(B * !C * !Y)	0.00121	0.00121	0.00108
	(A * !B * !C * !Y)	-0.00143	-0.00145	-0.00178
	(A * !B * !C * !Y)	0.00173	0.00173	0.00148
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00250	-0.00253	-0.00269
	(C * !Y)	0.00223	0.00225	0.00210
	(B * !C * !Y)	-0.00221	-0.00224	-0.00264
	(B * !C * !Y)	0.00239	0.00240	0.00211
	(A * !B * !C * !Y)	-0.00099	-0.00100	-0.00178
	(A * !B * !C * !Y)	0.00346	0.00344	0.00291
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00461	-0.00466	-0.00508
	(C * !Y)	0.00448	0.00451	0.00418
	(B * !C * !Y)	-0.00407	-0.00412	-0.00492
	(B * !C * !Y)	0.00479	0.00482	0.00426
	(A * !B * !C * !Y)	-0.00161	-0.00169	-0.00322
	(A * !B * !C * !Y)	0.00694	0.00695	0.00586

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00277	0.00287	0.00278	0.00295	0.00288	0.89736
sky130_fd_sc_hs__o2111ai_2	0.00539	0.00539	0.00557	0.00544	0.00539	1.52705
sky130_fd_sc_hs__o2111ai_4	0.01072	0.01077	0.00814	0.00822	0.00810	2.46504

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	40.65830	477.19300
sky130_fd_sc_hs__o2111ai_2	0.00000	81.25520	953.52900
sky130_fd_sc_hs__o2111ai_4	0.00000	95.42210	1191.31000

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)	0.07690	0.67834	8.45579
	A2->Y (FR)	0.06886	0.71370	9.09629
	B1->Y (FR)	0.03289	0.48649	6.37910
	C1->Y (FR)	0.02912	0.48098	6.36240
	D1->Y (FR)	0.02441	0.47431	6.32881
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.08070	0.58509	8.16464
	A2->Y (FR)	0.06859	0.61905	8.84348
	B1->Y (FR)	0.03083	0.40627	5.91337
	C1->Y (FR)	0.02644	0.39575	5.85327
	D1->Y (FR)	0.02075	0.38625	5.81478
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.08915	0.51502	7.89562
	A2->Y (FR)	0.07451	0.55482	8.63474
	B1->Y (FR)	0.05510	0.53570	8.49193
	C1->Y (FR)	0.04159	0.49262	7.96858
	D1->Y (FR)	0.03135	0.50560	8.38535

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.05800	0.42527	5.04995
	A2->Y (RF)	0.04773	0.40298	4.86213
	B1->Y (RF)	0.05356	0.47275	5.83274
	C1->Y (RF)	0.04829	0.50861	6.41741
	D1->Y (RF)	0.04088	0.52874	6.80892
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.06598	0.36642	5.05729
	A2->Y (RF)	0.05103	0.34217	4.87422
	B1->Y (RF)	0.06062	0.41015	5.82996
	C1->Y (RF)	0.05412	0.47097	6.79719
	D1->Y (RF)	0.04177	0.48897	7.19550
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.06213	0.26762	4.22768
	A2->Y (RF)	0.05148	0.26179	4.37319
	B1->Y (RF)	0.04346	0.30523	5.20588
	C1->Y (RF)	0.03675	0.35668	6.11200
	D1->Y (RF)	0.02399	0.37845	6.63479

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00288	0.00693	0.08460
	A1	0.01486	0.01886	0.09580
	A2	0.00291	0.00822	0.09462
	A2	0.01336	0.01862	0.10457
	B1	0.00143	0.00889	0.12263
	B1	0.01005	0.01751	0.13069
	C1	0.00063	0.00787	0.11636
	C1	0.00801	0.01530	0.12326
	D1	0.00003	0.00725	0.11174
	D1	0.00599	0.01322	0.11747
sky130_fd_sc_hs__o2111ai_2	A1	0.00494	0.01278	0.15045
	A1	0.02906	0.03710	0.17271
	A2	0.00503	0.01523	0.16629
	A2	0.02588	0.03601	0.18558
	B1	0.00208	0.01719	0.22681
	B1	0.01969	0.03482	0.24438
	C1	0.00077	0.01502	0.20868
	C1	0.01525	0.02955	0.22347
	D1	-0.00175	0.01264	0.19979
	D1	0.00983	0.02428	0.21168

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00863	0.02531	0.30018
	A1	0.05607	0.07271	0.34615
	A2	0.00839	0.02833	0.30260
	A2	0.04991	0.06977	0.34185
	B1	0.00357	0.02177	0.26055
	B1	0.03334	0.05154	0.28888
	C1	0.00096	0.01957	0.25721
	C1	0.02505	0.04362	0.28124
	D1	-0.00317	0.01520	0.23474
	D1	0.01483	0.03349	0.25068

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.02360	0.02661	0.09275
	A1	0.01157	0.01453	0.08039
	A2	0.02168	0.02461	0.08529
	A2	0.01117	0.01410	0.07422
	B1	0.01719	0.02123	0.09456
	B1	0.00854	0.01254	0.08592
	C1	0.01616	0.02001	0.08615
	C1	0.00877	0.01260	0.07772
	D1	0.01494	0.01947	0.08645
	D1	0.00898	0.01343	0.08019

sky130_fd_sc_hs__o2111ai_2	**A1**	0.04934	0.05532	0.18082
	A1	0.02514	0.03099	0.15536
	A2	0.04414	0.05030	0.16381
	A2	0.02318	0.02926	0.14198
	B1	0.03496	0.04395	0.19214
	B1	0.01727	0.02621	0.17347
	C1	0.03268	0.04044	0.15906
	C1	0.01812	0.02579	0.14448
	D1	0.03004	0.03910	0.15881
	D1	0.01845	0.02749	0.14625
sky130_fd_sc_hs__o2111ai_4	**A1**	0.07887	0.09248	0.34747
	A1	0.03132	0.04481	0.29994
	A2	0.07019	0.08422	0.30885
	A2	0.02846	0.04234	0.26621
	B1	0.05051	0.06188	0.22834
	B1	0.02065	0.03192	0.19723
	C1	0.04547	0.05604	0.19959
	C1	0.02140	0.03189	0.17460
	D1	0.03998	0.05195	0.18989
	D1	0.02206	0.03398	0.17080

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)**	0.00598	0.00558	0.00616
	(A2 * B1 * C1 * D1 * !Y)	0.00138	0.00095	0.00161
	(A2 * B1 * C1 * !D1 * Y)	0.00209	0.00207	0.00208
	(A2 * B1 * C1 * !D1 * Y)	-0.00246	-0.00245	-0.00245
	(A2 * B1 * !C1 * Y)	0.00209	0.00207	0.00208
	(A2 * B1 * !C1 * Y)	-0.00247	-0.00245	-0.00245
	(A2 * !B1 * Y)	0.00209	0.00210	0.00207
	(A2 * !B1 * Y)	-0.00247	-0.00247	-0.00245
	(!A2 * B1 * C1 * !D1 * Y)	0.00197	0.00198	0.00198
	(!A2 * B1 * C1 * !D1 * Y)	-0.00245	-0.00245	-0.00245
	(!A2 * B1 * !C1 * D1 * Y)	0.00199	0.00200	0.00199
	(!A2 * B1 * !C1 * D1 * Y)	-0.00246	-0.00247	-0.00246
	(!A2 * B1 * !C1 * !D1 * Y)	0.00195	0.00195	0.00195
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00248	-0.00248	-0.00248
	(!A2 * !B1 * C1 * D1 * Y)	0.00203	0.00203	0.00203
	(!A2 * !B1 * C1 * D1 * Y)	-0.00248	-0.00248	-0.00247
	(!A2 * !B1 * !D1 * Y)	0.00200	0.00202	0.00199
	(!A2 * !B1 * !D1 * Y)	-0.00248	-0.00249	-0.00248
	(!A2 * !B1 * !C1 * D1 * Y)	0.00200	0.00202	0.00199
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00248	-0.00249	-0.00248

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.01223	0.01114	0.01221
	(A2 * B1 * C1 * D1 * !Y)	0.00313	0.00200	0.00318
	(A2 * B1 * C1 * !D1 * Y)	0.00403	0.00405	0.00403
	(A2 * B1 * C1 * !D1 * Y)	-0.00496	-0.00497	-0.00494
	(A2 * B1 * !C1 * Y)	0.00402	0.00405	0.00402
	(A2 * B1 * !C1 * Y)	-0.00497	-0.00498	-0.00495
	(A2 * !B1 * Y)	0.00402	0.00404	0.00402
	(A2 * !B1 * Y)	-0.00497	-0.00498	-0.00495
	(!A2 * B1 * C1 * !D1 * Y)	0.00381	0.00386	0.00383
	(!A2 * B1 * C1 * !D1 * Y)	-0.00495	-0.00498	-0.00495
	(!A2 * B1 * !C1 * D1 * Y)	0.00382	0.00384	0.00384
	(!A2 * B1 * !C1 * D1 * Y)	-0.00498	-0.00499	-0.00498
	(!A2 * B1 * !C1 * !D1 * Y)	0.00375	0.00379	0.00377
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00500	-0.00502	-0.00500
	(!A2 * !B1 * C1 * D1 * Y)	0.00389	0.00394	0.00391
	(!A2 * !B1 * C1 * D1 * Y)	-0.00498	-0.00502	-0.00499
	(!A2 * !B1 * !D1 * Y)	0.00382	0.00388	0.00383
	(!A2 * !B1 * !D1 * Y)	-0.00500	-0.00503	-0.00500
	(!A2 * !B1 * !C1 * D1 * Y)	0.00382	0.00388	0.00383
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00500	-0.00503	-0.00500

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.01850	0.01617	0.01828
	(A2 * B1 * C1 * D1 * !Y)	0.00056	-0.00186	0.00042
	(A2 * B1 * C1 * !D1 * Y)	0.00790	0.00792	0.00790
	(A2 * B1 * C1 * !D1 * Y)	-0.00989	-0.00990	-0.00986
	(A2 * B1 * !C1 * Y)	0.00788	0.00790	0.00788
	(A2 * B1 * !C1 * Y)	-0.00991	-0.00992	-0.00988
	(A2 * !B1 * Y)	0.00788	0.00790	0.00788
	(A2 * !B1 * Y)	-0.00991	-0.00992	-0.00988
	(!A2 * B1 * C1 * !D1 * Y)	0.00757	0.00761	0.00759
	(!A2 * B1 * C1 * !D1 * Y)	-0.00988	-0.00990	-0.00987
	(!A2 * B1 * !C1 * D1 * Y)	0.00760	0.00766	0.00759
	(!A2 * B1 * !C1 * D1 * Y)	-0.00997	-0.00998	-0.00993
	(!A2 * B1 * !C1 * !D1 * Y)	0.00751	0.00756	0.00750
	(!A2 * B1 * !C1 * !D1 * Y)	-0.01000	-0.01002	-0.00997
	(!A2 * !B1 * C1 * D1 * Y)	0.00762	0.00773	0.00766
	(!A2 * !B1 * C1 * D1 * Y)	-0.00994	-0.01001	-0.00995
	(!A2 * !B1 * !D1 * Y)	0.00747	0.00754	0.00751
	(!A2 * !B1 * !D1 * Y)	-0.00995	-0.00999	-0.00997
	(!A2 * !B1 * !C1 * D1 * Y)	0.00747	0.00753	0.00751
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00995	-0.00999	-0.00997

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)**	0.00209	0.00205	0.00189
	(A2 * B1 * C1 * D1 * !Y)	0.00664	0.00664	0.00647
	(A2 * B1 * C1 * !D1 * Y)	-0.00202	-0.00203	-0.00203
	(A2 * B1 * C1 * !D1 * Y)	0.00250	0.00252	0.00251
	(A2 * B1 * !C1 * Y)	-0.00203	-0.00204	-0.00203
	(A2 * B1 * !C1 * Y)	0.00249	0.00252	0.00250
	(A2 * !B1 * Y)	-0.00203	-0.00204	-0.00203
	(A2 * !B1 * Y)	0.00250	0.00251	0.00250
	(!A2 * B1 * C1 * !D1 * Y)	-0.00167	-0.00193	-0.00196
	(!A2 * B1 * C1 * !D1 * Y)	0.00267	0.00255	0.00251
	(!A2 * B1 * !C1 * D1 * Y)	-0.00172	-0.00194	-0.00197
	(!A2 * B1 * !C1 * D1 * Y)	0.00263	0.00254	0.00251
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00182	-0.00195	-0.00195
	(!A2 * B1 * !C1 * !D1 * Y)	0.00248	0.00251	0.00249
	(!A2 * !B1 * C1 * D1 * Y)	-0.00180	-0.00196	-0.00198
	(!A2 * !B1 * C1 * D1 * Y)	0.00262	0.00252	0.00251
	(!A2 * !B1 * !D1 * Y)	-0.00192	-0.00199	-0.00199
	(!A2 * !B1 * !D1 * Y)	0.00249	0.00249	0.00249
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00193	-0.00199	-0.00199
	(!A2 * !B1 * !C1 * D1 * Y)	0.00249	0.00249	0.00249

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00432	0.00425	0.00393
	(A2 * B1 * C1 * D1 * !Y)	0.01337	0.01337	0.01301
	(A2 * B1 * C1 * !D1 * Y)	-0.00392	-0.00395	-0.00393
	(A2 * B1 * C1 * !D1 * Y)	0.00503	0.00511	0.00505
	(A2 * B1 * !C1 * Y)	-0.00393	-0.00396	-0.00394
	(A2 * B1 * !C1 * Y)	0.00503	0.00510	0.00504
	(A2 * !B1 * Y)	-0.00393	-0.00396	-0.00394
	(A2 * !B1 * Y)	0.00502	0.00510	0.00504
	(!A2 * B1 * C1 * !D1 * Y)	-0.00320	-0.00371	-0.00379
	(!A2 * B1 * C1 * !D1 * Y)	0.00541	0.00519	0.00507
	(!A2 * B1 * !C1 * D1 * Y)	-0.00330	-0.00377	-0.00381
	(!A2 * B1 * !C1 * D1 * Y)	0.00533	0.00515	0.00507
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00351	-0.00379	-0.00377
	(!A2 * B1 * !C1 * !D1 * Y)	0.00503	0.00508	0.00502
	(!A2 * !B1 * C1 * D1 * Y)	-0.00347	-0.00382	-0.00383
	(!A2 * !B1 * C1 * D1 * Y)	0.00527	0.00514	0.00507
	(!A2 * !B1 * !D1 * Y)	-0.00370	-0.00387	-0.00383
	(!A2 * !B1 * !D1 * Y)	0.00503	0.00508	0.00502
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00371	-0.00387	-0.00383
	(!A2 * !B1 * !C1 * D1 * Y)	0.00503	0.00508	0.00502

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00229	0.00218	0.00154
	(A2 * B1 * C1 * D1 * !Y)	0.02023	0.02017	0.01949
	(A2 * B1 * C1 * !D1 * Y)	-0.00767	-0.00772	-0.00769
	(A2 * B1 * C1 * !D1 * Y)	0.01004	0.01015	0.01008
	(A2 * B1 * !C1 * Y)	-0.00769	-0.00774	-0.00771
	(A2 * B1 * !C1 * Y)	0.01002	0.01014	0.01006
	(A2 * !B1 * Y)	-0.00769	-0.00775	-0.00771
	(A2 * !B1 * Y)	0.01002	0.01013	0.01005
	(!A2 * B1 * C1 * !D1 * Y)	-0.00622	-0.00723	-0.00741
	(!A2 * B1 * C1 * !D1 * Y)	0.01080	0.01034	0.01011
	(!A2 * B1 * !C1 * D1 * Y)	-0.00642	-0.00732	-0.00745
	(!A2 * B1 * !C1 * D1 * Y)	0.01064	0.01025	0.01010
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00685	-0.00740	-0.00750
	(!A2 * B1 * !C1 * !D1 * Y)	0.01003	0.01012	0.01002
	(!A2 * !B1 * C1 * D1 * Y)	-0.00676	-0.00747	-0.00750
	(!A2 * !B1 * C1 * D1 * Y)	0.01051	0.01023	0.01010
	(!A2 * !B1 * !D1 * Y)	-0.00723	-0.00754	-0.00751
	(!A2 * !B1 * !D1 * Y)	0.01004	0.01006	0.01002
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00726	-0.00753	-0.00751
	(!A2 * !B1 * !C1 * D1 * Y)	0.01003	0.01006	0.01002

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)**	0.00537	0.00540	0.00540
	(A1 * B1 * C1 * D1 * !Y)	0.00218	0.00217	0.00224
	(A1 * B1 * C1 * !D1 * Y)	0.00202	0.00205	0.00203
	(A1 * B1 * C1 * !D1 * Y)	-0.00242	-0.00243	-0.00242
	(A1 * B1 * !C1 * D1 * Y)	0.00202	0.00204	0.00203
	(A1 * B1 * !C1 * D1 * Y)	-0.00242	-0.00244	-0.00242
	(A1 * B1 * !C1 * !D1 * Y)	0.00200	0.00202	0.00201
	(A1 * B1 * !C1 * !D1 * Y)	-0.00244	-0.00245	-0.00244
	(A1 * !B1 * C1 * D1 * Y)	0.00202	0.00204	0.00203
	(A1 * !B1 * C1 * D1 * Y)	-0.00242	-0.00244	-0.00242
	(A1 * !B1 * !D1 * Y)	0.00201	0.00202	0.00201
	(A1 * !B1 * !D1 * Y)	-0.00244	-0.00245	-0.00244
	(A1 * !B1 * !C1 * D1 * Y)	0.00201	0.00202	0.00201
	(A1 * !B1 * !C1 * D1 * Y)	-0.00244	-0.00245	-0.00244
	(!A1 * B1 * C1 * !D1 * Y)	0.00191	0.00195	0.00193
	(!A1 * B1 * C1 * !D1 * Y)	-0.00241	-0.00243	-0.00242
	(!A1 * B1 * !C1 * D1 * Y)	0.00194	0.00195	0.00194
	(!A1 * B1 * !C1 * D1 * Y)	-0.00243	-0.00244	-0.00243
	(!A1 * B1 * !C1 * !D1 * Y)	0.00190	0.00192	0.00190
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00244	-0.00246	-0.00244
	(!A1 * !B1 * C1 * D1 * Y)	0.00199	0.00198	0.00198
	(!A1 * !B1 * C1 * D1 * Y)	-0.00245	-0.00244	-0.00244
	(!A1 * !B1 * !D1 * Y)	0.00196	0.00195	0.00195
	(!A1 * !B1 * !D1 * Y)	-0.00245	-0.00245	-0.00244
	(!A1 * !B1 * !C1 * D1 * Y)	0.00196	0.00196	0.00195
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00245	-0.00245	-0.00244

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.01065	0.01071	0.01071
	(A1 * B1 * C1 * D1 * !Y)	0.00436	0.00435	0.00446
	(A1 * B1 * C1 * !D1 * Y)	0.00396	0.00399	0.00395
	(A1 * B1 * C1 * !D1 * Y)	-0.00491	-0.00492	-0.00488
	(A1 * B1 * !C1 * D1 * Y)	0.00395	0.00398	0.00394
	(A1 * B1 * !C1 * D1 * Y)	-0.00492	-0.00493	-0.00489
	(A1 * B1 * !C1 * !D1 * Y)	0.00392	0.00394	0.00390
	(A1 * B1 * !C1 * !D1 * Y)	-0.00493	-0.00496	-0.00493
	(A1 * !B1 * C1 * D1 * Y)	0.00395	0.00398	0.00394
	(A1 * !B1 * C1 * D1 * Y)	-0.00492	-0.00493	-0.00489
	(A1 * !B1 * !D1 * Y)	0.00392	0.00394	0.00390
	(A1 * !B1 * !D1 * Y)	-0.00493	-0.00496	-0.00493
	(A1 * !B1 * !C1 * D1 * Y)	0.00388	0.00394	0.00390
	(A1 * !B1 * !C1 * D1 * Y)	-0.00492	-0.00496	-0.00493
	(!A1 * B1 * C1 * !D1 * Y)	0.00375	0.00381	0.00377
	(!A1 * B1 * C1 * !D1 * Y)	-0.00488	-0.00492	-0.00489
	(!A1 * B1 * !C1 * D1 * Y)	0.00376	0.00379	0.00377
	(!A1 * B1 * !C1 * D1 * Y)	-0.00491	-0.00493	-0.00492
	(!A1 * B1 * !C1 * !D1 * Y)	0.00369	0.00372	0.00370
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00493	-0.00496	-0.00494
	(!A1 * !B1 * C1 * D1 * Y)	0.00380	0.00385	0.00382
	(!A1 * !B1 * C1 * D1 * Y)	-0.00491	-0.00495	-0.00493
	(!A1 * !B1 * !D1 * Y)	0.00373	0.00377	0.00375
	(!A1 * !B1 * !D1 * Y)	-0.00492	-0.00495	-0.00494
	(!A1 * !B1 * !C1 * D1 * Y)	0.00373	0.00377	0.00375
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00492	-0.00495	-0.00494

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.01533	0.01552	0.01550
	(A1 * B1 * C1 * D1 * !Y)	0.00256	0.00248	0.00269
	(A1 * B1 * C1 * !D1 * Y)	0.00800	0.00812	0.00802
	(A1 * B1 * C1 * !D1 * Y)	-0.00986	-0.00994	-0.00987
	(A1 * B1 * !C1 * D1 * Y)	0.00798	0.00810	0.00801
	(A1 * B1 * !C1 * D1 * Y)	-0.00987	-0.00996	-0.00988
	(A1 * B1 * !C1 * !D1 * Y)	0.00791	0.00803	0.00793
	(A1 * B1 * !C1 * !D1 * Y)	-0.00995	-0.01001	-0.00995
	(A1 * !B1 * C1 * D1 * Y)	0.00798	0.00810	0.00800
	(A1 * !B1 * C1 * D1 * Y)	-0.00987	-0.00996	-0.00989
	(A1 * !B1 * !D1 * Y)	0.00791	0.00803	0.00794
	(A1 * !B1 * !D1 * Y)	-0.00994	-0.00999	-0.00995
	(A1 * !B1 * !C1 * D1 * Y)	0.00791	0.00803	0.00794
	(A1 * !B1 * !C1 * D1 * Y)	-0.00994	-0.00999	-0.00995
	(!A1 * B1 * C1 * !D1 * Y)	0.00766	0.00770	0.00764
	(!A1 * B1 * C1 * !D1 * Y)	-0.00991	-0.00993	-0.00987
	(!A1 * B1 * !C1 * D1 * Y)	0.00767	0.00775	0.00769
	(!A1 * B1 * !C1 * D1 * Y)	-0.00993	-0.00998	-0.00993
	(!A1 * B1 * !C1 * !D1 * Y)	0.00758	0.00762	0.00756
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00999	-0.01002	-0.00997
	(!A1 * !B1 * C1 * D1 * Y)	0.00777	0.00787	0.00781
	(!A1 * !B1 * C1 * D1 * Y)	-0.00994	-0.01000	-0.00995
	(!A1 * !B1 * !D1 * Y)	0.00764	0.00773	0.00767
	(!A1 * !B1 * !D1 * Y)	-0.00995	-0.01001	-0.00997
	(!A1 * !B1 * !C1 * D1 * Y)	0.00764	0.00772	0.00767
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00995	-0.01001	-0.00997

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)**	0.00168	0.00164	0.00136
	(A1 * B1 * C1 * D1 * !Y)	0.00484	0.00483	0.00455
	(A1 * B1 * C1 * !D1 * Y)	-0.00198	-0.00198	-0.00198
	(A1 * B1 * C1 * !D1 * Y)	0.00246	0.00248	0.00247
	(A1 * B1 * !C1 * D1 * Y)	-0.00198	-0.00199	-0.00198
	(A1 * B1 * !C1 * D1 * Y)	0.00246	0.00247	0.00247
	(A1 * B1 * !C1 * !D1 * Y)	-0.00200	-0.00201	-0.00200
	(A1 * B1 * !C1 * !D1 * Y)	0.00244	0.00247	0.00245
	(A1 * !B1 * C1 * D1 * Y)	-0.00198	-0.00199	-0.00198
	(A1 * !B1 * C1 * D1 * Y)	0.00246	0.00248	0.00247
	(A1 * !B1 * !D1 * Y)	-0.00200	-0.00201	-0.00200
	(A1 * !B1 * !D1 * Y)	0.00244	0.00247	0.00245
	(A1 * !B1 * !C1 * D1 * Y)	-0.00200	-0.00201	-0.00200
	(A1 * !B1 * !C1 * D1 * Y)	0.00244	0.00247	0.00245
	(!A1 * B1 * C1 * !D1 * Y)	-0.00161	-0.00189	-0.00191
	(!A1 * B1 * C1 * !D1 * Y)	0.00264	0.00252	0.00248
	(!A1 * B1 * !C1 * D1 * Y)	-0.00166	-0.00189	-0.00192
	(!A1 * B1 * !C1 * D1 * Y)	0.00261	0.00251	0.00248
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00177	-0.00191	-0.00190
	(!A1 * B1 * !C1 * !D1 * Y)	0.00244	0.00248	0.00246
	(!A1 * !B1 * C1 * D1 * Y)	-0.00175	-0.00191	-0.00193
	(!A1 * !B1 * C1 * D1 * Y)	0.00259	0.00249	0.00248
	(!A1 * !B1 * !D1 * Y)	-0.00187	-0.00194	-0.00195
	(!A1 * !B1 * !D1 * Y)	0.00246	0.00246	0.00246
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00188	-0.00194	-0.00195
	(!A1 * !B1 * !C1 * D1 * Y)	0.00246	0.00246	0.00245

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00351	0.00344	0.00290
	(A1 * B1 * C1 * D1 * !Y)	0.00977	0.00977	0.00922
	(A1 * B1 * C1 * !D1 * Y)	-0.00383	-0.00387	-0.00384
	(A1 * B1 * C1 * !D1 * Y)	0.00497	0.00503	0.00499
	(A1 * B1 * !C1 * D1 * Y)	-0.00384	-0.00388	-0.00385
	(A1 * B1 * !C1 * D1 * Y)	0.00496	0.00502	0.00498
	(A1 * B1 * !C1 * !D1 * Y)	-0.00388	-0.00391	-0.00389
	(A1 * B1 * !C1 * !D1 * Y)	0.00493	0.00499	0.00494
	(A1 * !B1 * C1 * D1 * Y)	-0.00384	-0.00388	-0.00385
	(A1 * !B1 * C1 * D1 * Y)	0.00496	0.00502	0.00498
	(A1 * !B1 * !D1 * Y)	-0.00388	-0.00391	-0.00389
	(A1 * !B1 * !D1 * Y)	0.00493	0.00499	0.00494
	(A1 * !B1 * !C1 * D1 * Y)	-0.00388	-0.00391	-0.00389
	(A1 * !B1 * !C1 * D1 * Y)	0.00493	0.00499	0.00494
	(!A1 * B1 * C1 * !D1 * Y)	-0.00309	-0.00362	-0.00371
	(!A1 * B1 * C1 * !D1 * Y)	0.00534	0.00512	0.00501
	(!A1 * B1 * !C1 * D1 * Y)	-0.00320	-0.00367	-0.00373
	(!A1 * B1 * !C1 * D1 * Y)	0.00525	0.00507	0.00500
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00341	-0.00371	-0.00370
	(!A1 * B1 * !C1 * !D1 * Y)	0.00495	0.00501	0.00496
	(!A1 * !B1 * C1 * D1 * Y)	-0.00339	-0.00374	-0.00375
	(!A1 * !B1 * C1 * D1 * Y)	0.00520	0.00503	0.00501
	(!A1 * !B1 * !D1 * Y)	-0.00361	-0.00377	-0.00375
	(!A1 * !B1 * !D1 * Y)	0.00497	0.00498	0.00496
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00363	-0.00377	-0.00375
	(!A1 * !B1 * !C1 * D1 * Y)	0.00496	0.00498	0.00496

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00048	0.00040	-0.00069
	(A1 * B1 * C1 * D1 * !Y)	0.01339	0.01335	0.01226
	(A1 * B1 * C1 * !D1 * Y)	-0.00781	-0.00786	-0.00781
	(A1 * B1 * C1 * !D1 * Y)	0.01005	0.01014	0.01006
	(A1 * B1 * !C1 * D1 * Y)	-0.00783	-0.00787	-0.00783
	(A1 * B1 * !C1 * D1 * Y)	0.01003	0.01012	0.01005
	(A1 * B1 * !C1 * !D1 * Y)	-0.00789	-0.00792	-0.00790
	(A1 * B1 * !C1 * !D1 * Y)	0.00996	0.01001	0.00998
	(A1 * !B1 * C1 * D1 * Y)	-0.00783	-0.00788	-0.00783
	(A1 * !B1 * C1 * D1 * Y)	0.01003	0.01012	0.01004
	(A1 * !B1 * !D1 * Y)	-0.00790	-0.00791	-0.00790
	(A1 * !B1 * !D1 * Y)	0.00996	0.00999	0.00998
	(A1 * !B1 * !C1 * D1 * Y)	-0.00790	-0.00791	-0.00790
	(A1 * !B1 * !C1 * D1 * Y)	0.00997	0.00999	0.00998
	(!A1 * B1 * C1 * !D1 * Y)	-0.00640	-0.00734	-0.00752
	(!A1 * B1 * C1 * !D1 * Y)	0.01075	0.01033	0.01011
	(!A1 * B1 * !C1 * D1 * Y)	-0.00656	-0.00743	-0.00757
	(!A1 * B1 * !C1 * D1 * Y)	0.01058	0.01024	0.01010
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00697	-0.00751	-0.00756
	(!A1 * B1 * !C1 * !D1 * Y)	0.00999	0.01010	0.01001
	(!A1 * !B1 * C1 * D1 * Y)	-0.00686	-0.00759	-0.00762
	(!A1 * !B1 * C1 * D1 * Y)	0.01053	0.01015	0.01010
	(!A1 * !B1 * !D1 * Y)	-0.00735	-0.00767	-0.00767
	(!A1 * !B1 * !D1 * Y)	0.01002	0.01005	0.01001
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00737	-0.00767	-0.00767
	(!A1 * !B1 * !C1 * D1 * Y)	0.01001	0.01005	0.01001

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)**	0.00190	0.00192	0.00190
	(A2 * C1 * !D1 * Y)	-0.00245	-0.00246	-0.00244
	(A2 * !C1 * D1 * Y)	0.00192	0.00195	0.00193
	(A2 * !C1 * D1 * Y)	-0.00245	-0.00247	-0.00246
	(A2 * !C1 * !D1 * Y)	0.00189	0.00190	0.00190
	(A2 * !C1 * !D1 * Y)	-0.00247	-0.00247	-0.00247
	(A1 * !A2 * C1 * !D1 * Y)	0.00190	0.00190	0.00191
	(A1 * !A2 * C1 * !D1 * Y)	-0.00245	-0.00245	-0.00245
	(A1 * !A2 * !C1 * D1 * Y)	0.00192	0.00195	0.00193
	(A1 * !A2 * !C1 * D1 * Y)	-0.00245	-0.00247	-0.00246
	(A1 * !A2 * !C1 * !D1 * Y)	0.00189	0.00192	0.00190
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00247	-0.00248	-0.00247
	(!A1 * !A2 * C1 * D1 * Y)	0.00080	0.00081	0.00080
	(!A1 * !A2 * C1 * D1 * Y)	-0.00242	-0.00244	-0.00242
	(!A1 * !A2 * C1 * !D1 * Y)	0.00099	0.00100	0.00099
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00247	-0.00247	-0.00247
	(!A1 * !A2 * !C1 * D1 * Y)	0.00105	0.00105	0.00105
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00247	-0.00247	-0.00247
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00106	0.00107	0.00106
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00247	-0.00249	-0.00247

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00402	0.00404	0.00402
	(A2 * C1 * !D1 * Y)	-0.00509	-0.00509	-0.00506
	(A2 * !C1 * D1 * Y)	0.00403	0.00409	0.00406
	(A2 * !C1 * D1 * Y)	-0.00507	-0.00511	-0.00508
	(A2 * !C1 * !D1 * Y)	0.00395	0.00401	0.00397
	(A2 * !C1 * !D1 * Y)	-0.00511	-0.00514	-0.00512
	(A1 * !A2 * C1 * !D1 * Y)	0.00399	0.00402	0.00400
	(A1 * !A2 * C1 * !D1 * Y)	-0.00507	-0.00509	-0.00506
	(A1 * !A2 * !C1 * D1 * Y)	0.00404	0.00409	0.00405
	(A1 * !A2 * !C1 * D1 * Y)	-0.00508	-0.00512	-0.00509
	(A1 * !A2 * !C1 * !D1 * Y)	0.00396	0.00402	0.00398
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00510	-0.00515	-0.00512
	(!A1 * !A2 * C1 * D1 * Y)	0.00169	0.00171	0.00171
	(!A1 * !A2 * C1 * D1 * Y)	-0.00501	-0.00504	-0.00498
	(!A1 * !A2 * C1 * !D1 * Y)	0.00214	0.00215	0.00213
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00512	-0.00514	-0.00512
	(!A1 * !A2 * !C1 * D1 * Y)	0.00218	0.00218	0.00217
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00512	-0.00513	-0.00512
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00221	0.00222	0.00220
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00512	-0.00514	-0.00512

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00764	0.00773	0.00769
	(A2 * C1 * !D1 * Y)	-0.00523	-0.00526	-0.00522
	(A2 * !C1 * D1 * Y)	0.00782	0.00793	0.00785
	(A2 * !C1 * D1 * Y)	-0.00526	-0.00530	-0.00527
	(A2 * !C1 * !D1 * Y)	0.00766	0.00779	0.00770
	(A2 * !C1 * !D1 * Y)	-0.00532	-0.00536	-0.00533
	(A1 * !A2 * C1 * !D1 * Y)	0.00762	0.00771	0.00767
	(A1 * !A2 * C1 * !D1 * Y)	-0.00522	-0.00526	-0.00521
	(A1 * !A2 * !C1 * D1 * Y)	0.00782	0.00793	0.00785
	(A1 * !A2 * !C1 * D1 * Y)	-0.00526	-0.00530	-0.00527
	(A1 * !A2 * !C1 * !D1 * Y)	0.00767	0.00778	0.00770
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00532	-0.00534	-0.00533
	(!A1 * !A2 * C1 * D1 * Y)	0.00311	0.00311	0.00312
	(!A1 * !A2 * C1 * D1 * Y)	-0.00515	-0.00515	-0.00509
	(!A1 * !A2 * C1 * !D1 * Y)	0.00387	0.00391	0.00388
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00535	-0.00538	-0.00536
	(!A1 * !A2 * !C1 * D1 * Y)	0.00398	0.00402	0.00398
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00533	-0.00536	-0.00534
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00404	0.00408	0.00404
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00533	-0.00537	-0.00534

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)**	-0.00152	-0.00180	-0.00185
	(A2 * C1 * !D1 * Y)	0.00278	0.00259	0.00251
	(A2 * !C1 * D1 * Y)	-0.00166	-0.00184	-0.00187
	(A2 * !C1 * D1 * Y)	0.00272	0.00255	0.00251
	(A2 * !C1 * !D1 * Y)	-0.00181	-0.00188	-0.00189
	(A2 * !C1 * !D1 * Y)	0.00251	0.00249	0.00248
	(A1 * !A2 * C1 * !D1 * Y)	-0.00145	-0.00184	-0.00185
	(A1 * !A2 * C1 * !D1 * Y)	0.00284	0.00257	0.00251
	(A1 * !A2 * !C1 * D1 * Y)	-0.00161	-0.00187	-0.00187
	(A1 * !A2 * !C1 * D1 * Y)	0.00275	0.00256	0.00251
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00179	-0.00190	-0.00189
	(A1 * !A2 * !C1 * !D1 * Y)	0.00251	0.00251	0.00248
	(!A1 * !A2 * C1 * D1 * Y)	-0.00067	-0.00069	-0.00071
	(!A1 * !A2 * C1 * D1 * Y)	0.00260	0.00263	0.00252
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00099	-0.00098	-0.00099
	(!A1 * !A2 * C1 * !D1 * Y)	0.00269	0.00272	0.00257
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00102	-0.00105	-0.00105
	(!A1 * !A2 * !C1 * D1 * Y)	0.00265	0.00264	0.00251
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00106	-0.00107	-0.00106
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00258	0.00258	0.00252

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00324	-0.00388	-0.00391
	(A2 * C1 * !D1 * Y)	0.00576	0.00532	0.00519
	(A2 * !C1 * D1 * Y)	-0.00346	-0.00395	-0.00394
	(A2 * !C1 * D1 * Y)	0.00560	0.00529	0.00520
	(A2 * !C1 * !D1 * Y)	-0.00381	-0.00401	-0.00397
	(A2 * !C1 * !D1 * Y)	0.00514	0.00520	0.00514
	(A1 * !A2 * C1 * !D1 * Y)	-0.00307	-0.00393	-0.00391
	(A1 * !A2 * C1 * !D1 * Y)	0.00590	0.00530	0.00519
	(A1 * !A2 * !C1 * D1 * Y)	-0.00337	-0.00396	-0.00394
	(A1 * !A2 * !C1 * D1 * Y)	0.00572	0.00529	0.00520
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00378	-0.00402	-0.00398
	(A1 * !A2 * !C1 * !D1 * Y)	0.00518	0.00520	0.00514
	(!A1 * !A2 * C1 * D1 * Y)	-0.00144	-0.00146	-0.00151
	(!A1 * !A2 * C1 * D1 * Y)	0.00541	0.00547	0.00524
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00214	-0.00211	-0.00213
	(!A1 * !A2 * C1 * !D1 * Y)	0.00549	0.00565	0.00533
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00212	-0.00217	-0.00217
	(!A1 * !A2 * !C1 * D1 * Y)	0.00549	0.00550	0.00525
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00221	-0.00222	-0.00220
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00534	0.00538	0.00524

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00603	-0.00757	-0.00754
	(A2 * C1 * !D1 * Y)	0.00680	0.00562	0.00546
	(A2 * !C1 * D1 * Y)	-0.00660	-0.00765	-0.00760
	(A2 * !C1 * D1 * Y)	0.00641	0.00560	0.00548
	(A2 * !C1 * !D1 * Y)	-0.00731	-0.00776	-0.00769
	(A2 * !C1 * !D1 * Y)	0.00543	0.00543	0.00536
	(A1 * !A2 * C1 * !D1 * Y)	-0.00585	-0.00752	-0.00754
	(A1 * !A2 * C1 * !D1 * Y)	0.00697	0.00555	0.00546
	(A1 * !A2 * !C1 * D1 * Y)	-0.00647	-0.00758	-0.00760
	(A1 * !A2 * !C1 * D1 * Y)	0.00651	0.00552	0.00548
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00724	-0.00769	-0.00769
	(A1 * !A2 * !C1 * !D1 * Y)	0.00546	0.00534	0.00536
	(!A1 * !A2 * C1 * D1 * Y)	-0.00263	-0.00266	-0.00275
	(!A1 * !A2 * C1 * D1 * Y)	0.00590	0.00595	0.00556
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00387	-0.00387	-0.00388
	(!A1 * !A2 * C1 * !D1 * Y)	0.00608	0.00636	0.00574
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00390	-0.00402	-0.00398
	(!A1 * !A2 * !C1 * D1 * Y)	0.00606	0.00600	0.00556
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00404	-0.00408	-0.00404
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00578	0.00578	0.00555

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)**	0.00198	0.00201	0.00199
	(A2 * B1 * !D1 * Y)	-0.00253	-0.00255	-0.00253
	(A2 * !B1 * D1 * Y)	0.00080	0.00080	0.00079
	(A2 * !B1 * D1 * Y)	-0.00256	-0.00257	-0.00255
	(A2 * !B1 * !D1 * Y)	0.00098	0.00100	0.00099
	(A2 * !B1 * !D1 * Y)	-0.00254	-0.00257	-0.00255
	(A1 * !A2 * B1 * !D1 * Y)	0.00198	0.00201	0.00199
	(A1 * !A2 * B1 * !D1 * Y)	-0.00253	-0.00255	-0.00253
	(!A2 * !B1 * D1 * Y)	0.00080	0.00080	0.00079
	(!A2 * !B1 * D1 * Y)	-0.00256	-0.00257	-0.00255
	(!A2 * !B1 * !D1 * Y)	0.00099	0.00100	0.00099
	(!A2 * !B1 * !D1 * Y)	-0.00255	-0.00257	-0.00255
	(!A1 * !A2 * B1 * D1 * Y)	0.00078	0.00079	0.00077
	(!A1 * !A2 * B1 * D1 * Y)	-0.00254	-0.00257	-0.00255
	(!A1 * !A2 * B1 * !D1 * Y)	0.00103	0.00104	0.00103
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00254	-0.00256	-0.00255

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00388	0.00392	0.00390
	(A2 * B1 * !D1 * Y)	-0.00493	-0.00497	-0.00494
	(A2 * !B1 * D1 * Y)	0.00159	0.00162	0.00161
	(A2 * !B1 * D1 * Y)	-0.00498	-0.00502	-0.00498
	(A2 * !B1 * !D1 * Y)	0.00209	0.00212	0.00209
	(A2 * !B1 * !D1 * Y)	-0.00500	-0.00503	-0.00500
	(A1 * !A2 * B1 * !D1 * Y)	0.00388	0.00392	0.00390
	(A1 * !A2 * B1 * !D1 * Y)	-0.00494	-0.00497	-0.00494
	(!A2 * !B1 * D1 * Y)	0.00159	0.00162	0.00161
	(!A2 * !B1 * D1 * Y)	-0.00498	-0.00502	-0.00498
	(!A2 * !B1 * !D1 * Y)	0.00209	0.00212	0.00209
	(!A2 * !B1 * !D1 * Y)	-0.00499	-0.00503	-0.00500
	(!A1 * !A2 * B1 * D1 * Y)	0.00150	0.00153	0.00153
	(!A1 * !A2 * B1 * D1 * Y)	-0.00498	-0.00502	-0.00498
	(!A1 * !A2 * B1 * !D1 * Y)	0.00207	0.00207	0.00206
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00499	-0.00501	-0.00498

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00778	0.00783	0.00782
	(A2 * B1 * !D1 * Y)	-0.00515	-0.00517	-0.00516
	(A2 * !B1 * D1 * Y)	0.00298	0.00300	0.00297
	(A2 * !B1 * D1 * Y)	-0.00529	-0.00531	-0.00526
	(A2 * !B1 * !D1 * Y)	0.00379	0.00385	0.00381
	(A2 * !B1 * !D1 * Y)	-0.00529	-0.00534	-0.00532
	(A1 * !A2 * B1 * !D1 * Y)	0.00779	0.00789	0.00782
	(A1 * !A2 * B1 * !D1 * Y)	-0.00515	-0.00519	-0.00516
	(!A2 * !B1 * D1 * Y)	0.00296	0.00300	0.00297
	(!A2 * !B1 * D1 * Y)	-0.00527	-0.00531	-0.00526
	(!A2 * !B1 * !D1 * Y)	0.00380	0.00385	0.00381
	(!A2 * !B1 * !D1 * Y)	-0.00530	-0.00534	-0.00532
	(!A1 * !A2 * B1 * D1 * Y)	0.00285	0.00290	0.00288
	(!A1 * !A2 * B1 * D1 * Y)	-0.00524	-0.00529	-0.00526
	(!A1 * !A2 * B1 * !D1 * Y)	0.00386	0.00389	0.00386
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00527	-0.00530	-0.00527

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)**	-0.00164	-0.00191	-0.00191
	(A2 * B1 * !D1 * Y)	0.00289	0.00267	0.00260
	(A2 * !B1 * D1 * Y)	-0.00074	-0.00074	-0.00075
	(A2 * !B1 * D1 * Y)	0.00263	0.00265	0.00258
	(A2 * !B1 * !D1 * Y)	-0.00098	-0.00099	-0.00099
	(A2 * !B1 * !D1 * Y)	0.00269	0.00271	0.00260
	(A1 * !A2 * B1 * !D1 * Y)	-0.00161	-0.00192	-0.00191
	(A1 * !A2 * B1 * !D1 * Y)	0.00292	0.00267	0.00260
	(!A2 * !B1 * D1 * Y)	-0.00073	-0.00074	-0.00075
	(!A2 * !B1 * D1 * Y)	0.00263	0.00265	0.00258
	(!A2 * !B1 * !D1 * Y)	-0.00099	-0.00099	-0.00099
	(!A2 * !B1 * !D1 * Y)	0.00269	0.00271	0.00260
	(!A1 * !A2 * B1 * D1 * Y)	-0.00069	-0.00070	-0.00071
	(!A1 * !A2 * B1 * D1 * Y)	0.00262	0.00265	0.00258
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00097	-0.00102	-0.00102
	(!A1 * !A2 * B1 * !D1 * Y)	0.00286	0.00281	0.00270

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00294	-0.00372	-0.00376
	(A2 * B1 * !D1 * Y)	0.00591	0.00517	0.00507
	(A2 * !B1 * D1 * Y)	-0.00146	-0.00147	-0.00152
	(A2 * !B1 * D1 * Y)	0.00519	0.00523	0.00507
	(A2 * !B1 * !D1 * Y)	-0.00205	-0.00207	-0.00209
	(A2 * !B1 * !D1 * Y)	0.00532	0.00536	0.00512
	(A1 * !A2 * B1 * !D1 * Y)	-0.00289	-0.00368	-0.00376
	(A1 * !A2 * B1 * !D1 * Y)	0.00596	0.00522	0.00507
	(!A2 * !B1 * D1 * Y)	-0.00146	-0.00147	-0.00152
	(!A2 * !B1 * D1 * Y)	0.00520	0.00523	0.00507
	(!A2 * !B1 * !D1 * Y)	-0.00205	-0.00207	-0.00209
	(!A2 * !B1 * !D1 * Y)	0.00531	0.00536	0.00512
	(!A1 * !A2 * B1 * D1 * Y)	-0.00137	-0.00138	-0.00142
	(!A1 * !A2 * B1 * D1 * Y)	0.00518	0.00522	0.00507
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00182	-0.00199	-0.00203
	(!A1 * !A2 * B1 * !D1 * Y)	0.00572	0.00555	0.00528

sky130_fd_sc_hs__o2111ai_4	(A2 * B1 * !D1 * Y)	-0.00584	-0.00730	-0.00751
	(A2 * B1 * !D1 * Y)	0.00715	0.00581	0.00541
	(A2 * !B1 * D1 * Y)	-0.00272	-0.00274	-0.00281
	(A2 * !B1 * D1 * Y)	0.00565	0.00568	0.00541
	(A2 * !B1 * !D1 * Y)	-0.00379	-0.00380	-0.00381
	(A2 * !B1 * !D1 * Y)	0.00593	0.00594	0.00550
	(A1 * !A2 * B1 * !D1 * Y)	-0.00578	-0.00728	-0.00751
	(A1 * !A2 * B1 * !D1 * Y)	0.00720	0.00569	0.00541
	(!A2 * !B1 * D1 * Y)	-0.00272	-0.00273	-0.00281
	(!A2 * !B1 * D1 * Y)	0.00565	0.00568	0.00541
	(!A2 * !B1 * !D1 * Y)	-0.00380	-0.00380	-0.00381
	(!A2 * !B1 * !D1 * Y)	0.00593	0.00594	0.00550
	(!A1 * !A2 * B1 * D1 * Y)	-0.00255	-0.00258	-0.00265
	(!A1 * !A2 * B1 * D1 * Y)	0.00562	0.00566	0.00541
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00348	-0.00381	-0.00383
	(!A1 * !A2 * B1 * !D1 * Y)	0.00673	0.00630	0.00583

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	(A2 * !C1 * Y)	0.00059	0.00059	0.00057
	(A2 * !C1 * Y)	-0.00291	-0.00294	-0.00297
	(A2 * !B1 * C1 * Y)	0.00060	0.00061	0.00056
	(A2 * !B1 * C1 * Y)	-0.00284	-0.00287	-0.00297
	(!A2 * !C1 * Y)	0.00058	0.00059	0.00057
	(!A2 * !C1 * Y)	-0.00291	-0.00294	-0.00297
	(!A2 * !B1 * C1 * Y)	0.00060	0.00061	0.00056
	(!A2 * !B1 * C1 * Y)	-0.00284	-0.00287	-0.00297
	(!A1 * !A2 * B1 * C1 * Y)	0.00068	0.00069	0.00059
	(!A1 * !A2 * B1 * C1 * Y)	-0.00270	-0.00272	-0.00293

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00137	0.00139	0.00130
	(A2 * !C1 * Y)	-0.00557	-0.00563	-0.00573
	(A2 * !B1 * C1 * Y)	0.00138	0.00138	0.00125
	(A2 * !B1 * C1 * Y)	-0.00541	-0.00545	-0.00571
	(!A2 * !C1 * Y)	0.00137	0.00139	0.00130
	(!A2 * !C1 * Y)	-0.00557	-0.00563	-0.00573
	(!A2 * !B1 * C1 * Y)	0.00138	0.00138	0.00125
	(!A2 * !B1 * C1 * Y)	-0.00541	-0.00544	-0.00571
	(!A1 * !A2 * B1 * C1 * Y)	0.00148	0.00149	0.00127
	(!A1 * !A2 * B1 * C1 * Y)	-0.00514	-0.00517	-0.00564
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00241	0.00244	0.00229
	(A2 * !C1 * Y)	-0.00658	-0.00666	-0.00687
	(A2 * !B1 * C1 * Y)	0.00242	0.00243	0.00221
	(A2 * !B1 * C1 * Y)	-0.00627	-0.00632	-0.00681
	(!A2 * !C1 * Y)	0.00241	0.00244	0.00229
	(!A2 * !C1 * Y)	-0.00659	-0.00666	-0.00687
	(!A2 * !B1 * C1 * Y)	0.00243	0.00242	0.00221
	(!A2 * !B1 * C1 * Y)	-0.00627	-0.00629	-0.00681
	(!A1 * !A2 * B1 * C1 * Y)	0.00265	0.00266	0.00228
	(!A1 * !A2 * B1 * C1 * Y)	-0.00573	-0.00578	-0.00669

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00054	-0.00055	-0.00054
	(A2 * !C1 * Y)	0.00298	0.00302	0.00299
	(A2 * !B1 * C1 * Y)	-0.00054	-0.00054	-0.00053
	(A2 * !B1 * C1 * Y)	0.00300	0.00302	0.00299
	(!A2 * !C1 * Y)	-0.00054	-0.00055	-0.00054
	(!A2 * !C1 * Y)	0.00298	0.00302	0.00299
	(!A2 * !B1 * C1 * Y)	-0.00054	-0.00054	-0.00053
	(!A2 * !B1 * C1 * Y)	0.00300	0.00303	0.00299
	(!A1 * !A2 * B1 * C1 * Y)	-0.00053	-0.00053	-0.00052
	(!A1 * !A2 * B1 * C1 * Y)	0.00298	0.00300	0.00299
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00124	-0.00126	-0.00124
	(A2 * !C1 * Y)	0.00575	0.00587	0.00577
	(A2 * !B1 * C1 * Y)	-0.00120	-0.00120	-0.00119
	(A2 * !B1 * C1 * Y)	0.00577	0.00579	0.00577
	(!A2 * !C1 * Y)	-0.00124	-0.00127	-0.00124
	(!A2 * !C1 * Y)	0.00574	0.00587	0.00577
	(!A2 * !B1 * C1 * Y)	-0.00120	-0.00120	-0.00119
	(!A2 * !B1 * C1 * Y)	0.00577	0.00580	0.00577
	(!A1 * !A2 * B1 * C1 * Y)	-0.00115	-0.00117	-0.00115
	(!A1 * !A2 * B1 * C1 * Y)	0.00574	0.00583	0.00576
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00219	-0.00222	-0.00217
	(A2 * !C1 * Y)	0.00693	0.00705	0.00694
	(A2 * !B1 * C1 * Y)	-0.00210	-0.00211	-0.00208
	(A2 * !B1 * C1 * Y)	0.00690	0.00696	0.00691
	(!A2 * !C1 * Y)	-0.00219	-0.00220	-0.00217
	(!A2 * !C1 * Y)	0.00694	0.00700	0.00694
	(!A2 * !B1 * C1 * Y)	-0.00211	-0.00210	-0.00208
	(!A2 * !B1 * C1 * Y)	0.00693	0.00693	0.00691
	(!A1 * !A2 * B1 * C1 * Y)	-0.00203	-0.00204	-0.00202
	(!A1 * !A2 * B1 * C1 * Y)	0.00688	0.00692	0.00691

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00267	0.00271	0.00251	0.00271	0.00273	1.61160
sky130_fd_sc_hs__o2111a_2	0.00269	0.00268	0.00264	0.00273	0.00283	3.30656
sky130_fd_sc_hs__o2111a_4	0.00515	0.00551	0.00467	0.00480	0.00483	6.01284

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	217.84300	1224.68000
sky130_fd_sc_hs__o2111a_2	0.00000	264.78400	570.39800
sky130_fd_sc_hs__o2111a_4	0.00000	652.15100	2447.72000

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)	0.08861	0.44505	5.56938
	A2->X (RR)	0.07637	0.42377	5.32463
	B1->X (RR)	0.08367	0.47840	6.08975
	C1->X (RR)	0.07895	0.49142	6.26146
	D1->X (RR)	0.07191	0.49097	6.25350
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.09959	0.37977	5.58386
	A2->X (RR)	0.08693	0.35958	5.34788
	B1->X (RR)	0.09534	0.41625	6.19233
	C1->X (RR)	0.09036	0.43210	6.36357
	D1->X (RR)	0.08281	0.43677	6.42155
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.12129	0.33316	5.48802
	A2->X (RR)	0.10852	0.31960	5.21411
	B1->X (RR)	0.11704	0.38060	6.23977
	C1->X (RR)	0.11171	0.41417	6.55079
	D1->X (RR)	0.09979	0.41604	6.66797

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.10530	0.48854	5.58058
	A2->X (FF)	0.09707	0.51480	5.82815
	B1->X (FF)	0.06309	0.43893	5.35052
	C1->X (FF)	0.05740	0.41915	5.13319
	D1->X (FF)	0.04784	0.38800	4.89436
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.12118	0.47887	5.79769
	A2->X (FF)	0.11289	0.50929	6.05305
	B1->X (FF)	0.06289	0.40318	5.37538
	C1->X (FF)	0.05838	0.38657	5.16420
	D1->X (FF)	0.05064	0.36021	4.94673
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.14699	0.46433	5.75962
	A2->X (FF)	0.13948	0.51658	6.16100
	B1->X (FF)	0.08046	0.40198	5.46643
	C1->X (FF)	0.07550	0.37826	5.09178
	D1->X (FF)	0.06627	0.35518	4.93458

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.04803	0.05651	0.25622
	A1	0.03652	0.04504	0.24511
	A2	0.04699	0.05609	0.25462
	A2	0.03691	0.04601	0.24473
	B1	0.04189	0.05502	0.30366
	B1	0.03390	0.04704	0.29580
	C1	0.04070	0.05367	0.29138
	C1	0.03396	0.04695	0.28504
	D1	0.03930	0.05107	0.25195
	D1	0.03383	0.04564	0.24725
sky130_fd_sc_hs__o2111a_2	A1	0.03767	0.04484	0.25053
	A1	0.02614	0.03341	0.23983
	A2	0.03608	0.04412	0.24764
	A2	0.02607	0.03422	0.23816
	B1	0.03056	0.04236	0.29318
	B1	0.02229	0.03415	0.28480
	C1	0.02925	0.04096	0.27869
	C1	0.02230	0.03412	0.27276
	D1	0.02792	0.03976	0.25637
	D1	0.02221	0.03403	0.25212

sky130_fd_sc_hs__o2111a_4	**A1**	0.11304	0.12129	0.46673
	A1	0.08962	0.09791	0.44470
	A2	0.11023	0.11849	0.42413
	A2	0.08922	0.09755	0.40259
	B1	0.09857	0.11782	0.58154
	B1	0.08217	0.10143	0.56466
	C1	0.09611	0.11410	0.53856
	C1	0.08243	0.10042	0.52639
	D1	0.09319	0.11350	0.53697
	D1	0.08244	0.10280	0.52769

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.01065	0.01954	0.22748
	A1	0.02208	0.03097	0.23750
	A2	0.01073	0.02102	0.22773
	A2	0.02075	0.03101	0.23778
	B1	0.00801	0.02347	0.28007
	B1	0.01598	0.03133	0.28735
	C1	0.00723	0.02247	0.26939
	C1	0.01399	0.02915	0.27413
	D1	0.00608	0.02109	0.25994
	D1	0.01156	0.02642	0.26425

sky130_fd_sc_hs__o2111a_2	**A1**	0.02145	0.02555	0.22823
	A1	0.03291	0.03696	0.23966
	A2	0.02162	0.02742	0.23734
	A2	0.03156	0.03728	0.24013
	B1	0.01528	0.02876	0.28087
	B1	0.02351	0.03688	0.28683
	C1	0.01427	0.02746	0.26611
	C1	0.02122	0.03433	0.27124
	D1	0.01266	0.02615	0.26313
	D1	0.01838	0.03171	0.26503
sky130_fd_sc_hs__o2111a_4	**A1**	0.04779	0.05032	0.41647
	A1	0.07106	0.07311	0.43718
	A2	0.04810	0.05113	0.39279
	A2	0.06898	0.07194	0.41000
	B1	0.03402	0.05635	0.52135
	B1	0.05036	0.07244	0.53662
	C1	0.03177	0.05322	0.48209
	C1	0.04545	0.06672	0.49187
	D1	0.02808	0.05052	0.47896
	D1	0.03882	0.06116	0.48303

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)**	0.01228	0.01192	0.01264
	(A2 * B1 * C1 * D1 * X)	0.00789	0.00749	0.00828
	(A2 * B1 * C1 * !D1 * !X)	0.00313	0.00312	0.00313
	(A2 * B1 * C1 * !D1 * !X)	-0.00121	-0.00120	-0.00120
	(A2 * B1 * !C1 * !X)	0.00312	0.00312	0.00313
	(A2 * B1 * !C1 * !X)	-0.00121	-0.00120	-0.00121
	(A2 * !B1 * !X)	0.00312	0.00311	0.00313
	(A2 * !B1 * !X)	-0.00121	-0.00121	-0.00121
	(!A2 * B1 * C1 * !D1 * !X)	0.00304	0.00306	0.00305
	(!A2 * B1 * C1 * !D1 * !X)	-0.00121	-0.00121	-0.00120
	(!A2 * B1 * !C1 * D1 * !X)	0.00306	0.00308	0.00306
	(!A2 * B1 * !C1 * D1 * !X)	-0.00122	-0.00123	-0.00122
	(!A2 * B1 * !C1 * !D1 * !X)	0.00303	0.00305	0.00303
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00123	-0.00124	-0.00123
	(!A2 * !B1 * C1 * D1 * !X)	0.00308	0.00311	0.00309
	(!A2 * !B1 * C1 * D1 * !X)	-0.00122	-0.00124	-0.00123
	(!A2 * !B1 * !D1 * !X)	0.00305	0.00307	0.00306
	(!A2 * !B1 * !D1 * !X)	-0.00123	-0.00124	-0.00123
	(!A2 * !B1 * !C1 * D1 * !X)	0.00305	0.00307	0.00306
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00122	-0.00124	-0.00123

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00665	0.00629	0.00702
	(A2 * B1 * C1 * D1 * X)	0.00220	0.00181	0.00260
	(A2 * B1 * C1 * !D1 * !X)	0.00425	0.00424	0.00425
	(A2 * B1 * C1 * !D1 * !X)	-0.00015	-0.00014	-0.00014
	(A2 * B1 * !C1 * !X)	0.00424	0.00423	0.00424
	(A2 * B1 * !C1 * !X)	-0.00015	-0.00014	-0.00014
	(A2 * !B1 * !X)	0.00424	0.00423	0.00424
	(A2 * !B1 * !X)	-0.00015	-0.00014	-0.00014
	(!A2 * B1 * C1 * !D1 * !X)	0.00413	0.00416	0.00414
	(!A2 * B1 * C1 * !D1 * !X)	-0.00014	-0.00016	-0.00014
	(!A2 * B1 * !C1 * D1 * !X)	0.00415	0.00417	0.00415
	(!A2 * B1 * !C1 * D1 * !X)	-0.00015	-0.00017	-0.00015
	(!A2 * B1 * !C1 * !D1 * !X)	0.00411	0.00412	0.00411
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00017	-0.00017	-0.00017
	(!A2 * !B1 * C1 * D1 * !X)	0.00420	0.00419	0.00419
	(!A2 * !B1 * C1 * D1 * !X)	-0.00017	-0.00017	-0.00016
	(!A2 * !B1 * !D1 * !X)	0.00417	0.00418	0.00416
	(!A2 * !B1 * !D1 * !X)	-0.00017	-0.00018	-0.00017
	(!A2 * !B1 * !C1 * D1 * !X)	0.00417	0.00418	0.00416
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00017	-0.00018	-0.00017

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.02466	0.02384	0.02527
	(A2 * B1 * C1 * D1 * X)	0.01596	0.01513	0.01664
	(A2 * B1 * C1 * !D1 * !X)	0.00804	0.00805	0.00804
	(A2 * B1 * C1 * !D1 * !X)	-0.00054	-0.00054	-0.00052
	(A2 * B1 * !C1 * !X)	0.00803	0.00804	0.00803
	(A2 * B1 * !C1 * !X)	-0.00055	-0.00054	-0.00053
	(A2 * !B1 * !X)	0.00803	0.00804	0.00803
	(A2 * !B1 * !X)	-0.00055	-0.00054	-0.00053
	(!A2 * B1 * C1 * !D1 * !X)	0.00784	0.00787	0.00784
	(!A2 * B1 * C1 * !D1 * !X)	-0.00055	-0.00055	-0.00053
	(!A2 * B1 * !C1 * D1 * !X)	0.00785	0.00786	0.00785
	(!A2 * B1 * !C1 * D1 * !X)	-0.00057	-0.00057	-0.00056
	(!A2 * B1 * !C1 * !D1 * !X)	0.00779	0.00782	0.00779
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00059	-0.00060	-0.00058
	(!A2 * !B1 * C1 * D1 * !X)	0.00789	0.00795	0.00792
	(!A2 * !B1 * C1 * D1 * !X)	-0.00055	-0.00060	-0.00057
	(!A2 * !B1 * !D1 * !X)	0.00786	0.00790	0.00786
	(!A2 * !B1 * !D1 * !X)	-0.00059	-0.00061	-0.00058
	(!A2 * !B1 * !C1 * D1 * !X)	0.00786	0.00790	0.00786
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00059	-0.00061	-0.00058

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)**	0.00858	0.00854	0.00833
	(A2 * B1 * C1 * D1 * X)	0.01295	0.01295	0.01272
	(A2 * B1 * C1 * !D1 * !X)	-0.00100	-0.00101	-0.00100
	(A2 * B1 * C1 * !D1 * !X)	0.00334	0.00337	0.00334
	(A2 * B1 * !C1 * !X)	-0.00100	-0.00102	-0.00100
	(A2 * B1 * !C1 * !X)	0.00334	0.00336	0.00334
	(A2 * !B1 * !X)	-0.00100	-0.00102	-0.00100
	(A2 * !B1 * !X)	0.00334	0.00336	0.00334
	(!A2 * B1 * C1 * !D1 * !X)	-0.00063	-0.00090	-0.00092
	(!A2 * B1 * C1 * !D1 * !X)	0.00352	0.00338	0.00334
	(!A2 * B1 * !C1 * D1 * !X)	-0.00068	-0.00091	-0.00094
	(!A2 * B1 * !C1 * D1 * !X)	0.00348	0.00337	0.00334
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00079	-0.00093	-0.00096
	(!A2 * B1 * !C1 * !D1 * !X)	0.00332	0.00334	0.00332
	(!A2 * !B1 * C1 * D1 * !X)	-0.00076	-0.00093	-0.00095
	(!A2 * !B1 * C1 * D1 * !X)	0.00347	0.00336	0.00334
	(!A2 * !B1 * !D1 * !X)	-0.00089	-0.00096	-0.00097
	(!A2 * !B1 * !D1 * !X)	0.00333	0.00333	0.00332
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00089	-0.00096	-0.00097
	(!A2 * !B1 * !C1 * D1 * !X)	0.00333	0.00333	0.00332

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00281	0.00277	0.00256
	(A2 * B1 * C1 * D1 * X)	0.00724	0.00723	0.00700
	(A2 * B1 * C1 * !D1 * !X)	-0.00003	-0.00005	-0.00003
	(A2 * B1 * C1 * !D1 * !X)	0.00435	0.00439	0.00436
	(A2 * B1 * !C1 * !X)	-0.00003	-0.00005	-0.00004
	(A2 * B1 * !C1 * !X)	0.00435	0.00438	0.00435
	(A2 * !B1 * !X)	-0.00004	-0.00005	-0.00004
	(A2 * !B1 * !X)	0.00435	0.00438	0.00435
	(!A2 * B1 * C1 * !D1 * !X)	0.00033	0.00005	0.00004
	(!A2 * B1 * C1 * !D1 * !X)	0.00452	0.00440	0.00436
	(!A2 * B1 * !C1 * D1 * !X)	0.00028	0.00005	0.00003
	(!A2 * B1 * !C1 * D1 * !X)	0.00448	0.00439	0.00436
	(!A2 * B1 * !C1 * !D1 * !X)	0.00017	0.00003	0.00001
	(!A2 * B1 * !C1 * !D1 * !X)	0.00433	0.00436	0.00434
	(!A2 * !B1 * C1 * D1 * !X)	0.00020	0.00004	0.00001
	(!A2 * !B1 * C1 * D1 * !X)	0.00447	0.00438	0.00436
	(!A2 * !B1 * !D1 * !X)	0.00008	0.00000	-0.00001
	(!A2 * !B1 * !D1 * !X)	0.00434	0.00435	0.00434
	(!A2 * !B1 * !C1 * D1 * !X)	0.00007	0.00000	-0.00001
	(!A2 * !B1 * !C1 * D1 * !X)	0.00433	0.00435	0.00434

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.01717	0.01712	0.01670
	(A2 * B1 * C1 * D1 * X)	0.02585	0.02579	0.02537
	(A2 * B1 * C1 * !D1 * !X)	0.00040	0.00037	0.00038
	(A2 * B1 * C1 * !D1 * !X)	0.00892	0.00897	0.00895
	(A2 * B1 * !C1 * !X)	0.00039	0.00036	0.00037
	(A2 * B1 * !C1 * !X)	0.00891	0.00896	0.00894
	(A2 * !B1 * !X)	0.00039	0.00036	0.00037
	(A2 * !B1 * !X)	0.00891	0.00896	0.00894
	(!A2 * B1 * C1 * !D1 * !X)	0.00095	0.00059	0.00051
	(!A2 * B1 * C1 * !D1 * !X)	0.00920	0.00907	0.00897
	(!A2 * B1 * !C1 * D1 * !X)	0.00086	0.00055	0.00050
	(!A2 * B1 * !C1 * D1 * !X)	0.00912	0.00903	0.00897
	(!A2 * B1 * !C1 * !D1 * !X)	0.00073	0.00051	0.00046
	(!A2 * B1 * !C1 * !D1 * !X)	0.00893	0.00897	0.00892
	(!A2 * !B1 * C1 * D1 * !X)	0.00077	0.00049	0.00047
	(!A2 * !B1 * C1 * D1 * !X)	0.00906	0.00899	0.00897
	(!A2 * !B1 * !D1 * !X)	0.00060	0.00044	0.00043
	(!A2 * !B1 * !D1 * !X)	0.00889	0.00894	0.00892
	(!A2 * !B1 * !C1 * D1 * !X)	0.00060	0.00044	0.00043
	(!A2 * !B1 * !C1 * D1 * !X)	0.00889	0.00894	0.00892

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)**	0.01159	0.01164	0.01166
	(A1 * B1 * C1 * D1 * X)	0.00855	0.00853	0.00860
	(A1 * B1 * C1 * !D1 * !X)	0.00302	0.00305	0.00303
	(A1 * B1 * C1 * !D1 * !X)	-0.00117	-0.00119	-0.00117
	(A1 * B1 * !C1 * D1 * !X)	0.00302	0.00304	0.00302
	(A1 * B1 * !C1 * D1 * !X)	-0.00118	-0.00119	-0.00118
	(A1 * B1 * !C1 * !D1 * !X)	0.00300	0.00302	0.00301
	(A1 * B1 * !C1 * !D1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !B1 * C1 * D1 * !X)	0.00302	0.00304	0.00302
	(A1 * !B1 * C1 * D1 * !X)	-0.00118	-0.00119	-0.00118
	(A1 * !B1 * !D1 * !X)	0.00300	0.00301	0.00301
	(A1 * !B1 * !D1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !B1 * !C1 * D1 * !X)	0.00300	0.00301	0.00301
	(A1 * !B1 * !C1 * D1 * !X)	-0.00119	-0.00120	-0.00119
	(!A1 * B1 * C1 * !D1 * !X)	0.00290	0.00293	0.00292
	(!A1 * B1 * C1 * !D1 * !X)	-0.00116	-0.00118	-0.00116
	(!A1 * B1 * !C1 * D1 * !X)	0.00295	0.00298	0.00296
	(!A1 * B1 * !C1 * D1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * !C1 * !D1 * !X)	0.00292	0.00295	0.00293
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00119	-0.00120	-0.00119
	(!A1 * !B1 * C1 * D1 * !X)	0.00297	0.00300	0.00299
	(!A1 * !B1 * C1 * D1 * !X)	-0.00118	-0.00120	-0.00119
	(!A1 * !B1 * !D1 * !X)	0.00296	0.00298	0.00296
	(!A1 * !B1 * !D1 * !X)	-0.00120	-0.00121	-0.00119
	(!A1 * !B1 * !C1 * D1 * !X)	0.00296	0.00298	0.00296
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00120	-0.00120	-0.00119

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00590	0.00592	0.00596
	(A1 * B1 * C1 * D1 * X)	0.00288	0.00287	0.00294
	(A1 * B1 * C1 * !D1 * !X)	0.00407	0.00409	0.00407
	(A1 * B1 * C1 * !D1 * !X)	-0.00009	-0.00010	-0.00009
	(A1 * B1 * !C1 * D1 * !X)	0.00407	0.00409	0.00407
	(A1 * B1 * !C1 * D1 * !X)	-0.00009	-0.00011	-0.00009
	(A1 * B1 * !C1 * !D1 * !X)	0.00405	0.00407	0.00405
	(A1 * B1 * !C1 * !D1 * !X)	-0.00011	-0.00012	-0.00011
	(A1 * !B1 * C1 * D1 * !X)	0.00407	0.00408	0.00407
	(A1 * !B1 * C1 * D1 * !X)	-0.00009	-0.00011	-0.00009
	(A1 * !B1 * !D1 * !X)	0.00405	0.00406	0.00405
	(A1 * !B1 * !D1 * !X)	-0.00011	-0.00011	-0.00010
	(A1 * !B1 * !C1 * D1 * !X)	0.00405	0.00406	0.00405
	(A1 * !B1 * !C1 * D1 * !X)	-0.00011	-0.00012	-0.00011
	(!A1 * B1 * C1 * !D1 * !X)	0.00396	0.00399	0.00397
	(!A1 * B1 * C1 * !D1 * !X)	-0.00008	-0.00010	-0.00008
	(!A1 * B1 * !C1 * D1 * !X)	0.00398	0.00399	0.00398
	(!A1 * B1 * !C1 * D1 * !X)	-0.00010	-0.00010	-0.00009
	(!A1 * B1 * !C1 * !D1 * !X)	0.00395	0.00396	0.00394
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00011	-0.00012	-0.00011
	(!A1 * !B1 * C1 * D1 * !X)	0.00401	0.00404	0.00402
	(!A1 * !B1 * C1 * D1 * !X)	-0.00010	-0.00011	-0.00011
	(!A1 * !B1 * !D1 * !X)	0.00400	0.00401	0.00399
	(!A1 * !B1 * !D1 * !X)	-0.00011	-0.00012	-0.00011
	(!A1 * !B1 * !C1 * D1 * !X)	0.00400	0.00400	0.00399
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00011	-0.00012	-0.00011

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.02372	0.02378	0.02379
	(A1 * B1 * C1 * D1 * X)	0.01717	0.01716	0.01729
	(A1 * B1 * C1 * !D1 * !X)	0.00820	0.00825	0.00821
	(A1 * B1 * C1 * !D1 * !X)	-0.00057	-0.00061	-0.00058
	(A1 * B1 * !C1 * D1 * !X)	0.00819	0.00824	0.00820
	(A1 * B1 * !C1 * D1 * !X)	-0.00058	-0.00062	-0.00059
	(A1 * B1 * !C1 * !D1 * !X)	0.00817	0.00821	0.00817
	(A1 * B1 * !C1 * !D1 * !X)	-0.00061	-0.00064	-0.00061
	(A1 * !B1 * C1 * D1 * !X)	0.00819	0.00824	0.00820
	(A1 * !B1 * C1 * D1 * !X)	-0.00058	-0.00062	-0.00059
	(A1 * !B1 * !D1 * !X)	0.00817	0.00821	0.00817
	(A1 * !B1 * !D1 * !X)	-0.00060	-0.00064	-0.00061
	(A1 * !B1 * !C1 * D1 * !X)	0.00817	0.00821	0.00817
	(A1 * !B1 * !C1 * D1 * !X)	-0.00060	-0.00064	-0.00061
	(!A1 * B1 * C1 * !D1 * !X)	0.00805	0.00806	0.00805
	(!A1 * B1 * C1 * !D1 * !X)	-0.00058	-0.00058	-0.00057
	(!A1 * B1 * !C1 * D1 * !X)	0.00807	0.00807	0.00806
	(!A1 * B1 * !C1 * D1 * !X)	-0.00061	-0.00061	-0.00060
	(!A1 * B1 * !C1 * !D1 * !X)	0.00793	0.00796	0.00792
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00062	-0.00064	-0.00061
	(!A1 * !B1 * C1 * D1 * !X)	0.00810	0.00813	0.00811
	(!A1 * !B1 * C1 * D1 * !X)	-0.00060	-0.00062	-0.00061
	(!A1 * !B1 * !D1 * !X)	0.00805	0.00810	0.00806
	(!A1 * !B1 * !D1 * !X)	-0.00061	-0.00064	-0.00061
	(!A1 * !B1 * !C1 * D1 * !X)	0.00804	0.00810	0.00806
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00060	-0.00064	-0.00061

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)**	0.00809	0.00806	0.00774
	(A1 * B1 * C1 * D1 * X)	0.01116	0.01114	0.01082
	(A1 * B1 * C1 * !D1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * B1 * C1 * !D1 * !X)	0.00330	0.00331	0.00331
	(A1 * B1 * !C1 * D1 * !X)	-0.00089	-0.00090	-0.00090
	(A1 * B1 * !C1 * D1 * !X)	0.00330	0.00331	0.00330
	(A1 * B1 * !C1 * !D1 * !X)	-0.00091	-0.00093	-0.00092
	(A1 * B1 * !C1 * !D1 * !X)	0.00328	0.00330	0.00328
	(A1 * !B1 * C1 * D1 * !X)	-0.00090	-0.00091	-0.00090
	(A1 * !B1 * C1 * D1 * !X)	0.00330	0.00331	0.00330
	(A1 * !B1 * !D1 * !X)	-0.00092	-0.00093	-0.00092
	(A1 * !B1 * !D1 * !X)	0.00328	0.00329	0.00328
	(A1 * !B1 * !C1 * D1 * !X)	-0.00092	-0.00093	-0.00092
	(A1 * !B1 * !C1 * D1 * !X)	0.00328	0.00330	0.00328
	(!A1 * B1 * C1 * !D1 * !X)	-0.00053	-0.00080	-0.00083
	(!A1 * B1 * C1 * !D1 * !X)	0.00348	0.00335	0.00331
	(!A1 * B1 * !C1 * D1 * !X)	-0.00059	-0.00081	-0.00084
	(!A1 * B1 * !C1 * D1 * !X)	0.00344	0.00333	0.00331
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00070	-0.00083	-0.00086
	(!A1 * B1 * !C1 * !D1 * !X)	0.00328	0.00330	0.00328
	(!A1 * !B1 * C1 * D1 * !X)	-0.00066	-0.00083	-0.00085
	(!A1 * !B1 * C1 * D1 * !X)	0.00342	0.00332	0.00331
	(!A1 * !B1 * !D1 * !X)	-0.00079	-0.00086	-0.00087
	(!A1 * !B1 * !D1 * !X)	0.00329	0.00329	0.00328
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00080	-0.00086	-0.00087
	(!A1 * !B1 * !C1 * D1 * !X)	0.00329	0.00329	0.00328

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00240	0.00237	0.00205
	(A1 * B1 * C1 * D1 * X)	0.00542	0.00541	0.00509
	(A1 * B1 * C1 * !D1 * !X)	0.00015	0.00013	0.00014
	(A1 * B1 * C1 * !D1 * !X)	0.00430	0.00432	0.00430
	(A1 * B1 * !C1 * D1 * !X)	0.00015	0.00012	0.00014
	(A1 * B1 * !C1 * D1 * !X)	0.00430	0.00431	0.00430
	(A1 * B1 * !C1 * !D1 * !X)	0.00012	0.00010	0.00012
	(A1 * B1 * !C1 * !D1 * !X)	0.00427	0.00429	0.00428
	(A1 * !B1 * C1 * D1 * !X)	0.00014	0.00012	0.00014
	(A1 * !B1 * C1 * D1 * !X)	0.00430	0.00432	0.00430
	(A1 * !B1 * !D1 * !X)	0.00011	0.00010	0.00011
	(A1 * !B1 * !D1 * !X)	0.00428	0.00429	0.00428
	(A1 * !B1 * !C1 * D1 * !X)	0.00012	0.00010	0.00012
	(A1 * !B1 * !C1 * D1 * !X)	0.00428	0.00429	0.00428
	(!A1 * B1 * C1 * !D1 * !X)	0.00049	0.00022	0.00020
	(!A1 * B1 * C1 * !D1 * !X)	0.00446	0.00434	0.00430
	(!A1 * B1 * !C1 * D1 * !X)	0.00044	0.00021	0.00019
	(!A1 * B1 * !C1 * D1 * !X)	0.00442	0.00433	0.00431
	(!A1 * B1 * !C1 * !D1 * !X)	0.00033	0.00019	0.00017
	(!A1 * B1 * !C1 * !D1 * !X)	0.00427	0.00430	0.00428
	(!A1 * !B1 * C1 * D1 * !X)	0.00036	0.00020	0.00018
	(!A1 * !B1 * C1 * D1 * !X)	0.00440	0.00431	0.00430
	(!A1 * !B1 * !D1 * !X)	0.00024	0.00017	0.00016
	(!A1 * !B1 * !D1 * !X)	0.00428	0.00429	0.00428
	(!A1 * !B1 * !C1 * D1 * !X)	0.00023	0.00017	0.00016
	(!A1 * !B1 * !C1 * D1 * !X)	0.00428	0.00429	0.00428

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.01578	0.01571	0.01511
	(A1 * B1 * C1 * D1 * X)	0.02229	0.02228	0.02166
	(A1 * B1 * C1 * !D1 * !X)	0.00025	0.00019	0.00022
	(A1 * B1 * C1 * !D1 * !X)	0.00902	0.00903	0.00900
	(A1 * B1 * !C1 * D1 * !X)	0.00024	0.00019	0.00021
	(A1 * B1 * !C1 * D1 * !X)	0.00901	0.00902	0.00899
	(A1 * B1 * !C1 * !D1 * !X)	0.00018	0.00013	0.00016
	(A1 * B1 * !C1 * !D1 * !X)	0.00895	0.00899	0.00895
	(A1 * !B1 * C1 * D1 * !X)	0.00023	0.00018	0.00021
	(A1 * !B1 * C1 * D1 * !X)	0.00900	0.00902	0.00899
	(A1 * !B1 * !D1 * !X)	0.00018	0.00014	0.00016
	(A1 * !B1 * !D1 * !X)	0.00894	0.00898	0.00895
	(A1 * !B1 * !C1 * D1 * !X)	0.00018	0.00014	0.00016
	(A1 * !B1 * !C1 * D1 * !X)	0.00894	0.00898	0.00895
	(!A1 * B1 * C1 * !D1 * !X)	0.00102	0.00044	0.00036
	(!A1 * B1 * C1 * !D1 * !X)	0.00942	0.00911	0.00901
	(!A1 * B1 * !C1 * D1 * !X)	0.00089	0.00040	0.00034
	(!A1 * B1 * !C1 * D1 * !X)	0.00932	0.00906	0.00900
	(!A1 * B1 * !C1 * !D1 * !X)	0.00064	0.00036	0.00030
	(!A1 * B1 * !C1 * !D1 * !X)	0.00897	0.00899	0.00895
	(!A1 * !B1 * C1 * D1 * !X)	0.00070	0.00032	0.00031
	(!A1 * !B1 * C1 * D1 * !X)	0.00924	0.00902	0.00900
	(!A1 * !B1 * !D1 * !X)	0.00044	0.00027	0.00027
	(!A1 * !B1 * !D1 * !X)	0.00897	0.00897	0.00895
	(!A1 * !B1 * !C1 * D1 * !X)	0.00043	0.00027	0.00027
	(!A1 * !B1 * !C1 * D1 * !X)	0.00897	0.00897	0.00895

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)**	0.00291	0.00293	0.00291
	(A2 * C1 * !D1 * !X)	-0.00090	-0.00091	-0.00090
	(A2 * !C1 * D1 * !X)	0.00293	0.00296	0.00294
	(A2 * !C1 * D1 * !X)	-0.00089	-0.00090	-0.00089
	(A2 * !C1 * !D1 * !X)	0.00288	0.00291	0.00289
	(A2 * !C1 * !D1 * !X)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * C1 * !D1 * !X)	0.00290	0.00293	0.00291
	(A1 * !A2 * C1 * !D1 * !X)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * !C1 * D1 * !X)	0.00293	0.00296	0.00294
	(A1 * !A2 * !C1 * D1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !C1 * !D1 * !X)	0.00288	0.00291	0.00289
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00092	-0.00093	-0.00092
	(!A1 * !A2 * C1 * D1 * !X)	0.00181	0.00181	0.00180
	(!A1 * !A2 * C1 * D1 * !X)	-0.00088	-0.00088	-0.00087
	(!A1 * !A2 * C1 * !D1 * !X)	0.00199	0.00199	0.00199
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00091	-0.00092	-0.00092
	(!A1 * !A2 * !C1 * D1 * !X)	0.00205	0.00205	0.00204
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00093	-0.00093	-0.00092
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00206	0.00205	0.00205
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00093	-0.00093	-0.00092

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00397	0.00399	0.00398
	(A2 * C1 * !D1 * !X)	-0.00013	-0.00014	-0.00013
	(A2 * !C1 * D1 * !X)	0.00401	0.00402	0.00401
	(A2 * !C1 * D1 * !X)	-0.00015	-0.00016	-0.00015
	(A2 * !C1 * !D1 * !X)	0.00397	0.00400	0.00398
	(A2 * !C1 * !D1 * !X)	-0.00016	-0.00017	-0.00016
	(A1 * !A2 * C1 * !D1 * !X)	0.00398	0.00400	0.00399
	(A1 * !A2 * C1 * !D1 * !X)	-0.00013	-0.00015	-0.00013
	(A1 * !A2 * !C1 * D1 * !X)	0.00400	0.00402	0.00401
	(A1 * !A2 * !C1 * D1 * !X)	-0.00014	-0.00015	-0.00015
	(A1 * !A2 * !C1 * !D1 * !X)	0.00397	0.00400	0.00398
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00016	-0.00017	-0.00016
	(!A1 * !A2 * C1 * D1 * !X)	0.00290	0.00291	0.00289
	(!A1 * !A2 * C1 * D1 * !X)	-0.00011	-0.00013	-0.00011
	(!A1 * !A2 * C1 * !D1 * !X)	0.00311	0.00312	0.00311
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00015	-0.00017	-0.00016
	(!A1 * !A2 * !C1 * D1 * !X)	0.00314	0.00314	0.00314
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00016	-0.00016	-0.00016
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00315	0.00316	0.00315
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00016	-0.00017	-0.00016

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00791	0.00795	0.00792
	(A2 * C1 * !D1 * !X)	0.00033	0.00031	0.00034
	(A2 * !C1 * D1 * !X)	0.00794	0.00801	0.00796
	(A2 * !C1 * D1 * !X)	0.00033	0.00030	0.00032
	(A2 * !C1 * !D1 * !X)	0.00785	0.00789	0.00787
	(A2 * !C1 * !D1 * !X)	0.00030	0.00028	0.00029
	(A1 * !A2 * C1 * !D1 * !X)	0.00790	0.00792	0.00791
	(A1 * !A2 * C1 * !D1 * !X)	0.00033	0.00032	0.00034
	(A1 * !A2 * !C1 * D1 * !X)	0.00794	0.00800	0.00796
	(A1 * !A2 * !C1 * D1 * !X)	0.00031	0.00029	0.00031
	(A1 * !A2 * !C1 * !D1 * !X)	0.00788	0.00790	0.00788
	(A1 * !A2 * !C1 * !D1 * !X)	0.00028	0.00028	0.00029
	(!A1 * !A2 * C1 * D1 * !X)	0.00567	0.00569	0.00567
	(!A1 * !A2 * C1 * D1 * !X)	0.00038	0.00036	0.00040
	(!A1 * !A2 * C1 * !D1 * !X)	0.00611	0.00613	0.00611
	(!A1 * !A2 * C1 * !D1 * !X)	0.00027	0.00025	0.00027
	(!A1 * !A2 * !C1 * D1 * !X)	0.00610	0.00610	0.00609
	(!A1 * !A2 * !C1 * D1 * !X)	0.00026	0.00026	0.00027
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00613	0.00614	0.00612
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00026	0.00025	0.00027

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)**	-0.00046	-0.00072	-0.00077
	(A2 * C1 * !D1 * !X)	0.00331	0.00311	0.00304
	(A2 * !C1 * D1 * !X)	-0.00058	-0.00076	-0.00078
	(A2 * !C1 * D1 * !X)	0.00324	0.00309	0.00305
	(A2 * !C1 * !D1 * !X)	-0.00072	-0.00080	-0.00081
	(A2 * !C1 * !D1 * !X)	0.00303	0.00302	0.00301
	(A1 * !A2 * C1 * !D1 * !X)	-0.00039	-0.00076	-0.00077
	(A1 * !A2 * C1 * !D1 * !X)	0.00337	0.00309	0.00304
	(A1 * !A2 * !C1 * D1 * !X)	-0.00055	-0.00079	-0.00078
	(A1 * !A2 * !C1 * D1 * !X)	0.00328	0.00309	0.00305
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00071	-0.00082	-0.00081
	(A1 * !A2 * !C1 * !D1 * !X)	0.00305	0.00304	0.00301
	(!A1 * !A2 * C1 * D1 * !X)	0.00039	0.00039	0.00037
	(!A1 * !A2 * C1 * D1 * !X)	0.00315	0.00316	0.00305
	(!A1 * !A2 * C1 * !D1 * !X)	0.00007	0.00010	0.00008
	(!A1 * !A2 * C1 * !D1 * !X)	0.00322	0.00324	0.00310
	(!A1 * !A2 * !C1 * D1 * !X)	0.00006	0.00003	0.00001
	(!A1 * !A2 * !C1 * D1 * !X)	0.00319	0.00316	0.00304
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00003	-0.00006	-0.00002
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00311	0.00310	0.00304

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00055	0.00027	0.00023
	(A2 * C1 * !D1 * !X)	0.00462	0.00443	0.00436
	(A2 * !C1 * D1 * !X)	0.00041	0.00024	0.00021
	(A2 * !C1 * D1 * !X)	0.00456	0.00440	0.00436
	(A2 * !C1 * !D1 * !X)	0.00025	0.00019	0.00019
	(A2 * !C1 * !D1 * !X)	0.00435	0.00434	0.00433
	(A1 * !A2 * C1 * !D1 * !X)	0.00061	0.00024	0.00023
	(A1 * !A2 * C1 * !D1 * !X)	0.00470	0.00442	0.00436
	(A1 * !A2 * !C1 * D1 * !X)	0.00045	0.00021	0.00021
	(A1 * !A2 * !C1 * D1 * !X)	0.00459	0.00440	0.00436
	(A1 * !A2 * !C1 * !D1 * !X)	0.00028	0.00018	0.00019
	(A1 * !A2 * !C1 * !D1 * !X)	0.00435	0.00436	0.00433
	(!A1 * !A2 * C1 * D1 * !X)	0.00140	0.00139	0.00137
	(!A1 * !A2 * C1 * D1 * !X)	0.00445	0.00448	0.00438
	(!A1 * !A2 * C1 * !D1 * !X)	0.00103	0.00107	0.00104
	(!A1 * !A2 * C1 * !D1 * !X)	0.00454	0.00457	0.00442
	(!A1 * !A2 * !C1 * D1 * !X)	0.00105	0.00102	0.00099
	(!A1 * !A2 * !C1 * D1 * !X)	0.00451	0.00449	0.00437
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00095	0.00093	0.00096
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00443	0.00443	0.00437

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00117	0.00053	0.00050
	(A2 * C1 * !D1 * !X)	0.00866	0.00821	0.00810
	(A2 * !C1 * D1 * !X)	0.00093	0.00047	0.00049
	(A2 * !C1 * D1 * !X)	0.00851	0.00820	0.00812
	(A2 * !C1 * !D1 * !X)	0.00059	0.00040	0.00043
	(A2 * !C1 * !D1 * !X)	0.00806	0.00810	0.00805
	(A1 * !A2 * C1 * !D1 * !X)	0.00133	0.00049	0.00050
	(A1 * !A2 * C1 * !D1 * !X)	0.00881	0.00820	0.00810
	(A1 * !A2 * !C1 * D1 * !X)	0.00101	0.00045	0.00048
	(A1 * !A2 * !C1 * D1 * !X)	0.00861	0.00819	0.00812
	(A1 * !A2 * !C1 * !D1 * !X)	0.00061	0.00040	0.00043
	(A1 * !A2 * !C1 * !D1 * !X)	0.00809	0.00810	0.00805
	(!A1 * !A2 * C1 * D1 * !X)	0.00293	0.00290	0.00285
	(!A1 * !A2 * C1 * D1 * !X)	0.00833	0.00837	0.00817
	(!A1 * !A2 * C1 * !D1 * !X)	0.00215	0.00224	0.00219
	(!A1 * !A2 * C1 * !D1 * !X)	0.00843	0.00856	0.00826
	(!A1 * !A2 * !C1 * D1 * !X)	0.00226	0.00222	0.00219
	(!A1 * !A2 * !C1 * D1 * !X)	0.00845	0.00841	0.00817
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00207	0.00204	0.00212
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00830	0.00828	0.00816

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)**	0.00294	0.00297	0.00294
	(A2 * B1 * !D1 * !X)	-0.00101	-0.00103	-0.00102
	(A2 * !B1 * D1 * !X)	0.00174	0.00174	0.00173
	(A2 * !B1 * D1 * !X)	-0.00104	-0.00105	-0.00103
	(A2 * !B1 * !D1 * !X)	0.00191	0.00191	0.00190
	(A2 * !B1 * !D1 * !X)	-0.00104	-0.00105	-0.00104
	(A1 * !A2 * B1 * !D1 * !X)	0.00294	0.00296	0.00294
	(A1 * !A2 * B1 * !D1 * !X)	-0.00102	-0.00103	-0.00102
	(!A2 * !B1 * D1 * !X)	0.00174	0.00174	0.00173
	(!A2 * !B1 * D1 * !X)	-0.00104	-0.00105	-0.00103
	(!A2 * !B1 * !D1 * !X)	0.00191	0.00191	0.00190
	(!A2 * !B1 * !D1 * !X)	-0.00104	-0.00105	-0.00104
	(!A1 * !A2 * B1 * D1 * !X)	0.00177	0.00177	0.00175
	(!A1 * !A2 * B1 * D1 * !X)	-0.00104	-0.00105	-0.00103
	(!A1 * !A2 * B1 * !D1 * !X)	0.00200	0.00201	0.00200
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00103	-0.00104	-0.00103

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00398	0.00400	0.00398
	(A2 * B1 * !D1 * !X)	-0.00021	-0.00023	-0.00021
	(A2 * !B1 * D1 * !X)	0.00282	0.00282	0.00282
	(A2 * !B1 * D1 * !X)	-0.00024	-0.00025	-0.00023
	(A2 * !B1 * !D1 * !X)	0.00304	0.00305	0.00304
	(A2 * !B1 * !D1 * !X)	-0.00024	-0.00025	-0.00023
	(A1 * !A2 * B1 * !D1 * !X)	0.00397	0.00400	0.00398
	(A1 * !A2 * B1 * !D1 * !X)	-0.00021	-0.00023	-0.00021
	(!A2 * !B1 * D1 * !X)	0.00282	0.00282	0.00282
	(!A2 * !B1 * D1 * !X)	-0.00024	-0.00025	-0.00023
	(!A2 * !B1 * !D1 * !X)	0.00304	0.00305	0.00304
	(!A2 * !B1 * !D1 * !X)	-0.00024	-0.00025	-0.00023
	(!A1 * !A2 * B1 * D1 * !X)	0.00283	0.00283	0.00283
	(!A1 * !A2 * B1 * D1 * !X)	-0.00024	-0.00025	-0.00023
	(!A1 * !A2 * B1 * !D1 * !X)	0.00310	0.00311	0.00310
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00023	-0.00024	-0.00023

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00804	0.00807	0.00806
	(A2 * B1 * !D1 * !X)	0.00024	0.00023	0.00024
	(A2 * !B1 * D1 * !X)	0.00569	0.00570	0.00571
	(A2 * !B1 * D1 * !X)	0.00017	0.00017	0.00020
	(A2 * !B1 * !D1 * !X)	0.00619	0.00620	0.00618
	(A2 * !B1 * !D1 * !X)	0.00017	0.00016	0.00017
	(A1 * !A2 * B1 * !D1 * !X)	0.00805	0.00809	0.00806
	(A1 * !A2 * B1 * !D1 * !X)	0.00024	0.00022	0.00024
	(!A2 * !B1 * D1 * !X)	0.00569	0.00570	0.00571
	(!A2 * !B1 * D1 * !X)	0.00017	0.00016	0.00020
	(!A2 * !B1 * !D1 * !X)	0.00619	0.00620	0.00618
	(!A2 * !B1 * !D1 * !X)	0.00017	0.00016	0.00017
	(!A1 * !A2 * B1 * D1 * !X)	0.00563	0.00564	0.00567
	(!A1 * !A2 * B1 * D1 * !X)	0.00017	0.00017	0.00020
	(!A1 * !A2 * B1 * !D1 * !X)	0.00621	0.00621	0.00620
	(!A1 * !A2 * B1 * !D1 * !X)	0.00017	0.00017	0.00018

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)**	-0.00053	-0.00079	-0.00078
	(A2 * B1 * !D1 * !X)	0.00344	0.00322	0.00316
	(A2 * !B1 * D1 * !X)	0.00040	0.00039	0.00039
	(A2 * !B1 * D1 * !X)	0.00320	0.00321	0.00315
	(A2 * !B1 * !D1 * !X)	0.00016	0.00017	0.00015
	(A2 * !B1 * !D1 * !X)	0.00325	0.00325	0.00316
	(A1 * !A2 * B1 * !D1 * !X)	-0.00050	-0.00079	-0.00078
	(A1 * !A2 * B1 * !D1 * !X)	0.00347	0.00322	0.00316
	(!A2 * !B1 * D1 * !X)	0.00040	0.00039	0.00039
	(!A2 * !B1 * D1 * !X)	0.00320	0.00321	0.00315
	(!A2 * !B1 * !D1 * !X)	0.00017	0.00017	0.00015
	(!A2 * !B1 * !D1 * !X)	0.00324	0.00325	0.00316
	(!A1 * !A2 * B1 * D1 * !X)	0.00041	0.00039	0.00039
	(!A1 * !A2 * B1 * D1 * !X)	0.00318	0.00323	0.00315
	(!A1 * !A2 * B1 * !D1 * !X)	0.00014	0.00008	0.00008
	(!A1 * !A2 * B1 * !D1 * !X)	0.00342	0.00336	0.00326

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00054	0.00026	0.00025
	(A2 * B1 * !D1 * !X)	0.00475	0.00451	0.00444
	(A2 * !B1 * D1 * !X)	0.00140	0.00139	0.00138
	(A2 * !B1 * D1 * !X)	0.00448	0.00450	0.00443
	(A2 * !B1 * !D1 * !X)	0.00111	0.00112	0.00109
	(A2 * !B1 * !D1 * !X)	0.00454	0.00454	0.00444
	(A1 * !A2 * B1 * !D1 * !X)	0.00057	0.00025	0.00025
	(A1 * !A2 * B1 * !D1 * !X)	0.00477	0.00450	0.00444
	(!A2 * !B1 * D1 * !X)	0.00140	0.00139	0.00138
	(!A2 * !B1 * D1 * !X)	0.00448	0.00450	0.00443
	(!A2 * !B1 * !D1 * !X)	0.00111	0.00112	0.00109
	(!A2 * !B1 * !D1 * !X)	0.00454	0.00454	0.00444
	(!A1 * !A2 * B1 * D1 * !X)	0.00141	0.00140	0.00139
	(!A1 * !A2 * B1 * D1 * !X)	0.00447	0.00451	0.00443
	(!A1 * !A2 * B1 * !D1 * !X)	0.00115	0.00108	0.00107
	(!A1 * !A2 * B1 * !D1 * !X)	0.00470	0.00465	0.00454

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00122	0.00043	0.00040
	(A2 * B1 * !D1 * !X)	0.00904	0.00828	0.00821
	(A2 * !B1 * D1 * !X)	0.00274	0.00273	0.00270
	(A2 * !B1 * D1 * !X)	0.00836	0.00840	0.00821
	(A2 * !B1 * !D1 * !X)	0.00212	0.00214	0.00207
	(A2 * !B1 * !D1 * !X)	0.00844	0.00847	0.00825
	(A1 * !A2 * B1 * !D1 * !X)	0.00128	0.00046	0.00040
	(A1 * !A2 * B1 * !D1 * !X)	0.00909	0.00833	0.00821
	(!A2 * !B1 * D1 * !X)	0.00274	0.00273	0.00270
	(!A2 * !B1 * D1 * !X)	0.00836	0.00840	0.00821
	(!A2 * !B1 * !D1 * !X)	0.00212	0.00214	0.00207
	(!A2 * !B1 * !D1 * !X)	0.00844	0.00847	0.00825
	(!A1 * !A2 * B1 * D1 * !X)	0.00281	0.00279	0.00277
	(!A1 * !A2 * B1 * D1 * !X)	0.00835	0.00839	0.00822
	(!A1 * !A2 * B1 * !D1 * !X)	0.00236	0.00219	0.00215
	(!A1 * !A2 * B1 * !D1 * !X)	0.00884	0.00867	0.00842

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00165	0.00165	0.00162
	(A2 * !C1 * !X)	-0.00143	-0.00145	-0.00148
	(A2 * !B1 * C1 * !X)	0.00165	0.00165	0.00161
	(A2 * !B1 * C1 * !X)	-0.00137	-0.00139	-0.00148
	(!A2 * !C1 * !X)	0.00165	0.00165	0.00162
	(!A2 * !C1 * !X)	-0.00143	-0.00145	-0.00148
	(!A2 * !B1 * C1 * !X)	0.00165	0.00165	0.00161
	(!A2 * !B1 * C1 * !X)	-0.00137	-0.00139	-0.00148
	(!A1 * !A2 * B1 * C1 * !X)	0.00174	0.00174	0.00165
	(!A1 * !A2 * B1 * C1 * !X)	-0.00123	-0.00124	-0.00145

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00272	0.00272	0.00269
	(A2 * !C1 * !X)	-0.00069	-0.00070	-0.00074
	(A2 * !B1 * C1 * !X)	0.00271	0.00272	0.00266
	(A2 * !B1 * C1 * !X)	-0.00062	-0.00064	-0.00074
	(!A2 * !C1 * !X)	0.00272	0.00272	0.00269
	(!A2 * !C1 * !X)	-0.00068	-0.00070	-0.00074
	(!A2 * !B1 * C1 * !X)	0.00271	0.00272	0.00266
	(!A2 * !B1 * C1 * !X)	-0.00062	-0.00064	-0.00074
	(!A1 * !A2 * B1 * C1 * !X)	0.00280	0.00280	0.00269
	(!A1 * !A2 * B1 * C1 * !X)	-0.00048	-0.00048	-0.00071
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00551	0.00551	0.00542
	(A2 * !C1 * !X)	-0.00043	-0.00043	-0.00059
	(A2 * !B1 * C1 * !X)	0.00546	0.00547	0.00534
	(A2 * !B1 * C1 * !X)	-0.00028	-0.00031	-0.00056
	(!A2 * !C1 * !X)	0.00551	0.00551	0.00542
	(!A2 * !C1 * !X)	-0.00043	-0.00043	-0.00059
	(!A2 * !B1 * C1 * !X)	0.00546	0.00547	0.00534
	(!A2 * !B1 * C1 * !X)	-0.00028	-0.00030	-0.00056
	(!A1 * !A2 * B1 * C1 * !X)	0.00558	0.00559	0.00536
	(!A1 * !A2 * B1 * C1 * !X)	-0.00001	-0.00004	-0.00051

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00048	0.00047	0.00048
	(A2 * !C1 * !X)	0.00358	0.00360	0.00358
	(A2 * !B1 * C1 * !X)	0.00050	0.00049	0.00050
	(A2 * !B1 * C1 * !X)	0.00356	0.00361	0.00358
	(!A2 * !C1 * !X)	0.00048	0.00047	0.00048
	(!A2 * !C1 * !X)	0.00358	0.00362	0.00358
	(!A2 * !B1 * C1 * !X)	0.00050	0.00050	0.00050
	(!A2 * !B1 * C1 * !X)	0.00356	0.00359	0.00358
	(!A1 * !A2 * B1 * C1 * !X)	0.00050	0.00049	0.00050
	(!A1 * !A2 * B1 * C1 * !X)	0.00357	0.00360	0.00358
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00150	0.00149	0.00150
	(A2 * !C1 * !X)	0.00492	0.00495	0.00492
	(A2 * !B1 * C1 * !X)	0.00153	0.00152	0.00153
	(A2 * !B1 * C1 * !X)	0.00491	0.00493	0.00492
	(!A2 * !C1 * !X)	0.00150	0.00149	0.00150
	(!A2 * !C1 * !X)	0.00492	0.00495	0.00492
	(!A2 * !B1 * C1 * !X)	0.00153	0.00152	0.00153
	(!A2 * !B1 * C1 * !X)	0.00491	0.00493	0.00492
	(!A1 * !A2 * B1 * C1 * !X)	0.00152	0.00153	0.00153
	(!A1 * !A2 * B1 * C1 * !X)	0.00493	0.00494	0.00492
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00296	0.00293	0.00296
	(A2 * !C1 * !X)	0.00893	0.00902	0.00895
	(A2 * !B1 * C1 * !X)	0.00304	0.00303	0.00304
	(A2 * !B1 * C1 * !X)	0.00892	0.00896	0.00894
	(!A2 * !C1 * !X)	0.00296	0.00293	0.00296
	(!A2 * !C1 * !X)	0.00893	0.00902	0.00895
	(!A2 * !B1 * C1 * !X)	0.00304	0.00303	0.00304
	(!A2 * !B1 * C1 * !X)	0.00892	0.00896	0.00894
	(!A1 * !A2 * B1 * C1 * !X)	0.00307	0.00305	0.00307
	(!A1 * !A2 * B1 * C1 * !X)	0.00893	0.00900	0.00894

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00278	0.00287	0.00292	0.00284	0.89955
sky130_fd_sc_hs__o211ai_2	0.00542	0.00551	0.00550	0.00535	1.54480
sky130_fd_sc_hs__o211ai_4	0.01070	0.01087	0.00784	0.00803	2.69773

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211ai_1	0.00000	58.34780	357.96300
sky130_fd_sc_hs__o211ai_2	0.00000	116.66600	715.61800
sky130_fd_sc_hs__o211ai_4	0.00000	143.77900	953.53500

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)	0.06946	0.67523	8.53331
	A2->Y (FR)	0.06136	0.71099	9.17711
	B1->Y (FR)	0.02994	0.49650	6.58126
	C1->Y (FR)	0.02458	0.48898	6.54154
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.06735	0.57692	8.31970
	A2->Y (FR)	0.05526	0.61261	8.97830
	B1->Y (FR)	0.02480	0.40220	5.99024
	C1->Y (FR)	0.01836	0.38791	5.87782
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.06553	0.48020	7.86021
	A2->Y (FR)	0.05414	0.53129	8.72869
	B1->Y (FR)	0.03609	0.51221	8.57132
	C1->Y (FR)	0.02363	0.48817	8.36998

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.04458	0.37332	4.53470
	A2->Y (RF)	0.03651	0.35478	4.38250
	B1->Y (RF)	0.04048	0.43339	5.46061
	C1->Y (RF)	0.03424	0.46150	5.93639
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.04312	0.28847	4.11865
	A2->Y (RF)	0.03393	0.27718	4.08205
	B1->Y (RF)	0.03946	0.37148	5.40685
	C1->Y (RF)	0.03075	0.39839	5.91437
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.04425	0.24191	4.15693
	A2->Y (RF)	0.03202	0.21819	3.92029
	B1->Y (RF)	0.03679	0.29868	5.14793
	C1->Y (RF)	0.02873	0.34734	6.04488

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00217	0.00683	0.09108
	A1	0.01253	0.01716	0.10105
	A2	0.00219	0.00825	0.10245
	A2	0.01104	0.01708	0.11114
	B1	0.00072	0.00907	0.13212
	B1	0.00787	0.01623	0.13900
	C1	-0.00006	0.00807	0.12509
	C1	0.00563	0.01379	0.13051
sky130_fd_sc_hs__o211ai_2	A1	0.00279	0.01232	0.17164
	A1	0.02374	0.03319	0.19161
	A2	0.00278	0.01487	0.18477
	A2	0.02053	0.03260	0.20184
	B1	0.00078	0.01794	0.24938
	B1	0.01499	0.03220	0.26381
	C1	-0.00180	0.01545	0.23673
	C1	0.00928	0.02653	0.24873
sky130_fd_sc_hs__o211ai_4	A1	0.00541	0.02485	0.31458
	A1	0.04638	0.06583	0.35560
	A2	0.00537	0.02944	0.33918
	A2	0.04015	0.06423	0.37293
	B1	0.00060	0.02210	0.28197
	B1	0.02302	0.04450	0.30360
	C1	-0.00363	0.01797	0.26778
	C1	0.01307	0.03468	0.28415

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.01876	0.02220	0.09149
	A1	0.00838	0.01182	0.08110
	A2	0.01684	0.02023	0.08342
	A2	0.00796	0.01135	0.07452
	B1	0.01294	0.01740	0.09358
	B1	0.00578	0.01024	0.08601
	C1	0.01170	0.01685	0.09322
	C1	0.00601	0.01112	0.08657
sky130_fd_sc_hs__o211ai_2	A1	0.03729	0.04514	0.18614
	A1	0.01629	0.02401	0.16514
	A2	0.03219	0.04022	0.16581
	A2	0.01438	0.02237	0.14766
	B1	0.02406	0.03426	0.18325
	B1	0.00983	0.01988	0.16829
	C1	0.02130	0.03311	0.18057
	C1	0.01022	0.02184	0.16947
sky130_fd_sc_hs__o211ai_4	A1	0.06241	0.07972	0.35014
	A1	0.02138	0.03840	0.30765
	A2	0.05214	0.06970	0.31192
	A2	0.01727	0.03476	0.27509
	B1	0.03456	0.04809	0.21820
	B1	0.01208	0.02549	0.19350
	C1	0.02933	0.04349	0.19823
	C1	0.01266	0.02680	0.18159

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)**	0.00493	0.00453	0.00513
	(A2 * B1 * C1 * !Y)	0.00035	-0.00008	0.00058
	(A2 * B1 * !C1 * Y)	0.00210	0.00212	0.00209
	(A2 * B1 * !C1 * Y)	-0.00244	-0.00245	-0.00243
	(A2 * !B1 * Y)	0.00209	0.00211	0.00208
	(A2 * !B1 * Y)	-0.00245	-0.00245	-0.00243
	(!A2 * B1 * !C1 * Y)	0.00203	0.00204	0.00203
	(!A2 * B1 * !C1 * Y)	-0.00243	-0.00244	-0.00243
	(!A2 * !B1 * C1 * Y)	0.00204	0.00207	0.00205
	(!A2 * !B1 * C1 * Y)	-0.00244	-0.00246	-0.00244
	(!A2 * !B1 * !C1 * Y)	0.00201	0.00202	0.00202
	(!A2 * !B1 * !C1 * Y)	-0.00245	-0.00246	-0.00246
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.01026	0.00912	0.01019
	(A2 * B1 * C1 * !Y)	0.00108	-0.00010	0.00107
	(A2 * B1 * !C1 * Y)	0.00409	0.00409	0.00408
	(A2 * B1 * !C1 * Y)	-0.00500	-0.00500	-0.00498
	(A2 * !B1 * Y)	0.00408	0.00408	0.00407
	(A2 * !B1 * Y)	-0.00501	-0.00501	-0.00499
	(!A2 * B1 * !C1 * Y)	0.00396	0.00399	0.00395
	(!A2 * B1 * !C1 * Y)	-0.00501	-0.00502	-0.00499
	(!A2 * !B1 * C1 * Y)	0.00400	0.00402	0.00400
	(!A2 * !B1 * C1 * Y)	-0.00503	-0.00504	-0.00502
	(!A2 * !B1 * !C1 * Y)	0.00392	0.00398	0.00394
	(!A2 * !B1 * !C1 * Y)	-0.00504	-0.00507	-0.00505

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.01600	0.01387	0.01606
	(A2 * B1 * C1 * !Y)	-0.00217	-0.00435	-0.00194
	(A2 * B1 * !C1 * Y)	0.00801	0.00805	0.00801
	(A2 * B1 * !C1 * Y)	-0.00993	-0.00994	-0.00988
	(A2 * !B1 * Y)	0.00800	0.00803	0.00799
	(A2 * !B1 * Y)	-0.00994	-0.00996	-0.00990
	(!A2 * B1 * !C1 * Y)	0.00778	0.00782	0.00777
	(!A2 * B1 * !C1 * Y)	-0.00994	-0.00995	-0.00990
	(!A2 * !B1 * C1 * Y)	0.00779	0.00784	0.00782
	(!A2 * !B1 * C1 * Y)	-0.00993	-0.00996	-0.00994
	(!A2 * !B1 * !C1 * Y)	0.00757	0.00772	0.00762
	(!A2 * !B1 * !C1 * Y)	-0.00997	-0.01007	-0.01000

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)**	0.00104	0.00101	0.00085
	(A2 * B1 * C1 * !Y)	0.00560	0.00560	0.00542
	(A2 * B1 * !C1 * Y)	-0.00204	-0.00205	-0.00204
	(A2 * B1 * !C1 * Y)	0.00249	0.00251	0.00249
	(A2 * !B1 * Y)	-0.00204	-0.00205	-0.00204
	(A2 * !B1 * Y)	0.00248	0.00251	0.00248
	(!A2 * B1 * !C1 * Y)	-0.00168	-0.00194	-0.00198
	(!A2 * B1 * !C1 * Y)	0.00271	0.00256	0.00249
	(!A2 * !B1 * C1 * Y)	-0.00178	-0.00196	-0.00199
	(!A2 * !B1 * C1 * Y)	0.00268	0.00254	0.00249
	(!A2 * !B1 * !C1 * Y)	-0.00194	-0.00200	-0.00201
	(!A2 * !B1 * !C1 * Y)	0.00248	0.00249	0.00247

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00220	0.00213	0.00180
	(A2 * B1 * C1 * !Y)	0.01134	0.01133	0.01098
	(A2 * B1 * !C1 * Y)	-0.00397	-0.00399	-0.00398
	(A2 * B1 * !C1 * Y)	0.00508	0.00512	0.00509
	(A2 * !B1 * Y)	-0.00398	-0.00400	-0.00399
	(A2 * !B1 * Y)	0.00507	0.00511	0.00509
	(!A2 * B1 * !C1 * Y)	-0.00337	-0.00380	-0.00386
	(!A2 * B1 * !C1 * Y)	0.00547	0.00523	0.00512
	(!A2 * !B1 * C1 * Y)	-0.00355	-0.00385	-0.00389
	(!A2 * !B1 * C1 * Y)	0.00540	0.00516	0.00511
	(!A2 * !B1 * !C1 * Y)	-0.00380	-0.00390	-0.00393
	(!A2 * !B1 * !C1 * Y)	0.00508	0.00508	0.00507
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00038	0.00021	-0.00042
	(A2 * B1 * C1 * !Y)	0.01844	0.01848	0.01770
	(A2 * B1 * !C1 * Y)	-0.00779	-0.00785	-0.00780
	(A2 * B1 * !C1 * Y)	0.01009	0.01021	0.01010
	(A2 * !B1 * Y)	-0.00781	-0.00787	-0.00782
	(A2 * !B1 * Y)	0.01007	0.01019	0.01009
	(!A2 * B1 * !C1 * Y)	-0.00636	-0.00739	-0.00754
	(!A2 * B1 * !C1 * Y)	0.01110	0.01043	0.01014
	(!A2 * !B1 * C1 * Y)	-0.00672	-0.00760	-0.00759
	(!A2 * !B1 * C1 * Y)	0.01093	0.01034	0.01015
	(!A2 * !B1 * !C1 * Y)	-0.00737	-0.00767	-0.00762
	(!A2 * !B1 * !C1 * Y)	0.01009	0.01008	0.01004

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)**	0.00431	0.00434	0.00435
	(A1 * B1 * C1 * !Y)	0.00110	0.00109	0.00116
	(A1 * B1 * !C1 * Y)	0.00203	0.00206	0.00204
	(A1 * B1 * !C1 * Y)	-0.00245	-0.00246	-0.00245
	(A1 * !B1 * C1 * Y)	0.00203	0.00205	0.00203
	(A1 * !B1 * C1 * Y)	-0.00245	-0.00246	-0.00245
	(A1 * !B1 * !C1 * Y)	0.00201	0.00202	0.00202
	(A1 * !B1 * !C1 * Y)	-0.00247	-0.00248	-0.00247
	(!A1 * B1 * !C1 * Y)	0.00197	0.00199	0.00198
	(!A1 * B1 * !C1 * Y)	-0.00245	-0.00246	-0.00245
	(!A1 * !B1 * C1 * Y)	0.00199	0.00201	0.00200
	(!A1 * !B1 * C1 * Y)	-0.00246	-0.00247	-0.00246
	(!A1 * !B1 * !C1 * Y)	0.00197	0.00198	0.00197
	(!A1 * !B1 * !C1 * Y)	-0.00248	-0.00249	-0.00247
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00878	0.00887	0.00885
	(A1 * B1 * C1 * !Y)	0.00234	0.00231	0.00242
	(A1 * B1 * !C1 * Y)	0.00411	0.00414	0.00410
	(A1 * B1 * !C1 * Y)	-0.00496	-0.00496	-0.00493
	(A1 * !B1 * C1 * Y)	0.00410	0.00413	0.00409
	(A1 * !B1 * C1 * Y)	-0.00497	-0.00497	-0.00494
	(A1 * !B1 * !C1 * Y)	0.00402	0.00409	0.00405
	(A1 * !B1 * !C1 * Y)	-0.00495	-0.00501	-0.00497
	(!A1 * B1 * !C1 * Y)	0.00393	0.00397	0.00395
	(!A1 * B1 * !C1 * Y)	-0.00493	-0.00496	-0.00493
	(!A1 * !B1 * C1 * Y)	0.00401	0.00402	0.00400
	(!A1 * !B1 * C1 * Y)	-0.00497	-0.00498	-0.00496
	(!A1 * !B1 * !C1 * Y)	0.00392	0.00397	0.00393
	(!A1 * !B1 * !C1 * Y)	-0.00498	-0.00501	-0.00499

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.01319	0.01332	0.01331
	(A1 * B1 * C1 * !Y)	0.00039	0.00037	0.00060
	(A1 * B1 * !C1 * Y)	0.00805	0.00810	0.00801
	(A1 * B1 * !C1 * Y)	-0.00999	-0.01000	-0.00992
	(A1 * !B1 * C1 * Y)	0.00793	0.00809	0.00799
	(A1 * !B1 * C1 * Y)	-0.00991	-0.01002	-0.00994
	(A1 * !B1 * !C1 * Y)	0.00789	0.00801	0.00792
	(A1 * !B1 * !C1 * Y)	-0.01001	-0.01008	-0.01000
	(!A1 * B1 * !C1 * Y)	0.00772	0.00783	0.00775
	(!A1 * B1 * !C1 * Y)	-0.00992	-0.00999	-0.00993
	(!A1 * !B1 * C1 * Y)	0.00779	0.00791	0.00781
	(!A1 * !B1 * C1 * Y)	-0.00997	-0.01004	-0.00998
	(!A1 * !B1 * !C1 * Y)	0.00766	0.00776	0.00769
	(!A1 * !B1 * !C1 * Y)	-0.01001	-0.01008	-0.01003

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)**	0.00064	0.00062	0.00032
	(A1 * B1 * C1 * !Y)	0.00384	0.00382	0.00354
	(A1 * B1 * !C1 * Y)	-0.00198	-0.00200	-0.00199
	(A1 * B1 * !C1 * Y)	0.00249	0.00252	0.00250
	(A1 * !B1 * C1 * Y)	-0.00199	-0.00200	-0.00199
	(A1 * !B1 * C1 * Y)	0.00249	0.00252	0.00250
	(A1 * !B1 * !C1 * Y)	-0.00201	-0.00201	-0.00201
	(A1 * !B1 * !C1 * Y)	0.00247	0.00248	0.00248
	(!A1 * B1 * !C1 * Y)	-0.00163	-0.00189	-0.00192
	(!A1 * B1 * !C1 * Y)	0.00273	0.00257	0.00251
	(!A1 * !B1 * C1 * Y)	-0.00173	-0.00191	-0.00194
	(!A1 * !B1 * C1 * Y)	0.00269	0.00254	0.00251
	(!A1 * !B1 * !C1 * Y)	-0.00189	-0.00195	-0.00196
	(!A1 * !B1 * !C1 * Y)	0.00249	0.00250	0.00249
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00120	0.00116	0.00061
	(A1 * B1 * C1 * !Y)	0.00770	0.00767	0.00713
	(A1 * B1 * !C1 * Y)	-0.00398	-0.00401	-0.00399
	(A1 * B1 * !C1 * Y)	0.00500	0.00505	0.00503
	(A1 * !B1 * C1 * Y)	-0.00398	-0.00401	-0.00400
	(A1 * !B1 * C1 * Y)	0.00500	0.00504	0.00502
	(A1 * !B1 * !C1 * Y)	-0.00402	-0.00406	-0.00404
	(A1 * !B1 * !C1 * Y)	0.00497	0.00503	0.00499
	(!A1 * B1 * !C1 * Y)	-0.00332	-0.00382	-0.00387
	(!A1 * B1 * !C1 * Y)	0.00546	0.00515	0.00506
	(!A1 * !B1 * C1 * Y)	-0.00351	-0.00384	-0.00389
	(!A1 * !B1 * C1 * Y)	0.00539	0.00511	0.00506
	(!A1 * !B1 * !C1 * Y)	-0.00380	-0.00391	-0.00393
	(!A1 * !B1 * !C1 * Y)	0.00502	0.00502	0.00501

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00152	-0.00168	-0.00276
	(A1 * B1 * C1 * !Y)	0.01120	0.01122	0.01011
	(A1 * B1 * !C1 * Y)	-0.00777	-0.00779	-0.00780
	(A1 * B1 * !C1 * Y)	0.01009	0.01012	0.01013
	(A1 * !B1 * C1 * Y)	-0.00779	-0.00782	-0.00781
	(A1 * !B1 * C1 * Y)	0.01007	0.01011	0.01011
	(A1 * !B1 * !C1 * Y)	-0.00787	-0.00793	-0.00788
	(A1 * !B1 * !C1 * Y)	0.01002	0.01013	0.01005
	(!A1 * B1 * !C1 * Y)	-0.00628	-0.00735	-0.00754
	(!A1 * B1 * !C1 * Y)	0.01118	0.01046	0.01017
	(!A1 * !B1 * C1 * Y)	-0.00671	-0.00755	-0.00759
	(!A1 * !B1 * C1 * Y)	0.01094	0.01027	0.01017
	(!A1 * !B1 * !C1 * Y)	-0.00736	-0.00765	-0.00767
	(!A1 * !B1 * !C1 * Y)	0.01011	0.01011	0.01007

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00195	0.00198	0.00196
	(A2 * !C1 * Y)	-0.00256	-0.00258	-0.00257
	(A1 * !A2 * !C1 * Y)	0.00194	0.00197	0.00195
	(A1 * !A2 * !C1 * Y)	-0.00256	-0.00258	-0.00257
	(!A1 * !A2 * C1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !A2 * C1 * Y)	-0.00258	-0.00260	-0.00258
	(!A1 * !A2 * !C1 * Y)	0.00107	0.00109	0.00108
	(!A1 * !A2 * !C1 * Y)	-0.00258	-0.00260	-0.00259
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00391	0.00394	0.00391
	(A2 * !C1 * Y)	-0.00504	-0.00505	-0.00502
	(A1 * !A2 * !C1 * Y)	0.00389	0.00395	0.00391
	(A1 * !A2 * !C1 * Y)	-0.00502	-0.00506	-0.00502
	(!A1 * !A2 * C1 * Y)	0.00150	0.00152	0.00154
	(!A1 * !A2 * C1 * Y)	-0.00507	-0.00511	-0.00507
	(!A1 * !A2 * !C1 * Y)	0.00206	0.00209	0.00206
	(!A1 * !A2 * !C1 * Y)	-0.00510	-0.00513	-0.00510
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00772	0.00782	0.00775
	(A2 * !C1 * Y)	-0.00499	-0.00502	-0.00499
	(A1 * !A2 * !C1 * Y)	0.00772	0.00782	0.00775
	(A1 * !A2 * !C1 * Y)	-0.00499	-0.00502	-0.00499
	(!A1 * !A2 * C1 * Y)	0.00292	0.00296	0.00297
	(!A1 * !A2 * C1 * Y)	-0.00507	-0.00511	-0.00507
	(!A1 * !A2 * !C1 * Y)	0.00396	0.00399	0.00396
	(!A1 * !A2 * !C1 * Y)	-0.00511	-0.00514	-0.00511

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00162	-0.00185	-0.00188
	(A2 * !C1 * Y)	0.00288	0.00270	0.00263
	(A1 * !A2 * !C1 * Y)	-0.00159	-0.00188	-0.00188
	(A1 * !A2 * !C1 * Y)	0.00294	0.00270	0.00263
	(!A1 * !A2 * C1 * Y)	-0.00072	-0.00072	-0.00074
	(!A1 * !A2 * C1 * Y)	0.00270	0.00273	0.00264
	(!A1 * !A2 * !C1 * Y)	-0.00104	-0.00106	-0.00108
	(!A1 * !A2 * !C1 * Y)	0.00282	0.00279	0.00267
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00310	-0.00377	-0.00378
	(A2 * !C1 * Y)	0.00585	0.00530	0.00516
	(A1 * !A2 * !C1 * Y)	-0.00300	-0.00377	-0.00378
	(A1 * !A2 * !C1 * Y)	0.00595	0.00530	0.00516
	(!A1 * !A2 * C1 * Y)	-0.00134	-0.00137	-0.00140
	(!A1 * !A2 * C1 * Y)	0.00533	0.00542	0.00519
	(!A1 * !A2 * !C1 * Y)	-0.00198	-0.00202	-0.00206
	(!A1 * !A2 * !C1 * Y)	0.00549	0.00550	0.00524
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00629	-0.00748	-0.00747
	(A2 * !C1 * Y)	0.00652	0.00544	0.00524
	(A1 * !A2 * !C1 * Y)	-0.00599	-0.00741	-0.00747
	(A1 * !A2 * !C1 * Y)	0.00676	0.00540	0.00524
	(!A1 * !A2 * C1 * Y)	-0.00259	-0.00266	-0.00271
	(!A1 * !A2 * C1 * Y)	0.00553	0.00563	0.00529
	(!A1 * !A2 * !C1 * Y)	-0.00382	-0.00390	-0.00396
	(!A1 * !A2 * !C1 * Y)	0.00588	0.00585	0.00538

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00062	0.00063	0.00060
	(A2 * !B1 * Y)	-0.00287	-0.00290	-0.00294
	(!A2 * !B1 * Y)	0.00062	0.00063	0.00060
	(!A2 * !B1 * Y)	-0.00287	-0.00290	-0.00294
	(!A1 * !A2 * B1 * Y)	0.00068	0.00068	0.00060
	(!A1 * !A2 * B1 * Y)	-0.00274	-0.00276	-0.00292
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00134	0.00135	0.00125
	(A2 * !B1 * Y)	-0.00558	-0.00564	-0.00575
	(!A2 * !B1 * Y)	0.00134	0.00135	0.00125
	(!A2 * !B1 * Y)	-0.00558	-0.00564	-0.00575
	(!A1 * !A2 * B1 * Y)	0.00135	0.00136	0.00120
	(!A1 * !A2 * B1 * Y)	-0.00534	-0.00537	-0.00570
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00252	0.00255	0.00238
	(A2 * !B1 * Y)	-0.00644	-0.00651	-0.00674
	(!A2 * !B1 * Y)	0.00253	0.00255	0.00238
	(!A2 * !B1 * Y)	-0.00645	-0.00651	-0.00674
	(!A1 * !A2 * B1 * Y)	0.00259	0.00259	0.00229
	(!A1 * !A2 * B1 * Y)	-0.00593	-0.00597	-0.00663

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00057	-0.00058	-0.00057
	(A2 * !B1 * Y)	0.00295	0.00299	0.00296
	(!A2 * !B1 * Y)	-0.00057	-0.00058	-0.00057
	(!A2 * !B1 * Y)	0.00295	0.00299	0.00296
	(!A1 * !A2 * B1 * Y)	-0.00055	-0.00055	-0.00055
	(!A1 * !A2 * B1 * Y)	0.00295	0.00299	0.00296
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00119	-0.00121	-0.00119
	(A2 * !B1 * Y)	0.00577	0.00585	0.00580
	(!A2 * !B1 * Y)	-0.00118	-0.00121	-0.00119
	(!A2 * !B1 * Y)	0.00576	0.00585	0.00580
	(!A1 * !A2 * B1 * Y)	-0.00110	-0.00110	-0.00109
	(!A1 * !A2 * B1 * Y)	0.00580	0.00582	0.00579
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00227	-0.00232	-0.00227
	(A2 * !B1 * Y)	0.00678	0.00692	0.00681
	(!A2 * !B1 * Y)	-0.00227	-0.00232	-0.00227
	(!A2 * !B1 * Y)	0.00678	0.00692	0.00681
	(!A1 * !A2 * B1 * Y)	-0.00207	-0.00210	-0.00207
	(!A1 * !A2 * B1 * Y)	0.00675	0.00684	0.00679

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00268	0.00286	0.00264	0.00259	1.73640
sky130_fd_sc_hs__o211a_2	0.00284	0.00282	0.00281	0.00273	3.32861
sky130_fd_sc_hs__o211a_4	0.00516	0.00489	0.00505	0.00445	6.04396

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	166.85400	426.61200
sky130_fd_sc_hs__o211a_2	0.00000	263.46300	429.33400
sky130_fd_sc_hs__o211a_4	0.00000	693.57900	1736.33000

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)	0.08075	0.43423	5.59980
	A2->X (RR)	0.06972	0.41274	5.35318
	B1->X (RR)	0.07554	0.47568	6.30881
	C1->X (RR)	0.06971	0.48300	6.46912
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.08349	0.35919	5.41203
	A2->X (RR)	0.07015	0.33740	5.16414
	B1->X (RR)	0.07906	0.40594	6.15727
	C1->X (RR)	0.07299	0.41472	6.30879
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.08602	0.31216	5.63212
	A2->X (RR)	0.07654	0.29160	5.44798
	B1->X (RR)	0.08006	0.34650	6.13673
	C1->X (RR)	0.06396	0.33603	6.26959

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.09686	0.48080	5.75707
	A2->X (FF)	0.08909	0.50633	6.01355
	B1->X (FF)	0.04983	0.41217	5.32662
	C1->X (FF)	0.04514	0.39355	5.16604
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.11113	0.46453	5.80422
	A2->X (FF)	0.10206	0.49345	6.05936
	B1->X (FF)	0.05774	0.39496	5.40548
	C1->X (FF)	0.05268	0.37761	5.24392
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.10681	0.41785	5.64029
	A2->X (FF)	0.09487	0.43828	5.86962
	B1->X (FF)	0.05984	0.35344	5.23542
	C1->X (FF)	0.05935	0.35632	5.29994

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.02622	0.03541	0.22934
	A1	0.01635	0.02554	0.21989
	A2	0.02577	0.03553	0.22988
	A2	0.01687	0.02665	0.22126
	B1	0.02013	0.03452	0.29118
	B1	0.01324	0.02764	0.28475
	C1	0.01891	0.03415	0.29048
	C1	0.01325	0.02852	0.28535
sky130_fd_sc_hs__o211a_2	A1	0.03159	0.03956	0.22503
	A1	0.02123	0.02931	0.21521
	A2	0.03000	0.03887	0.22458
	A2	0.02107	0.03000	0.21543
	B1	0.02467	0.03834	0.29514
	B1	0.01737	0.03115	0.28804
	C1	0.02331	0.03786	0.29307
	C1	0.01738	0.03202	0.28803
sky130_fd_sc_hs__o211a_4	A1	0.08353	0.10185	0.51216
	A1	0.06471	0.08306	0.49457
	A2	0.08078	0.09986	0.50635
	A2	0.06515	0.08432	0.49159
	B1	0.07030	0.09670	0.57091
	B1	0.05764	0.08408	0.55963
	C1	0.06720	0.09581	0.58000
	C1	0.05793	0.08659	0.57240

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01000	0.01902	0.22322
	A1	0.01985	0.02886	0.23306
	A2	0.00954	0.01991	0.22833
	A2	0.01841	0.02878	0.23304
	B1	0.00731	0.02324	0.28058
	B1	0.01419	0.03006	0.28581
	C1	0.00669	0.02252	0.27694
	C1	0.01234	0.02814	0.28252
sky130_fd_sc_hs__o211a_2	A1	0.01946	0.02445	0.22443
	A1	0.02979	0.03473	0.23475
	A2	0.01951	0.02630	0.22855
	A2	0.02842	0.03502	0.23525
	B1	0.01426	0.02855	0.28397
	B1	0.02156	0.03579	0.28969
	C1	0.01328	0.02754	0.28185
	C1	0.01920	0.03345	0.28394
sky130_fd_sc_hs__o211a_4	A1	0.03794	0.05004	0.46273
	A1	0.05674	0.06882	0.47916
	A2	0.03847	0.05358	0.46623
	A2	0.05407	0.06891	0.47853
	B1	0.02720	0.05665	0.56925
	B1	0.03986	0.06919	0.57681
	C1	0.02783	0.05446	0.53782
	C1	0.03710	0.06371	0.54718

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)**	0.00523	0.00490	0.00563
	(A2 * B1 * C1 * X)	0.00093	0.00055	0.00134
	(A2 * B1 * !C1 * !X)	0.00286	0.00289	0.00286
	(A2 * B1 * !C1 * !X)	-0.00140	-0.00141	-0.00139
	(A2 * !B1 * !X)	0.00285	0.00288	0.00285
	(A2 * !B1 * !X)	-0.00141	-0.00142	-0.00140
	(!A2 * B1 * !C1 * !X)	0.00280	0.00281	0.00281
	(!A2 * B1 * !C1 * !X)	-0.00140	-0.00140	-0.00139
	(!A2 * !B1 * C1 * !X)	0.00283	0.00283	0.00283
	(!A2 * !B1 * C1 * !X)	-0.00140	-0.00140	-0.00139
	(!A2 * !B1 * !C1 * !X)	0.00275	0.00277	0.00275
	(!A2 * !B1 * !C1 * !X)	-0.00145	-0.00146	-0.00144
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00550	0.00515	0.00587
	(A2 * B1 * C1 * X)	0.00104	0.00064	0.00143
	(A2 * B1 * !C1 * !X)	0.00403	0.00406	0.00403
	(A2 * B1 * !C1 * !X)	-0.00039	-0.00040	-0.00038
	(A2 * !B1 * !X)	0.00402	0.00405	0.00402
	(A2 * !B1 * !X)	-0.00039	-0.00041	-0.00039
	(!A2 * B1 * !C1 * !X)	0.00396	0.00398	0.00397
	(!A2 * B1 * !C1 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * !B1 * C1 * !X)	0.00398	0.00401	0.00399
	(!A2 * !B1 * C1 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * !B1 * !C1 * !X)	0.00397	0.00398	0.00396
	(!A2 * !B1 * !C1 * !X)	-0.00042	-0.00043	-0.00042

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.01821	0.01755	0.01891
	(A2 * B1 * C1 * X)	0.00967	0.00892	0.01039
	(A2 * B1 * !C1 * !X)	0.00816	0.00820	0.00817
	(A2 * B1 * !C1 * !X)	-0.00031	-0.00032	-0.00029
	(A2 * !B1 * !X)	0.00814	0.00818	0.00815
	(A2 * !B1 * !X)	-0.00033	-0.00034	-0.00031
	(!A2 * B1 * !C1 * !X)	0.00803	0.00804	0.00805
	(!A2 * B1 * !C1 * !X)	-0.00030	-0.00031	-0.00030
	(!A2 * !B1 * C1 * !X)	0.00808	0.00814	0.00810
	(!A2 * !B1 * C1 * !X)	-0.00032	-0.00036	-0.00033
	(!A2 * !B1 * !C1 * !X)	0.00798	0.00803	0.00799
	(!A2 * !B1 * !C1 * !X)	-0.00038	-0.00041	-0.00039

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)**	0.00170	0.00166	0.00145
	(A2 * B1 * C1 * X)	0.00600	0.00599	0.00576
	(A2 * B1 * !C1 * !X)	-0.00069	-0.00070	-0.00069
	(A2 * B1 * !C1 * !X)	0.00356	0.00360	0.00357
	(A2 * !B1 * !X)	-0.00070	-0.00071	-0.00070
	(A2 * !B1 * !X)	0.00356	0.00359	0.00356
	(!A2 * B1 * !C1 * !X)	-0.00034	-0.00061	-0.00063
	(!A2 * B1 * !C1 * !X)	0.00384	0.00365	0.00358
	(!A2 * !B1 * C1 * !X)	-0.00041	-0.00062	-0.00065
	(!A2 * !B1 * C1 * !X)	0.00380	0.00364	0.00357
	(!A2 * !B1 * !C1 * !X)	-0.00060	-0.00068	-0.00069
	(!A2 * !B1 * !C1 * !X)	0.00354	0.00355	0.00353

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00150	0.00145	0.00126
	(A2 * B1 * C1 * X)	0.00597	0.00596	0.00572
	(A2 * B1 * !C1 * !X)	0.00018	0.00017	0.00018
	(A2 * B1 * !C1 * !X)	0.00460	0.00463	0.00460
	(A2 * !B1 * !X)	0.00018	0.00018	0.00018
	(A2 * !B1 * !X)	0.00460	0.00460	0.00460
	(!A2 * B1 * !C1 * !X)	0.00050	0.00028	0.00024
	(!A2 * B1 * !C1 * !X)	0.00482	0.00467	0.00461
	(!A2 * !B1 * C1 * !X)	0.00043	0.00025	0.00023
	(!A2 * !B1 * C1 * !X)	0.00478	0.00464	0.00461
	(!A2 * !B1 * !C1 * !X)	0.00028	0.00022	0.00021
	(!A2 * !B1 * !C1 * !X)	0.00460	0.00460	0.00459
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.01113	0.01105	0.01065
	(A2 * B1 * C1 * X)	0.01970	0.01969	0.01922
	(A2 * B1 * !C1 * !X)	0.00035	0.00033	0.00034
	(A2 * B1 * !C1 * !X)	0.00879	0.00882	0.00881
	(A2 * !B1 * !X)	0.00033	0.00031	0.00032
	(A2 * !B1 * !X)	0.00878	0.00880	0.00879
	(!A2 * B1 * !C1 * !X)	0.00098	0.00048	0.00045
	(!A2 * B1 * !C1 * !X)	0.00930	0.00894	0.00884
	(!A2 * !B1 * C1 * !X)	0.00084	0.00046	0.00041
	(!A2 * !B1 * C1 * !X)	0.00921	0.00892	0.00882
	(!A2 * !B1 * !C1 * !X)	0.00050	0.00035	0.00034
	(!A2 * !B1 * !C1 * !X)	0.00874	0.00876	0.00874

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)**	0.00504	0.00505	0.00510
	(A1 * B1 * C1 * X)	0.00162	0.00162	0.00168
	(A1 * B1 * !C1 * !X)	0.00338	0.00340	0.00338
	(A1 * B1 * !C1 * !X)	-0.00119	-0.00121	-0.00119
	(A1 * !B1 * C1 * !X)	0.00337	0.00339	0.00336
	(A1 * !B1 * C1 * !X)	-0.00120	-0.00122	-0.00120
	(A1 * !B1 * !C1 * !X)	0.00334	0.00335	0.00333
	(A1 * !B1 * !C1 * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * B1 * !C1 * !X)	0.00332	0.00333	0.00332
	(!A1 * B1 * !C1 * !X)	-0.00120	-0.00120	-0.00119
	(!A1 * !B1 * C1 * !X)	0.00333	0.00336	0.00334
	(!A1 * !B1 * C1 * !X)	-0.00118	-0.00120	-0.00119
	(!A1 * !B1 * !C1 * !X)	0.00327	0.00330	0.00327
	(!A1 * !B1 * !C1 * !X)	-0.00123	-0.00125	-0.00124
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00478	0.00481	0.00483
	(A1 * B1 * C1 * X)	0.00163	0.00163	0.00170
	(A1 * B1 * !C1 * !X)	0.00399	0.00401	0.00399
	(A1 * B1 * !C1 * !X)	-0.00027	-0.00028	-0.00027
	(A1 * !B1 * C1 * !X)	0.00399	0.00401	0.00399
	(A1 * !B1 * C1 * !X)	-0.00027	-0.00029	-0.00027
	(A1 * !B1 * !C1 * !X)	0.00397	0.00399	0.00398
	(A1 * !B1 * !C1 * !X)	-0.00029	-0.00030	-0.00029
	(!A1 * B1 * !C1 * !X)	0.00394	0.00396	0.00395
	(!A1 * B1 * !C1 * !X)	-0.00027	-0.00028	-0.00027
	(!A1 * !B1 * C1 * !X)	0.00395	0.00397	0.00396
	(!A1 * !B1 * C1 * !X)	-0.00027	-0.00029	-0.00028
	(!A1 * !B1 * !C1 * !X)	0.00394	0.00395	0.00393
	(!A1 * !B1 * !C1 * !X)	-0.00030	-0.00031	-0.00030

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.01659	0.01664	0.01667
	(A1 * B1 * C1 * X)	0.01092	0.01091	0.01104
	(A1 * B1 * !C1 * !X)	0.00760	0.00763	0.00760
	(A1 * B1 * !C1 * !X)	-0.00034	-0.00037	-0.00034
	(A1 * !B1 * C1 * !X)	0.00758	0.00761	0.00758
	(A1 * !B1 * C1 * !X)	-0.00035	-0.00039	-0.00035
	(A1 * !B1 * !C1 * !X)	0.00751	0.00754	0.00752
	(A1 * !B1 * !C1 * !X)	-0.00041	-0.00044	-0.00041
	(!A1 * B1 * !C1 * !X)	0.00753	0.00755	0.00752
	(!A1 * B1 * !C1 * !X)	-0.00035	-0.00036	-0.00033
	(!A1 * !B1 * C1 * !X)	0.00753	0.00756	0.00754
	(!A1 * !B1 * C1 * !X)	-0.00034	-0.00037	-0.00035
	(!A1 * !B1 * !C1 * !X)	0.00745	0.00747	0.00743
	(!A1 * !B1 * !C1 * !X)	-0.00043	-0.00044	-0.00042

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)**	0.00075	0.00072	0.00040
	(A1 * B1 * C1 * X)	0.00418	0.00417	0.00385
	(A1 * B1 * !C1 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * B1 * !C1 * !X)	0.00337	0.00338	0.00337
	(A1 * !B1 * C1 * !X)	-0.00121	-0.00123	-0.00121
	(A1 * !B1 * C1 * !X)	0.00336	0.00337	0.00336
	(A1 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00124
	(A1 * !B1 * !C1 * !X)	0.00332	0.00334	0.00332
	(!A1 * B1 * !C1 * !X)	-0.00082	-0.00112	-0.00114
	(!A1 * B1 * !C1 * !X)	0.00367	0.00346	0.00338
	(!A1 * !B1 * C1 * !X)	-0.00092	-0.00115	-0.00116
	(!A1 * !B1 * C1 * !X)	0.00362	0.00344	0.00337
	(!A1 * !B1 * !C1 * !X)	-0.00112	-0.00121	-0.00120
	(!A1 * !B1 * !C1 * !X)	0.00334	0.00336	0.00333
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00108	0.00104	0.00073
	(A1 * B1 * C1 * X)	0.00421	0.00420	0.00387
	(A1 * B1 * !C1 * !X)	0.00022	0.00021	0.00022
	(A1 * B1 * !C1 * !X)	0.00449	0.00449	0.00449
	(A1 * !B1 * C1 * !X)	0.00022	0.00021	0.00022
	(A1 * !B1 * C1 * !X)	0.00448	0.00449	0.00448
	(A1 * !B1 * !C1 * !X)	0.00020	0.00018	0.00019
	(A1 * !B1 * !C1 * !X)	0.00446	0.00447	0.00446
	(!A1 * B1 * !C1 * !X)	0.00054	0.00030	0.00027
	(!A1 * B1 * !C1 * !X)	0.00469	0.00454	0.00449
	(!A1 * !B1 * C1 * !X)	0.00046	0.00028	0.00026
	(!A1 * !B1 * C1 * !X)	0.00466	0.00452	0.00449
	(!A1 * !B1 * !C1 * !X)	0.00031	0.00024	0.00023
	(!A1 * !B1 * !C1 * !X)	0.00448	0.00447	0.00447

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.01046	0.01037	0.00977
	(A1 * B1 * C1 * X)	0.01610	0.01611	0.01546
	(A1 * B1 * !C1 * !X)	0.00094	0.00089	0.00091
	(A1 * B1 * !C1 * !X)	0.00886	0.00888	0.00885
	(A1 * !B1 * C1 * !X)	0.00091	0.00086	0.00089
	(A1 * !B1 * C1 * !X)	0.00883	0.00885	0.00882
	(A1 * !B1 * !C1 * !X)	0.00083	0.00080	0.00082
	(A1 * !B1 * !C1 * !X)	0.00875	0.00876	0.00875
	(!A1 * B1 * !C1 * !X)	0.00155	0.00106	0.00101
	(!A1 * B1 * !C1 * !X)	0.00934	0.00899	0.00886
	(!A1 * !B1 * C1 * !X)	0.00141	0.00103	0.00097
	(!A1 * !B1 * C1 * !X)	0.00928	0.00895	0.00884
	(!A1 * !B1 * !C1 * !X)	0.00104	0.00091	0.00089
	(!A1 * !B1 * !C1 * !X)	0.00879	0.00878	0.00876

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00270	0.00272	0.00270
	(A2 * !C1 * !X)	-0.00146	-0.00147	-0.00146
	(A1 * !A2 * !C1 * !X)	0.00270	0.00272	0.00270
	(A1 * !A2 * !C1 * !X)	-0.00145	-0.00147	-0.00146
	(!A1 * !A2 * C1 * !X)	0.00172	0.00172	0.00170
	(!A1 * !A2 * C1 * !X)	-0.00153	-0.00154	-0.00152
	(!A1 * !A2 * !C1 * !X)	0.00195	0.00195	0.00194
	(!A1 * !A2 * !C1 * !X)	-0.00154	-0.00155	-0.00153
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00396	0.00397	0.00395
	(A2 * !C1 * !X)	-0.00030	-0.00031	-0.00030
	(A1 * !A2 * !C1 * !X)	0.00395	0.00396	0.00395
	(A1 * !A2 * !C1 * !X)	-0.00029	-0.00030	-0.00030
	(!A1 * !A2 * C1 * !X)	0.00282	0.00282	0.00280
	(!A1 * !A2 * C1 * !X)	-0.00036	-0.00037	-0.00035
	(!A1 * !A2 * !C1 * !X)	0.00306	0.00307	0.00306
	(!A1 * !A2 * !C1 * !X)	-0.00036	-0.00037	-0.00036
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00825	0.00826	0.00825
	(A2 * !C1 * !X)	0.00015	0.00014	0.00014
	(A1 * !A2 * !C1 * !X)	0.00825	0.00829	0.00824
	(A1 * !A2 * !C1 * !X)	0.00015	0.00012	0.00014
	(!A1 * !A2 * C1 * !X)	0.00619	0.00622	0.00616
	(!A1 * !A2 * C1 * !X)	0.00005	0.00003	0.00004
	(!A1 * !A2 * !C1 * !X)	0.00660	0.00663	0.00660
	(!A1 * !A2 * !C1 * !X)	0.00003	-0.00000	0.00002

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00030	-0.00047	-0.00049
	(A2 * !C1 * !X)	0.00388	0.00371	0.00365
	(A1 * !A2 * !C1 * !X)	-0.00026	-0.00049	-0.00049
	(A1 * !A2 * !C1 * !X)	0.00390	0.00371	0.00365
	(!A1 * !A2 * C1 * !X)	0.00051	0.00050	0.00049
	(!A1 * !A2 * C1 * !X)	0.00373	0.00377	0.00369
	(!A1 * !A2 * !C1 * !X)	0.00021	0.00017	0.00015
	(!A1 * !A2 * !C1 * !X)	0.00385	0.00382	0.00373
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00052	0.00031	0.00029
	(A2 * !C1 * !X)	0.00476	0.00460	0.00453
	(A1 * !A2 * !C1 * !X)	0.00055	0.00028	0.00029
	(A1 * !A2 * !C1 * !X)	0.00481	0.00459	0.00453
	(!A1 * !A2 * C1 * !X)	0.00145	0.00144	0.00143
	(!A1 * !A2 * C1 * !X)	0.00462	0.00464	0.00456
	(!A1 * !A2 * !C1 * !X)	0.00114	0.00111	0.00109
	(!A1 * !A2 * !C1 * !X)	0.00475	0.00471	0.00460
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00071	0.00037	0.00032
	(A2 * !C1 * !X)	0.00881	0.00856	0.00840
	(A1 * !A2 * !C1 * !X)	0.00075	0.00037	0.00032
	(A1 * !A2 * !C1 * !X)	0.00885	0.00852	0.00840
	(!A1 * !A2 * C1 * !X)	0.00239	0.00237	0.00235
	(!A1 * !A2 * C1 * !X)	0.00853	0.00858	0.00843
	(!A1 * !A2 * !C1 * !X)	0.00184	0.00178	0.00173
	(!A1 * !A2 * !C1 * !X)	0.00870	0.00867	0.00848

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00157	0.00157	0.00154
	(A2 * !B1 * !X)	-0.00170	-0.00172	-0.00175
	(!A2 * !B1 * !X)	0.00157	0.00157	0.00154
	(!A2 * !B1 * !X)	-0.00170	-0.00172	-0.00175
	(!A1 * !A2 * B1 * !X)	0.00166	0.00166	0.00158
	(!A1 * !A2 * B1 * !X)	-0.00156	-0.00157	-0.00173
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00272	0.00272	0.00269
	(A2 * !B1 * !X)	-0.00058	-0.00059	-0.00063
	(!A2 * !B1 * !X)	0.00272	0.00272	0.00269
	(!A2 * !B1 * !X)	-0.00058	-0.00059	-0.00063
	(!A1 * !A2 * B1 * !X)	0.00278	0.00279	0.00272
	(!A1 * !A2 * B1 * !X)	-0.00045	-0.00047	-0.00062
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00514	0.00514	0.00507
	(A2 * !B1 * !X)	-0.00033	-0.00035	-0.00044
	(!A2 * !B1 * !X)	0.00514	0.00514	0.00507
	(!A2 * !B1 * !X)	-0.00033	-0.00035	-0.00044
	(!A1 * !A2 * B1 * !X)	0.00527	0.00528	0.00512
	(!A1 * !A2 * B1 * !X)	-0.00001	-0.00004	-0.00036

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00058	0.00057	0.00058
	(A2 * !B1 * !X)	0.00385	0.00388	0.00386
	(!A2 * !B1 * !X)	0.00058	0.00057	0.00058
	(!A2 * !B1 * !X)	0.00385	0.00388	0.00386
	(!A1 * !A2 * B1 * !X)	0.00059	0.00059	0.00060
	(!A1 * !A2 * B1 * !X)	0.00386	0.00386	0.00387
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00150	0.00149	0.00150
	(A2 * !B1 * !X)	0.00480	0.00482	0.00481
	(!A2 * !B1 * !X)	0.00150	0.00149	0.00150
	(!A2 * !B1 * !X)	0.00480	0.00482	0.00481
	(!A1 * !A2 * B1 * !X)	0.00150	0.00149	0.00150
	(!A1 * !A2 * B1 * !X)	0.00481	0.00486	0.00482
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00332	0.00331	0.00333
	(A2 * !B1 * !X)	0.00881	0.00884	0.00881
	(!A2 * !B1 * !X)	0.00332	0.00331	0.00333
	(!A2 * !B1 * !X)	0.00880	0.00884	0.00881
	(!A1 * !A2 * B1 * !X)	0.00337	0.00336	0.00338
	(!A1 * !A2 * B1 * !X)	0.00879	0.00882	0.00880

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00291	0.00297	0.00289	0.91350
sky130_fd_sc_hs__o21ai_2	0.00589	0.00543	0.00534	1.59142
sky130_fd_sc_hs__o21ai_4	0.01050	0.01073	0.00795	2.53071

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	70.93440	238.70700
sky130_fd_sc_hs__o21ai_2	0.00000	141.80300	477.11700
sky130_fd_sc_hs__o21ai_4	0.00000	193.93000	714.74300

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)	0.05586	0.66655	8.64909
	A2->Y (FR)	0.04750	0.70385	9.29454
	B1->Y (FR)	0.02095	0.48247	6.52312
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.05051	0.55457	8.27085
	A2->Y (FR)	0.03911	0.58737	8.84891
	B1->Y (FR)	0.01627	0.40598	6.22166
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.05148	0.46332	7.66779
	A2->Y (FR)	0.04025	0.52417	8.65623
	B1->Y (FR)	0.02261	0.52607	8.94596

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.03051	0.33005	4.14445
	A2->Y (RF)	0.02463	0.31660	4.03479
	B1->Y (RF)	0.02583	0.39025	5.06057
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.02489	0.24799	3.69069
	A2->Y (RF)	0.02082	0.24166	3.70806
	B1->Y (RF)	0.01538	0.30361	4.74916
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.02494	0.18891	3.24665
	A2->Y (RF)	0.01980	0.17601	3.18832
	B1->Y (RF)	0.01243	0.21493	4.02174

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00086	0.00590	0.09539
	A1	0.01001	0.01505	0.10431
	A2	0.00093	0.00766	0.10876
	A2	0.00849	0.01521	0.11632
	B1	-0.00049	0.00908	0.14409
	B1	0.00539	0.01503	0.14990
sky130_fd_sc_hs__o21ai_2	A1	0.00106	0.01283	0.19555
	A1	0.01863	0.03043	0.21287
	A2	0.00106	0.01544	0.20591
	A2	0.01513	0.02952	0.21992
	B1	-0.00228	0.01827	0.27783
	B1	0.00830	0.02892	0.28947
sky130_fd_sc_hs__o21ai_4	A1	0.00162	0.02687	0.39043
	A1	0.03574	0.06114	0.42510
	A2	0.00117	0.02956	0.38408
	A2	0.02930	0.05777	0.41189
	B1	-0.00427	0.02141	0.32870
	B1	0.01162	0.03740	0.34510

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.01391	0.01808	0.09203
	A1	0.00475	0.00889	0.08290
	A2	0.01187	0.01604	0.08397
	A2	0.00431	0.00842	0.07596
	B1	0.00813	0.01460	0.10718
	B1	0.00225	0.00872	0.10064
sky130_fd_sc_hs__o21ai_2	A1	0.02617	0.03560	0.18362
	A1	0.00859	0.01794	0.16549
	A2	0.02143	0.03105	0.16553
	A2	0.00733	0.01688	0.15080
	B1	0.01409	0.02861	0.21163
	B1	0.00352	0.01796	0.20016
sky130_fd_sc_hs__o21ai_4	A1	0.04635	0.06835	0.37667
	A1	0.01222	0.03401	0.34240
	A2	0.03690	0.05817	0.32626
	A2	0.00868	0.02995	0.29572
	B1	0.02063	0.03863	0.24294
	B1	0.00476	0.02266	0.22586

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00411	0.00371	0.00430
	(A2 * B1 * !Y)	-0.00066	-0.00109	-0.00042
	(A2 * !B1 * Y)	0.00214	0.00212	0.00212
	(A2 * !B1 * Y)	-0.00259	-0.00257	-0.00257
	(!A2 * !B1 * Y)	0.00208	0.00210	0.00208
	(!A2 * !B1 * Y)	-0.00257	-0.00259	-0.00257
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00811	0.00710	0.00831
	(A2 * B1 * !Y)	-0.00120	-0.00215	-0.00092
	(A2 * !B1 * Y)	0.00407	0.00406	0.00406
	(A2 * !B1 * Y)	-0.00514	-0.00512	-0.00511
	(!A2 * !B1 * Y)	0.00396	0.00397	0.00398
	(!A2 * !B1 * Y)	-0.00511	-0.00511	-0.00511
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.01363	0.01162	0.01383
	(A2 * B1 * !Y)	-0.00428	-0.00634	-0.00392
	(A2 * !B1 * Y)	0.00787	0.00789	0.00787
	(A2 * !B1 * Y)	-0.00981	-0.00981	-0.00977
	(!A2 * !B1 * Y)	0.00768	0.00771	0.00771
	(!A2 * !B1 * Y)	-0.00978	-0.00980	-0.00978

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00020	-0.00024	-0.00040
	(A2 * B1 * !Y)	0.00453	0.00453	0.00435
	(A2 * !B1 * Y)	-0.00207	-0.00209	-0.00207
	(A2 * !B1 * Y)	0.00263	0.00265	0.00263
	(!A2 * !B1 * Y)	-0.00178	-0.00198	-0.00202
	(!A2 * !B1 * Y)	0.00290	0.00271	0.00264
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00011	-0.00019	-0.00050
	(A2 * B1 * !Y)	0.00917	0.00917	0.00878
	(A2 * !B1 * Y)	-0.00396	-0.00396	-0.00396
	(A2 * !B1 * Y)	0.00522	0.00524	0.00522
	(!A2 * !B1 * Y)	-0.00336	-0.00380	-0.00386
	(!A2 * !B1 * Y)	0.00577	0.00537	0.00524
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00155	-0.00170	-0.00233
	(A2 * B1 * !Y)	0.01626	0.01627	0.01553
	(A2 * !B1 * Y)	-0.00767	-0.00770	-0.00766
	(A2 * !B1 * Y)	0.00999	0.01009	0.00999
	(!A2 * !B1 * Y)	-0.00646	-0.00742	-0.00746
	(!A2 * !B1 * Y)	0.01110	0.01033	0.01004

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00339	0.00343	0.00344
	(A1 * B1 * !Y)	0.00011	0.00010	0.00017
	(A1 * !B1 * Y)	0.00195	0.00195	0.00193
	(A1 * !B1 * Y)	-0.00264	-0.00264	-0.00262
	(!A1 * !B1 * Y)	0.00190	0.00191	0.00191
	(!A1 * !B1 * Y)	-0.00262	-0.00262	-0.00262
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00637	0.00643	0.00644
	(A1 * B1 * !Y)	0.00022	0.00021	0.00033
	(A1 * !B1 * Y)	0.00396	0.00399	0.00395
	(A1 * !B1 * Y)	-0.00479	-0.00480	-0.00476
	(!A1 * !B1 * Y)	0.00387	0.00391	0.00387
	(!A1 * !B1 * Y)	-0.00478	-0.00479	-0.00476
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.01111	0.01132	0.01130
	(A1 * B1 * !Y)	-0.00156	-0.00164	-0.00141
	(A1 * !B1 * Y)	0.00796	0.00808	0.00798
	(A1 * !B1 * Y)	-0.00995	-0.01002	-0.00994
	(!A1 * !B1 * Y)	0.00785	0.00786	0.00784
	(!A1 * !B1 * Y)	-0.00998	-0.00997	-0.00995

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00052	-0.00055	-0.00083
	(A1 * B1 * !Y)	0.00276	0.00275	0.00246
	(A1 * !B1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !B1 * Y)	0.00267	0.00269	0.00268
	(!A1 * !B1 * Y)	-0.00162	-0.00180	-0.00184
	(!A1 * !B1 * Y)	0.00291	0.00274	0.00269
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00058	-0.00064	-0.00119
	(A1 * B1 * !Y)	0.00556	0.00555	0.00499
	(A1 * !B1 * Y)	-0.00383	-0.00385	-0.00384
	(A1 * !B1 * Y)	0.00485	0.00487	0.00487
	(!A1 * !B1 * Y)	-0.00325	-0.00366	-0.00375
	(!A1 * !B1 * Y)	0.00540	0.00504	0.00489
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00366	-0.00380	-0.00488
	(A1 * B1 * !Y)	0.00911	0.00909	0.00800
	(A1 * !B1 * Y)	-0.00773	-0.00781	-0.00777
	(A1 * !B1 * Y)	0.01008	0.01019	0.01015
	(!A1 * !B1 * Y)	-0.00654	-0.00755	-0.00757
	(!A1 * !B1 * Y)	0.01128	0.01048	0.01021

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00070	0.00070	0.00064
	(!A1 * !A2 * Y)	-0.00293	-0.00296	-0.00305
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00142	0.00143	0.00130
	(!A1 * !A2 * Y)	-0.00541	-0.00546	-0.00564
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00248	0.00248	0.00227
	(!A1 * !A2 * Y)	-0.00623	-0.00628	-0.00663

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00060	-0.00061	-0.00059
	(!A1 * !A2 * Y)	0.00307	0.00313	0.00308
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00120	-0.00123	-0.00120
	(!A1 * !A2 * Y)	0.00567	0.00580	0.00570
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00210	-0.00211	-0.00206
	(!A1 * !A2 * Y)	0.00676	0.00686	0.00675

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00250	0.00251	0.00248	1.68317
sky130_fd_sc_hs__o21a_2	0.00272	0.00266	0.00276	3.26690
sky130_fd_sc_hs__o21a_4	0.00521	0.00480	0.00460	6.22524

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	242.33900	506.15500
sky130_fd_sc_hs__o21a_2	0.00000	233.91300	288.16200
sky130_fd_sc_hs__o21a_4	0.00000	635.70100	1016.38000

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)	0.05646	0.40363	5.45240
	A2->X (RR)	0.04823	0.37918	5.18102
	B1->X (RR)	0.05173	0.43169	5.92008
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.05896	0.33383	5.34517
	A2->X (RR)	0.05147	0.31410	5.09177
	B1->X (RR)	0.05450	0.36391	5.81668
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.06401	0.28237	5.47171
	A2->X (RR)	0.05586	0.26137	5.28808
	B1->X (RR)	0.05573	0.30373	5.83383

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.07929	0.45468	5.68672
	A2->X (FF)	0.06976	0.47371	5.92299
	B1->X (FF)	0.04158	0.39829	5.42870
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.09747	0.44529	5.72547
	A2->X (FF)	0.08886	0.47010	5.95393
	B1->X (FF)	0.04737	0.37095	5.33055
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.09714	0.41018	5.79237
	A2->X (FF)	0.08404	0.42754	6.00266
	B1->X (FF)	0.05145	0.34924	5.50662

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.02451	0.03605	0.24637
	A1	0.01674	0.02829	0.23888
	A2	0.02343	0.03556	0.24563
	A2	0.01710	0.02923	0.23920
	B1	0.01860	0.03480	0.28682
	B1	0.01391	0.03013	0.28256
sky130_fd_sc_hs__o21a_2	A1	0.02387	0.03513	0.24808
	A1	0.01545	0.02677	0.24019
	A2	0.02267	0.03445	0.24680
	A2	0.01580	0.02758	0.23972
	B1	0.01733	0.03262	0.27416
	B1	0.01208	0.02736	0.26973
sky130_fd_sc_hs__o21a_4	A1	0.05870	0.08124	0.50253
	A1	0.04280	0.06542	0.48806
	A2	0.05591	0.07925	0.49641
	A2	0.04328	0.06669	0.48464
	B1	0.04493	0.07599	0.55237
	B1	0.03585	0.06701	0.54453

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00829	0.01928	0.23111
	A1	0.01606	0.02697	0.23791
	A2	0.00833	0.02062	0.23222
	A2	0.01467	0.02692	0.23856
	B1	0.00601	0.02414	0.30362
	B1	0.01071	0.02864	0.30547
sky130_fd_sc_hs__o21a_2	A1	0.01784	0.02537	0.23469
	A1	0.02625	0.03348	0.24157
	A2	0.01802	0.02684	0.23581
	A2	0.02488	0.03356	0.24269
	B1	0.01247	0.02846	0.29400
	B1	0.01775	0.03357	0.29854
sky130_fd_sc_hs__o21a_4	A1	0.03517	0.04965	0.47117
	A1	0.05108	0.06554	0.47969
	A2	0.03566	0.05330	0.47322
	A2	0.04830	0.06578	0.48035
	B1	0.02627	0.05695	0.58063
	B1	0.03539	0.06598	0.58934

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00581	0.00544	0.00615
	(A2 * B1 * X)	0.00165	0.00124	0.00201
	(A2 * !B1 * !X)	0.00292	0.00294	0.00292
	(A2 * !B1 * !X)	-0.00120	-0.00121	-0.00119
	(!A2 * !B1 * !X)	0.00289	0.00290	0.00290
	(!A2 * !B1 * !X)	-0.00119	-0.00120	-0.00120
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00421	0.00386	0.00459
	(A2 * B1 * X)	-0.00026	-0.00065	0.00014
	(A2 * !B1 * !X)	0.00427	0.00426	0.00427
	(A2 * !B1 * !X)	-0.00015	-0.00014	-0.00014
	(!A2 * !B1 * !X)	0.00422	0.00426	0.00423
	(!A2 * !B1 * !X)	-0.00014	-0.00016	-0.00014
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.01203	0.01136	0.01272
	(A2 * B1 * X)	0.00351	0.00275	0.00422
	(A2 * !B1 * !X)	0.00819	0.00823	0.00820
	(A2 * !B1 * !X)	-0.00025	-0.00027	-0.00024
	(!A2 * !B1 * !X)	0.00813	0.00819	0.00815
	(!A2 * !B1 * !X)	-0.00025	-0.00028	-0.00025

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00256	0.00252	0.00232
	(A2 * B1 * X)	0.00671	0.00672	0.00648
	(A2 * !B1 * !X)	-0.00074	-0.00075	-0.00074
	(A2 * !B1 * !X)	0.00337	0.00338	0.00337
	(!A2 * !B1 * !X)	-0.00046	-0.00065	-0.00070
	(!A2 * !B1 * !X)	0.00365	0.00348	0.00339
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00033	0.00029	0.00008
	(A2 * B1 * X)	0.00478	0.00478	0.00455
	(A2 * !B1 * !X)	-0.00006	-0.00007	-0.00006
	(A2 * !B1 * !X)	0.00436	0.00438	0.00436
	(!A2 * !B1 * !X)	0.00026	0.00004	-0.00001
	(!A2 * !B1 * !X)	0.00463	0.00445	0.00437
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00478	0.00471	0.00429
	(A2 * B1 * X)	0.01332	0.01329	0.01284
	(A2 * !B1 * !X)	0.00032	0.00030	0.00031
	(A2 * !B1 * !X)	0.00874	0.00878	0.00876
	(!A2 * !B1 * !X)	0.00088	0.00048	0.00040
	(!A2 * !B1 * !X)	0.00927	0.00896	0.00879

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00508	0.00510	0.00512
	(A1 * B1 * X)	0.00223	0.00223	0.00230
	(A1 * !B1 * !X)	0.00282	0.00284	0.00282
	(A1 * !B1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !X)	0.00280	0.00282	0.00281
	(!A1 * !B1 * !X)	-0.00113	-0.00114	-0.00114
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00343	0.00345	0.00349
	(A1 * B1 * X)	0.00041	0.00041	0.00048
	(A1 * !B1 * !X)	0.00406	0.00407	0.00406
	(A1 * !B1 * !X)	-0.00010	-0.00011	-0.00009
	(!A1 * !B1 * !X)	0.00401	0.00404	0.00402
	(!A1 * !B1 * !X)	-0.00009	-0.00011	-0.00009
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.01021	0.01028	0.01031
	(A1 * B1 * X)	0.00469	0.00466	0.00479
	(A1 * !B1 * !X)	0.00757	0.00760	0.00757
	(A1 * !B1 * !X)	-0.00023	-0.00027	-0.00023
	(!A1 * !B1 * !X)	0.00753	0.00758	0.00754
	(!A1 * !B1 * !X)	-0.00022	-0.00026	-0.00023

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00212	0.00210	0.00178
	(A1 * B1 * X)	0.00495	0.00494	0.00462
	(A1 * !B1 * !X)	-0.00064	-0.00066	-0.00065
	(A1 * !B1 * !X)	0.00331	0.00332	0.00331
	(!A1 * !B1 * !X)	-0.00037	-0.00056	-0.00061
	(!A1 * !B1 * !X)	0.00359	0.00342	0.00332
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00005	-0.00008	-0.00040
	(A1 * B1 * X)	0.00296	0.00295	0.00263
	(A1 * !B1 * !X)	0.00017	0.00014	0.00016
	(A1 * !B1 * !X)	0.00431	0.00433	0.00431
	(!A1 * !B1 * !X)	0.00045	0.00024	0.00020
	(!A1 * !B1 * !X)	0.00456	0.00438	0.00432
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00428	0.00419	0.00359
	(A1 * B1 * X)	0.00980	0.00981	0.00916
	(A1 * !B1 * !X)	0.00097	0.00092	0.00094
	(A1 * !B1 * !X)	0.00875	0.00877	0.00875
	(!A1 * !B1 * !X)	0.00149	0.00110	0.00102
	(!A1 * !B1 * !X)	0.00929	0.00892	0.00877

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00172	0.00173	0.00166
	(!A1 * !A2 * !X)	-0.00128	-0.00129	-0.00138
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00278	0.00279	0.00272
	(!A1 * !A2 * !X)	-0.00057	-0.00059	-0.00069
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00532	0.00532	0.00518
	(!A1 * !A2 * !X)	-0.00033	-0.00036	-0.00055

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00049	0.00048	0.00050
	(!A1 * !A2 * !X)	0.00350	0.00355	0.00351
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00149	0.00148	0.00149
	(!A1 * !A2 * !X)	0.00487	0.00492	0.00488
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00329	0.00327	0.00330
	(!A1 * !A2 * !X)	0.00897	0.00904	0.00898

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00277	0.00304	0.00239	0.89946
sky130_fd_sc_hs__o21bai_2	0.00585	0.00536	0.00264	1.60224
sky130_fd_sc_hs__o21bai_4	0.01061	0.01067	0.00356	2.84032

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	253.28300	365.46100
sky130_fd_sc_hs__o21bai_2	0.00000	215.19800	482.37100
sky130_fd_sc_hs__o21bai_4	0.00000	557.76800	735.92000

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)	0.05241	0.66202	8.58482
	A2->Y (FR)	0.04463	0.70122	9.23807
	B1_N->Y (RR)	0.04182	0.28444	2.76131
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.04856	0.55219	8.25470
	A2->Y (FR)	0.03784	0.58619	8.84002
	B1_N->Y (RR)	0.04242	0.22230	2.35669
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.05041	0.47558	8.12249
	A2->Y (FR)	0.03863	0.52924	9.00127
	B1_N->Y (RR)	0.05781	0.39194	6.18229

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.02999	0.32901	4.12154
	A2->Y (RF)	0.02436	0.31681	4.02909
	B1_N->Y (FF)	0.05507	0.41310	4.67336
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.02673	0.24973	3.72079
	A2->Y (RF)	0.02238	0.24398	3.73864
	B1_N->Y (FF)	0.05328	0.38577	4.79256
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.03225	0.21024	3.74471
	A2->Y (RF)	0.02264	0.19204	3.58475
	B1_N->Y (FF)	0.05582	0.32224	4.39525

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00086	0.00602	0.09732
	A1	0.00797	0.01313	0.10430
	A2	0.00080	0.00780	0.10969
	A2	0.00668	0.01365	0.11562
	B1_N	0.01460	0.03017	0.27842
	B1_N	0.01039	0.02598	0.27435
sky130_fd_sc_hs__o21bai_2	A1	0.00114	0.01308	0.19604
	A1	0.01541	0.02740	0.21017
	A2	0.00118	0.01571	0.20678
	A2	0.01177	0.02630	0.21732
	B1_N	0.01481	0.03177	0.29472
	B1_N	0.01028	0.02727	0.29032
sky130_fd_sc_hs__o21bai_4	A1	0.00192	0.02518	0.34730
	A1	0.02976	0.05307	0.37508
	A2	0.00165	0.03062	0.37837
	A2	0.02324	0.05228	0.39941
	B1_N	0.03514	0.06457	0.53553
	B1_N	0.02949	0.05893	0.53067

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.01322	0.01734	0.09092
	A1	0.00612	0.01020	0.08363
	A2	0.01131	0.01544	0.08246
	A2	0.00542	0.00950	0.07647
	B1_N	0.00645	0.02397	0.28962
	B1_N	0.01066	0.02814	0.29372
sky130_fd_sc_hs__o21bai_2	A1	0.02618	0.03553	0.18345
	A1	0.01190	0.02122	0.16850
	A2	0.02155	0.03112	0.16526
	A2	0.01096	0.02043	0.15418
	B1_N	0.02093	0.03850	0.32180
	B1_N	0.01777	0.03509	0.31967
sky130_fd_sc_hs__o21bai_4	A1	0.04908	0.06970	0.35849
	A1	0.02119	0.04185	0.32713
	A2	0.03898	0.05972	0.31529
	A2	0.01733	0.03800	0.29209
	B1_N	0.03881	0.06899	0.53432
	B1_N	0.03384	0.06399	0.52763

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)	0.00524	0.00526	0.00523
	(A2 * B1_N * Y)	0.00071	0.00071	0.00073
	(A2 * !B1_N * !Y)	0.00391	0.00351	0.00410
	(A2 * !B1_N * !Y)	-0.00065	-0.00109	-0.00044
	(!A2 * B1_N * Y)	0.00521	0.00524	0.00522
	(!A2 * B1_N * Y)	0.00073	0.00071	0.00072
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00549	0.00548	0.00548
	(A2 * B1_N * Y)	-0.00386	-0.00384	-0.00383
	(A2 * !B1_N * !Y)	0.00813	0.00722	0.00836
	(A2 * !B1_N * !Y)	-0.00133	-0.00230	-0.00101
	(!A2 * B1_N * Y)	0.00544	0.00547	0.00543
	(!A2 * B1_N * Y)	-0.00385	-0.00387	-0.00383
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.01430	0.01431	0.01428
	(A2 * B1_N * Y)	-0.00361	-0.00360	-0.00356
	(A2 * !B1_N * !Y)	0.01384	0.01177	0.01396
	(A2 * !B1_N * !Y)	-0.00430	-0.00637	-0.00399
	(!A2 * B1_N * Y)	0.01415	0.01419	0.01419
	(!A2 * B1_N * Y)	-0.00356	-0.00358	-0.00357

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)	0.00113	0.00112	0.00113
	(A2 * B1_N * Y)	0.00565	0.00567	0.00565
	(A2 * !B1_N * !Y)	0.00004	-0.00001	-0.00016
	(A2 * !B1_N * !Y)	0.00458	0.00460	0.00440
	(!A2 * B1_N * Y)	0.00141	0.00121	0.00117
	(!A2 * B1_N * Y)	0.00592	0.00573	0.00566
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00292	-0.00294	-0.00291
	(A2 * B1_N * Y)	0.00641	0.00647	0.00641
	(A2 * !B1_N * !Y)	-0.00007	-0.00015	-0.00045
	(A2 * !B1_N * !Y)	0.00936	0.00937	0.00897
	(!A2 * B1_N * Y)	-0.00235	-0.00277	-0.00285
	(!A2 * B1_N * Y)	0.00695	0.00656	0.00643
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00142	-0.00150	-0.00146
	(A2 * B1_N * Y)	0.01634	0.01648	0.01640
	(A2 * !B1_N * !Y)	-0.00165	-0.00178	-0.00242
	(A2 * !B1_N * !Y)	0.01642	0.01640	0.01564
	(!A2 * B1_N * Y)	-0.00026	-0.00129	-0.00132
	(!A2 * B1_N * Y)	0.01747	0.01672	0.01645

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)	0.00530	0.00530	0.00528
	(A1 * B1_N * Y)	0.00049	0.00050	0.00052
	(A1 * !B1_N * !Y)	0.00345	0.00348	0.00349
	(A1 * !B1_N * !Y)	-0.00004	-0.00004	0.00003
	(!A1 * B1_N * Y)	0.00525	0.00527	0.00526
	(!A1 * B1_N * Y)	0.00051	0.00050	0.00051
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00510	0.00517	0.00513
	(A1 * B1_N * Y)	-0.00352	-0.00357	-0.00353
	(A1 * !B1_N * !Y)	0.00638	0.00644	0.00645
	(A1 * !B1_N * !Y)	0.00029	0.00027	0.00040
	(!A1 * B1_N * Y)	0.00508	0.00511	0.00508
	(!A1 * B1_N * Y)	-0.00355	-0.00356	-0.00353
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.01418	0.01421	0.01421
	(A1 * B1_N * Y)	-0.00359	-0.00361	-0.00359
	(A1 * !B1_N * !Y)	0.01097	0.01117	0.01116
	(A1 * !B1_N * !Y)	-0.00158	-0.00167	-0.00143
	(!A1 * B1_N * Y)	0.01409	0.01415	0.01412
	(!A1 * B1_N * Y)	-0.00360	-0.00364	-0.00359

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)	0.00109	0.00107	0.00108
	(A1 * B1_N * Y)	0.00585	0.00588	0.00586
	(A1 * !B1_N * !Y)	-0.00054	-0.00058	-0.00086
	(A1 * !B1_N * !Y)	0.00293	0.00293	0.00264
	(!A1 * B1_N * Y)	0.00137	0.00117	0.00112
	(!A1 * B1_N * Y)	0.00613	0.00595	0.00587
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00255	-0.00258	-0.00256
	(A1 * B1_N * Y)	0.00609	0.00614	0.00610
	(A1 * !B1_N * !Y)	-0.00050	-0.00057	-0.00111
	(A1 * !B1_N * !Y)	0.00559	0.00558	0.00501
	(!A1 * B1_N * Y)	-0.00203	-0.00243	-0.00250
	(!A1 * B1_N * Y)	0.00661	0.00624	0.00612
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00136	-0.00136	-0.00138
	(A1 * B1_N * Y)	0.01638	0.01637	0.01642
	(A1 * !B1_N * !Y)	-0.00352	-0.00363	-0.00470
	(A1 * !B1_N * !Y)	0.00920	0.00916	0.00805
	(!A1 * B1_N * Y)	-0.00021	-0.00113	-0.00125
	(!A1 * B1_N * Y)	0.01746	0.01679	0.01647

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)	0.01051	0.02721	0.29309
	(!A1 * !A2 * Y)	0.00576	0.02244	0.28834
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.01205	0.02950	0.31665
	(!A1 * !A2 * Y)	0.00661	0.02405	0.31123
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.01928	0.04733	0.50346
	(!A1 * !A2 * Y)	0.01188	0.03989	0.49604

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)	0.00010	0.01781	0.28656
	(!A1 * !A2 * Y)	0.00489	0.02261	0.29133
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00079	0.01848	0.30653
	(!A1 * !A2 * Y)	0.00627	0.02397	0.31197
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00167	0.03175	0.49372
	(!A1 * !A2 * Y)	0.00916	0.03928	0.50119

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00254	0.00267	0.00219	1.51335
sky130_fd_sc_hs__o21ba_2	0.00263	0.00274	0.00232	2.78419
sky130_fd_sc_hs__o21ba_4	0.00528	0.00500	0.00281	5.21737

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ba_1	0.00000	341.33500	486.43300
sky130_fd_sc_hs__o21ba_2	0.00000	415.77500	603.57000
sky130_fd_sc_hs__o21ba_4	0.00000	696.69300	1019.34000

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)	0.06241	0.42987	5.54744
	A2->X (RR)	0.05410	0.40663	5.28609
	B1_N->X (FR)	0.09124	0.61179	7.96990
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.06263	0.33842	5.06600
	A2->X (RR)	0.05377	0.31702	4.79871
	B1_N->X (FR)	0.09369	0.52043	7.52829
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.06856	0.29138	5.26591
	A2->X (RR)	0.06092	0.27066	5.08652
	B1_N->X (FR)	0.09293	0.47527	7.80401

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.08173	0.44857	5.34275
	A2->X (FF)	0.07355	0.46927	5.58216
	B1_N->X (RF)	0.06661	0.25537	2.37266
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.09568	0.43412	5.32225
	A2->X (FF)	0.08721	0.45937	5.55516
	B1_N->X (RF)	0.07203	0.22895	2.42603
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.09566	0.39576	5.20144
	A2->X (FF)	0.08282	0.41275	5.41346
	B1_N->X (RF)	0.07523	0.19487	2.06332

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.01970	0.03139	0.24629
	A1	0.01323	0.02492	0.24017
	A2	0.01899	0.03116	0.24568
	A2	0.01368	0.02587	0.24056
	B1_N	0.01742	0.03615	0.34100
	B1_N	0.02132	0.04004	0.34528
sky130_fd_sc_hs__o21ba_2	A1	0.02389	0.03513	0.24871
	A1	0.01723	0.02852	0.24185
	A2	0.02275	0.03457	0.24712
	A2	0.01730	0.02913	0.24152
	B1_N	0.02094	0.03860	0.32615
	B1_N	0.02513	0.04275	0.33040
sky130_fd_sc_hs__o21ba_4	A1	0.05881	0.08102	0.50659
	A1	0.04555	0.06787	0.49408
	A2	0.05612	0.07908	0.49979
	A2	0.04612	0.06921	0.48936
	B1_N	0.05578	0.07566	0.45763
	B1_N	0.05824	0.07889	0.46302

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00839	0.01919	0.23125
	A1	0.01487	0.02563	0.23561
	A2	0.00837	0.02053	0.23234
	A2	0.01368	0.02573	0.23679
	B1_N	0.01995	0.03648	0.31947
	B1_N	0.01613	0.03261	0.31532
sky130_fd_sc_hs__o21ba_2	A1	0.01679	0.02453	0.23216
	A1	0.02345	0.03091	0.23878
	A2	0.01682	0.02579	0.23677
	A2	0.02228	0.03122	0.24012
	B1_N	0.02605	0.04107	0.33107
	B1_N	0.02192	0.03693	0.32638
sky130_fd_sc_hs__o21ba_4	A1	0.03342	0.04801	0.46502
	A1	0.04668	0.06116	0.47273
	A2	0.03383	0.05137	0.46364
	A2	0.04386	0.06120	0.47309
	B1_N	0.04165	0.05818	0.41395
	B1_N	0.03947	0.05593	0.41017

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)	0.00605	0.00607	0.00605
	(A2 * B1_N * !X)	0.00193	0.00192	0.00194
	(A2 * !B1_N * X)	0.00386	0.00350	0.00423
	(A2 * !B1_N * X)	-0.00032	-0.00071	0.00008
	(!A2 * B1_N * !X)	0.00603	0.00605	0.00604
	(!A2 * B1_N * !X)	0.00194	0.00193	0.00193
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00730	0.00733	0.00730
	(A2 * B1_N * !X)	0.00300	0.00299	0.00301
	(A2 * !B1_N * X)	0.00414	0.00378	0.00449
	(A2 * !B1_N * X)	-0.00021	-0.00062	0.00017
	(!A2 * B1_N * !X)	0.00727	0.00730	0.00728
	(!A2 * B1_N * !X)	0.00301	0.00299	0.00301
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00931	0.00935	0.00932
	(A2 * B1_N * !X)	0.00070	0.00069	0.00072
	(A2 * !B1_N * X)	0.01207	0.01139	0.01275
	(A2 * !B1_N * X)	0.00338	0.00261	0.00408
	(!A2 * B1_N * !X)	0.00926	0.00933	0.00928
	(!A2 * B1_N * !X)	0.00071	0.00067	0.00070

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)	0.00242	0.00240	0.00242
	(A2 * B1_N * !X)	0.00653	0.00657	0.00654
	(A2 * !B1_N * X)	0.00067	0.00063	0.00042
	(A2 * !B1_N * X)	0.00483	0.00482	0.00459
	(!A2 * B1_N * !X)	0.00270	0.00250	0.00245
	(!A2 * B1_N * !X)	0.00681	0.00664	0.00655
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00320	0.00319	0.00321
	(A2 * B1_N * !X)	0.00751	0.00753	0.00751
	(A2 * !B1_N * X)	0.00045	0.00042	0.00021
	(A2 * !B1_N * X)	0.00480	0.00478	0.00456
	(!A2 * B1_N * !X)	0.00349	0.00329	0.00324
	(!A2 * B1_N * !X)	0.00778	0.00759	0.00752
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00127	0.00125	0.00127
	(A2 * B1_N * !X)	0.00986	0.00990	0.00987
	(A2 * !B1_N * X)	0.00481	0.00473	0.00432
	(A2 * !B1_N * X)	0.01352	0.01349	0.01304
	(!A2 * B1_N * !X)	0.00180	0.00141	0.00134
	(!A2 * B1_N * !X)	0.01037	0.01005	0.00991

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)	0.00614	0.00616	0.00614
	(A1 * B1_N * !X)	0.00192	0.00191	0.00192
	(A1 * !B1_N * X)	0.00329	0.00333	0.00335
	(A1 * !B1_N * X)	0.00021	0.00019	0.00027
	(!A1 * B1_N * !X)	0.00613	0.00614	0.00613
	(!A1 * B1_N * !X)	0.00192	0.00192	0.00192
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00734	0.00736	0.00734
	(A1 * B1_N * !X)	0.00298	0.00296	0.00298
	(A1 * !B1_N * X)	0.00355	0.00359	0.00360
	(A1 * !B1_N * X)	0.00031	0.00030	0.00037
	(!A1 * B1_N * !X)	0.00731	0.00733	0.00732
	(!A1 * B1_N * !X)	0.00298	0.00297	0.00298
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00870	0.00874	0.00871
	(A1 * B1_N * !X)	0.00068	0.00063	0.00067
	(A1 * !B1_N * X)	0.01035	0.01037	0.01043
	(A1 * !B1_N * X)	0.00459	0.00459	0.00472
	(!A1 * B1_N * !X)	0.00867	0.00870	0.00868
	(!A1 * B1_N * !X)	0.00068	0.00066	0.00067

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)	0.00234	0.00232	0.00233
	(A1 * B1_N * !X)	0.00655	0.00656	0.00655
	(A1 * !B1_N * X)	0.00006	0.00004	-0.00028
	(A1 * !B1_N * X)	0.00316	0.00314	0.00282
	(!A1 * B1_N * !X)	0.00261	0.00241	0.00236
	(!A1 * B1_N * !X)	0.00682	0.00665	0.00657
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00318	0.00317	0.00317
	(A1 * B1_N * !X)	0.00754	0.00754	0.00754
	(A1 * !B1_N * X)	-0.00012	-0.00015	-0.00048
	(A1 * !B1_N * X)	0.00311	0.00309	0.00278
	(!A1 * B1_N * !X)	0.00344	0.00324	0.00320
	(!A1 * B1_N * !X)	0.00780	0.00761	0.00754
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00190	0.00184	0.00188
	(A1 * B1_N * !X)	0.00992	0.00995	0.00992
	(A1 * !B1_N * X)	0.00419	0.00412	0.00350
	(A1 * !B1_N * X)	0.00993	0.00991	0.00928
	(!A1 * B1_N * !X)	0.00244	0.00204	0.00194
	(!A1 * B1_N * !X)	0.01049	0.01010	0.00995

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)	0.01104	0.02723	0.28282
	(!A1 * !A2 * !X)	0.00660	0.02277	0.27839
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.01269	0.02863	0.28371
	(!A1 * !A2 * !X)	0.00805	0.02394	0.27904
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.01576	0.03419	0.33390
	(!A1 * !A2 * !X)	0.01003	0.02842	0.32816

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)	0.00127	0.01830	0.27669
	(!A1 * !A2 * !X)	0.00572	0.02277	0.28113
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00222	0.01908	0.27698
	(!A1 * !A2 * !X)	0.00692	0.02377	0.28165
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00465	0.02376	0.32419
	(!A1 * !A2 * !X)	0.01041	0.02953	0.32994

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00286	0.00300	0.00297	0.00288	0.00291	0.88834
sky130_fd_sc_hs__o221ai_2	0.00586	0.00534	0.00613	0.00533	0.00537	1.54688
sky130_fd_sc_hs__o221ai_4	0.01118	0.01058	0.01129	0.01055	0.01070	2.84530

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	72.00790	357.75100
sky130_fd_sc_hs__o221ai_2	0.00000	143.95800	714.98200
sky130_fd_sc_hs__o221ai_4	0.00000	287.78600	1428.91000

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)	0.08001	0.68486	8.49679
	A2->Y (FR)	0.07169	0.72118	9.14448
	B1->Y (FR)	0.05952	0.65466	8.37121
	B2->Y (FR)	0.05054	0.69146	9.02400
	C1->Y (FR)	0.02284	0.47140	6.29475
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.07498	0.57374	8.12655
	A2->Y (FR)	0.06430	0.60637	8.71659
	B1->Y (FR)	0.05560	0.54777	8.02764
	B2->Y (FR)	0.04476	0.57919	8.60775
	C1->Y (FR)	0.01809	0.38854	5.89044
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.06635	0.47241	7.67860
	A2->Y (FR)	0.05611	0.51773	8.45176
	B1->Y (FR)	0.05527	0.47471	8.05649
	B2->Y (FR)	0.04320	0.51593	8.77094
	C1->Y (FR)	0.01837	0.34785	6.05312

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.05862	0.39141	4.53813
	A2->Y (RF)	0.05085	0.37978	4.46445
	B1->Y (RF)	0.05251	0.44896	5.48042
	B2->Y (RF)	0.04370	0.42959	5.31474
	C1->Y (RF)	0.04450	0.49728	6.27864
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.04536	0.29622	4.19508
	A2->Y (RF)	0.03818	0.29075	4.23079
	B1->Y (RF)	0.03914	0.35205	5.13883
	B2->Y (RF)	0.03219	0.36063	5.40473
	C1->Y (RF)	0.02118	0.40218	6.18564
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.05194	0.26354	4.53819
	A2->Y (RF)	0.04062	0.25118	4.52808
	B1->Y (RF)	0.04596	0.33128	5.68515
	B2->Y (RF)	0.03474	0.32080	5.74828
	C1->Y (RF)	0.02343	0.38077	6.85221

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00313	0.00763	0.09307
	A1	0.01566	0.02013	0.10529
	A2	0.00324	0.00910	0.10361
	A2	0.01425	0.02010	0.11457
	B1	0.00108	0.00567	0.08882
	B1	0.01049	0.01507	0.09909
	B2	0.00107	0.00722	0.10097
	B2	0.00880	0.01493	0.10869
	C1	-0.00062	0.00781	0.12906
	C1	0.00567	0.01416	0.13562
sky130_fd_sc_hs__o221ai_2	A1	0.00513	0.01516	0.18452
	A1	0.02929	0.03928	0.20844
	A2	0.00518	0.01760	0.19547
	A2	0.02578	0.03820	0.21530
	B1	0.00132	0.01158	0.17625
	B1	0.01972	0.02998	0.19464
	B2	0.00157	0.01395	0.18471
	B2	0.01633	0.02868	0.19890
	C1	-0.00206	0.01611	0.24963
	C1	0.00938	0.02756	0.26227

sky130_fd_sc_hs__o221ai_4	**A1**	0.00851	0.02757	0.31265
	A1	0.05619	0.07527	0.35993
	A2	0.00877	0.03116	0.32440
	A2	0.04962	0.07194	0.36324
	B1	0.00204	0.02296	0.33182
	B1	0.03807	0.05898	0.36736
	B2	0.00204	0.02668	0.33990
	B2	0.03142	0.05602	0.36805
	C1	-0.00371	0.03611	0.53253
	C1	0.01893	0.05883	0.55453

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01859	0.02196	0.09525
	A1	0.00825	0.01149	0.08195
	A2	0.01650	0.01985	0.08656
	A2	0.00758	0.01083	0.07503
	B1	0.01545	0.01898	0.08492
	B1	0.00602	0.00950	0.07467
	B2	0.01343	0.01705	0.07963
	B2	0.00570	0.00929	0.07153
	C1	0.00983	0.01529	0.09578
	C1	0.00353	0.00892	0.08873

sky130_fd_sc_hs__o221ai_2	**A1**	0.04173	0.04907	0.19027
	A1	0.01531	0.02264	0.16038
	A2	0.03050	0.03827	0.16836
	A2	0.01471	0.02216	0.14646
	B1	0.02942	0.03733	0.16706
	B1	0.01099	0.01880	0.14824
	B2	0.02509	0.03260	0.14451
	B2	0.01034	0.01779	0.12844
	C1	0.01712	0.02980	0.19089
	C1	0.00566	0.01824	0.17736
sky130_fd_sc_hs__o221ai_4	**A1**	0.08597	0.10293	0.39004
	A1	0.03454	0.05198	0.33301
	A2	0.07861	0.09499	0.34663
	A2	0.03364	0.05054	0.29915
	B1	0.05995	0.07873	0.35419
	B1	0.02393	0.04257	0.31822
	B2	0.05261	0.07076	0.31496
	B2	0.02322	0.04123	0.28431
	C1	0.03501	0.06528	0.43073
	C1	0.01237	0.04247	0.40661

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)**	0.00411	0.00370	0.00427
	(A2 * B2 * C1 * !Y)	-0.00062	-0.00107	-0.00043
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00220	0.00223	0.00220
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00248	-0.00249	-0.00247
	(A2 * B1 * !B2 * C1 * !Y)	0.00464	0.00424	0.00481
	(A2 * B1 * !B2 * C1 * !Y)	-0.00009	-0.00054	0.00010
	(A2 * !B1 * !B2 * Y)	0.00222	0.00225	0.00222
	(A2 * !B1 * !B2 * Y)	-0.00247	-0.00248	-0.00246
	(!A2 * B2 * !C1 * Y)	0.00208	0.00208	0.00209
	(!A2 * B2 * !C1 * Y)	-0.00247	-0.00247	-0.00247
	(!A2 * B1 * !B2 * !C1 * Y)	0.00209	0.00211	0.00210
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00247	-0.00248	-0.00247
	(!A2 * !B1 * !B2 * C1 * Y)	0.00217	0.00216	0.00216
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00249	-0.00248	-0.00248
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00209	0.00212	0.00209
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00250	-0.00251	-0.00250

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00816	0.00723	0.00837
	(A2 * B2 * C1 * !Y)	-0.00115	-0.00214	-0.00085
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00406	0.00408	0.00408
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00508	-0.00509	-0.00508
	(A2 * B1 * !B2 * C1 * !Y)	0.00923	0.00830	0.00943
	(A2 * B1 * !B2 * C1 * !Y)	-0.00008	-0.00107	0.00022
	(A2 * !B1 * !B2 * Y)	0.00412	0.00410	0.00411
	(A2 * !B1 * !B2 * Y)	-0.00508	-0.00506	-0.00505
	(!A2 * B2 * !C1 * Y)	0.00391	0.00396	0.00392
	(!A2 * B2 * !C1 * Y)	-0.00509	-0.00512	-0.00509
	(!A2 * B1 * !B2 * !C1 * Y)	0.00393	0.00398	0.00394
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00509	-0.00512	-0.00509
	(!A2 * !B1 * !B2 * C1 * Y)	0.00399	0.00406	0.00402
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00509	-0.00514	-0.00511
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00393	0.00393	0.00392
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00515	-0.00514	-0.00514

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.01621	0.01426	0.01660
	(A2 * B2 * C1 * !Y)	-0.00214	-0.00407	-0.00157
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00827	0.00827	0.00825
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00986	-0.00985	-0.00980
	(A2 * B1 * !B2 * C1 * !Y)	0.01835	0.01640	0.01873
	(A2 * B1 * !B2 * C1 * !Y)	-0.00000	-0.00193	0.00056
	(A2 * !B1 * !B2 * Y)	0.00833	0.00833	0.00830
	(A2 * !B1 * !B2 * Y)	-0.00981	-0.00979	-0.00975
	(!A2 * B2 * !C1 * Y)	0.00790	0.00796	0.00788
	(!A2 * B2 * !C1 * Y)	-0.00986	-0.00988	-0.00981
	(!A2 * B1 * !B2 * !C1 * Y)	0.00793	0.00793	0.00791
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00986	-0.00985	-0.00981
	(!A2 * !B1 * !B2 * C1 * Y)	0.00807	0.00818	0.00811
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00977	-0.00984	-0.00978
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00779	0.00791	0.00783
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00988	-0.00997	-0.00991

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)**	-0.00005	-0.00009	-0.00024
	(A2 * B2 * C1 * !Y)	0.00467	0.00468	0.00449
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00216	-0.00216	-0.00215
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00253	0.00255	0.00253
	(A2 * B1 * !B2 * C1 * !Y)	0.00048	0.00045	0.00030
	(A2 * B1 * !B2 * C1 * !Y)	0.00522	0.00522	0.00503
	(A2 * !B1 * !B2 * Y)	-0.00214	-0.00215	-0.00214
	(A2 * !B1 * !B2 * Y)	0.00255	0.00257	0.00254
	(!A2 * B2 * !C1 * Y)	-0.00177	-0.00206	-0.00208
	(!A2 * B2 * !C1 * Y)	0.00270	0.00257	0.00254
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00179	-0.00206	-0.00208
	(!A2 * B1 * !B2 * !C1 * Y)	0.00271	0.00258	0.00254
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00180	-0.00205	-0.00208
	(!A2 * !B1 * !B2 * C1 * Y)	0.00278	0.00261	0.00256
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00199	-0.00210	-0.00209
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00252	0.00253	0.00251

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00009	0.00002	-0.00029
	(A2 * B2 * C1 * !Y)	0.00937	0.00938	0.00898
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00398	-0.00399	-0.00397
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00520	0.00523	0.00520
	(A2 * B1 * !B2 * C1 * !Y)	0.00116	0.00109	0.00078
	(A2 * B1 * !B2 * C1 * !Y)	0.01044	0.01045	0.01005
	(A2 * !B1 * !B2 * Y)	-0.00395	-0.00396	-0.00395
	(A2 * !B1 * !B2 * Y)	0.00523	0.00526	0.00522
	(!A2 * B2 * !C1 * Y)	-0.00321	-0.00374	-0.00383
	(!A2 * B2 * !C1 * Y)	0.00554	0.00532	0.00521
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00326	-0.00376	-0.00384
	(!A2 * B1 * !B2 * !C1 * Y)	0.00559	0.00533	0.00521
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00331	-0.00380	-0.00383
	(!A2 * !B1 * !B2 * C1 * Y)	0.00570	0.00532	0.00525
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00368	-0.00388	-0.00391
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00519	0.00518	0.00516

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00032	0.00018	-0.00044
	(A2 * B2 * C1 * !Y)	0.01861	0.01863	0.01784
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00805	-0.00807	-0.00804
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.01004	0.01009	0.01003
	(A2 * B1 * !B2 * C1 * !Y)	0.00246	0.00238	0.00170
	(A2 * B1 * !B2 * C1 * !Y)	0.02075	0.02062	0.01997
	(A2 * !B1 * !B2 * Y)	-0.00799	-0.00801	-0.00798
	(A2 * !B1 * !B2 * Y)	0.01010	0.01014	0.01009
	(!A2 * B2 * !C1 * Y)	-0.00652	-0.00755	-0.00774
	(!A2 * B2 * !C1 * Y)	0.01081	0.01031	0.01006
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00660	-0.00757	-0.00776
	(!A2 * B1 * !B2 * !C1 * Y)	0.01087	0.01032	0.01006
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00665	-0.00762	-0.00774
	(!A2 * !B1 * !B2 * C1 * Y)	0.01117	0.01044	0.01017
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00744	-0.00786	-0.00783
	(!A2 * !B1 * !B2 * !C1 * Y)	0.01004	0.01001	0.00997

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)**	0.00341	0.00345	0.00345
	(A1 * B2 * C1 * !Y)	0.00003	0.00003	0.00010
	(A1 * B2 * !C1 * Y)	0.00202	0.00202	0.00201
	(A1 * B2 * !C1 * Y)	-0.00266	-0.00265	-0.00264
	(A1 * B1 * !B2 * C1 * !Y)	0.00395	0.00398	0.00399
	(A1 * B1 * !B2 * C1 * !Y)	0.00057	0.00056	0.00063
	(A1 * B1 * !B2 * !C1 * Y)	0.00200	0.00202	0.00201
	(A1 * B1 * !B2 * !C1 * Y)	-0.00264	-0.00265	-0.00264
	(A1 * !B1 * !B2 * C1 * Y)	0.00201	0.00204	0.00202
	(A1 * !B1 * !B2 * C1 * Y)	-0.00262	-0.00264	-0.00262
	(A1 * !B1 * !B2 * !C1 * Y)	0.00198	0.00200	0.00199
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00266	-0.00267	-0.00266
	(!A1 * B2 * !C1 * Y)	0.00192	0.00195	0.00193
	(!A1 * B2 * !C1 * Y)	-0.00263	-0.00266	-0.00264
	(!A1 * B1 * !B2 * !C1 * Y)	0.00193	0.00195	0.00194
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00264	-0.00265	-0.00264
	(!A1 * !B1 * !B2 * C1 * Y)	0.00198	0.00199	0.00197
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00266	-0.00266	-0.00265
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00193	0.00194	0.00193
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00267	-0.00268	-0.00266

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00645	0.00651	0.00652
	(A1 * B2 * C1 * !Y)	0.00038	0.00037	0.00049
	(A1 * B2 * !C1 * Y)	0.00385	0.00392	0.00387
	(A1 * B2 * !C1 * Y)	-0.00474	-0.00479	-0.00475
	(A1 * B1 * !B2 * C1 * !Y)	0.00751	0.00758	0.00759
	(A1 * B1 * !B2 * C1 * !Y)	0.00145	0.00143	0.00156
	(A1 * B1 * !B2 * !C1 * Y)	0.00386	0.00392	0.00388
	(A1 * B1 * !B2 * !C1 * Y)	-0.00475	-0.00479	-0.00475
	(A1 * !B1 * !B2 * C1 * Y)	0.00392	0.00395	0.00390
	(A1 * !B1 * !B2 * C1 * Y)	-0.00475	-0.00477	-0.00472
	(A1 * !B1 * !B2 * !C1 * Y)	0.00382	0.00388	0.00383
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00479	-0.00483	-0.00479
	(!A1 * B2 * !C1 * Y)	0.00367	0.00372	0.00369
	(!A1 * B2 * !C1 * Y)	-0.00475	-0.00478	-0.00475
	(!A1 * B1 * !B2 * !C1 * Y)	0.00369	0.00372	0.00372
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00475	-0.00477	-0.00475
	(!A1 * !B1 * !B2 * C1 * Y)	0.00380	0.00381	0.00380
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00477	-0.00477	-0.00476
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00369	0.00373	0.00368
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00481	-0.00483	-0.00481

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.01294	0.01313	0.01314
	(A1 * B2 * C1 * !Y)	0.00083	0.00076	0.00100
	(A1 * B2 * !C1 * Y)	0.00752	0.00766	0.00757
	(A1 * B2 * !C1 * Y)	-0.00974	-0.00984	-0.00976
	(A1 * B1 * !B2 * C1 * !Y)	0.01508	0.01526	0.01527
	(A1 * B1 * !B2 * C1 * !Y)	0.00297	0.00289	0.00314
	(A1 * B1 * !B2 * !C1 * Y)	0.00754	0.00766	0.00757
	(A1 * B1 * !B2 * !C1 * Y)	-0.00977	-0.00984	-0.00976
	(A1 * !B1 * !B2 * C1 * Y)	0.00760	0.00773	0.00763
	(A1 * !B1 * !B2 * C1 * Y)	-0.00971	-0.00979	-0.00971
	(A1 * !B1 * !B2 * !C1 * Y)	0.00746	0.00757	0.00749
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00984	-0.00991	-0.00984
	(!A1 * B2 * !C1 * Y)	0.00723	0.00733	0.00726
	(!A1 * B2 * !C1 * Y)	-0.00977	-0.00983	-0.00977
	(!A1 * B1 * !B2 * !C1 * Y)	0.00729	0.00731	0.00729
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00980	-0.00980	-0.00977
	(!A1 * !B1 * !B2 * C1 * Y)	0.00741	0.00752	0.00745
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00976	-0.00984	-0.00979
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00728	0.00728	0.00726
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00990	-0.00989	-0.00987

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)**	-0.00041	-0.00043	-0.00071
	(A1 * B2 * C1 * !Y)	0.00298	0.00296	0.00267
	(A1 * B2 * !C1 * Y)	-0.00195	-0.00195	-0.00196
	(A1 * B2 * !C1 * Y)	0.00268	0.00269	0.00269
	(A1 * B1 * !B2 * C1 * !Y)	0.00012	0.00009	-0.00018
	(A1 * B1 * !B2 * C1 * !Y)	0.00351	0.00350	0.00321
	(A1 * B1 * !B2 * !C1 * Y)	-0.00195	-0.00197	-0.00196
	(A1 * B1 * !B2 * !C1 * Y)	0.00268	0.00272	0.00269
	(A1 * !B1 * !B2 * C1 * Y)	-0.00194	-0.00195	-0.00194
	(A1 * !B1 * !B2 * C1 * Y)	0.00270	0.00273	0.00271
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * !B1 * !B2 * !C1 * Y)	0.00266	0.00268	0.00267
	(!A1 * B2 * !C1 * Y)	-0.00160	-0.00187	-0.00189
	(!A1 * B2 * !C1 * Y)	0.00284	0.00274	0.00270
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00163	-0.00187	-0.00189
	(!A1 * B1 * !B2 * !C1 * Y)	0.00285	0.00274	0.00270
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00164	-0.00186	-0.00189
	(!A1 * !B1 * !B2 * C1 * Y)	0.00290	0.00276	0.00272
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00180	-0.00191	-0.00192
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00267	0.00269	0.00268

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00041	-0.00046	-0.00101
	(A1 * B2 * C1 * !Y)	0.00568	0.00565	0.00509
	(A1 * B2 * !C1 * Y)	-0.00376	-0.00379	-0.00377
	(A1 * B2 * !C1 * Y)	0.00484	0.00490	0.00486
	(A1 * B1 * !B2 * C1 * !Y)	0.00066	0.00061	0.00006
	(A1 * B1 * !B2 * C1 * !Y)	0.00674	0.00672	0.00616
	(A1 * B1 * !B2 * !C1 * Y)	-0.00375	-0.00379	-0.00377
	(A1 * B1 * !B2 * !C1 * Y)	0.00483	0.00489	0.00486
	(A1 * !B1 * !B2 * C1 * Y)	-0.00373	-0.00376	-0.00374
	(A1 * !B1 * !B2 * C1 * Y)	0.00487	0.00491	0.00489
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00379	-0.00383	-0.00381
	(A1 * !B1 * !B2 * !C1 * Y)	0.00479	0.00485	0.00482
	(!A1 * B2 * !C1 * Y)	-0.00309	-0.00356	-0.00364
	(!A1 * B2 * !C1 * Y)	0.00517	0.00498	0.00488
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00312	-0.00357	-0.00365
	(!A1 * B1 * !B2 * !C1 * Y)	0.00518	0.00499	0.00488
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00315	-0.00361	-0.00364
	(!A1 * !B1 * !B2 * C1 * Y)	0.00532	0.00498	0.00493
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00349	-0.00369	-0.00368
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00484	0.00485	0.00483

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00089	-0.00100	-0.00209
	(A1 * B2 * C1 * !Y)	0.01136	0.01131	0.01019
	(A1 * B2 * !C1 * Y)	-0.00734	-0.00736	-0.00736
	(A1 * B2 * !C1 * Y)	0.00994	0.00997	0.00998
	(A1 * B1 * !B2 * C1 * !Y)	0.00127	0.00114	0.00005
	(A1 * B1 * !B2 * C1 * !Y)	0.01347	0.01345	0.01233
	(A1 * B1 * !B2 * !C1 * Y)	-0.00734	-0.00740	-0.00736
	(A1 * B1 * !B2 * !C1 * Y)	0.00995	0.01005	0.00998
	(A1 * !B1 * !B2 * C1 * Y)	-0.00729	-0.00732	-0.00730
	(A1 * !B1 * !B2 * C1 * Y)	0.01000	0.01005	0.01003
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00743	-0.00748	-0.00744
	(A1 * !B1 * !B2 * !C1 * Y)	0.00987	0.00998	0.00990
	(!A1 * B2 * !C1 * Y)	-0.00606	-0.00695	-0.00711
	(!A1 * B2 * !C1 * Y)	0.01058	0.01021	0.01001
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00612	-0.00698	-0.00713
	(!A1 * B1 * !B2 * !C1 * Y)	0.01063	0.01022	0.01001
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00615	-0.00702	-0.00710
	(!A1 * !B1 * !B2 * C1 * Y)	0.01090	0.01031	0.01010
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00681	-0.00722	-0.00725
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00995	0.00995	0.00992

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)**	0.00415	0.00378	0.00437
	(A2 * B2 * C1 * !Y)	-0.00061	-0.00103	-0.00038
	(A2 * !B2 * !C1 * Y)	0.00207	0.00208	0.00207
	(A2 * !B2 * !C1 * Y)	-0.00263	-0.00263	-0.00262
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00209	0.00212	0.00210
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00262	-0.00264	-0.00262
	(A1 * !A2 * B2 * C1 * !Y)	0.00468	0.00431	0.00490
	(A1 * !A2 * B2 * C1 * !Y)	-0.00008	-0.00050	0.00016
	(A1 * !A2 * !B2 * !C1 * Y)	0.00207	0.00209	0.00207
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00263	-0.00263	-0.00262
	(!A1 * !A2 * B2 * C1 * Y)	0.00087	0.00088	0.00087
	(!A1 * !A2 * B2 * C1 * Y)	-0.00265	-0.00267	-0.00264
	(!A1 * !A2 * B2 * !C1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00266	-0.00267	-0.00265
	(!A1 * !A2 * !B2 * C1 * Y)	0.00089	0.00090	0.00090
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00264	-0.00266	-0.00263
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00265	-0.00267	-0.00266

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00840	0.00750	0.00864
	(A2 * B2 * C1 * !Y)	-0.00103	-0.00199	-0.00071
	(A2 * !B2 * !C1 * Y)	0.00400	0.00401	0.00402
	(A2 * !B2 * !C1 * Y)	-0.00519	-0.00520	-0.00519
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00410	0.00409	0.00410
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00520	-0.00520	-0.00519
	(A1 * !A2 * B2 * C1 * !Y)	0.00947	0.00849	0.00971
	(A1 * !A2 * B2 * C1 * !Y)	0.00004	-0.00088	0.00036
	(A1 * !A2 * !B2 * !C1 * Y)	0.00401	0.00399	0.00401
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00521	-0.00518	-0.00519
	(!A1 * !A2 * B2 * C1 * Y)	0.00158	0.00157	0.00157
	(!A1 * !A2 * B2 * C1 * Y)	-0.00527	-0.00524	-0.00523
	(!A1 * !A2 * B2 * !C1 * Y)	0.00211	0.00209	0.00209
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00527	-0.00524	-0.00524
	(!A1 * !A2 * !B2 * C1 * Y)	0.00164	0.00166	0.00164
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00524	-0.00527	-0.00522
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00224	0.00225	0.00224
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00525	-0.00527	-0.00525

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.01631	0.01443	0.01673
	(A2 * B2 * C1 * !Y)	-0.00197	-0.00386	-0.00138
	(A2 * !B2 * !C1 * Y)	0.00777	0.00779	0.00781
	(A2 * !B2 * !C1 * Y)	-0.01005	-0.01005	-0.01005
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00797	0.00798	0.00796
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.01010	-0.01009	-0.01005
	(A1 * !A2 * B2 * C1 * !Y)	0.01844	0.01660	0.01887
	(A1 * !A2 * B2 * C1 * !Y)	0.00016	-0.00170	0.00075
	(A1 * !A2 * !B2 * !C1 * Y)	0.00778	0.00789	0.00781
	(A1 * !A2 * !B2 * !C1 * Y)	-0.01005	-0.01012	-0.01005
	(!A1 * !A2 * B2 * C1 * Y)	0.00295	0.00294	0.00293
	(!A1 * !A2 * B2 * C1 * Y)	-0.01021	-0.01019	-0.01012
	(!A1 * !A2 * B2 * !C1 * Y)	0.00392	0.00391	0.00390
	(!A1 * !A2 * B2 * !C1 * Y)	-0.01021	-0.01019	-0.01014
	(!A1 * !A2 * !B2 * C1 * Y)	0.00306	0.00306	0.00305
	(!A1 * !A2 * !B2 * C1 * Y)	-0.01015	-0.01013	-0.01010
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00419	0.00419	0.00417
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.01020	-0.01020	-0.01017

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)**	-0.00014	-0.00017	-0.00034
	(A2 * B2 * C1 * !Y)	0.00461	0.00461	0.00443
	(A2 * !B2 * !C1 * Y)	-0.00170	-0.00198	-0.00200
	(A2 * !B2 * !C1 * Y)	0.00298	0.00276	0.00268
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00204	-0.00205	-0.00204
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00267	0.00268	0.00268
	(A1 * !A2 * B2 * C1 * !Y)	0.00039	0.00035	0.00020
	(A1 * !A2 * B2 * C1 * !Y)	0.00515	0.00516	0.00496
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00166	-0.00200	-0.00200
	(A1 * !A2 * !B2 * !C1 * Y)	0.00301	0.00275	0.00268
	(!A1 * !A2 * B2 * C1 * Y)	-0.00070	-0.00070	-0.00077
	(!A1 * !A2 * B2 * C1 * Y)	0.00294	0.00295	0.00278
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00107	-0.00108	-0.00115
	(!A1 * !A2 * B2 * !C1 * Y)	0.00297	0.00299	0.00277
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00079	-0.00079	-0.00082
	(!A1 * !A2 * !B2 * C1 * Y)	0.00279	0.00281	0.00271
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00114	-0.00116	-0.00121
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00293	0.00293	0.00277

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00018	-0.00026	-0.00057
	(A2 * B2 * C1 * !Y)	0.00920	0.00921	0.00883
	(A2 * !B2 * !C1 * Y)	-0.00321	-0.00385	-0.00389
	(A2 * !B2 * !C1 * Y)	0.00600	0.00549	0.00533
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00400	-0.00402	-0.00400
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00531	0.00537	0.00531
	(A1 * !A2 * B2 * C1 * !Y)	0.00089	0.00081	0.00050
	(A1 * !A2 * B2 * C1 * !Y)	0.01026	0.01028	0.00990
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00316	-0.00387	-0.00389
	(A1 * !A2 * !B2 * !C1 * Y)	0.00606	0.00548	0.00533
	(!A1 * !A2 * B2 * C1 * Y)	-0.00124	-0.00126	-0.00137
	(!A1 * !A2 * B2 * C1 * Y)	0.00580	0.00584	0.00549
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00196	-0.00196	-0.00209
	(!A1 * !A2 * B2 * !C1 * Y)	0.00586	0.00584	0.00546
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00141	-0.00144	-0.00148
	(!A1 * !A2 * !B2 * C1 * Y)	0.00552	0.00563	0.00537
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00209	-0.00215	-0.00224
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00581	0.00581	0.00547

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00017	0.00003	-0.00059
	(A2 * B2 * C1 * !Y)	0.01839	0.01840	0.01763
	(A2 * !B2 * !C1 * Y)	-0.00612	-0.00751	-0.00755
	(A2 * !B2 * !C1 * Y)	0.01171	0.01046	0.01031
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00773	-0.00780	-0.00775
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.01022	0.01038	0.01027
	(A1 * !A2 * B2 * C1 * !Y)	0.00231	0.00217	0.00155
	(A1 * !A2 * B2 * C1 * !Y)	0.02053	0.02054	0.01976
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00599	-0.00749	-0.00755
	(A1 * !A2 * !B2 * !C1 * Y)	0.01183	0.01053	0.01031
	(!A1 * !A2 * B2 * C1 * Y)	-0.00230	-0.00233	-0.00255
	(!A1 * !A2 * B2 * C1 * Y)	0.01115	0.01121	0.01061
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00365	-0.00370	-0.00390
	(!A1 * !A2 * B2 * !C1 * Y)	0.01128	0.01137	0.01055
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00262	-0.00265	-0.00275
	(!A1 * !A2 * !B2 * C1 * Y)	0.01065	0.01074	0.01039
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00391	-0.00406	-0.00417
	(!A1 * !A2 * !B2 * !C1 * Y)	0.01120	0.01123	0.01057

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)**	0.00336	0.00340	0.00341
	(A2 * B1 * C1 * !Y)	0.00017	0.00016	0.00023
	(A2 * B1 * !C1 * Y)	0.00199	0.00202	0.00200
	(A2 * B1 * !C1 * Y)	-0.00247	-0.00248	-0.00247
	(A2 * !B1 * !C1 * Y)	0.00198	0.00200	0.00198
	(A2 * !B1 * !C1 * Y)	-0.00248	-0.00249	-0.00247
	(A1 * !A2 * B1 * C1 * !Y)	0.00389	0.00393	0.00394
	(A1 * !A2 * B1 * C1 * !Y)	0.00070	0.00069	0.00076
	(A1 * !A2 * B1 * !C1 * Y)	0.00200	0.00202	0.00200
	(A1 * !A2 * B1 * !C1 * Y)	-0.00247	-0.00248	-0.00247
	(A1 * !A2 * !B1 * !C1 * Y)	0.00197	0.00197	0.00197
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00248	-0.00248	-0.00247
	(!A1 * !A2 * B1 * C1 * Y)	0.00079	0.00080	0.00079
	(!A1 * !A2 * B1 * C1 * Y)	-0.00250	-0.00251	-0.00249
	(!A1 * !A2 * B1 * !C1 * Y)	0.00107	0.00107	0.00107
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00250	-0.00251	-0.00250
	(!A1 * !A2 * !B1 * C1 * Y)	0.00081	0.00082	0.00083
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00248	-0.00249	-0.00248
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00114	0.00114	0.00114
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00250	-0.00251	-0.00250

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00641	0.00649	0.00650
	(A2 * B1 * C1 * !Y)	0.00038	0.00036	0.00048
	(A2 * B1 * !C1 * Y)	0.00382	0.00388	0.00384
	(A2 * B1 * !C1 * Y)	-0.00475	-0.00479	-0.00475
	(A2 * !B1 * !C1 * Y)	0.00373	0.00377	0.00376
	(A2 * !B1 * !C1 * Y)	-0.00474	-0.00477	-0.00475
	(A1 * !A2 * B1 * C1 * !Y)	0.00749	0.00756	0.00757
	(A1 * !A2 * B1 * C1 * !Y)	0.00144	0.00143	0.00155
	(A1 * !A2 * B1 * !C1 * Y)	0.00382	0.00388	0.00384
	(A1 * !A2 * B1 * !C1 * Y)	-0.00475	-0.00479	-0.00475
	(A1 * !A2 * !B1 * !C1 * Y)	0.00375	0.00377	0.00376
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00477	-0.00477	-0.00475
	(!A1 * !A2 * B1 * C1 * Y)	0.00142	0.00142	0.00141
	(!A1 * !A2 * B1 * C1 * Y)	-0.00483	-0.00484	-0.00478
	(!A1 * !A2 * B1 * !C1 * Y)	0.00195	0.00195	0.00193
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00483	-0.00483	-0.00480
	(!A1 * !A2 * !B1 * C1 * Y)	0.00147	0.00148	0.00148
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00478	-0.00480	-0.00476
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00207	0.00208	0.00207
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00480	-0.00482	-0.00480

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.01302	0.01315	0.01318
	(A2 * B1 * C1 * !Y)	0.00078	0.00075	0.00101
	(A2 * B1 * !C1 * Y)	0.00774	0.00786	0.00778
	(A2 * B1 * !C1 * Y)	-0.00956	-0.00964	-0.00957
	(A2 * !B1 * !C1 * Y)	0.00757	0.00770	0.00762
	(A2 * !B1 * !C1 * Y)	-0.00955	-0.00964	-0.00957
	(A1 * !A2 * B1 * C1 * !Y)	0.01513	0.01516	0.01531
	(A1 * !A2 * B1 * C1 * !Y)	0.00294	0.00295	0.00315
	(A1 * !A2 * B1 * !C1 * Y)	0.00775	0.00786	0.00778
	(A1 * !A2 * B1 * !C1 * Y)	-0.00957	-0.00964	-0.00957
	(A1 * !A2 * !B1 * !C1 * Y)	0.00757	0.00768	0.00762
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00955	-0.00963	-0.00957
	(!A1 * !A2 * B1 * C1 * Y)	0.00281	0.00285	0.00282
	(!A1 * !A2 * B1 * C1 * Y)	-0.00966	-0.00975	-0.00964
	(!A1 * !A2 * B1 * !C1 * Y)	0.00378	0.00383	0.00379
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00967	-0.00974	-0.00967
	(!A1 * !A2 * !B1 * C1 * Y)	0.00294	0.00296	0.00294
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00964	-0.00968	-0.00962
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00405	0.00408	0.00405
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00968	-0.00973	-0.00969

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)**	-0.00036	-0.00040	-0.00067
	(A2 * B1 * C1 * !Y)	0.00283	0.00283	0.00254
	(A2 * B1 * !C1 * Y)	-0.00195	-0.00196	-0.00195
	(A2 * B1 * !C1 * Y)	0.00251	0.00254	0.00252
	(A2 * !B1 * !C1 * Y)	-0.00164	-0.00189	-0.00191
	(A2 * !B1 * !C1 * Y)	0.00279	0.00258	0.00253
	(A1 * !A2 * B1 * C1 * !Y)	0.00018	0.00015	-0.00014
	(A1 * !A2 * B1 * C1 * !Y)	0.00337	0.00336	0.00307
	(A1 * !A2 * B1 * !C1 * Y)	-0.00195	-0.00196	-0.00195
	(A1 * !A2 * B1 * !C1 * Y)	0.00251	0.00254	0.00252
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00159	-0.00190	-0.00191
	(A1 * !A2 * !B1 * !C1 * Y)	0.00284	0.00260	0.00253
	(!A1 * !A2 * B1 * C1 * Y)	-0.00061	-0.00062	-0.00069
	(!A1 * !A2 * B1 * C1 * Y)	0.00277	0.00278	0.00263
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00099	-0.00100	-0.00107
	(!A1 * !A2 * B1 * !C1 * Y)	0.00281	0.00283	0.00261
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00071	-0.00072	-0.00074
	(!A1 * !A2 * !B1 * C1 * Y)	0.00264	0.00265	0.00256
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00106	-0.00109	-0.00113
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00277	0.00277	0.00262

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00037	-0.00043	-0.00098
	(A2 * B1 * C1 * !Y)	0.00567	0.00566	0.00510
	(A2 * B1 * !C1 * Y)	-0.00372	-0.00375	-0.00374
	(A2 * B1 * !C1 * Y)	0.00484	0.00489	0.00486
	(A2 * !B1 * !C1 * Y)	-0.00294	-0.00364	-0.00364
	(A2 * !B1 * !C1 * Y)	0.00556	0.00500	0.00488
	(A1 * !A2 * B1 * C1 * !Y)	0.00070	0.00064	0.00009
	(A1 * !A2 * B1 * C1 * !Y)	0.00674	0.00673	0.00617
	(A1 * !A2 * B1 * !C1 * Y)	-0.00373	-0.00375	-0.00374
	(A1 * !A2 * B1 * !C1 * Y)	0.00485	0.00488	0.00486
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00288	-0.00366	-0.00364
	(A1 * !A2 * !B1 * !C1 * Y)	0.00562	0.00499	0.00488
	(!A1 * !A2 * B1 * C1 * Y)	-0.00107	-0.00110	-0.00121
	(!A1 * !A2 * B1 * C1 * Y)	0.00531	0.00535	0.00504
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00178	-0.00181	-0.00193
	(!A1 * !A2 * B1 * !C1 * Y)	0.00537	0.00542	0.00501
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00125	-0.00126	-0.00132
	(!A1 * !A2 * !B1 * C1 * Y)	0.00507	0.00511	0.00493
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00192	-0.00198	-0.00206
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00534	0.00535	0.00502

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00091	-0.00104	-0.00215
	(A2 * B1 * C1 * !Y)	0.01128	0.01126	0.01015
	(A2 * B1 * !C1 * Y)	-0.00756	-0.00755	-0.00757
	(A2 * B1 * !C1 * Y)	0.00975	0.00975	0.00979
	(A2 * !B1 * !C1 * Y)	-0.00596	-0.00740	-0.00738
	(A2 * !B1 * !C1 * Y)	0.01123	0.01007	0.00983
	(A1 * !A2 * B1 * C1 * !Y)	0.00117	0.00109	-0.00001
	(A1 * !A2 * B1 * C1 * !Y)	0.01348	0.01340	0.01229
	(A1 * !A2 * B1 * !C1 * Y)	-0.00756	-0.00759	-0.00757
	(A1 * !A2 * B1 * !C1 * Y)	0.00976	0.00982	0.00979
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00583	-0.00734	-0.00738
	(A1 * !A2 * !B1 * !C1 * Y)	0.01134	0.00993	0.00983
	(!A1 * !A2 * B1 * C1 * Y)	-0.00220	-0.00224	-0.00244
	(!A1 * !A2 * B1 * C1 * Y)	0.01066	0.01073	0.01012
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00355	-0.00360	-0.00379
	(!A1 * !A2 * B1 * !C1 * Y)	0.01080	0.01089	0.01007
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00255	-0.00255	-0.00264
	(!A1 * !A2 * !B1 * C1 * Y)	0.01024	0.01028	0.00991
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00381	-0.00392	-0.00405
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01071	0.01070	0.01009

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)	0.00079	0.00080	0.00073
	(A2 * !B1 * !B2 * Y)	-0.00296	-0.00298	-0.00307
	(!A2 * !B1 * !B2 * Y)	0.00079	0.00080	0.00073
	(!A2 * !B1 * !B2 * Y)	-0.00295	-0.00298	-0.00307
	(!A1 * !A2 * B2 * Y)	0.00082	0.00083	0.00070
	(!A1 * !A2 * B2 * Y)	-0.00276	-0.00279	-0.00304
	(!A1 * !A2 * B1 * !B2 * Y)	0.00083	0.00083	0.00071
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00279	-0.00282	-0.00304
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00143	0.00144	0.00132
	(A2 * !B1 * !B2 * Y)	-0.00550	-0.00555	-0.00573
	(!A2 * !B1 * !B2 * Y)	0.00143	0.00142	0.00132
	(!A2 * !B1 * !B2 * Y)	-0.00550	-0.00550	-0.00573
	(!A1 * !A2 * B2 * Y)	0.00150	0.00150	0.00128
	(!A1 * !A2 * B2 * Y)	-0.00515	-0.00519	-0.00568
	(!A1 * !A2 * B1 * !B2 * Y)	0.00151	0.00151	0.00130
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00521	-0.00524	-0.00568
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00246	0.00247	0.00226
	(A2 * !B1 * !B2 * Y)	-0.01123	-0.01129	-0.01161
	(!A2 * !B1 * !B2 * Y)	0.00246	0.00244	0.00226
	(!A2 * !B1 * !B2 * Y)	-0.01123	-0.01119	-0.01161
	(!A1 * !A2 * B2 * Y)	0.00259	0.00259	0.00220
	(!A1 * !A2 * B2 * Y)	-0.01053	-0.01060	-0.01150
	(!A1 * !A2 * B1 * !B2 * Y)	0.00261	0.00260	0.00223
	(!A1 * !A2 * B1 * !B2 * Y)	-0.01069	-0.01070	-0.01152

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)	-0.00068	-0.00069	-0.00068
	(A2 * !B1 * !B2 * Y)	0.00310	0.00316	0.00310
	(!A2 * !B1 * !B2 * Y)	-0.00068	-0.00069	-0.00068
	(!A2 * !B1 * !B2 * Y)	0.00310	0.00315	0.00310
	(!A1 * !A2 * B2 * Y)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * B2 * Y)	0.00309	0.00312	0.00310
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00065	-0.00066	-0.00065
	(!A1 * !A2 * B1 * !B2 * Y)	0.00309	0.00315	0.00310
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00122	-0.00124	-0.00121
	(A2 * !B1 * !B2 * Y)	0.00577	0.00590	0.00580
	(!A2 * !B1 * !B2 * Y)	-0.00121	-0.00124	-0.00121
	(!A2 * !B1 * !B2 * Y)	0.00576	0.00589	0.00580
	(!A1 * !A2 * B2 * Y)	-0.00115	-0.00118	-0.00115
	(!A1 * !A2 * B2 * Y)	0.00577	0.00588	0.00579
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00117	-0.00119	-0.00117
	(!A1 * !A2 * B1 * !B2 * Y)	0.00576	0.00589	0.00579
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00206	-0.00210	-0.00205
	(A2 * !B1 * !B2 * Y)	0.01168	0.01193	0.01174
	(!A2 * !B1 * !B2 * Y)	-0.00206	-0.00210	-0.00205
	(!A2 * !B1 * !B2 * Y)	0.01168	0.01192	0.01174
	(!A1 * !A2 * B2 * Y)	-0.00195	-0.00197	-0.00195
	(!A1 * !A2 * B2 * Y)	0.01166	0.01180	0.01172
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00200	-0.00199	-0.00198
	(!A1 * !A2 * B1 * !B2 * Y)	0.01172	0.01174	0.01172

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00265	0.00261	0.00257	0.00272	0.00267	1.65084
sky130_fd_sc_hs__o221a_2	0.00280	0.00274	0.00274	0.00284	0.00278	3.23697
sky130_fd_sc_hs__o221a_4	0.00526	0.00475	0.00557	0.00475	0.00482	6.09358

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	171.01600	426.04800
sky130_fd_sc_hs__o221a_2	0.00000	256.40100	428.91000
sky130_fd_sc_hs__o221a_4	0.00000	515.30200	857.42900

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)	0.09567	0.45932	5.51989
	A2->X (RR)	0.08801	0.44832	5.39339
	B1->X (RR)	0.08915	0.49275	6.04881
	B2->X (RR)	0.08184	0.47267	5.83910
	C1->X (RR)	0.06166	0.48607	6.62490
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.09514	0.37507	5.28581
	A2->X (RR)	0.08821	0.36486	5.15959
	B1->X (RR)	0.08891	0.41069	5.82490
	B2->X (RR)	0.08442	0.39451	5.62966
	C1->X (RR)	0.06600	0.41154	6.40633
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.10589	0.33544	5.61430
	A2->X (RR)	0.09726	0.32635	5.51383
	B1->X (RR)	0.10058	0.36827	6.00760
	B2->X (RR)	0.09155	0.34719	5.82650
	C1->X (RR)	0.07100	0.37055	6.68529

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.10768	0.50362	5.51962
	A2->X (FF)	0.09811	0.53070	5.89670
	B1->X (FF)	0.08977	0.45927	5.34186
	B2->X (FF)	0.08102	0.48051	5.59624
	C1->X (FF)	0.04492	0.38669	4.95038
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.12460	0.49122	5.62901
	A2->X (FF)	0.11425	0.52093	5.99896
	B1->X (FF)	0.10327	0.44508	5.43278
	B2->X (FF)	0.09454	0.46984	5.68068
	C1->X (FF)	0.05135	0.36834	5.01726
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.11330	0.43546	5.58944
	A2->X (FF)	0.10123	0.45865	5.85848
	B1->X (FF)	0.10115	0.40195	5.40978
	B2->X (FF)	0.08807	0.42045	5.64873
	C1->X (FF)	0.04897	0.32506	4.97079

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.02399	0.03110	0.19267
	A1	0.01633	0.02327	0.18353
	A2	0.02327	0.03133	0.19874
	A2	0.01698	0.02483	0.19058
	B1	0.02141	0.03134	0.23067
	B1	0.01301	0.02295	0.22233
	B2	0.02078	0.03118	0.23084
	B2	0.01347	0.02389	0.22391
	C1	0.01560	0.03119	0.29123
	C1	0.00978	0.02538	0.28589
sky130_fd_sc_hs__o221a_2	A1	0.02968	0.03631	0.19859
	A1	0.02155	0.02764	0.19007
	A2	0.03164	0.03870	0.20499
	A2	0.02184	0.02897	0.19499
	B1	0.02640	0.03602	0.23725
	B1	0.01741	0.02716	0.22909
	B2	0.03100	0.03877	0.23138
	B2	0.01800	0.02797	0.22938
	C1	0.02011	0.03521	0.29650
	C1	0.01394	0.02912	0.29192

sky130_fd_sc_hs__o221a_4	**A1**	0.05707	0.07356	0.45435
	A1	0.04374	0.05875	0.43620
	A2	0.05425	0.07150	0.44645
	A2	0.04403	0.05976	0.43100
	B1	0.05210	0.07185	0.47451
	B1	0.03501	0.05488	0.45786
	B2	0.04917	0.06935	0.47193
	B2	0.03576	0.05603	0.45992
	C1	0.03778	0.06828	0.58092
	C1	0.02723	0.05775	0.57216

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.01110	0.01809	0.19150
	A1	0.02278	0.02975	0.20295
	A2	0.01112	0.01983	0.21217
	A2	0.02138	0.03010	0.22229
	B1	0.00925	0.01859	0.20888
	B1	0.01764	0.02688	0.21512
	B2	0.00904	0.01957	0.21285
	B2	0.01633	0.02686	0.21821
	C1	0.00643	0.02216	0.27008
	C1	0.01224	0.02790	0.27453

sky130_fd_sc_hs__o221a_2	**A1**	0.02192	0.02445	0.19670
	A1	0.03437	0.03678	0.20914
	A2	0.02194	0.02627	0.21714
	A2	0.03296	0.03722	0.22815
	B1	0.01825	0.02437	0.21183
	B1	0.02722	0.03308	0.22000
	B2	0.01803	0.02563	0.21611
	B2	0.02839	0.03431	0.21222
	C1	0.01271	0.02741	0.27559
	C1	0.01887	0.03343	0.27777
sky130_fd_sc_hs__o221a_4	**A1**	0.04188	0.05026	0.42840
	A1	0.06484	0.07293	0.45060
	A2	0.04254	0.05467	0.45232
	A2	0.06215	0.07369	0.46515
	B1	0.03532	0.04804	0.42875
	B1	0.05239	0.06495	0.44502
	B2	0.03881	0.05210	0.42162
	B2	0.05473	0.06778	0.43396
	C1	0.02607	0.05494	0.54886
	C1	0.03663	0.06537	0.55277

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

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

	(A2 * B2 * C1 * X)	0.00403	0.00366	0.00439
	(A2 * B2 * C1 * X)	-0.00017	-0.00058	0.00022
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00278	0.00277	0.00278
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00138	-0.00137	-0.00137
	(A2 * B1 * !B2 * C1 * X)	0.00461	0.00424	0.00497
	(A2 * B1 * !B2 * C1 * X)	0.00041	0.00000	0.00080
	(A2 * !B1 * !B2 * !X)	0.00280	0.00280	0.00280
sky130_fd_sc_hs__o221a_1	**(A2 * !B1 * !B2 * !X)**	-0.00136	-0.00135	-0.00135
	(!A2 * B2 * !C1 * !X)	0.00271	0.00271	0.00271
	(!A2 * B2 * !C1 * !X)	-0.00137	-0.00137	-0.00137
	(!A2 * B1 * !B2 * !C1 * !X)	0.00272	0.00274	0.00273
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * !B2 * C1 * !X)	0.00277	0.00278	0.00277
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00138	-0.00139	-0.00138
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00269	0.00270	0.00268
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00142	-0.00143	-0.00142

	(A2 * B2 * C1 * X)	0.00436	0.00399	0.00470
	(A2 * B2 * C1 * X)	-0.00009	-0.00052	0.00026
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00404	0.00407	0.00404
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00037	-0.00038	-0.00036
	(A2 * B1 * !B2 * C1 * X)	0.00494	0.00457	0.00528
	(A2 * B1 * !B2 * C1 * X)	0.00049	0.00006	0.00084
	(A2 * !B1 * !B2 * !X)	0.00405	0.00409	0.00406
sky130_fd_sc_hs__o221a_2	**(A2 * !B1 * !B2 * !X)**	-0.00035	-0.00037	-0.00035
	(!A2 * B2 * !C1 * !X)	0.00394	0.00396	0.00395
	(!A2 * B2 * !C1 * !X)	-0.00036	-0.00038	-0.00037
	(!A2 * B1 * !B2 * !C1 * !X)	0.00394	0.00397	0.00395
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00036	-0.00038	-0.00036
	(!A2 * !B1 * !B2 * C1 * !X)	0.00402	0.00402	0.00401
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00397	0.00397	0.00397
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00039	-0.00039	-0.00039

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00834	0.00765	0.00905
	(A2 * B2 * C1 * X)	-0.00020	-0.00096	0.00054
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00799	0.00803	0.00801
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00043	-0.00046	-0.00043
	(A2 * B1 * !B2 * C1 * X)	0.00950	0.00881	0.01021
	(A2 * B1 * !B2 * C1 * X)	0.00096	0.00020	0.00170
	(A2 * !B1 * !B2 * !X)	0.00803	0.00808	0.00806
	(A2 * !B1 * !B2 * !X)	-0.00039	-0.00041	-0.00039
	(!A2 * B2 * !C1 * !X)	0.00784	0.00788	0.00787
	(!A2 * B2 * !C1 * !X)	-0.00044	-0.00047	-0.00044
	(!A2 * B1 * !B2 * !C1 * !X)	0.00786	0.00790	0.00788
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00044	-0.00047	-0.00044
	(!A2 * !B1 * !B2 * C1 * !X)	0.00798	0.00803	0.00800
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00042	-0.00044	-0.00043
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00779	0.00781	0.00780
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00052	-0.00054	-0.00053

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)**	0.00059	0.00055	0.00035
	(A2 * B2 * C1 * X)	0.00478	0.00477	0.00455
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00060	-0.00061	-0.00060
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00355	0.00357	0.00355
	(A2 * B1 * !B2 * C1 * X)	0.00117	0.00113	0.00092
	(A2 * B1 * !B2 * C1 * X)	0.00536	0.00535	0.00512
	(A2 * !B1 * !B2 * !X)	-0.00058	-0.00059	-0.00058
	(A2 * !B1 * !B2 * !X)	0.00357	0.00359	0.00357
	(!A2 * B2 * !C1 * !X)	-0.00029	-0.00054	-0.00055
	(!A2 * B2 * !C1 * !X)	0.00374	0.00360	0.00355
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00030	-0.00054	-0.00055
	(!A2 * B1 * !B2 * !C1 * !X)	0.00375	0.00360	0.00355
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00032	-0.00052	-0.00053
	(!A2 * !B1 * !B2 * C1 * !X)	0.00381	0.00364	0.00358
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00051	-0.00059	-0.00060
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00352	0.00353	0.00351

	(A2 * B2 * C1 * X)	0.00035	0.00030	0.00010
	(A2 * B2 * C1 * X)	0.00479	0.00479	0.00456
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00017	0.00017	0.00017
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00457	0.00458	0.00458
	(A2 * B1 * !B2 * C1 * X)	0.00092	0.00088	0.00068
	(A2 * B1 * !B2 * C1 * X)	0.00537	0.00537	0.00514
	(A2 * !B1 * !B2 * !X)	0.00019	0.00018	0.00018
sky130_fd_sc_hs__o221a_2	**(A2 * !B1 * !B2 * !X)**	0.00459	0.00460	0.00459
	(!A2 * B2 * !C1 * !X)	0.00050	0.00025	0.00023
	(!A2 * B2 * !C1 * !X)	0.00472	0.00462	0.00459
	(!A2 * B1 * !B2 * !C1 * !X)	0.00048	0.00025	0.00023
	(!A2 * B1 * !B2 * !C1 * !X)	0.00473	0.00462	0.00459
	(!A2 * !B1 * !B2 * C1 * !X)	0.00045	0.00025	0.00024
	(!A2 * !B1 * !B2 * C1 * !X)	0.00479	0.00465	0.00461
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00030	0.00021	0.00020
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00458	0.00458	0.00456

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00103	0.00095	0.00054
	(A2 * B2 * C1 * X)	0.00958	0.00955	0.00910
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00051	0.00047	0.00050
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00892	0.00900	0.00895
	(A2 * B1 * !B2 * C1 * X)	0.00219	0.00211	0.00170
	(A2 * B1 * !B2 * C1 * X)	0.01074	0.01071	0.01025
	(A2 * !B1 * !B2 * !X)	0.00056	0.00052	0.00054
	(A2 * !B1 * !B2 * !X)	0.00897	0.00905	0.00899
	(!A2 * B2 * !C1 * !X)	0.00111	0.00062	0.00061
	(!A2 * B2 * !C1 * !X)	0.00932	0.00904	0.00897
	(!A2 * B1 * !B2 * !C1 * !X)	0.00108	0.00061	0.00060
	(!A2 * B1 * !B2 * !C1 * !X)	0.00933	0.00904	0.00897
	(!A2 * !B1 * !B2 * C1 * !X)	0.00105	0.00065	0.00064
	(!A2 * !B1 * !B2 * C1 * !X)	0.00945	0.00913	0.00904
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00069	0.00051	0.00051
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00888	0.00890	0.00888

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)**	0.00332	0.00335	0.00337
	(A1 * B2 * C1 * X)	0.00043	0.00042	0.00050
	(A1 * B2 * !C1 * !X)	0.00281	0.00283	0.00282
	(A1 * B2 * !C1 * !X)	-0.00120	-0.00122	-0.00120
	(A1 * B1 * !B2 * C1 * X)	0.00390	0.00393	0.00395
	(A1 * B1 * !B2 * C1 * X)	0.00100	0.00100	0.00108
	(A1 * B1 * !B2 * !C1 * !X)	0.00281	0.00283	0.00282
	(A1 * B1 * !B2 * !C1 * !X)	-0.00120	-0.00122	-0.00120
	(A1 * !B1 * !B2 * C1 * !X)	0.00283	0.00285	0.00283
	(A1 * !B1 * !B2 * C1 * !X)	-0.00118	-0.00120	-0.00118
	(A1 * !B1 * !B2 * !C1 * !X)	0.00277	0.00278	0.00278
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * B2 * !C1 * !X)	0.00275	0.00277	0.00276
	(!A1 * B2 * !C1 * !X)	-0.00120	-0.00121	-0.00120
	(!A1 * B1 * !B2 * !C1 * !X)	0.00275	0.00277	0.00276
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00120	-0.00121	-0.00120
	(!A1 * !B1 * !B2 * C1 * !X)	0.00281	0.00283	0.00281
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00122	-0.00122	-0.00121
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00271	0.00272	0.00270
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00359	0.00363	0.00364
	(A1 * B2 * C1 * X)	0.00047	0.00046	0.00053
	(A1 * B2 * !C1 * !X)	0.00406	0.00409	0.00407
	(A1 * B2 * !C1 * !X)	-0.00017	-0.00019	-0.00017
	(A1 * B1 * !B2 * C1 * X)	0.00417	0.00421	0.00422
	(A1 * B1 * !B2 * C1 * X)	0.00105	0.00104	0.00111
	(A1 * B1 * !B2 * !C1 * !X)	0.00407	0.00409	0.00407
	(A1 * B1 * !B2 * !C1 * !X)	-0.00017	-0.00019	-0.00017
	(A1 * !B1 * !B2 * C1 * !X)	0.00407	0.00410	0.00408
	(A1 * !B1 * !B2 * C1 * !X)	-0.00016	-0.00018	-0.00016
	(A1 * !B1 * !B2 * !C1 * !X)	0.00405	0.00406	0.00405
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00019	-0.00020	-0.00019
	(!A1 * B2 * !C1 * !X)	0.00398	0.00399	0.00399
	(!A1 * B2 * !C1 * !X)	-0.00017	-0.00017	-0.00017
	(!A1 * B1 * !B2 * !C1 * !X)	0.00400	0.00401	0.00401
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00017	-0.00018	-0.00017
	(!A1 * !B1 * !B2 * C1 * !X)	0.00405	0.00406	0.00404
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00019	-0.00019	-0.00018
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00400	0.00401	0.00400
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00020	-0.00020	-0.00019

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00640	0.00646	0.00650
	(A1 * B2 * C1 * X)	0.00097	0.00094	0.00108
	(A1 * B2 * !C1 * !X)	0.00748	0.00752	0.00748
	(A1 * B2 * !C1 * !X)	-0.00022	-0.00026	-0.00023
	(A1 * B1 * !B2 * C1 * X)	0.00756	0.00762	0.00766
	(A1 * B1 * !B2 * C1 * X)	0.00213	0.00210	0.00224
	(A1 * B1 * !B2 * !C1 * !X)	0.00748	0.00752	0.00748
	(A1 * B1 * !B2 * !C1 * !X)	-0.00022	-0.00026	-0.00023
	(A1 * !B1 * !B2 * C1 * !X)	0.00752	0.00755	0.00752
	(A1 * !B1 * !B2 * C1 * !X)	-0.00018	-0.00023	-0.00020
	(A1 * !B1 * !B2 * !C1 * !X)	0.00740	0.00744	0.00741
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00030	-0.00033	-0.00030
	(!A1 * B2 * !C1 * !X)	0.00738	0.00741	0.00740
	(!A1 * B2 * !C1 * !X)	-0.00022	-0.00024	-0.00022
	(!A1 * B1 * !B2 * !C1 * !X)	0.00740	0.00743	0.00741
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00022	-0.00025	-0.00022
	(!A1 * !B1 * !B2 * C1 * !X)	0.00749	0.00746	0.00748
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00025	-0.00023	-0.00025
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00732	0.00733	0.00731
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00032	-0.00032	-0.00031

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)**	0.00013	0.00011	-0.00021
	(A1 * B2 * C1 * X)	0.00303	0.00301	0.00268
	(A1 * B2 * !C1 * !X)	-0.00063	-0.00065	-0.00064
	(A1 * B2 * !C1 * !X)	0.00338	0.00338	0.00338
	(A1 * B1 * !B2 * C1 * X)	0.00072	0.00069	0.00036
	(A1 * B1 * !B2 * C1 * X)	0.00360	0.00358	0.00326
	(A1 * B1 * !B2 * !C1 * !X)	-0.00064	-0.00066	-0.00064
	(A1 * B1 * !B2 * !C1 * !X)	0.00338	0.00340	0.00338
	(A1 * !B1 * !B2 * C1 * !X)	-0.00060	-0.00062	-0.00061
	(A1 * !B1 * !B2 * C1 * !X)	0.00341	0.00342	0.00340
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00068	-0.00070	-0.00068
	(A1 * !B1 * !B2 * !C1 * !X)	0.00333	0.00336	0.00334
	(!A1 * B2 * !C1 * !X)	-0.00029	-0.00057	-0.00059
	(!A1 * B2 * !C1 * !X)	0.00359	0.00343	0.00338
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00031	-0.00057	-0.00059
	(!A1 * B1 * !B2 * !C1 * !X)	0.00360	0.00343	0.00338
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00033	-0.00055	-0.00057
	(!A1 * !B1 * !B2 * C1 * !X)	0.00366	0.00347	0.00342
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00054	-0.00062	-0.00063
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00335	0.00335	0.00334

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00007	-0.00009	-0.00041
	(A1 * B2 * C1 * X)	0.00306	0.00303	0.00272
	(A1 * B2 * !C1 * !X)	0.00015	0.00015	0.00014
	(A1 * B2 * !C1 * !X)	0.00439	0.00438	0.00439
	(A1 * B1 * !B2 * C1 * X)	0.00052	0.00049	0.00017
	(A1 * B1 * !B2 * C1 * X)	0.00362	0.00361	0.00330
	(A1 * B1 * !B2 * !C1 * !X)	0.00015	0.00014	0.00014
	(A1 * B1 * !B2 * !C1 * !X)	0.00439	0.00438	0.00439
	(A1 * !B1 * !B2 * C1 * !X)	0.00018	0.00015	0.00016
	(A1 * !B1 * !B2 * C1 * !X)	0.00441	0.00442	0.00441
	(A1 * !B1 * !B2 * !C1 * !X)	0.00013	0.00011	0.00012
	(A1 * !B1 * !B2 * !C1 * !X)	0.00436	0.00437	0.00436
	(!A1 * B2 * !C1 * !X)	0.00051	0.00022	0.00021
	(!A1 * B2 * !C1 * !X)	0.00455	0.00442	0.00439
	(!A1 * B1 * !B2 * !C1 * !X)	0.00048	0.00022	0.00020
	(!A1 * B1 * !B2 * !C1 * !X)	0.00456	0.00442	0.00439
	(!A1 * !B1 * !B2 * C1 * !X)	0.00046	0.00023	0.00021
	(!A1 * !B1 * !B2 * C1 * !X)	0.00461	0.00445	0.00441
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00028	0.00019	0.00017
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00438	0.00437	0.00437

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00065	0.00058	-0.00004
	(A1 * B2 * C1 * X)	0.00608	0.00607	0.00543
	(A1 * B2 * !C1 * !X)	0.00105	0.00100	0.00102
	(A1 * B2 * !C1 * !X)	0.00874	0.00877	0.00874
	(A1 * B1 * !B2 * C1 * X)	0.00181	0.00174	0.00112
	(A1 * B1 * !B2 * C1 * X)	0.00724	0.00723	0.00659
	(A1 * B1 * !B2 * !C1 * !X)	0.00105	0.00100	0.00102
	(A1 * B1 * !B2 * !C1 * !X)	0.00874	0.00876	0.00874
	(A1 * !B1 * !B2 * C1 * !X)	0.00112	0.00107	0.00108
	(A1 * !B1 * !B2 * C1 * !X)	0.00881	0.00880	0.00880
	(A1 * !B1 * !B2 * !C1 * !X)	0.00096	0.00091	0.00094
	(A1 * !B1 * !B2 * !C1 * !X)	0.00864	0.00869	0.00865
	(!A1 * B2 * !C1 * !X)	0.00172	0.00118	0.00112
	(!A1 * B2 * !C1 * !X)	0.00918	0.00886	0.00875
	(!A1 * B1 * !B2 * !C1 * !X)	0.00169	0.00118	0.00112
	(!A1 * B1 * !B2 * !C1 * !X)	0.00920	0.00887	0.00875
	(!A1 * !B1 * !B2 * C1 * !X)	0.00165	0.00116	0.00116
	(!A1 * !B1 * !B2 * C1 * !X)	0.00931	0.00889	0.00881
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00122	0.00103	0.00102
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00868	0.00867	0.00866

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)**	0.00393	0.00356	0.00427
	(A2 * B2 * C1 * X)	-0.00019	-0.00059	0.00018
	(A2 * !B2 * !C1 * !X)	0.00280	0.00282	0.00280
	(A2 * !B2 * !C1 * !X)	-0.00126	-0.00127	-0.00125
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00281	0.00284	0.00281
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00125	-0.00127	-0.00125
	(A1 * !A2 * B2 * C1 * X)	0.00450	0.00414	0.00485
	(A1 * !A2 * B2 * C1 * X)	0.00039	-0.00001	0.00076
	(A1 * !A2 * !B2 * !C1 * !X)	0.00280	0.00282	0.00280
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00125	-0.00127	-0.00125
	(!A1 * !A2 * B2 * C1 * !X)	0.00176	0.00177	0.00176
	(!A1 * !A2 * B2 * C1 * !X)	-0.00130	-0.00131	-0.00128
	(!A1 * !A2 * B2 * !C1 * !X)	0.00195	0.00196	0.00195
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00130	-0.00131	-0.00129
	(!A1 * !A2 * !B2 * C1 * !X)	0.00174	0.00175	0.00176
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00129	-0.00130	-0.00128
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00201	0.00202	0.00201
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00129	-0.00131	-0.00130

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00420	0.00385	0.00458
	(A2 * B2 * C1 * X)	-0.00016	-0.00055	0.00024
	(A2 * !B2 * !C1 * !X)	0.00402	0.00405	0.00403
	(A2 * !B2 * !C1 * !X)	-0.00025	-0.00027	-0.00025
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00406	0.00409	0.00406
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00025	-0.00026	-0.00025
	(A1 * !A2 * B2 * C1 * X)	0.00478	0.00443	0.00516
	(A1 * !A2 * B2 * C1 * X)	0.00042	0.00002	0.00082
	(A1 * !A2 * !B2 * !C1 * !X)	0.00403	0.00405	0.00403
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00026	-0.00027	-0.00025
	(!A1 * !A2 * B2 * C1 * !X)	0.00284	0.00285	0.00284
	(!A1 * !A2 * B2 * C1 * !X)	-0.00029	-0.00030	-0.00027
	(!A1 * !A2 * B2 * !C1 * !X)	0.00309	0.00310	0.00308
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00029	-0.00030	-0.00028
	(!A1 * !A2 * !B2 * C1 * !X)	0.00285	0.00286	0.00286
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00027	-0.00029	-0.00027
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00315	0.00316	0.00315
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00029	-0.00031	-0.00029

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00873	0.00809	0.00945
	(A2 * B2 * C1 * X)	-0.00025	-0.00096	0.00051
	(A2 * !B2 * !C1 * !X)	0.00840	0.00846	0.00842
	(A2 * !B2 * !C1 * !X)	-0.00042	-0.00046	-0.00043
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00844	0.00850	0.00846
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00042	-0.00045	-0.00042
	(A1 * !A2 * B2 * C1 * X)	0.00989	0.00925	0.01061
	(A1 * !A2 * B2 * C1 * X)	0.00091	0.00020	0.00167
	(A1 * !A2 * !B2 * !C1 * !X)	0.00840	0.00846	0.00842
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00042	-0.00046	-0.00043
	(!A1 * !A2 * B2 * C1 * !X)	0.00620	0.00622	0.00620
	(!A1 * !A2 * B2 * C1 * !X)	-0.00054	-0.00056	-0.00050
	(!A1 * !A2 * B2 * !C1 * !X)	0.00656	0.00659	0.00656
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00054	-0.00057	-0.00054
	(!A1 * !A2 * !B2 * C1 * !X)	0.00617	0.00620	0.00621
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00053	-0.00055	-0.00051
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00668	0.00671	0.00669
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00055	-0.00058	-0.00056

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)**	0.00072	0.00067	0.00047
	(A2 * B2 * C1 * X)	0.00482	0.00482	0.00458
	(A2 * !B2 * !C1 * !X)	-0.00031	-0.00058	-0.00061
	(A2 * !B2 * !C1 * !X)	0.00374	0.00352	0.00344
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00064	-0.00065	-0.00064
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00343	0.00344	0.00343
	(A1 * !A2 * B2 * C1 * X)	0.00129	0.00126	0.00105
	(A1 * !A2 * B2 * C1 * X)	0.00540	0.00538	0.00516
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00027	-0.00059	-0.00061
	(A1 * !A2 * !B2 * !C1 * !X)	0.00378	0.00351	0.00344
	(!A1 * !A2 * B2 * C1 * !X)	0.00053	0.00053	0.00047
	(!A1 * !A2 * B2 * C1 * !X)	0.00366	0.00365	0.00351
	(!A1 * !A2 * B2 * !C1 * !X)	0.00022	0.00021	0.00014
	(!A1 * !A2 * B2 * !C1 * !X)	0.00366	0.00366	0.00348
	(!A1 * !A2 * !B2 * C1 * !X)	0.00046	0.00046	0.00043
	(!A1 * !A2 * !B2 * C1 * !X)	0.00353	0.00355	0.00346
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00015	0.00014	0.00009
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00362	0.00362	0.00349

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00046	0.00042	0.00021
	(A2 * B2 * C1 * X)	0.00480	0.00479	0.00457
	(A2 * !B2 * !C1 * !X)	0.00051	0.00022	0.00020
	(A2 * !B2 * !C1 * !X)	0.00478	0.00455	0.00447
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00015	0.00014	0.00015
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00446	0.00449	0.00446
	(A1 * !A2 * B2 * C1 * X)	0.00104	0.00099	0.00079
	(A1 * !A2 * B2 * C1 * X)	0.00538	0.00538	0.00515
	(A1 * !A2 * !B2 * !C1 * !X)	0.00054	0.00021	0.00020
	(A1 * !A2 * !B2 * !C1 * !X)	0.00481	0.00454	0.00447
	(!A1 * !A2 * B2 * C1 * !X)	0.00148	0.00147	0.00142
	(!A1 * !A2 * B2 * C1 * !X)	0.00471	0.00472	0.00456
	(!A1 * !A2 * B2 * !C1 * !X)	0.00114	0.00113	0.00106
	(!A1 * !A2 * B2 * !C1 * !X)	0.00474	0.00476	0.00455
	(!A1 * !A2 * !B2 * C1 * !X)	0.00141	0.00140	0.00138
	(!A1 * !A2 * !B2 * C1 * !X)	0.00457	0.00460	0.00451
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00107	0.00105	0.00101
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00470	0.00470	0.00455

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00063	0.00055	0.00014
	(A2 * B2 * C1 * X)	0.00961	0.00958	0.00913
	(A2 * !B2 * !C1 * !X)	0.00072	0.00019	0.00013
	(A2 * !B2 * !C1 * !X)	0.00956	0.00909	0.00897
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00006	0.00002	0.00005
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00892	0.00898	0.00893
	(A1 * !A2 * B2 * C1 * X)	0.00179	0.00172	0.00130
	(A1 * !A2 * B2 * C1 * X)	0.01077	0.01073	0.01029
	(A1 * !A2 * !B2 * !C1 * !X)	0.00079	0.00019	0.00013
	(A1 * !A2 * !B2 * !C1 * !X)	0.00963	0.00909	0.00897
	(!A1 * !A2 * B2 * C1 * !X)	0.00254	0.00250	0.00241
	(!A1 * !A2 * B2 * C1 * !X)	0.00939	0.00948	0.00911
	(!A1 * !A2 * B2 * !C1 * !X)	0.00193	0.00189	0.00175
	(!A1 * !A2 * B2 * !C1 * !X)	0.00940	0.00946	0.00906
	(!A1 * !A2 * !B2 * C1 * !X)	0.00239	0.00238	0.00232
	(!A1 * !A2 * !B2 * C1 * !X)	0.00916	0.00919	0.00902
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00177	0.00174	0.00166
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00933	0.00934	0.00908

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)**	0.00355	0.00359	0.00360
	(A2 * B1 * C1 * X)	0.00041	0.00040	0.00047
	(A2 * B1 * !C1 * !X)	0.00300	0.00301	0.00300
	(A2 * B1 * !C1 * !X)	-0.00126	-0.00128	-0.00126
	(A2 * !B1 * !C1 * !X)	0.00299	0.00301	0.00299
	(A2 * !B1 * !C1 * !X)	-0.00127	-0.00128	-0.00126
	(A1 * !A2 * B1 * C1 * X)	0.00413	0.00416	0.00418
	(A1 * !A2 * B1 * C1 * X)	0.00099	0.00098	0.00105
	(A1 * !A2 * B1 * !C1 * !X)	0.00299	0.00301	0.00300
	(A1 * !A2 * B1 * !C1 * !X)	-0.00126	-0.00128	-0.00126
	(A1 * !A2 * !B1 * !C1 * !X)	0.00299	0.00299	0.00299
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00127	-0.00127	-0.00126
	(!A1 * !A2 * B1 * C1 * !X)	0.00187	0.00187	0.00186
	(!A1 * !A2 * B1 * C1 * !X)	-0.00130	-0.00132	-0.00130
	(!A1 * !A2 * B1 * !C1 * !X)	0.00206	0.00207	0.00206
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00131	-0.00131	-0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	0.00185	0.00186	0.00188
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00130	-0.00130	-0.00129
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00213	0.00214	0.00213
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00132	-0.00131

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00374	0.00377	0.00379
	(A2 * B1 * C1 * X)	0.00046	0.00045	0.00053
	(A2 * B1 * !C1 * !X)	0.00419	0.00421	0.00419
	(A2 * B1 * !C1 * !X)	-0.00021	-0.00022	-0.00021
	(A2 * !B1 * !C1 * !X)	0.00415	0.00417	0.00417
	(A2 * !B1 * !C1 * !X)	-0.00020	-0.00021	-0.00021
	(A1 * !A2 * B1 * C1 * X)	0.00431	0.00435	0.00437
	(A1 * !A2 * B1 * C1 * X)	0.00105	0.00103	0.00111
	(A1 * !A2 * B1 * !C1 * !X)	0.00419	0.00421	0.00419
	(A1 * !A2 * B1 * !C1 * !X)	-0.00021	-0.00022	-0.00021
	(A1 * !A2 * !B1 * !C1 * !X)	0.00417	0.00417	0.00417
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00021	-0.00021	-0.00021
	(!A1 * !A2 * B1 * C1 * !X)	0.00290	0.00291	0.00290
	(!A1 * !A2 * B1 * C1 * !X)	-0.00025	-0.00026	-0.00024
	(!A1 * !A2 * B1 * !C1 * !X)	0.00316	0.00316	0.00315
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00025	-0.00025	-0.00024
	(!A1 * !A2 * !B1 * C1 * !X)	0.00292	0.00293	0.00294
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00023	-0.00025	-0.00022
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00323	0.00324	0.00323
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00025	-0.00026	-0.00025

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00655	0.00661	0.00664
	(A2 * B1 * C1 * X)	0.00096	0.00095	0.00109
	(A2 * B1 * !C1 * !X)	0.00755	0.00759	0.00755
	(A2 * B1 * !C1 * !X)	-0.00029	-0.00033	-0.00030
	(A2 * !B1 * !C1 * !X)	0.00754	0.00757	0.00753
	(A2 * !B1 * !C1 * !X)	-0.00031	-0.00032	-0.00030
	(A1 * !A2 * B1 * C1 * X)	0.00771	0.00776	0.00780
	(A1 * !A2 * B1 * C1 * X)	0.00212	0.00211	0.00225
	(A1 * !A2 * B1 * !C1 * !X)	0.00755	0.00758	0.00756
	(A1 * !A2 * B1 * !C1 * !X)	-0.00029	-0.00033	-0.00030
	(A1 * !A2 * !B1 * !C1 * !X)	0.00753	0.00756	0.00752
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00031	-0.00033	-0.00029
	(!A1 * !A2 * B1 * C1 * !X)	0.00540	0.00541	0.00539
	(!A1 * !A2 * B1 * C1 * !X)	-0.00040	-0.00045	-0.00039
	(!A1 * !A2 * B1 * !C1 * !X)	0.00578	0.00579	0.00578
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00041	-0.00044	-0.00041
	(!A1 * !A2 * !B1 * C1 * !X)	0.00540	0.00540	0.00543
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00038	-0.00040	-0.00037
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00590	0.00590	0.00590
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00042	-0.00042	-0.00042

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)**	-0.00008	-0.00013	-0.00042
	(A2 * B1 * C1 * X)	0.00306	0.00306	0.00273
	(A2 * B1 * !C1 * !X)	-0.00082	-0.00084	-0.00083
	(A2 * B1 * !C1 * !X)	0.00343	0.00346	0.00344
	(A2 * !B1 * !C1 * !X)	-0.00048	-0.00077	-0.00079
	(A2 * !B1 * !C1 * !X)	0.00376	0.00352	0.00345
	(A1 * !A2 * B1 * C1 * X)	0.00050	0.00047	0.00016
	(A1 * !A2 * B1 * C1 * X)	0.00364	0.00362	0.00331
	(A1 * !A2 * B1 * !C1 * !X)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * B1 * !C1 * !X)	0.00343	0.00345	0.00344
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00044	-0.00079	-0.00079
	(A1 * !A2 * !B1 * !C1 * !X)	0.00379	0.00351	0.00345
	(!A1 * !A2 * B1 * C1 * !X)	0.00044	0.00042	0.00036
	(!A1 * !A2 * B1 * C1 * !X)	0.00367	0.00368	0.00352
	(!A1 * !A2 * B1 * !C1 * !X)	0.00011	0.00009	0.00002
	(!A1 * !A2 * B1 * !C1 * !X)	0.00367	0.00369	0.00349
	(!A1 * !A2 * !B1 * C1 * !X)	0.00034	0.00034	0.00031
	(!A1 * !A2 * !B1 * C1 * !X)	0.00355	0.00356	0.00347
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00002	0.00001	-0.00003
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00362	0.00363	0.00350

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00023	-0.00026	-0.00058
	(A2 * B1 * C1 * X)	0.00304	0.00302	0.00270
	(A2 * B1 * !C1 * !X)	0.00003	0.00000	0.00002
	(A2 * B1 * !C1 * !X)	0.00442	0.00444	0.00442
	(A2 * !B1 * !C1 * !X)	0.00037	0.00007	0.00006
	(A2 * !B1 * !C1 * !X)	0.00473	0.00449	0.00443
	(A1 * !A2 * B1 * C1 * X)	0.00035	0.00032	-0.00000
	(A1 * !A2 * B1 * C1 * X)	0.00361	0.00360	0.00328
	(A1 * !A2 * B1 * !C1 * !X)	0.00003	0.00002	0.00002
	(A1 * !A2 * B1 * !C1 * !X)	0.00442	0.00443	0.00442
	(A1 * !A2 * !B1 * !C1 * !X)	0.00041	0.00006	0.00006
	(A1 * !A2 * !B1 * !C1 * !X)	0.00477	0.00449	0.00443
	(!A1 * !A2 * B1 * C1 * !X)	0.00145	0.00142	0.00136
	(!A1 * !A2 * B1 * C1 * !X)	0.00469	0.00469	0.00452
	(!A1 * !A2 * B1 * !C1 * !X)	0.00107	0.00105	0.00099
	(!A1 * !A2 * B1 * !C1 * !X)	0.00471	0.00472	0.00451
	(!A1 * !A2 * !B1 * C1 * !X)	0.00134	0.00133	0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	0.00454	0.00455	0.00447
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00098	0.00097	0.00093
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00464	0.00465	0.00451

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00050	0.00041	-0.00018
	(A2 * B1 * C1 * X)	0.00608	0.00608	0.00543
	(A2 * B1 * !C1 * !X)	0.00097	0.00092	0.00095
	(A2 * B1 * !C1 * !X)	0.00881	0.00884	0.00881
	(A2 * !B1 * !C1 * !X)	0.00160	0.00103	0.00101
	(A2 * !B1 * !C1 * !X)	0.00942	0.00896	0.00883
	(A1 * !A2 * B1 * C1 * X)	0.00166	0.00160	0.00097
	(A1 * !A2 * B1 * C1 * X)	0.00724	0.00722	0.00659
	(A1 * !A2 * B1 * !C1 * !X)	0.00097	0.00096	0.00095
	(A1 * !A2 * B1 * !C1 * !X)	0.00881	0.00879	0.00881
	(A1 * !A2 * !B1 * !C1 * !X)	0.00167	0.00101	0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	0.00948	0.00894	0.00883
	(!A1 * !A2 * B1 * C1 * !X)	0.00337	0.00332	0.00322
	(!A1 * !A2 * B1 * C1 * !X)	0.00929	0.00930	0.00900
	(!A1 * !A2 * B1 * !C1 * !X)	0.00271	0.00268	0.00254
	(!A1 * !A2 * B1 * !C1 * !X)	0.00928	0.00931	0.00893
	(!A1 * !A2 * !B1 * C1 * !X)	0.00318	0.00316	0.00311
	(!A1 * !A2 * !B1 * C1 * !X)	0.00902	0.00905	0.00889
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00254	0.00253	0.00245
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00917	0.00921	0.00895

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)	0.00178	0.00178	0.00171
	(A2 * !B1 * !B2 * !X)	-0.00162	-0.00164	-0.00174
	(!A2 * !B1 * !B2 * !X)	0.00178	0.00178	0.00171
	(!A2 * !B1 * !B2 * !X)	-0.00163	-0.00164	-0.00174
	(!A1 * !A2 * B2 * !X)	0.00177	0.00177	0.00165
	(!A1 * !A2 * B2 * !X)	-0.00149	-0.00151	-0.00172
	(!A1 * !A2 * B1 * !B2 * !X)	0.00177	0.00177	0.00166
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00151	-0.00153	-0.00172
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00289	0.00289	0.00282
	(A2 * !B1 * !B2 * !X)	-0.00063	-0.00064	-0.00073
	(!A2 * !B1 * !B2 * !X)	0.00289	0.00289	0.00282
	(!A2 * !B1 * !B2 * !X)	-0.00063	-0.00064	-0.00073
	(!A1 * !A2 * B2 * !X)	0.00290	0.00290	0.00279
	(!A1 * !A2 * B2 * !X)	-0.00046	-0.00047	-0.00070
	(!A1 * !A2 * B1 * !B2 * !X)	0.00290	0.00291	0.00280
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00049	-0.00050	-0.00070
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00541	0.00541	0.00526
	(A2 * !B1 * !B2 * !X)	-0.00089	-0.00091	-0.00111
	(!A2 * !B1 * !B2 * !X)	0.00541	0.00541	0.00526
	(!A2 * !B1 * !B2 * !X)	-0.00089	-0.00091	-0.00111
	(!A1 * !A2 * B2 * !X)	0.00539	0.00539	0.00518
	(!A1 * !A2 * B2 * !X)	-0.00062	-0.00065	-0.00106
	(!A1 * !A2 * B1 * !B2 * !X)	0.00539	0.00540	0.00520
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00065	-0.00070	-0.00107

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	0.00043	0.00045
	(A2 * !B1 * !B2 * !X)	0.00386	0.00391	0.00387
	(!A2 * !B1 * !B2 * !X)	0.00045	0.00044	0.00045
	(!A2 * !B1 * !B2 * !X)	0.00386	0.00389	0.00387
	(!A1 * !A2 * B2 * !X)	0.00052	0.00051	0.00052
	(!A1 * !A2 * B2 * !X)	0.00385	0.00388	0.00387
	(!A1 * !A2 * B1 * !B2 * !X)	0.00050	0.00050	0.00051
	(!A1 * !A2 * B1 * !B2 * !X)	0.00387	0.00389	0.00387
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00139	0.00138	0.00139
	(A2 * !B1 * !B2 * !X)	0.00492	0.00495	0.00492
	(!A2 * !B1 * !B2 * !X)	0.00139	0.00138	0.00139
	(!A2 * !B1 * !B2 * !X)	0.00492	0.00494	0.00492
	(!A1 * !A2 * B2 * !X)	0.00143	0.00141	0.00143
	(!A1 * !A2 * B2 * !X)	0.00490	0.00496	0.00492
	(!A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00141	0.00142
	(!A1 * !A2 * B1 * !B2 * !X)	0.00491	0.00496	0.00492
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00319	0.00319	0.00321
	(A2 * !B1 * !B2 * !X)	0.00954	0.00957	0.00953
	(!A2 * !B1 * !B2 * !X)	0.00319	0.00319	0.00321
	(!A2 * !B1 * !B2 * !X)	0.00954	0.00956	0.00953
	(!A1 * !A2 * B2 * !X)	0.00331	0.00329	0.00332
	(!A1 * !A2 * B2 * !X)	0.00950	0.00961	0.00952
	(!A1 * !A2 * B1 * !B2 * !X)	0.00329	0.00328	0.00330
	(!A1 * !A2 * B1 * !B2 * !X)	0.00949	0.00956	0.00952

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00286	0.00281	0.00289	0.00295	0.89367
sky130_fd_sc_hs__o22ai_2	0.00542	0.00553	0.00551	0.00542	1.54610
sky130_fd_sc_hs__o22ai_4	0.01115	0.01056	0.01144	0.01072	2.51039

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	75.33000	238.44600
sky130_fd_sc_hs__o22ai_2	0.00000	150.57900	476.50900
sky130_fd_sc_hs__o22ai_4	0.00000	301.00400	952.19000

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)	0.06696	0.67349	8.56189
	A2->Y (FR)	0.05762	0.70981	9.20875
	B1->Y (FR)	0.04318	0.65041	8.53059
	B2->Y (FR)	0.03460	0.68699	9.17206
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.06878	0.58473	8.42821
	A2->Y (FR)	0.05640	0.62039	9.09977
	B1->Y (FR)	0.04180	0.55321	8.33002
	B2->Y (FR)	0.02897	0.59122	9.01393
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.07009	0.48897	7.79675
	A2->Y (FR)	0.05877	0.53687	8.61758
	B1->Y (FR)	0.04074	0.45825	7.69240
	B2->Y (FR)	0.02925	0.49947	8.41165

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.03951	0.34417	4.16079
	A2->Y (RF)	0.03338	0.33443	4.10336
	B1->Y (RF)	0.03212	0.39559	4.99295
	B2->Y (RF)	0.02656	0.38271	4.89119
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.04087	0.28210	3.92450
	A2->Y (RF)	0.03244	0.26926	3.84658
	B1->Y (RF)	0.03295	0.33695	4.86408
	B2->Y (RF)	0.02438	0.31684	4.70648
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.02811	0.19203	3.23567
	A2->Y (RF)	0.02375	0.17823	3.15363
	B1->Y (RF)	0.02147	0.24820	4.23054
	B2->Y (RF)	0.02188	0.26501	4.46455

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00217	0.00735	0.10183
	A1	0.01278	0.01796	0.11235
	A2	0.00227	0.00916	0.11346
	A2	0.01114	0.01804	0.12249
	B1	-0.00027	0.00509	0.09667
	B1	0.00724	0.01262	0.10414
	B2	-0.00023	0.00686	0.10937
	B2	0.00565	0.01273	0.11541
sky130_fd_sc_hs__o22ai_2	A1	0.00398	0.01478	0.19485
	A1	0.02485	0.03599	0.21561
	A2	0.00384	0.01794	0.21455
	A2	0.02163	0.03576	0.23207
	B1	-0.00080	0.01038	0.18444
	B1	0.01403	0.02524	0.19911
	B2	-0.00094	0.01364	0.20714
	B2	0.01054	0.02515	0.21859
sky130_fd_sc_hs__o22ai_4	A1	0.00595	0.03295	0.43997
	A1	0.04742	0.07441	0.48146
	A2	0.00587	0.03693	0.44843
	A2	0.04061	0.07178	0.48267
	B1	-0.00203	0.02501	0.40781
	B1	0.02757	0.05458	0.43826
	B2	-0.00174	0.02936	0.41517
	B2	0.02120	0.05223	0.44063

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.01343	0.01757	0.09454
	A1	0.00280	0.00695	0.08360
	A2	0.01119	0.01530	0.08527
	A2	0.00229	0.00640	0.07611
	B1	0.01025	0.01524	0.09220
	B1	0.00274	0.00765	0.08421
	B2	0.00833	0.01333	0.08518
	B2	0.00246	0.00741	0.07930
sky130_fd_sc_hs__o22ai_2	A1	0.02673	0.03555	0.18293
	A1	0.00582	0.01463	0.16137
	A2	0.02153	0.03065	0.16378
	A2	0.00370	0.01276	0.14596
	B1	0.02070	0.03108	0.17940
	B1	0.00587	0.01623	0.16402
	B2	0.01529	0.02599	0.16439
	B2	0.00382	0.01446	0.15239
sky130_fd_sc_hs__o22ai_4	A1	0.05098	0.07230	0.39518
	A1	0.00950	0.03073	0.35285
	A2	0.04152	0.06321	0.35357
	A2	0.00676	0.02836	0.31777
	B1	0.03959	0.06290	0.37166
	B1	0.01002	0.03327	0.34144
	B2	0.03097	0.05332	0.32613
	B2	0.00807	0.03038	0.30323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00304	0.00264	0.00321
	(A2 * B2 * !Y)	-0.00168	-0.00213	-0.00148
	(A2 * B1 * !B2 * !Y)	0.00358	0.00317	0.00375
	(A2 * B1 * !B2 * !Y)	-0.00114	-0.00159	-0.00095
	(A2 * !B1 * !B2 * Y)	0.00221	0.00224	0.00221
	(A2 * !B1 * !B2 * Y)	-0.00247	-0.00248	-0.00246
	(!A2 * !B1 * !B2 * Y)	0.00217	0.00217	0.00217
	(!A2 * !B1 * !B2 * Y)	-0.00246	-0.00246	-0.00246
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00617	0.00505	0.00614
	(A2 * B2 * !Y)	-0.00297	-0.00410	-0.00292
	(A2 * B1 * !B2 * !Y)	0.00724	0.00611	0.00720
	(A2 * B1 * !B2 * !Y)	-0.00190	-0.00304	-0.00185
	(A2 * !B1 * !B2 * Y)	0.00411	0.00411	0.00410
	(A2 * !B1 * !B2 * Y)	-0.00492	-0.00492	-0.00490
	(!A2 * !B1 * !B2 * Y)	0.00405	0.00408	0.00404
	(!A2 * !B1 * !B2 * Y)	-0.00492	-0.00493	-0.00491
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01189	0.01000	0.01230
	(A2 * B2 * !Y)	-0.00633	-0.00822	-0.00574
	(A2 * B1 * !B2 * !Y)	0.01403	0.01214	0.01444
	(A2 * B1 * !B2 * !Y)	-0.00419	-0.00608	-0.00360
	(A2 * !B1 * !B2 * Y)	0.00806	0.00808	0.00804
	(A2 * !B1 * !B2 * Y)	-0.00994	-0.00994	-0.00988
	(!A2 * !B1 * !B2 * Y)	0.00787	0.00797	0.00790
	(!A2 * !B1 * !B2 * Y)	-0.00990	-0.00996	-0.00990

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00107	-0.00110	-0.00126
	(A2 * B2 * !Y)	0.00365	0.00365	0.00346
	(A2 * B1 * !B2 * !Y)	-0.00053	-0.00057	-0.00072
	(A2 * B1 * !B2 * !Y)	0.00418	0.00419	0.00399
	(A2 * !B1 * !B2 * Y)	-0.00211	-0.00212	-0.00211
	(A2 * !B1 * !B2 * Y)	0.00257	0.00258	0.00257
	(!A2 * !B1 * !B2 * Y)	-0.00171	-0.00200	-0.00205
	(!A2 * !B1 * !B2 * Y)	0.00292	0.00267	0.00258
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00179	-0.00188	-0.00219
	(A2 * B2 * !Y)	0.00728	0.00731	0.00692
	(A2 * B1 * !B2 * !Y)	-0.00072	-0.00081	-0.00112
	(A2 * B1 * !B2 * !Y)	0.00835	0.00838	0.00799
	(A2 * !B1 * !B2 * Y)	-0.00390	-0.00392	-0.00390
	(A2 * !B1 * !B2 * Y)	0.00509	0.00513	0.00510
	(!A2 * !B1 * !B2 * Y)	-0.00310	-0.00372	-0.00380
	(!A2 * !B1 * !B2 * Y)	0.00585	0.00533	0.00514
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00366	-0.00384	-0.00447
	(A2 * B2 * !Y)	0.01440	0.01447	0.01368
	(A2 * B1 * !B2 * !Y)	-0.00152	-0.00170	-0.00233
	(A2 * B1 * !B2 * !Y)	0.01653	0.01660	0.01582
	(A2 * !B1 * !B2 * Y)	-0.00762	-0.00769	-0.00764
	(A2 * !B1 * !B2 * Y)	0.01027	0.01042	0.01031
	(!A2 * !B1 * !B2 * Y)	-0.00621	-0.00740	-0.00743
	(!A2 * !B1 * !B2 * Y)	0.01157	0.01067	0.01036

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00221	0.00224	0.00225
	(A1 * B2 * !Y)	-0.00091	-0.00092	-0.00085
	(A1 * B1 * !B2 * !Y)	0.00275	0.00278	0.00279
	(A1 * B1 * !B2 * !Y)	-0.00038	-0.00038	-0.00032
	(A1 * !B1 * !B2 * Y)	0.00203	0.00204	0.00202
	(A1 * !B1 * !B2 * Y)	-0.00238	-0.00238	-0.00237
	(!A1 * !B1 * !B2 * Y)	0.00199	0.00200	0.00199
	(!A1 * !B1 * !B2 * Y)	-0.00237	-0.00238	-0.00237
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00475	0.00484	0.00483
	(A1 * B2 * !Y)	-0.00170	-0.00173	-0.00162
	(A1 * B1 * !B2 * !Y)	0.00584	0.00593	0.00592
	(A1 * B1 * !B2 * !Y)	-0.00062	-0.00065	-0.00054
	(A1 * !B1 * !B2 * Y)	0.00412	0.00414	0.00409
	(A1 * !B1 * !B2 * Y)	-0.00498	-0.00499	-0.00495
	(!A1 * !B1 * !B2 * Y)	0.00404	0.00407	0.00403
	(!A1 * !B1 * !B2 * Y)	-0.00498	-0.00499	-0.00496
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00871	0.00890	0.00892
	(A1 * B2 * !Y)	-0.00330	-0.00338	-0.00313
	(A1 * B1 * !B2 * !Y)	0.01085	0.01105	0.01106
	(A1 * B1 * !B2 * !Y)	-0.00116	-0.00125	-0.00099
	(A1 * !B1 * !B2 * Y)	0.00790	0.00790	0.00792
	(A1 * !B1 * !B2 * Y)	-0.00939	-0.00939	-0.00938
	(!A1 * !B1 * !B2 * Y)	0.00776	0.00787	0.00779
	(!A1 * !B1 * !B2 * Y)	-0.00937	-0.00945	-0.00939

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00128	-0.00132	-0.00158
	(A1 * B2 * !Y)	0.00184	0.00184	0.00155
	(A1 * B1 * !B2 * !Y)	-0.00074	-0.00078	-0.00105
	(A1 * B1 * !B2 * !Y)	0.00237	0.00237	0.00208
	(A1 * !B1 * !B2 * Y)	-0.00191	-0.00193	-0.00192
	(A1 * !B1 * !B2 * Y)	0.00246	0.00249	0.00247
	(!A1 * !B1 * !B2 * Y)	-0.00155	-0.00181	-0.00187
	(!A1 * !B1 * !B2 * Y)	0.00278	0.00257	0.00248
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00285	-0.00289	-0.00343
	(A1 * B2 * !Y)	0.00366	0.00364	0.00310
	(A1 * B1 * !B2 * !Y)	-0.00178	-0.00182	-0.00236
	(A1 * B1 * !B2 * !Y)	0.00473	0.00471	0.00417
	(A1 * !B1 * !B2 * Y)	-0.00387	-0.00392	-0.00389
	(A1 * !B1 * !B2 * Y)	0.00512	0.00518	0.00515
	(!A1 * !B1 * !B2 * Y)	-0.00309	-0.00368	-0.00379
	(!A1 * !B1 * !B2 * Y)	0.00587	0.00540	0.00519
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00503	-0.00513	-0.00624
	(A1 * B2 * !Y)	0.00714	0.00709	0.00597
	(A1 * B1 * !B2 * !Y)	-0.00289	-0.00299	-0.00410
	(A1 * B1 * !B2 * !Y)	0.00928	0.00923	0.00811
	(A1 * !B1 * !B2 * Y)	-0.00749	-0.00756	-0.00751
	(A1 * !B1 * !B2 * Y)	0.00975	0.00984	0.00979
	(!A1 * !B1 * !B2 * Y)	-0.00611	-0.00717	-0.00731
	(!A1 * !B1 * !B2 * Y)	0.01104	0.01012	0.00985

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00308	0.00269	0.00328
	(A2 * B2 * !Y)	-0.00168	-0.00210	-0.00144
	(A1 * !A2 * B2 * !Y)	0.00362	0.00322	0.00382
	(A1 * !A2 * B2 * !Y)	-0.00115	-0.00157	-0.00090
	(!A1 * !A2 * B2 * Y)	0.00074	0.00073	0.00073
	(!A1 * !A2 * B2 * Y)	-0.00298	-0.00296	-0.00296
	(!A1 * !A2 * !B2 * Y)	0.00084	0.00085	0.00076
	(!A1 * !A2 * !B2 * Y)	-0.00280	-0.00282	-0.00295
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00616	0.00503	0.00612
	(A2 * B2 * !Y)	-0.00303	-0.00416	-0.00298
	(A1 * !A2 * B2 * !Y)	0.00722	0.00610	0.00719
	(A1 * !A2 * B2 * !Y)	-0.00196	-0.00310	-0.00191
	(!A1 * !A2 * B2 * Y)	0.00121	0.00121	0.00121
	(!A1 * !A2 * B2 * Y)	-0.00591	-0.00591	-0.00587
	(!A1 * !A2 * !B2 * Y)	0.00142	0.00144	0.00127
	(!A1 * !A2 * !B2 * Y)	-0.00557	-0.00563	-0.00588
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01232	0.01037	0.01270
	(A2 * B2 * !Y)	-0.00606	-0.00801	-0.00552
	(A1 * !A2 * B2 * !Y)	0.01445	0.01250	0.01484
	(A1 * !A2 * B2 * !Y)	-0.00393	-0.00587	-0.00338
	(!A1 * !A2 * B2 * Y)	0.00230	0.00229	0.00229
	(!A1 * !A2 * B2 * Y)	-0.01198	-0.01197	-0.01189
	(!A1 * !A2 * !B2 * Y)	0.00265	0.00264	0.00239
	(!A1 * !A2 * !B2 * Y)	-0.01137	-0.01142	-0.01190

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00113	-0.00118	-0.00133
	(A2 * B2 * !Y)	0.00359	0.00361	0.00341
	(A1 * !A2 * B2 * !Y)	-0.00060	-0.00064	-0.00080
	(A1 * !A2 * B2 * !Y)	0.00413	0.00414	0.00395
	(!A1 * !A2 * B2 * Y)	-0.00060	-0.00061	-0.00064
	(!A1 * !A2 * B2 * Y)	0.00315	0.00316	0.00306
	(!A1 * !A2 * !B2 * Y)	-0.00071	-0.00072	-0.00070
	(!A1 * !A2 * !B2 * Y)	0.00298	0.00304	0.00299
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00178	-0.00185	-0.00218
	(A2 * B2 * !Y)	0.00734	0.00734	0.00698
	(A1 * !A2 * B2 * !Y)	-0.00071	-0.00079	-0.00111
	(A1 * !A2 * B2 * !Y)	0.00841	0.00843	0.00805
	(!A1 * !A2 * B2 * Y)	-0.00096	-0.00097	-0.00104
	(!A1 * !A2 * B2 * Y)	0.00622	0.00626	0.00608
	(!A1 * !A2 * !B2 * Y)	-0.00116	-0.00118	-0.00116
	(!A1 * !A2 * !B2 * Y)	0.00593	0.00605	0.00596
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00408	-0.00424	-0.00487
	(A2 * B2 * !Y)	0.01418	0.01422	0.01346
	(A1 * !A2 * B2 * !Y)	-0.00194	-0.00210	-0.00273
	(A1 * !A2 * B2 * !Y)	0.01632	0.01635	0.01560
	(!A1 * !A2 * B2 * Y)	-0.00183	-0.00187	-0.00195
	(!A1 * !A2 * B2 * Y)	0.01258	0.01275	0.01228
	(!A1 * !A2 * !B2 * Y)	-0.00219	-0.00222	-0.00216
	(!A1 * !A2 * !B2 * Y)	0.01205	0.01223	0.01205

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00237	0.00241	0.00242
	(A2 * B1 * !Y)	-0.00086	-0.00087	-0.00080
	(A1 * !A2 * B1 * !Y)	0.00290	0.00295	0.00295
	(A1 * !A2 * B1 * !Y)	-0.00032	-0.00033	-0.00026
	(!A1 * !A2 * B1 * Y)	0.00060	0.00060	0.00060
	(!A1 * !A2 * B1 * Y)	-0.00296	-0.00297	-0.00294
	(!A1 * !A2 * !B1 * Y)	0.00071	0.00071	0.00062
	(!A1 * !A2 * !B1 * Y)	-0.00278	-0.00279	-0.00293
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00455	0.00462	0.00462
	(A2 * B1 * !Y)	-0.00173	-0.00175	-0.00164
	(A1 * !A2 * B1 * !Y)	0.00563	0.00571	0.00570
	(A1 * !A2 * B1 * !Y)	-0.00065	-0.00067	-0.00055
	(!A1 * !A2 * B1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A2 * B1 * Y)	-0.00582	-0.00585	-0.00578
	(!A1 * !A2 * !B1 * Y)	0.00135	0.00136	0.00120
	(!A1 * !A2 * !B1 * Y)	-0.00546	-0.00551	-0.00578
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00893	0.00908	0.00909
	(A2 * B1 * !Y)	-0.00338	-0.00340	-0.00315
	(A1 * !A2 * B1 * !Y)	0.01107	0.01109	0.01123
	(A1 * !A2 * B1 * !Y)	-0.00125	-0.00120	-0.00101
	(!A1 * !A2 * B1 * Y)	0.00216	0.00215	0.00215
	(!A1 * !A2 * B1 * Y)	-0.01142	-0.01139	-0.01134
	(!A1 * !A2 * !B1 * Y)	0.00250	0.00251	0.00225
	(!A1 * !A2 * !B1 * Y)	-0.01080	-0.01087	-0.01134

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00145	-0.00148	-0.00176
	(A2 * B1 * !Y)	0.00178	0.00177	0.00148
	(A1 * !A2 * B1 * !Y)	-0.00091	-0.00095	-0.00123
	(A1 * !A2 * B1 * !Y)	0.00231	0.00230	0.00202
	(!A1 * !A2 * B1 * Y)	-0.00047	-0.00049	-0.00051
	(!A1 * !A2 * B1 * Y)	0.00310	0.00315	0.00304
	(!A1 * !A2 * !B1 * Y)	-0.00057	-0.00058	-0.00057
	(!A1 * !A2 * !B1 * Y)	0.00296	0.00302	0.00297
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00263	-0.00270	-0.00323
	(A2 * B1 * !Y)	0.00366	0.00366	0.00311
	(A1 * !A2 * B1 * !Y)	-0.00156	-0.00162	-0.00216
	(A1 * !A2 * B1 * !Y)	0.00473	0.00472	0.00418
	(!A1 * !A2 * B1 * Y)	-0.00090	-0.00090	-0.00098
	(!A1 * !A2 * B1 * Y)	0.00610	0.00609	0.00597
	(!A1 * !A2 * !B1 * Y)	-0.00110	-0.00111	-0.00109
	(!A1 * !A2 * !B1 * Y)	0.00586	0.00595	0.00586
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00514	-0.00526	-0.00636
	(A2 * B1 * !Y)	0.00715	0.00713	0.00602
	(A1 * !A2 * B1 * !Y)	-0.00300	-0.00311	-0.00422
	(A1 * !A2 * B1 * !Y)	0.00929	0.00926	0.00816
	(!A1 * !A2 * B1 * Y)	-0.00168	-0.00171	-0.00182
	(!A1 * !A2 * B1 * Y)	0.01196	0.01202	0.01171
	(!A1 * !A2 * !B1 * Y)	-0.00203	-0.00208	-0.00202
	(!A1 * !A2 * !B1 * Y)	0.01143	0.01166	0.01148

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00248	0.00257	0.00265	0.00283	1.75165
sky130_fd_sc_hs__o22a_2	0.00265	0.00269	0.00280	0.00277	3.30354
sky130_fd_sc_hs__o22a_4	0.00518	0.00479	0.00528	0.00500	6.01247

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22a_1	0.00000	140.42200	284.94000
sky130_fd_sc_hs__o22a_2	0.00000	192.72300	287.71800
sky130_fd_sc_hs__o22a_4	0.00000	388.46200	575.14800

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)	0.06802	0.42323	5.53102
	A2->X (RR)	0.06103	0.40369	5.30292
	B1->X (RR)	0.06150	0.44055	5.79701
	B2->X (RR)	0.05448	0.41609	5.53341
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.07004	0.35298	5.38979
	A2->X (RR)	0.06293	0.33586	5.16262
	B1->X (RR)	0.06364	0.37327	5.61212
	B2->X (RR)	0.05564	0.34728	5.33295
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.07580	0.30493	5.41401
	A2->X (RR)	0.06981	0.28731	5.25635
	B1->X (RR)	0.06447	0.31981	5.75329
	B2->X (RR)	0.06362	0.31226	5.53007

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.09009	0.47755	5.88862
	A2->X (FF)	0.08134	0.49925	6.12326
	B1->X (FF)	0.06727	0.43527	5.68833
	B2->X (FF)	0.05889	0.45623	6.00242
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.10790	0.46531	5.86667
	A2->X (FF)	0.09669	0.49835	6.09585
	B1->X (FF)	0.08399	0.42231	5.67596
	B2->X (FF)	0.07415	0.44627	5.96846
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.10559	0.42124	5.72307
	A2->X (FF)	0.09116	0.44912	5.93823
	B1->X (FF)	0.08538	0.38426	5.55476
	B2->X (FF)	0.07380	0.39811	5.69609

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01705	0.02863	0.24338
	A1	0.00762	0.01923	0.23425
	A2	0.01620	0.02823	0.24245
	A2	0.00813	0.02015	0.23427
	B1	0.01420	0.02668	0.23199
	B1	0.00739	0.01988	0.22560
	B2	0.01402	0.02712	0.23620
	B2	0.00817	0.02129	0.23026
sky130_fd_sc_hs__o22a_2	A1	0.02187	0.03321	0.24874
	A1	0.01188	0.02336	0.23919
	A2	0.02074	0.03252	0.24658
	A2	0.01219	0.02397	0.23782
	B1	0.01874	0.03061	0.22381
	B1	0.01175	0.02365	0.21738
	B2	0.01766	0.03007	0.22701
	B2	0.01212	0.02455	0.22125
sky130_fd_sc_hs__o22a_4	A1	0.05226	0.07284	0.50174
	A1	0.03256	0.05439	0.48282
	A2	0.04075	0.06487	0.49493
	A2	0.02518	0.04938	0.47889
	B1	0.03812	0.06355	0.47489
	B1	0.02451	0.04999	0.46226
	B2	0.03551	0.06071	0.46081
	B2	0.02509	0.05033	0.45129

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00933	0.01944	0.23097
	A1	0.01943	0.02922	0.23787
	A2	0.00934	0.02084	0.23342
	A2	0.01806	0.02914	0.23794
	B1	0.00694	0.01827	0.23056
	B1	0.01374	0.02504	0.23733
	B2	0.00628	0.01916	0.23934
	B2	0.01211	0.02498	0.24107
sky130_fd_sc_hs__o22a_2	A1	0.01993	0.02561	0.23243
	A1	0.03030	0.03587	0.24279
	A2	0.02001	0.02721	0.23630
	A2	0.02895	0.03613	0.24292
	B1	0.01511	0.02314	0.22776
	B1	0.02207	0.02993	0.23349
	B2	0.01510	0.02480	0.23633
	B2	0.02316	0.03116	0.23029
sky130_fd_sc_hs__o22a_4	A1	0.03895	0.05113	0.46611
	A1	0.05883	0.07063	0.48554
	A2	0.03944	0.05478	0.47002
	A2	0.05611	0.07094	0.48404
	B1	0.03102	0.04707	0.46580
	B1	0.04461	0.06050	0.47684
	B2	0.03427	0.05027	0.44753
	B2	0.04725	0.06322	0.46002

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00265	0.00228	0.00300
	(A2 * B2 * X)	-0.00148	-0.00188	-0.00110
	(A2 * B1 * !B2 * X)	0.00323	0.00286	0.00358
	(A2 * B1 * !B2 * X)	-0.00090	-0.00130	-0.00052
	(A2 * !B1 * !B2 * !X)	0.00290	0.00292	0.00290
	(A2 * !B1 * !B2 * !X)	-0.00118	-0.00119	-0.00117
	(!A2 * !B1 * !B2 * !X)	0.00289	0.00290	0.00288
	(!A2 * !B1 * !B2 * !X)	-0.00119	-0.00119	-0.00118
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00296	0.00260	0.00331
	(A2 * B2 * X)	-0.00143	-0.00183	-0.00105
	(A2 * B1 * !B2 * X)	0.00354	0.00318	0.00389
	(A2 * B1 * !B2 * X)	-0.00085	-0.00125	-0.00047
	(A2 * !B1 * !B2 * !X)	0.00419	0.00422	0.00419
	(A2 * !B1 * !B2 * !X)	-0.00015	-0.00016	-0.00014
	(!A2 * !B1 * !B2 * !X)	0.00416	0.00418	0.00416
	(!A2 * !B1 * !B2 * !X)	-0.00016	-0.00016	-0.00015
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00577	0.00507	0.00646
	(A2 * B2 * X)	-0.00269	-0.00345	-0.00197
	(A2 * B1 * !B2 * X)	0.00693	0.00623	0.00762
	(A2 * B1 * !B2 * X)	-0.00153	-0.00229	-0.00081
	(A2 * !B1 * !B2 * !X)	0.00817	0.00822	0.00819
	(A2 * !B1 * !B2 * !X)	-0.00017	-0.00020	-0.00017
	(!A2 * !B1 * !B2 * !X)	0.00814	0.00821	0.00815
	(!A2 * !B1 * !B2 * !X)	-0.00018	-0.00022	-0.00020

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00048	-0.00052	-0.00072
	(A2 * B2 * X)	0.00365	0.00364	0.00340
	(A2 * B1 * !B2 * X)	0.00010	0.00006	-0.00014
	(A2 * B1 * !B2 * X)	0.00423	0.00422	0.00398
	(A2 * !B1 * !B2 * !X)	-0.00063	-0.00064	-0.00063
	(A2 * !B1 * !B2 * !X)	0.00344	0.00347	0.00344
	(!A2 * !B1 * !B2 * !X)	-0.00029	-0.00054	-0.00058
	(!A2 * !B1 * !B2 * !X)	0.00377	0.00356	0.00346
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00073	-0.00078	-0.00098
	(A2 * B2 * X)	0.00364	0.00364	0.00340
	(A2 * B1 * !B2 * X)	-0.00016	-0.00020	-0.00040
	(A2 * B1 * !B2 * X)	0.00422	0.00422	0.00398
	(A2 * !B1 * !B2 * !X)	0.00007	0.00007	0.00007
	(A2 * !B1 * !B2 * !X)	0.00441	0.00442	0.00441
	(!A2 * !B1 * !B2 * !X)	0.00044	0.00018	0.00013
	(!A2 * !B1 * !B2 * !X)	0.00473	0.00452	0.00442
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00130	-0.00138	-0.00179
	(A2 * B2 * X)	0.00717	0.00714	0.00669
	(A2 * B1 * !B2 * X)	-0.00014	-0.00022	-0.00063
	(A2 * B1 * !B2 * X)	0.00833	0.00830	0.00784
	(A2 * !B1 * !B2 * !X)	0.00051	0.00048	0.00050
	(A2 * !B1 * !B2 * !X)	0.00886	0.00890	0.00887
	(!A2 * !B1 * !B2 * !X)	0.00109	0.00061	0.00060
	(!A2 * !B1 * !B2 * !X)	0.00944	0.00903	0.00892

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00206	0.00209	0.00211
	(A1 * B2 * X)	-0.00083	-0.00084	-0.00077
	(A1 * B1 * !B2 * X)	0.00264	0.00267	0.00269
	(A1 * B1 * !B2 * X)	-0.00025	-0.00026	-0.00019
	(A1 * !B1 * !B2 * !X)	0.00284	0.00285	0.00284
	(A1 * !B1 * !B2 * !X)	-0.00117	-0.00119	-0.00117
	(!A1 * !B1 * !B2 * !X)	0.00283	0.00284	0.00282
	(!A1 * !B1 * !B2 * !X)	-0.00118	-0.00119	-0.00118
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00223	0.00228	0.00229
	(A1 * B2 * X)	-0.00080	-0.00083	-0.00075
	(A1 * B1 * !B2 * X)	0.00281	0.00286	0.00287
	(A1 * B1 * !B2 * X)	-0.00022	-0.00025	-0.00017
	(A1 * !B1 * !B2 * !X)	0.00409	0.00411	0.00409
	(A1 * !B1 * !B2 * !X)	-0.00009	-0.00010	-0.00009
	(!A1 * !B1 * !B2 * !X)	0.00408	0.00409	0.00407
	(!A1 * !B1 * !B2 * !X)	-0.00009	-0.00010	-0.00008
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00397	0.00404	0.00407
	(A1 * B2 * X)	-0.00156	-0.00158	-0.00145
	(A1 * B1 * !B2 * X)	0.00515	0.00520	0.00523
	(A1 * B1 * !B2 * X)	-0.00041	-0.00042	-0.00029
	(A1 * !B1 * !B2 * !X)	0.00762	0.00766	0.00762
	(A1 * !B1 * !B2 * !X)	-0.00019	-0.00023	-0.00020
	(!A1 * !B1 * !B2 * !X)	0.00762	0.00765	0.00760
	(!A1 * !B1 * !B2 * !X)	-0.00020	-0.00022	-0.00020

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00106	-0.00108	-0.00141
	(A1 * B2 * X)	0.00183	0.00180	0.00149
	(A1 * B1 * !B2 * X)	-0.00048	-0.00050	-0.00083
	(A1 * B1 * !B2 * X)	0.00240	0.00239	0.00207
	(A1 * !B1 * !B2 * !X)	-0.00056	-0.00058	-0.00057
	(A1 * !B1 * !B2 * !X)	0.00344	0.00346	0.00344
	(!A1 * !B1 * !B2 * !X)	-0.00025	-0.00050	-0.00053
	(!A1 * !B1 * !B2 * !X)	0.00376	0.00355	0.00346
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00119	-0.00122	-0.00154
	(A1 * B2 * X)	0.00186	0.00185	0.00153
	(A1 * B1 * !B2 * X)	-0.00061	-0.00064	-0.00096
	(A1 * B1 * !B2 * X)	0.00244	0.00243	0.00211
	(A1 * !B1 * !B2 * !X)	0.00018	0.00015	0.00017
	(A1 * !B1 * !B2 * !X)	0.00436	0.00437	0.00435
	(!A1 * !B1 * !B2 * !X)	0.00053	0.00026	0.00021
	(!A1 * !B1 * !B2 * !X)	0.00468	0.00445	0.00436
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00187	-0.00194	-0.00254
	(A1 * B2 * X)	0.00370	0.00368	0.00303
	(A1 * B1 * !B2 * X)	-0.00069	-0.00078	-0.00138
	(A1 * B1 * !B2 * X)	0.00483	0.00484	0.00419
	(A1 * !B1 * !B2 * !X)	0.00110	0.00105	0.00107
	(A1 * !B1 * !B2 * !X)	0.00891	0.00892	0.00889
	(!A1 * !B1 * !B2 * !X)	0.00165	0.00121	0.00115
	(!A1 * !B1 * !B2 * !X)	0.00946	0.00909	0.00892

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00271	0.00237	0.00310
	(A2 * B2 * X)	-0.00157	-0.00194	-0.00115
	(A1 * !A2 * B2 * X)	0.00329	0.00295	0.00368
	(A1 * !A2 * B2 * X)	-0.00099	-0.00136	-0.00057
	(!A1 * !A2 * B2 * !X)	0.00157	0.00157	0.00157
	(!A1 * !A2 * B2 * !X)	-0.00184	-0.00183	-0.00182
	(!A1 * !A2 * !B2 * !X)	0.00165	0.00165	0.00158
	(!A1 * !A2 * !B2 * !X)	-0.00168	-0.00170	-0.00181
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00304	0.00268	0.00341
	(A2 * B2 * X)	-0.00138	-0.00178	-0.00099
	(A1 * !A2 * B2 * X)	0.00361	0.00326	0.00399
	(A1 * !A2 * B2 * X)	-0.00080	-0.00120	-0.00041
	(!A1 * !A2 * B2 * !X)	0.00268	0.00268	0.00268
	(!A1 * !A2 * B2 * !X)	-0.00073	-0.00073	-0.00072
	(!A1 * !A2 * !B2 * !X)	0.00278	0.00279	0.00270
	(!A1 * !A2 * !B2 * !X)	-0.00057	-0.00059	-0.00072
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00598	0.00523	0.00665
	(A2 * B2 * X)	-0.00265	-0.00346	-0.00195
	(A1 * !A2 * B2 * X)	0.00714	0.00639	0.00781
	(A1 * !A2 * B2 * X)	-0.00149	-0.00230	-0.00079
	(!A1 * !A2 * B2 * !X)	0.00579	0.00581	0.00580
	(!A1 * !A2 * B2 * !X)	-0.00106	-0.00108	-0.00103
	(!A1 * !A2 * !B2 * !X)	0.00594	0.00596	0.00582
	(!A1 * !A2 * !B2 * !X)	-0.00077	-0.00080	-0.00103

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00058	-0.00062	-0.00083
	(A2 * B2 * X)	0.00369	0.00367	0.00345
	(A1 * !A2 * B2 * X)	0.00000	-0.00004	-0.00025
	(A1 * !A2 * B2 * X)	0.00427	0.00425	0.00403
	(!A1 * !A2 * B2 * !X)	0.00067	0.00067	0.00065
	(!A1 * !A2 * B2 * !X)	0.00411	0.00413	0.00404
	(!A1 * !A2 * !B2 * !X)	0.00057	0.00058	0.00059
	(!A1 * !A2 * !B2 * !X)	0.00396	0.00397	0.00395
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00083	-0.00087	-0.00108
	(A2 * B2 * X)	0.00356	0.00355	0.00334
	(A1 * !A2 * B2 * X)	-0.00026	-0.00030	-0.00050
	(A1 * !A2 * B2 * X)	0.00416	0.00415	0.00392
	(!A1 * !A2 * B2 * !X)	0.00160	0.00160	0.00157
	(!A1 * !A2 * B2 * !X)	0.00506	0.00508	0.00498
	(!A1 * !A2 * !B2 * !X)	0.00151	0.00150	0.00151
	(!A1 * !A2 * !B2 * !X)	0.00490	0.00494	0.00491
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00148	-0.00158	-0.00198
	(A2 * B2 * X)	0.00713	0.00714	0.00666
	(A1 * !A2 * B2 * X)	-0.00033	-0.00042	-0.00083
	(A1 * !A2 * B2 * X)	0.00829	0.00830	0.00782
	(!A1 * !A2 * B2 * !X)	0.00286	0.00284	0.00280
	(!A1 * !A2 * B2 * !X)	0.00974	0.00979	0.00963
	(!A1 * !A2 * !B2 * !X)	0.00266	0.00265	0.00267
	(!A1 * !A2 * !B2 * !X)	0.00943	0.00947	0.00946

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00261	0.00262	0.00267
	(A2 * B1 * X)	-0.00078	-0.00078	-0.00072
	(A1 * !A2 * B1 * X)	0.00319	0.00320	0.00325
	(A1 * !A2 * B1 * X)	-0.00021	-0.00021	-0.00015
	(!A1 * !A2 * B1 * !X)	0.00210	0.00211	0.00209
	(!A1 * !A2 * B1 * !X)	-0.00155	-0.00157	-0.00154
	(!A1 * !A2 * !B1 * !X)	0.00220	0.00219	0.00212
	(!A1 * !A2 * !B1 * !X)	-0.00139	-0.00140	-0.00153
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00229	0.00234	0.00236
	(A2 * B1 * X)	-0.00076	-0.00079	-0.00071
	(A1 * !A2 * B1 * X)	0.00287	0.00292	0.00294
	(A1 * !A2 * B1 * X)	-0.00018	-0.00021	-0.00013
	(!A1 * !A2 * B1 * !X)	0.00265	0.00265	0.00265
	(!A1 * !A2 * B1 * !X)	-0.00059	-0.00061	-0.00059
	(!A1 * !A2 * !B1 * !X)	0.00277	0.00276	0.00268
	(!A1 * !A2 * !B1 * !X)	-0.00043	-0.00044	-0.00058
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00417	0.00424	0.00428
	(A2 * B1 * X)	-0.00154	-0.00157	-0.00143
	(A1 * !A2 * B1 * X)	0.00533	0.00540	0.00543
	(A1 * !A2 * B1 * X)	-0.00038	-0.00041	-0.00027
	(!A1 * !A2 * B1 * !X)	0.00512	0.00511	0.00510
	(!A1 * !A2 * B1 * !X)	-0.00118	-0.00123	-0.00117
	(!A1 * !A2 * !B1 * !X)	0.00528	0.00528	0.00515
	(!A1 * !A2 * !B1 * !X)	-0.00088	-0.00090	-0.00114

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00163	-0.00166	-0.00198
	(A2 * B1 * X)	0.00178	0.00176	0.00144
	(A1 * !A2 * B1 * X)	-0.00105	-0.00108	-0.00140
	(A1 * !A2 * B1 * X)	0.00236	0.00234	0.00202
	(!A1 * !A2 * B1 * !X)	0.00017	0.00015	0.00012
	(!A1 * !A2 * B1 * !X)	0.00384	0.00384	0.00375
	(!A1 * !A2 * !B1 * !X)	0.00004	0.00002	0.00005
	(!A1 * !A2 * !B1 * !X)	0.00365	0.00370	0.00366
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00126	-0.00129	-0.00161
	(A2 * B1 * X)	0.00182	0.00180	0.00148
	(A1 * !A2 * B1 * X)	-0.00068	-0.00071	-0.00103
	(A1 * !A2 * B1 * X)	0.00240	0.00238	0.00206
	(!A1 * !A2 * B1 * !X)	0.00166	0.00162	0.00160
	(!A1 * !A2 * B1 * !X)	0.00493	0.00494	0.00485
	(!A1 * !A2 * !B1 * !X)	0.00153	0.00152	0.00153
	(!A1 * !A2 * !B1 * !X)	0.00478	0.00479	0.00477
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00208	-0.00213	-0.00275
	(A2 * B1 * X)	0.00369	0.00365	0.00301
	(A1 * !A2 * B1 * X)	-0.00092	-0.00099	-0.00159
	(A1 * !A2 * B1 * X)	0.00485	0.00483	0.00417
	(!A1 * !A2 * B1 * !X)	0.00360	0.00354	0.00350
	(!A1 * !A2 * B1 * !X)	0.00993	0.00990	0.00976
	(!A1 * !A2 * !B1 * !X)	0.00334	0.00331	0.00334
	(!A1 * !A2 * !B1 * !X)	0.00956	0.00960	0.00957

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00230	0.00250	0.00280	0.00294	0.91237
sky130_fd_sc_hs__o2bb2ai_2	0.00521	0.00459	0.00570	0.00527	1.72404
sky130_fd_sc_hs__o2bb2ai_4	0.01077	0.01083	0.01068	0.01087	2.83370

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	288.75600	727.07900
sky130_fd_sc_hs__o2bb2ai_2	0.00000	576.70800	1451.13000
sky130_fd_sc_hs__o2bb2ai_4	0.00000	665.07400	966.44900

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)	0.04820	0.28388	2.71154
	A2_N->Y (RR)	0.04585	0.29295	2.87053
	B1->Y (FR)	0.05188	0.66280	8.63208
	B2->Y (FR)	0.04363	0.70133	9.28237
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.04374	0.21568	2.56196
	A2_N->Y (RR)	0.04020	0.21888	2.66643
	B1->Y (FR)	0.04620	0.55022	8.42447
	B2->Y (FR)	0.03604	0.58529	9.02237
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.04781	0.18427	2.51773
	A2_N->Y (RR)	0.04424	0.20925	2.86050
	B1->Y (FR)	0.05151	0.47542	8.11125
	B2->Y (FR)	0.04015	0.52870	8.98560

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)	0.06451	0.45064	5.06751
	A2_N->Y (FF)	0.05753	0.42549	4.83693
	B1->Y (RF)	0.03062	0.33535	4.22749
	B2->Y (RF)	0.02420	0.32184	4.11979
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.05230	0.38522	4.98707
	A2_N->Y (FF)	0.04977	0.38022	4.98693
	B1->Y (RF)	0.02642	0.25866	3.96983
	B2->Y (RF)	0.02151	0.25196	3.98039
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.06156	0.35109	4.82090
	A2_N->Y (FF)	0.05352	0.31607	4.41491
	B1->Y (RF)	0.03085	0.21052	3.75326
	B2->Y (RF)	0.02198	0.19148	3.57647

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	0.02189	0.03869	0.31599
	A1_N	0.01634	0.03314	0.31057
	A2_N	0.02080	0.03654	0.28547
	A2_N	0.01639	0.03216	0.28097
	B1	0.00087	0.00594	0.09530
	B1	0.00791	0.01298	0.10212
	B2	0.00084	0.00778	0.10835
	B2	0.00652	0.01345	0.11407
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.04214	0.07322	0.58369
	A1_N	0.03014	0.06120	0.57189
	A2_N	0.03936	0.07176	0.58007
	A2_N	0.03075	0.06317	0.57171
	B1	0.00139	0.01341	0.19426
	B1	0.01544	0.02752	0.20800
	B2	0.00140	0.01602	0.20606
	B2	0.01183	0.02645	0.21612
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.05673	0.12169	1.21720
	A1_N	0.03055	0.09546	1.19123
	A2_N	0.05069	0.11291	1.10592
	A2_N	0.03064	0.09286	1.08614
	B1	0.00190	0.02497	0.34568
	B1	0.03000	0.05313	0.37337
	B2	0.00167	0.03034	0.37685
	B2	0.02363	0.05235	0.39852

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00722	0.02540	0.30555
	A1_N	0.01280	0.03091	0.31086
	A2_N	0.00659	0.02431	0.29767
	A2_N	0.01101	0.02867	0.30207
	B1	0.01336	0.01745	0.09062
	B1	0.00633	0.01041	0.08336
	B2	0.01139	0.01550	0.08211
	B2	0.00570	0.00977	0.07634
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.02098	0.05593	0.59675
	A1_N	0.02512	0.06000	0.59968
	A2_N	0.02026	0.05333	0.56369
	A2_N	0.02092	0.05394	0.56562
	B1	0.02608	0.03579	0.18263
	B1	0.01202	0.02166	0.16811
	B2	0.02157	0.03131	0.16395
	B2	0.01110	0.02075	0.15323
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02755	0.09795	1.19111
	A1_N	0.05373	0.12404	1.21519
	A2_N	0.02374	0.09058	1.10703
	A2_N	0.04378	0.11058	1.12663
	B1	0.05405	0.07446	0.36053
	B1	0.02593	0.04638	0.33106
	B2	0.04378	0.06447	0.31928
	B2	0.02177	0.04243	0.29636

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)	0.01526	0.03170	0.30408
	(A2_N * !B1 * !B2 * Y)	0.00927	0.02568	0.29810
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00295	0.00296	0.00294
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00081	-0.00082	-0.00082
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.03003	0.06217	0.59462
	(A2_N * !B1 * !B2 * Y)	0.01722	0.04929	0.58178
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00579	0.00584	0.00580
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00236	-0.00240	-0.00238
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.04666	0.11023	1.18696
	(A2_N * !B1 * !B2 * Y)	0.01882	0.08220	1.15909
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.01227	0.01240	0.01231
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00544	-0.00552	-0.00546

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)	0.00055	0.01850	0.29643
	(A2_N * !B1 * !B2 * Y)	0.00659	0.02454	0.30241
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00044	-0.00058	-0.00060
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00333	0.00317	0.00313
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00087	0.03601	0.57930
	(A2_N * !B1 * !B2 * Y)	0.01375	0.04894	0.59209
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00075	-0.00109	-0.00113
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00741	0.00718	0.00702
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00235	0.07168	1.15544
	(A2_N * !B1 * !B2 * Y)	0.03044	0.09984	1.18321
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00213	-0.00301	-0.00317
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.01565	0.01490	0.01458

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)	0.01415	0.03124	0.30328
	(A1_N * !B1 * !B2 * Y)	0.00929	0.02635	0.29841
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00168	0.00168	0.00165
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00127	-0.00129	-0.00132
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.02728	0.05861	0.55413
	(A1_N * !B1 * !B2 * Y)	0.01781	0.04910	0.54466
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00328	0.00330	0.00322
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00225	-0.00229	-0.00238
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.04065	0.10287	1.11051
	(A1_N * !B1 * !B2 * Y)	0.01884	0.08095	1.08864
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00680	0.00681	0.00665
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00699	-0.00709	-0.00729

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)	0.00011	0.01806	0.29575
	(A1_N * !B1 * !B2 * Y)	0.00502	0.02297	0.30064
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00060	0.00059	0.00060
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00355	0.00358	0.00356
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	-0.00007	0.03268	0.53936
	(A1_N * !B1 * !B2 * Y)	0.00942	0.04222	0.54882
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00127	0.00126	0.00128
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00685	0.00689	0.00686
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00082	0.06510	1.08057
	(A1_N * !B1 * !B2 * Y)	0.02108	0.08711	1.10247
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00232	0.00226	0.00231
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.01617	0.01641	0.01621

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)	0.00839	0.00841	0.00839
	(A1_N * A2_N * B2 * Y)	0.00382	0.00381	0.00383
	(A1_N * A2_N * !B2 * Y)	0.00836	0.00839	0.00837
	(A1_N * A2_N * !B2 * Y)	0.00384	0.00382	0.00383
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00395	0.00355	0.00414
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00066	-0.00110	-0.00044
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.01673	0.01670	0.01672
	(A1_N * A2_N * B2 * Y)	0.00750	0.00753	0.00753
	(A1_N * A2_N * !B2 * Y)	0.01668	0.01671	0.01668
	(A1_N * A2_N * !B2 * Y)	0.00751	0.00749	0.00753
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00802	0.00716	0.00829
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00129	-0.00224	-0.00095
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.01634	0.01637	0.01633
	(A1_N * A2_N * B2 * Y)	-0.00161	-0.00161	-0.00156
	(A1_N * A2_N * !B2 * Y)	0.01626	0.01630	0.01626
	(A1_N * A2_N * !B2 * Y)	-0.00160	-0.00161	-0.00158
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01602	0.01394	0.01617
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00216	-0.00427	-0.00184

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)	0.00427	0.00426	0.00428
	(A1_N * A2_N * B2 * Y)	0.00883	0.00886	0.00883
	(A1_N * A2_N * !B2 * Y)	0.00457	0.00437	0.00431
	(A1_N * A2_N * !B2 * Y)	0.00911	0.00894	0.00884
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00005	0.00001	-0.00014
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00464	0.00465	0.00446
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00855	0.00854	0.00855
	(A1_N * A2_N * B2 * Y)	0.01776	0.01777	0.01775
	(A1_N * A2_N * !B2 * Y)	0.00910	0.00869	0.00861
	(A1_N * A2_N * !B2 * Y)	0.01828	0.01790	0.01777
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00008	0.00001	-0.00030
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00939	0.00939	0.00900
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00052	0.00048	0.00051
	(A1_N * A2_N * B2 * Y)	0.01839	0.01848	0.01842
	(A1_N * A2_N * !B2 * Y)	0.00171	0.00078	0.00065
	(A1_N * A2_N * !B2 * Y)	0.01958	0.01871	0.01846
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00046	0.00035	-0.00033
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01854	0.01845	0.01779

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)	0.00848	0.00848	0.00847
	(A1_N * A2_N * B1 * Y)	0.00380	0.00380	0.00382
	(A1_N * A2_N * !B1 * Y)	0.00844	0.00846	0.00845
	(A1_N * A2_N * !B1 * Y)	0.00382	0.00380	0.00381
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00339	0.00342	0.00343
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00000	-0.00001	0.00006
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.01648	0.01650	0.01645
	(A1_N * A2_N * B1 * Y)	0.00782	0.00782	0.00785
	(A1_N * A2_N * !B1 * Y)	0.01641	0.01642	0.01642
	(A1_N * A2_N * !B1 * Y)	0.00785	0.00784	0.00784
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00637	0.00643	0.00644
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00033	0.00032	0.00044
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.01630	0.01642	0.01633
	(A1_N * A2_N * B1 * Y)	-0.00163	-0.00171	-0.00164
	(A1_N * A2_N * !B1 * Y)	0.01619	0.01631	0.01624
	(A1_N * A2_N * !B1 * Y)	-0.00163	-0.00171	-0.00164
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.01323	0.01345	0.01343
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00053	0.00044	0.00067

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)	0.00420	0.00418	0.00419
	(A1_N * A2_N * B1 * Y)	0.00884	0.00888	0.00885
	(A1_N * A2_N * !B1 * Y)	0.00449	0.00429	0.00423
	(A1_N * A2_N * !B1 * Y)	0.00913	0.00896	0.00886
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00042	-0.00045	-0.00073
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00296	0.00295	0.00267
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00883	0.00881	0.00882
	(A1_N * A2_N * B1 * Y)	0.01740	0.01744	0.01743
	(A1_N * A2_N * !B1 * Y)	0.00934	0.00896	0.00887
	(A1_N * A2_N * !B1 * Y)	0.01792	0.01757	0.01745
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00041	-0.00047	-0.00103
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00562	0.00561	0.00504
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00051	0.00047	0.00051
	(A1_N * A2_N * B1 * Y)	0.01846	0.01853	0.01849
	(A1_N * A2_N * !B1 * Y)	0.00171	0.00079	0.00065
	(A1_N * A2_N * !B1 * Y)	0.01965	0.01879	0.01854
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00148	-0.00162	-0.00270
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.01134	0.01133	0.01021

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00243	0.00249	0.00267	1.67550
sky130_fd_sc_hs__o2bb2a_2	0.00232	0.00252	0.00265	0.00273	3.00870
sky130_fd_sc_hs__o2bb2a_4	0.00230	0.00245	0.00500	0.00487	6.08087

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	485.22600	848.86300
sky130_fd_sc_hs__o2bb2a_2	0.00000	413.38400	964.97900
sky130_fd_sc_hs__o2bb2a_4	0.00000	893.76600	1211.70000

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)	0.09083	0.59998	7.90558
	A2_N->X (FR)	0.08415	0.57239	7.54063
	B1->X (RR)	0.05996	0.40899	5.46147
	B2->X (RR)	0.05200	0.38612	5.20092
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.10010	0.54262	7.97352
	A2_N->X (FR)	0.09134	0.51445	7.58590
	B1->X (RR)	0.06307	0.33708	5.19580
	B2->X (RR)	0.05462	0.31721	4.93871
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.11743	0.50285	8.04358
	A2_N->X (FR)	0.10958	0.47772	7.66279
	B1->X (RR)	0.07346	0.29304	5.44631
	B2->X (RR)	0.06143	0.26733	5.17767

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)	0.07421	0.26559	2.61319
	A2_N->X (RF)	0.07200	0.27964	2.90250
	B1->X (FF)	0.08199	0.46185	5.71198
	B2->X (FF)	0.07394	0.48212	5.94700
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.08325	0.22640	2.22409
	A2_N->X (RF)	0.08121	0.23626	2.44636
	B1->X (FF)	0.09901	0.44479	5.52130
	B2->X (FF)	0.09058	0.47068	5.75058
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.09388	0.23143	2.62026
	A2_N->X (RF)	0.09173	0.24129	2.81741
	B1->X (FF)	0.10358	0.41555	5.72040
	B2->X (FF)	0.09031	0.43859	5.96032

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	0.02300	0.04291	0.35976
	A1_N	0.02833	0.04821	0.36558
	A2_N	0.02227	0.04190	0.34977
	A2_N	0.02634	0.04601	0.35383
	B1	0.02496	0.03642	0.24814
	B1	0.01845	0.02993	0.24190
	B2	0.02423	0.03616	0.24729
	B2	0.01884	0.03077	0.24179
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.02210	0.04079	0.35854
	A1_N	0.02754	0.04627	0.36479
	A2_N	0.02103	0.03930	0.33204
	A2_N	0.02532	0.04359	0.33715
	B1	0.02455	0.03562	0.25073
	B1	0.01763	0.02870	0.24358
	B2	0.02349	0.03513	0.24914
	B2	0.01777	0.02940	0.24325
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.04791	0.06847	0.44363
	A1_N	0.05288	0.07351	0.44974
	A2_N	0.05825	0.07466	0.39297
	A2_N	0.05804	0.07627	0.39973
	B1	0.06162	0.08157	0.48586
	B1	0.04844	0.06854	0.47369
	B2	0.05709	0.07877	0.47571
	B2	0.04688	0.06865	0.46506

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.02732	0.04521	0.35786
	A1_N	0.02205	0.03993	0.35211
	A2_N	0.02623	0.04514	0.36371
	A2_N	0.02219	0.04111	0.35925
	B1	0.00881	0.01969	0.23084
	B1	0.01532	0.02609	0.23688
	B2	0.00877	0.02079	0.23248
	B2	0.01417	0.02617	0.23787
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.03368	0.04871	0.33863
	A1_N	0.03028	0.04444	0.33060
	A2_N	0.03345	0.04774	0.34069
	A2_N	0.03046	0.04474	0.33756
	B1	0.01808	0.02530	0.23802
	B1	0.02501	0.03209	0.24178
	B2	0.01806	0.02690	0.23952
	B2	0.02379	0.03242	0.24258
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.05164	0.06580	0.41261
	A1_N	0.05155	0.06357	0.39951
	A2_N	0.05277	0.06529	0.41302
	A2_N	0.05173	0.06414	0.41155
	B1	0.03725	0.04824	0.44351
	B1	0.05041	0.06135	0.45537
	B2	0.03734	0.05181	0.44818
	B2	0.04755	0.06168	0.45297

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)	0.01542	0.03216	0.30561
	(A2_N * !B1 * !B2 * !X)	0.00949	0.02620	0.29968
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00516	0.00518	0.00516
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00138	0.00136	0.00137
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.01693	0.03287	0.29659
	(A2_N * !B1 * !B2 * !X)	0.01083	0.02675	0.29049
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00335	0.00338	0.00335
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00048	-0.00049	-0.00049
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.02071	0.03585	0.29730
	(A2_N * !B1 * !B2 * !X)	0.01457	0.02969	0.29118
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00853	0.00855	0.00852
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00473	0.00472	0.00472

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)	0.00165	0.01989	0.29883
	(A2_N * !B1 * !B2 * !X)	0.00761	0.02588	0.30474
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00161	0.00147	0.00145
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00542	0.00526	0.00522
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00264	0.02008	0.28927
	(A2_N * !B1 * !B2 * !X)	0.00878	0.02622	0.29535
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00037	-0.00052	-0.00054
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00345	0.00331	0.00327
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00546	0.02221	0.28921
	(A2_N * !B1 * !B2 * !X)	0.01165	0.02841	0.29532
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00482	0.00468	0.00466
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00863	0.00849	0.00843

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)	0.01439	0.03169	0.30327
	(A1_N * !B1 * !B2 * !X)	0.00968	0.02695	0.29854
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00377	0.00377	0.00374
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00089	0.00087	0.00084
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.01599	0.03244	0.29485
	(A1_N * !B1 * !B2 * !X)	0.01104	0.02746	0.28988
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00197	0.00197	0.00194
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00105	-0.00106	-0.00110
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.01972	0.03532	0.29598
	(A1_N * !B1 * !B2 * !X)	0.01480	0.03038	0.29106
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00708	0.00708	0.00705
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00418	0.00416	0.00413

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)	0.00112	0.01937	0.29653
	(A1_N * !B1 * !B2 * !X)	0.00586	0.02412	0.30126
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00278	0.00277	0.00278
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00566	0.00571	0.00567
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00205	0.01948	0.28749
	(A1_N * !B1 * !B2 * !X)	0.00705	0.02448	0.29246
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00078	0.00076	0.00078
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00379	0.00384	0.00380
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00499	0.02156	0.28779
	(A1_N * !B1 * !B2 * !X)	0.00995	0.02650	0.29272
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00604	0.00603	0.00604
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00893	0.00896	0.00894

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)	0.00921	0.00920	0.00920
	(A1_N * A2_N * B2 * !X)	0.00513	0.00514	0.00515
	(A1_N * A2_N * !B2 * !X)	0.00918	0.00921	0.00919
	(A1_N * A2_N * !B2 * !X)	0.00515	0.00513	0.00514
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00580	0.00545	0.00618
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00169	0.00130	0.00209
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.01043	0.01042	0.01043
	(A1_N * A2_N * B2 * !X)	0.00609	0.00610	0.00610
	(A1_N * A2_N * !B2 * !X)	0.01040	0.01043	0.01041
	(A1_N * A2_N * !B2 * !X)	0.00610	0.00608	0.00610
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00412	0.00377	0.00449
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00027	-0.00066	0.00013
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.01419	0.01420	0.01420
	(A1_N * A2_N * B2 * !X)	0.00594	0.00592	0.00594
	(A1_N * A2_N * !B2 * !X)	0.01416	0.01420	0.01417
	(A1_N * A2_N * !B2 * !X)	0.00593	0.00590	0.00592
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.01212	0.01107	0.01242
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00374	0.00266	0.00409

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)	0.00558	0.00557	0.00558
	(A1_N * A2_N * B2 * !X)	0.00964	0.00966	0.00964
	(A1_N * A2_N * !B2 * !X)	0.00585	0.00566	0.00562
	(A1_N * A2_N * !B2 * !X)	0.00991	0.00973	0.00965
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00262	0.00259	0.00238
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00673	0.00671	0.00649
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00637	0.00636	0.00637
	(A1_N * A2_N * B2 * !X)	0.01071	0.01073	0.01071
	(A1_N * A2_N * !B2 * !X)	0.00665	0.00646	0.00641
	(A1_N * A2_N * !B2 * !X)	0.01098	0.01080	0.01072
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00051	0.00047	0.00026
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00488	0.00487	0.00465
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00691	0.00689	0.00690
	(A1_N * A2_N * B2 * !X)	0.01514	0.01519	0.01516
	(A1_N * A2_N * !B2 * !X)	0.00753	0.00707	0.00698
	(A1_N * A2_N * !B2 * !X)	0.01581	0.01537	0.01521
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00523	0.00516	0.00473
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.01361	0.01357	0.01311

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)	0.00932	0.00933	0.00932
	(A1_N * A2_N * B1 * !X)	0.00510	0.00508	0.00510
	(A1_N * A2_N * !B1 * !X)	0.00930	0.00933	0.00931
	(A1_N * A2_N * !B1 * !X)	0.00510	0.00509	0.00510
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00531	0.00534	0.00536
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00221	0.00220	0.00228
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.01057	0.01059	0.01057
	(A1_N * A2_N * B1 * !X)	0.00616	0.00614	0.00616
	(A1_N * A2_N * !B1 * !X)	0.01053	0.01054	0.01055
	(A1_N * A2_N * !B1 * !X)	0.00617	0.00616	0.00616
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00349	0.00353	0.00356
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00024	0.00023	0.00030
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.01406	0.01410	0.01406
	(A1_N * A2_N * B1 * !X)	0.00596	0.00592	0.00595
	(A1_N * A2_N * !B1 * !X)	0.01404	0.01409	0.01405
	(A1_N * A2_N * !B1 * !X)	0.00596	0.00592	0.00595
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.01040	0.01045	0.01046
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00456	0.00455	0.00467

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)	0.00547	0.00545	0.00546
	(A1_N * A2_N * B1 * !X)	0.00968	0.00971	0.00969
	(A1_N * A2_N * !B1 * !X)	0.00575	0.00555	0.00550
	(A1_N * A2_N * !B1 * !X)	0.00998	0.00978	0.00970
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00197	0.00194	0.00162
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00506	0.00504	0.00472
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00624	0.00622	0.00624
	(A1_N * A2_N * B1 * !X)	0.01065	0.01066	0.01065
	(A1_N * A2_N * !B1 * !X)	0.00651	0.00632	0.00627
	(A1_N * A2_N * !B1 * !X)	0.01091	0.01074	0.01065
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00004	-0.00007	-0.00039
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00324	0.00322	0.00290
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00707	0.00701	0.00704
	(A1_N * A2_N * B1 * !X)	0.01515	0.01518	0.01515
	(A1_N * A2_N * !B1 * !X)	0.00760	0.00717	0.00709
	(A1_N * A2_N * !B1 * !X)	0.01574	0.01531	0.01518
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00427	0.00420	0.00360
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.01008	0.01008	0.00947

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00272	0.00287	0.00278	0.00288	0.00294	0.62717
sky130_fd_sc_hs__o311ai_2	0.00534	0.00546	0.00550	0.00550	0.00557	1.01701
sky130_fd_sc_hs__o311ai_4	0.01053	0.01055	0.01096	0.00834	0.00787	1.93532

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	62.35290	357.75200
sky130_fd_sc_hs__o311ai_2	0.00000	124.63900	714.70800
sky130_fd_sc_hs__o311ai_4	0.00000	144.82400	951.81100

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)	0.10787	0.74759	8.20830
	A2->Y (FR)	0.10132	0.78805	8.87111
	A3->Y (FR)	0.08210	0.79982	9.25379
	B1->Y (FR)	0.02732	0.43182	5.28060
	C1->Y (FR)	0.02280	0.42441	5.22849
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.12316	0.65072	7.86184
	A2->Y (FR)	0.11184	0.68538	8.50553
	A3->Y (FR)	0.09132	0.71372	9.14416
	B1->Y (FR)	0.02737	0.37210	4.97674
	C1->Y (FR)	0.02196	0.36211	4.91803
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.10984	0.53560	7.63340
	A2->Y (FR)	0.10183	0.59118	8.54757
	A3->Y (FR)	0.07711	0.60893	9.05673
	B1->Y (FR)	0.03740	0.45459	6.95218
	C1->Y (FR)	0.02646	0.44825	7.04731

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.04682	0.31135	3.12605
	A2->Y (RF)	0.04556	0.31286	3.18493
	A3->Y (RF)	0.03579	0.29667	3.08806
	B1->Y (RF)	0.03914	0.37107	4.13746
	C1->Y (RF)	0.03379	0.39791	4.54629
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.05493	0.26659	2.94806
	A2->Y (RF)	0.04939	0.25294	2.86353
	A3->Y (RF)	0.03950	0.23685	2.75631
	B1->Y (RF)	0.04864	0.32874	3.94858
	C1->Y (RF)	0.04167	0.38390	4.77963
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.05867	0.22107	3.03967
	A2->Y (RF)	0.05083	0.20549	2.90187
	A3->Y (RF)	0.03629	0.18534	2.77191
	B1->Y (RF)	0.05243	0.31483	4.48104
	C1->Y (RF)	0.04217	0.34385	5.05130

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00180	0.00574	0.09869
	A1	0.01400	0.01793	0.11066
	A2	0.00194	0.00570	0.08610
	A2	0.01264	0.01641	0.09661
	A3	0.00189	0.00727	0.09923
	A3	0.01104	0.01642	0.10824
	B1	0.00011	0.00973	0.16046
	B1	0.00737	0.01700	0.16791
	C1	-0.00062	0.00872	0.15148
	C1	0.00539	0.01478	0.15798
sky130_fd_sc_hs__o311ai_2	A1	0.00429	0.01150	0.17964
	A1	0.02907	0.03629	0.20418
	A2	0.00433	0.01204	0.16095
	A2	0.02603	0.03370	0.18191
	A3	0.00429	0.01404	0.17295
	A3	0.02295	0.03265	0.19115
	B1	0.00046	0.01926	0.29725
	B1	0.01484	0.03378	0.31167
	C1	-0.00113	0.01640	0.26757
	C1	0.01043	0.02809	0.28021

sky130_fd_sc_hs__o311ai_4	**A1**	0.00624	0.02102	0.31624
	A1	0.05483	0.06958	0.36375
	A2	0.00655	0.02083	0.26690
	A2	0.04895	0.06310	0.30810
	A3	0.00659	0.02569	0.29847
	A3	0.04315	0.06228	0.33426
	B1	0.00066	0.02194	0.30978
	B1	0.02445	0.04570	0.33358
	C1	-0.00304	0.01826	0.28947
	C1	0.01452	0.03578	0.30636

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.02074	0.02413	0.10411
	A1	0.00853	0.01186	0.09191
	A2	0.01828	0.02155	0.09322
	A2	0.00755	0.01077	0.08220
	A3	0.01587	0.01931	0.08584
	A3	0.00670	0.01009	0.07667
	B1	0.01201	0.01760	0.11909
	B1	0.00472	0.01029	0.11180
	C1	0.01094	0.01717	0.11713
	C1	0.00492	0.01109	0.11074

sky130_fd_sc_hs__o311ai_2	**A1**	0.04285	0.04924	0.20074
	A1	0.01804	0.02435	0.17545
	A2	0.03626	0.04306	0.18108
	A2	0.01450	0.02130	0.15901
	A3	0.03170	0.03855	0.16210
	A3	0.01301	0.01986	0.14343
	B1	0.02333	0.03583	0.24062
	B1	0.00890	0.02137	0.22582
	C1	0.02111	0.03318	0.21173
	C1	0.00951	0.02157	0.19982
sky130_fd_sc_hs__o311ai_4	**A1**	0.07451	0.09041	0.40056
	A1	0.02582	0.04164	0.35099
	A2	0.06324	0.07822	0.34521
	A2	0.02083	0.03580	0.30286
	A3	0.05258	0.06898	0.31189
	A3	0.01593	0.03216	0.27479
	B1	0.03496	0.04907	0.24816
	B1	0.01117	0.02527	0.22395
	C1	0.02925	0.04427	0.22803
	C1	0.01169	0.02664	0.21052

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)**	0.00206	0.00208	0.00205
	(A2 * B1 * !C1 * Y)	-0.00247	-0.00248	-0.00247
	(A2 * A3 * B1 * C1 * !Y)	0.00441	0.00422	0.00419
	(A2 * A3 * B1 * C1 * !Y)	-0.00013	-0.00035	-0.00034
	(A2 * !B1 * Y)	0.00206	0.00208	0.00205
	(A2 * !B1 * Y)	-0.00248	-0.00249	-0.00247
	(A2 * !A3 * B1 * C1 * !Y)	0.00489	0.00450	0.00471
	(A2 * !A3 * B1 * C1 * !Y)	0.00029	-0.00013	0.00017
	(!A2 * A3 * B1 * C1 * !Y)	0.00521	0.00475	0.00511
	(!A2 * A3 * B1 * C1 * !Y)	0.00055	0.00004	0.00054
	(!A2 * A3 * B1 * !C1 * Y)	0.00205	0.00208	0.00205
	(!A2 * A3 * B1 * !C1 * Y)	-0.00240	-0.00246	-0.00245
	(!A2 * A3 * !B1 * Y)	0.00205	0.00208	0.00205
	(!A2 * A3 * !B1 * Y)	-0.00241	-0.00247	-0.00245
	(!A2 * !A3 * B1 * !C1 * Y)	0.00197	0.00199	0.00198
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00247	-0.00248	-0.00247
	(!A2 * !A3 * !B1 * C1 * Y)	0.00202	0.00203	0.00201
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00249	-0.00249	-0.00248
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00199	0.00201	0.00198
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00250	-0.00251	-0.00249

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00401	0.00403	0.00401
	(A2 * B1 * !C1 * Y)	-0.00491	-0.00495	-0.00493
	(A2 * A3 * B1 * C1 * !Y)	0.00886	0.00834	0.00828
	(A2 * A3 * B1 * C1 * !Y)	-0.00008	-0.00066	-0.00066
	(A2 * !B1 * Y)	0.00400	0.00402	0.00400
	(A2 * !B1 * Y)	-0.00492	-0.00496	-0.00493
	(A2 * !A3 * B1 * C1 * !Y)	0.01005	0.00900	0.00933
	(A2 * !A3 * B1 * C1 * !Y)	0.00095	-0.00014	0.00035
	(!A2 * A3 * B1 * C1 * !Y)	0.01063	0.00942	0.01014
	(!A2 * A3 * B1 * C1 * !Y)	0.00143	0.00016	0.00111
	(!A2 * A3 * B1 * !C1 * Y)	0.00400	0.00402	0.00401
	(!A2 * A3 * B1 * !C1 * Y)	-0.00477	-0.00490	-0.00489
	(!A2 * A3 * !B1 * Y)	0.00399	0.00403	0.00400
	(!A2 * A3 * !B1 * Y)	-0.00478	-0.00492	-0.00490
	(!A2 * !A3 * B1 * !C1 * Y)	0.00382	0.00385	0.00384
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00494	-0.00496	-0.00494
	(!A2 * !A3 * !B1 * C1 * Y)	0.00388	0.00390	0.00388
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00496	-0.00497	-0.00495
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00380	0.00384	0.00379
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00500	-0.00502	-0.00499

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00806	0.00803	0.00803
	(A2 * B1 * !C1 * Y)	-0.00984	-0.00986	-0.00983
	(A2 * A3 * B1 * C1 * !Y)	0.01341	0.01247	0.01241
	(A2 * A3 * B1 * C1 * !Y)	-0.00452	-0.00547	-0.00546
	(A2 * !B1 * Y)	0.00804	0.00802	0.00801
	(A2 * !B1 * Y)	-0.00985	-0.00988	-0.00985
	(A2 * !A3 * B1 * C1 * !Y)	0.01560	0.01372	0.01450
	(A2 * !A3 * B1 * C1 * !Y)	-0.00264	-0.00448	-0.00345
	(!A2 * A3 * B1 * C1 * !Y)	0.01666	0.01464	0.01612
	(!A2 * A3 * B1 * C1 * !Y)	-0.00173	-0.00387	-0.00193
	(!A2 * A3 * B1 * !C1 * Y)	0.00800	0.00806	0.00802
	(!A2 * A3 * B1 * !C1 * Y)	-0.00954	-0.00979	-0.00977
	(!A2 * A3 * !B1 * Y)	0.00799	0.00804	0.00801
	(!A2 * A3 * !B1 * Y)	-0.00956	-0.00981	-0.00978
	(!A2 * !A3 * B1 * !C1 * Y)	0.00764	0.00768	0.00767
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00987	-0.00989	-0.00986
	(!A2 * !A3 * !B1 * C1 * Y)	0.00774	0.00782	0.00778
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00987	-0.00992	-0.00988
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00758	0.00770	0.00761
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00995	-0.01003	-0.00997

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)**	-0.00201	-0.00202	-0.00200
	(A2 * B1 * !C1 * Y)	0.00252	0.00254	0.00252
	(A2 * A3 * B1 * C1 * !Y)	0.00013	0.00012	0.00012
	(A2 * A3 * B1 * C1 * !Y)	0.00465	0.00467	0.00465
	(A2 * !B1 * Y)	-0.00201	-0.00202	-0.00201
	(A2 * !B1 * Y)	0.00252	0.00254	0.00251
	(A2 * !A3 * B1 * C1 * !Y)	0.00060	0.00057	0.00050
	(A2 * !A3 * B1 * C1 * !Y)	0.00517	0.00519	0.00508
	(!A2 * A3 * B1 * C1 * !Y)	0.00108	0.00105	0.00091
	(!A2 * A3 * B1 * C1 * !Y)	0.00570	0.00570	0.00554
	(!A2 * A3 * B1 * !C1 * Y)	-0.00200	-0.00201	-0.00200
	(!A2 * A3 * B1 * !C1 * Y)	0.00248	0.00251	0.00248
	(!A2 * A3 * !B1 * Y)	-0.00201	-0.00202	-0.00201
	(!A2 * A3 * !B1 * Y)	0.00248	0.00250	0.00248
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00170	-0.00192	-0.00195
	(!A2 * !A3 * B1 * !C1 * Y)	0.00270	0.00258	0.00253
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00178	-0.00194	-0.00196
	(!A2 * !A3 * !B1 * C1 * Y)	0.00266	0.00256	0.00253
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00190	-0.00197	-0.00198
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00251	0.00252	0.00251

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00391	-0.00393	-0.00391
	(A2 * B1 * !C1 * Y)	0.00501	0.00506	0.00501
	(A2 * A3 * B1 * C1 * !Y)	0.00038	0.00035	0.00037
	(A2 * A3 * B1 * C1 * !Y)	0.00930	0.00935	0.00931
	(A2 * !B1 * Y)	-0.00391	-0.00394	-0.00392
	(A2 * !B1 * Y)	0.00500	0.00506	0.00501
	(A2 * !A3 * B1 * C1 * !Y)	0.00133	0.00127	0.00114
	(A2 * !A3 * B1 * C1 * !Y)	0.01036	0.01040	0.01020
	(!A2 * A3 * B1 * C1 * !Y)	0.00226	0.00220	0.00194
	(!A2 * A3 * B1 * C1 * !Y)	0.01139	0.01138	0.01108
	(!A2 * A3 * B1 * !C1 * Y)	-0.00390	-0.00392	-0.00391
	(!A2 * A3 * B1 * !C1 * Y)	0.00493	0.00497	0.00494
	(!A2 * A3 * !B1 * Y)	-0.00391	-0.00393	-0.00392
	(!A2 * A3 * !B1 * Y)	0.00492	0.00496	0.00493
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00318	-0.00373	-0.00378
	(!A2 * !A3 * B1 * !C1 * Y)	0.00550	0.00518	0.00506
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00336	-0.00380	-0.00381
	(!A2 * !A3 * !B1 * C1 * Y)	0.00539	0.00514	0.00506
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00365	-0.00384	-0.00379
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00503	0.00507	0.00501

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00781	-0.00786	-0.00782
	(A2 * B1 * !C1 * Y)	0.01002	0.01012	0.01003
	(A2 * A3 * B1 * C1 * !Y)	-0.00343	-0.00346	-0.00345
	(A2 * A3 * B1 * C1 * !Y)	0.01442	0.01446	0.01443
	(A2 * !B1 * Y)	-0.00783	-0.00788	-0.00784
	(A2 * !B1 * Y)	0.01000	0.01010	0.01002
	(A2 * !A3 * B1 * C1 * !Y)	-0.00157	-0.00165	-0.00195
	(A2 * !A3 * B1 * C1 * !Y)	0.01653	0.01655	0.01616
	(!A2 * A3 * B1 * C1 * !Y)	0.00037	0.00023	-0.00030
	(!A2 * A3 * B1 * C1 * !Y)	0.01856	0.01861	0.01798
	(!A2 * A3 * B1 * !C1 * Y)	-0.00780	-0.00785	-0.00782
	(!A2 * A3 * B1 * !C1 * Y)	0.00984	0.00994	0.00987
	(!A2 * A3 * !B1 * Y)	-0.00782	-0.00787	-0.00784
	(!A2 * A3 * !B1 * Y)	0.00982	0.00993	0.00985
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00664	-0.00741	-0.00756
	(!A2 * !A3 * B1 * !C1 * Y)	0.01069	0.01037	0.01011
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00687	-0.00757	-0.00761
	(!A2 * !A3 * !B1 * C1 * Y)	0.01059	0.01020	0.01011
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00734	-0.00768	-0.00761
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00999	0.01013	0.01001

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)**	0.00437	0.00439	0.00431
	(A1 * A3 * B1 * C1 * !Y)	0.00066	0.00067	0.00064
	(A1 * A3 * B1 * !C1 * Y)	0.00195	0.00197	0.00196
	(A1 * A3 * B1 * !C1 * Y)	-0.00185	-0.00185	-0.00178
	(A1 * A3 * !B1 * Y)	0.00195	0.00196	0.00195
	(A1 * A3 * !B1 * Y)	-0.00184	-0.00186	-0.00179
	(A1 * !A3 * B1 * C1 * !Y)	0.00442	0.00443	0.00441
	(A1 * !A3 * B1 * C1 * !Y)	0.00118	0.00119	0.00120
	(A1 * !A3 * B1 * !C1 * Y)	0.00197	0.00198	0.00196
	(A1 * !A3 * B1 * !C1 * Y)	-0.00252	-0.00252	-0.00251
	(A1 * !A3 * !B1 * C1 * Y)	0.00197	0.00198	0.00195
	(A1 * !A3 * !B1 * C1 * Y)	-0.00253	-0.00253	-0.00251
	(A1 * !A3 * !B1 * !C1 * Y)	0.00195	0.00196	0.00194
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00253	-0.00254	-0.00253
	(!A1 * A3 * B1 * C1 * !Y)	0.00512	0.00456	0.00509
	(!A1 * A3 * B1 * C1 * !Y)	0.00058	0.00001	0.00060
	(!A1 * A3 * B1 * !C1 * Y)	0.00197	0.00198	0.00196
	(!A1 * A3 * B1 * !C1 * Y)	-0.00252	-0.00252	-0.00250
	(!A1 * A3 * !B1 * Y)	0.00196	0.00197	0.00195
	(!A1 * A3 * !B1 * Y)	-0.00253	-0.00253	-0.00251
	(!A1 * !A3 * B1 * !C1 * Y)	0.00189	0.00191	0.00190
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00250	-0.00252	-0.00251
	(!A1 * !A3 * !B1 * C1 * Y)	0.00192	0.00193	0.00192
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00189	0.00188	0.00188
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00254	-0.00253	-0.00253

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00890	0.00891	0.00875
	(A1 * A3 * B1 * C1 * !Y)	0.00124	0.00124	0.00119
	(A1 * A3 * B1 * !C1 * Y)	0.00404	0.00406	0.00404
	(A1 * A3 * B1 * !C1 * Y)	-0.00371	-0.00374	-0.00362
	(A1 * A3 * !B1 * Y)	0.00403	0.00406	0.00404
	(A1 * A3 * !B1 * Y)	-0.00371	-0.00373	-0.00362
	(A1 * !A3 * B1 * C1 * !Y)	0.00886	0.00893	0.00881
	(A1 * !A3 * B1 * C1 * !Y)	0.00234	0.00230	0.00235
	(A1 * !A3 * B1 * !C1 * Y)	0.00406	0.00409	0.00405
	(A1 * !A3 * B1 * !C1 * Y)	-0.00505	-0.00506	-0.00501
	(A1 * !A3 * !B1 * C1 * Y)	0.00405	0.00409	0.00404
	(A1 * !A3 * !B1 * C1 * Y)	-0.00505	-0.00506	-0.00502
	(A1 * !A3 * !B1 * !C1 * Y)	0.00402	0.00405	0.00400
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00505	-0.00510	-0.00505
	(!A1 * A3 * B1 * C1 * !Y)	0.01023	0.00910	0.01013
	(!A1 * A3 * B1 * C1 * !Y)	0.00101	-0.00013	0.00102
	(!A1 * A3 * B1 * !C1 * Y)	0.00406	0.00408	0.00404
	(!A1 * A3 * B1 * !C1 * Y)	-0.00505	-0.00505	-0.00502
	(!A1 * A3 * !B1 * Y)	0.00405	0.00408	0.00403
	(!A1 * A3 * !B1 * Y)	-0.00506	-0.00506	-0.00503
	(!A1 * !A3 * B1 * !C1 * Y)	0.00387	0.00390	0.00389
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00502	-0.00504	-0.00502
	(!A1 * !A3 * !B1 * C1 * Y)	0.00394	0.00395	0.00393
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00506	-0.00506	-0.00504
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00386	0.00390	0.00386
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00509	-0.00510	-0.00507

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.01329	0.01348	0.01310
	(A1 * A3 * B1 * C1 * !Y)	-0.00151	-0.00148	-0.00163
	(A1 * A3 * B1 * !C1 * Y)	0.00798	0.00800	0.00795
	(A1 * A3 * B1 * !C1 * Y)	-0.00725	-0.00732	-0.00704
	(A1 * A3 * !B1 * Y)	0.00787	0.00799	0.00793
	(A1 * A3 * !B1 * Y)	-0.00724	-0.00730	-0.00706
	(A1 * !A3 * B1 * C1 * !Y)	0.01344	0.01363	0.01340
	(A1 * !A3 * B1 * C1 * !Y)	0.00083	0.00071	0.00080
	(A1 * !A3 * B1 * !C1 * Y)	0.00788	0.00796	0.00793
	(A1 * !A3 * B1 * !C1 * Y)	-0.00984	-0.00991	-0.00986
	(A1 * !A3 * !B1 * C1 * Y)	0.00789	0.00794	0.00792
	(A1 * !A3 * !B1 * C1 * Y)	-0.00989	-0.00992	-0.00988
	(A1 * !A3 * !B1 * !C1 * Y)	0.00782	0.00795	0.00785
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00996	-0.01004	-0.00995
	(!A1 * A3 * B1 * C1 * !Y)	0.01667	0.01406	0.01606
	(!A1 * A3 * B1 * C1 * !Y)	-0.00134	-0.00411	-0.00184
	(!A1 * A3 * B1 * !C1 * Y)	0.00791	0.00802	0.00793
	(!A1 * A3 * B1 * !C1 * Y)	-0.00988	-0.00994	-0.00987
	(!A1 * A3 * !B1 * Y)	0.00789	0.00800	0.00791
	(!A1 * A3 * !B1 * Y)	-0.00989	-0.00996	-0.00989
	(!A1 * !A3 * B1 * !C1 * Y)	0.00768	0.00774	0.00767
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00993	-0.00995	-0.00989
	(!A1 * !A3 * !B1 * C1 * Y)	0.00774	0.00780	0.00772
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00996	-0.00998	-0.00993
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00757	0.00769	0.00760
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00997	-0.01005	-0.00999

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)**	0.00007	0.00006	0.00009
	(A1 * A3 * B1 * C1 * !Y)	0.00371	0.00371	0.00369
	(A1 * A3 * B1 * !C1 * Y)	-0.00190	-0.00192	-0.00191
	(A1 * A3 * B1 * !C1 * Y)	0.00185	0.00187	0.00180
	(A1 * A3 * !B1 * Y)	-0.00191	-0.00192	-0.00191
	(A1 * A3 * !B1 * Y)	0.00184	0.00186	0.00179
	(A1 * !A3 * B1 * C1 * !Y)	0.00050	0.00048	0.00019
	(A1 * !A3 * B1 * C1 * !Y)	0.00373	0.00372	0.00344
	(A1 * !A3 * B1 * !C1 * Y)	-0.00190	-0.00192	-0.00191
	(A1 * !A3 * B1 * !C1 * Y)	0.00255	0.00258	0.00256
	(A1 * !A3 * !B1 * C1 * Y)	-0.00191	-0.00192	-0.00191
	(A1 * !A3 * !B1 * C1 * Y)	0.00255	0.00257	0.00256
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00192	-0.00194	-0.00193
	(A1 * !A3 * !B1 * !C1 * Y)	0.00253	0.00255	0.00254
	(!A1 * A3 * B1 * C1 * !Y)	0.00108	0.00104	0.00089
	(!A1 * A3 * B1 * C1 * !Y)	0.00559	0.00560	0.00540
	(!A1 * A3 * B1 * !C1 * Y)	-0.00190	-0.00191	-0.00191
	(!A1 * A3 * B1 * !C1 * Y)	0.00255	0.00257	0.00256
	(!A1 * A3 * !B1 * Y)	-0.00191	-0.00191	-0.00191
	(!A1 * A3 * !B1 * Y)	0.00255	0.00256	0.00256
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00158	-0.00182	-0.00185
	(!A1 * !A3 * B1 * !C1 * Y)	0.00275	0.00262	0.00257
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00166	-0.00184	-0.00186
	(!A1 * !A3 * !B1 * C1 * Y)	0.00271	0.00259	0.00256
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00179	-0.00187	-0.00188
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00254	0.00256	0.00254

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00012	0.00010	0.00014
	(A1 * A3 * B1 * C1 * !Y)	0.00752	0.00753	0.00750
	(A1 * A3 * B1 * !C1 * Y)	-0.00393	-0.00396	-0.00394
	(A1 * A3 * B1 * !C1 * Y)	0.00371	0.00374	0.00363
	(A1 * A3 * !B1 * Y)	-0.00394	-0.00397	-0.00395
	(A1 * A3 * !B1 * Y)	0.00371	0.00373	0.00362
	(A1 * !A3 * B1 * C1 * !Y)	0.00107	0.00100	0.00039
	(A1 * !A3 * B1 * C1 * !Y)	0.00756	0.00757	0.00699
	(A1 * !A3 * B1 * !C1 * Y)	-0.00393	-0.00395	-0.00394
	(A1 * !A3 * B1 * !C1 * Y)	0.00509	0.00513	0.00511
	(A1 * !A3 * !B1 * C1 * Y)	-0.00394	-0.00396	-0.00395
	(A1 * !A3 * !B1 * C1 * Y)	0.00508	0.00513	0.00511
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00397	-0.00400	-0.00398
	(A1 * !A3 * !B1 * !C1 * Y)	0.00505	0.00510	0.00507
	(!A1 * A3 * B1 * C1 * !Y)	0.00221	0.00215	0.00183
	(!A1 * A3 * B1 * C1 * !Y)	0.01137	0.01134	0.01099
	(!A1 * A3 * B1 * !C1 * Y)	-0.00393	-0.00394	-0.00394
	(!A1 * A3 * B1 * !C1 * Y)	0.00511	0.00512	0.00513
	(!A1 * A3 * !B1 * Y)	-0.00394	-0.00394	-0.00395
	(!A1 * A3 * !B1 * Y)	0.00510	0.00511	0.00512
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00317	-0.00372	-0.00381
	(!A1 * !A3 * B1 * !C1 * Y)	0.00560	0.00527	0.00514
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00336	-0.00381	-0.00383
	(!A1 * !A3 * !B1 * C1 * Y)	0.00547	0.00518	0.00514
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00367	-0.00386	-0.00386
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00509	0.00511	0.00509

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00380	-0.00383	-0.00375
	(A1 * A3 * B1 * C1 * !Y)	0.01067	0.01072	0.01063
	(A1 * A3 * B1 * !C1 * Y)	-0.00773	-0.00779	-0.00774
	(A1 * A3 * B1 * !C1 * Y)	0.00725	0.00732	0.00707
	(A1 * A3 * !B1 * Y)	-0.00775	-0.00781	-0.00776
	(A1 * A3 * !B1 * Y)	0.00724	0.00730	0.00706
	(A1 * !A3 * B1 * C1 * !Y)	-0.00204	-0.00216	-0.00331
	(A1 * !A3 * B1 * C1 * !Y)	0.01065	0.01065	0.00953
	(A1 * !A3 * B1 * !C1 * Y)	-0.00771	-0.00775	-0.00772
	(A1 * !A3 * B1 * !C1 * Y)	0.01005	0.01011	0.01008
	(A1 * !A3 * !B1 * C1 * Y)	-0.00773	-0.00778	-0.00774
	(A1 * !A3 * !B1 * C1 * Y)	0.01004	0.01011	0.01006
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00779	-0.00785	-0.00781
	(A1 * !A3 * !B1 * !C1 * Y)	0.00996	0.01005	0.00999
	(!A1 * A3 * B1 * C1 * !Y)	0.00031	0.00017	-0.00045
	(!A1 * A3 * B1 * C1 * !Y)	0.01832	0.01829	0.01754
	(!A1 * A3 * B1 * !C1 * Y)	-0.00770	-0.00777	-0.00772
	(!A1 * A3 * B1 * !C1 * Y)	0.01005	0.01017	0.01009
	(!A1 * A3 * !B1 * Y)	-0.00772	-0.00778	-0.00774
	(!A1 * A3 * !B1 * Y)	0.01003	0.01015	0.01007
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00642	-0.00730	-0.00746
	(!A1 * !A3 * B1 * !C1 * Y)	0.01088	0.01038	0.01013
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00670	-0.00745	-0.00752
	(!A1 * !A3 * !B1 * C1 * Y)	0.01069	0.01028	0.01012
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00723	-0.00757	-0.00759
	(!A1 * !A3 * !B1 * !C1 * Y)	0.01003	0.01006	0.01003

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)**	0.00424	0.00426	0.00425
	(A2 * B1 * C1 * !Y)	0.00112	0.00111	0.00112
	(A2 * B1 * !C1 * Y)	0.00199	0.00202	0.00200
	(A2 * B1 * !C1 * Y)	-0.00238	-0.00240	-0.00239
	(A2 * !B1 * C1 * Y)	0.00199	0.00200	0.00199
	(A2 * !B1 * C1 * Y)	-0.00238	-0.00240	-0.00239
	(A2 * !B1 * !C1 * Y)	0.00197	0.00198	0.00197
	(A2 * !B1 * !C1 * Y)	-0.00240	-0.00242	-0.00241
	(A1 * !A2 * B1 * C1 * !Y)	0.00425	0.00426	0.00429
	(A1 * !A2 * B1 * C1 * !Y)	0.00128	0.00128	0.00131
	(A1 * !A2 * B1 * !C1 * Y)	0.00201	0.00201	0.00200
	(A1 * !A2 * B1 * !C1 * Y)	-0.00234	-0.00238	-0.00237
	(A1 * !A2 * !B1 * C1 * Y)	0.00201	0.00201	0.00199
	(A1 * !A2 * !B1 * C1 * Y)	-0.00234	-0.00238	-0.00238
	(A1 * !A2 * !B1 * !C1 * Y)	0.00197	0.00199	0.00197
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00234	-0.00239	-0.00238
	(!A1 * !A2 * B1 * !C1 * Y)	0.00190	0.00191	0.00191
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00239	-0.00240	-0.00239
	(!A1 * !A2 * !B1 * C1 * Y)	0.00195	0.00195	0.00194
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00240	-0.00240	-0.00240
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00191	0.00193	0.00191
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00242	-0.00243	-0.00242

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00861	0.00866	0.00862
	(A2 * B1 * C1 * !Y)	0.00216	0.00215	0.00217
	(A2 * B1 * !C1 * Y)	0.00398	0.00403	0.00399
	(A2 * B1 * !C1 * Y)	-0.00493	-0.00500	-0.00497
	(A2 * !B1 * C1 * Y)	0.00397	0.00402	0.00398
	(A2 * !B1 * C1 * Y)	-0.00494	-0.00500	-0.00498
	(A2 * !B1 * !C1 * Y)	0.00394	0.00398	0.00395
	(A2 * !B1 * !C1 * Y)	-0.00498	-0.00504	-0.00501
	(A1 * !A2 * B1 * C1 * !Y)	0.00864	0.00869	0.00872
	(A1 * !A2 * B1 * C1 * !Y)	0.00249	0.00248	0.00255
	(A1 * !A2 * B1 * !C1 * Y)	0.00398	0.00403	0.00399
	(A1 * !A2 * B1 * !C1 * Y)	-0.00480	-0.00494	-0.00493
	(A1 * !A2 * !B1 * C1 * Y)	0.00397	0.00403	0.00398
	(A1 * !A2 * !B1 * C1 * Y)	-0.00481	-0.00495	-0.00494
	(A1 * !A2 * !B1 * !C1 * Y)	0.00394	0.00398	0.00395
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00485	-0.00495	-0.00493
	(!A1 * !A2 * B1 * !C1 * Y)	0.00381	0.00385	0.00382
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00497	-0.00501	-0.00497
	(!A1 * !A2 * !B1 * C1 * Y)	0.00386	0.00390	0.00386
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00500	-0.00502	-0.00499
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00375	0.00382	0.00377
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00501	-0.00506	-0.00503

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.01324	0.01336	0.01323
	(A2 * B1 * C1 * !Y)	0.00015	0.00012	0.00020
	(A2 * B1 * !C1 * Y)	0.00773	0.00777	0.00767
	(A2 * B1 * !C1 * Y)	-0.01037	-0.01044	-0.01037
	(A2 * !B1 * C1 * Y)	0.00763	0.00775	0.00766
	(A2 * !B1 * C1 * Y)	-0.01031	-0.01046	-0.01038
	(A2 * !B1 * !C1 * Y)	0.00756	0.00767	0.00758
	(A2 * !B1 * !C1 * Y)	-0.01038	-0.01052	-0.01045
	(A1 * !A2 * B1 * C1 * !Y)	0.01325	0.01335	0.01339
	(A1 * !A2 * B1 * C1 * !Y)	0.00085	0.00082	0.00097
	(A1 * !A2 * B1 * !C1 * Y)	0.00765	0.00777	0.00767
	(A1 * !A2 * B1 * !C1 * Y)	-0.01004	-0.01031	-0.01029
	(A1 * !A2 * !B1 * C1 * Y)	0.00763	0.00775	0.00766
	(A1 * !A2 * !B1 * C1 * Y)	-0.01005	-0.01029	-0.01028
	(A1 * !A2 * !B1 * !C1 * Y)	0.00757	0.00767	0.00759
	(A1 * !A2 * !B1 * !C1 * Y)	-0.01013	-0.01028	-0.01026
	(!A1 * !A2 * B1 * !C1 * Y)	0.00739	0.00748	0.00741
	(!A1 * !A2 * B1 * !C1 * Y)	-0.01039	-0.01046	-0.01039
	(!A1 * !A2 * !B1 * C1 * Y)	0.00744	0.00751	0.00749
	(!A1 * !A2 * !B1 * C1 * Y)	-0.01040	-0.01046	-0.01043
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00740	0.00747	0.00737
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.01052	-0.01056	-0.01049

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)**	0.00012	0.00011	0.00001
	(A2 * B1 * C1 * !Y)	0.00323	0.00323	0.00316
	(A2 * B1 * !C1 * Y)	-0.00194	-0.00195	-0.00194
	(A2 * B1 * !C1 * Y)	0.00243	0.00245	0.00244
	(A2 * !B1 * C1 * Y)	-0.00194	-0.00196	-0.00195
	(A2 * !B1 * C1 * Y)	0.00242	0.00245	0.00243
	(A2 * !B1 * !C1 * Y)	-0.00196	-0.00197	-0.00197
	(A2 * !B1 * !C1 * Y)	0.00241	0.00243	0.00242
	(A1 * !A2 * B1 * C1 * !Y)	0.00074	0.00071	0.00047
	(A1 * !A2 * B1 * C1 * !Y)	0.00377	0.00377	0.00355
	(A1 * !A2 * B1 * !C1 * Y)	-0.00194	-0.00195	-0.00194
	(A1 * !A2 * B1 * !C1 * Y)	0.00238	0.00240	0.00239
	(A1 * !A2 * !B1 * C1 * Y)	-0.00194	-0.00195	-0.00195
	(A1 * !A2 * !B1 * C1 * Y)	0.00238	0.00239	0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00196	-0.00197	-0.00197
	(A1 * !A2 * !B1 * !C1 * Y)	0.00237	0.00239	0.00238
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00160	-0.00185	-0.00188
	(!A1 * !A2 * B1 * !C1 * Y)	0.00265	0.00250	0.00245
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00169	-0.00187	-0.00190
	(!A1 * !A2 * !B1 * C1 * Y)	0.00260	0.00248	0.00245
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00183	-0.00190	-0.00191
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00242	0.00244	0.00243

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00013	0.00008	-0.00011
	(A2 * B1 * C1 * !Y)	0.00651	0.00654	0.00637
	(A2 * B1 * !C1 * Y)	-0.00388	-0.00391	-0.00389
	(A2 * B1 * !C1 * Y)	0.00504	0.00510	0.00506
	(A2 * !B1 * C1 * Y)	-0.00389	-0.00392	-0.00389
	(A2 * !B1 * C1 * Y)	0.00504	0.00510	0.00505
	(A2 * !B1 * !C1 * Y)	-0.00392	-0.00395	-0.00393
	(A2 * !B1 * !C1 * Y)	0.00500	0.00506	0.00502
	(A1 * !A2 * B1 * C1 * !Y)	0.00141	0.00135	0.00079
	(A1 * !A2 * B1 * C1 * !Y)	0.00764	0.00765	0.00717
	(A1 * !A2 * B1 * !C1 * Y)	-0.00388	-0.00390	-0.00389
	(A1 * !A2 * B1 * !C1 * Y)	0.00495	0.00498	0.00497
	(A1 * !A2 * !B1 * C1 * Y)	-0.00389	-0.00391	-0.00389
	(A1 * !A2 * !B1 * C1 * Y)	0.00494	0.00498	0.00496
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00392	-0.00394	-0.00393
	(A1 * !A2 * !B1 * !C1 * Y)	0.00491	0.00495	0.00493
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00313	-0.00369	-0.00376
	(!A1 * !A2 * B1 * !C1 * Y)	0.00553	0.00522	0.00510
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00334	-0.00375	-0.00378
	(!A1 * !A2 * !B1 * C1 * Y)	0.00542	0.00518	0.00510
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00363	-0.00381	-0.00377
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00506	0.00510	0.00505

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00404	-0.00410	-0.00455
	(A2 * B1 * C1 * !Y)	0.00893	0.00893	0.00855
	(A2 * B1 * !C1 * Y)	-0.00746	-0.00751	-0.00746
	(A2 * B1 * !C1 * Y)	0.01051	0.01061	0.01053
	(A2 * !B1 * C1 * Y)	-0.00748	-0.00753	-0.00748
	(A2 * !B1 * C1 * Y)	0.01050	0.01060	0.01052
	(A2 * !B1 * !C1 * Y)	-0.00752	-0.00760	-0.00755
	(A2 * !B1 * !C1 * Y)	0.01039	0.01055	0.01045
	(A1 * !A2 * B1 * C1 * !Y)	-0.00149	-0.00163	-0.00271
	(A1 * !A2 * B1 * C1 * !Y)	0.01104	0.01109	0.01013
	(A1 * !A2 * B1 * !C1 * Y)	-0.00745	-0.00749	-0.00747
	(A1 * !A2 * B1 * !C1 * Y)	0.01026	0.01031	0.01029
	(A1 * !A2 * !B1 * C1 * Y)	-0.00749	-0.00749	-0.00748
	(A1 * !A2 * !B1 * C1 * Y)	0.01028	0.01029	0.01028
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00756	-0.00757	-0.00755
	(A1 * !A2 * !B1 * !C1 * Y)	0.01026	0.01028	0.01026
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00624	-0.00714	-0.00723
	(!A1 * !A2 * B1 * !C1 * Y)	0.01128	0.01084	0.01063
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00655	-0.00729	-0.00728
	(!A1 * !A2 * !B1 * C1 * Y)	0.01113	0.01075	0.01061
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00699	-0.00733	-0.00736
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01052	0.01056	0.01053

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00193	0.00196	0.00194
	(A3 * !C1 * Y)	-0.00255	-0.00257	-0.00255
	(A2 * !A3 * !C1 * Y)	0.00194	0.00195	0.00194
	(A2 * !A3 * !C1 * Y)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * !A3 * !C1 * Y)	0.00194	0.00196	0.00194
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00255	-0.00257	-0.00255
	(!A1 * !A2 * !A3 * C1 * Y)	0.00078	0.00079	0.00077
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00258	-0.00260	-0.00258
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00104	0.00104	0.00103
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00260	-0.00260	-0.00259
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00400	0.00401	0.00401
	(A3 * !C1 * Y)	-0.00501	-0.00502	-0.00501
	(A2 * !A3 * !C1 * Y)	0.00400	0.00405	0.00401
	(A2 * !A3 * !C1 * Y)	-0.00501	-0.00504	-0.00501
	(A1 * !A2 * !A3 * !C1 * Y)	0.00400	0.00406	0.00401
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00501	-0.00505	-0.00502
	(!A1 * !A2 * !A3 * C1 * Y)	0.00161	0.00163	0.00162
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00507	-0.00511	-0.00507
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00216	0.00217	0.00216
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00510	-0.00511	-0.00510
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00751	0.00761	0.00754
	(A3 * !C1 * Y)	-0.00564	-0.00569	-0.00565
	(A2 * !A3 * !C1 * Y)	0.00751	0.00755	0.00755
	(A2 * !A3 * !C1 * Y)	-0.00564	-0.00566	-0.00565
	(A1 * !A2 * !A3 * !C1 * Y)	0.00753	0.00761	0.00755
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00565	-0.00568	-0.00565
	(!A1 * !A2 * !A3 * C1 * Y)	0.00292	0.00295	0.00291
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00582	-0.00586	-0.00582
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00395	0.00396	0.00393
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00591	-0.00592	-0.00590

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00165	-0.00183	-0.00186
	(A3 * !C1 * Y)	0.00286	0.00269	0.00262
	(A2 * !A3 * !C1 * Y)	-0.00163	-0.00183	-0.00186
	(A2 * !A3 * !C1 * Y)	0.00288	0.00268	0.00262
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00160	-0.00186	-0.00186
	(A1 * !A2 * !A3 * !C1 * Y)	0.00290	0.00269	0.00262
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00065	-0.00067	-0.00067
	(!A1 * !A2 * !A3 * C1 * Y)	0.00270	0.00275	0.00265
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00099	-0.00102	-0.00103
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00283	0.00279	0.00267
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00336	-0.00386	-0.00387
	(A3 * !C1 * Y)	0.00565	0.00528	0.00514
	(A2 * !A3 * !C1 * Y)	-0.00330	-0.00387	-0.00387
	(A2 * !A3 * !C1 * Y)	0.00570	0.00527	0.00514
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00322	-0.00384	-0.00387
	(A1 * !A2 * !A3 * !C1 * Y)	0.00581	0.00521	0.00514
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00138	-0.00140	-0.00144
	(!A1 * !A2 * !A3 * C1 * Y)	0.00533	0.00540	0.00522
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00205	-0.00214	-0.00216
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00555	0.00553	0.00528

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00602	-0.00728	-0.00726
	(A3 * !C1 * Y)	0.00721	0.00610	0.00590
	(A2 * !A3 * !C1 * Y)	-0.00588	-0.00721	-0.00726
	(A2 * !A3 * !C1 * Y)	0.00738	0.00605	0.00590
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00566	-0.00715	-0.00726
	(A1 * !A2 * !A3 * !C1 * Y)	0.00753	0.00612	0.00590
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00245	-0.00248	-0.00255
	(!A1 * !A2 * !A3 * C1 * Y)	0.00634	0.00641	0.00609
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00368	-0.00388	-0.00393
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00687	0.00669	0.00622

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00067	0.00068	0.00065
	(A3 * !B1 * Y)	-0.00297	-0.00300	-0.00303
	(A2 * !A3 * !B1 * Y)	0.00068	0.00068	0.00065
	(A2 * !A3 * !B1 * Y)	-0.00297	-0.00300	-0.00303
	(!A2 * !A3 * !B1 * Y)	0.00067	0.00068	0.00065
	(!A2 * !A3 * !B1 * Y)	-0.00297	-0.00300	-0.00303
	(!A1 * !A2 * !A3 * B1 * Y)	0.00076	0.00076	0.00068
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00280	-0.00282	-0.00300
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00133	0.00134	0.00126
	(A3 * !B1 * Y)	-0.00582	-0.00588	-0.00597
	(A2 * !A3 * !B1 * Y)	0.00133	0.00134	0.00126
	(A2 * !A3 * !B1 * Y)	-0.00582	-0.00588	-0.00597
	(!A2 * !A3 * !B1 * Y)	0.00133	0.00134	0.00126
	(!A2 * !A3 * !B1 * Y)	-0.00582	-0.00588	-0.00597
	(!A1 * !A2 * !A3 * B1 * Y)	0.00144	0.00145	0.00126
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00546	-0.00550	-0.00589
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00243	0.00246	0.00231
	(A3 * !B1 * Y)	-0.00641	-0.00648	-0.00668
	(A2 * !A3 * !B1 * Y)	0.00243	0.00246	0.00231
	(A2 * !A3 * !B1 * Y)	-0.00640	-0.00648	-0.00668
	(!A2 * !A3 * !B1 * Y)	0.00243	0.00246	0.00231
	(!A2 * !A3 * !B1 * Y)	-0.00640	-0.00647	-0.00668
	(!A1 * !A2 * !A3 * B1 * Y)	0.00269	0.00270	0.00236
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00572	-0.00576	-0.00652

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00063	-0.00063	-0.00062
	(A3 * !B1 * Y)	0.00304	0.00308	0.00305
	(A2 * !A3 * !B1 * Y)	-0.00063	-0.00063	-0.00062
	(A2 * !A3 * !B1 * Y)	0.00304	0.00308	0.00305
	(!A2 * !A3 * !B1 * Y)	-0.00063	-0.00063	-0.00062
	(!A2 * !A3 * !B1 * Y)	0.00304	0.00308	0.00305
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00060	-0.00061	-0.00060
	(!A1 * !A2 * !A3 * B1 * Y)	0.00303	0.00310	0.00305
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00121	-0.00122	-0.00120
	(A3 * !B1 * Y)	0.00600	0.00606	0.00601
	(A2 * !A3 * !B1 * Y)	-0.00121	-0.00122	-0.00120
	(A2 * !A3 * !B1 * Y)	0.00600	0.00606	0.00601
	(!A2 * !A3 * !B1 * Y)	-0.00121	-0.00122	-0.00120
	(!A2 * !A3 * !B1 * Y)	0.00601	0.00605	0.00601
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00111	-0.00112	-0.00110
	(!A1 * !A2 * !A3 * B1 * Y)	0.00598	0.00604	0.00601
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00220	-0.00225	-0.00220
	(A3 * !B1 * Y)	0.00672	0.00686	0.00675
	(A2 * !A3 * !B1 * Y)	-0.00220	-0.00225	-0.00220
	(A2 * !A3 * !B1 * Y)	0.00672	0.00686	0.00675
	(!A2 * !A3 * !B1 * Y)	-0.00220	-0.00223	-0.00220
	(!A2 * !A3 * !B1 * Y)	0.00672	0.00680	0.00675
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00206	-0.00208	-0.00203
	(!A1 * !A2 * !A3 * B1 * Y)	0.00674	0.00683	0.00674

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00262	0.00311	0.00267	0.00261	0.00267	1.72092
sky130_fd_sc_hs__o311a_2	0.00290	0.00290	0.00288	0.00283	0.00281	3.30045
sky130_fd_sc_hs__o311a_4	0.00483	0.00527	0.00484	0.00585	0.00506	6.25981

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	167.87900	426.05300
sky130_fd_sc_hs__o311a_2	0.00000	259.92400	407.27400
sky130_fd_sc_hs__o311a_4	0.00000	523.64900	857.13000

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)	0.08954	0.44336	5.39395
	A2->X (RR)	0.08599	0.43739	5.22161
	A3->X (RR)	0.07441	0.41742	5.11659
	B1->X (RR)	0.08211	0.49607	6.37969
	C1->X (RR)	0.06071	0.47561	6.56797
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.09294	0.37217	5.37634
	A2->X (RR)	0.08676	0.35920	5.15764
	A3->X (RR)	0.07213	0.33833	5.00100
	B1->X (RR)	0.08812	0.42404	6.18303
	C1->X (RR)	0.08228	0.43519	6.34371
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.10403	0.31879	5.24750
	A2->X (RR)	0.09465	0.30183	5.00952
	A3->X (RR)	0.08155	0.28735	4.92956
	B1->X (RR)	0.09917	0.38595	6.36115
	C1->X (RR)	0.09058	0.39335	6.56393

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.15508	0.54226	5.88088
	A2->X (FF)	0.14832	0.57155	6.19175
	A3->X (FF)	0.12063	0.57752	6.32471
	B1->X (FF)	0.05285	0.43131	5.27665
	C1->X (FF)	0.04873	0.41430	5.11914
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.15216	0.49812	5.69129
	A2->X (FF)	0.14241	0.52893	6.18565
	A3->X (FF)	0.12567	0.54123	6.33051
	B1->X (FF)	0.05912	0.40052	5.42576
	C1->X (FF)	0.05413	0.38242	5.25220
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.19308	0.51997	6.23186
	A2->X (FF)	0.18197	0.54431	6.41183
	A3->X (FF)	0.15225	0.55085	6.50580
	B1->X (FF)	0.05437	0.34388	5.23034
	C1->X (FF)	0.04894	0.32687	5.09427

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.03014	0.03595	0.19480
	A1	0.01858	0.02440	0.18350
	A2	0.02780	0.03374	0.17370
	A2	0.01735	0.02332	0.16316
	A3	0.02568	0.03267	0.17891
	A3	0.01690	0.02391	0.17003
	B1	0.02047	0.03488	0.29175
	B1	0.01338	0.02781	0.28516
	C1	0.01939	0.03459	0.29120
	C1	0.01337	0.02858	0.28564
sky130_fd_sc_hs__o311a_2	A1	0.03534	0.04072	0.21202
	A1	0.02283	0.02820	0.20000
	A2	0.03223	0.03864	0.19330
	A2	0.02127	0.02767	0.18208
	A3	0.02994	0.03762	0.19946
	A3	0.02048	0.02818	0.18990
	B1	0.02469	0.03838	0.29551
	B1	0.01724	0.03101	0.28839
	C1	0.02340	0.03793	0.29261
	C1	0.01725	0.03180	0.28622

sky130_fd_sc_hs__o311a_4	**A1**	0.07180	0.08196	0.42947
	A1	0.04990	0.06018	0.40706
	A2	0.06530	0.07645	0.38478
	A2	0.04557	0.05681	0.36453
	A3	0.05973	0.07320	0.38532
	A3	0.04303	0.05664	0.36809
	B1	0.04906	0.07470	0.54906
	B1	0.03502	0.06075	0.53451
	C1	0.04583	0.07533	0.58172
	C1	0.03520	0.06474	0.57294

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.01211	0.01632	0.18184
	A1	0.02366	0.02787	0.19340
	A2	0.01223	0.01625	0.17154
	A2	0.02267	0.02668	0.18051
	A3	0.01219	0.01833	0.18015
	A3	0.02096	0.02707	0.18717
	B1	0.00684	0.02257	0.27002
	B1	0.01558	0.03087	0.27245
	C1	0.00624	0.02177	0.26757
	C1	0.01390	0.02892	0.26949

sky130_fd_sc_hs__o311a_2	**A1**	0.02239	0.02428	0.18962
	A1	0.03488	0.03583	0.20211
	A2	0.02254	0.02365	0.19785
	A2	0.03347	0.03458	0.20601
	A3	0.02248	0.02551	0.20460
	A3	0.03192	0.03493	0.21385
	B1	0.01436	0.02869	0.27397
	B1	0.02181	0.03601	0.27977
	C1	0.01336	0.02745	0.26888
	C1	0.01949	0.03356	0.27355
sky130_fd_sc_hs__o311a_4	**A1**	0.05512	0.04832	0.39361
	A1	0.07697	0.06992	0.40675
	A2	0.05496	0.04843	0.35232
	A2	0.07467	0.06798	0.36554
	A3	0.05518	0.05214	0.36094
	A3	0.07185	0.06879	0.37371
	B1	0.02794	0.05618	0.55550
	B1	0.04195	0.07008	0.56445
	C1	0.02616	0.05528	0.55477
	C1	0.03675	0.06586	0.56478

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)**	0.00289	0.00291	0.00288
	(A2 * B1 * !C1 * !X)	-0.00136	-0.00138	-0.00137
	(A2 * A3 * B1 * C1 * X)	0.00483	0.00467	0.00464
	(A2 * A3 * B1 * C1 * X)	0.00058	0.00037	0.00038
	(A2 * !B1 * !X)	0.00288	0.00290	0.00287
	(A2 * !B1 * !X)	-0.00137	-0.00139	-0.00138
	(A2 * !A3 * B1 * C1 * X)	0.00538	0.00500	0.00520
	(A2 * !A3 * B1 * C1 * X)	0.00106	0.00064	0.00093
	(!A2 * A3 * B1 * C1 * X)	0.00569	0.00526	0.00573
	(!A2 * A3 * B1 * C1 * X)	0.00130	0.00083	0.00143
	(!A2 * A3 * B1 * !C1 * !X)	0.00288	0.00291	0.00288
	(!A2 * A3 * B1 * !C1 * !X)	-0.00130	-0.00136	-0.00135
	(!A2 * A3 * !B1 * !X)	0.00287	0.00290	0.00287
	(!A2 * A3 * !B1 * !X)	-0.00131	-0.00137	-0.00136
	(!A2 * !A3 * B1 * !C1 * !X)	0.00285	0.00286	0.00285
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00137
	(!A2 * !A3 * !B1 * C1 * !X)	0.00286	0.00287	0.00285
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00139	-0.00139	-0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00280	0.00282	0.00280
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00141	-0.00143	-0.00142

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00400	0.00403	0.00400
	(A2 * B1 * !C1 * !X)	-0.00058	-0.00061	-0.00059
	(A2 * A3 * B1 * C1 * X)	0.00496	0.00477	0.00473
	(A2 * A3 * B1 * C1 * X)	0.00036	0.00012	0.00013
	(A2 * !B1 * !X)	0.00400	0.00403	0.00400
	(A2 * !B1 * !X)	-0.00059	-0.00061	-0.00059
	(A2 * !A3 * B1 * C1 * X)	0.00545	0.00505	0.00525
	(A2 * !A3 * B1 * C1 * X)	0.00078	0.00034	0.00064
	(!A2 * A3 * B1 * C1 * X)	0.00575	0.00529	0.00566
	(!A2 * A3 * B1 * C1 * X)	0.00102	0.00051	0.00101
	(!A2 * A3 * B1 * !C1 * !X)	0.00400	0.00403	0.00400
	(!A2 * A3 * B1 * !C1 * !X)	-0.00053	-0.00059	-0.00057
	(!A2 * A3 * !B1 * !X)	0.00399	0.00403	0.00400
	(!A2 * A3 * !B1 * !X)	-0.00053	-0.00059	-0.00058
	(!A2 * !A3 * B1 * !C1 * !X)	0.00393	0.00395	0.00393
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00060	-0.00062	-0.00060
	(!A2 * !A3 * !B1 * C1 * !X)	0.00397	0.00396	0.00396
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00062	-0.00061	-0.00061
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00391	0.00393	0.00391
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00063	-0.00064	-0.00063

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00754	0.00755	0.00753
	(A2 * B1 * !C1 * !X)	-0.00028	-0.00030	-0.00029
	(A2 * A3 * B1 * C1 * X)	0.00901	0.00852	0.00846
	(A2 * A3 * B1 * C1 * X)	0.00116	0.00065	0.00064
	(A2 * !B1 * !X)	0.00752	0.00753	0.00751
	(A2 * !B1 * !X)	-0.00030	-0.00032	-0.00031
	(A2 * !A3 * B1 * C1 * X)	0.01025	0.00922	0.00962
	(A2 * !A3 * B1 * C1 * X)	0.00225	0.00122	0.00175
	(!A2 * A3 * B1 * C1 * X)	0.01091	0.00972	0.01065
	(!A2 * A3 * B1 * C1 * X)	0.00279	0.00156	0.00272
	(!A2 * A3 * B1 * !C1 * !X)	0.00753	0.00756	0.00753
	(!A2 * A3 * B1 * !C1 * !X)	-0.00015	-0.00027	-0.00026
	(!A2 * A3 * !B1 * !X)	0.00751	0.00754	0.00751
	(!A2 * A3 * !B1 * !X)	-0.00017	-0.00029	-0.00028
	(!A2 * !A3 * B1 * !C1 * !X)	0.00747	0.00747	0.00746
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00033	-0.00032	-0.00031
	(!A2 * !A3 * !B1 * C1 * !X)	0.00746	0.00748	0.00746
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00036	-0.00036	-0.00034
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00738	0.00740	0.00737
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00041	-0.00042	-0.00040

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)**	-0.00071	-0.00071	-0.00071
	(A2 * B1 * !C1 * !X)	0.00353	0.00354	0.00354
	(A2 * A3 * B1 * C1 * X)	0.00048	0.00046	0.00048
	(A2 * A3 * B1 * C1 * X)	0.00472	0.00476	0.00473
	(A2 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * !B1 * !X)	0.00352	0.00353	0.00353
	(A2 * !A3 * B1 * C1 * X)	0.00099	0.00096	0.00088
	(A2 * !A3 * B1 * C1 * X)	0.00529	0.00531	0.00519
	(!A2 * A3 * B1 * C1 * X)	0.00163	0.00159	0.00141
	(!A2 * A3 * B1 * C1 * X)	0.00597	0.00597	0.00577
	(!A2 * A3 * B1 * !C1 * !X)	-0.00071	-0.00071	-0.00071
	(!A2 * A3 * B1 * !C1 * !X)	0.00351	0.00351	0.00351
	(!A2 * A3 * !B1 * !X)	-0.00071	-0.00072	-0.00072
	(!A2 * A3 * !B1 * !X)	0.00349	0.00350	0.00350
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00043	-0.00066	-0.00067
	(!A2 * !A3 * B1 * !C1 * !X)	0.00374	0.00360	0.00355
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00049	-0.00067	-0.00069
	(!A2 * !A3 * !B1 * C1 * !X)	0.00370	0.00358	0.00354
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00065	-0.00072	-0.00072
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00350	0.00352	0.00351

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00021	0.00020	0.00021
	(A2 * B1 * !C1 * !X)	0.00480	0.00483	0.00480
	(A2 * A3 * B1 * C1 * X)	0.00046	0.00043	0.00045
	(A2 * A3 * B1 * C1 * X)	0.00504	0.00508	0.00505
	(A2 * !B1 * !X)	0.00020	0.00019	0.00020
	(A2 * !B1 * !X)	0.00480	0.00483	0.00480
	(A2 * !A3 * B1 * C1 * X)	0.00093	0.00090	0.00083
	(A2 * !A3 * B1 * C1 * X)	0.00557	0.00559	0.00548
	(!A2 * A3 * B1 * C1 * X)	0.00140	0.00137	0.00123
	(!A2 * A3 * B1 * C1 * X)	0.00609	0.00610	0.00593
	(!A2 * A3 * B1 * !C1 * !X)	0.00021	0.00020	0.00021
	(!A2 * A3 * B1 * !C1 * !X)	0.00476	0.00479	0.00477
	(!A2 * A3 * !B1 * !X)	0.00021	0.00019	0.00020
	(!A2 * A3 * !B1 * !X)	0.00476	0.00479	0.00477
	(!A2 * !A3 * B1 * !C1 * !X)	0.00052	0.00029	0.00027
	(!A2 * !A3 * B1 * !C1 * !X)	0.00499	0.00487	0.00482
	(!A2 * !A3 * !B1 * C1 * !X)	0.00044	0.00027	0.00025
	(!A2 * !A3 * !B1 * C1 * !X)	0.00496	0.00484	0.00482
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00032	0.00024	0.00023
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00481	0.00481	0.00480

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00098	0.00095	0.00097
	(A2 * B1 * !C1 * !X)	0.00878	0.00884	0.00879
	(A2 * A3 * B1 * C1 * X)	0.00187	0.00185	0.00188
	(A2 * A3 * B1 * C1 * X)	0.00970	0.00975	0.00971
	(A2 * !B1 * !X)	0.00096	0.00093	0.00095
	(A2 * !B1 * !X)	0.00876	0.00882	0.00877
	(A2 * !A3 * B1 * C1 * X)	0.00287	0.00281	0.00265
	(A2 * !A3 * B1 * C1 * X)	0.01079	0.01083	0.01059
	(!A2 * A3 * B1 * C1 * X)	0.00416	0.00410	0.00372
	(!A2 * A3 * B1 * C1 * X)	0.01219	0.01216	0.01176
	(!A2 * A3 * B1 * !C1 * !X)	0.00098	0.00098	0.00097
	(!A2 * A3 * B1 * !C1 * !X)	0.00870	0.00870	0.00871
	(!A2 * A3 * !B1 * !X)	0.00096	0.00096	0.00095
	(!A2 * A3 * !B1 * !X)	0.00868	0.00868	0.00869
	(!A2 * !A3 * B1 * !C1 * !X)	0.00154	0.00111	0.00107
	(!A2 * !A3 * B1 * !C1 * !X)	0.00922	0.00894	0.00883
	(!A2 * !A3 * !B1 * C1 * !X)	0.00142	0.00108	0.00103
	(!A2 * !A3 * !B1 * C1 * !X)	0.00913	0.00891	0.00882
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00113	0.00099	0.00096
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00874	0.00878	0.00874

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)**	0.00492	0.00497	0.00486
	(A1 * A3 * B1 * C1 * X)	0.00112	0.00114	0.00109
	(A1 * A3 * B1 * !C1 * !X)	0.00289	0.00289	0.00288
	(A1 * A3 * B1 * !C1 * !X)	-0.00104	-0.00104	-0.00097
	(A1 * A3 * !B1 * !X)	0.00288	0.00288	0.00287
	(A1 * A3 * !B1 * !X)	-0.00105	-0.00105	-0.00098
	(A1 * !A3 * B1 * C1 * X)	0.00501	0.00504	0.00498
	(A1 * !A3 * B1 * C1 * X)	0.00169	0.00167	0.00169
	(A1 * !A3 * B1 * !C1 * !X)	0.00290	0.00290	0.00288
	(A1 * !A3 * B1 * !C1 * !X)	-0.00154	-0.00154	-0.00152
	(A1 * !A3 * !B1 * C1 * !X)	0.00289	0.00289	0.00287
	(A1 * !A3 * !B1 * C1 * !X)	-0.00155	-0.00155	-0.00153
	(A1 * !A3 * !B1 * !C1 * !X)	0.00286	0.00286	0.00284
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00158	-0.00158	-0.00156
	(!A1 * A3 * B1 * C1 * X)	0.00577	0.00516	0.00578
	(!A1 * A3 * B1 * C1 * X)	0.00128	0.00068	0.00135
	(!A1 * A3 * B1 * !C1 * !X)	0.00289	0.00290	0.00288
	(!A1 * A3 * B1 * !C1 * !X)	-0.00153	-0.00153	-0.00151
	(!A1 * A3 * !B1 * !X)	0.00289	0.00289	0.00287
	(!A1 * A3 * !B1 * !X)	-0.00154	-0.00154	-0.00152
	(!A1 * !A3 * B1 * !C1 * !X)	0.00282	0.00284	0.00283
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00152	-0.00153	-0.00152
	(!A1 * !A3 * !B1 * C1 * !X)	0.00284	0.00286	0.00285
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00151	-0.00153	-0.00151
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00278	0.00280	0.00278
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00156	-0.00158	-0.00156

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00477	0.00478	0.00472
	(A1 * A3 * B1 * C1 * X)	0.00104	0.00103	0.00102
	(A1 * A3 * B1 * !C1 * !X)	0.00400	0.00402	0.00401
	(A1 * A3 * B1 * !C1 * !X)	0.00019	0.00018	0.00025
	(A1 * A3 * !B1 * !X)	0.00400	0.00401	0.00401
	(A1 * A3 * !B1 * !X)	0.00018	0.00018	0.00025
	(A1 * !A3 * B1 * C1 * X)	0.00477	0.00478	0.00477
	(A1 * !A3 * B1 * C1 * X)	0.00152	0.00152	0.00154
	(A1 * !A3 * B1 * !C1 * !X)	0.00401	0.00402	0.00400
	(A1 * !A3 * B1 * !C1 * !X)	-0.00050	-0.00050	-0.00048
	(A1 * !A3 * !B1 * C1 * !X)	0.00401	0.00402	0.00400
	(A1 * !A3 * !B1 * C1 * !X)	-0.00050	-0.00051	-0.00049
	(A1 * !A3 * !B1 * !C1 * !X)	0.00399	0.00400	0.00398
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00052	-0.00052	-0.00050
	(!A1 * A3 * B1 * C1 * X)	0.00545	0.00492	0.00548
	(!A1 * A3 * B1 * C1 * X)	0.00089	0.00035	0.00097
	(!A1 * A3 * B1 * !C1 * !X)	0.00402	0.00403	0.00401
	(!A1 * A3 * B1 * !C1 * !X)	-0.00050	-0.00049	-0.00047
	(!A1 * A3 * !B1 * !X)	0.00401	0.00402	0.00400
	(!A1 * A3 * !B1 * !X)	-0.00050	-0.00049	-0.00048
	(!A1 * !A3 * B1 * !C1 * !X)	0.00391	0.00394	0.00393
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00048	-0.00049	-0.00048
	(!A1 * !A3 * !B1 * C1 * !X)	0.00397	0.00398	0.00396
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00050	-0.00051	-0.00049
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00390	0.00393	0.00391
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00051	-0.00052	-0.00051

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00933	0.00944	0.00923
	(A1 * A3 * B1 * C1 * X)	0.00226	0.00229	0.00220
	(A1 * A3 * B1 * !C1 * !X)	0.00799	0.00803	0.00800
	(A1 * A3 * B1 * !C1 * !X)	0.00071	0.00069	0.00083
	(A1 * A3 * !B1 * !X)	0.00797	0.00801	0.00798
	(A1 * A3 * !B1 * !X)	0.00069	0.00067	0.00081
	(A1 * !A3 * B1 * C1 * X)	0.00951	0.00958	0.00947
	(A1 * !A3 * B1 * C1 * X)	0.00344	0.00339	0.00342
	(A1 * !A3 * B1 * !C1 * !X)	0.00798	0.00798	0.00799
	(A1 * !A3 * B1 * !C1 * !X)	-0.00028	-0.00028	-0.00028
	(A1 * !A3 * !B1 * C1 * !X)	0.00797	0.00795	0.00797
	(A1 * !A3 * !B1 * C1 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A3 * !B1 * !C1 * !X)	0.00791	0.00796	0.00791
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00036	-0.00040	-0.00036
	(!A1 * A3 * B1 * C1 * X)	0.01106	0.00988	0.01109
	(!A1 * A3 * B1 * C1 * X)	0.00262	0.00143	0.00276
	(!A1 * A3 * B1 * !C1 * !X)	0.00803	0.00804	0.00800
	(!A1 * A3 * B1 * !C1 * !X)	-0.00030	-0.00030	-0.00027
	(!A1 * A3 * !B1 * !X)	0.00796	0.00802	0.00798
	(!A1 * A3 * !B1 * !X)	-0.00028	-0.00032	-0.00029
	(!A1 * !A3 * B1 * !C1 * !X)	0.00792	0.00794	0.00790
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00030	-0.00031	-0.00028
	(!A1 * !A3 * !B1 * C1 * !X)	0.00792	0.00793	0.00791
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00030	-0.00031	-0.00028
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00779	0.00777	0.00777
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00038	-0.00037	-0.00037

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)**	0.00035	0.00034	0.00036
	(A1 * A3 * B1 * C1 * X)	0.00406	0.00407	0.00406
	(A1 * A3 * B1 * !C1 * !X)	-0.00070	-0.00072	-0.00071
	(A1 * A3 * B1 * !C1 * !X)	0.00312	0.00315	0.00309
	(A1 * A3 * !B1 * !X)	-0.00071	-0.00073	-0.00072
	(A1 * A3 * !B1 * !X)	0.00311	0.00314	0.00308
	(A1 * !A3 * B1 * C1 * X)	0.00077	0.00075	0.00045
	(A1 * !A3 * B1 * C1 * X)	0.00409	0.00407	0.00378
	(A1 * !A3 * B1 * !C1 * !X)	-0.00070	-0.00072	-0.00070
	(A1 * !A3 * B1 * !C1 * !X)	0.00369	0.00371	0.00370
	(A1 * !A3 * !B1 * C1 * !X)	-0.00071	-0.00073	-0.00071
	(A1 * !A3 * !B1 * C1 * !X)	0.00368	0.00370	0.00369
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00074	-0.00076	-0.00075
	(A1 * !A3 * !B1 * !C1 * !X)	0.00365	0.00367	0.00365
	(!A1 * A3 * B1 * C1 * X)	0.00156	0.00152	0.00131
	(!A1 * A3 * B1 * C1 * X)	0.00600	0.00598	0.00576
	(!A1 * A3 * B1 * !C1 * !X)	-0.00071	-0.00072	-0.00071
	(!A1 * A3 * B1 * !C1 * !X)	0.00369	0.00371	0.00369
	(!A1 * A3 * !B1 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * A3 * !B1 * !X)	0.00367	0.00367	0.00368
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00038	-0.00063	-0.00066
	(!A1 * !A3 * B1 * !C1 * !X)	0.00395	0.00377	0.00370
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00045	-0.00065	-0.00068
	(!A1 * !A3 * !B1 * C1 * !X)	0.00388	0.00375	0.00370
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00063	-0.00071	-0.00072
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00365	0.00368	0.00366

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00054	0.00054	0.00056
	(A1 * A3 * B1 * C1 * X)	0.00421	0.00421	0.00418
	(A1 * A3 * B1 * !C1 * !X)	0.00021	0.00019	0.00020
	(A1 * A3 * B1 * !C1 * !X)	0.00398	0.00399	0.00392
	(A1 * A3 * !B1 * !X)	0.00021	0.00019	0.00020
	(A1 * A3 * !B1 * !X)	0.00397	0.00399	0.00392
	(A1 * !A3 * B1 * C1 * X)	0.00102	0.00099	0.00069
	(A1 * !A3 * B1 * C1 * X)	0.00426	0.00426	0.00397
	(A1 * !A3 * B1 * !C1 * !X)	0.00022	0.00020	0.00021
	(A1 * !A3 * B1 * !C1 * !X)	0.00470	0.00472	0.00470
	(A1 * !A3 * !B1 * C1 * !X)	0.00022	0.00019	0.00021
	(A1 * !A3 * !B1 * C1 * !X)	0.00469	0.00471	0.00469
	(A1 * !A3 * !B1 * !C1 * !X)	0.00019	0.00017	0.00019
	(A1 * !A3 * !B1 * !C1 * !X)	0.00466	0.00469	0.00467
	(!A1 * A3 * B1 * C1 * X)	0.00156	0.00152	0.00136
	(!A1 * A3 * B1 * C1 * X)	0.00607	0.00607	0.00589
	(!A1 * A3 * B1 * !C1 * !X)	0.00021	0.00019	0.00020
	(!A1 * A3 * B1 * !C1 * !X)	0.00468	0.00472	0.00469
	(!A1 * A3 * !B1 * !X)	0.00021	0.00019	0.00020
	(!A1 * A3 * !B1 * !X)	0.00468	0.00471	0.00469
	(!A1 * !A3 * B1 * !C1 * !X)	0.00053	0.00029	0.00027
	(!A1 * !A3 * B1 * !C1 * !X)	0.00488	0.00475	0.00470
	(!A1 * !A3 * !B1 * C1 * !X)	0.00045	0.00027	0.00025
	(!A1 * !A3 * !B1 * C1 * !X)	0.00484	0.00473	0.00470
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00032	0.00024	0.00023
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00468	0.00469	0.00468

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00129	0.00128	0.00132
	(A1 * A3 * B1 * C1 * X)	0.00821	0.00822	0.00820
	(A1 * A3 * B1 * !C1 * !X)	0.00051	0.00048	0.00051
	(A1 * A3 * B1 * !C1 * !X)	0.00766	0.00769	0.00759
	(A1 * A3 * !B1 * !X)	0.00049	0.00046	0.00049
	(A1 * A3 * !B1 * !X)	0.00764	0.00767	0.00757
	(A1 * !A3 * B1 * C1 * X)	0.00217	0.00213	0.00151
	(A1 * !A3 * B1 * C1 * X)	0.00825	0.00822	0.00764
	(A1 * !A3 * B1 * !C1 * !X)	0.00054	0.00051	0.00052
	(A1 * !A3 * B1 * !C1 * !X)	0.00878	0.00881	0.00880
	(A1 * !A3 * !B1 * C1 * !X)	0.00052	0.00049	0.00050
	(A1 * !A3 * !B1 * C1 * !X)	0.00876	0.00879	0.00877
	(A1 * !A3 * !B1 * !C1 * !X)	0.00044	0.00042	0.00043
	(A1 * !A3 * !B1 * !C1 * !X)	0.00868	0.00872	0.00870
	(!A1 * A3 * B1 * C1 * X)	0.00368	0.00360	0.00318
	(!A1 * A3 * B1 * C1 * X)	0.01204	0.01200	0.01156
	(!A1 * A3 * B1 * !C1 * !X)	0.00051	0.00050	0.00051
	(!A1 * A3 * B1 * !C1 * !X)	0.00875	0.00878	0.00877
	(!A1 * A3 * !B1 * !X)	0.00050	0.00047	0.00049
	(!A1 * A3 * !B1 * !X)	0.00873	0.00877	0.00875
	(!A1 * !A3 * B1 * !C1 * !X)	0.00122	0.00069	0.00063
	(!A1 * !A3 * B1 * !C1 * !X)	0.00931	0.00893	0.00881
	(!A1 * !A3 * !B1 * C1 * !X)	0.00107	0.00065	0.00059
	(!A1 * !A3 * !B1 * C1 * !X)	0.00921	0.00887	0.00879
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00068	0.00053	0.00052
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00871	0.00873	0.00871

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)**	0.00448	0.00449	0.00448
	(A2 * B1 * C1 * X)	0.00149	0.00149	0.00150
	(A2 * B1 * !C1 * !X)	0.00286	0.00288	0.00286
	(A2 * B1 * !C1 * !X)	-0.00121	-0.00124	-0.00123
	(A2 * !B1 * C1 * !X)	0.00285	0.00287	0.00285
	(A2 * !B1 * C1 * !X)	-0.00122	-0.00125	-0.00124
	(A2 * !B1 * !C1 * !X)	0.00282	0.00283	0.00282
	(A2 * !B1 * !C1 * !X)	-0.00126	-0.00128	-0.00127
	(A1 * !A2 * B1 * C1 * X)	0.00449	0.00450	0.00453
	(A1 * !A2 * B1 * C1 * X)	0.00164	0.00164	0.00167
	(A1 * !A2 * B1 * !C1 * !X)	0.00286	0.00288	0.00286
	(A1 * !A2 * B1 * !C1 * !X)	-0.00116	-0.00122	-0.00122
	(A1 * !A2 * !B1 * C1 * !X)	0.00285	0.00287	0.00285
	(A1 * !A2 * !B1 * C1 * !X)	-0.00117	-0.00123	-0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	0.00282	0.00283	0.00282
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00120	-0.00126	-0.00126
	(!A1 * !A2 * B1 * !C1 * !X)	0.00284	0.00285	0.00283
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00124	-0.00125	-0.00123
	(!A1 * !A2 * !B1 * C1 * !X)	0.00285	0.00284	0.00283
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00280	0.00280	0.00279
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00128	-0.00129	-0.00128

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00469	0.00471	0.00470
	(A2 * B1 * C1 * X)	0.00154	0.00152	0.00154
	(A2 * B1 * !C1 * !X)	0.00400	0.00402	0.00400
	(A2 * B1 * !C1 * !X)	-0.00040	-0.00043	-0.00041
	(A2 * !B1 * C1 * !X)	0.00400	0.00402	0.00400
	(A2 * !B1 * C1 * !X)	-0.00041	-0.00043	-0.00042
	(A2 * !B1 * !C1 * !X)	0.00398	0.00400	0.00399
	(A2 * !B1 * !C1 * !X)	-0.00042	-0.00044	-0.00043
	(A1 * !A2 * B1 * C1 * X)	0.00470	0.00473	0.00474
	(A1 * !A2 * B1 * C1 * X)	0.00170	0.00169	0.00173
	(A1 * !A2 * B1 * !C1 * !X)	0.00400	0.00401	0.00400
	(A1 * !A2 * B1 * !C1 * !X)	-0.00034	-0.00040	-0.00040
	(A1 * !A2 * !B1 * C1 * !X)	0.00399	0.00401	0.00400
	(A1 * !A2 * !B1 * C1 * !X)	-0.00035	-0.00041	-0.00040
	(A1 * !A2 * !B1 * !C1 * !X)	0.00398	0.00400	0.00399
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00036	-0.00042	-0.00042
	(!A1 * !A2 * B1 * !C1 * !X)	0.00393	0.00395	0.00394
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00041	-0.00043	-0.00042
	(!A1 * !A2 * !B1 * C1 * !X)	0.00397	0.00398	0.00396
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00043	-0.00044	-0.00043
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00394	0.00395	0.00394
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00045	-0.00045	-0.00044

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00882	0.00885	0.00883
	(A2 * B1 * C1 * X)	0.00306	0.00305	0.00307
	(A2 * B1 * !C1 * !X)	0.00756	0.00761	0.00757
	(A2 * B1 * !C1 * !X)	-0.00036	-0.00043	-0.00040
	(A2 * !B1 * C1 * !X)	0.00755	0.00759	0.00755
	(A2 * !B1 * C1 * !X)	-0.00038	-0.00045	-0.00042
	(A2 * !B1 * !C1 * !X)	0.00748	0.00753	0.00750
	(A2 * !B1 * !C1 * !X)	-0.00044	-0.00050	-0.00048
	(A1 * !A2 * B1 * C1 * X)	0.00883	0.00892	0.00891
	(A1 * !A2 * B1 * C1 * X)	0.00336	0.00332	0.00342
	(A1 * !A2 * B1 * !C1 * !X)	0.00757	0.00760	0.00757
	(A1 * !A2 * B1 * !C1 * !X)	-0.00024	-0.00037	-0.00037
	(A1 * !A2 * !B1 * C1 * !X)	0.00755	0.00759	0.00755
	(A1 * !A2 * !B1 * C1 * !X)	-0.00026	-0.00039	-0.00039
	(A1 * !A2 * !B1 * !C1 * !X)	0.00749	0.00753	0.00750
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00032	-0.00045	-0.00045
	(!A1 * !A2 * B1 * !C1 * !X)	0.00747	0.00751	0.00749
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00040	-0.00043	-0.00040
	(!A1 * !A2 * !B1 * C1 * !X)	0.00750	0.00751	0.00750
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00044	-0.00044	-0.00042
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00739	0.00742	0.00739
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00050	-0.00051	-0.00049

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)**	0.00072	0.00071	0.00058
	(A2 * B1 * C1 * X)	0.00369	0.00369	0.00358
	(A2 * B1 * !C1 * !X)	-0.00068	-0.00070	-0.00069
	(A2 * B1 * !C1 * !X)	0.00340	0.00341	0.00340
	(A2 * !B1 * C1 * !X)	-0.00070	-0.00071	-0.00070
	(A2 * !B1 * C1 * !X)	0.00339	0.00340	0.00339
	(A2 * !B1 * !C1 * !X)	-0.00073	-0.00074	-0.00073
	(A2 * !B1 * !C1 * !X)	0.00335	0.00337	0.00335
	(A1 * !A2 * B1 * C1 * X)	0.00136	0.00134	0.00106
	(A1 * !A2 * B1 * C1 * X)	0.00426	0.00426	0.00401
	(A1 * !A2 * B1 * !C1 * !X)	-0.00068	-0.00070	-0.00069
	(A1 * !A2 * B1 * !C1 * !X)	0.00335	0.00337	0.00336
	(A1 * !A2 * !B1 * C1 * !X)	-0.00070	-0.00071	-0.00070
	(A1 * !A2 * !B1 * C1 * !X)	0.00334	0.00337	0.00335
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00073	-0.00074	-0.00073
	(A1 * !A2 * !B1 * !C1 * !X)	0.00331	0.00333	0.00332
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00037	-0.00063	-0.00065
	(!A1 * !A2 * B1 * !C1 * !X)	0.00364	0.00347	0.00342
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00044	-0.00064	-0.00067
	(!A1 * !A2 * !B1 * C1 * !X)	0.00359	0.00345	0.00341
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00062	-0.00070	-0.00070
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00337	0.00339	0.00337

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00052	0.00052	0.00043
	(A2 * B1 * C1 * X)	0.00367	0.00367	0.00360
	(A2 * B1 * !C1 * !X)	0.00022	0.00019	0.00021
	(A2 * B1 * !C1 * !X)	0.00463	0.00464	0.00462
	(A2 * !B1 * C1 * !X)	0.00021	0.00019	0.00021
	(A2 * !B1 * C1 * !X)	0.00463	0.00464	0.00462
	(A2 * !B1 * !C1 * !X)	0.00018	0.00018	0.00018
	(A2 * !B1 * !C1 * !X)	0.00460	0.00460	0.00460
	(A1 * !A2 * B1 * C1 * X)	0.00114	0.00112	0.00088
	(A1 * !A2 * B1 * C1 * X)	0.00421	0.00421	0.00399
	(A1 * !A2 * B1 * !C1 * !X)	0.00022	0.00020	0.00021
	(A1 * !A2 * B1 * !C1 * !X)	0.00457	0.00459	0.00458
	(A1 * !A2 * !B1 * C1 * !X)	0.00021	0.00019	0.00021
	(A1 * !A2 * !B1 * C1 * !X)	0.00457	0.00459	0.00457
	(A1 * !A2 * !B1 * !C1 * !X)	0.00019	0.00018	0.00018
	(A1 * !A2 * !B1 * !C1 * !X)	0.00455	0.00456	0.00456
	(!A1 * !A2 * B1 * !C1 * !X)	0.00054	0.00029	0.00026
	(!A1 * !A2 * B1 * !C1 * !X)	0.00483	0.00469	0.00464
	(!A1 * !A2 * !B1 * C1 * !X)	0.00045	0.00027	0.00025
	(!A1 * !A2 * !B1 * C1 * !X)	0.00478	0.00466	0.00464
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00032	0.00024	0.00023
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00462	0.00463	0.00461

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00166	0.00162	0.00137
	(A2 * B1 * C1 * X)	0.00735	0.00738	0.00716
	(A2 * B1 * !C1 * !X)	0.00096	0.00093	0.00094
	(A2 * B1 * !C1 * !X)	0.00887	0.00889	0.00889
	(A2 * !B1 * C1 * !X)	0.00092	0.00092	0.00092
	(A2 * !B1 * C1 * !X)	0.00887	0.00886	0.00887
	(A2 * !B1 * !C1 * !X)	0.00086	0.00084	0.00084
	(A2 * !B1 * !C1 * !X)	0.00877	0.00880	0.00880
	(A1 * !A2 * B1 * C1 * X)	0.00298	0.00293	0.00235
	(A1 * !A2 * B1 * C1 * X)	0.00854	0.00856	0.00803
	(A1 * !A2 * B1 * !C1 * !X)	0.00095	0.00091	0.00093
	(A1 * !A2 * B1 * !C1 * !X)	0.00880	0.00883	0.00880
	(A1 * !A2 * !B1 * C1 * !X)	0.00093	0.00089	0.00091
	(A1 * !A2 * !B1 * C1 * !X)	0.00878	0.00881	0.00878
	(A1 * !A2 * !B1 * !C1 * !X)	0.00085	0.00083	0.00084
	(A1 * !A2 * !B1 * !C1 * !X)	0.00870	0.00873	0.00872
	(!A1 * !A2 * B1 * !C1 * !X)	0.00160	0.00109	0.00102
	(!A1 * !A2 * B1 * !C1 * !X)	0.00941	0.00906	0.00893
	(!A1 * !A2 * !B1 * C1 * !X)	0.00146	0.00104	0.00099
	(!A1 * !A2 * !B1 * C1 * !X)	0.00931	0.00902	0.00892
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00110	0.00093	0.00092
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00883	0.00888	0.00883

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00278	0.00280	0.00277
	(A3 * !C1 * !X)	-0.00128	-0.00130	-0.00128
	(A2 * !A3 * !C1 * !X)	0.00278	0.00280	0.00277
	(A2 * !A3 * !C1 * !X)	-0.00128	-0.00130	-0.00128
	(A1 * !A2 * !A3 * !C1 * !X)	0.00277	0.00280	0.00277
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00127	-0.00129	-0.00128
	(!A1 * !A2 * !A3 * C1 * !X)	0.00188	0.00188	0.00182
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00210	0.00211	0.00210
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00132	-0.00133	-0.00132
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00396	0.00397	0.00396
	(A3 * !C1 * !X)	-0.00034	-0.00035	-0.00034
	(A2 * !A3 * !C1 * !X)	0.00395	0.00398	0.00396
	(A2 * !A3 * !C1 * !X)	-0.00034	-0.00036	-0.00034
	(A1 * !A2 * !A3 * !C1 * !X)	0.00395	0.00398	0.00396
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00034	-0.00036	-0.00034
	(!A1 * !A2 * !A3 * C1 * !X)	0.00281	0.00281	0.00279
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00041	-0.00042	-0.00040
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00306	0.00306	0.00305
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00042	-0.00043	-0.00042
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00790	0.00794	0.00791
	(A3 * !C1 * !X)	-0.00098	-0.00101	-0.00099
	(A2 * !A3 * !C1 * !X)	0.00790	0.00794	0.00791
	(A2 * !A3 * !C1 * !X)	-0.00098	-0.00101	-0.00099
	(A1 * !A2 * !A3 * !C1 * !X)	0.00789	0.00793	0.00791
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00097	-0.00101	-0.00099
	(!A1 * !A2 * !A3 * C1 * !X)	0.00587	0.00590	0.00585
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00109	-0.00113	-0.00109
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00634	0.00637	0.00635
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00108	-0.00113	-0.00110

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00039	-0.00055	-0.00057
	(A3 * !C1 * !X)	0.00368	0.00353	0.00347
	(A2 * !A3 * !C1 * !X)	-0.00039	-0.00055	-0.00057
	(A2 * !A3 * !C1 * !X)	0.00369	0.00353	0.00347
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00035	-0.00057	-0.00057
	(A1 * !A2 * !A3 * !C1 * !X)	0.00371	0.00354	0.00347
	(!A1 * !A2 * !A3 * C1 * !X)	0.00043	0.00042	0.00042
	(!A1 * !A2 * !A3 * C1 * !X)	0.00357	0.00361	0.00353
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00006	0.00002	0.00001
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00367	0.00362	0.00353
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	0.00050	0.00031	0.00028
	(A3 * !C1 * !X)	0.00480	0.00464	0.00457
	(A2 * !A3 * !C1 * !X)	0.00053	0.00028	0.00028
	(A2 * !A3 * !C1 * !X)	0.00482	0.00464	0.00457
	(A1 * !A2 * !A3 * !C1 * !X)	0.00055	0.00028	0.00028
	(A1 * !A2 * !A3 * !C1 * !X)	0.00486	0.00463	0.00457
	(!A1 * !A2 * !A3 * C1 * !X)	0.00147	0.00147	0.00146
	(!A1 * !A2 * !A3 * C1 * !X)	0.00469	0.00472	0.00463
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00115	0.00111	0.00110
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00482	0.00477	0.00466

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00117	0.00068	0.00065
	(A3 * !C1 * !X)	0.01005	0.00969	0.00953
	(A2 * !A3 * !C1 * !X)	0.00120	0.00064	0.00065
	(A2 * !A3 * !C1 * !X)	0.01012	0.00966	0.00953
	(A1 * !A2 * !A3 * !C1 * !X)	0.00127	0.00064	0.00065
	(A1 * !A2 * !A3 * !C1 * !X)	0.01019	0.00966	0.00953
	(!A1 * !A2 * !A3 * C1 * !X)	0.00280	0.00279	0.00276
	(!A1 * !A2 * !A3 * C1 * !X)	0.00975	0.00980	0.00964
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00216	0.00206	0.00202
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00992	0.00989	0.00965

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00166	0.00166	0.00163
	(A3 * !B1 * !X)	-0.00167	-0.00169	-0.00172
	(A2 * !A3 * !B1 * !X)	0.00166	0.00166	0.00163
	(A2 * !A3 * !B1 * !X)	-0.00167	-0.00169	-0.00172
	(!A2 * !A3 * !B1 * !X)	0.00166	0.00166	0.00163
	(!A2 * !A3 * !B1 * !X)	-0.00167	-0.00169	-0.00172
	(!A1 * !A2 * !A3 * B1 * !X)	0.00184	0.00184	0.00172
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00145	-0.00147	-0.00167
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00275	0.00275	0.00272
	(A3 * !B1 * !X)	-0.00067	-0.00069	-0.00072
	(A2 * !A3 * !B1 * !X)	0.00275	0.00275	0.00272
	(A2 * !A3 * !B1 * !X)	-0.00067	-0.00069	-0.00072
	(!A2 * !A3 * !B1 * !X)	0.00275	0.00275	0.00272
	(!A2 * !A3 * !B1 * !X)	-0.00067	-0.00069	-0.00072
	(!A1 * !A2 * !A3 * B1 * !X)	0.00283	0.00283	0.00275
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00052	-0.00053	-0.00070
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00542	0.00543	0.00535
	(A3 * !B1 * !X)	-0.00096	-0.00101	-0.00111
	(A2 * !A3 * !B1 * !X)	0.00542	0.00543	0.00535
	(A2 * !A3 * !B1 * !X)	-0.00096	-0.00102	-0.00111
	(!A2 * !A3 * !B1 * !X)	0.00542	0.00543	0.00535
	(!A2 * !A3 * !B1 * !X)	-0.00096	-0.00101	-0.00111
	(!A1 * !A2 * !A3 * B1 * !X)	0.00560	0.00562	0.00539
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00058	-0.00060	-0.00101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00049	0.00048	0.00049
	(A3 * !B1 * !X)	0.00382	0.00385	0.00383
	(A2 * !A3 * !B1 * !X)	0.00049	0.00048	0.00049
	(A2 * !A3 * !B1 * !X)	0.00382	0.00385	0.00383
	(!A2 * !A3 * !B1 * !X)	0.00049	0.00048	0.00049
	(!A2 * !A3 * !B1 * !X)	0.00382	0.00384	0.00383
	(!A1 * !A2 * !A3 * B1 * !X)	0.00048	0.00048	0.00048
	(!A1 * !A2 * !A3 * B1 * !X)	0.00382	0.00384	0.00383
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00146	0.00146	0.00147
	(A3 * !B1 * !X)	0.00490	0.00492	0.00490
	(A2 * !A3 * !B1 * !X)	0.00146	0.00146	0.00147
	(A2 * !A3 * !B1 * !X)	0.00490	0.00492	0.00490
	(!A2 * !A3 * !B1 * !X)	0.00146	0.00146	0.00147
	(!A2 * !A3 * !B1 * !X)	0.00490	0.00492	0.00490
	(!A1 * !A2 * !A3 * B1 * !X)	0.00148	0.00148	0.00150
	(!A1 * !A2 * !A3 * B1 * !X)	0.00493	0.00496	0.00492
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00306	0.00304	0.00306
	(A3 * !B1 * !X)	0.00946	0.00953	0.00949
	(A2 * !A3 * !B1 * !X)	0.00306	0.00303	0.00306
	(A2 * !A3 * !B1 * !X)	0.00946	0.00957	0.00949
	(!A2 * !A3 * !B1 * !X)	0.00306	0.00304	0.00306
	(!A2 * !A3 * !B1 * !X)	0.00946	0.00953	0.00949
	(!A1 * !A2 * !A3 * B1 * !X)	0.00316	0.00316	0.00318
	(!A1 * !A2 * !A3 * B1 * !X)	0.00948	0.00953	0.00950

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00269	0.00315	0.00307	0.00278	0.64198
sky130_fd_sc_hs__o31ai_2	0.00553	0.00540	0.00564	0.00554	1.05632
sky130_fd_sc_hs__o31ai_4	0.01064	0.01061	0.01097	0.00813	1.84099

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	71.33210	238.46100
sky130_fd_sc_hs__o31ai_2	0.00000	142.56600	476.27200
sky130_fd_sc_hs__o31ai_4	0.00000	180.62000	713.26900

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)	0.09097	0.74116	8.39796
	A2->Y (FR)	0.08610	0.78343	9.05452
	A3->Y (FR)	0.06710	0.79759	9.45041
	B1->Y (FR)	0.02079	0.42960	5.36584
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.10120	0.64373	8.15863
	A2->Y (FR)	0.08957	0.67783	8.78823
	A3->Y (FR)	0.06909	0.70705	9.42054
	B1->Y (FR)	0.01864	0.37614	5.21455
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.09595	0.53053	7.69218
	A2->Y (FR)	0.08553	0.57422	8.46363
	A3->Y (FR)	0.06246	0.60952	9.17492
	B1->Y (FR)	0.02373	0.45264	7.03380

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.03275	0.28091	2.94031
	A2->Y (RF)	0.03273	0.27484	2.88996
	A3->Y (RF)	0.02562	0.26133	2.80413
	B1->Y (RF)	0.02811	0.34247	3.83213
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.03410	0.23214	2.73317
	A2->Y (RF)	0.03233	0.22106	2.66087
	A3->Y (RF)	0.02583	0.20862	2.58350
	B1->Y (RF)	0.02677	0.29595	3.72171
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.03625	0.18163	2.52439
	A2->Y (RF)	0.03240	0.16632	2.38806
	A3->Y (RF)	0.02285	0.14321	2.17546
	B1->Y (RF)	0.02823	0.26881	3.88378

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00103	0.00541	0.10276
	A1	0.01181	0.01620	0.11424
	A2	0.00107	0.00526	0.09015
	A2	0.01076	0.01497	0.09974
	A3	0.00101	0.00711	0.10573
	A3	0.00915	0.01525	0.11381
	B1	-0.00054	0.01028	0.17192
	B1	0.00536	0.01624	0.17816
sky130_fd_sc_hs__o31ai_2	A1	0.00219	0.01044	0.19192
	A1	0.02401	0.03232	0.21357
	A2	0.00227	0.01106	0.17004
	A2	0.02077	0.02954	0.18841
	A3	0.00212	0.01316	0.18334
	A3	0.01774	0.02877	0.19876
	B1	-0.00215	0.01938	0.31683
	B1	0.00897	0.03066	0.32930
sky130_fd_sc_hs__o31ai_4	A1	0.00325	0.02032	0.35387
	A1	0.04565	0.06273	0.39575
	A2	0.00336	0.02107	0.31345
	A2	0.03958	0.05722	0.34906
	A3	0.00302	0.02578	0.34122
	A3	0.03331	0.05609	0.37150
	B1	-0.00396	0.02278	0.36487
	B1	0.01288	0.03963	0.38308

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.01663	0.02056	0.10417
	A1	0.00585	0.00976	0.09313
	A2	0.01435	0.01824	0.09459
	A2	0.00464	0.00849	0.08449
	A3	0.01194	0.01598	0.08767
	A3	0.00380	0.00785	0.07941
	B1	0.00799	0.01532	0.13480
	B1	0.00209	0.00940	0.12868
sky130_fd_sc_hs__o31ai_2	A1	0.03436	0.04208	0.20069
	A1	0.01252	0.02019	0.17869
	A2	0.02768	0.03580	0.18057
	A2	0.00918	0.01729	0.16186
	A3	0.02313	0.03142	0.16246
	A3	0.00749	0.01572	0.14663
	B1	0.01512	0.03128	0.26520
	B1	0.00398	0.02009	0.25373
sky130_fd_sc_hs__o31ai_4	A1	0.06175	0.07931	0.39931
	A1	0.01930	0.03684	0.35644
	A2	0.04908	0.06696	0.35198
	A2	0.01284	0.03064	0.31557
	A3	0.03921	0.05813	0.31976
	A3	0.00887	0.02780	0.28932
	B1	0.02236	0.04283	0.29823
	B1	0.00553	0.02594	0.28124

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)**	0.00338	0.00318	0.00315
	(A2 * A3 * B1 * !Y)	-0.00111	-0.00133	-0.00131
	(A2 * !B1 * Y)	0.00207	0.00208	0.00205
	(A2 * !B1 * Y)	-0.00241	-0.00242	-0.00240
	(A2 * !A3 * B1 * !Y)	0.00386	0.00346	0.00367
	(A2 * !A3 * B1 * !Y)	-0.00069	-0.00111	-0.00081
	(!A2 * A3 * B1 * !Y)	0.00418	0.00371	0.00407
	(!A2 * A3 * B1 * !Y)	-0.00042	-0.00094	-0.00043
	(!A2 * A3 * !B1 * Y)	0.00205	0.00208	0.00205
	(!A2 * A3 * !B1 * Y)	-0.00234	-0.00240	-0.00239
	(!A2 * !A3 * !B1 * Y)	0.00202	0.00204	0.00202
	(!A2 * !A3 * !B1 * Y)	-0.00241	-0.00242	-0.00241
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00694	0.00640	0.00633
	(A2 * A3 * B1 * !Y)	-0.00221	-0.00281	-0.00280
	(A2 * !B1 * Y)	0.00414	0.00416	0.00414
	(A2 * !B1 * Y)	-0.00498	-0.00502	-0.00499
	(A2 * !A3 * B1 * !Y)	0.00814	0.00706	0.00738
	(A2 * !A3 * B1 * !Y)	-0.00117	-0.00228	-0.00180
	(!A2 * A3 * B1 * !Y)	0.00872	0.00748	0.00819
	(!A2 * A3 * B1 * !Y)	-0.00069	-0.00197	-0.00103
	(!A2 * A3 * !B1 * Y)	0.00413	0.00415	0.00414
	(!A2 * A3 * !B1 * Y)	-0.00484	-0.00497	-0.00496
	(!A2 * !A3 * !B1 * Y)	0.00403	0.00404	0.00403
	(!A2 * !A3 * !B1 * Y)	-0.00503	-0.00503	-0.00501

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.01144	0.01041	0.01030
	(A2 * A3 * B1 * !Y)	-0.00650	-0.00757	-0.00759
	(A2 * !B1 * Y)	0.00802	0.00803	0.00800
	(A2 * !B1 * Y)	-0.00987	-0.00992	-0.00988
	(A2 * !A3 * B1 * !Y)	0.01375	0.01173	0.01239
	(A2 * !A3 * B1 * !Y)	-0.00450	-0.00651	-0.00556
	(!A2 * A3 * B1 * !Y)	0.01481	0.01262	0.01402
	(!A2 * A3 * B1 * !Y)	-0.00356	-0.00593	-0.00405
	(!A2 * A3 * !B1 * Y)	0.00796	0.00805	0.00800
	(!A2 * A3 * !B1 * Y)	-0.00956	-0.00984	-0.00981
	(!A2 * !A3 * !B1 * Y)	0.00775	0.00779	0.00779
	(!A2 * !A3 * !B1 * Y)	-0.00990	-0.00993	-0.00990

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)**	-0.00091	-0.00092	-0.00091
	(A2 * A3 * B1 * !Y)	0.00354	0.00356	0.00355
	(A2 * !B1 * Y)	-0.00200	-0.00202	-0.00200
	(A2 * !B1 * Y)	0.00245	0.00248	0.00245
	(A2 * !A3 * B1 * !Y)	-0.00043	-0.00046	-0.00054
	(A2 * !A3 * B1 * !Y)	0.00406	0.00407	0.00398
	(!A2 * A3 * B1 * !Y)	0.00004	0.00001	-0.00013
	(!A2 * A3 * B1 * !Y)	0.00459	0.00461	0.00444
	(!A2 * A3 * !B1 * Y)	-0.00200	-0.00201	-0.00200
	(!A2 * A3 * !B1 * Y)	0.00241	0.00244	0.00242
	(!A2 * !A3 * !B1 * Y)	-0.00175	-0.00193	-0.00196
	(!A2 * !A3 * !B1 * Y)	0.00266	0.00253	0.00247

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00182	-0.00186	-0.00183
	(A2 * A3 * B1 * !Y)	0.00729	0.00736	0.00730
	(A2 * !B1 * Y)	-0.00403	-0.00406	-0.00404
	(A2 * !B1 * Y)	0.00507	0.00513	0.00508
	(A2 * !A3 * B1 * !Y)	-0.00087	-0.00093	-0.00107
	(A2 * !A3 * B1 * !Y)	0.00835	0.00838	0.00819
	(!A2 * A3 * B1 * !Y)	0.00005	-0.00000	-0.00027
	(!A2 * A3 * B1 * !Y)	0.00938	0.00938	0.00907
	(!A2 * A3 * !B1 * Y)	-0.00404	-0.00405	-0.00404
	(!A2 * A3 * !B1 * Y)	0.00501	0.00503	0.00501
	(!A2 * !A3 * !B1 * Y)	-0.00333	-0.00389	-0.00392
	(!A2 * !A3 * !B1 * Y)	0.00571	0.00528	0.00514
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00546	-0.00550	-0.00548
	(A2 * A3 * B1 * !Y)	0.01238	0.01246	0.01240
	(A2 * !B1 * Y)	-0.00778	-0.00784	-0.00779
	(A2 * !B1 * Y)	0.01005	0.01019	0.01007
	(A2 * !A3 * B1 * !Y)	-0.00359	-0.00364	-0.00395
	(A2 * !A3 * B1 * !Y)	0.01454	0.01452	0.01417
	(!A2 * A3 * B1 * !Y)	-0.00169	-0.00181	-0.00234
	(!A2 * A3 * B1 * !Y)	0.01655	0.01656	0.01594
	(!A2 * A3 * !B1 * Y)	-0.00776	-0.00783	-0.00779
	(!A2 * A3 * !B1 * Y)	0.00984	0.00998	0.00989
	(!A2 * !A3 * !B1 * Y)	-0.00652	-0.00752	-0.00757
	(!A2 * !A3 * !B1 * Y)	0.01113	0.01044	0.01016

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)**	0.00360	0.00364	0.00356
	(A1 * A3 * B1 * !Y)	-0.00044	-0.00044	-0.00047
	(A1 * A3 * !B1 * Y)	0.00203	0.00205	0.00204
	(A1 * A3 * !B1 * Y)	-0.00212	-0.00213	-0.00206
	(A1 * !A3 * B1 * !Y)	0.00366	0.00365	0.00364
	(A1 * !A3 * B1 * !Y)	0.00006	0.00007	0.00008
	(A1 * !A3 * !B1 * Y)	0.00205	0.00206	0.00204
	(A1 * !A3 * !B1 * Y)	-0.00280	-0.00280	-0.00278
	(!A1 * A3 * B1 * !Y)	0.00436	0.00380	0.00433
	(!A1 * A3 * B1 * !Y)	-0.00053	-0.00110	-0.00051
	(!A1 * A3 * !B1 * Y)	0.00205	0.00205	0.00204
	(!A1 * A3 * !B1 * Y)	-0.00280	-0.00280	-0.00278
	(!A1 * !A3 * !B1 * Y)	0.00199	0.00202	0.00200
	(!A1 * !A3 * !B1 * Y)	-0.00278	-0.00280	-0.00278
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00682	0.00684	0.00667
	(A1 * A3 * B1 * !Y)	-0.00077	-0.00079	-0.00082
	(A1 * A3 * !B1 * Y)	0.00403	0.00406	0.00402
	(A1 * A3 * !B1 * Y)	-0.00367	-0.00370	-0.00358
	(A1 * !A3 * B1 * !Y)	0.00680	0.00678	0.00675
	(A1 * !A3 * B1 * !Y)	0.00031	0.00034	0.00034
	(A1 * !A3 * !B1 * Y)	0.00404	0.00407	0.00402
	(A1 * !A3 * !B1 * Y)	-0.00500	-0.00502	-0.00497
	(!A1 * A3 * B1 * !Y)	0.00813	0.00703	0.00807
	(!A1 * A3 * B1 * !Y)	-0.00101	-0.00214	-0.00097
	(!A1 * A3 * !B1 * Y)	0.00403	0.00406	0.00402
	(!A1 * A3 * !B1 * Y)	-0.00501	-0.00501	-0.00498
	(!A1 * !A3 * !B1 * Y)	0.00392	0.00395	0.00392
	(!A1 * !A3 * !B1 * Y)	-0.00500	-0.00501	-0.00498

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.01140	0.01151	0.01116
	(A1 * A3 * B1 * !Y)	-0.00357	-0.00364	-0.00372
	(A1 * A3 * !B1 * Y)	0.00792	0.00804	0.00795
	(A1 * A3 * !B1 * Y)	-0.00735	-0.00740	-0.00713
	(A1 * !A3 * B1 * !Y)	0.01141	0.01146	0.01135
	(A1 * !A3 * B1 * !Y)	-0.00140	-0.00142	-0.00140
	(A1 * !A3 * !B1 * Y)	0.00793	0.00798	0.00795
	(A1 * !A3 * !B1 * Y)	-0.00996	-0.00999	-0.00995
	(!A1 * A3 * B1 * !Y)	0.01421	0.01186	0.01401
	(!A1 * A3 * B1 * !Y)	-0.00388	-0.00642	-0.00400
	(!A1 * A3 * !B1 * Y)	0.00792	0.00805	0.00795
	(!A1 * A3 * !B1 * Y)	-0.00996	-0.01003	-0.00995
	(!A1 * !A3 * !B1 * Y)	0.00770	0.00779	0.00774
	(!A1 * !A3 * !B1 * Y)	-0.00996	-0.01002	-0.00996

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)**	-0.00125	-0.00126	-0.00124
	(A1 * A3 * B1 * !Y)	0.00274	0.00274	0.00272
	(A1 * A3 * !B1 * Y)	-0.00198	-0.00200	-0.00198
	(A1 * A3 * !B1 * Y)	0.00213	0.00215	0.00207
	(A1 * !A3 * B1 * !Y)	-0.00080	-0.00083	-0.00112
	(A1 * !A3 * B1 * !Y)	0.00277	0.00276	0.00248
	(A1 * !A3 * !B1 * Y)	-0.00198	-0.00199	-0.00198
	(A1 * !A3 * !B1 * Y)	0.00282	0.00284	0.00283
	(!A1 * A3 * B1 * !Y)	-0.00024	-0.00028	-0.00043
	(!A1 * A3 * B1 * !Y)	0.00462	0.00462	0.00443
	(!A1 * A3 * !B1 * Y)	-0.00198	-0.00198	-0.00198
	(!A1 * A3 * !B1 * Y)	0.00282	0.00283	0.00283
	(!A1 * !A3 * !B1 * Y)	-0.00169	-0.00189	-0.00193
	(!A1 * !A3 * !B1 * Y)	0.00308	0.00292	0.00284
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00196	-0.00198	-0.00193
	(A1 * A3 * B1 * !Y)	0.00537	0.00540	0.00536
	(A1 * A3 * !B1 * Y)	-0.00391	-0.00394	-0.00391
	(A1 * A3 * !B1 * Y)	0.00367	0.00370	0.00359
	(A1 * !A3 * B1 * !Y)	-0.00101	-0.00107	-0.00168
	(A1 * !A3 * B1 * !Y)	0.00544	0.00545	0.00487
	(A1 * !A3 * !B1 * Y)	-0.00390	-0.00394	-0.00391
	(A1 * !A3 * !B1 * Y)	0.00505	0.00512	0.00507
	(!A1 * A3 * B1 * !Y)	0.00013	0.00003	-0.00027
	(!A1 * A3 * B1 * !Y)	0.00918	0.00920	0.00882
	(!A1 * A3 * !B1 * Y)	-0.00391	-0.00394	-0.00391
	(!A1 * A3 * !B1 * Y)	0.00507	0.00513	0.00509
	(!A1 * !A3 * !B1 * Y)	-0.00323	-0.00375	-0.00381
	(!A1 * !A3 * !B1 * Y)	0.00564	0.00526	0.00511

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00594	-0.00596	-0.00587
	(A1 * A3 * B1 * !Y)	0.00867	0.00869	0.00862
	(A1 * A3 * !B1 * Y)	-0.00775	-0.00780	-0.00775
	(A1 * A3 * !B1 * Y)	0.00735	0.00740	0.00716
	(A1 * !A3 * B1 * !Y)	-0.00411	-0.00421	-0.00540
	(A1 * !A3 * B1 * !Y)	0.00880	0.00878	0.00762
	(A1 * !A3 * !B1 * Y)	-0.00772	-0.00777	-0.00774
	(A1 * !A3 * !B1 * Y)	0.01012	0.01018	0.01015
	(!A1 * A3 * B1 * !Y)	-0.00177	-0.00193	-0.00257
	(!A1 * A3 * B1 * !Y)	0.01627	0.01625	0.01553
	(!A1 * A3 * !B1 * Y)	-0.00775	-0.00775	-0.00774
	(!A1 * A3 * !B1 * Y)	0.01018	0.01019	0.01018
	(!A1 * !A3 * !B1 * Y)	-0.00647	-0.00751	-0.00753
	(!A1 * !A3 * !B1 * Y)	0.01126	0.01046	0.01022

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00350	0.00353	0.00351
	(A2 * B1 * !Y)	0.00005	0.00004	0.00006
	(A2 * !B1 * Y)	0.00197	0.00198	0.00196
	(A2 * !B1 * Y)	-0.00275	-0.00276	-0.00274
	(A1 * !A2 * B1 * !Y)	0.00351	0.00353	0.00354
	(A1 * !A2 * B1 * !Y)	0.00022	0.00021	0.00025
	(A1 * !A2 * !B1 * Y)	0.00197	0.00197	0.00196
	(A1 * !A2 * !B1 * Y)	-0.00269	-0.00274	-0.00273
	(!A1 * !A2 * !B1 * Y)	0.00193	0.00194	0.00192
	(!A1 * !A2 * !B1 * Y)	-0.00276	-0.00277	-0.00275

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00671	0.00677	0.00670
	(A2 * B1 * !Y)	0.00010	0.00008	0.00012
	(A2 * !B1 * Y)	0.00390	0.00397	0.00393
	(A2 * !B1 * Y)	-0.00513	-0.00520	-0.00517
	(A1 * !A2 * B1 * !Y)	0.00672	0.00676	0.00679
	(A1 * !A2 * B1 * !Y)	0.00044	0.00043	0.00050
	(A1 * !A2 * !B1 * Y)	0.00391	0.00397	0.00393
	(A1 * !A2 * !B1 * Y)	-0.00500	-0.00515	-0.00514
	(!A1 * !A2 * !B1 * Y)	0.00382	0.00386	0.00383
	(!A1 * !A2 * !B1 * Y)	-0.00520	-0.00521	-0.00518
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.01108	0.01128	0.01114
	(A2 * B1 * !Y)	-0.00180	-0.00189	-0.00180
	(A2 * !B1 * Y)	0.00769	0.00775	0.00771
	(A2 * !B1 * Y)	-0.01019	-0.01029	-0.01026
	(A1 * !A2 * B1 * !Y)	0.01114	0.01134	0.01131
	(A1 * !A2 * B1 * !Y)	-0.00115	-0.00123	-0.00104
	(A1 * !A2 * !B1 * Y)	0.00770	0.00773	0.00771
	(A1 * !A2 * !B1 * Y)	-0.00994	-0.01019	-0.01019
	(!A1 * !A2 * !B1 * Y)	0.00748	0.00758	0.00752
	(!A1 * !A2 * !B1 * Y)	-0.01027	-0.01034	-0.01027

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00121	-0.00123	-0.00133
	(A2 * B1 * !Y)	0.00221	0.00222	0.00214
	(A2 * !B1 * Y)	-0.00191	-0.00191	-0.00191
	(A2 * !B1 * Y)	0.00279	0.00281	0.00279
	(A1 * !A2 * B1 * !Y)	-0.00059	-0.00062	-0.00086
	(A1 * !A2 * B1 * !Y)	0.00275	0.00275	0.00253
	(A1 * !A2 * !B1 * Y)	-0.00190	-0.00192	-0.00191
	(A1 * !A2 * !B1 * Y)	0.00274	0.00277	0.00275
	(!A1 * !A2 * !B1 * Y)	-0.00164	-0.00182	-0.00186
	(!A1 * !A2 * !B1 * Y)	0.00301	0.00287	0.00281
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00214	-0.00218	-0.00236
	(A2 * B1 * !Y)	0.00440	0.00441	0.00425
	(A2 * !B1 * Y)	-0.00381	-0.00384	-0.00382
	(A2 * !B1 * Y)	0.00525	0.00530	0.00527
	(A1 * !A2 * B1 * !Y)	-0.00085	-0.00090	-0.00145
	(A1 * !A2 * B1 * !Y)	0.00553	0.00553	0.00505
	(A1 * !A2 * !B1 * Y)	-0.00383	-0.00385	-0.00382
	(A1 * !A2 * !B1 * Y)	0.00517	0.00521	0.00516
	(!A1 * !A2 * !B1 * Y)	-0.00319	-0.00368	-0.00372
	(!A1 * !A2 * !B1 * Y)	0.00581	0.00544	0.00530
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00613	-0.00620	-0.00658
	(A2 * B1 * !Y)	0.00675	0.00676	0.00642
	(A2 * !B1 * Y)	-0.00748	-0.00752	-0.00750
	(A2 * !B1 * Y)	0.01039	0.01045	0.01044
	(A1 * !A2 * B1 * !Y)	-0.00360	-0.00370	-0.00478
	(A1 * !A2 * B1 * !Y)	0.00896	0.00895	0.00800
	(A1 * !A2 * !B1 * Y)	-0.00752	-0.00753	-0.00750
	(A1 * !A2 * !B1 * Y)	0.01022	0.01025	0.01021
	(!A1 * !A2 * !B1 * Y)	-0.00635	-0.00733	-0.00731
	(!A1 * !A2 * !B1 * Y)	0.01136	0.01074	0.01053

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)	0.00073	0.00074	0.00067
	(!A1 * !A2 * !A3 * Y)	-0.00277	-0.00280	-0.00291
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00146	0.00146	0.00130
	(!A1 * !A2 * !A3 * Y)	-0.00551	-0.00555	-0.00580
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00258	0.00260	0.00232
	(!A1 * !A2 * !A3 * Y)	-0.00625	-0.00631	-0.00680

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)	-0.00060	-0.00061	-0.00060
	(!A1 * !A2 * !A3 * Y)	0.00294	0.00300	0.00295
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00116	-0.00118	-0.00115
	(!A1 * !A2 * !A3 * Y)	0.00589	0.00599	0.00590
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00202	-0.00207	-0.00201
	(!A1 * !A2 * !A3 * Y)	0.00694	0.00708	0.00698

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00266	0.00261	0.00259	0.00238	1.62018
sky130_fd_sc_hs__o31a_2	0.00282	0.00274	0.00275	0.00284	2.74110
sky130_fd_sc_hs__o31a_4	0.00484	0.00515	0.00507	0.00503	6.14830

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31a_1	0.00000	248.98500	505.34500
sky130_fd_sc_hs__o31a_2	0.00000	219.50900	287.66900
sky130_fd_sc_hs__o31a_4	0.00000	441.75600	574.85400

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)	0.06341	0.40721	5.07798
	A2->X (RR)	0.06132	0.39733	4.88937
	A3->X (RR)	0.05218	0.37724	4.75245
	B1->X (RR)	0.05698	0.45202	5.95086
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.06718	0.34184	4.68922
	A2->X (RR)	0.06513	0.33445	4.54202
	A3->X (RR)	0.05559	0.31717	4.42425
	B1->X (RR)	0.06141	0.39593	5.79359
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.07285	0.28644	5.19805
	A2->X (RR)	0.06937	0.27372	4.95936
	A3->X (RR)	0.05812	0.25733	4.87222
	B1->X (RR)	0.06621	0.34461	6.16777

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.12451	0.50022	5.67449
	A2->X (FF)	0.11501	0.52541	6.03253
	A3->X (FF)	0.09586	0.53240	6.16233
	B1->X (FF)	0.04608	0.41013	5.41179
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.15519	0.49490	5.35075
	A2->X (FF)	0.14523	0.52190	5.68239
	A3->X (FF)	0.12575	0.53178	5.80237
	B1->X (FF)	0.04917	0.36203	4.79924
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.16161	0.47940	6.11979
	A2->X (FF)	0.15174	0.50459	6.29358
	A3->X (FF)	0.12428	0.50899	6.37707
	B1->X (FF)	0.04645	0.33414	5.33507

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.02766	0.03470	0.18531
	A1	0.01798	0.02501	0.17552
	A2	0.02535	0.03252	0.16764
	A2	0.01708	0.02428	0.15932
	A3	0.02429	0.03234	0.17494
	A3	0.01730	0.02535	0.16791
	B1	0.01902	0.03678	0.31853
	B1	0.01408	0.03185	0.31399
sky130_fd_sc_hs__o31a_2	A1	0.02732	0.03315	0.15973
	A1	0.01707	0.02296	0.14959
	A2	0.02480	0.03103	0.14507
	A2	0.01605	0.02236	0.13618
	A3	0.02353	0.03060	0.15211
	A3	0.01597	0.02307	0.14471
	B1	0.01779	0.03510	0.31741
	B1	0.01201	0.02940	0.31206
sky130_fd_sc_hs__o31a_4	A1	0.05517	0.07153	0.43531
	A1	0.03621	0.05264	0.41586
	A2	0.04969	0.06585	0.38759
	A2	0.03276	0.04897	0.37020
	A3	0.04534	0.06338	0.38871
	A3	0.03161	0.04973	0.37458
	B1	0.03371	0.06682	0.57802
	B1	0.02383	0.05707	0.56887

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00953	0.01573	0.18212
	A1	0.01922	0.02540	0.19047
	A2	0.00961	0.01575	0.17544
	A2	0.01785	0.02399	0.18293
	A3	0.00956	0.01745	0.18747
	A3	0.01655	0.02444	0.19063
	B1	0.00625	0.02399	0.29665
	B1	0.01119	0.02880	0.30146
sky130_fd_sc_hs__o31a_2	A1	0.02113	0.02097	0.17939
	A1	0.03136	0.03107	0.18608
	A2	0.02124	0.02113	0.16847
	A2	0.02998	0.02982	0.17718
	A3	0.02118	0.02298	0.18020
	A3	0.02873	0.03048	0.18550
	B1	0.01202	0.02830	0.29730
	B1	0.01778	0.03401	0.30279
sky130_fd_sc_hs__o31a_4	A1	0.04628	0.04574	0.40193
	A1	0.06527	0.06471	0.41596
	A2	0.04575	0.04548	0.36070
	A2	0.06267	0.06220	0.37171
	A3	0.04625	0.04895	0.37433
	A3	0.05996	0.06260	0.37994
	B1	0.02497	0.05666	0.58927
	B1	0.03481	0.06637	0.59528

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)**	0.00542	0.00524	0.00520
	(A2 * A3 * B1 * X)	0.00129	0.00106	0.00108
	(A2 * !B1 * !X)	0.00278	0.00280	0.00277
	(A2 * !B1 * !X)	-0.00136	-0.00137	-0.00135
	(A2 * !A3 * B1 * X)	0.00590	0.00553	0.00577
	(A2 * !A3 * B1 * X)	0.00170	0.00129	0.00162
	(!A2 * A3 * B1 * X)	0.00621	0.00578	0.00630
	(!A2 * A3 * B1 * X)	0.00195	0.00147	0.00211
	(!A2 * A3 * !B1 * !X)	0.00277	0.00280	0.00277
	(!A2 * A3 * !B1 * !X)	-0.00129	-0.00135	-0.00134
	(!A2 * !A3 * !B1 * !X)	0.00276	0.00276	0.00275
	(!A2 * !A3 * !B1 * !X)	-0.00137	-0.00137	-0.00136
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00373	0.00350	0.00350
	(A2 * A3 * B1 * X)	-0.00069	-0.00091	-0.00091
	(A2 * !B1 * !X)	0.00411	0.00413	0.00410
	(A2 * !B1 * !X)	-0.00030	-0.00032	-0.00030
	(A2 * !A3 * B1 * X)	0.00421	0.00382	0.00406
	(A2 * !A3 * B1 * X)	-0.00026	-0.00070	-0.00037
	(!A2 * A3 * B1 * X)	0.00454	0.00404	0.00459
	(!A2 * A3 * B1 * X)	-0.00001	-0.00050	0.00013
	(!A2 * A3 * !B1 * !X)	0.00409	0.00410	0.00410
	(!A2 * A3 * !B1 * !X)	-0.00024	-0.00028	-0.00029
	(!A2 * !A3 * !B1 * !X)	0.00407	0.00408	0.00407
	(!A2 * !A3 * !B1 * !X)	-0.00031	-0.00031	-0.00031

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00662	0.00613	0.00606
	(A2 * A3 * B1 * X)	-0.00125	-0.00176	-0.00179
	(A2 * !B1 * !X)	0.00757	0.00758	0.00756
	(A2 * !B1 * !X)	-0.00028	-0.00031	-0.00029
	(A2 * !A3 * B1 * X)	0.00782	0.00684	0.00727
	(A2 * !A3 * B1 * X)	-0.00024	-0.00122	-0.00065
	(!A2 * A3 * B1 * X)	0.00846	0.00727	0.00823
	(!A2 * A3 * B1 * X)	0.00027	-0.00096	0.00024
	(!A2 * A3 * !B1 * !X)	0.00756	0.00759	0.00756
	(!A2 * A3 * !B1 * !X)	-0.00015	-0.00027	-0.00026
	(!A2 * !A3 * !B1 * !X)	0.00751	0.00753	0.00750
	(!A2 * !A3 * !B1 * !X)	-0.00034	-0.00035	-0.00032

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)**	0.00130	0.00129	0.00129
	(A2 * A3 * B1 * X)	0.00542	0.00544	0.00542
	(A2 * !B1 * !X)	-0.00060	-0.00061	-0.00060
	(A2 * !B1 * !X)	0.00353	0.00355	0.00353
	(A2 * !A3 * B1 * X)	0.00181	0.00179	0.00170
	(A2 * !A3 * B1 * X)	0.00598	0.00599	0.00589
	(!A2 * A3 * B1 * X)	0.00244	0.00240	0.00221
	(!A2 * A3 * B1 * X)	0.00667	0.00666	0.00645
	(!A2 * A3 * !B1 * !X)	-0.00059	-0.00061	-0.00060
	(!A2 * A3 * !B1 * !X)	0.00349	0.00351	0.00349
	(!A2 * !A3 * !B1 * !X)	-0.00034	-0.00053	-0.00056
	(!A2 * !A3 * !B1 * !X)	0.00378	0.00362	0.00355

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00079	-0.00080	-0.00079
	(A2 * A3 * B1 * X)	0.00362	0.00363	0.00362
	(A2 * !B1 * !X)	0.00011	0.00010	0.00011
	(A2 * !B1 * !X)	0.00451	0.00453	0.00451
	(A2 * !A3 * B1 * X)	-0.00028	-0.00031	-0.00038
	(A2 * !A3 * B1 * X)	0.00419	0.00420	0.00408
	(!A2 * A3 * B1 * X)	0.00035	0.00031	0.00013
	(!A2 * A3 * B1 * X)	0.00486	0.00486	0.00465
	(!A2 * A3 * !B1 * !X)	0.00011	0.00010	0.00011
	(!A2 * A3 * !B1 * !X)	0.00447	0.00449	0.00448
	(!A2 * !A3 * !B1 * !X)	0.00038	0.00018	0.00016
	(!A2 * !A3 * !B1 * !X)	0.00474	0.00458	0.00453
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00066	-0.00068	-0.00064
	(A2 * A3 * B1 * X)	0.00718	0.00723	0.00721
	(A2 * !B1 * !X)	0.00094	0.00093	0.00094
	(A2 * !B1 * !X)	0.00880	0.00882	0.00878
	(A2 * !A3 * B1 * X)	0.00031	0.00027	0.00009
	(A2 * !A3 * B1 * X)	0.00828	0.00828	0.00809
	(!A2 * A3 * B1 * X)	0.00168	0.00161	0.00123
	(!A2 * A3 * B1 * X)	0.00977	0.00975	0.00934
	(!A2 * A3 * !B1 * !X)	0.00094	0.00093	0.00094
	(!A2 * A3 * !B1 * !X)	0.00871	0.00873	0.00871
	(!A2 * !A3 * !B1 * !X)	0.00152	0.00113	0.00104
	(!A2 * !A3 * !B1 * !X)	0.00936	0.00904	0.00886

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)**	0.00525	0.00527	0.00522
	(A1 * A3 * B1 * X)	0.00196	0.00197	0.00196
	(A1 * A3 * !B1 * !X)	0.00282	0.00283	0.00282
	(A1 * A3 * !B1 * !X)	-0.00056	-0.00057	-0.00050
	(A1 * !A3 * B1 * X)	0.00527	0.00528	0.00528
	(A1 * !A3 * B1 * X)	0.00240	0.00240	0.00242
	(A1 * !A3 * !B1 * !X)	0.00283	0.00284	0.00282
	(A1 * !A3 * !B1 * !X)	-0.00115	-0.00116	-0.00114
	(!A1 * A3 * B1 * X)	0.00595	0.00544	0.00613
	(!A1 * A3 * B1 * X)	0.00192	0.00141	0.00214
	(!A1 * A3 * !B1 * !X)	0.00283	0.00284	0.00282
	(!A1 * A3 * !B1 * !X)	-0.00115	-0.00115	-0.00113
	(!A1 * !A3 * !B1 * !X)	0.00280	0.00282	0.00280
	(!A1 * !A3 * !B1 * !X)	-0.00115	-0.00115	-0.00114
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00353	0.00356	0.00350
	(A1 * A3 * B1 * X)	0.00003	0.00003	0.00002
	(A1 * A3 * !B1 * !X)	0.00403	0.00404	0.00403
	(A1 * A3 * !B1 * !X)	0.00042	0.00041	0.00048
	(A1 * !A3 * B1 * X)	0.00356	0.00357	0.00357
	(A1 * !A3 * B1 * X)	0.00048	0.00048	0.00050
	(A1 * !A3 * !B1 * !X)	0.00404	0.00405	0.00402
	(A1 * !A3 * !B1 * !X)	-0.00017	-0.00017	-0.00015
	(!A1 * A3 * B1 * X)	0.00426	0.00374	0.00442
	(!A1 * A3 * B1 * X)	0.00001	-0.00051	0.00022
	(!A1 * A3 * !B1 * !X)	0.00404	0.00405	0.00403
	(!A1 * A3 * !B1 * !X)	-0.00016	-0.00016	-0.00014
	(!A1 * !A3 * !B1 * !X)	0.00400	0.00401	0.00400
	(!A1 * !A3 * !B1 * !X)	-0.00016	-0.00016	-0.00015

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00704	0.00713	0.00694
	(A1 * A3 * B1 * X)	-0.00002	0.00001	-0.00006
	(A1 * A3 * !B1 * !X)	0.00814	0.00817	0.00816
	(A1 * A3 * !B1 * !X)	0.00090	0.00088	0.00104
	(A1 * !A3 * B1 * X)	0.00723	0.00731	0.00719
	(A1 * !A3 * B1 * X)	0.00100	0.00095	0.00100
	(A1 * !A3 * !B1 * !X)	0.00812	0.00816	0.00814
	(A1 * !A3 * !B1 * !X)	-0.00027	-0.00031	-0.00029
	(!A1 * A3 * B1 * X)	0.00862	0.00745	0.00878
	(!A1 * A3 * B1 * X)	0.00007	-0.00115	0.00029
	(!A1 * A3 * !B1 * !X)	0.00813	0.00816	0.00815
	(!A1 * A3 * !B1 * !X)	-0.00026	-0.00028	-0.00026
	(!A1 * !A3 * !B1 * !X)	0.00807	0.00812	0.00809
	(!A1 * !A3 * !B1 * !X)	-0.00027	-0.00031	-0.00028

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)**	0.00137	0.00135	0.00137
	(A1 * A3 * B1 * X)	0.00458	0.00460	0.00457
	(A1 * A3 * !B1 * !X)	-0.00064	-0.00066	-0.00065
	(A1 * A3 * !B1 * !X)	0.00269	0.00271	0.00265
	(A1 * !A3 * B1 * X)	0.00187	0.00184	0.00153
	(A1 * !A3 * B1 * X)	0.00473	0.00472	0.00442
	(A1 * !A3 * !B1 * !X)	-0.00064	-0.00064	-0.00064
	(A1 * !A3 * !B1 * !X)	0.00331	0.00331	0.00332
	(!A1 * A3 * B1 * X)	0.00257	0.00252	0.00232
	(!A1 * A3 * B1 * X)	0.00658	0.00657	0.00633
	(!A1 * A3 * !B1 * !X)	-0.00064	-0.00065	-0.00065
	(!A1 * A3 * !B1 * !X)	0.00330	0.00331	0.00331
	(!A1 * !A3 * !B1 * !X)	-0.00036	-0.00057	-0.00060
	(!A1 * !A3 * !B1 * !X)	0.00358	0.00339	0.00333
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00072	-0.00072	-0.00070
	(A1 * A3 * B1 * X)	0.00274	0.00274	0.00272
	(A1 * A3 * !B1 * !X)	0.00018	0.00017	0.00018
	(A1 * A3 * !B1 * !X)	0.00375	0.00376	0.00370
	(A1 * !A3 * B1 * X)	-0.00022	-0.00024	-0.00056
	(A1 * !A3 * B1 * X)	0.00287	0.00285	0.00255
	(A1 * !A3 * !B1 * !X)	0.00020	0.00018	0.00019
	(A1 * !A3 * !B1 * !X)	0.00436	0.00437	0.00437
	(!A1 * A3 * B1 * X)	0.00050	0.00046	0.00024
	(!A1 * A3 * B1 * X)	0.00470	0.00468	0.00447
	(!A1 * A3 * !B1 * !X)	0.00019	0.00017	0.00018
	(!A1 * A3 * !B1 * !X)	0.00435	0.00438	0.00436
	(!A1 * !A3 * !B1 * !X)	0.00047	0.00026	0.00023
	(!A1 * !A3 * !B1 * !X)	0.00459	0.00442	0.00437

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00136	-0.00137	-0.00132
	(A1 * A3 * B1 * X)	0.00555	0.00556	0.00552
	(A1 * A3 * !B1 * !X)	0.00036	0.00033	0.00035
	(A1 * A3 * !B1 * !X)	0.00747	0.00750	0.00739
	(A1 * !A3 * B1 * X)	-0.00049	-0.00056	-0.00113
	(A1 * !A3 * B1 * X)	0.00576	0.00576	0.00516
	(A1 * !A3 * !B1 * !X)	0.00039	0.00035	0.00037
	(A1 * !A3 * !B1 * !X)	0.00879	0.00882	0.00880
	(!A1 * A3 * B1 * X)	0.00108	0.00100	0.00058
	(!A1 * A3 * B1 * X)	0.00961	0.00959	0.00913
	(!A1 * A3 * !B1 * !X)	0.00036	0.00034	0.00035
	(!A1 * A3 * !B1 * !X)	0.00875	0.00879	0.00877
	(!A1 * !A3 * !B1 * !X)	0.00093	0.00049	0.00045
	(!A1 * !A3 * !B1 * !X)	0.00928	0.00893	0.00882

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00513	0.00515	0.00514
	(A2 * B1 * X)	0.00227	0.00226	0.00228
	(A2 * !B1 * !X)	0.00280	0.00282	0.00280
	(A2 * !B1 * !X)	-0.00116	-0.00119	-0.00118
	(A1 * !A2 * B1 * X)	0.00514	0.00516	0.00519
	(A1 * !A2 * B1 * X)	0.00244	0.00244	0.00248
	(A1 * !A2 * !B1 * !X)	0.00282	0.00281	0.00280
	(A1 * !A2 * !B1 * !X)	-0.00113	-0.00116	-0.00116
	(!A1 * !A2 * !B1 * !X)	0.00279	0.00279	0.00278
	(!A1 * !A2 * !B1 * !X)	-0.00118	-0.00119	-0.00118

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00353	0.00355	0.00354
	(A2 * B1 * X)	0.00038	0.00037	0.00038
	(A2 * !B1 * !X)	0.00408	0.00409	0.00408
	(A2 * !B1 * !X)	-0.00018	-0.00020	-0.00019
	(A1 * !A2 * B1 * X)	0.00355	0.00356	0.00358
	(A1 * !A2 * B1 * X)	0.00054	0.00054	0.00058
	(A1 * !A2 * !B1 * !X)	0.00408	0.00409	0.00408
	(A1 * !A2 * !B1 * !X)	-0.00013	-0.00018	-0.00018
	(!A1 * !A2 * !B1 * !X)	0.00405	0.00406	0.00404
	(!A1 * !A2 * !B1 * !X)	-0.00020	-0.00020	-0.00019
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00645	0.00649	0.00647
	(A2 * B1 * X)	0.00055	0.00053	0.00055
	(A2 * !B1 * !X)	0.00776	0.00781	0.00777
	(A2 * !B1 * !X)	-0.00045	-0.00052	-0.00049
	(A1 * !A2 * B1 * X)	0.00647	0.00650	0.00656
	(A1 * !A2 * B1 * X)	0.00087	0.00086	0.00095
	(A1 * !A2 * !B1 * !X)	0.00776	0.00780	0.00777
	(A1 * !A2 * !B1 * !X)	-0.00033	-0.00046	-0.00046
	(!A1 * !A2 * !B1 * !X)	0.00774	0.00776	0.00772
	(!A1 * !A2 * !B1 * !X)	-0.00052	-0.00054	-0.00051

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00140	0.00139	0.00131
	(A2 * B1 * X)	0.00425	0.00425	0.00418
	(A2 * !B1 * !X)	-0.00062	-0.00064	-0.00063
	(A2 * !B1 * !X)	0.00334	0.00336	0.00335
	(A1 * !A2 * B1 * X)	0.00206	0.00204	0.00179
	(A1 * !A2 * B1 * X)	0.00483	0.00482	0.00459
	(A1 * !A2 * !B1 * !X)	-0.00062	-0.00063	-0.00063
	(A1 * !A2 * !B1 * !X)	0.00330	0.00331	0.00330
	(!A1 * !A2 * !B1 * !X)	-0.00034	-0.00055	-0.00058
	(!A1 * !A2 * !B1 * !X)	0.00361	0.00343	0.00336
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00079	-0.00079	-0.00088
	(A2 * B1 * X)	0.00235	0.00236	0.00229
	(A2 * !B1 * !X)	0.00014	0.00012	0.00013
	(A2 * !B1 * !X)	0.00440	0.00441	0.00440
	(A1 * !A2 * B1 * X)	-0.00013	-0.00015	-0.00040
	(A1 * !A2 * B1 * X)	0.00293	0.00293	0.00270
	(A1 * !A2 * !B1 * !X)	0.00014	0.00013	0.00013
	(A1 * !A2 * !B1 * !X)	0.00435	0.00436	0.00436
	(!A1 * !A2 * !B1 * !X)	0.00043	0.00021	0.00018
	(!A1 * !A2 * !B1 * !X)	0.00464	0.00447	0.00441
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00098	-0.00099	-0.00121
	(A2 * B1 * X)	0.00491	0.00491	0.00475
	(A2 * !B1 * !X)	0.00076	0.00072	0.00074
	(A2 * !B1 * !X)	0.00898	0.00899	0.00898
	(A1 * !A2 * B1 * X)	0.00035	0.00031	-0.00025
	(A1 * !A2 * B1 * X)	0.00609	0.00608	0.00558
	(A1 * !A2 * !B1 * !X)	0.00075	0.00071	0.00074
	(A1 * !A2 * !B1 * !X)	0.00887	0.00890	0.00887
	(!A1 * !A2 * !B1 * !X)	0.00145	0.00089	0.00084
	(!A1 * !A2 * !B1 * !X)	0.00967	0.00917	0.00904

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)	0.00171	0.00171	0.00163
	(!A1 * !A2 * !A3 * !X)	-0.00113	-0.00115	-0.00127
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00287	0.00288	0.00279
	(!A1 * !A2 * !A3 * !X)	-0.00067	-0.00069	-0.00081
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00543	0.00543	0.00526
	(!A1 * !A2 * !A3 * !X)	-0.00095	-0.00095	-0.00126

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)	0.00056	0.00055	0.00057
	(!A1 * !A2 * !A3 * !X)	0.00341	0.00346	0.00342
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00143	0.00143	0.00144
	(!A1 * !A2 * !A3 * !X)	0.00501	0.00503	0.00501
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00329	0.00326	0.00330
	(!A1 * !A2 * !A3 * !X)	0.00970	0.00981	0.00973

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00270	0.00297	0.00288	0.00284	0.00293	0.63594
sky130_fd_sc_hs__o32ai_2	0.00573	0.00535	0.00575	0.00544	0.00551	1.05675
sky130_fd_sc_hs__o32ai_4	0.01082	0.01083	0.01088	0.01111	0.01076	1.84954

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	70.76750	238.19400
sky130_fd_sc_hs__o32ai_2	0.00000	141.40900	475.67400
sky130_fd_sc_hs__o32ai_4	0.00000	282.63800	950.19400

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)	0.10773	0.75892	8.42096
	A2->Y (FR)	0.10033	0.79841	9.06961
	A3->Y (FR)	0.08100	0.81024	9.44974
	B1->Y (FR)	0.04268	0.56921	6.83346
	B2->Y (FR)	0.03419	0.60676	7.50577
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.11659	0.64491	8.02328
	A2->Y (FR)	0.10837	0.69774	8.85884
	A3->Y (FR)	0.08363	0.70835	9.24654
	B1->Y (FR)	0.04602	0.51745	6.97822
	B2->Y (FR)	0.03163	0.54721	7.55914
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.11815	0.55371	7.74772
	A2->Y (FR)	0.10931	0.60784	8.62297
	A3->Y (FR)	0.08366	0.62863	9.13807
	B1->Y (FR)	0.04376	0.42284	6.45010
	B2->Y (FR)	0.03046	0.46059	7.14821

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.04147	0.29086	2.92653
	A2->Y (RF)	0.04103	0.29446	3.00573
	A3->Y (RF)	0.03403	0.28409	2.94965
	B1->Y (RF)	0.03204	0.34452	3.82699
	B2->Y (RF)	0.02653	0.33123	3.72211
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.03480	0.21892	2.53204
	A2->Y (RF)	0.03590	0.22737	2.68749
	A3->Y (RF)	0.02848	0.21499	2.63049
	B1->Y (RF)	0.03363	0.28649	3.54530
	B2->Y (RF)	0.02628	0.27874	3.55952
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.04767	0.21032	2.84347
	A2->Y (RF)	0.04149	0.19148	2.65449
	A3->Y (RF)	0.02969	0.17053	2.48560
	B1->Y (RF)	0.04905	0.30225	4.08307
	B2->Y (RF)	0.04017	0.30796	4.32907

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00229	0.00678	0.10878
	A1	0.01451	0.01902	0.12097
	A2	0.00246	0.00673	0.09382
	A2	0.01326	0.01757	0.10475
	A3	0.00241	0.00841	0.10804
	A3	0.01160	0.01760	0.11723
	B1	-0.00030	0.00596	0.11718
	B1	0.00712	0.01339	0.12509
	B2	-0.00029	0.00757	0.13004
	B2	0.00558	0.01346	0.13584
sky130_fd_sc_hs__o32ai_2	A1	0.00417	0.01336	0.21354
	A1	0.02970	0.03894	0.23922
	A2	0.00454	0.01289	0.17317
	A2	0.02636	0.03471	0.19507
	A3	0.00434	0.01612	0.19703
	A3	0.02348	0.03526	0.21629
	B1	-0.00090	0.01142	0.21518
	B1	0.01401	0.02635	0.23044
	B2	-0.00110	0.01383	0.22592
	B2	0.01096	0.02594	0.23778

sky130_fd_sc_hs__o32ai_4	**A1**	0.00829	0.02703	0.40651
	A1	0.05839	0.07721	0.45725
	A2	0.00847	0.02625	0.34255
	A2	0.05228	0.07008	0.38591
	A3	0.00847	0.03260	0.38020
	A3	0.04598	0.07021	0.41727
	B1	-0.00195	0.02153	0.37654
	B1	0.02829	0.05180	0.40749
	B2	-0.00193	0.02388	0.35977
	B2	0.02200	0.04781	0.38347

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01641	0.02034	0.10646
	A1	0.00418	0.00808	0.09416
	A2	0.01366	0.01750	0.09400
	A2	0.00282	0.00664	0.08305
	A3	0.01126	0.01528	0.08743
	A3	0.00206	0.00605	0.07809
	B1	0.00999	0.01582	0.11475
	B1	0.00256	0.00838	0.10727
	B2	0.00800	0.01383	0.10653
	B2	0.00212	0.00790	0.10042

sky130_fd_sc_hs__o32ai_2	**A1**	0.03361	0.04218	0.21568
	A1	0.00806	0.01659	0.18983
	A2	0.03461	0.04188	0.18318
	A2	0.00944	0.01690	0.15733
	A3	0.02925	0.03715	0.17028
	A3	0.00318	0.01175	0.14863
	B1	0.02048	0.03217	0.21818
	B1	0.00559	0.01729	0.20327
	B2	0.01550	0.02696	0.19233
	B2	0.00346	0.01490	0.18029
sky130_fd_sc_hs__o32ai_4	**A1**	0.06644	0.08641	0.46284
	A1	0.01626	0.03619	0.41197
	A2	0.06817	0.08626	0.40554
	A2	0.01904	0.03721	0.35164
	A3	0.05738	0.07679	0.37411
	A3	0.00656	0.02724	0.33155
	B1	0.04065	0.06495	0.41832
	B1	0.01043	0.03468	0.38755
	B2	0.03153	0.05379	0.34486
	B2	0.00764	0.02984	0.31987

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)**	0.00244	0.00224	0.00221
	(A2 * A3 * B2 * !Y)	-0.00210	-0.00234	-0.00232
	(A2 * A3 * B1 * !B2 * !Y)	0.00298	0.00278	0.00274
	(A2 * A3 * B1 * !B2 * !Y)	-0.00157	-0.00180	-0.00179
	(A2 * !B1 * !B2 * Y)	0.00213	0.00214	0.00211
	(A2 * !B1 * !B2 * Y)	-0.00241	-0.00243	-0.00241
	(A2 * !A3 * B2 * !Y)	0.00294	0.00254	0.00273
	(A2 * !A3 * B2 * !Y)	-0.00166	-0.00210	-0.00181
	(A2 * !A3 * B1 * !B2 * !Y)	0.00348	0.00308	0.00327
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00112	-0.00156	-0.00128
	(!A2 * A3 * B2 * !Y)	0.00325	0.00278	0.00314
	(!A2 * A3 * B2 * !Y)	-0.00141	-0.00193	-0.00144
	(!A2 * A3 * B1 * !B2 * !Y)	0.00378	0.00331	0.00367
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00088	-0.00140	-0.00090
	(!A2 * A3 * !B1 * !B2 * Y)	0.00211	0.00214	0.00211
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00235	-0.00241	-0.00240
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00208	0.00210	0.00208
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00242	-0.00243	-0.00241

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00506	0.00458	0.00455
	(A2 * A3 * B2 * !Y)	-0.00440	-0.00487	-0.00487
	(A2 * A3 * B1 * !B2 * !Y)	0.00613	0.00565	0.00562
	(A2 * A3 * B1 * !B2 * !Y)	-0.00333	-0.00380	-0.00380
	(A2 * !B1 * !B2 * Y)	0.00437	0.00435	0.00436
	(A2 * !B1 * !B2 * Y)	-0.00507	-0.00507	-0.00507
	(A2 * !A3 * B2 * !Y)	0.00620	0.00522	0.00560
	(A2 * !A3 * B2 * !Y)	-0.00343	-0.00435	-0.00387
	(A2 * !A3 * B1 * !B2 * !Y)	0.00726	0.00628	0.00667
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00236	-0.00328	-0.00280
	(!A2 * A3 * B2 * !Y)	0.00674	0.00570	0.00642
	(!A2 * A3 * B2 * !Y)	-0.00297	-0.00403	-0.00310
	(!A2 * A3 * B1 * !B2 * !Y)	0.00781	0.00676	0.00749
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00190	-0.00296	-0.00203
	(!A2 * A3 * !B1 * !B2 * Y)	0.00435	0.00436	0.00436
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00493	-0.00503	-0.00503
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00427	0.00427	0.00426
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00511	-0.00510	-0.00508

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00965	0.00869	0.00862
	(A2 * A3 * B2 * !Y)	-0.00851	-0.00949	-0.00948
	(A2 * A3 * B1 * !B2 * !Y)	0.01179	0.01083	0.01076
	(A2 * A3 * B1 * !B2 * !Y)	-0.00637	-0.00735	-0.00734
	(A2 * !B1 * !B2 * Y)	0.00825	0.00825	0.00823
	(A2 * !B1 * !B2 * Y)	-0.00986	-0.00990	-0.00986
	(A2 * !A3 * B2 * !Y)	0.01188	0.00998	0.01071
	(A2 * !A3 * B2 * !Y)	-0.00659	-0.00849	-0.00747
	(A2 * !A3 * B1 * !B2 * !Y)	0.01402	0.01212	0.01285
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00446	-0.00635	-0.00533
	(!A2 * A3 * B2 * !Y)	0.01300	0.01089	0.01234
	(!A2 * A3 * B2 * !Y)	-0.00574	-0.00788	-0.00594
	(!A2 * A3 * B1 * !B2 * !Y)	0.01514	0.01303	0.01448
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00360	-0.00574	-0.00381
	(!A2 * A3 * !B1 * !B2 * Y)	0.00825	0.00827	0.00823
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00962	-0.00983	-0.00979
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00810	0.00810	0.00808
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00994	-0.00992	-0.00989

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)**	-0.00191	-0.00193	-0.00192
	(A2 * A3 * B2 * !Y)	0.00260	0.00263	0.00261
	(A2 * A3 * B1 * !B2 * !Y)	-0.00138	-0.00140	-0.00139
	(A2 * A3 * B1 * !B2 * !Y)	0.00313	0.00317	0.00314
	(A2 * !B1 * !B2 * Y)	-0.00201	-0.00202	-0.00201
	(A2 * !B1 * !B2 * Y)	0.00250	0.00252	0.00251
	(A2 * !A3 * B2 * !Y)	-0.00144	-0.00147	-0.00154
	(A2 * !A3 * B2 * !Y)	0.00313	0.00315	0.00304
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00091	-0.00094	-0.00100
	(A2 * !A3 * B1 * !B2 * !Y)	0.00366	0.00369	0.00358
	(!A2 * A3 * B2 * !Y)	-0.00096	-0.00100	-0.00113
	(!A2 * A3 * B2 * !Y)	0.00365	0.00367	0.00350
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00043	-0.00047	-0.00060
	(!A2 * A3 * B1 * !B2 * !Y)	0.00419	0.00420	0.00403
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00201	-0.00202	-0.00201
	(!A2 * A3 * !B1 * !B2 * Y)	0.00247	0.00250	0.00248
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00169	-0.00194	-0.00197
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00278	0.00260	0.00253

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00395	-0.00398	-0.00396
	(A2 * A3 * B2 * !Y)	0.00546	0.00552	0.00547
	(A2 * A3 * B1 * !B2 * !Y)	-0.00288	-0.00291	-0.00289
	(A2 * A3 * B1 * !B2 * !Y)	0.00653	0.00659	0.00654
	(A2 * !B1 * !B2 * Y)	-0.00415	-0.00419	-0.00416
	(A2 * !B1 * !B2 * Y)	0.00526	0.00532	0.00526
	(A2 * !A3 * B2 * !Y)	-0.00301	-0.00307	-0.00321
	(A2 * !A3 * B2 * !Y)	0.00652	0.00655	0.00634
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00195	-0.00200	-0.00214
	(A2 * !A3 * B1 * !B2 * !Y)	0.00759	0.00762	0.00741
	(!A2 * A3 * B2 * !Y)	-0.00206	-0.00212	-0.00238
	(!A2 * A3 * B2 * !Y)	0.00756	0.00757	0.00725
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00099	-0.00105	-0.00132
	(!A2 * A3 * B1 * !B2 * !Y)	0.00863	0.00863	0.00832
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00414	-0.00418	-0.00416
	(!A2 * A3 * !B1 * !B2 * Y)	0.00516	0.00522	0.00518
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00335	-0.00391	-0.00403
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00601	0.00554	0.00531

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00743	-0.00747	-0.00745
	(A2 * A3 * B2 * !Y)	0.01065	0.01073	0.01067
	(A2 * A3 * B1 * !B2 * !Y)	-0.00529	-0.00533	-0.00531
	(A2 * A3 * B1 * !B2 * !Y)	0.01279	0.01287	0.01281
	(A2 * !B1 * !B2 * Y)	-0.00782	-0.00787	-0.00783
	(A2 * !B1 * !B2 * Y)	0.01024	0.01034	0.01026
	(A2 * !A3 * B2 * !Y)	-0.00557	-0.00565	-0.00594
	(A2 * !A3 * B2 * !Y)	0.01279	0.01281	0.01241
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00343	-0.00351	-0.00381
	(A2 * !A3 * B1 * !B2 * !Y)	0.01493	0.01495	0.01455
	(!A2 * A3 * B2 * !Y)	-0.00367	-0.00376	-0.00430
	(!A2 * A3 * B2 * !Y)	0.01488	0.01483	0.01422
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00153	-0.00162	-0.00216
	(!A2 * A3 * B1 * !B2 * !Y)	0.01702	0.01697	0.01636
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00781	-0.00788	-0.00783
	(!A2 * A3 * !B1 * !B2 * Y)	0.01005	0.01020	0.01009
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00630	-0.00739	-0.00761
	(!A2 * !A3 * !B1 * !B2 * Y)	0.01166	0.01077	0.01035

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)**	0.00238	0.00239	0.00231
	(A1 * A3 * B2 * !Y)	-0.00148	-0.00147	-0.00149
	(A1 * A3 * B1 * !B2 * !Y)	0.00291	0.00292	0.00284
	(A1 * A3 * B1 * !B2 * !Y)	-0.00094	-0.00093	-0.00096
	(A1 * A3 * !B1 * !B2 * Y)	0.00204	0.00205	0.00204
	(A1 * A3 * !B1 * !B2 * Y)	-0.00189	-0.00190	-0.00182
	(A1 * !A3 * B2 * !Y)	0.00240	0.00239	0.00238
	(A1 * !A3 * B2 * !Y)	-0.00094	-0.00094	-0.00093
	(A1 * !A3 * B1 * !B2 * !Y)	0.00293	0.00292	0.00291
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00041	-0.00040	-0.00040
	(A1 * !A3 * !B1 * !B2 * Y)	0.00205	0.00207	0.00204
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00254	-0.00255	-0.00253
	(!A1 * A3 * B2 * !Y)	0.00310	0.00254	0.00307
	(!A1 * A3 * B2 * !Y)	-0.00155	-0.00211	-0.00152
	(!A1 * A3 * B1 * !B2 * !Y)	0.00364	0.00307	0.00361
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00101	-0.00158	-0.00099
	(!A1 * A3 * !B1 * !B2 * Y)	0.00205	0.00206	0.00204
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00255	-0.00254	-0.00252
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00201	0.00202	0.00201
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00254	-0.00254	-0.00253

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00471	0.00482	0.00460
	(A1 * A3 * B2 * !Y)	-0.00270	-0.00269	-0.00277
	(A1 * A3 * B1 * !B2 * !Y)	0.00579	0.00590	0.00569
	(A1 * A3 * B1 * !B2 * !Y)	-0.00162	-0.00161	-0.00169
	(A1 * A3 * !B1 * !B2 * Y)	0.00401	0.00404	0.00400
	(A1 * A3 * !B1 * !B2 * Y)	-0.00368	-0.00368	-0.00352
	(A1 * !A3 * B2 * !Y)	0.00480	0.00489	0.00477
	(A1 * !A3 * B2 * !Y)	-0.00148	-0.00153	-0.00150
	(A1 * !A3 * B1 * !B2 * !Y)	0.00587	0.00596	0.00584
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00041	-0.00046	-0.00043
	(A1 * !A3 * !B1 * !B2 * Y)	0.00402	0.00402	0.00400
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00490	-0.00489	-0.00487
	(!A1 * A3 * B2 * !Y)	0.00645	0.00508	0.00607
	(!A1 * A3 * B2 * !Y)	-0.00257	-0.00397	-0.00286
	(!A1 * A3 * B1 * !B2 * !Y)	0.00752	0.00615	0.00713
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00151	-0.00290	-0.00179
	(!A1 * A3 * !B1 * !B2 * Y)	0.00401	0.00404	0.00400
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00491	-0.00491	-0.00487
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00389	0.00389	0.00390
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00488	-0.00488	-0.00487

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00958	0.00972	0.00935
	(A1 * A3 * B2 * !Y)	-0.00555	-0.00546	-0.00562
	(A1 * A3 * B1 * !B2 * !Y)	0.01173	0.01187	0.01151
	(A1 * A3 * B1 * !B2 * !Y)	-0.00340	-0.00331	-0.00347
	(A1 * A3 * !B1 * !B2 * Y)	0.00826	0.00827	0.00823
	(A1 * A3 * !B1 * !B2 * Y)	-0.00734	-0.00733	-0.00700
	(A1 * !A3 * B2 * !Y)	0.00976	0.00986	0.00964
	(A1 * !A3 * B2 * !Y)	-0.00326	-0.00330	-0.00320
	(A1 * !A3 * B1 * !B2 * !Y)	0.01190	0.01200	0.01178
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00113	-0.00116	-0.00106
	(A1 * !A3 * !B1 * !B2 * Y)	0.00828	0.00828	0.00824
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00997	-0.00994	-0.00988
	(!A1 * A3 * B2 * !Y)	0.01301	0.01033	0.01233
	(!A1 * A3 * B2 * !Y)	-0.00544	-0.00815	-0.00590
	(!A1 * A3 * B1 * !B2 * !Y)	0.01514	0.01247	0.01446
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00331	-0.00601	-0.00376
	(!A1 * A3 * !B1 * !B2 * Y)	0.00818	0.00832	0.00823
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00986	-0.00997	-0.00989
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00807	0.00809	0.00806
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00995	-0.00994	-0.00990

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)**	-0.00194	-0.00194	-0.00192
	(A1 * A3 * B2 * !Y)	0.00183	0.00182	0.00180
	(A1 * A3 * B1 * !B2 * !Y)	-0.00141	-0.00141	-0.00138
	(A1 * A3 * B1 * !B2 * !Y)	0.00236	0.00236	0.00234
	(A1 * A3 * !B1 * !B2 * Y)	-0.00194	-0.00195	-0.00194
	(A1 * A3 * !B1 * !B2 * Y)	0.00193	0.00194	0.00188
	(A1 * !A3 * B2 * !Y)	-0.00149	-0.00151	-0.00181
	(A1 * !A3 * B2 * !Y)	0.00185	0.00183	0.00155
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00095	-0.00098	-0.00128
	(A1 * !A3 * B1 * !B2 * !Y)	0.00237	0.00237	0.00209
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00194	-0.00195	-0.00194
	(A1 * !A3 * !B1 * !B2 * Y)	0.00262	0.00264	0.00263
	(!A1 * A3 * B2 * !Y)	-0.00093	-0.00097	-0.00112
	(!A1 * A3 * B2 * !Y)	0.00369	0.00369	0.00350
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00039	-0.00043	-0.00059
	(!A1 * A3 * B1 * !B2 * !Y)	0.00423	0.00423	0.00403
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00194	-0.00194	-0.00194
	(!A1 * A3 * !B1 * !B2 * Y)	0.00262	0.00263	0.00263
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00157	-0.00184	-0.00189
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00294	0.00273	0.00264

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00385	-0.00386	-0.00381
	(A1 * A3 * B2 * !Y)	0.00340	0.00341	0.00338
	(A1 * A3 * B1 * !B2 * !Y)	-0.00279	-0.00280	-0.00276
	(A1 * A3 * B1 * !B2 * !Y)	0.00446	0.00447	0.00444
	(A1 * A3 * !B1 * !B2 * Y)	-0.00380	-0.00381	-0.00380
	(A1 * A3 * !B1 * !B2 * Y)	0.00370	0.00371	0.00362
	(A1 * !A3 * B2 * !Y)	-0.00298	-0.00303	-0.00358
	(A1 * !A3 * B2 * !Y)	0.00337	0.00336	0.00280
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00189	-0.00196	-0.00251
	(A1 * !A3 * B1 * !B2 * !Y)	0.00442	0.00443	0.00387
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00379	-0.00380	-0.00380
	(A1 * !A3 * !B1 * !B2 * Y)	0.00506	0.00508	0.00507
	(!A1 * A3 * B2 * !Y)	-0.00174	-0.00182	-0.00213
	(!A1 * A3 * B2 * !Y)	0.00721	0.00721	0.00683
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00067	-0.00075	-0.00106
	(!A1 * A3 * B1 * !B2 * !Y)	0.00828	0.00828	0.00790
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00380	-0.00382	-0.00380
	(!A1 * A3 * !B1 * !B2 * Y)	0.00508	0.00512	0.00508
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00299	-0.00361	-0.00369
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00577	0.00528	0.00510

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00785	-0.00788	-0.00779
	(A1 * A3 * B2 * !Y)	0.00687	0.00691	0.00683
	(A1 * A3 * B1 * !B2 * !Y)	-0.00572	-0.00575	-0.00567
	(A1 * A3 * B1 * !B2 * !Y)	0.00900	0.00904	0.00896
	(A1 * A3 * !B1 * !B2 * Y)	-0.00782	-0.00789	-0.00783
	(A1 * A3 * !B1 * !B2 * Y)	0.00742	0.00748	0.00723
	(A1 * !A3 * B2 * !Y)	-0.00607	-0.00620	-0.00736
	(A1 * !A3 * B2 * !Y)	0.00685	0.00685	0.00573
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00394	-0.00406	-0.00522
	(A1 * !A3 * B1 * !B2 * !Y)	0.00899	0.00899	0.00787
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00781	-0.00787	-0.00783
	(A1 * !A3 * !B1 * !B2 * Y)	0.01026	0.01032	0.01028
	(!A1 * A3 * B2 * !Y)	-0.00374	-0.00388	-0.00449
	(!A1 * A3 * B2 * !Y)	0.01461	0.01458	0.01382
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00160	-0.00174	-0.00235
	(!A1 * A3 * B1 * !B2 * !Y)	0.01675	0.01672	0.01596
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00781	-0.00788	-0.00783
	(!A1 * A3 * !B1 * !B2 * Y)	0.01026	0.01039	0.01030
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00619	-0.00739	-0.00760
	(!A1 * !A3 * !B1 * !B2 * Y)	0.01171	0.01076	0.01035

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00221	0.00224	0.00222
	(A2 * B2 * !Y)	-0.00093	-0.00094	-0.00093
	(A2 * B1 * !B2 * !Y)	0.00275	0.00277	0.00276
	(A2 * B1 * !B2 * !Y)	-0.00040	-0.00041	-0.00040
	(A2 * !B1 * !B2 * Y)	0.00204	0.00205	0.00203
	(A2 * !B1 * !B2 * Y)	-0.00239	-0.00239	-0.00238
	(A1 * !A2 * B2 * !Y)	0.00222	0.00224	0.00226
	(A1 * !A2 * B2 * !Y)	-0.00077	-0.00078	-0.00074
	(A1 * !A2 * B1 * !B2 * !Y)	0.00275	0.00277	0.00279
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00024	-0.00024	-0.00021
	(A1 * !A2 * !B1 * !B2 * Y)	0.00204	0.00205	0.00203
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00232	-0.00237	-0.00236
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00199	0.00201	0.00200
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00238	-0.00240	-0.00238
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00485	0.00490	0.00486
	(A2 * B2 * !Y)	-0.00185	-0.00186	-0.00184
	(A2 * B1 * !B2 * !Y)	0.00592	0.00597	0.00594
	(A2 * B1 * !B2 * !Y)	-0.00077	-0.00079	-0.00077
	(A2 * !B1 * !B2 * Y)	0.00397	0.00399	0.00398
	(A2 * !B1 * !B2 * Y)	-0.00518	-0.00523	-0.00522
	(A1 * !A2 * B2 * !Y)	0.00487	0.00490	0.00494
	(A1 * !A2 * B2 * !Y)	-0.00152	-0.00152	-0.00146
	(A1 * !A2 * B1 * !B2 * !Y)	0.00595	0.00599	0.00602
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00045	-0.00045	-0.00039
	(A1 * !A2 * !B1 * !B2 * Y)	0.00396	0.00403	0.00398
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00504	-0.00519	-0.00518
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00386	0.00388	0.00388
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00523	-0.00523	-0.00522

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00925	0.00929	0.00923
	(A2 * B2 * !Y)	-0.00367	-0.00367	-0.00363
	(A2 * B1 * !B2 * !Y)	0.01139	0.01144	0.01138
	(A2 * B1 * !B2 * !Y)	-0.00153	-0.00153	-0.00148
	(A2 * !B1 * !B2 * Y)	0.00782	0.00780	0.00777
	(A2 * !B1 * !B2 * Y)	-0.01008	-0.01012	-0.01010
	(A1 * !A2 * B2 * !Y)	0.00925	0.00934	0.00939
	(A1 * !A2 * B2 * !Y)	-0.00297	-0.00299	-0.00285
	(A1 * !A2 * B1 * !B2 * !Y)	0.01139	0.01149	0.01154
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00082	-0.00085	-0.00071
	(A1 * !A2 * !B1 * !B2 * Y)	0.00774	0.00785	0.00777
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00975	-0.01002	-0.01002
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00761	0.00759	0.00760
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.01014	-0.01011	-0.01010

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00188	-0.00188	-0.00198
	(A2 * B2 * !Y)	0.00126	0.00126	0.00118
	(A2 * B1 * !B2 * !Y)	-0.00134	-0.00135	-0.00145
	(A2 * B1 * !B2 * !Y)	0.00180	0.00179	0.00172
	(A2 * !B1 * !B2 * Y)	-0.00193	-0.00194	-0.00193
	(A2 * !B1 * !B2 * Y)	0.00247	0.00249	0.00248
	(A1 * !A2 * B2 * !Y)	-0.00126	-0.00128	-0.00153
	(A1 * !A2 * B2 * !Y)	0.00180	0.00180	0.00157
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00073	-0.00075	-0.00100
	(A1 * !A2 * B1 * !B2 * !Y)	0.00233	0.00233	0.00211
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00193	-0.00195	-0.00193
	(A1 * !A2 * !B1 * !B2 * Y)	0.00242	0.00245	0.00243
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00156	-0.00183	-0.00188
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00279	0.00259	0.00250
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00419	-0.00424	-0.00446
	(A2 * B2 * !Y)	0.00246	0.00248	0.00228
	(A2 * B1 * !B2 * !Y)	-0.00311	-0.00316	-0.00338
	(A2 * B1 * !B2 * !Y)	0.00354	0.00356	0.00336
	(A2 * !B1 * !B2 * Y)	-0.00376	-0.00381	-0.00378
	(A2 * !B1 * !B2 * Y)	0.00536	0.00543	0.00539
	(A1 * !A2 * B2 * !Y)	-0.00289	-0.00295	-0.00350
	(A1 * !A2 * B2 * !Y)	0.00359	0.00360	0.00312
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00181	-0.00188	-0.00242
	(A1 * !A2 * B1 * !B2 * !Y)	0.00467	0.00468	0.00420
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00377	-0.00379	-0.00378
	(A1 * !A2 * !B1 * !B2 * Y)	0.00526	0.00529	0.00528
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00300	-0.00368	-0.00368
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00608	0.00557	0.00545

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00781	-0.00790	-0.00834
	(A2 * B2 * !Y)	0.00492	0.00496	0.00458
	(A2 * B1 * !B2 * !Y)	-0.00567	-0.00576	-0.00620
	(A2 * B1 * !B2 * !Y)	0.00707	0.00711	0.00672
	(A2 * !B1 * !B2 * Y)	-0.00733	-0.00741	-0.00737
	(A2 * !B1 * !B2 * Y)	0.01038	0.01050	0.01044
	(A1 * !A2 * B2 * !Y)	-0.00529	-0.00542	-0.00650
	(A1 * !A2 * B2 * !Y)	0.00710	0.00712	0.00618
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00315	-0.00328	-0.00436
	(A1 * !A2 * B1 * !B2 * !Y)	0.00924	0.00927	0.00832
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00736	-0.00740	-0.00737
	(A1 * !A2 * !B1 * !B2 * Y)	0.01016	0.01021	0.01018
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00592	-0.00716	-0.00718
	(!A1 * !A2 * !B1 * !B2 * Y)	0.01173	0.01080	0.01055

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00302	0.00262	0.00322
	(A3 * B2 * !Y)	-0.00168	-0.00210	-0.00143
	(A2 * !A3 * B2 * !Y)	0.00304	0.00265	0.00324
	(A2 * !A3 * B2 * !Y)	-0.00165	-0.00207	-0.00141
	(A1 * !A2 * !A3 * B2 * !Y)	0.00353	0.00314	0.00374
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00116	-0.00158	-0.00091
	(!A1 * !A2 * !A3 * B2 * Y)	0.00072	0.00072	0.00072
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00292	-0.00291	-0.00289
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00083	0.00084	0.00075
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00271	-0.00273	-0.00288

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00607	0.00493	0.00603
	(A3 * B2 * !Y)	-0.00283	-0.00401	-0.00283
	(A2 * !A3 * B2 * !Y)	0.00612	0.00498	0.00608
	(A2 * !A3 * B2 * !Y)	-0.00278	-0.00396	-0.00277
	(A1 * !A2 * !A3 * B2 * !Y)	0.00711	0.00597	0.00707
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00179	-0.00297	-0.00179
	(!A1 * !A2 * !A3 * B2 * Y)	0.00114	0.00114	0.00114
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00577	-0.00578	-0.00573
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00137	0.00137	0.00119
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00535	-0.00539	-0.00572
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.01238	0.01020	0.01244
	(A3 * B2 * !Y)	-0.00593	-0.00813	-0.00572
	(A2 * !A3 * B2 * !Y)	0.01248	0.01031	0.01255
	(A2 * !A3 * B2 * !Y)	-0.00583	-0.00802	-0.00561
	(A1 * !A2 * !A3 * B2 * !Y)	0.01444	0.01228	0.01452
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00386	-0.00605	-0.00364
	(!A1 * !A2 * !A3 * B2 * Y)	0.00228	0.00229	0.00228
	(!A1 * !A2 * !A3 * B2 * Y)	-0.01197	-0.01200	-0.01188
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00275	0.00273	0.00238
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.01118	-0.01121	-0.01187

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00113	-0.00115	-0.00132
	(A3 * B2 * !Y)	0.00352	0.00351	0.00335
	(A2 * !A3 * B2 * !Y)	-0.00110	-0.00115	-0.00130
	(A2 * !A3 * B2 * !Y)	0.00355	0.00357	0.00337
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00061	-0.00063	-0.00080
	(A1 * !A2 * !A3 * B2 * !Y)	0.00405	0.00403	0.00387
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00056	-0.00057	-0.00060
	(!A1 * !A2 * !A3 * B2 * Y)	0.00312	0.00314	0.00303
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00067	-0.00068	-0.00067
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00292	0.00296	0.00293
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00183	-0.00188	-0.00221
	(A3 * B2 * !Y)	0.00708	0.00704	0.00670
	(A2 * !A3 * B2 * !Y)	-0.00178	-0.00183	-0.00216
	(A2 * !A3 * B2 * !Y)	0.00713	0.00709	0.00675
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00080	-0.00085	-0.00117
	(A1 * !A2 * !A3 * B2 * !Y)	0.00812	0.00808	0.00773
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00083	-0.00083	-0.00090
	(!A1 * !A2 * !A3 * B2 * Y)	0.00612	0.00613	0.00599
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00580	0.00587	0.00583
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00402	-0.00419	-0.00482
	(A3 * B2 * !Y)	0.01413	0.01417	0.01343
	(A2 * !A3 * B2 * !Y)	-0.00396	-0.00404	-0.00471
	(A2 * !A3 * B2 * !Y)	0.01432	0.01420	0.01354
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00199	-0.00211	-0.00274
	(A1 * !A2 * !A3 * B2 * !Y)	0.01630	0.01624	0.01551
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00166	-0.00169	-0.00181
	(!A1 * !A2 * !A3 * B2 * Y)	0.01267	0.01280	0.01241
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00208	-0.00210	-0.00206
	(!A1 * !A2 * !A3 * !B2 * Y)	0.01203	0.01216	0.01207

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00234	0.00238	0.00239
	(A3 * B1 * !Y)	-0.00090	-0.00091	-0.00084
	(A2 * !A3 * B1 * !Y)	0.00237	0.00241	0.00241
	(A2 * !A3 * B1 * !Y)	-0.00088	-0.00088	-0.00081
	(A1 * !A2 * !A3 * B1 * !Y)	0.00286	0.00290	0.00291
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00038	-0.00039	-0.00032
	(!A1 * !A2 * !A3 * B1 * Y)	0.00061	0.00061	0.00061
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00295	-0.00296	-0.00293
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00072	0.00072	0.00063
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00275	-0.00276	-0.00292
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00465	0.00472	0.00472
	(A3 * B1 * !Y)	-0.00181	-0.00183	-0.00171
	(A2 * !A3 * B1 * !Y)	0.00471	0.00478	0.00477
	(A2 * !A3 * B1 * !Y)	-0.00176	-0.00177	-0.00166
	(A1 * !A2 * !A3 * B1 * !Y)	0.00570	0.00578	0.00577
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00077	-0.00078	-0.00066
	(!A1 * !A2 * !A3 * B1 * Y)	0.00120	0.00120	0.00120
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00588	-0.00588	-0.00584
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00144	0.00143	0.00125
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00548	-0.00550	-0.00583

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00907	0.00910	0.00927
	(A3 * B1 * !Y)	-0.00351	-0.00351	-0.00336
	(A2 * !A3 * B1 * !Y)	0.00918	0.00925	0.00938
	(A2 * !A3 * B1 * !Y)	-0.00340	-0.00343	-0.00325
	(A1 * !A2 * !A3 * B1 * !Y)	0.01116	0.01123	0.01136
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00142	-0.00145	-0.00126
	(!A1 * !A2 * !A3 * B1 * Y)	0.00231	0.00230	0.00231
	(!A1 * !A2 * !A3 * B1 * Y)	-0.01169	-0.01167	-0.01159
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00275	0.00276	0.00240
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.01085	-0.01095	-0.01158

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00148	-0.00151	-0.00179
	(A3 * B1 * !Y)	0.00176	0.00175	0.00146
	(A2 * !A3 * B1 * !Y)	-0.00145	-0.00149	-0.00176
	(A2 * !A3 * B1 * !Y)	0.00178	0.00178	0.00149
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00096	-0.00099	-0.00127
	(A1 * !A2 * !A3 * B1 * !Y)	0.00227	0.00227	0.00198
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00045	-0.00046	-0.00049
	(!A1 * !A2 * !A3 * B1 * Y)	0.00313	0.00315	0.00306
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00056	-0.00057	-0.00055
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00296	0.00301	0.00297

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00283	-0.00290	-0.00343
	(A3 * B1 * !Y)	0.00362	0.00362	0.00307
	(A2 * !A3 * B1 * !Y)	-0.00278	-0.00286	-0.00338
	(A2 * !A3 * B1 * !Y)	0.00367	0.00367	0.00312
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00181	-0.00186	-0.00239
	(A1 * !A2 * !A3 * B1 * !Y)	0.00469	0.00465	0.00411
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00090	-0.00091	-0.00096
	(!A1 * !A2 * !A3 * B1 * Y)	0.00626	0.00628	0.00609
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00110	-0.00112	-0.00109
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00591	0.00601	0.00593
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00552	-0.00568	-0.00673
	(A3 * B1 * !Y)	0.00715	0.00714	0.00604
	(A2 * !A3 * B1 * !Y)	-0.00541	-0.00554	-0.00663
	(A2 * !A3 * B1 * !Y)	0.00724	0.00722	0.00614
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00349	-0.00358	-0.00465
	(A1 * !A2 * !A3 * B1 * !Y)	0.00928	0.00921	0.00811
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00168	-0.00171	-0.00183
	(!A1 * !A2 * !A3 * B1 * Y)	0.01238	0.01247	0.01210
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00209	-0.00214	-0.00208
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01172	0.01194	0.01178

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00269	0.00262	0.00259	0.00261	0.00264	1.67495
sky130_fd_sc_hs__o32a_2	0.00281	0.00277	0.00280	0.00299	0.00279	3.14025
sky130_fd_sc_hs__o32a_4	0.00484	0.00517	0.00480	0.00640	0.00507	6.17869

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	123.39400	284.44300
sky130_fd_sc_hs__o32a_2	0.00000	164.78000	287.25400
sky130_fd_sc_hs__o32a_4	0.00000	332.54200	573.91600

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)	0.07593	0.43421	5.24454
	A2->X (RR)	0.07320	0.42655	5.06867
	A3->X (RR)	0.06449	0.40905	4.95137
	B1->X (RR)	0.06770	0.46472	5.87911
	B2->X (RR)	0.05952	0.44078	5.62646
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.07787	0.35814	4.95877
	A2->X (RR)	0.07581	0.35204	4.79834
	A3->X (RR)	0.06797	0.33754	4.69098
	B1->X (RR)	0.07016	0.39182	5.58746
	B2->X (RR)	0.06221	0.36914	5.32448
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.09180	0.32267	5.31996
	A2->X (RR)	0.08457	0.30731	5.08717
	A3->X (RR)	0.07235	0.28695	4.94146
	B1->X (RR)	0.08485	0.36469	5.94602
	B2->X (RR)	0.07154	0.33601	5.67983

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.14078	0.52613	5.83536
	A2->X (FF)	0.12932	0.56529	6.19867
	A3->X (FF)	0.10980	0.57436	6.33354
	B1->X (FF)	0.07236	0.44339	5.61529
	B2->X (FF)	0.06224	0.46080	5.87726
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.17030	0.53697	5.81438
	A2->X (FF)	0.16098	0.56706	6.15681
	A3->X (FF)	0.14204	0.57959	6.29068
	B1->X (FF)	0.09282	0.43414	5.54051
	B2->X (FF)	0.08186	0.45707	5.80620
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.18166	0.50577	6.17618
	A2->X (FF)	0.16724	0.53815	6.35421
	A3->X (FF)	0.13863	0.54727	6.49316
	B1->X (FF)	0.08888	0.39120	5.68882
	B2->X (FF)	0.07565	0.41025	5.95067

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.02034	0.02746	0.18019
	A1	0.00900	0.01614	0.16876
	A2	0.01808	0.02535	0.16266
	A2	0.00821	0.01550	0.15276
	A3	0.01707	0.02513	0.16978
	A3	0.00848	0.01654	0.16115
	B1	0.01503	0.02807	0.24743
	B1	0.00782	0.02087	0.24062
	B2	0.01409	0.02769	0.24782
	B2	0.00834	0.02194	0.24248
sky130_fd_sc_hs__o32a_2	A1	0.02551	0.03252	0.18599
	A1	0.01327	0.02033	0.17355
	A2	0.02320	0.03038	0.16711
	A2	0.01598	0.02283	0.15809
	A3	0.02206	0.03002	0.17387
	A3	0.01251	0.02048	0.16458
	B1	0.01969	0.03235	0.24957
	B1	0.01163	0.02435	0.24190
	B2	0.01839	0.03158	0.24965
	B2	0.01217	0.02536	0.24320

sky130_fd_sc_hs__o32a_4	**A1**	0.05180	0.06821	0.43192
	A1	0.02957	0.04599	0.40917
	A2	0.04595	0.06218	0.38376
	A2	0.02613	0.04252	0.36344
	A3	0.04134	0.05969	0.38737
	A3	0.02492	0.04336	0.37061
	B1	0.03894	0.06348	0.46887
	B1	0.02376	0.04837	0.45517
	B2	0.03525	0.06143	0.46697
	B2	0.02430	0.05054	0.45550

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.01096	0.01618	0.18046
	A1	0.02320	0.02797	0.19110
	A2	0.01145	0.01619	0.17377
	A2	0.02183	0.02656	0.18302
	A3	0.01140	0.01790	0.18128
	A3	0.02050	0.02699	0.19040
	B1	0.00692	0.01802	0.22735
	B1	0.01411	0.02516	0.23289
	B2	0.00695	0.01954	0.23086
	B2	0.01269	0.02527	0.23637

sky130_fd_sc_hs__o32a_2	**A1**	0.02611	0.02378	0.18577
	A1	0.03871	0.03636	0.19833
	A2	0.02626	0.02376	0.18571
	A2	0.03742	0.03491	0.18787
	A3	0.02619	0.02561	0.18958
	A3	0.03611	0.03552	0.19598
	B1	0.01767	0.02369	0.22023
	B1	0.02701	0.03302	0.22758
	B2	0.01858	0.02569	0.21121
	B2	0.02728	0.03413	0.21973
sky130_fd_sc_hs__o32a_4	**A1**	0.05498	0.04856	0.39391
	A1	0.07838	0.07197	0.41534
	A2	0.05499	0.04879	0.35935
	A2	0.07601	0.06977	0.37182
	A3	0.05498	0.05262	0.36910
	A3	0.07260	0.07021	0.38179
	B1	0.03555	0.04708	0.44564
	B1	0.05363	0.06512	0.46343
	B2	0.03662	0.05076	0.43918
	B2	0.05303	0.06697	0.45268

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)**	0.00236	0.00218	0.00214
	(A2 * A3 * B2 * X)	-0.00182	-0.00205	-0.00203
	(A2 * A3 * B1 * !B2 * X)	0.00294	0.00276	0.00272
	(A2 * A3 * B1 * !B2 * X)	-0.00124	-0.00147	-0.00145
	(A2 * !B1 * !B2 * !X)	0.00285	0.00286	0.00284
	(A2 * !B1 * !B2 * !X)	-0.00134	-0.00135	-0.00133
	(A2 * !A3 * B2 * X)	0.00284	0.00246	0.00270
	(A2 * !A3 * B2 * X)	-0.00141	-0.00182	-0.00149
	(A2 * !A3 * B1 * !B2 * X)	0.00342	0.00304	0.00328
	(A2 * !A3 * B1 * !B2 * X)	-0.00083	-0.00124	-0.00091
	(!A2 * A3 * B2 * X)	0.00315	0.00272	0.00323
	(!A2 * A3 * B2 * X)	-0.00116	-0.00164	-0.00100
	(!A2 * A3 * B1 * !B2 * X)	0.00373	0.00330	0.00381
	(!A2 * A3 * B1 * !B2 * X)	-0.00058	-0.00106	-0.00042
	(!A2 * A3 * !B1 * !B2 * !X)	0.00283	0.00286	0.00284
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00127	-0.00134	-0.00132
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00283	0.00284	0.00282
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00135	-0.00135	-0.00135

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00260	0.00238	0.00238
	(A2 * A3 * B2 * X)	-0.00180	-0.00200	-0.00201
	(A2 * A3 * B1 * !B2 * X)	0.00318	0.00296	0.00296
	(A2 * A3 * B1 * !B2 * X)	-0.00122	-0.00143	-0.00143
	(A2 * !B1 * !B2 * !X)	0.00407	0.00409	0.00407
	(A2 * !B1 * !B2 * !X)	-0.00033	-0.00034	-0.00033
	(A2 * !A3 * B2 * X)	0.00308	0.00271	0.00295
	(A2 * !A3 * B2 * X)	-0.00139	-0.00180	-0.00147
	(A2 * !A3 * B1 * !B2 * X)	0.00366	0.00329	0.00353
	(A2 * !A3 * B1 * !B2 * X)	-0.00081	-0.00122	-0.00089
	(!A2 * A3 * B2 * X)	0.00339	0.00297	0.00348
	(!A2 * A3 * B2 * X)	-0.00114	-0.00162	-0.00097
	(!A2 * A3 * B1 * !B2 * X)	0.00397	0.00355	0.00406
	(!A2 * A3 * B1 * !B2 * X)	-0.00056	-0.00104	-0.00039
	(!A2 * A3 * !B1 * !B2 * !X)	0.00406	0.00409	0.00407
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00027	-0.00033	-0.00031
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00404	0.00405	0.00403
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00034	-0.00034	-0.00033

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00436	0.00388	0.00382
	(A2 * A3 * B2 * X)	-0.00354	-0.00405	-0.00407
	(A2 * A3 * B1 * !B2 * X)	0.00552	0.00504	0.00498
	(A2 * A3 * B1 * !B2 * X)	-0.00238	-0.00290	-0.00291
	(A2 * !B1 * !B2 * !X)	0.00779	0.00779	0.00778
	(A2 * !B1 * !B2 * !X)	-0.00009	-0.00012	-0.00010
	(A2 * !A3 * B2 * X)	0.00556	0.00458	0.00498
	(A2 * !A3 * B2 * X)	-0.00250	-0.00351	-0.00296
	(A2 * !A3 * B1 * !B2 * X)	0.00672	0.00574	0.00614
	(A2 * !A3 * B1 * !B2 * X)	-0.00134	-0.00235	-0.00180
	(!A2 * A3 * B2 * X)	0.00622	0.00506	0.00601
	(!A2 * A3 * B2 * X)	-0.00201	-0.00319	-0.00200
	(!A2 * A3 * B1 * !B2 * X)	0.00738	0.00622	0.00716
	(!A2 * A3 * B1 * !B2 * X)	-0.00085	-0.00203	-0.00084
	(!A2 * A3 * !B1 * !B2 * !X)	0.00779	0.00781	0.00778
	(!A2 * A3 * !B1 * !B2 * !X)	0.00003	-0.00008	-0.00008
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00774	0.00777	0.00773
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00015	-0.00016	-0.00014

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)**	-0.00182	-0.00183	-0.00183
	(A2 * A3 * B2 * X)	0.00235	0.00236	0.00235
	(A2 * A3 * B1 * !B2 * X)	-0.00124	-0.00125	-0.00125
	(A2 * A3 * B1 * !B2 * X)	0.00293	0.00294	0.00293
	(A2 * !B1 * !B2 * !X)	-0.00058	-0.00058	-0.00057
	(A2 * !B1 * !B2 * !X)	0.00360	0.00362	0.00360
	(A2 * !A3 * B2 * X)	-0.00131	-0.00133	-0.00142
	(A2 * !A3 * B2 * X)	0.00292	0.00292	0.00281
	(A2 * !A3 * B1 * !B2 * X)	-0.00073	-0.00075	-0.00084
	(A2 * !A3 * B1 * !B2 * X)	0.00350	0.00350	0.00339
	(!A2 * A3 * B2 * X)	-0.00068	-0.00072	-0.00091
	(!A2 * A3 * B2 * X)	0.00360	0.00359	0.00338
	(!A2 * A3 * B1 * !B2 * X)	-0.00010	-0.00014	-0.00033
	(!A2 * A3 * B1 * !B2 * X)	0.00418	0.00417	0.00396
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00057	-0.00058	-0.00057
	(!A2 * A3 * !B1 * !B2 * !X)	0.00356	0.00359	0.00357
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00028	-0.00052	-0.00053
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00389	0.00369	0.00362

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00202	-0.00203	-0.00202
	(A2 * A3 * B2 * X)	0.00238	0.00239	0.00238
	(A2 * A3 * B1 * !B2 * X)	-0.00144	-0.00145	-0.00144
	(A2 * A3 * B1 * !B2 * X)	0.00296	0.00297	0.00296
	(A2 * !B1 * !B2 * !X)	0.00019	0.00018	0.00020
	(A2 * !B1 * !B2 * !X)	0.00459	0.00461	0.00459
	(A2 * !A3 * B2 * X)	-0.00151	-0.00153	-0.00161
	(A2 * !A3 * B2 * X)	0.00295	0.00295	0.00284
	(A2 * !A3 * B1 * !B2 * X)	-0.00093	-0.00095	-0.00103
	(A2 * !A3 * B1 * !B2 * X)	0.00353	0.00353	0.00342
	(!A2 * A3 * B2 * X)	-0.00087	-0.00092	-0.00110
	(!A2 * A3 * B2 * X)	0.00363	0.00362	0.00341
	(!A2 * A3 * B1 * !B2 * X)	-0.00030	-0.00034	-0.00052
	(!A2 * A3 * B1 * !B2 * X)	0.00421	0.00420	0.00399
	(!A2 * A3 * !B1 * !B2 * !X)	0.00020	0.00019	0.00020
	(!A2 * A3 * !B1 * !B2 * !X)	0.00454	0.00457	0.00455
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00052	0.00027	0.00024
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00486	0.00467	0.00461

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00310	-0.00311	-0.00309
	(A2 * A3 * B2 * X)	0.00478	0.00481	0.00480
	(A2 * A3 * B1 * !B2 * X)	-0.00194	-0.00195	-0.00193
	(A2 * A3 * B1 * !B2 * X)	0.00594	0.00597	0.00596
	(A2 * !B1 * !B2 * !X)	0.00091	0.00089	0.00091
	(A2 * !B1 * !B2 * !X)	0.00878	0.00883	0.00878
	(A2 * !A3 * B2 * X)	-0.00210	-0.00216	-0.00232
	(A2 * !A3 * B2 * X)	0.00590	0.00593	0.00571
	(A2 * !A3 * B1 * !B2 * X)	-0.00094	-0.00100	-0.00116
	(A2 * !A3 * B1 * !B2 * X)	0.00706	0.00709	0.00687
	(!A2 * A3 * B2 * X)	-0.00079	-0.00086	-0.00124
	(!A2 * A3 * B2 * X)	0.00731	0.00729	0.00689
	(!A2 * A3 * B1 * !B2 * X)	0.00036	0.00030	-0.00008
	(!A2 * A3 * B1 * !B2 * X)	0.00847	0.00845	0.00805
	(!A2 * A3 * !B1 * !B2 * !X)	0.00092	0.00090	0.00091
	(!A2 * A3 * !B1 * !B2 * !X)	0.00869	0.00872	0.00870
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00162	0.00107	0.00100
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00949	0.00904	0.00885

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)**	0.00216	0.00219	0.00213
	(A1 * A3 * B2 * X)	-0.00115	-0.00114	-0.00115
	(A1 * A3 * B1 * !B2 * X)	0.00274	0.00277	0.00271
	(A1 * A3 * B1 * !B2 * X)	-0.00057	-0.00056	-0.00057
	(A1 * A3 * !B1 * !B2 * !X)	0.00287	0.00288	0.00287
	(A1 * A3 * !B1 * !B2 * !X)	-0.00053	-0.00053	-0.00047
	(A1 * !A3 * B2 * X)	0.00217	0.00219	0.00219
	(A1 * !A3 * B2 * X)	-0.00069	-0.00070	-0.00068
	(A1 * !A3 * B1 * !B2 * X)	0.00275	0.00277	0.00277
	(A1 * !A3 * B1 * !B2 * X)	-0.00011	-0.00012	-0.00010
	(A1 * !A3 * !B1 * !B2 * !X)	0.00288	0.00287	0.00287
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00111	-0.00110	-0.00110
	(!A1 * A3 * B2 * X)	0.00287	0.00236	0.00304
	(!A1 * A3 * B2 * X)	-0.00117	-0.00169	-0.00095
	(!A1 * A3 * B1 * !B2 * X)	0.00345	0.00294	0.00362
	(!A1 * A3 * B1 * !B2 * X)	-0.00059	-0.00111	-0.00037
	(!A1 * A3 * !B1 * !B2 * !X)	0.00288	0.00289	0.00287
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00111	-0.00111	-0.00109
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00286	0.00287	0.00285
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00111	-0.00111	-0.00110

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00242	0.00245	0.00239
	(A1 * A3 * B2 * X)	-0.00113	-0.00112	-0.00113
	(A1 * A3 * B1 * !B2 * X)	0.00300	0.00303	0.00297
	(A1 * A3 * B1 * !B2 * X)	-0.00055	-0.00054	-0.00055
	(A1 * A3 * !B1 * !B2 * !X)	0.00410	0.00411	0.00410
	(A1 * A3 * !B1 * !B2 * !X)	0.00046	0.00045	0.00052
	(A1 * !A3 * B2 * X)	0.00243	0.00244	0.00245
	(A1 * !A3 * B2 * X)	-0.00068	-0.00068	-0.00066
	(A1 * !A3 * B1 * !B2 * X)	0.00301	0.00303	0.00303
	(A1 * !A3 * B1 * !B2 * X)	-0.00010	-0.00010	-0.00008
	(A1 * !A3 * !B1 * !B2 * !X)	0.00410	0.00411	0.00409
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00013	-0.00014	-0.00012
	(!A1 * A3 * B2 * X)	0.00313	0.00262	0.00330
	(!A1 * A3 * B2 * X)	-0.00116	-0.00167	-0.00094
	(!A1 * A3 * B1 * !B2 * X)	0.00371	0.00320	0.00388
	(!A1 * A3 * B1 * !B2 * X)	-0.00058	-0.00109	-0.00036
	(!A1 * A3 * !B1 * !B2 * !X)	0.00411	0.00412	0.00410
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00013	-0.00012	-0.00011
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00406	0.00407	0.00406
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00012	-0.00012	-0.00012

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00428	0.00437	0.00418
	(A1 * A3 * B2 * X)	-0.00257	-0.00251	-0.00259
	(A1 * A3 * B1 * !B2 * X)	0.00544	0.00553	0.00533
	(A1 * A3 * B1 * !B2 * X)	-0.00141	-0.00135	-0.00143
	(A1 * A3 * !B1 * !B2 * !X)	0.00787	0.00787	0.00786
	(A1 * A3 * !B1 * !B2 * !X)	0.00079	0.00080	0.00097
	(A1 * !A3 * B2 * X)	0.00452	0.00457	0.00447
	(A1 * !A3 * B2 * X)	-0.00146	-0.00150	-0.00145
	(A1 * !A3 * B1 * !B2 * X)	0.00568	0.00573	0.00562
	(A1 * !A3 * B1 * !B2 * X)	-0.00030	-0.00034	-0.00029
	(A1 * !A3 * !B1 * !B2 * !X)	0.00786	0.00784	0.00782
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00043	-0.00043	-0.00041
	(!A1 * A3 * B2 * X)	0.00601	0.00482	0.00605
	(!A1 * A3 * B2 * X)	-0.00241	-0.00361	-0.00225
	(!A1 * A3 * B1 * !B2 * X)	0.00717	0.00598	0.00721
	(!A1 * A3 * B1 * !B2 * X)	-0.00125	-0.00245	-0.00109
	(!A1 * A3 * !B1 * !B2 * !X)	0.00787	0.00789	0.00786
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00041	-0.00041	-0.00037
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00780	0.00783	0.00780
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00040	-0.00042	-0.00040

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)**	-0.00173	-0.00174	-0.00172
	(A1 * A3 * B2 * X)	0.00150	0.00152	0.00149
	(A1 * A3 * B1 * !B2 * X)	-0.00115	-0.00116	-0.00114
	(A1 * A3 * B1 * !B2 * X)	0.00208	0.00210	0.00207
	(A1 * A3 * !B1 * !B2 * !X)	-0.00061	-0.00062	-0.00061
	(A1 * A3 * !B1 * !B2 * !X)	0.00275	0.00276	0.00270
	(A1 * !A3 * B2 * X)	-0.00122	-0.00125	-0.00157
	(A1 * !A3 * B2 * X)	0.00165	0.00164	0.00133
	(A1 * !A3 * B1 * !B2 * X)	-0.00065	-0.00067	-0.00099
	(A1 * !A3 * B1 * !B2 * X)	0.00223	0.00222	0.00191
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00059	-0.00062	-0.00060
	(A1 * !A3 * !B1 * !B2 * !X)	0.00336	0.00338	0.00337
	(!A1 * A3 * B2 * X)	-0.00052	-0.00057	-0.00077
	(!A1 * A3 * B2 * X)	0.00349	0.00348	0.00325
	(!A1 * A3 * B1 * !B2 * X)	0.00005	0.00001	-0.00019
	(!A1 * A3 * B1 * !B2 * X)	0.00407	0.00406	0.00383
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * A3 * !B1 * !B2 * !X)	0.00336	0.00338	0.00336
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00027	-0.00053	-0.00056
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00368	0.00347	0.00338

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00194	-0.00195	-0.00193
	(A1 * A3 * B2 * X)	0.00154	0.00155	0.00152
	(A1 * A3 * B1 * !B2 * X)	-0.00136	-0.00137	-0.00135
	(A1 * A3 * B1 * !B2 * X)	0.00212	0.00213	0.00210
	(A1 * A3 * !B1 * !B2 * !X)	0.00017	0.00015	0.00016
	(A1 * A3 * !B1 * !B2 * !X)	0.00376	0.00378	0.00371
	(A1 * !A3 * B2 * X)	-0.00143	-0.00146	-0.00178
	(A1 * !A3 * B2 * X)	0.00168	0.00167	0.00136
	(A1 * !A3 * B1 * !B2 * X)	-0.00085	-0.00088	-0.00120
	(A1 * !A3 * B1 * !B2 * X)	0.00226	0.00225	0.00194
	(A1 * !A3 * !B1 * !B2 * !X)	0.00019	0.00016	0.00018
	(A1 * !A3 * !B1 * !B2 * !X)	0.00439	0.00440	0.00439
	(!A1 * A3 * B2 * X)	-0.00073	-0.00078	-0.00098
	(!A1 * A3 * B2 * X)	0.00353	0.00352	0.00328
	(!A1 * A3 * B1 * !B2 * X)	-0.00015	-0.00020	-0.00040
	(!A1 * A3 * B1 * !B2 * X)	0.00410	0.00409	0.00386
	(!A1 * A3 * !B1 * !B2 * !X)	0.00017	0.00015	0.00016
	(!A1 * A3 * !B1 * !B2 * !X)	0.00436	0.00439	0.00437
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00053	0.00026	0.00022
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00468	0.00447	0.00439

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00327	-0.00328	-0.00324
	(A1 * A3 * B2 * X)	0.00339	0.00340	0.00336
	(A1 * A3 * B1 * !B2 * X)	-0.00211	-0.00212	-0.00208
	(A1 * A3 * B1 * !B2 * X)	0.00454	0.00456	0.00452
	(A1 * A3 * !B1 * !B2 * !X)	0.00084	0.00083	0.00084
	(A1 * A3 * !B1 * !B2 * !X)	0.00773	0.00774	0.00764
	(A1 * !A3 * B2 * X)	-0.00250	-0.00256	-0.00312
	(A1 * !A3 * B2 * X)	0.00350	0.00348	0.00289
	(A1 * !A3 * B1 * !B2 * X)	-0.00135	-0.00140	-0.00197
	(A1 * !A3 * B1 * !B2 * X)	0.00466	0.00464	0.00405
	(A1 * !A3 * !B1 * !B2 * !X)	0.00089	0.00084	0.00087
	(A1 * !A3 * !B1 * !B2 * !X)	0.00912	0.00913	0.00910
	(!A1 * A3 * B2 * X)	-0.00088	-0.00097	-0.00138
	(!A1 * A3 * B2 * X)	0.00746	0.00744	0.00697
	(!A1 * A3 * B1 * !B2 * X)	0.00028	0.00019	-0.00023
	(!A1 * A3 * B1 * !B2 * X)	0.00862	0.00860	0.00813
	(!A1 * A3 * !B1 * !B2 * !X)	0.00085	0.00082	0.00084
	(!A1 * A3 * !B1 * !B2 * !X)	0.00904	0.00908	0.00906
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00157	0.00101	0.00094
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00977	0.00931	0.00912

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00205	0.00207	0.00205
	(A2 * B2 * X)	-0.00081	-0.00082	-0.00081
	(A2 * B1 * !B2 * X)	0.00263	0.00265	0.00263
	(A2 * B1 * !B2 * X)	-0.00023	-0.00024	-0.00023
	(A2 * !B1 * !B2 * !X)	0.00287	0.00289	0.00287
	(A2 * !B1 * !B2 * !X)	-0.00109	-0.00112	-0.00110
	(A1 * !A2 * B2 * X)	0.00206	0.00207	0.00210
	(A1 * !A2 * B2 * X)	-0.00065	-0.00065	-0.00061
	(A1 * !A2 * B1 * !B2 * X)	0.00264	0.00265	0.00268
	(A1 * !A2 * B1 * !B2 * X)	-0.00007	-0.00007	-0.00003
	(A1 * !A2 * !B1 * !B2 * !X)	0.00289	0.00289	0.00287
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00105	-0.00109	-0.00109
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00287	0.00288	0.00286
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00111	-0.00111	-0.00111
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00235	0.00237	0.00236
	(A2 * B2 * X)	-0.00079	-0.00080	-0.00079
	(A2 * B1 * !B2 * X)	0.00293	0.00295	0.00294
	(A2 * B1 * !B2 * X)	-0.00021	-0.00022	-0.00021
	(A2 * !B1 * !B2 * !X)	0.00409	0.00411	0.00409
	(A2 * !B1 * !B2 * !X)	-0.00015	-0.00018	-0.00016
	(A1 * !A2 * B2 * X)	0.00236	0.00238	0.00240
	(A1 * !A2 * B2 * X)	-0.00062	-0.00062	-0.00059
	(A1 * !A2 * B1 * !B2 * X)	0.00294	0.00296	0.00298
	(A1 * !A2 * B1 * !B2 * X)	-0.00004	-0.00005	-0.00001
	(A1 * !A2 * !B1 * !B2 * !X)	0.00411	0.00410	0.00409
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00011	-0.00015	-0.00015
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00406	0.00407	0.00407
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00016	-0.00016	-0.00016

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00390	0.00393	0.00391
	(A2 * B2 * X)	-0.00158	-0.00160	-0.00158
	(A2 * B1 * !B2 * X)	0.00506	0.00509	0.00507
	(A2 * B1 * !B2 * X)	-0.00042	-0.00044	-0.00042
	(A2 * !B1 * !B2 * !X)	0.00771	0.00775	0.00771
	(A2 * !B1 * !B2 * !X)	0.00002	-0.00006	-0.00003
	(A1 * !A2 * B2 * X)	0.00392	0.00400	0.00399
	(A1 * !A2 * B2 * X)	-0.00125	-0.00129	-0.00119
	(A1 * !A2 * B1 * !B2 * X)	0.00508	0.00516	0.00515
	(A1 * !A2 * B1 * !B2 * X)	-0.00009	-0.00013	-0.00003
	(A1 * !A2 * !B1 * !B2 * !X)	0.00772	0.00774	0.00771
	(A1 * !A2 * !B1 * !B2 * !X)	0.00015	0.00001	0.00000
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00772	0.00773	0.00770
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00004	-0.00005	-0.00004

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00170	-0.00170	-0.00179
	(A2 * B2 * X)	0.00115	0.00115	0.00109
	(A2 * B1 * !B2 * X)	-0.00112	-0.00112	-0.00121
	(A2 * B1 * !B2 * X)	0.00173	0.00173	0.00167
	(A2 * !B1 * !B2 * !X)	-0.00060	-0.00062	-0.00061
	(A2 * !B1 * !B2 * !X)	0.00336	0.00337	0.00336
	(A1 * !A2 * B2 * X)	-0.00104	-0.00106	-0.00131
	(A1 * !A2 * B2 * X)	0.00173	0.00173	0.00150
	(A1 * !A2 * B1 * !B2 * X)	-0.00046	-0.00048	-0.00073
	(A1 * !A2 * B1 * !B2 * X)	0.00231	0.00231	0.00208
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00060	-0.00061	-0.00061
	(A1 * !A2 * !B1 * !B2 * !X)	0.00331	0.00331	0.00332
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00028	-0.00054	-0.00057
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00369	0.00346	0.00338
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00195	-0.00196	-0.00204
	(A2 * B2 * X)	0.00118	0.00118	0.00111
	(A2 * B1 * !B2 * X)	-0.00137	-0.00138	-0.00147
	(A2 * B1 * !B2 * X)	0.00176	0.00176	0.00169
	(A2 * !B1 * !B2 * !X)	0.00019	0.00016	0.00017
	(A2 * !B1 * !B2 * !X)	0.00442	0.00443	0.00442
	(A1 * !A2 * B2 * X)	-0.00129	-0.00132	-0.00156
	(A1 * !A2 * B2 * X)	0.00176	0.00175	0.00152
	(A1 * !A2 * B1 * !B2 * X)	-0.00071	-0.00074	-0.00098
	(A1 * !A2 * B1 * !B2 * X)	0.00234	0.00233	0.00210
	(A1 * !A2 * !B1 * !B2 * !X)	0.00018	0.00017	0.00017
	(A1 * !A2 * !B1 * !B2 * !X)	0.00438	0.00437	0.00437
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00054	0.00026	0.00022
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00474	0.00452	0.00443

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00308	-0.00310	-0.00334
	(A2 * B2 * X)	0.00237	0.00237	0.00219
	(A2 * B1 * !B2 * X)	-0.00193	-0.00194	-0.00218
	(A2 * B1 * !B2 * X)	0.00353	0.00353	0.00335
	(A2 * !B1 * !B2 * !X)	0.00101	0.00095	0.00098
	(A2 * !B1 * !B2 * !X)	0.00871	0.00872	0.00869
	(A1 * !A2 * B2 * X)	-0.00173	-0.00177	-0.00233
	(A1 * !A2 * B2 * X)	0.00357	0.00356	0.00307
	(A1 * !A2 * B1 * !B2 * X)	-0.00058	-0.00061	-0.00118
	(A1 * !A2 * B1 * !B2 * X)	0.00473	0.00472	0.00423
	(A1 * !A2 * !B1 * !B2 * !X)	0.00100	0.00095	0.00098
	(A1 * !A2 * !B1 * !B2 * !X)	0.00858	0.00861	0.00858
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00166	0.00112	0.00105
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00938	0.00892	0.00875

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00286	0.00248	0.00319
	(A3 * B2 * X)	-0.00143	-0.00185	-0.00108
	(A2 * !A3 * B2 * X)	0.00289	0.00251	0.00322
	(A2 * !A3 * B2 * X)	-0.00140	-0.00183	-0.00105
	(A1 * !A2 * !A3 * B2 * X)	0.00341	0.00303	0.00374
	(A1 * !A2 * !A3 * B2 * X)	-0.00088	-0.00130	-0.00053
	(!A1 * !A2 * !A3 * B2 * !X)	0.00174	0.00173	0.00174
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00170	-0.00168	-0.00166
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00185	0.00185	0.00176
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00147	-0.00149	-0.00165

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00330	0.00291	0.00362
	(A3 * B2 * X)	-0.00162	-0.00203	-0.00125
	(A2 * !A3 * B2 * X)	0.00332	0.00293	0.00365
	(A2 * !A3 * B2 * X)	-0.00159	-0.00201	-0.00122
	(A1 * !A2 * !A3 * B2 * X)	0.00385	0.00346	0.00417
	(A1 * !A2 * !A3 * B2 * X)	-0.00107	-0.00148	-0.00069
	(!A1 * !A2 * !A3 * B2 * !X)	0.00287	0.00287	0.00287
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00101	-0.00100	-0.00098
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00298	0.00299	0.00289
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00080	-0.00082	-0.00098
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00624	0.00537	0.00674
	(A3 * B2 * X)	-0.00333	-0.00424	-0.00276
	(A2 * !A3 * B2 * X)	0.00632	0.00545	0.00681
	(A2 * !A3 * B2 * X)	-0.00325	-0.00416	-0.00269
	(A1 * !A2 * !A3 * B2 * X)	0.00746	0.00661	0.00798
	(A1 * !A2 * !A3 * B2 * X)	-0.00213	-0.00303	-0.00155
	(!A1 * !A2 * !A3 * B2 * !X)	0.00536	0.00538	0.00538
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00250	-0.00253	-0.00244
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00559	0.00561	0.00541
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00207	-0.00211	-0.00243

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00071	-0.00076	-0.00097
	(A3 * B2 * X)	0.00356	0.00355	0.00333
	(A2 * !A3 * B2 * X)	-0.00069	-0.00073	-0.00094
	(A2 * !A3 * B2 * X)	0.00358	0.00357	0.00335
	(A1 * !A2 * !A3 * B2 * X)	-0.00016	-0.00021	-0.00041
	(A1 * !A2 * !A3 * B2 * X)	0.00411	0.00411	0.00388
	(!A1 * !A2 * !A3 * B2 * !X)	0.00057	0.00057	0.00054
	(!A1 * !A2 * !A3 * B2 * !X)	0.00402	0.00404	0.00394
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00044	0.00043	0.00045
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00378	0.00382	0.00380
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00110	-0.00114	-0.00135
	(A3 * B2 * X)	0.00378	0.00377	0.00354
	(A2 * !A3 * B2 * X)	-0.00108	-0.00112	-0.00132
	(A2 * !A3 * B2 * X)	0.00380	0.00379	0.00357
	(A1 * !A2 * !A3 * B2 * X)	-0.00055	-0.00060	-0.00080
	(A1 * !A2 * !A3 * B2 * X)	0.00433	0.00433	0.00409
	(!A1 * !A2 * !A3 * B2 * !X)	0.00146	0.00145	0.00142
	(!A1 * !A2 * !A3 * B2 * !X)	0.00537	0.00537	0.00528
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00135	0.00134	0.00135
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00518	0.00520	0.00519
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00168	-0.00175	-0.00217
	(A3 * B2 * X)	0.00785	0.00781	0.00738
	(A2 * !A3 * B2 * X)	-0.00166	-0.00176	-0.00214
	(A2 * !A3 * B2 * X)	0.00786	0.00789	0.00741
	(A1 * !A2 * !A3 * B2 * X)	-0.00073	-0.00080	-0.00122
	(A1 * !A2 * !A3 * B2 * X)	0.00883	0.00880	0.00837
	(!A1 * !A2 * !A3 * B2 * !X)	0.00343	0.00341	0.00335
	(!A1 * !A2 * !A3 * B2 * !X)	0.01130	0.01132	0.01117
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00315	0.00312	0.00316
	(!A1 * !A2 * !A3 * !B2 * !X)	0.01087	0.01100	0.01090

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00212	0.00216	0.00217
	(A3 * B1 * X)	-0.00082	-0.00083	-0.00076
	(A2 * !A3 * B1 * X)	0.00215	0.00218	0.00220
	(A2 * !A3 * B1 * X)	-0.00080	-0.00081	-0.00074
	(A1 * !A2 * !A3 * B1 * X)	0.00267	0.00271	0.00272
	(A1 * !A2 * !A3 * B1 * X)	-0.00027	-0.00028	-0.00021
	(!A1 * !A2 * !A3 * B1 * !X)	0.00162	0.00161	0.00161
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00166	-0.00167	-0.00163
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00173	0.00173	0.00164
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00144	-0.00145	-0.00161
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00238	0.00242	0.00243
	(A3 * B1 * X)	-0.00080	-0.00081	-0.00074
	(A2 * !A3 * B1 * X)	0.00240	0.00244	0.00245
	(A2 * !A3 * B1 * X)	-0.00078	-0.00079	-0.00072
	(A1 * !A2 * !A3 * B1 * X)	0.00293	0.00297	0.00298
	(A1 * !A2 * !A3 * B1 * X)	-0.00025	-0.00026	-0.00019
	(!A1 * !A2 * !A3 * B1 * !X)	0.00268	0.00267	0.00267
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00067	-0.00069	-0.00066
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00281	0.00280	0.00271
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00047	-0.00048	-0.00065

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00412	0.00413	0.00423
	(A3 * B1 * X)	-0.00157	-0.00157	-0.00147
	(A2 * !A3 * B1 * X)	0.00418	0.00420	0.00428
	(A2 * !A3 * B1 * X)	-0.00152	-0.00153	-0.00142
	(A1 * !A2 * !A3 * B1 * X)	0.00523	0.00525	0.00534
	(A1 * !A2 * !A3 * B1 * X)	-0.00047	-0.00048	-0.00037
	(!A1 * !A2 * !A3 * B1 * !X)	0.00531	0.00529	0.00529
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00116	-0.00118	-0.00112
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00556	0.00556	0.00536
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00071	-0.00074	-0.00106

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00116	-0.00120	-0.00151
	(A3 * B1 * X)	0.00177	0.00176	0.00145
	(A2 * !A3 * B1 * X)	-0.00115	-0.00118	-0.00149
	(A2 * !A3 * B1 * X)	0.00181	0.00179	0.00147
	(A1 * !A2 * !A3 * B1 * X)	-0.00063	-0.00065	-0.00096
	(A1 * !A2 * !A3 * B1 * X)	0.00234	0.00231	0.00200
	(!A1 * !A2 * !A3 * B1 * !X)	0.00072	0.00070	0.00067
	(!A1 * !A2 * !A3 * B1 * !X)	0.00399	0.00399	0.00391
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00056	0.00055	0.00057
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00376	0.00380	0.00377

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00137	-0.00141	-0.00173
	(A3 * B1 * X)	0.00180	0.00179	0.00147
	(A2 * !A3 * B1 * X)	-0.00135	-0.00139	-0.00170
	(A2 * !A3 * B1 * X)	0.00182	0.00182	0.00150
	(A1 * !A2 * !A3 * B1 * X)	-0.00082	-0.00086	-0.00117
	(A1 * !A2 * !A3 * B1 * X)	0.00235	0.00234	0.00202
	(!A1 * !A2 * !A3 * B1 * !X)	0.00168	0.00164	0.00161
	(!A1 * !A2 * !A3 * B1 * !X)	0.00506	0.00505	0.00496
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00153	0.00152	0.00153
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00485	0.00487	0.00486
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00214	-0.00223	-0.00282
	(A3 * B1 * X)	0.00360	0.00361	0.00295
	(A2 * !A3 * B1 * X)	-0.00208	-0.00215	-0.00277
	(A2 * !A3 * B1 * X)	0.00365	0.00363	0.00300
	(A1 * !A2 * !A3 * B1 * X)	-0.00104	-0.00109	-0.00172
	(A1 * !A2 * !A3 * B1 * X)	0.00472	0.00469	0.00406
	(!A1 * !A2 * !A3 * B1 * !X)	0.00358	0.00347	0.00343
	(!A1 * !A2 * !A3 * B1 * !X)	0.01004	0.01004	0.00984
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00320	0.00316	0.00320
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00951	0.00959	0.00953

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00276	0.00282	0.00292	0.00289	0.00292	0.48019
sky130_fd_sc_hs__o41ai_2	0.00545	0.00553	0.00533	0.00540	0.00567	0.78924
sky130_fd_sc_hs__o41ai_4	0.01060	0.01053	0.01068	0.01080	0.00787	1.46644

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	69.37030	238.19900
sky130_fd_sc_hs__o41ai_2	0.00000	138.70200	475.80100
sky130_fd_sc_hs__o41ai_4	0.00000	165.36100	712.04600

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)	0.13753	0.81803	8.19644
	A2->Y (FR)	0.12929	0.84693	8.67825
	A3->Y (FR)	0.11176	0.87154	9.16891
	A4->Y (FR)	0.08336	0.87072	9.41875
	B1->Y (FR)	0.01974	0.39349	4.64587
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.15148	0.71324	8.00419
	A2->Y (FR)	0.14097	0.73645	8.42596
	A3->Y (FR)	0.12016	0.77199	9.10395
	A4->Y (FR)	0.07812	0.76333	9.34963
	B1->Y (FR)	0.01544	0.32075	4.21954
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.14583	0.60348	7.85629
	A2->Y (FR)	0.13553	0.63284	8.41483
	A3->Y (FR)	0.11450	0.66805	9.09404
	A4->Y (FR)	0.07255	0.66902	9.44596
	B1->Y (FR)	0.02052	0.41528	6.15107

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.03343	0.25792	2.24797
	A2->Y (RF)	0.03409	0.25166	2.19556
	A3->Y (RF)	0.03249	0.24435	2.15789
	A4->Y (RF)	0.02590	0.23228	2.09331
	B1->Y (RF)	0.02623	0.31625	3.11503
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.03215	0.20272	1.93671
	A2->Y (RF)	0.03290	0.19631	1.88752
	A3->Y (RF)	0.03194	0.18643	1.81322
	A4->Y (RF)	0.02431	0.17289	1.76129
	B1->Y (RF)	0.02377	0.27338	3.00059
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.03744	0.16580	1.91670
	A2->Y (RF)	0.03585	0.15404	1.79930
	A3->Y (RF)	0.03217	0.14070	1.69732
	A4->Y (RF)	0.02190	0.11979	1.54740
	B1->Y (RF)	0.02809	0.26993	3.42119

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00190	0.00521	0.10749
	A1	0.01439	0.01773	0.11994
	A2	0.00196	0.00545	0.09524
	A2	0.01293	0.01642	0.10610
	A3	0.00196	0.00583	0.08705
	A3	0.01153	0.01541	0.09665
	A4	0.00189	0.00754	0.10141
	A4	0.01001	0.01565	0.10948
	B1	-0.00075	0.01106	0.19282
	B1	0.00500	0.01682	0.19889
sky130_fd_sc_hs__o41ai_2	A1	0.00296	0.00907	0.20134
	A1	0.02817	0.03429	0.22654
	A2	0.00305	0.00990	0.17822
	A2	0.02516	0.03203	0.20012
	A3	0.00317	0.01042	0.15592
	A3	0.02203	0.02930	0.17480
	A4	0.00300	0.01383	0.18079
	A4	0.01880	0.02967	0.19653
	B1	-0.00280	0.02236	0.38512
	B1	0.00838	0.03361	0.39621

sky130_fd_sc_hs__o41ai_4	**A1**	0.00503	0.01750	0.36075
	A1	0.05461	0.06715	0.41059
	A2	0.00520	0.01869	0.31839
	A2	0.04851	0.06206	0.36407
	A3	0.00521	0.02005	0.28539
	A3	0.04255	0.05736	0.32238
	A4	0.00485	0.02667	0.33245
	A4	0.03601	0.05783	0.36340
	B1	-0.00433	0.02590	0.42656
	B1	0.01166	0.04201	0.44456

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01906	0.02228	0.10833
	A1	0.00656	0.00976	0.09575
	A2	0.01627	0.01958	0.09808
	A2	0.00529	0.00860	0.08704
	A3	0.01340	0.01693	0.08956
	A3	0.00381	0.00735	0.07995
	A4	0.01102	0.01485	0.08580
	A4	0.00289	0.00671	0.07763
	B1	0.00706	0.01523	0.15496
	B1	0.00127	0.00942	0.14915

sky130_fd_sc_hs__o41ai_2	**A1**	0.04007	0.04641	0.21049
	A1	0.01484	0.02116	0.18523
	A2	0.03352	0.04039	0.18994
	A2	0.01137	0.01822	0.16772
	A3	0.02771	0.03471	0.16819
	A3	0.00882	0.01581	0.14929
	A4	0.02130	0.02950	0.16076
	A4	0.00547	0.01364	0.14492
	B1	0.01367	0.03267	0.32341
	B1	0.00244	0.02138	0.31215
sky130_fd_sc_hs__o41ai_4	**A1**	0.07365	0.08798	0.41022
	A1	0.02397	0.03826	0.36055
	A2	0.06104	0.07601	0.36483
	A2	0.01769	0.03266	0.32118
	A3	0.04948	0.06493	0.32357
	A3	0.01212	0.02753	0.28595
	A4	0.03756	0.05580	0.30991
	A4	0.00641	0.02455	0.27870
	B1	0.02020	0.04286	0.34657
	B1	0.00415	0.02675	0.33038

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)**	0.00320	0.00317	0.00313
	(A2 * A4 * B1 * !Y)	-0.00132	-0.00143	-0.00141
	(A2 * A3 * !A4 * B1 * !Y)	0.00334	0.00320	0.00317
	(A2 * A3 * !A4 * B1 * !Y)	-0.00119	-0.00140	-0.00138
	(A2 * !B1 * Y)	0.00208	0.00211	0.00208
	(A2 * !B1 * Y)	-0.00245	-0.00249	-0.00247
	(A2 * !A3 * !A4 * B1 * !Y)	0.00393	0.00354	0.00365
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00070	-0.00114	-0.00091
	(!A2 * A3 * A4 * B1 * !Y)	0.00335	0.00321	0.00317
	(!A2 * A3 * A4 * B1 * !Y)	-0.00111	-0.00137	-0.00137
	(!A2 * A3 * !B1 * Y)	0.00207	0.00210	0.00208
	(!A2 * A3 * !B1 * Y)	-0.00237	-0.00246	-0.00245
	(!A2 * A3 * !A4 * B1 * !Y)	0.00406	0.00363	0.00369
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00058	-0.00107	-0.00088
	(!A2 * !A3 * A4 * B1 * !Y)	0.00427	0.00385	0.00410
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00044	-0.00092	-0.00050
	(!A2 * !A3 * A4 * !B1 * Y)	0.00207	0.00210	0.00208
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00233	-0.00244	-0.00245
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00203	0.00205	0.00203
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00248	-0.00249	-0.00247

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00641	0.00626	0.00624
	(A2 * A4 * B1 * !Y)	-0.00260	-0.00284	-0.00283
	(A2 * A3 * !A4 * B1 * !Y)	0.00674	0.00634	0.00632
	(A2 * A3 * !A4 * B1 * !Y)	-0.00230	-0.00277	-0.00276
	(A2 * !B1 * Y)	0.00413	0.00413	0.00412
	(A2 * !B1 * Y)	-0.00489	-0.00496	-0.00495
	(A2 * !A3 * !A4 * B1 * !Y)	0.00817	0.00710	0.00727
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00110	-0.00219	-0.00183
	(!A2 * A3 * A4 * B1 * !Y)	0.00672	0.00634	0.00630
	(!A2 * A3 * A4 * B1 * !Y)	-0.00215	-0.00274	-0.00274
	(!A2 * A3 * !B1 * Y)	0.00411	0.00414	0.00412
	(!A2 * A3 * !B1 * Y)	-0.00471	-0.00491	-0.00491
	(!A2 * A3 * !A4 * B1 * !Y)	0.00836	0.00724	0.00736
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00090	-0.00210	-0.00175
	(!A2 * !A3 * A4 * B1 * !Y)	0.00877	0.00771	0.00819
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00061	-0.00178	-0.00099
	(!A2 * !A3 * A4 * !B1 * Y)	0.00411	0.00414	0.00412
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00461	-0.00488	-0.00489
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00403	0.00404	0.00403
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00497	-0.00498	-0.00496

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.01049	0.01016	0.01011
	(A2 * A4 * B1 * !Y)	-0.00725	-0.00775	-0.00772
	(A2 * A3 * !A4 * B1 * !Y)	0.01116	0.01034	0.01027
	(A2 * A3 * !A4 * B1 * !Y)	-0.00665	-0.00760	-0.00757
	(A2 * !B1 * Y)	0.00798	0.00799	0.00795
	(A2 * !B1 * Y)	-0.00978	-0.00991	-0.00988
	(A2 * !A3 * !A4 * B1 * !Y)	0.01385	0.01182	0.01217
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00441	-0.00648	-0.00572
	(!A2 * A3 * A4 * B1 * !Y)	0.01113	0.01032	0.01024
	(!A2 * A3 * A4 * B1 * !Y)	-0.00641	-0.00751	-0.00752
	(!A2 * A3 * !B1 * Y)	0.00798	0.00798	0.00795
	(!A2 * A3 * !B1 * Y)	-0.00945	-0.00978	-0.00979
	(!A2 * A3 * !A4 * B1 * !Y)	0.01425	0.01209	0.01235
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00406	-0.00628	-0.00556
	(!A2 * !A3 * A4 * B1 * !Y)	0.01506	0.01299	0.01400
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00351	-0.00565	-0.00404
	(!A2 * !A3 * A4 * !B1 * Y)	0.00798	0.00798	0.00795
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00925	-0.00972	-0.00973
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00774	0.00779	0.00777
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00989	-0.00993	-0.00990

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)**	-0.00098	-0.00098	-0.00098
	(A2 * A4 * B1 * !Y)	0.00358	0.00359	0.00358
	(A2 * A3 * !A4 * B1 * !Y)	-0.00095	-0.00096	-0.00095
	(A2 * A3 * !A4 * B1 * !Y)	0.00360	0.00363	0.00360
	(A2 * !B1 * Y)	-0.00203	-0.00203	-0.00203
	(A2 * !B1 * Y)	0.00252	0.00253	0.00252
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00052	-0.00055	-0.00061
	(A2 * !A3 * !A4 * B1 * !Y)	0.00407	0.00409	0.00400
	(!A2 * A3 * A4 * B1 * !Y)	-0.00093	-0.00095	-0.00093
	(!A2 * A3 * A4 * B1 * !Y)	0.00358	0.00361	0.00359
	(!A2 * A3 * !B1 * Y)	-0.00202	-0.00203	-0.00203
	(!A2 * A3 * !B1 * Y)	0.00247	0.00250	0.00248
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00043	-0.00044	-0.00050
	(!A2 * A3 * !A4 * B1 * !Y)	0.00418	0.00417	0.00412
	(!A2 * !A3 * A4 * B1 * !Y)	0.00002	-0.00001	-0.00012
	(!A2 * !A3 * A4 * B1 * !Y)	0.00468	0.00469	0.00454
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00202	-0.00204	-0.00203
	(!A2 * !A3 * A4 * !B1 * Y)	0.00245	0.00248	0.00246
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00171	-0.00193	-0.00197
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00276	0.00261	0.00254

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00191	-0.00192	-0.00192
	(A2 * A4 * B1 * !Y)	0.00713	0.00716	0.00715
	(A2 * A3 * !A4 * B1 * !Y)	-0.00186	-0.00188	-0.00186
	(A2 * A3 * !A4 * B1 * !Y)	0.00721	0.00726	0.00722
	(A2 * !B1 * Y)	-0.00400	-0.00404	-0.00402
	(A2 * !B1 * Y)	0.00500	0.00507	0.00503
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00098	-0.00101	-0.00114
	(A2 * !A3 * !A4 * B1 * !Y)	0.00819	0.00819	0.00805
	(!A2 * A3 * A4 * B1 * !Y)	-0.00184	-0.00186	-0.00184
	(!A2 * A3 * A4 * B1 * !Y)	0.00713	0.00717	0.00715
	(!A2 * A3 * !B1 * Y)	-0.00401	-0.00403	-0.00402
	(!A2 * A3 * !B1 * Y)	0.00492	0.00495	0.00493
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00082	-0.00086	-0.00095
	(!A2 * A3 * !A4 * B1 * !Y)	0.00837	0.00840	0.00825
	(!A2 * !A3 * A4 * B1 * !Y)	0.00007	0.00002	-0.00020
	(!A2 * !A3 * A4 * B1 * !Y)	0.00934	0.00934	0.00909
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00401	-0.00402	-0.00402
	(!A2 * !A3 * A4 * !B1 * Y)	0.00488	0.00489	0.00489
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00334	-0.00383	-0.00391
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00556	0.00523	0.00508

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00562	-0.00563	-0.00562
	(A2 * A4 * B1 * !Y)	0.01218	0.01222	0.01220
	(A2 * A3 * !A4 * B1 * !Y)	-0.00549	-0.00553	-0.00551
	(A2 * A3 * !A4 * B1 * !Y)	0.01230	0.01237	0.01234
	(A2 * !B1 * Y)	-0.00774	-0.00778	-0.00775
	(A2 * !B1 * Y)	0.01003	0.01012	0.01005
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00375	-0.00387	-0.00410
	(A2 * !A3 * !A4 * B1 * !Y)	0.01428	0.01438	0.01399
	(!A2 * A3 * A4 * B1 * !Y)	-0.00543	-0.00549	-0.00544
	(!A2 * A3 * A4 * B1 * !Y)	0.01215	0.01227	0.01221
	(!A2 * A3 * !B1 * Y)	-0.00775	-0.00778	-0.00775
	(!A2 * A3 * !B1 * Y)	0.00984	0.00992	0.00985
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00345	-0.00350	-0.00369
	(!A2 * A3 * !A4 * B1 * !Y)	0.01467	0.01467	0.01440
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00169	-0.00176	-0.00220
	(!A2 * !A3 * A4 * B1 * !Y)	0.01662	0.01659	0.01608
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00773	-0.00779	-0.00775
	(!A2 * !A3 * A4 * !B1 * Y)	0.00970	0.00982	0.00973
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00652	-0.00737	-0.00753
	(!A2 * !A3 * !A4 * !B1 * Y)	0.01106	0.01045	0.01015

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)**	0.00321	0.00322	0.00310
	(A1 * A3 * A4 * B1 * !Y)	-0.00057	-0.00058	-0.00062
	(A1 * A3 * !B1 * Y)	0.00201	0.00202	0.00201
	(A1 * A3 * !B1 * Y)	-0.00175	-0.00177	-0.00172
	(A1 * A3 * !A4 * B1 * !Y)	0.00327	0.00329	0.00314
	(A1 * A3 * !A4 * B1 * !Y)	-0.00042	-0.00043	-0.00051
	(A1 * !A3 * A4 * B1 * !Y)	0.00339	0.00352	0.00333
	(A1 * !A3 * A4 * B1 * !Y)	-0.00035	-0.00027	-0.00033
	(A1 * !A3 * A4 * !B1 * Y)	0.00201	0.00203	0.00201
	(A1 * !A3 * A4 * !B1 * Y)	-0.00169	-0.00170	-0.00166
	(A1 * !A3 * !A4 * B1 * !Y)	0.00340	0.00342	0.00337
	(A1 * !A3 * !A4 * B1 * !Y)	0.00018	0.00017	0.00017
	(A1 * !A3 * !A4 * !B1 * Y)	0.00202	0.00204	0.00201
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00243	-0.00243	-0.00241
	(!A1 * A3 * A4 * B1 * !Y)	0.00345	0.00315	0.00311
	(!A1 * A3 * A4 * B1 * !Y)	-0.00100	-0.00131	-0.00132
	(!A1 * A3 * !B1 * Y)	0.00202	0.00203	0.00201
	(!A1 * A3 * !B1 * Y)	-0.00242	-0.00242	-0.00241
	(!A1 * A3 * !A4 * B1 * !Y)	0.00402	0.00347	0.00363
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00050	-0.00105	-0.00081
	(!A1 * !A3 * A4 * B1 * !Y)	0.00437	0.00369	0.00404
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00022	-0.00091	-0.00043
	(!A1 * !A3 * A4 * !B1 * Y)	0.00202	0.00203	0.00201
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00236	-0.00240	-0.00239
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00197	0.00197	0.00197
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00242	-0.00242	-0.00242

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00665	0.00666	0.00640
	(A1 * A3 * A4 * B1 * !Y)	-0.00122	-0.00123	-0.00129
	(A1 * A3 * !B1 * Y)	0.00414	0.00416	0.00413
	(A1 * A3 * !B1 * Y)	-0.00362	-0.00365	-0.00356
	(A1 * A3 * !A4 * B1 * !Y)	0.00681	0.00682	0.00648
	(A1 * A3 * !A4 * B1 * !Y)	-0.00092	-0.00094	-0.00110
	(A1 * !A3 * A4 * B1 * !Y)	0.00692	0.00727	0.00685
	(A1 * !A3 * A4 * B1 * !Y)	-0.00089	-0.00063	-0.00079
	(A1 * !A3 * A4 * !B1 * Y)	0.00413	0.00418	0.00413
	(A1 * !A3 * A4 * !B1 * Y)	-0.00354	-0.00356	-0.00350
	(A1 * !A3 * !A4 * B1 * !Y)	0.00701	0.00700	0.00690
	(A1 * !A3 * !A4 * B1 * !Y)	0.00032	0.00034	0.00032
	(A1 * !A3 * !A4 * !B1 * Y)	0.00415	0.00415	0.00413
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00506	-0.00504	-0.00502
	(!A1 * A3 * A4 * B1 * !Y)	0.00696	0.00641	0.00632
	(!A1 * A3 * A4 * B1 * !Y)	-0.00223	-0.00283	-0.00283
	(!A1 * A3 * !B1 * Y)	0.00415	0.00417	0.00413
	(!A1 * A3 * !B1 * Y)	-0.00502	-0.00505	-0.00502
	(!A1 * A3 * !A4 * B1 * !Y)	0.00820	0.00711	0.00737
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00114	-0.00225	-0.00182
	(!A1 * !A3 * A4 * B1 * !Y)	0.00875	0.00758	0.00818
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00064	-0.00192	-0.00106
	(!A1 * !A3 * A4 * !B1 * Y)	0.00411	0.00417	0.00413
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00485	-0.00500	-0.00499
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00403	0.00403	0.00402
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00505	-0.00504	-0.00503

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.01078	0.01074	0.01026
	(A1 * A3 * A4 * B1 * !Y)	-0.00418	-0.00421	-0.00433
	(A1 * A3 * !B1 * Y)	0.00792	0.00792	0.00788
	(A1 * A3 * !B1 * Y)	-0.00684	-0.00692	-0.00672
	(A1 * A3 * !A4 * B1 * !Y)	0.01111	0.01106	0.01040
	(A1 * A3 * !A4 * B1 * !Y)	-0.00359	-0.00363	-0.00394
	(A1 * !A3 * A4 * B1 * !Y)	0.01137	0.01201	0.01117
	(A1 * !A3 * A4 * B1 * !Y)	-0.00354	-0.00308	-0.00336
	(A1 * !A3 * A4 * !B1 * Y)	0.00786	0.00798	0.00788
	(A1 * !A3 * A4 * !B1 * Y)	-0.00675	-0.00677	-0.00664
	(A1 * !A3 * !A4 * B1 * !Y)	0.01164	0.01161	0.01134
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00123	-0.00121	-0.00127
	(A1 * !A3 * !A4 * !B1 * Y)	0.00793	0.00790	0.00788
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00993	-0.00988	-0.00985
	(!A1 * A3 * A4 * B1 * !Y)	0.01165	0.01038	0.01018
	(!A1 * A3 * A4 * B1 * !Y)	-0.00618	-0.00752	-0.00754
	(!A1 * A3 * !B1 * Y)	0.00792	0.00796	0.00787
	(!A1 * A3 * !B1 * Y)	-0.00984	-0.00990	-0.00984
	(!A1 * A3 * !A4 * B1 * !Y)	0.01411	0.01175	0.01228
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00404	-0.00642	-0.00552
	(!A1 * !A3 * A4 * B1 * !Y)	0.01527	0.01271	0.01391
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00299	-0.00574	-0.00400
	(!A1 * !A3 * A4 * !B1 * Y)	0.00786	0.00797	0.00787
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00953	-0.00979	-0.00977
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00769	0.00771	0.00768
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00989	-0.00990	-0.00986

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)**	-0.00091	-0.00093	-0.00092
	(A1 * A3 * A4 * B1 * !Y)	0.00274	0.00275	0.00272
	(A1 * A3 * !B1 * Y)	-0.00195	-0.00197	-0.00196
	(A1 * A3 * !B1 * Y)	0.00175	0.00177	0.00172
	(A1 * A3 * !A4 * B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A3 * !A4 * B1 * !Y)	0.00272	0.00273	0.00270
	(A1 * !A3 * A4 * B1 * !Y)	-0.00094	-0.00095	-0.00092
	(A1 * !A3 * A4 * B1 * !Y)	0.00262	0.00262	0.00261
	(A1 * !A3 * A4 * !B1 * Y)	-0.00196	-0.00197	-0.00196
	(A1 * !A3 * A4 * !B1 * Y)	0.00169	0.00170	0.00166
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00054	-0.00057	-0.00083
	(A1 * !A3 * !A4 * B1 * !Y)	0.00268	0.00267	0.00241
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00195	-0.00197	-0.00196
	(A1 * !A3 * !A4 * !B1 * Y)	0.00246	0.00248	0.00247
	(!A1 * A3 * A4 * B1 * !Y)	-0.00085	-0.00086	-0.00086
	(!A1 * A3 * A4 * B1 * !Y)	0.00355	0.00357	0.00356
	(!A1 * A3 * !B1 * Y)	-0.00196	-0.00197	-0.00196
	(!A1 * A3 * !B1 * Y)	0.00245	0.00248	0.00246
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00039	-0.00042	-0.00049
	(!A1 * A3 * !A4 * B1 * !Y)	0.00407	0.00410	0.00399
	(!A1 * !A3 * A4 * B1 * !Y)	0.00008	0.00005	-0.00009
	(!A1 * !A3 * A4 * B1 * !Y)	0.00459	0.00460	0.00444
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00195	-0.00197	-0.00196
	(!A1 * !A3 * A4 * !B1 * Y)	0.00241	0.00244	0.00241
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00164	-0.00186	-0.00191
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00269	0.00255	0.00248

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00196	-0.00199	-0.00195
	(A1 * A3 * A4 * B1 * !Y)	0.00559	0.00563	0.00556
	(A1 * A3 * !B1 * Y)	-0.00402	-0.00405	-0.00402
	(A1 * A3 * !B1 * Y)	0.00362	0.00365	0.00356
	(A1 * A3 * !A4 * B1 * !Y)	-0.00193	-0.00193	-0.00191
	(A1 * A3 * !A4 * B1 * !Y)	0.00553	0.00553	0.00551
	(A1 * !A3 * A4 * B1 * !Y)	-0.00199	-0.00201	-0.00197
	(A1 * !A3 * A4 * B1 * !Y)	0.00537	0.00539	0.00537
	(A1 * !A3 * A4 * !B1 * Y)	-0.00401	-0.00403	-0.00402
	(A1 * !A3 * A4 * !B1 * Y)	0.00354	0.00356	0.00350
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00119	-0.00126	-0.00173
	(A1 * !A3 * !A4 * B1 * !Y)	0.00544	0.00545	0.00495
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00401	-0.00405	-0.00402
	(A1 * !A3 * !A4 * !B1 * Y)	0.00510	0.00515	0.00512
	(!A1 * A3 * A4 * B1 * !Y)	-0.00184	-0.00184	-0.00184
	(!A1 * A3 * A4 * B1 * !Y)	0.00730	0.00730	0.00731
	(!A1 * A3 * !B1 * Y)	-0.00401	-0.00404	-0.00402
	(!A1 * A3 * !B1 * Y)	0.00509	0.00514	0.00512
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00091	-0.00094	-0.00109
	(!A1 * A3 * !A4 * B1 * !Y)	0.00834	0.00833	0.00816
	(!A1 * !A3 * A4 * B1 * !Y)	0.00005	-0.00001	-0.00026
	(!A1 * !A3 * A4 * B1 * !Y)	0.00938	0.00938	0.00908
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00402	-0.00403	-0.00402
	(!A1 * !A3 * A4 * !B1 * Y)	0.00501	0.00502	0.00502
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00330	-0.00383	-0.00391
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00567	0.00530	0.00515

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00559	-0.00565	-0.00560
	(A1 * A3 * A4 * B1 * !Y)	0.00871	0.00877	0.00865
	(A1 * A3 * !B1 * Y)	-0.00765	-0.00773	-0.00767
	(A1 * A3 * !B1 * Y)	0.00684	0.00692	0.00672
	(A1 * A3 * !A4 * B1 * !Y)	-0.00551	-0.00553	-0.00549
	(A1 * A3 * !A4 * B1 * !Y)	0.00863	0.00865	0.00858
	(A1 * !A3 * A4 * B1 * !Y)	-0.00565	-0.00570	-0.00561
	(A1 * !A3 * A4 * B1 * !Y)	0.00832	0.00838	0.00835
	(A1 * !A3 * A4 * !B1 * Y)	-0.00767	-0.00770	-0.00767
	(A1 * !A3 * A4 * !B1 * Y)	0.00675	0.00677	0.00664
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00421	-0.00431	-0.00524
	(A1 * !A3 * !A4 * B1 * !Y)	0.00856	0.00855	0.00760
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00765	-0.00770	-0.00766
	(A1 * !A3 * !A4 * !B1 * Y)	0.01002	0.01009	0.01005
	(!A1 * A3 * A4 * B1 * !Y)	-0.00534	-0.00534	-0.00536
	(!A1 * A3 * A4 * B1 * !Y)	0.01234	0.01235	0.01237
	(!A1 * A3 * !B1 * Y)	-0.00765	-0.00766	-0.00767
	(!A1 * A3 * !B1 * Y)	0.00999	0.01001	0.01003
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00350	-0.00360	-0.00389
	(!A1 * A3 * !A4 * B1 * !Y)	0.01445	0.01447	0.01408
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00162	-0.00171	-0.00226
	(!A1 * !A3 * A4 * B1 * !Y)	0.01652	0.01645	0.01587
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00765	-0.00768	-0.00767
	(!A1 * !A3 * A4 * !B1 * Y)	0.00979	0.00984	0.00982
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00640	-0.00731	-0.00745
	(!A1 * !A3 * !A4 * !B1 * Y)	0.01100	0.01039	0.01011

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)**	0.00344	0.00345	0.00336
	(A2 * A4 * B1 * !Y)	-0.00033	-0.00034	-0.00038
	(A2 * A4 * !B1 * Y)	0.00201	0.00203	0.00202
	(A2 * A4 * !B1 * Y)	-0.00179	-0.00181	-0.00176
	(A2 * !A4 * B1 * !Y)	0.00321	0.00323	0.00317
	(A2 * !A4 * B1 * !Y)	0.00000	-0.00001	-0.00003
	(A2 * !A4 * !B1 * Y)	0.00203	0.00204	0.00201
	(A2 * !A4 * !B1 * Y)	-0.00247	-0.00249	-0.00247
	(A1 * !A2 * A4 * B1 * !Y)	0.00368	0.00355	0.00355
	(A1 * !A2 * A4 * B1 * !Y)	-0.00014	-0.00029	-0.00024
	(A1 * !A2 * A4 * !B1 * Y)	0.00201	0.00204	0.00201
	(A1 * !A2 * A4 * !B1 * Y)	-0.00174	-0.00175	-0.00172
	(A1 * !A2 * !A4 * B1 * !Y)	0.00341	0.00345	0.00339
	(A1 * !A2 * !A4 * B1 * !Y)	0.00028	0.00026	0.00027
	(A1 * !A2 * !A4 * !B1 * Y)	0.00203	0.00203	0.00201
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00242	-0.00246	-0.00246
	(!A1 * !A2 * A4 * B1 * !Y)	0.00413	0.00356	0.00410
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00043	-0.00101	-0.00042
	(!A1 * !A2 * A4 * !B1 * Y)	0.00202	0.00204	0.00201
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00249	-0.00249	-0.00247
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00196	0.00197	0.00197
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00247	-0.00248	-0.00247

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00666	0.00673	0.00647
	(A2 * A4 * B1 * !Y)	-0.00080	-0.00077	-0.00090
	(A2 * A4 * !B1 * Y)	0.00392	0.00395	0.00391
	(A2 * A4 * !B1 * Y)	-0.00359	-0.00363	-0.00354
	(A2 * !A4 * B1 * !Y)	0.00623	0.00627	0.00612
	(A2 * !A4 * B1 * !Y)	-0.00002	-0.00004	-0.00010
	(A2 * !A4 * !B1 * Y)	0.00392	0.00391	0.00391
	(A2 * !A4 * !B1 * Y)	-0.00490	-0.00491	-0.00491
	(A1 * !A2 * A4 * B1 * !Y)	0.00732	0.00693	0.00681
	(A1 * !A2 * A4 * B1 * !Y)	-0.00022	-0.00059	-0.00058
	(A1 * !A2 * A4 * !B1 * Y)	0.00391	0.00396	0.00391
	(A1 * !A2 * A4 * !B1 * Y)	-0.00347	-0.00349	-0.00341
	(A1 * !A2 * !A4 * B1 * !Y)	0.00674	0.00677	0.00665
	(A1 * !A2 * !A4 * B1 * !Y)	0.00064	0.00063	0.00059
	(A1 * !A2 * !A4 * !B1 * Y)	0.00389	0.00395	0.00391
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00474	-0.00487	-0.00487
	(!A1 * !A2 * A4 * B1 * !Y)	0.00846	0.00698	0.00795
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00052	-0.00203	-0.00092
	(!A1 * !A2 * A4 * !B1 * Y)	0.00392	0.00396	0.00391
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00494	-0.00495	-0.00491
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00377	0.00382	0.00379
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00491	-0.00494	-0.00491

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.01131	0.01149	0.01103
	(A2 * A4 * B1 * !Y)	-0.00356	-0.00355	-0.00377
	(A2 * A4 * !B1 * Y)	0.00799	0.00810	0.00802
	(A2 * A4 * !B1 * Y)	-0.00705	-0.00706	-0.00691
	(A2 * !A4 * B1 * !Y)	0.01057	0.01057	0.01030
	(A2 * !A4 * B1 * !Y)	-0.00222	-0.00222	-0.00232
	(A2 * !A4 * !B1 * Y)	0.00798	0.00805	0.00801
	(A2 * !A4 * !B1 * Y)	-0.00992	-0.01002	-0.00998
	(A1 * !A2 * A4 * B1 * !Y)	0.01268	0.01191	0.01179
	(A1 * !A2 * A4 * B1 * !Y)	-0.00262	-0.00331	-0.00317
	(A1 * !A2 * A4 * !B1 * Y)	0.00803	0.00812	0.00801
	(A1 * !A2 * A4 * !B1 * Y)	-0.00682	-0.00692	-0.00675
	(A1 * !A2 * !A4 * B1 * !Y)	0.01141	0.01146	0.01128
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00091	-0.00094	-0.00099
	(A1 * !A2 * !A4 * !B1 * Y)	0.00799	0.00810	0.00800
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00966	-0.00991	-0.00986
	(!A1 * !A2 * A4 * B1 * !Y)	0.01474	0.01178	0.01399
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00345	-0.00642	-0.00411
	(!A1 * !A2 * A4 * !B1 * Y)	0.00798	0.00800	0.00800
	(!A1 * !A2 * A4 * !B1 * Y)	-0.01000	-0.01001	-0.01000
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00776	0.00783	0.00779
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.01000	-0.01005	-0.01000

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)**	-0.00100	-0.00101	-0.00100
	(A2 * A4 * B1 * !Y)	0.00259	0.00260	0.00260
	(A2 * A4 * !B1 * Y)	-0.00196	-0.00198	-0.00196
	(A2 * A4 * !B1 * Y)	0.00179	0.00181	0.00176
	(A2 * !A4 * B1 * !Y)	-0.00097	-0.00097	-0.00100
	(A2 * !A4 * B1 * !Y)	0.00225	0.00225	0.00222
	(A2 * !A4 * !B1 * Y)	-0.00196	-0.00197	-0.00196
	(A2 * !A4 * !B1 * Y)	0.00251	0.00252	0.00252
	(A1 * !A2 * A4 * B1 * !Y)	-0.00101	-0.00102	-0.00097
	(A1 * !A2 * A4 * B1 * !Y)	0.00259	0.00261	0.00261
	(A1 * !A2 * A4 * !B1 * Y)	-0.00195	-0.00197	-0.00196
	(A1 * !A2 * A4 * !B1 * Y)	0.00174	0.00175	0.00172
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00047	-0.00049	-0.00085
	(A1 * !A2 * !A4 * B1 * !Y)	0.00270	0.00270	0.00241
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00196	-0.00198	-0.00196
	(A1 * !A2 * !A4 * !B1 * Y)	0.00246	0.00249	0.00247
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00001	-0.00005	-0.00020
	(!A1 * !A2 * A4 * B1 * !Y)	0.00454	0.00453	0.00434
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00196	-0.00197	-0.00196
	(!A1 * !A2 * A4 * !B1 * Y)	0.00252	0.00254	0.00253
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00165	-0.00187	-0.00191
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00275	0.00260	0.00254

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00180	-0.00180	-0.00178
	(A2 * A4 * B1 * !Y)	0.00531	0.00531	0.00532
	(A2 * A4 * !B1 * Y)	-0.00380	-0.00383	-0.00380
	(A2 * A4 * !B1 * Y)	0.00359	0.00363	0.00354
	(A2 * !A4 * B1 * !Y)	-0.00169	-0.00172	-0.00171
	(A2 * !A4 * B1 * !Y)	0.00451	0.00454	0.00452
	(A2 * !A4 * !B1 * Y)	-0.00379	-0.00381	-0.00380
	(A2 * !A4 * !B1 * Y)	0.00497	0.00500	0.00499
	(A1 * !A2 * A4 * B1 * !Y)	-0.00177	-0.00178	-0.00169
	(A1 * !A2 * A4 * B1 * !Y)	0.00529	0.00530	0.00532
	(A1 * !A2 * A4 * !B1 * Y)	-0.00380	-0.00382	-0.00380
	(A1 * !A2 * A4 * !B1 * Y)	0.00347	0.00349	0.00341
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00077	-0.00083	-0.00157
	(A1 * !A2 * !A4 * B1 * !Y)	0.00535	0.00537	0.00477
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00380	-0.00383	-0.00380
	(A1 * !A2 * !A4 * !B1 * Y)	0.00487	0.00492	0.00488
	(!A1 * !A2 * A4 * B1 * !Y)	0.00027	0.00019	-0.00013
	(!A1 * !A2 * A4 * B1 * !Y)	0.00917	0.00915	0.00879
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00380	-0.00383	-0.00380
	(!A1 * !A2 * A4 * !B1 * Y)	0.00500	0.00505	0.00501
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00315	-0.00363	-0.00370
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00549	0.00517	0.00503

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00582	-0.00584	-0.00580
	(A2 * A4 * B1 * !Y)	0.00841	0.00844	0.00844
	(A2 * A4 * !B1 * Y)	-0.00781	-0.00782	-0.00781
	(A2 * A4 * !B1 * Y)	0.00705	0.00706	0.00691
	(A2 * !A4 * B1 * !Y)	-0.00565	-0.00567	-0.00571
	(A2 * !A4 * B1 * !Y)	0.00699	0.00701	0.00696
	(A2 * !A4 * !B1 * Y)	-0.00779	-0.00782	-0.00779
	(A2 * !A4 * !B1 * Y)	0.01012	0.01018	0.01014
	(A1 * !A2 * A4 * B1 * !Y)	-0.00580	-0.00580	-0.00564
	(A1 * !A2 * A4 * B1 * !Y)	0.00844	0.00846	0.00849
	(A1 * !A2 * A4 * !B1 * Y)	-0.00776	-0.00785	-0.00780
	(A1 * !A2 * A4 * !B1 * Y)	0.00682	0.00692	0.00675
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00373	-0.00385	-0.00536
	(A1 * !A2 * !A4 * B1 * !Y)	0.00867	0.00871	0.00752
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00778	-0.00784	-0.00779
	(A1 * !A2 * !A4 * !B1 * Y)	0.00984	0.00992	0.00986
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00175	-0.00192	-0.00255
	(!A1 * !A2 * A4 * B1 * !Y)	0.01642	0.01638	0.01564
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00778	-0.00782	-0.00779
	(!A1 * !A2 * A4 * !B1 * Y)	0.01017	0.01024	0.01021
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00648	-0.00752	-0.00757
	(!A1 * !A2 * !A4 * !B1 * Y)	0.01120	0.01049	0.01025

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00328	0.00331	0.00329
	(A3 * B1 * !Y)	0.00006	0.00005	0.00006
	(A3 * !B1 * Y)	0.00201	0.00202	0.00200
	(A3 * !B1 * Y)	-0.00247	-0.00249	-0.00248
	(A2 * !A3 * B1 * !Y)	0.00328	0.00333	0.00329
	(A2 * !A3 * B1 * !Y)	0.00008	0.00006	0.00008
	(A2 * !A3 * !B1 * Y)	0.00202	0.00202	0.00200
	(A2 * !A3 * !B1 * Y)	-0.00238	-0.00246	-0.00246
	(A1 * !A2 * !A3 * B1 * !Y)	0.00329	0.00331	0.00333
	(A1 * !A2 * !A3 * B1 * !Y)	0.00025	0.00024	0.00027
	(A1 * !A2 * !A3 * !B1 * Y)	0.00202	0.00202	0.00200
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00233	-0.00244	-0.00244
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00195	0.00197	0.00196
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00248	-0.00249	-0.00248
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00644	0.00648	0.00645
	(A3 * B1 * !Y)	0.00005	0.00004	0.00006
	(A3 * !B1 * Y)	0.00398	0.00401	0.00396
	(A3 * !B1 * Y)	-0.00490	-0.00498	-0.00496
	(A2 * !A3 * B1 * !Y)	0.00643	0.00648	0.00645
	(A2 * !A3 * B1 * !Y)	0.00010	0.00008	0.00010
	(A2 * !A3 * !B1 * Y)	0.00394	0.00400	0.00396
	(A2 * !A3 * !B1 * Y)	-0.00469	-0.00491	-0.00492
	(A1 * !A2 * !A3 * B1 * !Y)	0.00646	0.00649	0.00654
	(A1 * !A2 * !A3 * B1 * !Y)	0.00043	0.00042	0.00048
	(A1 * !A2 * !A3 * !B1 * Y)	0.00393	0.00400	0.00396
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00456	-0.00486	-0.00483
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00382	0.00386	0.00383
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00498	-0.00500	-0.00496

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.01108	0.01112	0.01105
	(A3 * B1 * !Y)	-0.00186	-0.00186	-0.00182
	(A3 * !B1 * Y)	0.00797	0.00801	0.00802
	(A3 * !B1 * Y)	-0.00966	-0.00986	-0.00987
	(A2 * !A3 * B1 * !Y)	0.01102	0.01121	0.01106
	(A2 * !A3 * B1 * !Y)	-0.00172	-0.00180	-0.00171
	(A2 * !A3 * !B1 * Y)	0.00800	0.00812	0.00802
	(A2 * !A3 * !B1 * Y)	-0.00933	-0.00975	-0.00975
	(A1 * !A2 * !A3 * B1 * !Y)	0.01108	0.01117	0.01122
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00104	-0.00107	-0.00094
	(A1 * !A2 * !A3 * !B1 * Y)	0.00800	0.00811	0.00802
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00908	-0.00960	-0.00952
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00778	0.00784	0.00777
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00992	-0.00994	-0.00987

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00102	-0.00104	-0.00113
	(A3 * B1 * !Y)	0.00217	0.00218	0.00211
	(A3 * !B1 * Y)	-0.00195	-0.00196	-0.00195
	(A3 * !B1 * Y)	0.00251	0.00255	0.00252
	(A2 * !A3 * B1 * !Y)	-0.00090	-0.00093	-0.00111
	(A2 * !A3 * B1 * !Y)	0.00223	0.00224	0.00211
	(A2 * !A3 * !B1 * Y)	-0.00195	-0.00195	-0.00195
	(A2 * !A3 * !B1 * Y)	0.00246	0.00247	0.00247
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00031	-0.00034	-0.00068
	(A1 * !A2 * !A3 * B1 * !Y)	0.00276	0.00276	0.00251
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00195	-0.00196	-0.00195
	(A1 * !A2 * !A3 * !B1 * Y)	0.00243	0.00246	0.00244
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00165	-0.00186	-0.00190
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00275	0.00261	0.00254
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00192	-0.00197	-0.00219
	(A3 * B1 * !Y)	0.00441	0.00443	0.00423
	(A3 * !B1 * Y)	-0.00386	-0.00387	-0.00385
	(A3 * !B1 * Y)	0.00504	0.00507	0.00504
	(A2 * !A3 * B1 * !Y)	-0.00168	-0.00172	-0.00212
	(A2 * !A3 * B1 * !Y)	0.00455	0.00456	0.00426
	(A2 * !A3 * !B1 * Y)	-0.00385	-0.00387	-0.00385
	(A2 * !A3 * !B1 * Y)	0.00491	0.00495	0.00493
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00040	-0.00046	-0.00126
	(A1 * !A2 * !A3 * B1 * !Y)	0.00565	0.00566	0.00507
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00385	-0.00388	-0.00385
	(A1 * !A2 * !A3 * !B1 * Y)	0.00482	0.00487	0.00483
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00320	-0.00371	-0.00375
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00555	0.00521	0.00509

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00613	-0.00622	-0.00664
	(A3 * B1 * !Y)	0.00661	0.00664	0.00628
	(A3 * !B1 * Y)	-0.00778	-0.00786	-0.00781
	(A3 * !B1 * Y)	0.00997	0.01010	0.01003
	(A2 * !A3 * B1 * !Y)	-0.00564	-0.00573	-0.00651
	(A2 * !A3 * B1 * !Y)	0.00683	0.00687	0.00631
	(A2 * !A3 * !B1 * Y)	-0.00783	-0.00782	-0.00781
	(A2 * !A3 * !B1 * Y)	0.00976	0.00975	0.00975
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00318	-0.00329	-0.00481
	(A1 * !A2 * !A3 * B1 * !Y)	0.00900	0.00902	0.00792
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00782	-0.00786	-0.00781
	(A1 * !A2 * !A3 * !B1 * Y)	0.00952	0.00960	0.00952
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00655	-0.00752	-0.00759
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01106	0.01037	0.01013

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)	0.00084	0.00084	0.00074
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00283	-0.00285	-0.00302
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00193	0.00194	0.00174
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00540	-0.00544	-0.00577
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00282	0.00284	0.00249
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00578	-0.00585	-0.00650

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)	-0.00064	-0.00066	-0.00064
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00306	0.00313	0.00308
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00155	-0.00157	-0.00155
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00586	0.00594	0.00589
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00212	-0.00213	-0.00209
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00671	0.00677	0.00672

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00263	0.00273	0.00273	0.00275	0.00251	1.65658
sky130_fd_sc_hs__o41a_2	0.00278	0.00292	0.00298	0.00284	0.00285	3.37683
sky130_fd_sc_hs__o41a_4	0.00507	0.00545	0.00547	0.00509	0.00469	5.87866

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	249.38700	483.74600
sky130_fd_sc_hs__o41a_2	0.00000	209.32400	265.83000
sky130_fd_sc_hs__o41a_4	0.00000	628.07700	972.24600

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)	0.06989	0.43337	5.37047
	A2->X (RR)	0.06779	0.41911	5.13168
	A3->X (RR)	0.06262	0.40143	4.93353
	A4->X (RR)	0.05314	0.38138	4.81778
	B1->X (RR)	0.06204	0.47434	6.00079
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.07099	0.35160	5.20930
	A2->X (RR)	0.06916	0.34063	5.00263
	A3->X (RR)	0.06480	0.32709	4.82767
	A4->X (RR)	0.05463	0.30808	4.71059
	B1->X (RR)	0.06372	0.39885	6.00220
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.08008	0.30249	5.13122
	A2->X (RR)	0.07811	0.29172	4.93705
	A3->X (RR)	0.06864	0.27305	4.71903
	A4->X (RR)	0.05944	0.25409	4.66213
	B1->X (RR)	0.07191	0.36431	6.06381

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.15995	0.53327	5.98830
	A2->X (FF)	0.15096	0.55251	6.13819
	A3->X (FF)	0.13256	0.56546	6.27247
	A4->X (FF)	0.10580	0.56445	6.35542
	B1->X (FF)	0.04309	0.40569	5.48653
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.19070	0.53833	6.23598
	A2->X (FF)	0.18304	0.55986	6.37952
	A3->X (FF)	0.16581	0.57641	6.52152
	A4->X (FF)	0.13603	0.57807	6.60399
	B1->X (FF)	0.04686	0.37873	5.56942
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.20378	0.50746	6.12642
	A2->X (FF)	0.19346	0.52541	6.25148
	A3->X (FF)	0.16853	0.54039	6.38690
	A4->X (FF)	0.13257	0.53391	6.44813
	B1->X (FF)	0.05381	0.36680	5.42995

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.03167	0.03998	0.23606
	A1	0.01992	0.02827	0.22457
	A2	0.02870	0.03662	0.20831
	A2	0.01850	0.02644	0.19801
	A3	0.02563	0.03352	0.18871
	A3	0.01694	0.02485	0.17993
	A4	0.02396	0.03296	0.19681
	A4	0.01668	0.02566	0.18950
	B1	0.01888	0.03442	0.27690
	B1	0.01404	0.02960	0.27247
sky130_fd_sc_hs__o41a_2	A1	0.03170	0.03968	0.24030
	A1	0.01913	0.02714	0.22751
	A2	0.02878	0.03649	0.21123
	A2	0.01771	0.02547	0.21668
	A3	0.02558	0.03326	0.19059
	A3	0.01591	0.02359	0.18111
	A4	0.02325	0.03220	0.19794
	A4	0.01515	0.02411	0.18964
	B1	0.01752	0.03430	0.30412
	B1	0.01194	0.02874	0.29938

sky130_fd_sc_hs__o41a_4	**A1**	0.07541	0.08868	0.45866
	A1	0.05195	0.06531	0.43463
	A2	0.06949	0.08334	0.41133
	A2	0.04826	0.06217	0.38951
	A3	0.06096	0.07576	0.37071
	A3	0.04297	0.05779	0.35278
	A4	0.05587	0.07289	0.38345
	A4	0.04146	0.05854	0.36858
	B1	0.04482	0.07801	0.59263
	B1	0.03553	0.06879	0.58469

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.01163	0.01665	0.21346
	A1	0.02337	0.02839	0.22529
	A2	0.01171	0.01670	0.19036
	A2	0.02190	0.02688	0.19945
	A3	0.01172	0.01703	0.17337
	A3	0.02039	0.02571	0.18164
	A4	0.01161	0.01870	0.18649
	A4	0.01891	0.02600	0.19183
	B1	0.00601	0.02386	0.30213
	B1	0.01081	0.02866	0.30618

sky130_fd_sc_hs__o41a_2	**A1**	0.02551	0.02356	0.22019
	A1	0.03804	0.03590	0.23082
	A2	0.02558	0.02334	0.19613
	A2	0.03662	0.03437	0.20360
	A3	0.02558	0.02352	0.17680
	A3	0.03523	0.03328	0.18488
	A4	0.02550	0.02550	0.18803
	A4	0.03360	0.03366	0.19536
	B1	0.01243	0.02929	0.31120
	B1	0.02200	0.03732	0.30407
sky130_fd_sc_hs__o41a_4	**A1**	0.05253	0.04602	0.41434
	A1	0.07595	0.06945	0.43145
	A2	0.05171	0.04582	0.37431
	A2	0.07295	0.06704	0.38727
	A3	0.05193	0.04711	0.34077
	A3	0.06992	0.06509	0.35199
	A4	0.05232	0.05117	0.36205
	A4	0.06670	0.06545	0.37146
	B1	0.02793	0.05891	0.59962
	B1	0.04414	0.07363	0.59171

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)**	0.00511	0.00506	0.00503
	(A2 * A4 * B1 * X)	0.00079	0.00068	0.00069
	(A2 * A3 * !A4 * B1 * X)	0.00525	0.00510	0.00507
	(A2 * A3 * !A4 * B1 * X)	0.00091	0.00071	0.00073
	(A2 * !B1 * !X)	0.00290	0.00292	0.00290
	(A2 * !B1 * !X)	-0.00143	-0.00146	-0.00144
	(A2 * !A3 * !A4 * B1 * X)	0.00584	0.00543	0.00555
	(A2 * !A3 * !A4 * B1 * X)	0.00142	0.00096	0.00119
	(!A2 * A3 * A4 * B1 * X)	0.00526	0.00510	0.00506
	(!A2 * A3 * A4 * B1 * X)	0.00101	0.00073	0.00074
	(!A2 * A3 * !B1 * !X)	0.00289	0.00292	0.00290
	(!A2 * A3 * !B1 * !X)	-0.00134	-0.00143	-0.00142
	(!A2 * A3 * !A4 * B1 * X)	0.00597	0.00552	0.00559
	(!A2 * A3 * !A4 * B1 * X)	0.00154	0.00103	0.00123
	(!A2 * !A3 * A4 * B1 * X)	0.00618	0.00574	0.00600
	(!A2 * !A3 * A4 * B1 * X)	0.00168	0.00118	0.00161
	(!A2 * !A3 * A4 * !B1 * !X)	0.00289	0.00292	0.00290
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00129	-0.00141	-0.00142
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00287	0.00289	0.00287
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00145	-0.00146	-0.00145

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00345	0.00341	0.00338
	(A2 * A4 * B1 * X)	-0.00108	-0.00118	-0.00116
	(A2 * A3 * !A4 * B1 * X)	0.00358	0.00344	0.00341
	(A2 * A3 * !A4 * B1 * X)	-0.00096	-0.00115	-0.00113
	(A2 * !B1 * !X)	0.00417	0.00419	0.00416
	(A2 * !B1 * !X)	-0.00037	-0.00039	-0.00037
	(A2 * !A3 * !A4 * B1 * X)	0.00415	0.00377	0.00389
	(A2 * !A3 * !A4 * B1 * X)	-0.00048	-0.00090	-0.00066
	(!A2 * A3 * A4 * B1 * X)	0.00359	0.00345	0.00341
	(!A2 * A3 * A4 * B1 * X)	-0.00086	-0.00112	-0.00111
	(!A2 * A3 * !B1 * !X)	0.00415	0.00419	0.00416
	(!A2 * A3 * !B1 * !X)	-0.00028	-0.00037	-0.00036
	(!A2 * A3 * !A4 * B1 * X)	0.00429	0.00387	0.00394
	(!A2 * A3 * !A4 * B1 * X)	-0.00034	-0.00082	-0.00062
	(!A2 * !A3 * A4 * B1 * X)	0.00450	0.00409	0.00435
	(!A2 * !A3 * A4 * B1 * X)	-0.00020	-0.00067	-0.00024
	(!A2 * !A3 * A4 * !B1 * !X)	0.00415	0.00419	0.00416
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00023	-0.00035	-0.00035
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00411	0.00413	0.00411
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00038	-0.00039	-0.00038

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.01007	0.00987	0.00984
	(A2 * A4 * B1 * X)	0.00181	0.00154	0.00154
	(A2 * A3 * !A4 * B1 * X)	0.01042	0.00998	0.00992
	(A2 * A3 * !A4 * B1 * X)	0.00212	0.00164	0.00162
	(A2 * !B1 * !X)	0.00760	0.00760	0.00759
	(A2 * !B1 * !X)	-0.00067	-0.00073	-0.00071
	(A2 * !A3 * !A4 * B1 * X)	0.01180	0.01076	0.01095
	(A2 * !A3 * !A4 * B1 * X)	0.00328	0.00224	0.00261
	(!A2 * A3 * A4 * B1 * X)	0.01043	0.00996	0.00990
	(!A2 * A3 * A4 * B1 * X)	0.00230	0.00163	0.00161
	(!A2 * A3 * !B1 * !X)	0.00759	0.00761	0.00759
	(!A2 * A3 * !B1 * !X)	-0.00049	-0.00068	-0.00068
	(!A2 * A3 * !A4 * B1 * X)	0.01205	0.01085	0.01095
	(!A2 * A3 * !A4 * B1 * X)	0.00354	0.00226	0.00259
	(!A2 * !A3 * A4 * B1 * X)	0.01250	0.01131	0.01178
	(!A2 * !A3 * A4 * B1 * X)	0.00386	0.00257	0.00336
	(!A2 * !A3 * A4 * !B1 * !X)	0.00759	0.00762	0.00759
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00038	-0.00065	-0.00067
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00754	0.00756	0.00753
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00075

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)**	0.00141	0.00140	0.00140
	(A2 * A4 * B1 * X)	0.00574	0.00575	0.00575
	(A2 * A3 * !A4 * B1 * X)	0.00143	0.00142	0.00143
	(A2 * A3 * !A4 * B1 * X)	0.00577	0.00580	0.00578
	(A2 * !B1 * !X)	-0.00072	-0.00073	-0.00072
	(A2 * !B1 * !X)	0.00361	0.00362	0.00361
	(A2 * !A3 * !A4 * B1 * X)	0.00186	0.00183	0.00177
	(A2 * !A3 * !A4 * B1 * X)	0.00624	0.00627	0.00617
	(!A2 * A3 * A4 * B1 * X)	0.00145	0.00144	0.00145
	(!A2 * A3 * A4 * B1 * X)	0.00575	0.00578	0.00576
	(!A2 * A3 * !B1 * !X)	-0.00072	-0.00073	-0.00072
	(!A2 * A3 * !B1 * !X)	0.00357	0.00359	0.00358
	(!A2 * A3 * !A4 * B1 * X)	0.00195	0.00193	0.00188
	(!A2 * A3 * !A4 * B1 * X)	0.00635	0.00636	0.00629
	(!A2 * !A3 * A4 * B1 * X)	0.00240	0.00237	0.00226
	(!A2 * !A3 * A4 * B1 * X)	0.00685	0.00686	0.00671
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00072	-0.00073	-0.00072
	(!A2 * !A3 * A4 * !B1 * !X)	0.00354	0.00356	0.00355
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00042	-0.00064	-0.00068
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00388	0.00372	0.00363

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00074	-0.00074	-0.00074
	(A2 * A4 * B1 * X)	0.00380	0.00381	0.00380
	(A2 * A3 * !A4 * B1 * X)	-0.00071	-0.00073	-0.00071
	(A2 * A3 * !A4 * B1 * X)	0.00383	0.00386	0.00383
	(A2 * !B1 * !X)	0.00005	0.00005	0.00005
	(A2 * !B1 * !X)	0.00459	0.00460	0.00459
	(A2 * !A3 * !A4 * B1 * X)	-0.00029	-0.00032	-0.00038
	(A2 * !A3 * !A4 * B1 * X)	0.00430	0.00432	0.00422
	(!A2 * A3 * A4 * B1 * X)	-0.00069	-0.00071	-0.00069
	(!A2 * A3 * A4 * B1 * X)	0.00380	0.00383	0.00381
	(!A2 * A3 * !B1 * !X)	0.00006	0.00004	0.00005
	(!A2 * A3 * !B1 * !X)	0.00454	0.00457	0.00455
	(!A2 * A3 * !A4 * B1 * X)	-0.00019	-0.00020	-0.00026
	(!A2 * A3 * !A4 * B1 * X)	0.00441	0.00441	0.00435
	(!A2 * !A3 * A4 * B1 * X)	0.00026	0.00024	0.00012
	(!A2 * !A3 * A4 * B1 * X)	0.00490	0.00489	0.00477
	(!A2 * !A3 * A4 * !B1 * !X)	0.00006	0.00005	0.00005
	(!A2 * !A3 * A4 * !B1 * !X)	0.00452	0.00454	0.00452
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00038	0.00015	0.00011
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00483	0.00468	0.00460

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00313	0.00312	0.00313
	(A2 * A4 * B1 * X)	0.01141	0.01143	0.01143
	(A2 * A3 * !A4 * B1 * X)	0.00316	0.00315	0.00317
	(A2 * A3 * !A4 * B1 * X)	0.01145	0.01148	0.01148
	(A2 * !B1 * !X)	0.00093	0.00091	0.00091
	(A2 * !B1 * !X)	0.00918	0.00924	0.00921
	(A2 * !A3 * !A4 * B1 * X)	0.00394	0.00389	0.00379
	(A2 * !A3 * !A4 * B1 * X)	0.01235	0.01240	0.01223
	(!A2 * A3 * A4 * B1 * X)	0.00323	0.00322	0.00324
	(!A2 * A3 * A4 * B1 * X)	0.01143	0.01147	0.01146
	(!A2 * A3 * !B1 * !X)	0.00092	0.00090	0.00091
	(!A2 * A3 * !B1 * !X)	0.00910	0.00913	0.00911
	(!A2 * A3 * !A4 * B1 * X)	0.00424	0.00421	0.00411
	(!A2 * A3 * !A4 * B1 * X)	0.01266	0.01268	0.01255
	(!A2 * !A3 * A4 * B1 * X)	0.00512	0.00508	0.00485
	(!A2 * !A3 * A4 * B1 * X)	0.01363	0.01363	0.01339
	(!A2 * !A3 * A4 * !B1 * !X)	0.00092	0.00090	0.00091
	(!A2 * !A3 * A4 * !B1 * !X)	0.00903	0.00910	0.00905
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00150	0.00109	0.00101
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00975	0.00945	0.00928

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)**	0.00510	0.00511	0.00500
	(A1 * A3 * A4 * B1 * X)	0.00153	0.00153	0.00149
	(A1 * A3 * !B1 * !X)	0.00283	0.00284	0.00283
	(A1 * A3 * !B1 * !X)	-0.00080	-0.00081	-0.00072
	(A1 * A3 * !A4 * B1 * X)	0.00517	0.00519	0.00504
	(A1 * A3 * !A4 * B1 * X)	0.00167	0.00167	0.00160
	(A1 * !A3 * A4 * B1 * X)	0.00529	0.00541	0.00523
	(A1 * !A3 * A4 * B1 * X)	0.00175	0.00184	0.00178
	(A1 * !A3 * A4 * !B1 * !X)	0.00283	0.00285	0.00283
	(A1 * !A3 * A4 * !B1 * !X)	-0.00081	-0.00081	-0.00068
	(A1 * !A3 * !A4 * B1 * X)	0.00529	0.00529	0.00526
	(A1 * !A3 * !A4 * B1 * X)	0.00225	0.00225	0.00227
	(A1 * !A3 * !A4 * !B1 * !X)	0.00284	0.00285	0.00283
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00141	-0.00141	-0.00139
	(!A1 * A3 * A4 * B1 * X)	0.00534	0.00505	0.00501
	(!A1 * A3 * A4 * B1 * X)	0.00110	0.00079	0.00078
	(!A1 * A3 * !B1 * !X)	0.00284	0.00285	0.00283
	(!A1 * A3 * !B1 * !X)	-0.00139	-0.00140	-0.00139
	(!A1 * A3 * !A4 * B1 * X)	0.00590	0.00536	0.00553
	(!A1 * A3 * !A4 * B1 * X)	0.00159	0.00104	0.00129
	(!A1 * !A3 * A4 * B1 * X)	0.00625	0.00557	0.00593
	(!A1 * !A3 * A4 * B1 * X)	0.00186	0.00118	0.00166
	(!A1 * !A3 * A4 * !B1 * !X)	0.00284	0.00285	0.00283
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00134	-0.00138	-0.00137
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00281	0.00282	0.00281
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00140	-0.00140	-0.00139

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00343	0.00344	0.00333
	(A1 * A3 * A4 * B1 * X)	-0.00032	-0.00033	-0.00036
	(A1 * A3 * !B1 * !X)	0.00407	0.00409	0.00408
	(A1 * A3 * !B1 * !X)	0.00025	0.00025	0.00033
	(A1 * A3 * !A4 * B1 * X)	0.00350	0.00351	0.00336
	(A1 * A3 * !A4 * B1 * X)	-0.00020	-0.00019	-0.00026
	(A1 * !A3 * A4 * B1 * X)	0.00362	0.00374	0.00355
	(A1 * !A3 * A4 * B1 * X)	-0.00013	-0.00004	-0.00011
	(A1 * !A3 * A4 * !B1 * !X)	0.00407	0.00410	0.00408
	(A1 * !A3 * A4 * !B1 * !X)	0.00022	0.00022	0.00035
	(A1 * !A3 * !A4 * B1 * X)	0.00365	0.00366	0.00361
	(A1 * !A3 * !A4 * B1 * X)	0.00041	0.00040	0.00040
	(A1 * !A3 * !A4 * !B1 * !X)	0.00408	0.00410	0.00407
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00039	-0.00040	-0.00038
	(!A1 * A3 * A4 * B1 * X)	0.00368	0.00338	0.00333
	(!A1 * A3 * A4 * B1 * X)	-0.00079	-0.00111	-0.00112
	(!A1 * A3 * !B1 * !X)	0.00409	0.00410	0.00408
	(!A1 * A3 * !B1 * !X)	-0.00038	-0.00038	-0.00037
	(!A1 * A3 * !A4 * B1 * X)	0.00426	0.00371	0.00386
	(!A1 * A3 * !A4 * B1 * X)	-0.00028	-0.00084	-0.00061
	(!A1 * !A3 * A4 * B1 * X)	0.00462	0.00392	0.00427
	(!A1 * !A3 * A4 * B1 * X)	0.00001	-0.00069	-0.00023
	(!A1 * !A3 * A4 * !B1 * !X)	0.00409	0.00409	0.00408
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00031	-0.00036	-0.00035
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00400	0.00403	0.00402
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00038	-0.00039	-0.00037

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.01099	0.01102	0.01077
	(A1 * A3 * A4 * B1 * X)	0.00323	0.00324	0.00314
	(A1 * A3 * !B1 * !X)	0.00837	0.00840	0.00839
	(A1 * A3 * !B1 * !X)	0.00051	0.00050	0.00067
	(A1 * A3 * !A4 * B1 * X)	0.01112	0.01119	0.01086
	(A1 * A3 * !A4 * B1 * X)	0.00352	0.00356	0.00337
	(A1 * !A3 * A4 * B1 * X)	0.01133	0.01158	0.01119
	(A1 * !A3 * A4 * B1 * X)	0.00367	0.00388	0.00370
	(A1 * !A3 * A4 * !B1 * !X)	0.00837	0.00840	0.00839
	(A1 * !A3 * A4 * !B1 * !X)	0.00050	0.00050	0.00075
	(A1 * !A3 * !A4 * B1 * X)	0.01140	0.01148	0.01130
	(A1 * !A3 * !A4 * B1 * X)	0.00483	0.00477	0.00478
	(A1 * !A3 * !A4 * !B1 * !X)	0.00835	0.00839	0.00836
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00065	-0.00069	-0.00067
	(!A1 * A3 * A4 * B1 * X)	0.01139	0.01078	0.01070
	(!A1 * A3 * A4 * B1 * X)	0.00241	0.00165	0.00167
	(!A1 * A3 * !B1 * !X)	0.00836	0.00844	0.00838
	(!A1 * A3 * !B1 * !X)	-0.00059	-0.00067	-0.00064
	(!A1 * A3 * !A4 * B1 * X)	0.01268	0.01144	0.01174
	(!A1 * A3 * !A4 * B1 * X)	0.00354	0.00218	0.00268
	(!A1 * !A3 * A4 * B1 * X)	0.01329	0.01185	0.01256
	(!A1 * !A3 * A4 * B1 * X)	0.00402	0.00254	0.00345
	(!A1 * !A3 * A4 * !B1 * !X)	0.00836	0.00838	0.00838
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00047	-0.00059	-0.00060
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00831	0.00836	0.00832
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00065	-0.00068	-0.00066

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)**	0.00146	0.00145	0.00146
	(A1 * A3 * A4 * B1 * X)	0.00492	0.00492	0.00489
	(A1 * A3 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * A3 * !B1 * !X)	0.00284	0.00286	0.00281
	(A1 * A3 * !A4 * B1 * X)	0.00148	0.00148	0.00149
	(A1 * A3 * !A4 * B1 * X)	0.00489	0.00490	0.00487
	(A1 * !A3 * A4 * B1 * X)	0.00144	0.00143	0.00146
	(A1 * !A3 * A4 * B1 * X)	0.00479	0.00479	0.00478
	(A1 * !A3 * A4 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * !A3 * A4 * !B1 * !X)	0.00278	0.00279	0.00275
	(A1 * !A3 * !A4 * B1 * X)	0.00186	0.00183	0.00155
	(A1 * !A3 * !A4 * B1 * X)	0.00487	0.00486	0.00459
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00065	-0.00067	-0.00066
	(A1 * !A3 * !A4 * !B1 * !X)	0.00356	0.00358	0.00357
	(!A1 * A3 * A4 * B1 * X)	0.00152	0.00151	0.00152
	(!A1 * A3 * A4 * B1 * X)	0.00574	0.00576	0.00574
	(!A1 * A3 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(!A1 * A3 * !B1 * !X)	0.00355	0.00358	0.00356
	(!A1 * A3 * !A4 * B1 * X)	0.00198	0.00196	0.00189
	(!A1 * A3 * !A4 * B1 * X)	0.00626	0.00627	0.00617
	(!A1 * !A3 * A4 * B1 * X)	0.00246	0.00242	0.00229
	(!A1 * !A3 * A4 * B1 * X)	0.00677	0.00677	0.00661
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00065	-0.00066	-0.00066
	(!A1 * !A3 * A4 * !B1 * !X)	0.00350	0.00352	0.00351
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00037	-0.00058	-0.00062
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00381	0.00365	0.00358

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00066	-0.00067	-0.00066
	(A1 * A3 * A4 * B1 * X)	0.00298	0.00299	0.00295
	(A1 * A3 * !B1 * !X)	0.00014	0.00013	0.00014
	(A1 * A3 * !B1 * !X)	0.00383	0.00384	0.00379
	(A1 * A3 * !A4 * B1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A3 * !A4 * B1 * X)	0.00296	0.00297	0.00293
	(A1 * !A3 * A4 * B1 * X)	-0.00068	-0.00069	-0.00067
	(A1 * !A3 * A4 * B1 * X)	0.00286	0.00288	0.00286
	(A1 * !A3 * A4 * !B1 * !X)	0.00014	0.00013	0.00014
	(A1 * !A3 * A4 * !B1 * !X)	0.00377	0.00379	0.00375
	(A1 * !A3 * !A4 * B1 * X)	-0.00032	-0.00035	-0.00058
	(A1 * !A3 * !A4 * B1 * X)	0.00291	0.00290	0.00266
	(A1 * !A3 * !A4 * !B1 * !X)	0.00015	0.00014	0.00014
	(A1 * !A3 * !A4 * !B1 * !X)	0.00459	0.00459	0.00460
	(!A1 * A3 * A4 * B1 * X)	-0.00059	-0.00061	-0.00060
	(!A1 * A3 * A4 * B1 * X)	0.00383	0.00386	0.00384
	(!A1 * A3 * !B1 * !X)	0.00014	0.00013	0.00014
	(!A1 * A3 * !B1 * !X)	0.00457	0.00460	0.00458
	(!A1 * A3 * !A4 * B1 * X)	-0.00013	-0.00017	-0.00023
	(!A1 * A3 * !A4 * B1 * X)	0.00435	0.00438	0.00427
	(!A1 * !A3 * A4 * B1 * X)	0.00034	0.00030	0.00017
	(!A1 * !A3 * A4 * B1 * X)	0.00487	0.00487	0.00472
	(!A1 * !A3 * A4 * !B1 * !X)	0.00014	0.00012	0.00014
	(!A1 * !A3 * A4 * !B1 * !X)	0.00452	0.00455	0.00453
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00045	0.00023	0.00019
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00481	0.00467	0.00460

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00226	0.00223	0.00227
	(A1 * A3 * A4 * B1 * X)	0.00975	0.00979	0.00973
	(A1 * A3 * !B1 * !X)	0.00013	0.00011	0.00012
	(A1 * A3 * !B1 * !X)	0.00770	0.00772	0.00765
	(A1 * A3 * !A4 * B1 * X)	0.00229	0.00227	0.00231
	(A1 * A3 * !A4 * B1 * X)	0.00969	0.00972	0.00967
	(A1 * !A3 * A4 * B1 * X)	0.00226	0.00224	0.00230
	(A1 * !A3 * A4 * B1 * X)	0.00951	0.00954	0.00951
	(A1 * !A3 * A4 * !B1 * !X)	0.00013	0.00011	0.00012
	(A1 * !A3 * A4 * !B1 * !X)	0.00756	0.00759	0.00752
	(A1 * !A3 * !A4 * B1 * X)	0.00298	0.00292	0.00253
	(A1 * !A3 * !A4 * B1 * X)	0.00959	0.00960	0.00913
	(A1 * !A3 * !A4 * !B1 * !X)	0.00016	0.00013	0.00015
	(A1 * !A3 * !A4 * !B1 * !X)	0.00917	0.00919	0.00918
	(!A1 * A3 * A4 * B1 * X)	0.00245	0.00243	0.00245
	(!A1 * A3 * A4 * B1 * X)	0.01144	0.01149	0.01146
	(!A1 * A3 * !B1 * !X)	0.00013	0.00011	0.00012
	(!A1 * A3 * !B1 * !X)	0.00911	0.00914	0.00913
	(!A1 * A3 * !A4 * B1 * X)	0.00341	0.00337	0.00322
	(!A1 * A3 * !A4 * B1 * X)	0.01251	0.01251	0.01235
	(!A1 * !A3 * A4 * B1 * X)	0.00433	0.00425	0.00400
	(!A1 * !A3 * A4 * B1 * X)	0.01351	0.01353	0.01322
	(!A1 * !A3 * A4 * !B1 * !X)	0.00014	0.00012	0.00012
	(!A1 * !A3 * A4 * !B1 * !X)	0.00901	0.00904	0.00904
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00070	0.00022	0.00022
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00964	0.00925	0.00919

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)**	0.00524	0.00525	0.00517
	(A2 * A4 * B1 * X)	0.00182	0.00181	0.00177
	(A2 * A4 * !B1 * !X)	0.00282	0.00283	0.00282
	(A2 * A4 * !B1 * !X)	-0.00072	-0.00073	-0.00065
	(A2 * !A4 * B1 * X)	0.00502	0.00504	0.00498
	(A2 * !A4 * B1 * X)	0.00215	0.00213	0.00212
	(A2 * !A4 * !B1 * !X)	0.00283	0.00284	0.00282
	(A2 * !A4 * !B1 * !X)	-0.00133	-0.00135	-0.00133
	(A1 * !A2 * A4 * B1 * X)	0.00548	0.00535	0.00537
	(A1 * !A2 * A4 * B1 * X)	0.00200	0.00185	0.00192
	(A1 * !A2 * A4 * !B1 * !X)	0.00282	0.00284	0.00282
	(A1 * !A2 * A4 * !B1 * !X)	-0.00075	-0.00076	-0.00063
	(A1 * !A2 * !A4 * B1 * X)	0.00519	0.00523	0.00518
	(A1 * !A2 * !A4 * B1 * X)	0.00241	0.00239	0.00240
	(A1 * !A2 * !A4 * !B1 * !X)	0.00283	0.00283	0.00282
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00127	-0.00132	-0.00131
	(!A1 * !A2 * A4 * B1 * X)	0.00591	0.00535	0.00591
	(!A1 * !A2 * A4 * B1 * X)	0.00168	0.00112	0.00173
	(!A1 * !A2 * A4 * !B1 * !X)	0.00283	0.00284	0.00282
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00135	-0.00135	-0.00133
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00279	0.00280	0.00279
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00133	-0.00134	-0.00133

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00370	0.00371	0.00362
	(A2 * A4 * B1 * X)	-0.00011	-0.00012	-0.00017
	(A2 * A4 * !B1 * !X)	0.00410	0.00411	0.00410
	(A2 * A4 * !B1 * !X)	0.00018	0.00017	0.00025
	(A2 * !A4 * B1 * X)	0.00347	0.00350	0.00343
	(A2 * !A4 * B1 * X)	0.00024	0.00022	0.00020
	(A2 * !A4 * !B1 * !X)	0.00411	0.00412	0.00409
	(A2 * !A4 * !B1 * !X)	-0.00043	-0.00044	-0.00042
	(A1 * !A2 * A4 * B1 * X)	0.00394	0.00381	0.00380
	(A1 * !A2 * A4 * B1 * X)	0.00010	-0.00004	-0.00000
	(A1 * !A2 * A4 * !B1 * !X)	0.00409	0.00412	0.00410
	(A1 * !A2 * A4 * !B1 * !X)	0.00017	0.00016	0.00029
	(A1 * !A2 * !A4 * B1 * X)	0.00367	0.00372	0.00365
	(A1 * !A2 * !A4 * B1 * X)	0.00053	0.00051	0.00052
	(A1 * !A2 * !A4 * !B1 * !X)	0.00411	0.00411	0.00409
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00037	-0.00041	-0.00041
	(!A1 * !A2 * A4 * B1 * X)	0.00442	0.00383	0.00436
	(!A1 * !A2 * A4 * B1 * X)	-0.00018	-0.00077	-0.00019
	(!A1 * !A2 * A4 * !B1 * !X)	0.00411	0.00412	0.00410
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00044	-0.00044	-0.00042
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00405	0.00406	0.00405
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00042	-0.00043	-0.00042

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.01131	0.01128	0.01113
	(A2 * A4 * B1 * X)	0.00373	0.00366	0.00359
	(A2 * A4 * !B1 * !X)	0.00831	0.00834	0.00832
	(A2 * A4 * !B1 * !X)	0.00052	0.00050	0.00067
	(A2 * !A4 * B1 * X)	0.01074	0.01077	0.01066
	(A2 * !A4 * B1 * X)	0.00439	0.00436	0.00432
	(A2 * !A4 * !B1 * !X)	0.00828	0.00832	0.00830
	(A2 * !A4 * !B1 * !X)	-0.00058	-0.00065	-0.00064
	(A1 * !A2 * A4 * B1 * X)	0.01172	0.01139	0.01143
	(A1 * !A2 * A4 * B1 * X)	0.00409	0.00379	0.00389
	(A1 * !A2 * A4 * !B1 * !X)	0.00830	0.00834	0.00832
	(A1 * !A2 * A4 * !B1 * !X)	0.00050	0.00050	0.00075
	(A1 * !A2 * !A4 * B1 * X)	0.01114	0.01123	0.01110
	(A1 * !A2 * !A4 * B1 * X)	0.00494	0.00489	0.00491
	(A1 * !A2 * !A4 * !B1 * !X)	0.00828	0.00831	0.00830
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00045	-0.00060	-0.00060
	(!A1 * !A2 * A4 * B1 * X)	0.01253	0.01138	0.01248
	(!A1 * !A2 * A4 * B1 * X)	0.00351	0.00231	0.00349
	(!A1 * !A2 * A4 * !B1 * !X)	0.00829	0.00833	0.00832
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00062	-0.00064	-0.00062
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00823	0.00828	0.00825
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00063	-0.00066	-0.00064

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)**	0.00146	0.00145	0.00147
	(A2 * A4 * B1 * X)	0.00472	0.00473	0.00473
	(A2 * A4 * !B1 * !X)	-0.00064	-0.00066	-0.00065
	(A2 * A4 * !B1 * !X)	0.00277	0.00278	0.00273
	(A2 * !A4 * B1 * X)	0.00151	0.00150	0.00146
	(A2 * !A4 * B1 * X)	0.00439	0.00439	0.00435
	(A2 * !A4 * !B1 * !X)	-0.00064	-0.00065	-0.00064
	(A2 * !A4 * !B1 * !X)	0.00350	0.00351	0.00350
	(A1 * !A2 * A4 * B1 * X)	0.00145	0.00145	0.00149
	(A1 * !A2 * A4 * B1 * X)	0.00472	0.00473	0.00473
	(A1 * !A2 * A4 * !B1 * !X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * A4 * !B1 * !X)	0.00272	0.00272	0.00269
	(A1 * !A2 * !A4 * B1 * X)	0.00202	0.00200	0.00164
	(A1 * !A2 * !A4 * B1 * X)	0.00484	0.00484	0.00455
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00064	-0.00066	-0.00064
	(A1 * !A2 * !A4 * !B1 * !X)	0.00344	0.00347	0.00345
	(!A1 * !A2 * A4 * B1 * X)	0.00246	0.00242	0.00226
	(!A1 * !A2 * A4 * B1 * X)	0.00666	0.00664	0.00646
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00064	-0.00065	-0.00065
	(!A1 * !A2 * A4 * !B1 * !X)	0.00350	0.00352	0.00351
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00035	-0.00057	-0.00060
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00376	0.00359	0.00352

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00078	-0.00079	-0.00077
	(A2 * A4 * B1 * X)	0.00285	0.00286	0.00287
	(A2 * A4 * !B1 * !X)	0.00012	0.00010	0.00011
	(A2 * A4 * !B1 * !X)	0.00390	0.00392	0.00387
	(A2 * !A4 * B1 * X)	-0.00075	-0.00075	-0.00078
	(A2 * !A4 * B1 * X)	0.00249	0.00250	0.00247
	(A2 * !A4 * !B1 * !X)	0.00013	0.00011	0.00012
	(A2 * !A4 * !B1 * !X)	0.00462	0.00464	0.00463
	(A1 * !A2 * A4 * B1 * X)	-0.00078	-0.00079	-0.00075
	(A1 * !A2 * A4 * B1 * X)	0.00283	0.00285	0.00285
	(A1 * !A2 * A4 * !B1 * !X)	0.00011	0.00010	0.00011
	(A1 * !A2 * A4 * !B1 * !X)	0.00384	0.00385	0.00381
	(A1 * !A2 * !A4 * B1 * X)	-0.00026	-0.00028	-0.00064
	(A1 * !A2 * !A4 * B1 * X)	0.00293	0.00293	0.00264
	(A1 * !A2 * !A4 * !B1 * !X)	0.00013	0.00012	0.00012
	(A1 * !A2 * !A4 * !B1 * !X)	0.00457	0.00458	0.00458
	(!A1 * !A2 * A4 * B1 * X)	0.00022	0.00018	0.00002
	(!A1 * !A2 * A4 * B1 * X)	0.00479	0.00477	0.00459
	(!A1 * !A2 * A4 * !B1 * !X)	0.00012	0.00010	0.00011
	(!A1 * !A2 * A4 * !B1 * !X)	0.00462	0.00465	0.00463
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00044	0.00021	0.00017
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00487	0.00471	0.00465

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00228	0.00226	0.00231
	(A2 * A4 * B1 * X)	0.00951	0.00955	0.00954
	(A2 * A4 * !B1 * !X)	0.00019	0.00018	0.00019
	(A2 * A4 * !B1 * !X)	0.00769	0.00771	0.00765
	(A2 * !A4 * B1 * X)	0.00240	0.00238	0.00234
	(A2 * !A4 * B1 * X)	0.00875	0.00876	0.00872
	(A2 * !A4 * !B1 * !X)	0.00023	0.00018	0.00021
	(A2 * !A4 * !B1 * !X)	0.00911	0.00915	0.00912
	(A1 * !A2 * A4 * B1 * X)	0.00230	0.00228	0.00239
	(A1 * !A2 * A4 * B1 * X)	0.00948	0.00951	0.00952
	(A1 * !A2 * A4 * !B1 * !X)	0.00019	0.00017	0.00019
	(A1 * !A2 * A4 * !B1 * !X)	0.00756	0.00759	0.00751
	(A1 * !A2 * !A4 * B1 * X)	0.00344	0.00341	0.00261
	(A1 * !A2 * !A4 * B1 * X)	0.00970	0.00970	0.00910
	(A1 * !A2 * !A4 * !B1 * !X)	0.00023	0.00022	0.00021
	(A1 * !A2 * !A4 * !B1 * !X)	0.00899	0.00899	0.00900
	(!A1 * !A2 * A4 * B1 * X)	0.00434	0.00426	0.00395
	(!A1 * !A2 * A4 * B1 * X)	0.01335	0.01334	0.01298
	(!A1 * !A2 * A4 * !B1 * !X)	0.00020	0.00017	0.00019
	(!A1 * !A2 * A4 * !B1 * !X)	0.00912	0.00917	0.00914
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00081	0.00030	0.00030
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00965	0.00924	0.00917

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00516	0.00518	0.00516
	(A3 * B1 * X)	0.00220	0.00219	0.00220
	(A3 * !B1 * !X)	0.00284	0.00286	0.00284
	(A3 * !B1 * !X)	-0.00134	-0.00138	-0.00137
	(A2 * !A3 * B1 * X)	0.00516	0.00517	0.00517
	(A2 * !A3 * B1 * X)	0.00222	0.00221	0.00222
	(A2 * !A3 * !B1 * !X)	0.00283	0.00286	0.00284
	(A2 * !A3 * !B1 * !X)	-0.00126	-0.00135	-0.00135
	(A1 * !A2 * !A3 * B1 * X)	0.00517	0.00519	0.00521
	(A1 * !A2 * !A3 * B1 * X)	0.00239	0.00238	0.00242
	(A1 * !A2 * !A3 * !B1 * !X)	0.00284	0.00286	0.00284
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00120	-0.00133	-0.00135
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00282	0.00283	0.00282
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00138	-0.00138	-0.00137
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00347	0.00349	0.00348
	(A3 * B1 * X)	0.00030	0.00029	0.00030
	(A3 * !B1 * !X)	0.00408	0.00410	0.00409
	(A3 * !B1 * !X)	-0.00031	-0.00035	-0.00035
	(A2 * !A3 * B1 * X)	0.00347	0.00351	0.00348
	(A2 * !A3 * B1 * X)	0.00032	0.00030	0.00032
	(A2 * !A3 * !B1 * !X)	0.00411	0.00410	0.00409
	(A2 * !A3 * !B1 * !X)	-0.00025	-0.00032	-0.00033
	(A1 * !A2 * !A3 * B1 * X)	0.00348	0.00350	0.00352
	(A1 * !A2 * !A3 * B1 * X)	0.00049	0.00048	0.00051
	(A1 * !A2 * !A3 * !B1 * !X)	0.00408	0.00409	0.00409
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00018	-0.00030	-0.00032
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00405	0.00405	0.00405
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00035	-0.00035	-0.00034

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.01015	0.01018	0.01016
	(A3 * B1 * X)	0.00441	0.00439	0.00441
	(A3 * !B1 * !X)	0.00759	0.00762	0.00758
	(A3 * !B1 * !X)	-0.00061	-0.00071	-0.00069
	(A2 * !A3 * B1 * X)	0.01017	0.01020	0.01017
	(A2 * !A3 * B1 * X)	0.00445	0.00444	0.00447
	(A2 * !A3 * !B1 * !X)	0.00758	0.00762	0.00758
	(A2 * !A3 * !B1 * !X)	-0.00043	-0.00063	-0.00065
	(A1 * !A2 * !A3 * B1 * X)	0.01020	0.01018	0.01026
	(A1 * !A2 * !A3 * B1 * X)	0.00480	0.00482	0.00486
	(A1 * !A2 * !A3 * !B1 * !X)	0.00758	0.00761	0.00758
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00031	-0.00059	-0.00063
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00755	0.00755	0.00753
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00071	-0.00072	-0.00069

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00137	0.00136	0.00128
	(A3 * B1 * X)	0.00431	0.00431	0.00425
	(A3 * !B1 * !X)	-0.00066	-0.00068	-0.00067
	(A3 * !B1 * !X)	0.00353	0.00356	0.00354
	(A2 * !A3 * B1 * X)	0.00149	0.00147	0.00130
	(A2 * !A3 * B1 * X)	0.00437	0.00438	0.00425
	(A2 * !A3 * !B1 * !X)	-0.00066	-0.00068	-0.00067
	(A2 * !A3 * !B1 * !X)	0.00348	0.00350	0.00349
	(A1 * !A2 * !A3 * B1 * X)	0.00207	0.00206	0.00172
	(A1 * !A2 * !A3 * B1 * X)	0.00490	0.00490	0.00465
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00066	-0.00068	-0.00067
	(A1 * !A2 * !A3 * !B1 * !X)	0.00344	0.00346	0.00345
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00037	-0.00059	-0.00063
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00380	0.00363	0.00356
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00073	-0.00074	-0.00084
	(A3 * B1 * X)	0.00243	0.00243	0.00235
	(A3 * !B1 * !X)	0.00013	0.00011	0.00013
	(A3 * !B1 * !X)	0.00455	0.00457	0.00455
	(A2 * !A3 * B1 * X)	-0.00062	-0.00063	-0.00082
	(A2 * !A3 * B1 * X)	0.00249	0.00249	0.00235
	(A2 * !A3 * !B1 * !X)	0.00013	0.00011	0.00013
	(A2 * !A3 * !B1 * !X)	0.00449	0.00452	0.00450
	(A1 * !A2 * !A3 * B1 * X)	-0.00003	-0.00005	-0.00038
	(A1 * !A2 * !A3 * B1 * X)	0.00301	0.00301	0.00276
	(A1 * !A2 * !A3 * !B1 * !X)	0.00013	0.00011	0.00013
	(A1 * !A2 * !A3 * !B1 * !X)	0.00446	0.00448	0.00447
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00044	0.00021	0.00018
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00478	0.00463	0.00457

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00296	0.00294	0.00276
	(A3 * B1 * X)	0.00867	0.00867	0.00854
	(A3 * !B1 * !X)	0.00096	0.00091	0.00092
	(A3 * !B1 * !X)	0.00917	0.00920	0.00918
	(A2 * !A3 * B1 * X)	0.00320	0.00319	0.00280
	(A2 * !A3 * B1 * X)	0.00881	0.00881	0.00853
	(A2 * !A3 * !B1 * !X)	0.00094	0.00093	0.00092
	(A2 * !A3 * !B1 * !X)	0.00903	0.00903	0.00904
	(A1 * !A2 * !A3 * B1 * X)	0.00445	0.00442	0.00367
	(A1 * !A2 * !A3 * B1 * X)	0.00990	0.00989	0.00934
	(A1 * !A2 * !A3 * !B1 * !X)	0.00094	0.00091	0.00092
	(A1 * !A2 * !A3 * !B1 * !X)	0.00894	0.00897	0.00896
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00152	0.00108	0.00101
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00970	0.00937	0.00922

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)**	0.00179	0.00179	0.00168
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00122	-0.00123	-0.00140
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00282	0.00283	0.00273
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00058	-0.00059	-0.00076
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00552	0.00554	0.00533
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00012	-0.00016	-0.00050

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)	0.00055	0.00055	0.00056
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00357	0.00360	0.00358
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	0.00152	0.00152	0.00153
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00497	0.00500	0.00498
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	0.00328	0.00328	0.00331
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00900	0.00903	0.00901

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00257	0.00239	1.74454
sky130_fd_sc_hs__or2b_2	0.00267	0.00231	2.71380
sky130_fd_sc_hs__or2b_4	0.00505	0.00286	6.11262

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	270.64100	486.08300
sky130_fd_sc_hs__or2b_2	0.00000	303.92500	611.25300
sky130_fd_sc_hs__or2b_4	0.00000	317.17100	640.44000

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)	0.04434	0.40100	5.56533
	B_N->X (FR)	0.07154	0.56405	7.68525
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.04508	0.31189	4.71424
	B_N->X (FR)	0.07925	0.50651	7.50314
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.04176	0.24059	5.09153
	B_N->X (FR)	0.08158	0.44734	7.64821

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.06807	0.43571	5.50295
	B_N->X (RF)	0.07499	0.29425	3.07861
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.08698	0.41765	5.15397
	B_N->X (RF)	0.09796	0.25789	2.37894
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.08824	0.39447	5.79360
	B_N->X (RF)	0.09707	0.23851	2.65308

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.02116	0.03087	0.19528
	A	0.01630	0.02604	0.19082
	B_N	0.01286	0.03139	0.31757
	B_N	0.01698	0.03553	0.32233
sky130_fd_sc_hs__or2b_2	A	0.02544	0.03585	0.18956
	A	0.02030	0.03074	0.18442
	B_N	0.01731	0.03492	0.30942
	B_N	0.02142	0.03899	0.31356
sky130_fd_sc_hs__or2b_4	A	0.03527	0.06240	0.49080
	A	0.02567	0.05285	0.48075
	B_N	0.03392	0.05431	0.39324
	B_N	0.03850	0.05894	0.40023

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.01460	0.02407	0.18141
	A	0.01944	0.02885	0.18626
	B_N	0.02092	0.03838	0.32695
	B_N	0.01680	0.03420	0.32242
sky130_fd_sc_hs__or2b_2	A	0.02171	0.02873	0.21139
	A	0.02683	0.03375	0.21664
	B_N	0.02872	0.04056	0.31382
	B_N	0.02463	0.03645	0.30963
sky130_fd_sc_hs__or2b_4	A	0.03774	0.05394	0.47220
	A	0.04732	0.06326	0.48180
	B_N	0.04676	0.06047	0.40262
	B_N	0.04220	0.05582	0.39813

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00257	0.00222	0.00296
	(!B_N * X)	-0.00162	-0.00201	-0.00123
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00275	0.00238	0.00311
	(!B_N * X)	-0.00169	-0.00210	-0.00132
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00569	0.00478	0.00612
	(!B_N * X)	-0.00268	-0.00362	-0.00223

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00052	-0.00056	-0.00077
	(!B_N * X)	0.00366	0.00365	0.00342
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00063	-0.00067	-0.00087
	(!B_N * X)	0.00380	0.00381	0.00357
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00108	-0.00115	-0.00158
	(!B_N * X)	0.00727	0.00725	0.00679

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00927	0.02595	0.29030
	(A * X)	0.00453	0.02119	0.28554
sky130_fd_sc_hs__or2b_2	(A * X)	0.00963	0.02554	0.28134
	(A * X)	0.00487	0.02077	0.27659
sky130_fd_sc_hs__or2b_4	(A * X)	0.00997	0.02757	0.31864
	(A * X)	0.00439	0.02197	0.31306

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00151	0.01934	0.28703
	(A * X)	0.00627	0.02411	0.29178
sky130_fd_sc_hs__or2b_2	(A * X)	0.00157	0.01873	0.27792
	(A * X)	0.00634	0.02350	0.28268
sky130_fd_sc_hs__or2b_4	(A * X)	0.00420	0.02248	0.31547
	(A * X)	0.00981	0.02811	0.32105

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00234	0.00223	1.69341
sky130_fd_sc_hs__or2_2	0.00288	0.00253	2.72720
sky130_fd_sc_hs__or2_4	0.00456	0.00396	6.06013

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	164.99800	362.31600
sky130_fd_sc_hs__or2_2	0.00000	121.91900	249.45100
sky130_fd_sc_hs__or2_4	0.00000	239.99200	483.53500

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)	0.04231	0.38685	5.32023
	B->X (RR)	0.03831	0.37144	5.18034
sky130_fd_sc_hs__or2_2	A->X (RR)	0.04600	0.31272	4.71766
	B->X (RR)	0.04108	0.29562	4.55111
sky130_fd_sc_hs__or2_4	A->X (RR)	0.06162	0.33062	5.99188
	B->X (RR)	0.05042	0.29696	5.68229

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.07064	0.44292	5.50396
	B->X (FF)	0.06091	0.46155	5.99445
sky130_fd_sc_hs__or2_2	A->X (FF)	0.08607	0.41294	4.99490
	B->X (FF)	0.07416	0.43589	5.50183
sky130_fd_sc_hs__or2_4	A->X (FF)	0.08179	0.35593	4.88501
	B->X (FF)	0.06943	0.37874	5.44273

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.01469	0.02463	0.19200
	A	0.00899	0.01892	0.18654
	B	0.01811	0.02959	0.21315
	B	0.01350	0.02499	0.20844
sky130_fd_sc_hs__or2_2	A	0.01774	0.02771	0.18003
	A	0.01088	0.02085	0.17329
	B	0.01693	0.02801	0.18972
	B	0.01162	0.02271	0.18440
sky130_fd_sc_hs__or2_4	A	0.03463	0.05274	0.36028
	A	0.02337	0.04148	0.35186
	B	0.03134	0.05213	0.38249
	B	0.02338	0.04437	0.37518

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00686	0.01662	0.17703
	A	0.01257	0.02223	0.18266
	B	0.00671	0.01915	0.22251
	B	0.01130	0.02369	0.22591
sky130_fd_sc_hs__or2_2	A	0.01439	0.02090	0.18680
	A	0.02125	0.02775	0.19365
	B	0.01439	0.02331	0.22987
	B	0.01968	0.02857	0.23139
sky130_fd_sc_hs__or2_4	A	0.03166	0.04202	0.31970
	A	0.04292	0.05326	0.32763
	B	0.03175	0.04728	0.39841
	B	0.03970	0.05521	0.40286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00252	0.00235	0.00442
	(B * X)	-0.00114	-0.00136	0.00077
sky130_fd_sc_hs__or2_2	(B * X)	0.00297	0.00259	0.00332
	(B * X)	-0.00139	-0.00182	-0.00101
sky130_fd_sc_hs__or2_4	(B * X)	0.00437	0.00351	0.00493
	(B * X)	-0.00276	-0.00368	-0.00214

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00137	0.00128	0.00069
	(B * X)	0.00504	0.00498	0.00436
sky130_fd_sc_hs__or2_2	(B * X)	-0.00087	-0.00091	-0.00112
	(B * X)	0.00347	0.00347	0.00324
sky130_fd_sc_hs__or2_4	(B * X)	-0.00001	-0.00008	-0.00051
	(B * X)	0.00710	0.00707	0.00662

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00194	0.00196	0.00216
	(A * X)	-0.00067	-0.00067	-0.00045
sky130_fd_sc_hs__or2_2	(A * X)	0.00208	0.00210	0.00214
	(A * X)	-0.00082	-0.00082	-0.00075
sky130_fd_sc_hs__or2_4	(A * X)	0.00247	0.00253	0.00258
	(A * X)	-0.00159	-0.00163	-0.00150

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00027	-0.00033	-0.00111
	(A * X)	0.00235	0.00230	0.00151
sky130_fd_sc_hs__or2_2	(A * X)	-0.00117	-0.00119	-0.00152
	(A * X)	0.00174	0.00171	0.00139
sky130_fd_sc_hs__or2_4	(A * X)	-0.00061	-0.00067	-0.00129
	(A * X)	0.00350	0.00348	0.00285

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00252	0.00274	0.00232	1.73839
sky130_fd_sc_hs__or3b_2	0.00268	0.00260	0.00230	2.74853
sky130_fd_sc_hs__or3b_4	0.00469	0.00429	0.00268	6.11757

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	238.56200	488.08100
sky130_fd_sc_hs__or3b_2	0.00000	256.93900	616.52600
sky130_fd_sc_hs__or3b_4	0.00000	220.25000	627.97700

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)	0.04937	0.41042	5.42974
	B->X (RR)	0.04807	0.39656	5.19727
	C_N->X (FR)	0.07436	0.56882	7.65835
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.04939	0.32098	4.63186
	B->X (RR)	0.04768	0.30881	4.45028
	C_N->X (FR)	0.08014	0.50702	7.48968
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.06718	0.34053	5.92254
	B->X (RR)	0.06243	0.32098	5.64046
	C_N->X (FR)	0.09519	0.46318	7.72000

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.10608	0.48243	5.71728
	B->X (FF)	0.09867	0.51011	6.21899
	C_N->X (RF)	0.09789	0.33211	3.13887
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.13370	0.47026	5.37535
	B->X (FF)	0.12328	0.49655	5.85900
	C_N->X (RF)	0.12443	0.30820	2.58948
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.11935	0.39268	5.09328
	B->X (FF)	0.10914	0.42074	5.61122
	C_N->X (RF)	0.11087	0.26190	2.76873

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.02370	0.03183	0.18427
	A	0.01737	0.02550	0.17833
	B	0.02191	0.03025	0.17062
	B	0.01651	0.02487	0.16512
	C_N	0.01330	0.03176	0.31327
	C_N	0.01679	0.03528	0.31741
sky130_fd_sc_hs__or3b_2	A	0.02809	0.03623	0.17401
	A	0.02155	0.02976	0.16766
	B	0.02589	0.03466	0.16143
	B	0.02063	0.02942	0.15620
	C_N	0.01739	0.03488	0.30201
	C_N	0.02117	0.03862	0.30658
sky130_fd_sc_hs__or3b_4	A	0.04184	0.05713	0.35259
	A	0.03036	0.04574	0.34403
	B	0.03621	0.05247	0.32395
	B	0.02775	0.04412	0.31644
	C_N	0.03274	0.05100	0.36763
	C_N	0.03702	0.05525	0.37417

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.01661	0.02320	0.17145
	A	0.02296	0.02954	0.17781
	B	0.01653	0.02337	0.17988
	B	0.02193	0.02875	0.18343
	C_N	0.02285	0.03878	0.32144
	C_N	0.01933	0.03528	0.31726
sky130_fd_sc_hs__or3b_2	A	0.02610	0.02770	0.18548
	A	0.03260	0.03414	0.18801
	B	0.02613	0.02790	0.18998
	B	0.03137	0.03313	0.19299
	C_N	0.03287	0.04169	0.30572
	C_N	0.02910	0.03784	0.30087
sky130_fd_sc_hs__or3b_4	A	0.04241	0.04528	0.31207
	A	0.05383	0.05669	0.31812
	B	0.04266	0.04711	0.32655
	B	0.05110	0.05524	0.33459
	C_N	0.05108	0.05871	0.37554
	C_N	0.04678	0.05444	0.36985

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)	0.00561	0.00524	0.00551
	(B * C_N * X)	0.00165	0.00124	0.00158
	(B * !C_N * X)	0.00203	0.00185	0.00181
	(B * !C_N * X)	-0.00190	-0.00212	-0.00210
	(!B * !C_N * X)	0.00281	0.00239	0.00291
	(!B * !C_N * X)	-0.00123	-0.00169	-0.00106
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00593	0.00554	0.00580
	(B * C_N * X)	0.00169	0.00125	0.00158
	(B * !C_N * X)	0.00225	0.00203	0.00203
	(B * !C_N * X)	-0.00195	-0.00216	-0.00217
	(!B * !C_N * X)	0.00307	0.00260	0.00312
	(!B * !C_N * X)	-0.00124	-0.00175	-0.00112
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00573	0.00492	0.00541
	(B * C_N * X)	-0.00161	-0.00249	-0.00186
	(B * !C_N * X)	0.00327	0.00287	0.00281
	(B * !C_N * X)	-0.00398	-0.00445	-0.00442
	(!B * !C_N * X)	0.00491	0.00398	0.00500
	(!B * !C_N * X)	-0.00257	-0.00356	-0.00233

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)	0.00209	0.00206	0.00198
	(B * C_N * X)	0.00603	0.00604	0.00594
	(B * !C_N * X)	-0.00158	-0.00158	-0.00159
	(B * !C_N * X)	0.00234	0.00234	0.00234
	(!B * !C_N * X)	-0.00044	-0.00047	-0.00067
	(!B * !C_N * X)	0.00356	0.00355	0.00334
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00185	0.00182	0.00173
	(B * C_N * X)	0.00607	0.00608	0.00597
	(B * !C_N * X)	-0.00175	-0.00176	-0.00175
	(B * !C_N * X)	0.00244	0.00246	0.00245
	(!B * !C_N * X)	-0.00061	-0.00064	-0.00084
	(!B * !C_N * X)	0.00367	0.00366	0.00345
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00026	-0.00030	-0.00048
	(B * C_N * X)	0.00704	0.00704	0.00685
	(B * !C_N * X)	-0.00223	-0.00225	-0.00224
	(B * !C_N * X)	0.00499	0.00506	0.00501
	(!B * !C_N * X)	0.00005	-0.00001	-0.00040
	(!B * !C_N * X)	0.00745	0.00745	0.00703

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)	0.00543	0.00543	0.00544
	(A * C_N * X)	0.00229	0.00230	0.00233
	(A * !C_N * X)	0.00209	0.00210	0.00205
	(A * !C_N * X)	-0.00149	-0.00149	-0.00152
	(!A * !C_N * X)	0.00277	0.00229	0.00298
	(!A * !C_N * X)	-0.00151	-0.00199	-0.00126
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00548	0.00549	0.00550
	(A * C_N * X)	0.00241	0.00241	0.00244
	(A * !C_N * X)	0.00204	0.00207	0.00201
	(A * !C_N * X)	-0.00153	-0.00152	-0.00155
	(!A * !C_N * X)	0.00275	0.00226	0.00294
	(!A * !C_N * X)	-0.00147	-0.00197	-0.00125
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00442	0.00443	0.00443
	(A * C_N * X)	-0.00026	-0.00025	-0.00021
	(A * !C_N * X)	0.00284	0.00286	0.00274
	(A * !C_N * X)	-0.00289	-0.00288	-0.00294
	(!A * !C_N * X)	0.00414	0.00316	0.00453
	(!A * !C_N * X)	-0.00288	-0.00385	-0.00243

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)	0.00172	0.00168	0.00138
	(A * C_N * X)	0.00483	0.00482	0.00451
	(A * !C_N * X)	-0.00175	-0.00175	-0.00173
	(A * !C_N * X)	0.00179	0.00179	0.00176
	(!A * !C_N * X)	-0.00055	-0.00059	-0.00080
	(!A * !C_N * X)	0.00371	0.00368	0.00346
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00170	0.00167	0.00136
	(A * C_N * X)	0.00476	0.00475	0.00445
	(A * !C_N * X)	-0.00165	-0.00166	-0.00164
	(A * !C_N * X)	0.00184	0.00186	0.00184
	(!A * !C_N * X)	-0.00046	-0.00050	-0.00071
	(!A * !C_N * X)	0.00374	0.00373	0.00350
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00015	-0.00021	-0.00082
	(A * C_N * X)	0.00452	0.00451	0.00390
	(A * !C_N * X)	-0.00199	-0.00199	-0.00195
	(A * !C_N * X)	0.00358	0.00360	0.00355
	(!A * !C_N * X)	0.00046	0.00038	-0.00004
	(!A * !C_N * X)	0.00741	0.00741	0.00694

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00850	0.02511	0.28679
	(B * X)	0.00389	0.02048	0.28217
	(A * !B * X)	0.00918	0.02578	0.28736
	(A * !B * X)	0.00447	0.02105	0.28263
sky130_fd_sc_hs__or3b_2	(B * X)	0.00917	0.02509	0.28096
	(B * X)	0.00437	0.02029	0.27618
	(A * !B * X)	0.00984	0.02576	0.28151
	(A * !B * X)	0.00494	0.02085	0.27662
sky130_fd_sc_hs__or3b_4	(B * X)	0.00881	0.02647	0.30991
	(B * X)	0.00310	0.02075	0.30419
	(A * !B * X)	0.01021	0.02784	0.31106
	(A * !B * X)	0.00428	0.02190	0.30512

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00131	0.01903	0.28365
	(B * X)	0.00591	0.02366	0.28826
	(A * !B * X)	0.00132	0.01905	0.28385
	(A * !B * X)	0.00609	0.02383	0.28859
sky130_fd_sc_hs__or3b_2	(B * X)	0.00138	0.01853	0.27736
	(B * X)	0.00616	0.02332	0.28214
	(A * !B * X)	0.00139	0.01855	0.27756
	(A * !B * X)	0.00635	0.02349	0.28246
sky130_fd_sc_hs__or3b_4	(B * X)	0.00186	0.02017	0.30474
	(B * X)	0.00756	0.02589	0.31043
	(A * !B * X)	0.00191	0.02021	0.30516
	(A * !B * X)	0.00795	0.02627	0.31108

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00260	0.00258	0.00252	1.76056
sky130_fd_sc_hs__or3_2	0.00264	0.00268	0.00274	3.27299
sky130_fd_sc_hs__or3_4	0.00489	0.00436	0.00426	6.10596

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3_1	0.00000	56.31390	143.47300
sky130_fd_sc_hs__or3_2	0.00000	74.88800	254.74500
sky130_fd_sc_hs__or3_4	0.00000	146.87700	486.37400

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)	0.04926	0.40642	5.39668
	B->X (RR)	0.04783	0.39254	5.15723
	C->X (RR)	0.04255	0.37379	5.03404
sky130_fd_sc_hs__or3_2	A->X (RR)	0.04843	0.31614	5.02916
	B->X (RR)	0.04652	0.30210	4.80294
	C->X (RR)	0.04230	0.28687	4.68197
sky130_fd_sc_hs__or3_4	A->X (RR)	0.06787	0.34112	5.90686
	B->X (RR)	0.06301	0.32144	5.62822
	C->X (RR)	0.05417	0.29917	5.49930

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.10774	0.48576	5.74580
	B->X (FF)	0.09842	0.51293	6.25932
	C->X (FF)	0.07997	0.51745	6.38047
sky130_fd_sc_hs__or3_2	A->X (FF)	0.12992	0.47790	5.89428
	B->X (FF)	0.11969	0.50636	6.38557
	C->X (FF)	0.10274	0.51523	6.50525
sky130_fd_sc_hs__or3_4	A->X (FF)	0.11890	0.39346	5.08997
	B->X (FF)	0.10845	0.42078	5.60103
	C->X (FF)	0.08858	0.42494	5.72933

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01658	0.02484	0.18487
	A	0.00830	0.01660	0.17689
	B	0.01427	0.02289	0.16983
	B	0.00747	0.01608	0.16290
	C	0.01350	0.02290	0.17699
	C	0.00789	0.01731	0.17129
sky130_fd_sc_hs__or3_2	A	0.02072	0.03063	0.20806
	A	0.01244	0.02234	0.19953
	B	0.01821	0.02866	0.18815
	B	0.01129	0.02177	0.18102
	C	0.01748	0.02849	0.19453
	C	0.01172	0.02277	0.18891
sky130_fd_sc_hs__or3_4	A	0.04151	0.05675	0.35253
	A	0.02674	0.04201	0.33722
	B	0.03532	0.05151	0.32247
	B	0.02403	0.04029	0.31229
	C	0.03245	0.05022	0.33397
	C	0.02365	0.04155	0.32658

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00866	0.01530	0.16496
	A	0.01691	0.02354	0.17323
	B	0.00876	0.01568	0.17409
	B	0.01557	0.02247	0.17915
	C	0.00863	0.01728	0.18257
	C	0.01422	0.02286	0.18726
sky130_fd_sc_hs__or3_2	A	0.01975	0.02223	0.18983
	A	0.02803	0.03051	0.19669
	B	0.01994	0.02250	0.19659
	B	0.02684	0.02939	0.19995
	C	0.01976	0.02411	0.20311
	C	0.02549	0.02982	0.20704
sky130_fd_sc_hs__or3_4	A	0.03693	0.03977	0.30714
	A	0.05168	0.05452	0.31649
	B	0.03768	0.04211	0.32124
	B	0.04892	0.05304	0.33221
	C	0.03725	0.04492	0.34261
	C	0.04608	0.05357	0.34829

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00215	0.00196	0.00193
	(B * C * X)	-0.00189	-0.00212	-0.00211
	(B * !C * X)	0.00263	0.00226	0.00249
	(B * !C * X)	-0.00147	-0.00188	-0.00156
	(!B * C * X)	0.00293	0.00252	0.00302
	(!B * C * X)	-0.00125	-0.00170	-0.00107
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00226	0.00207	0.00204
	(B * C * X)	-0.00188	-0.00212	-0.00211
	(B * !C * X)	0.00275	0.00237	0.00260
	(B * !C * X)	-0.00146	-0.00188	-0.00156
	(!B * C * X)	0.00305	0.00262	0.00313
	(!B * C * X)	-0.00124	-0.00171	-0.00107
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00369	0.00323	0.00322
	(B * C * X)	-0.00375	-0.00416	-0.00417
	(B * !C * X)	0.00472	0.00384	0.00434
	(B * !C * X)	-0.00286	-0.00369	-0.00309
	(!B * C * X)	0.00531	0.00434	0.00540
	(!B * C * X)	-0.00239	-0.00337	-0.00210

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00173	-0.00175	-0.00174
	(B * C * X)	0.00230	0.00233	0.00230
	(B * !C * X)	-0.00121	-0.00122	-0.00132
	(B * !C * X)	0.00287	0.00285	0.00277
	(!B * C * X)	-0.00059	-0.00062	-0.00082
	(!B * C * X)	0.00355	0.00354	0.00333
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00179	-0.00179	-0.00179
	(B * C * X)	0.00234	0.00235	0.00235
	(B * !C * X)	-0.00127	-0.00129	-0.00138
	(B * !C * X)	0.00291	0.00290	0.00282
	(!B * C * X)	-0.00065	-0.00068	-0.00088
	(!B * C * X)	0.00359	0.00358	0.00338
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00271	-0.00274	-0.00272
	(B * C * X)	0.00466	0.00472	0.00467
	(B * !C * X)	-0.00169	-0.00172	-0.00190
	(B * !C * X)	0.00583	0.00582	0.00561
	(!B * C * X)	-0.00045	-0.00051	-0.00089
	(!B * C * X)	0.00719	0.00716	0.00674

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00200	0.00201	0.00196
	(A * C * X)	-0.00121	-0.00122	-0.00122
	(A * !C * X)	0.00200	0.00200	0.00200
	(A * !C * X)	-0.00080	-0.00079	-0.00076
	(!A * C * X)	0.00265	0.00216	0.00286
	(!A * C * X)	-0.00129	-0.00178	-0.00103
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00204	0.00205	0.00200
	(A * C * X)	-0.00132	-0.00133	-0.00134
	(A * !C * X)	0.00205	0.00205	0.00205
	(A * !C * X)	-0.00090	-0.00091	-0.00088
	(!A * C * X)	0.00272	0.00222	0.00292
	(!A * C * X)	-0.00140	-0.00190	-0.00114
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00280	0.00282	0.00270
	(A * C * X)	-0.00248	-0.00246	-0.00250
	(A * !C * X)	0.00286	0.00287	0.00285
	(A * !C * X)	-0.00151	-0.00151	-0.00147
	(!A * C * X)	0.00416	0.00312	0.00449
	(!A * C * X)	-0.00259	-0.00362	-0.00215

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00168	-0.00168	-0.00166
	(A * C * X)	0.00147	0.00147	0.00145
	(A * !C * X)	-0.00115	-0.00118	-0.00149
	(A * !C * X)	0.00162	0.00161	0.00131
	(!A * C * X)	-0.00047	-0.00050	-0.00071
	(!A * C * X)	0.00345	0.00342	0.00320
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00167	-0.00168	-0.00166
	(A * C * X)	0.00163	0.00164	0.00161
	(A * !C * X)	-0.00116	-0.00119	-0.00151
	(A * !C * X)	0.00178	0.00177	0.00146
	(!A * C * X)	-0.00048	-0.00052	-0.00073
	(!A * C * X)	0.00361	0.00360	0.00336
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00203	-0.00204	-0.00200
	(A * C * X)	0.00309	0.00309	0.00305
	(A * !C * X)	-0.00105	-0.00110	-0.00174
	(A * !C * X)	0.00331	0.00331	0.00269
	(!A * C * X)	0.00041	0.00033	-0.00009
	(!A * C * X)	0.00708	0.00708	0.00660

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00191	0.00193	0.00192
	(B * X)	-0.00089	-0.00090	-0.00089
	(A * !B * X)	0.00193	0.00195	0.00197
	(A * !B * X)	-0.00073	-0.00073	-0.00069
sky130_fd_sc_hs__or3_2	(B * X)	0.00215	0.00218	0.00216
	(B * X)	-0.00088	-0.00090	-0.00088
	(A * !B * X)	0.00216	0.00219	0.00220
	(A * !B * X)	-0.00072	-0.00073	-0.00069
sky130_fd_sc_hs__or3_4	(B * X)	0.00274	0.00278	0.00275
	(B * X)	-0.00175	-0.00178	-0.00174
	(A * !B * X)	0.00278	0.00280	0.00285
	(A * !B * X)	-0.00141	-0.00141	-0.00133

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00169	-0.00169	-0.00177
	(B * X)	0.00112	0.00111	0.00105
	(A * !B * X)	-0.00103	-0.00105	-0.00130
	(A * !B * X)	0.00169	0.00169	0.00146
sky130_fd_sc_hs__or3_2	(B * X)	-0.00187	-0.00188	-0.00196
	(B * X)	0.00115	0.00115	0.00109
	(A * !B * X)	-0.00121	-0.00124	-0.00149
	(A * !B * X)	0.00173	0.00173	0.00150
sky130_fd_sc_hs__or3_4	(B * X)	-0.00224	-0.00225	-0.00241
	(B * X)	0.00224	0.00225	0.00211
	(A * !B * X)	-0.00085	-0.00091	-0.00143
	(A * !B * X)	0.00342	0.00343	0.00295

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00256	0.00253	0.00237	0.00240	1.71090
sky130_fd_sc_hs__or4bb_2	0.00253	0.00267	0.00233	0.00231	2.70304
sky130_fd_sc_hs__or4bb_4	0.00399	0.00407	0.00258	0.00255	5.12787

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	399.63800	850.71600
sky130_fd_sc_hs__or4bb_2	0.00000	410.95300	984.42400
sky130_fd_sc_hs__or4bb_4	0.00000	237.90900	771.67300

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)	0.05014	0.41062	5.18643
	B->X (RR)	0.05046	0.40169	5.00933
	C_N->X (FR)	0.08739	0.58693	7.64960
	D_N->X (FR)	0.07722	0.57295	7.62673
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.05033	0.32893	4.69416
	B->X (RR)	0.05118	0.32218	4.52300
	C_N->X (FR)	0.08095	0.50110	7.26854
	D_N->X (FR)	0.07960	0.50470	7.43344
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.07426	0.35729	5.49273
	B->X (RR)	0.07535	0.34956	5.30824
	C_N->X (FR)	0.11801	0.50961	7.83291
	D_N->X (FR)	0.11397	0.50890	7.86191

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.14891	0.52616	5.86683
	B->X (FF)	0.13764	0.54844	6.34297
	C_N->X (RF)	0.14267	0.38299	3.09155
	D_N->X (RF)	0.11012	0.35760	3.06411
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.17842	0.51374	5.81928
	B->X (FF)	0.17133	0.53409	5.93362
	C_N->X (RF)	0.17149	0.35839	2.42871
	D_N->X (RF)	0.14643	0.34422	2.51027
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.20077	0.46994	5.24974
	B->X (FF)	0.19136	0.48955	5.38721
	C_N->X (RF)	0.19343	0.33545	2.26378
	D_N->X (RF)	0.15369	0.31249	2.17928

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.03387	0.04032	0.18105
	A	0.02768	0.03416	0.17477
	B	0.03172	0.03890	0.16833
	B	0.02662	0.03384	0.17103
	C_N	0.02239	0.03984	0.31126
	C_N	0.02640	0.04383	0.31588
	D_N	0.02272	0.04056	0.31177
	D_N	0.02627	0.04410	0.31594
sky130_fd_sc_hs__or4bb_2	A	0.03809	0.04854	0.24639
	A	0.03189	0.04242	0.24020
	B	0.03614	0.04598	0.21836
	B	0.03082	0.04074	0.21289
	C_N	0.02594	0.04406	0.32460
	C_N	0.02981	0.04791	0.32903
	D_N	0.02709	0.04402	0.31787
	D_N	0.03065	0.04755	0.32166
sky130_fd_sc_hs__or4bb_4	A	0.05023	0.06426	0.37580
	A	0.03914	0.05319	0.36599
	B	0.04402	0.05767	0.32851
	B	0.03564	0.04936	0.32097
	C_N	0.03966	0.05570	0.35753
	C_N	0.04328	0.05938	0.36331
	D_N	0.03922	0.05624	0.37011
	D_N	0.04289	0.06000	0.37577

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.02574	0.02973	0.16768
	A	0.03191	0.03561	0.17324
	B	0.02573	0.02991	0.17380
	B	0.03080	0.03498	0.17827
	C_N	0.03213	0.04544	0.31500
	C_N	0.02813	0.04124	0.31043
	D_N	0.02989	0.04433	0.31584
	D_N	0.02635	0.04070	0.31178
sky130_fd_sc_hs__or4bb_2	A	0.03703	0.03564	0.22705
	A	0.04323	0.04185	0.22825
	B	0.03670	0.03531	0.20073
	B	0.04200	0.04059	0.20270
	C_N	0.04243	0.04949	0.32290
	C_N	0.03856	0.04555	0.31901
	D_N	0.04121	0.04771	0.30430
	D_N	0.03766	0.04416	0.29927
sky130_fd_sc_hs__or4bb_4	A	0.06057	0.05177	0.34911
	A	0.07166	0.06267	0.35426
	B	0.06073	0.05275	0.31097
	B	0.06907	0.06091	0.31257
	C_N	0.06824	0.06470	0.34929
	C_N	0.06461	0.06091	0.34471
	D_N	0.06625	0.06386	0.35230
	D_N	0.06256	0.06019	0.34766

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)**	0.00884	0.00846	0.00865
	(B * C_N * D_N * X)	0.00483	0.00441	0.00467
	(B * !D_N * X)	0.00517	0.00504	0.00501
	(B * !D_N * X)	0.00120	0.00103	0.00105
	(B * !C_N * D_N * X)	0.00519	0.00504	0.00501
	(B * !C_N * D_N * X)	0.00122	0.00103	0.00105
	(!B * C_N * !D_N * X)	0.00603	0.00564	0.00609
	(!B * C_N * !D_N * X)	0.00199	0.00155	0.00209
	(!B * !C_N * D_N * X)	0.00587	0.00546	0.00558
	(!B * !C_N * D_N * X)	0.00184	0.00138	0.00159
	(!B * !C_N * !D_N * X)	0.00205	0.00191	0.00187
	(!B * !C_N * !D_N * X)	-0.00186	-0.00208	-0.00208
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00895	0.00859	0.00878
	(B * C_N * D_N * X)	0.00486	0.00445	0.00472
	(B * !D_N * X)	0.00530	0.00513	0.00514
	(B * !D_N * X)	0.00122	0.00109	0.00109
	(B * !C_N * D_N * X)	0.00513	0.00498	0.00495
	(B * !C_N * D_N * X)	0.00106	0.00088	0.00090
	(!B * C_N * !D_N * X)	0.00615	0.00576	0.00621
	(!B * C_N * !D_N * X)	0.00201	0.00158	0.00213
	(!B * !C_N * D_N * X)	0.00580	0.00539	0.00551
	(!B * !C_N * D_N * X)	0.00168	0.00122	0.00144
	(!B * !C_N * !D_N * X)	0.00199	0.00184	0.00181
	(!B * !C_N * !D_N * X)	-0.00201	-0.00224	-0.00223

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00667	0.00566	0.00597
	(B * C_N * D_N * X)	-0.00022	-0.00125	-0.00085
	(B * !D_N * X)	0.00414	0.00378	0.00375
	(B * !D_N * X)	-0.00267	-0.00304	-0.00303
	(B * !C_N * D_N * X)	0.00419	0.00378	0.00376
	(B * !C_N * D_N * X)	-0.00262	-0.00304	-0.00303
	(!B * C_N * !D_N * X)	0.00607	0.00508	0.00593
	(!B * C_N * !D_N * X)	-0.00090	-0.00193	-0.00093
	(!B * !C_N * D_N * X)	0.00572	0.00468	0.00489
	(!B * !C_N * D_N * X)	-0.00122	-0.00230	-0.00194
	(!B * !C_N * !D_N * X)	0.00295	0.00259	0.00256
	(!B * !C_N * !D_N * X)	-0.00372	-0.00419	-0.00420

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)**	0.00511	0.00508	0.00502
	(B * C_N * D_N * X)	0.00911	0.00913	0.00902
	(B * !D_N * X)	0.00151	0.00149	0.00150
	(B * !D_N * X)	0.00547	0.00550	0.00547
	(B * !C_N * D_N * X)	0.00152	0.00151	0.00151
	(B * !C_N * D_N * X)	0.00547	0.00548	0.00548
	(!B * C_N * !D_N * X)	0.00272	0.00270	0.00252
	(!B * C_N * !D_N * X)	0.00674	0.00672	0.00655
	(!B * !C_N * D_N * X)	0.00207	0.00206	0.00199
	(!B * !C_N * D_N * X)	0.00609	0.00608	0.00601
	(!B * !C_N * !D_N * X)	-0.00161	-0.00162	-0.00161
	(!B * !C_N * !D_N * X)	0.00232	0.00235	0.00233

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00505	0.00503	0.00495
	(B * C_N * D_N * X)	0.00912	0.00913	0.00904
	(B * !D_N * X)	0.00144	0.00142	0.00143
	(B * !D_N * X)	0.00548	0.00550	0.00549
	(B * !C_N * D_N * X)	0.00163	0.00163	0.00163
	(B * !C_N * D_N * X)	0.00567	0.00569	0.00568
	(!B * C_N * !D_N * X)	0.00264	0.00262	0.00244
	(!B * C_N * !D_N * X)	0.00675	0.00673	0.00656
	(!B * !C_N * D_N * X)	0.00219	0.00218	0.00210
	(!B * !C_N * D_N * X)	0.00628	0.00627	0.00621
	(!B * !C_N * !D_N * X)	-0.00149	-0.00151	-0.00150
	(!B * !C_N * !D_N * X)	0.00251	0.00255	0.00253
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00141	0.00138	0.00123
	(B * C_N * D_N * X)	0.00828	0.00829	0.00810
	(B * !D_N * X)	-0.00074	-0.00076	-0.00075
	(B * !D_N * X)	0.00602	0.00609	0.00605
	(B * !C_N * D_N * X)	-0.00074	-0.00075	-0.00074
	(B * !C_N * D_N * X)	0.00604	0.00608	0.00605
	(!B * C_N * !D_N * X)	0.00165	0.00161	0.00127
	(!B * C_N * !D_N * X)	0.00858	0.00853	0.00819
	(!B * !C_N * D_N * X)	0.00038	0.00036	0.00023
	(!B * !C_N * D_N * X)	0.00728	0.00727	0.00713
	(!B * !C_N * !D_N * X)	-0.00191	-0.00192	-0.00191
	(!B * !C_N * !D_N * X)	0.00481	0.00485	0.00482

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)**	0.00845	0.00846	0.00845
	(A * C_N * D_N * X)	0.00541	0.00541	0.00544
	(A * C_N * !D_N * X)	0.00558	0.00571	0.00561
	(A * C_N * !D_N * X)	0.00181	0.00190	0.00184
	(A * !C_N * D_N * X)	0.00494	0.00496	0.00485
	(A * !C_N * D_N * X)	0.00141	0.00140	0.00132
	(A * !C_N * !D_N * X)	0.00173	0.00174	0.00164
	(A * !C_N * !D_N * X)	-0.00185	-0.00187	-0.00191
	(!A * C_N * !D_N * X)	0.00619	0.00560	0.00617
	(!A * C_N * !D_N * X)	0.00200	0.00142	0.00202
	(!A * !C_N * D_N * X)	0.00559	0.00511	0.00535
	(!A * !C_N * D_N * X)	0.00141	0.00093	0.00120
	(!A * !C_N * !D_N * X)	0.00195	0.00169	0.00165
	(!A * !C_N * !D_N * X)	-0.00222	-0.00249	-0.00250
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00887	0.00891	0.00889
	(A * C_N * D_N * X)	0.00559	0.00557	0.00561
	(A * C_N * !D_N * X)	0.00602	0.00614	0.00602
	(A * C_N * !D_N * X)	0.00196	0.00206	0.00199
	(A * !C_N * D_N * X)	0.00546	0.00550	0.00537
	(A * !C_N * D_N * X)	0.00168	0.00168	0.00160
	(A * !C_N * !D_N * X)	0.00226	0.00229	0.00217
	(A * !C_N * !D_N * X)	-0.00157	-0.00159	-0.00163
	(!A * C_N * !D_N * X)	0.00660	0.00603	0.00659
	(!A * C_N * !D_N * X)	0.00219	0.00159	0.00218
	(!A * !C_N * D_N * X)	0.00613	0.00565	0.00588
	(!A * !C_N * D_N * X)	0.00171	0.00120	0.00147
	(!A * !C_N * !D_N * X)	0.00248	0.00222	0.00218
	(!A * !C_N * !D_N * X)	-0.00194	-0.00222	-0.00222

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00555	0.00557	0.00550
	(A * C_N * D_N * X)	0.00105	0.00103	0.00100
	(A * C_N * !D_N * X)	0.00470	0.00500	0.00476
	(A * C_N * !D_N * X)	-0.00135	-0.00113	-0.00129
	(A * !C_N * D_N * X)	0.00421	0.00417	0.00390
	(A * !C_N * D_N * X)	-0.00142	-0.00147	-0.00167
	(A * !C_N * !D_N * X)	0.00282	0.00280	0.00258
	(A * !C_N * !D_N * X)	-0.00291	-0.00294	-0.00303
	(!A * C_N * !D_N * X)	0.00597	0.00485	0.00587
	(!A * C_N * !D_N * X)	-0.00082	-0.00200	-0.00092
	(!A * !C_N * D_N * X)	0.00548	0.00444	0.00482
	(!A * !C_N * D_N * X)	-0.00137	-0.00241	-0.00197
	(!A * !C_N * !D_N * X)	0.00312	0.00258	0.00250
	(!A * !C_N * !D_N * X)	-0.00369	-0.00425	-0.00426

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)**	0.00496	0.00493	0.00465
	(A * C_N * D_N * X)	0.00799	0.00799	0.00769
	(A * C_N * !D_N * X)	0.00108	0.00106	0.00108
	(A * C_N * !D_N * X)	0.00473	0.00473	0.00472
	(A * !C_N * D_N * X)	0.00172	0.00171	0.00172
	(A * !C_N * D_N * X)	0.00518	0.00519	0.00516
	(A * !C_N * !D_N * X)	-0.00143	-0.00143	-0.00143
	(A * !C_N * !D_N * X)	0.00206	0.00206	0.00204
	(!A * C_N * !D_N * X)	0.00264	0.00261	0.00241
	(!A * C_N * !D_N * X)	0.00678	0.00676	0.00656
	(!A * !C_N * D_N * X)	0.00228	0.00226	0.00217
	(!A * !C_N * D_N * X)	0.00644	0.00643	0.00633
	(!A * !C_N * !D_N * X)	-0.00138	-0.00138	-0.00138
	(!A * !C_N * !D_N * X)	0.00277	0.00277	0.00277
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00461	0.00456	0.00429
	(A * C_N * D_N * X)	0.00789	0.00788	0.00759
	(A * C_N * !D_N * X)	0.00071	0.00069	0.00071
	(A * C_N * !D_N * X)	0.00461	0.00463	0.00461
	(A * !C_N * D_N * X)	0.00123	0.00122	0.00124
	(A * !C_N * D_N * X)	0.00495	0.00496	0.00493
	(A * !C_N * !D_N * X)	-0.00192	-0.00193	-0.00191
	(A * !C_N * !D_N * X)	0.00184	0.00185	0.00181
	(!A * C_N * !D_N * X)	0.00227	0.00223	0.00204
	(!A * C_N * !D_N * X)	0.00668	0.00666	0.00646
	(!A * !C_N * D_N * X)	0.00181	0.00178	0.00169
	(!A * !C_N * D_N * X)	0.00620	0.00620	0.00611
	(!A * !C_N * !D_N * X)	-0.00185	-0.00187	-0.00186
	(!A * !C_N * !D_N * X)	0.00253	0.00256	0.00254

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	0.00121	0.00117	0.00065
	(A * C_N * D_N * X)	0.00575	0.00574	0.00523
	(A * C_N * !D_N * X)	-0.00138	-0.00139	-0.00137
	(A * C_N * !D_N * X)	0.00441	0.00443	0.00442
	(A * !C_N * D_N * X)	-0.00076	-0.00076	-0.00073
	(A * !C_N * D_N * X)	0.00465	0.00466	0.00463
	(A * !C_N * !D_N * X)	-0.00197	-0.00199	-0.00196
	(A * !C_N * !D_N * X)	0.00351	0.00354	0.00348
	(!A * C_N * !D_N * X)	0.00172	0.00165	0.00128
	(!A * C_N * !D_N * X)	0.00850	0.00847	0.00808
	(!A * !C_N * D_N * X)	0.00041	0.00036	0.00019
	(!A * !C_N * D_N * X)	0.00719	0.00722	0.00699
	(!A * !C_N * !D_N * X)	-0.00181	-0.00183	-0.00182
	(!A * !C_N * !D_N * X)	0.00494	0.00497	0.00496

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.01239	0.02816	0.28296
	(B * X)	0.00751	0.02324	0.27806
	(A * !B * X) + (!A * !B * !D_N * X)	0.01299	0.02874	0.28341
	(A * !B * X) + (!A * !B * !D_N * X)	0.00799	0.02372	0.27840
sky130_fd_sc_hs__or4bb_2	(B * X)	0.01188	0.02842	0.29075
	(B * X)	0.00715	0.02366	0.28602
	(A * !B * X) + (!A * !B * !D_N * X)	0.01247	0.02896	0.29094
	(A * !B * X) + (!A * !B * !D_N * X)	0.00762	0.02411	0.28608
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00920	0.02637	0.30317
	(B * X)	0.00417	0.02131	0.29815
	(A * !B * X) + (!A * !B * !D_N * X)	0.01037	0.02752	0.30406
	(A * !B * X) + (!A * !B * !D_N * X)	0.00514	0.02226	0.29884

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00473	0.02169	0.27939
	(B * X)	0.00962	0.02658	0.28428
	(A * !B * X) + (!A * !B * !D_N * X)	0.00487	0.02182	0.27969
	(A * !B * X) + (!A * !B * !D_N * X)	0.00994	0.02688	0.28470
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00459	0.02229	0.28754
	(B * X)	0.00932	0.02704	0.29227
	(A * !B * X) + (!A * !B * !D_N * X)	0.00472	0.02238	0.28755
	(A * !B * X) + (!A * !B * !D_N * X)	0.00962	0.02730	0.29240
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00401	0.02176	0.29957
	(B * X)	0.00901	0.02678	0.30458
	(A * !B * X) + (!A * !B * !D_N * X)	0.00438	0.02211	0.30026
	(A * !B * X) + (!A * !B * !D_N * X)	0.00968	0.02743	0.30548

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)	0.01162	0.02763	0.28175
	(B * C_N * X)	0.00721	0.02318	0.27733
	(A * !B * C_N * X)	0.01225	0.02824	0.28231
	(A * !B * C_N * X)	0.00776	0.02373	0.27781
	(!C_N * X)	0.00863	0.02464	0.27925
	(!C_N * X)	0.00423	0.02021	0.27483
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.01177	0.02778	0.28392
	(B * C_N * X)	0.00738	0.02336	0.27953
	(A * !B * C_N * X)	0.01239	0.02840	0.28447
	(A * !B * C_N * X)	0.00793	0.02391	0.28001
	(!C_N * X)	0.00878	0.02479	0.28096
	(!C_N * X)	0.00441	0.02039	0.27657
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.01022	0.02738	0.30801
	(B * C_N * X)	0.00518	0.02235	0.30301
	(A * !B * C_N * X)	0.01153	0.02867	0.30920
	(A * !B * C_N * X)	0.00636	0.02350	0.30407
	(!C_N * X)	0.00950	0.02667	0.30733
	(!C_N * X)	0.00450	0.02166	0.30236

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)	0.00469	0.02181	0.27883
	(B * C_N * X)	0.00909	0.02623	0.28325
	(A * !B * C_N * X)	0.00479	0.02189	0.27907
	(A * !B * C_N * X)	0.00928	0.02642	0.28356
	(!C_N * X)	0.00136	0.01852	0.27601
	(!C_N * X)	0.00574	0.02294	0.28042
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00501	0.02220	0.28131
	(B * C_N * X)	0.00940	0.02660	0.28570
	(A * !B * C_N * X)	0.00510	0.02230	0.28156
	(A * !B * C_N * X)	0.00960	0.02679	0.28602
	(!C_N * X)	0.00165	0.01884	0.27795
	(!C_N * X)	0.00603	0.02323	0.28234
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00435	0.02207	0.30387
	(B * C_N * X)	0.00933	0.02707	0.30885
	(A * !B * C_N * X)	0.00452	0.02224	0.30438
	(A * !B * C_N * X)	0.00970	0.02743	0.30949
	(!C_N * X)	0.00256	0.02029	0.30208
	(!C_N * X)	0.00752	0.02527	0.30705

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00261	0.00250	0.00259	0.00242	1.64528
sky130_fd_sc_hs__or4b_2	0.00269	0.00260	0.00261	0.00230	2.74255
sky130_fd_sc_hs__or4b_4	0.00395	0.00447	0.00450	0.00252	6.33444

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4b_1	0.00000	217.99900	490.10300
sky130_fd_sc_hs__or4b_2	0.00000	228.71800	621.83400
sky130_fd_sc_hs__or4b_4	0.00000	164.64800	630.70800

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)	0.05261	0.41973	5.15074
	B->X (RR)	0.05283	0.41097	4.98512
	C->X (RR)	0.05034	0.39652	4.81710
	D_N->X (FR)	0.07761	0.57173	7.52675
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.05091	0.32456	4.48961
	B->X (RR)	0.05135	0.31807	4.35955
	C->X (RR)	0.04896	0.30632	4.21826
	D_N->X (FR)	0.08342	0.51182	7.46863
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.07613	0.35714	5.81790
	B->X (RR)	0.07518	0.34575	5.63107
	C->X (RR)	0.06711	0.32204	5.39929
	D_N->X (FR)	0.10059	0.47468	7.87736

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.15481	0.53037	5.75694
	B->X (FF)	0.14339	0.55172	6.22371
	C->X (FF)	0.12713	0.56598	6.35372
	D_N->X (RF)	0.11255	0.36513	3.03032
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.18707	0.52251	5.58068
	B->X (FF)	0.17587	0.54353	6.01719
	C->X (FF)	0.15633	0.55790	6.13161
	D_N->X (RF)	0.14984	0.35375	2.60418
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.19259	0.48196	5.86357
	B->X (FF)	0.18311	0.49919	6.01958
	C->X (FF)	0.15605	0.51090	6.17531
	D_N->X (RF)	0.14305	0.31928	3.04476

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.02685	0.03280	0.16359
	A	0.01881	0.02478	0.15543
	B	0.02447	0.03112	0.15207
	B	0.01794	0.02461	0.14544
	C	0.02228	0.02900	0.14039
	C	0.01675	0.02349	0.13476
	D_N	0.01374	0.03150	0.30842
	D_N	0.01702	0.03477	0.31175
sky130_fd_sc_hs__or4b_2	A	0.03114	0.03788	0.16489
	A	0.02297	0.02981	0.15692
	B	0.02878	0.03626	0.15340
	B	0.02212	0.02963	0.14703
	C	0.02637	0.03392	0.14189
	C	0.02071	0.02830	0.13684
	D_N	0.01819	0.03550	0.29920
	D_N	0.02168	0.03900	0.30345
sky130_fd_sc_hs__or4b_4	A	0.04970	0.06275	0.36224
	A	0.03559	0.04870	0.34812
	B	0.04472	0.05734	0.32499
	B	0.03269	0.04533	0.31409
	C	0.03762	0.05135	0.29542
	C	0.02801	0.04183	0.28679
	D_N	0.03478	0.05223	0.36143
	D_N	0.03798	0.05551	0.36651

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01806	0.02126	0.15581
	A	0.02610	0.02930	0.16387
	B	0.01825	0.02196	0.16324
	B	0.02476	0.02847	0.16864
	C	0.01810	0.02210	0.15104
	C	0.02361	0.02762	0.15465
	D_N	0.02401	0.03891	0.31705
	D_N	0.02074	0.03551	0.31252
sky130_fd_sc_hs__or4b_2	A	0.03005	0.02673	0.17244
	A	0.03819	0.03486	0.17795
	B	0.03031	0.02736	0.17483
	B	0.03694	0.03400	0.18162
	C	0.03001	0.02753	0.16033
	C	0.03566	0.03318	0.16617
	D_N	0.03700	0.04271	0.29955
	D_N	0.03352	0.03910	0.29499
sky130_fd_sc_hs__or4b_4	A	0.05705	0.04781	0.33586
	A	0.07112	0.06178	0.34339
	B	0.05685	0.04815	0.30469
	B	0.06886	0.06007	0.31031
	C	0.05623	0.04874	0.27769
	C	0.06579	0.05829	0.28589
	D_N	0.06461	0.06329	0.37541
	D_N	0.06142	0.05999	0.36874

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)**	0.00525	0.00510	0.00506
	(B * C * D_N * X)	0.00125	0.00104	0.00106
	(B * !D_N * X)	0.00197	0.00192	0.00189
	(B * !D_N * X)	-0.00202	-0.00213	-0.00211
	(B * !C * D_N * X)	0.00580	0.00541	0.00558
	(B * !C * D_N * X)	0.00172	0.00130	0.00155
	(!B * C * D_N * X)	0.00593	0.00551	0.00563
	(!B * C * D_N * X)	0.00184	0.00136	0.00160
	(!B * C * !D_N * X)	0.00211	0.00196	0.00192
	(!B * C * !D_N * X)	-0.00183	-0.00208	-0.00207
	(!B * !C * !D_N * X)	0.00303	0.00263	0.00303
	(!B * !C * !D_N * X)	-0.00113	-0.00159	-0.00104
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00543	0.00524	0.00524
	(B * C * D_N * X)	0.00123	0.00105	0.00105
	(B * !D_N * X)	0.00209	0.00201	0.00201
	(B * !D_N * X)	-0.00210	-0.00218	-0.00218
	(B * !C * D_N * X)	0.00598	0.00559	0.00576
	(B * !C * D_N * X)	0.00172	0.00129	0.00155
	(!B * C * D_N * X)	0.00613	0.00568	0.00581
	(!B * C * D_N * X)	0.00185	0.00135	0.00159
	(!B * C * !D_N * X)	0.00223	0.00204	0.00204
	(!B * C * !D_N * X)	-0.00189	-0.00212	-0.00213
	(!B * !C * !D_N * X)	0.00318	0.00276	0.00315
	(!B * !C * !D_N * X)	-0.00117	-0.00165	-0.00110

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00387	0.00347	0.00342
	(B * C * D_N * X)	-0.00257	-0.00302	-0.00302
	(B * !D_N * X)	0.00234	0.00219	0.00216
	(B * !D_N * X)	-0.00408	-0.00429	-0.00428
	(B * !C * D_N * X)	0.00520	0.00423	0.00451
	(B * !C * D_N * X)	-0.00143	-0.00242	-0.00198
	(!B * C * D_N * X)	0.00547	0.00433	0.00455
	(!B * C * D_N * X)	-0.00118	-0.00236	-0.00196
	(!B * C * !D_N * X)	0.00269	0.00226	0.00222
	(!B * C * !D_N * X)	-0.00362	-0.00419	-0.00421
	(!B * !C * !D_N * X)	0.00480	0.00371	0.00445
	(!B * !C * !D_N * X)	-0.00199	-0.00314	-0.00212

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)**	0.00143	0.00142	0.00143
	(B * C * D_N * X)	0.00543	0.00545	0.00544
	(B * !D_N * X)	-0.00174	-0.00175	-0.00174
	(B * !D_N * X)	0.00227	0.00228	0.00227
	(B * !C * D_N * X)	0.00189	0.00186	0.00180
	(B * !C * D_N * X)	0.00594	0.00597	0.00586
	(!B * C * D_N * X)	0.00199	0.00198	0.00191
	(!B * C * D_N * X)	0.00606	0.00605	0.00598
	(!B * C * !D_N * X)	-0.00170	-0.00171	-0.00170
	(!B * C * !D_N * X)	0.00227	0.00230	0.00228
	(!B * !C * !D_N * X)	-0.00056	-0.00058	-0.00076
	(!B * !C * !D_N * X)	0.00356	0.00354	0.00337

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00130	0.00129	0.00129
	(B * C * D_N * X)	0.00548	0.00549	0.00548
	(B * !D_N * X)	-0.00181	-0.00182	-0.00181
	(B * !D_N * X)	0.00238	0.00240	0.00238
	(B * !C * D_N * X)	0.00175	0.00173	0.00165
	(B * !C * D_N * X)	0.00599	0.00599	0.00590
	(!B * C * D_N * X)	0.00186	0.00184	0.00177
	(!B * C * D_N * X)	0.00611	0.00610	0.00603
	(!B * C * !D_N * X)	-0.00176	-0.00178	-0.00177
	(!B * C * !D_N * X)	0.00238	0.00241	0.00239
	(!B * !C * !D_N * X)	-0.00063	-0.00065	-0.00083
	(!B * !C * !D_N * X)	0.00367	0.00365	0.00348
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00053	-0.00053	-0.00051
	(B * C * D_N * X)	0.00594	0.00598	0.00594
	(B * !D_N * X)	-0.00174	-0.00175	-0.00174
	(B * !D_N * X)	0.00471	0.00474	0.00471
	(B * !C * D_N * X)	0.00035	0.00031	0.00017
	(B * !C * D_N * X)	0.00690	0.00695	0.00675
	(!B * C * D_N * X)	0.00065	0.00062	0.00049
	(!B * C * D_N * X)	0.00721	0.00724	0.00708
	(!B * C * !D_N * X)	-0.00164	-0.00165	-0.00164
	(!B * C * !D_N * X)	0.00472	0.00474	0.00474
	(!B * !C * !D_N * X)	0.00063	0.00057	0.00024
	(!B * !C * !D_N * X)	0.00730	0.00729	0.00693

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)**	0.00502	0.00503	0.00492
	(A * C * D_N * X)	0.00194	0.00193	0.00187
	(A * C * !D_N * X)	0.00181	0.00181	0.00171
	(A * C * !D_N * X)	-0.00133	-0.00134	-0.00138
	(A * !C * D_N * X)	0.00508	0.00510	0.00509
	(A * !C * D_N * X)	0.00244	0.00242	0.00245
	(A * !C * !D_N * X)	0.00195	0.00206	0.00191
	(A * !C * !D_N * X)	-0.00119	-0.00111	-0.00117
	(!A * C * D_N * X)	0.00566	0.00517	0.00540
	(!A * C * D_N * X)	0.00185	0.00136	0.00165
	(!A * C * !D_N * X)	0.00199	0.00174	0.00170
	(!A * C * !D_N * X)	-0.00172	-0.00202	-0.00203
	(!A * !C * !D_N * X)	0.00289	0.00229	0.00280
	(!A * !C * !D_N * X)	-0.00099	-0.00159	-0.00098
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00521	0.00523	0.00511
	(A * C * D_N * X)	0.00192	0.00193	0.00187
	(A * C * !D_N * X)	0.00194	0.00195	0.00186
	(A * C * !D_N * X)	-0.00139	-0.00140	-0.00143
	(A * !C * D_N * X)	0.00530	0.00532	0.00531
	(A * !C * D_N * X)	0.00245	0.00244	0.00246
	(A * !C * !D_N * X)	0.00210	0.00222	0.00205
	(A * !C * !D_N * X)	-0.00125	-0.00117	-0.00123
	(!A * C * D_N * X)	0.00590	0.00539	0.00561
	(!A * C * D_N * X)	0.00189	0.00138	0.00165
	(!A * C * !D_N * X)	0.00218	0.00190	0.00186
	(!A * C * !D_N * X)	-0.00179	-0.00207	-0.00208
	(!A * !C * !D_N * X)	0.00308	0.00247	0.00296
	(!A * !C * !D_N * X)	-0.00100	-0.00162	-0.00103

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00434	0.00440	0.00411
	(A * C * D_N * X)	-0.00138	-0.00132	-0.00149
	(A * C * !D_N * X)	0.00296	0.00296	0.00273
	(A * C * !D_N * X)	-0.00291	-0.00288	-0.00297
	(A * !C * D_N * X)	0.00460	0.00462	0.00452
	(A * !C * D_N * X)	-0.00016	-0.00019	-0.00022
	(A * !C * !D_N * X)	0.00325	0.00348	0.00312
	(A * !C * !D_N * X)	-0.00253	-0.00236	-0.00253
	(!A * C * D_N * X)	0.00588	0.00468	0.00501
	(!A * C * D_N * X)	-0.00123	-0.00244	-0.00199
	(!A * C * !D_N * X)	0.00342	0.00278	0.00269
	(!A * C * !D_N * X)	-0.00357	-0.00423	-0.00426
	(!A * !C * !D_N * X)	0.00535	0.00405	0.00490
	(!A * !C * !D_N * X)	-0.00190	-0.00321	-0.00214

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)**	0.00162	0.00161	0.00162
	(A * C * D_N * X)	0.00462	0.00463	0.00460
	(A * C * !D_N * X)	-0.00153	-0.00154	-0.00154
	(A * C * !D_N * X)	0.00150	0.00151	0.00148
	(A * !C * D_N * X)	0.00206	0.00203	0.00174
	(A * !C * D_N * X)	0.00471	0.00471	0.00441
	(A * !C * !D_N * X)	-0.00155	-0.00156	-0.00153
	(A * !C * !D_N * X)	0.00143	0.00143	0.00142
	(!A * C * D_N * X)	0.00220	0.00217	0.00209
	(!A * C * D_N * X)	0.00597	0.00596	0.00586
	(!A * C * !D_N * X)	-0.00147	-0.00148	-0.00147
	(!A * C * !D_N * X)	0.00226	0.00229	0.00227
	(!A * !C * !D_N * X)	-0.00033	-0.00037	-0.00056
	(!A * !C * !D_N * X)	0.00347	0.00346	0.00326
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00146	0.00145	0.00146
	(A * C * D_N * X)	0.00466	0.00467	0.00464
	(A * C * !D_N * X)	-0.00163	-0.00163	-0.00163
	(A * C * !D_N * X)	0.00161	0.00162	0.00159
	(A * !C * D_N * X)	0.00187	0.00184	0.00157
	(A * !C * D_N * X)	0.00473	0.00473	0.00444
	(A * !C * !D_N * X)	-0.00164	-0.00165	-0.00163
	(A * !C * !D_N * X)	0.00153	0.00155	0.00153
	(!A * C * D_N * X)	0.00204	0.00202	0.00192
	(!A * C * D_N * X)	0.00600	0.00600	0.00590
	(!A * C * !D_N * X)	-0.00157	-0.00158	-0.00158
	(!A * C * !D_N * X)	0.00236	0.00238	0.00236
	(!A * !C * !D_N * X)	-0.00044	-0.00048	-0.00067
	(!A * !C * !D_N * X)	0.00357	0.00356	0.00336

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00109	-0.00110	-0.00108
	(A * C * D_N * X)	0.00439	0.00441	0.00437
	(A * C * !D_N * X)	-0.00224	-0.00225	-0.00223
	(A * C * !D_N * X)	0.00334	0.00336	0.00331
	(A * !C * D_N * X)	-0.00035	-0.00041	-0.00083
	(A * !C * D_N * X)	0.00445	0.00446	0.00397
	(A * !C * !D_N * X)	-0.00225	-0.00225	-0.00222
	(A * !C * !D_N * X)	0.00316	0.00318	0.00316
	(!A * C * D_N * X)	0.00017	0.00011	-0.00005
	(!A * C * D_N * X)	0.00719	0.00722	0.00700
	(!A * C * !D_N * X)	-0.00207	-0.00209	-0.00208
	(!A * C * !D_N * X)	0.00486	0.00491	0.00488
	(!A * !C * !D_N * X)	0.00015	0.00010	-0.00029
	(!A * !C * !D_N * X)	0.00729	0.00725	0.00685

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)	0.00515	0.00518	0.00512
	(B * D_N * X)	0.00227	0.00225	0.00225
	(B * !D_N * X)	0.00207	0.00208	0.00201
	(B * !D_N * X)	-0.00132	-0.00131	-0.00136
	(A * !B * D_N * X)	0.00528	0.00529	0.00528
	(A * !B * D_N * X)	0.00253	0.00253	0.00253
	(A * !B * !D_N * X)	0.00230	0.00218	0.00220
	(A * !B * !D_N * X)	-0.00112	-0.00124	-0.00120
	(!A * !B * !D_N * X)	0.00273	0.00223	0.00292
	(!A * !B * !D_N * X)	-0.00132	-0.00183	-0.00110

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00536	0.00538	0.00533
	(B * D_N * X)	0.00226	0.00225	0.00224
	(B * !D_N * X)	0.00206	0.00208	0.00200
	(B * !D_N * X)	-0.00156	-0.00156	-0.00162
	(A * !B * D_N * X)	0.00549	0.00554	0.00550
	(A * !B * D_N * X)	0.00254	0.00252	0.00254
	(A * !B * !D_N * X)	0.00229	0.00218	0.00218
	(A * !B * !D_N * X)	-0.00134	-0.00146	-0.00144
	(!A * !B * !D_N * X)	0.00275	0.00224	0.00292
	(!A * !B * !D_N * X)	-0.00151	-0.00202	-0.00131
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00452	0.00455	0.00446
	(B * D_N * X)	-0.00059	-0.00062	-0.00065
	(B * !D_N * X)	0.00332	0.00329	0.00315
	(B * !D_N * X)	-0.00298	-0.00303	-0.00311
	(A * !B * D_N * X)	0.00483	0.00484	0.00482
	(A * !B * D_N * X)	-0.00004	-0.00006	-0.00005
	(A * !B * !D_N * X)	0.00369	0.00340	0.00343
	(A * !B * !D_N * X)	-0.00255	-0.00284	-0.00277
	(!A * !B * !D_N * X)	0.00454	0.00352	0.00488
	(!A * !B * !D_N * X)	-0.00295	-0.00397	-0.00254

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)**	0.00137	0.00137	0.00133
	(B * D_N * X)	0.00424	0.00424	0.00421
	(B * !D_N * X)	-0.00170	-0.00170	-0.00168
	(B * !D_N * X)	0.00156	0.00156	0.00156
	(A * !B * D_N * X)	0.00194	0.00192	0.00160
	(A * !B * D_N * X)	0.00473	0.00473	0.00445
	(A * !B * !D_N * X)	-0.00169	-0.00170	-0.00165
	(A * !B * !D_N * X)	0.00155	0.00156	0.00156
	(!A * !B * !D_N * X)	-0.00049	-0.00054	-0.00074
	(!A * !B * !D_N * X)	0.00353	0.00351	0.00328
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00121	0.00120	0.00117
	(B * D_N * X)	0.00430	0.00430	0.00427
	(B * !D_N * X)	-0.00163	-0.00163	-0.00162
	(B * !D_N * X)	0.00187	0.00186	0.00187
	(A * !B * D_N * X)	0.00176	0.00174	0.00142
	(A * !B * D_N * X)	0.00477	0.00477	0.00448
	(A * !B * !D_N * X)	-0.00162	-0.00163	-0.00159
	(A * !B * !D_N * X)	0.00182	0.00184	0.00184
	(!A * !B * !D_N * X)	-0.00044	-0.00048	-0.00069
	(!A * !B * !D_N * X)	0.00379	0.00378	0.00355
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00153	-0.00155	-0.00163
	(B * D_N * X)	0.00356	0.00356	0.00352
	(B * !D_N * X)	-0.00229	-0.00231	-0.00226
	(B * !D_N * X)	0.00367	0.00371	0.00370
	(A * !B * D_N * X)	-0.00038	-0.00042	-0.00115
	(A * !B * D_N * X)	0.00457	0.00456	0.00394
	(A * !B * !D_N * X)	-0.00229	-0.00229	-0.00220
	(A * !B * !D_N * X)	0.00360	0.00363	0.00363
	(!A * !B * !D_N * X)	0.00010	0.00002	-0.00040
	(!A * !B * !D_N * X)	0.00752	0.00747	0.00703

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00865	0.02520	0.28723
	(C * X)	0.00391	0.02043	0.28248
	(B * !C * X)	0.00876	0.02531	0.28725
	(B * !C * X)	0.00396	0.02047	0.28245
	(A * !B * !C * X)	0.00939	0.02593	0.28777
	(A * !B * !C * X)	0.00451	0.02102	0.28289
sky130_fd_sc_hs__or4b_2	(C * X)	0.00936	0.02518	0.28122
	(C * X)	0.00449	0.02029	0.27635
	(B * !C * X)	0.00948	0.02529	0.28129
	(B * !C * X)	0.00453	0.02033	0.27637
	(A * !B * !C * X)	0.01010	0.02591	0.28185
	(A * !B * !C * X)	0.00507	0.02087	0.27684
sky130_fd_sc_hs__or4b_4	(C * X)	0.00852	0.02617	0.31096
	(C * X)	0.00321	0.02084	0.30564
	(B * !C * X)	0.00881	0.02645	0.31114
	(B * !C * X)	0.00333	0.02095	0.30569
	(A * !B * !C * X)	0.01010	0.02773	0.31231
	(A * !B * !C * X)	0.00445	0.02206	0.30668

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00127	0.01899	0.28394
	(C * X)	0.00602	0.02374	0.28867
	(B * !C * X)	0.00128	0.01898	0.28388
	(B * !C * X)	0.00605	0.02376	0.28865
	(A * !B * !C * X)	0.00131	0.01900	0.28403
	(A * !B * !C * X)	0.00626	0.02394	0.28891
sky130_fd_sc_hs__or4b_2	(C * X)	0.00155	0.01862	0.27763
	(C * X)	0.00641	0.02348	0.28248
	(B * !C * X)	0.00155	0.01863	0.27764
	(B * !C * X)	0.00645	0.02350	0.28252
	(A * !B * !C * X)	0.00156	0.01863	0.27783
	(A * !B * !C * X)	0.00664	0.02371	0.28283
sky130_fd_sc_hs__or4b_4	(C * X)	0.00238	0.02061	0.30652
	(C * X)	0.00767	0.02592	0.31182
	(B * !C * X)	0.00239	0.02061	0.30654
	(B * !C * X)	0.00775	0.02599	0.31190
	(A * !B * !C * X)	0.00242	0.02064	0.30694
	(A * !B * !C * X)	0.00813	0.02637	0.31254

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00259	0.00247	0.00252	0.00245	1.64258
sky130_fd_sc_hs__or4_2	0.00269	0.00265	0.00276	0.00274	3.31174
sky130_fd_sc_hs__or4_4	0.00390	0.00451	0.00455	0.00428	6.26634

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4_1	0.00000	35.74760	143.01600
sky130_fd_sc_hs__or4_2	0.00000	46.63010	260.05700
sky130_fd_sc_hs__or4_4	0.00000	91.28880	489.21400

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)	0.05089	0.41804	5.18484
	B->X (RR)	0.05169	0.41045	5.02126
	C->X (RR)	0.04911	0.39485	4.85146
	D->X (RR)	0.04319	0.37637	4.76229
sky130_fd_sc_hs__or4_2	A->X (RR)	0.04938	0.31884	4.92309
	B->X (RR)	0.04967	0.31029	4.75835
	C->X (RR)	0.04771	0.29853	4.60395
	D->X (RR)	0.04319	0.28420	4.52074
sky130_fd_sc_hs__or4_4	A->X (RR)	0.06898	0.33981	5.67955
	B->X (RR)	0.07079	0.33516	5.55079
	C->X (RR)	0.06384	0.30866	5.28253
	D->X (RR)	0.05641	0.29047	5.20018

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.14934	0.52101	5.70998
	B->X (FF)	0.13835	0.54327	6.17450
	C->X (FF)	0.11981	0.55511	6.30434
	D->X (FF)	0.09046	0.55168	6.37528
sky130_fd_sc_hs__or4_2	A->X (FF)	0.18085	0.53212	6.15541
	B->X (FF)	0.16987	0.55451	6.60560
	C->X (FF)	0.15357	0.57011	6.72931
	D->X (FF)	0.12551	0.57114	6.80222
sky130_fd_sc_hs__or4_4	A->X (FF)	0.18537	0.47475	5.86798
	B->X (FF)	0.17710	0.48980	5.71133
	C->X (FF)	0.15066	0.50427	6.15973
	D->X (FF)	0.11480	0.49950	6.21827

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01940	0.02542	0.15841
	A	0.00963	0.01566	0.14854
	B	0.01703	0.02375	0.14636
	B	0.00873	0.01548	0.13798
	C	0.01448	0.02124	0.13354
	C	0.00744	0.01422	0.12641
	D	0.01364	0.02129	0.14214
	D	0.00782	0.01547	0.13626
sky130_fd_sc_hs__or4_2	A	0.02369	0.03194	0.19425
	A	0.01354	0.02179	0.18395
	B	0.02120	0.03004	0.17778
	B	0.01246	0.02133	0.16884
	C	0.01878	0.02747	0.16184
	C	0.01128	0.01999	0.15457
	D	0.01786	0.02727	0.17018
	D	0.01156	0.02097	0.16371
sky130_fd_sc_hs__or4_4	A	0.04877	0.06284	0.36715
	A	0.03150	0.04568	0.35090
	B	0.04390	0.05617	0.31695
	B	0.02865	0.04102	0.30316
	C	0.03665	0.05093	0.29803
	C	0.02422	0.03869	0.28631
	D	0.03359	0.04995	0.31407
	D	0.02384	0.04036	0.30382

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00943	0.01287	0.14872
	A	0.01918	0.02262	0.15850
	B	0.00953	0.01347	0.15517
	B	0.01780	0.02174	0.16274
	C	0.00955	0.01387	0.14184
	C	0.01657	0.02089	0.14843
	D	0.00934	0.01552	0.15459
	D	0.01516	0.02133	0.15853
sky130_fd_sc_hs__or4_2	A	0.02342	0.02085	0.17740
	A	0.03357	0.03098	0.18422
	B	0.02360	0.02132	0.17861
	B	0.03231	0.03003	0.18708
	C	0.02352	0.02161	0.16303
	C	0.03099	0.02909	0.17007
	D	0.02339	0.02320	0.17370
	D	0.02967	0.02949	0.17998
sky130_fd_sc_hs__or4_4	A	0.04867	0.04062	0.32882
	A	0.06590	0.05758	0.34351
	B	0.04843	0.04061	0.25438
	B	0.06369	0.05557	0.26965
	C	0.04849	0.04209	0.27884
	C	0.06086	0.05445	0.28456
	D	0.04766	0.04497	0.29675
	D	0.05739	0.05455	0.30463

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00192	0.00188	0.00185
	(B * D * X)	-0.00206	-0.00216	-0.00215
	(B * C * !D * X)	0.00205	0.00191	0.00188
	(B * C * !D * X)	-0.00193	-0.00213	-0.00212
	(B * !C * !D * X)	0.00264	0.00225	0.00240
	(B * !C * !D * X)	-0.00145	-0.00187	-0.00162
	(!B * C * D * X)	0.00206	0.00192	0.00188
	(!B * C * D * X)	-0.00186	-0.00211	-0.00211
	(!B * C * !D * X)	0.00276	0.00235	0.00245
	(!B * C * !D * X)	-0.00133	-0.00181	-0.00158
	(!B * !C * D * X)	0.00299	0.00260	0.00299
	(!B * !C * D * X)	-0.00119	-0.00163	-0.00108
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00210	0.00206	0.00203
	(B * D * X)	-0.00206	-0.00217	-0.00216
	(B * C * !D * X)	0.00224	0.00210	0.00207
	(B * C * !D * X)	-0.00194	-0.00214	-0.00213
	(B * !C * !D * X)	0.00281	0.00244	0.00258
	(B * !C * !D * X)	-0.00146	-0.00188	-0.00163
	(!B * C * D * X)	0.00224	0.00210	0.00206
	(!B * C * D * X)	-0.00187	-0.00212	-0.00212
	(!B * C * !D * X)	0.00293	0.00253	0.00263
	(!B * C * !D * X)	-0.00136	-0.00182	-0.00159
	(!B * !C * D * X)	0.00316	0.00278	0.00317
	(!B * !C * D * X)	-0.00121	-0.00165	-0.00109

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00230	0.00216	0.00213
	(B * D * X)	-0.00405	-0.00428	-0.00427
	(B * C * !D * X)	0.00262	0.00225	0.00220
	(B * C * !D * X)	-0.00377	-0.00420	-0.00420
	(B * !C * !D * X)	0.00398	0.00303	0.00328
	(B * !C * !D * X)	-0.00264	-0.00361	-0.00317
	(!B * C * D * X)	0.00265	0.00223	0.00219
	(!B * C * D * X)	-0.00359	-0.00419	-0.00420
	(!B * C * !D * X)	0.00424	0.00313	0.00333
	(!B * C * !D * X)	-0.00238	-0.00355	-0.00314
	(!B * !C * D * X)	0.00474	0.00366	0.00441
	(!B * !C * D * X)	-0.00205	-0.00319	-0.00214

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00173	-0.00174	-0.00173
	(B * D * X)	0.00227	0.00228	0.00227
	(B * C * !D * X)	-0.00170	-0.00171	-0.00171
	(B * C * !D * X)	0.00229	0.00231	0.00230
	(B * !C * !D * X)	-0.00125	-0.00128	-0.00134
	(B * !C * !D * X)	0.00281	0.00283	0.00272
	(!B * C * D * X)	-0.00169	-0.00170	-0.00169
	(!B * C * D * X)	0.00227	0.00230	0.00228
	(!B * C * !D * X)	-0.00114	-0.00115	-0.00123
	(!B * C * !D * X)	0.00292	0.00291	0.00285
	(!B * !C * D * X)	-0.00055	-0.00057	-0.00075
	(!B * !C * D * X)	0.00357	0.00356	0.00339

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00187	-0.00186	-0.00186
	(B * D * X)	0.00233	0.00233	0.00233
	(B * C * !D * X)	-0.00183	-0.00184	-0.00184
	(B * C * !D * X)	0.00235	0.00237	0.00236
	(B * !C * !D * X)	-0.00138	-0.00141	-0.00148
	(B * !C * !D * X)	0.00286	0.00289	0.00278
	(!B * C * D * X)	-0.00182	-0.00183	-0.00182
	(!B * C * D * X)	0.00233	0.00236	0.00234
	(!B * C * !D * X)	-0.00128	-0.00130	-0.00136
	(!B * C * !D * X)	0.00298	0.00298	0.00290
	(!B * !C * D * X)	-0.00068	-0.00071	-0.00088
	(!B * !C * D * X)	0.00364	0.00362	0.00344
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00180	-0.00180	-0.00180
	(B * D * X)	0.00461	0.00463	0.00461
	(B * C * !D * X)	-0.00177	-0.00177	-0.00176
	(B * C * !D * X)	0.00466	0.00467	0.00466
	(B * !C * !D * X)	-0.00091	-0.00095	-0.00108
	(B * !C * !D * X)	0.00562	0.00566	0.00546
	(!B * C * D * X)	-0.00170	-0.00171	-0.00170
	(!B * C * D * X)	0.00462	0.00464	0.00463
	(!B * C * !D * X)	-0.00061	-0.00064	-0.00076
	(!B * C * !D * X)	0.00593	0.00596	0.00579
	(!B * !C * D * X)	0.00057	0.00052	0.00018
	(!B * !C * D * X)	0.00723	0.00722	0.00686

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)**	0.00179	0.00179	0.00169
	(A * C * D * X)	-0.00142	-0.00143	-0.00147
	(A * C * !D * X)	0.00185	0.00187	0.00174
	(A * C * !D * X)	-0.00129	-0.00130	-0.00136
	(A * !C * D * X)	0.00194	0.00205	0.00189
	(A * !C * D * X)	-0.00123	-0.00115	-0.00120
	(A * !C * !D * X)	0.00196	0.00197	0.00195
	(A * !C * !D * X)	-0.00077	-0.00077	-0.00075
	(!A * C * D * X)	0.00200	0.00172	0.00168
	(!A * C * D * X)	-0.00179	-0.00208	-0.00209
	(!A * C * !D * X)	0.00255	0.00204	0.00225
	(!A * C * !D * X)	-0.00131	-0.00182	-0.00154
	(!A * !C * D * X)	0.00289	0.00227	0.00278
	(!A * !C * D * X)	-0.00106	-0.00167	-0.00105
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00195	0.00196	0.00185
	(A * C * D * X)	-0.00147	-0.00148	-0.00152
	(A * C * !D * X)	0.00202	0.00203	0.00190
	(A * C * !D * X)	-0.00135	-0.00136	-0.00141
	(A * !C * D * X)	0.00210	0.00221	0.00206
	(A * !C * D * X)	-0.00130	-0.00122	-0.00126
	(A * !C * !D * X)	0.00212	0.00214	0.00212
	(A * !C * !D * X)	-0.00084	-0.00086	-0.00084
	(!A * C * D * X)	0.00217	0.00191	0.00186
	(!A * C * D * X)	-0.00189	-0.00216	-0.00217
	(!A * C * !D * X)	0.00270	0.00221	0.00243
	(!A * C * !D * X)	-0.00143	-0.00192	-0.00163
	(!A * !C * D * X)	0.00305	0.00245	0.00296
	(!A * !C * D * X)	-0.00116	-0.00176	-0.00113

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00299	0.00300	0.00277
	(A * C * D * X)	-0.00291	-0.00288	-0.00296
	(A * C * !D * X)	0.00311	0.00317	0.00285
	(A * C * !D * X)	-0.00264	-0.00258	-0.00275
	(A * !C * D * X)	0.00328	0.00350	0.00315
	(A * !C * D * X)	-0.00249	-0.00232	-0.00245
	(A * !C * !D * X)	0.00345	0.00345	0.00334
	(A * !C * !D * X)	-0.00144	-0.00144	-0.00146
	(!A * C * D * X)	0.00343	0.00280	0.00271
	(!A * C * D * X)	-0.00360	-0.00426	-0.00428
	(!A * C * !D * X)	0.00474	0.00355	0.00384
	(!A * C * !D * X)	-0.00245	-0.00365	-0.00319
	(!A * !C * D * X)	0.00534	0.00405	0.00492
	(!A * !C * D * X)	-0.00201	-0.00330	-0.00219

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)**	-0.00155	-0.00156	-0.00155
	(A * C * D * X)	0.00155	0.00157	0.00154
	(A * C * !D * X)	-0.00153	-0.00153	-0.00152
	(A * C * !D * X)	0.00154	0.00155	0.00152
	(A * !C * D * X)	-0.00156	-0.00157	-0.00155
	(A * !C * D * X)	0.00144	0.00145	0.00144
	(A * !C * !D * X)	-0.00111	-0.00114	-0.00144
	(A * !C * !D * X)	0.00160	0.00159	0.00130
	(!A * C * D * X)	-0.00148	-0.00149	-0.00148
	(!A * C * D * X)	0.00229	0.00231	0.00229
	(!A * C * !D * X)	-0.00097	-0.00100	-0.00108
	(!A * C * !D * X)	0.00285	0.00286	0.00275
	(!A * !C * D * X)	-0.00035	-0.00038	-0.00058
	(!A * !C * D * X)	0.00352	0.00349	0.00331
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00166	-0.00167	-0.00167
	(A * C * D * X)	0.00166	0.00167	0.00164
	(A * C * !D * X)	-0.00164	-0.00165	-0.00164
	(A * C * !D * X)	0.00165	0.00165	0.00162
	(A * !C * D * X)	-0.00168	-0.00169	-0.00167
	(A * !C * D * X)	0.00155	0.00156	0.00154
	(A * !C * !D * X)	-0.00124	-0.00127	-0.00157
	(A * !C * !D * X)	0.00173	0.00172	0.00142
	(!A * C * D * X)	-0.00161	-0.00161	-0.00161
	(!A * C * D * X)	0.00241	0.00241	0.00242
	(!A * C * !D * X)	-0.00110	-0.00112	-0.00122
	(!A * C * !D * X)	0.00298	0.00298	0.00288
	(!A * !C * D * X)	-0.00048	-0.00052	-0.00071
	(!A * !C * D * X)	0.00365	0.00364	0.00344

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00237	-0.00239	-0.00237
	(A * C * D * X)	0.00324	0.00326	0.00321
	(A * C * !D * X)	-0.00235	-0.00235	-0.00233
	(A * C * !D * X)	0.00318	0.00320	0.00316
	(A * !C * D * X)	-0.00237	-0.00238	-0.00234
	(A * !C * D * X)	0.00303	0.00305	0.00302
	(A * !C * !D * X)	-0.00164	-0.00168	-0.00213
	(A * !C * !D * X)	0.00322	0.00321	0.00272
	(!A * C * D * X)	-0.00219	-0.00220	-0.00219
	(!A * C * D * X)	0.00478	0.00482	0.00479
	(!A * C * !D * X)	-0.00116	-0.00121	-0.00138
	(!A * C * !D * X)	0.00593	0.00596	0.00574
	(!A * !C * D * X)	0.00005	-0.00001	-0.00039
	(!A * !C * D * X)	0.00727	0.00721	0.00683

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00195	0.00195	0.00189
	(B * D * X)	-0.00121	-0.00122	-0.00125
	(B * !D * X)	0.00174	0.00176	0.00171
	(B * !D * X)	-0.00092	-0.00094	-0.00095
	(A * !B * D * X)	0.00217	0.00204	0.00207
	(A * !B * D * X)	-0.00104	-0.00117	-0.00111
	(A * !B * !D * X)	0.00191	0.00194	0.00190
	(A * !B * !D * X)	-0.00067	-0.00069	-0.00067
	(!A * !B * D * X)	0.00260	0.00209	0.00279
	(!A * !B * D * X)	-0.00127	-0.00178	-0.00104

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00219	0.00220	0.00213
	(B * D * X)	-0.00120	-0.00119	-0.00122
	(B * !D * X)	0.00200	0.00203	0.00196
	(B * !D * X)	-0.00092	-0.00094	-0.00094
	(A * !B * D * X)	0.00244	0.00230	0.00232
	(A * !B * D * X)	-0.00101	-0.00115	-0.00109
	(A * !B * !D * X)	0.00218	0.00219	0.00217
	(A * !B * !D * X)	-0.00065	-0.00066	-0.00065
	(!A * !B * D * X)	0.00288	0.00236	0.00305
	(!A * !B * D * X)	-0.00126	-0.00178	-0.00104
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00338	0.00334	0.00321
	(B * D * X)	-0.00246	-0.00249	-0.00254
	(B * !D * X)	0.00284	0.00286	0.00276
	(B * !D * X)	-0.00188	-0.00190	-0.00193
	(A * !B * D * X)	0.00374	0.00345	0.00348
	(A * !B * D * X)	-0.00209	-0.00236	-0.00226
	(A * !B * !D * X)	0.00322	0.00323	0.00319
	(A * !B * !D * X)	-0.00133	-0.00134	-0.00133
	(!A * !B * D * X)	0.00461	0.00356	0.00491
	(!A * !B * D * X)	-0.00257	-0.00362	-0.00216

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00159	-0.00160	-0.00158
	(B * D * X)	0.00142	0.00144	0.00143
	(B * !D * X)	-0.00153	-0.00154	-0.00158
	(B * !D * X)	0.00114	0.00114	0.00110
	(A * !B * D * X)	-0.00159	-0.00160	-0.00155
	(A * !B * D * X)	0.00142	0.00144	0.00144
	(A * !B * !D * X)	-0.00099	-0.00101	-0.00137
	(A * !B * !D * X)	0.00163	0.00163	0.00134
	(!A * !B * D * X)	-0.00039	-0.00044	-0.00064
	(!A * !B * D * X)	0.00345	0.00344	0.00320
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00180	-0.00179	-0.00178
	(B * D * X)	0.00145	0.00144	0.00144
	(B * !D * X)	-0.00176	-0.00177	-0.00179
	(B * !D * X)	0.00116	0.00116	0.00114
	(A * !B * D * X)	-0.00179	-0.00180	-0.00176
	(A * !B * D * X)	0.00146	0.00147	0.00146
	(A * !B * !D * X)	-0.00122	-0.00124	-0.00159
	(A * !B * !D * X)	0.00165	0.00165	0.00136
	(!A * !B * D * X)	-0.00061	-0.00065	-0.00086
	(!A * !B * D * X)	0.00350	0.00349	0.00326
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00244	-0.00246	-0.00241
	(B * D * X)	0.00304	0.00307	0.00305
	(B * !D * X)	-0.00232	-0.00233	-0.00239
	(B * !D * X)	0.00240	0.00240	0.00233
	(A * !B * D * X)	-0.00242	-0.00244	-0.00234
	(A * !B * D * X)	0.00300	0.00304	0.00303
	(A * !B * !D * X)	-0.00124	-0.00127	-0.00206
	(A * !B * !D * X)	0.00339	0.00338	0.00275
	(!A * !B * D * X)	-0.00001	-0.00010	-0.00053
	(!A * !B * D * X)	0.00706	0.00703	0.00659

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00182	0.00184	0.00183
	(C * X)	-0.00093	-0.00094	-0.00093
	(B * !C * X)	0.00183	0.00184	0.00183
	(B * !C * X)	-0.00092	-0.00092	-0.00091
	(A * !B * !C * X)	0.00183	0.00186	0.00187
	(A * !B * !C * X)	-0.00074	-0.00075	-0.00071
sky130_fd_sc_hs__or4_2	(C * X)	0.00215	0.00218	0.00216
	(C * X)	-0.00090	-0.00091	-0.00090
	(B * !C * X)	0.00217	0.00217	0.00216
	(B * !C * X)	-0.00089	-0.00088	-0.00088
	(A * !B * !C * X)	0.00217	0.00219	0.00221
	(A * !B * !C * X)	-0.00070	-0.00071	-0.00067
sky130_fd_sc_hs__or4_4	(C * X)	0.00296	0.00297	0.00297
	(C * X)	-0.00175	-0.00176	-0.00175
	(B * !C * X)	0.00297	0.00298	0.00298
	(B * !C * X)	-0.00171	-0.00172	-0.00171
	(A * !B * !C * X)	0.00300	0.00304	0.00308
	(A * !B * !C * X)	-0.00136	-0.00138	-0.00130

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00162	-0.00163	-0.00170
	(C * X)	0.00112	0.00112	0.00106
	(B * !C * X)	-0.00151	-0.00152	-0.00168
	(B * !C * X)	0.00118	0.00118	0.00107
	(A * !B * !C * X)	-0.00089	-0.00091	-0.00122
	(A * !B * !C * X)	0.00174	0.00173	0.00149
sky130_fd_sc_hs__or4_2	(C * X)	-0.00191	-0.00192	-0.00200
	(C * X)	0.00113	0.00113	0.00107
	(B * !C * X)	-0.00181	-0.00182	-0.00197
	(B * !C * X)	0.00119	0.00119	0.00108
	(A * !B * !C * X)	-0.00118	-0.00120	-0.00151
	(A * !B * !C * X)	0.00175	0.00174	0.00150
sky130_fd_sc_hs__or4_4	(C * X)	-0.00248	-0.00251	-0.00266
	(C * X)	0.00222	0.00223	0.00209
	(B * !C * X)	-0.00223	-0.00226	-0.00263
	(B * !C * X)	0.00234	0.00236	0.00209
	(A * !B * !C * X)	-0.00096	-0.00097	-0.00170
	(A * !B * !C * X)	0.00348	0.00346	0.00294

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00201	0.00185	0.00427	0.00186	0.00557	0.00301	1.68248	1.69590
sky130_fd_sc_hs__sdfbbn_2	0.00203	0.00186	0.00431	0.00174	0.00549	0.00297	3.39434	3.40728

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbn_1	0.00000	1211.99000	2073.20000
sky130_fd_sc_hs__sdfbbn_2	0.00000	1202.95000	2106.79000

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)	0.23194	0.73681	7.82067
	SET_B->Q (FR)	0.11589	0.65675	8.06162
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.26076	0.67658	7.87051
	SET_B->Q (FR)	0.13644	0.59596	8.12428

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)	0.23553	0.59411	5.18584
	RESET_B->Q (FF)	0.15549	0.53098	5.14258
	SET_B->Q (RF)	0.10096	0.31987	2.59670
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.25601	0.57016	5.26093
	RESET_B->Q (FF)	0.17738	0.51075	5.24502
	SET_B->Q (RF)	0.12268	0.31215	2.76704

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)	0.21293	0.73046	7.90898
	RESET_B->Q_N (FR)	0.13351	0.66949	7.85442
	SET_B->Q_N (RR)	0.07833	0.46724	5.77973
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.21479	0.64817	7.85737
	RESET_B->Q_N (FR)	0.13695	0.58941	7.83118
	SET_B->Q_N (RR)	0.08204	0.39561	5.74864

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)	0.19669	0.59981	5.29884
	SET_B->Q_N (FF)	0.08265	0.52460	5.89125
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.20792	0.56988	5.23537
	SET_B->Q_N (FF)	0.08732	0.48843	5.83027

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)	-0.03890	-0.00436	2.13847
	setup	CLK_N (F)	0.09732	0.05400	-2.12916
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04110	-0.00934	2.13721
	setup	CLK_N (F)	0.09881	0.05832	-2.12540

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)	-0.11579	-0.15093	-0.71886
	setup	CLK_N (F)	0.13123	0.16214	0.72574
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.12739	-0.16260	-0.78815
	setup	CLK_N (F)	0.14391	0.17640	0.79576

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)	-0.03890	-0.00436	2.13847
	setup	CLK_N (F)	0.09732	0.05400	-2.12916
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04110	-0.00934	2.13721
	setup	CLK_N (F)	0.09881	0.05832	-2.12540

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)	-0.11579	-0.15093	-0.71886
	setup	CLK_N (F)	0.13123	0.16214	0.72574
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.12739	-0.16260	-0.78815
	setup	CLK_N (F)	0.14391	0.17640	0.79576

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)	-0.05807	-0.01175	2.10659
	setup	CLK_N (F)	0.12187	0.06676	-2.08984
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05989	-0.01500	2.11876
	setup	CLK_N (F)	0.12002	0.07006	-2.10116

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)	-0.14984	-0.16280	-0.72265
	setup	CLK_N (F)	0.17108	0.17809	0.73100
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.16054	-0.17758	-0.79766
	setup	CLK_N (F)	0.18187	0.19358	0.81188

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)	-0.05807	-0.01175	2.10659
	hold	CLK_N (F)	-0.06294	-0.01813	2.09884
	setup	CLK_N (F)	0.11559	0.06149	-2.09764
	setup	CLK_N (F)	0.12187	0.06676	-2.08984
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05989	-0.01500	2.11876
	hold	CLK_N (F)	-0.06449	-0.02138	2.10837
	setup	CLK_N (F)	0.11890	0.06374	-2.10746
	setup	CLK_N (F)	0.12002	0.07006	-2.10116

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)	-0.15080	-0.16644	-0.72265
	hold	CLK_N (F)	-0.14984	-0.16280	-0.72548
	setup	CLK_N (F)	0.17108	0.17809	0.72807
	setup	CLK_N (F)	0.17060	0.17529	0.73100
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.16481	-0.18045	-0.79766
	hold	CLK_N (F)	-0.16054	-0.17758	-0.80198
	setup	CLK_N (F)	0.18187	0.19358	0.80583
	setup	CLK_N (F)	0.17968	0.19029	0.81188

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)	-0.05263	-0.02469	1.79056
	setup	CLK_N (F)	0.17236	0.11585	-1.75002
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05205	-0.02594	1.80329
	setup	CLK_N (F)	0.18268	0.12959	-1.72953

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)	-0.07502	-0.07177	0.02144
	setup	CLK_N (F)	0.13510	0.14304	0.40354
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08143	-0.07179	-0.00008
	setup	CLK_N (F)	0.14529	0.15461	0.48448

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)	-0.15105	-0.10563	1.76261
	hold	CLK_N (F)	-0.05263	-0.02469	1.79056
	setup	CLK_N (F)	0.17236	0.11585	-1.75002
	setup	CLK_N (F)	0.10784	0.07479	-1.77640
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.16608	-0.11698	1.73917
	hold	CLK_N (F)	-0.05205	-0.02594	1.80329
	setup	CLK_N (F)	0.18268	0.12959	-1.72953
	setup	CLK_N (F)	0.11114	0.07624	-1.79334

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)	-0.07502	-0.07177	0.02144
	hold	CLK_N (F)	-0.11787	-0.13089	-0.39768
	setup	CLK_N (F)	0.13376	0.12458	0.00507
	setup	CLK_N (F)	0.13510	0.14304	0.40354
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08143	-0.07179	-0.00008
	hold	CLK_N (F)	-0.13089	-0.14552	-0.47659
	setup	CLK_N (F)	0.13821	0.12676	0.02768
	setup	CLK_N (F)	0.14529	0.15461	0.48448

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)	0.06634	0.00466	-2.11496
	removal	CLK_N (F)	0.00512	0.06200	2.21328
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.06482	0.00342	-2.09613
	removal	CLK_N (F)	0.00656	0.06451	2.20882

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)	0.06318	0.00459	-2.11496
	recovery	CLK_N (F)	0.06426	0.00459	-2.11519
	recovery	CLK_N (F)	0.06634	0.00466	-2.11502
	removal	CLK_N (F)	0.00512	0.06200	2.21328
	removal	CLK_N (F)	0.00512	0.06200	2.21328
	removal	CLK_N (F)	0.00512	0.06200	2.21328
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.06482	0.00340	-2.09677
	recovery	CLK_N (F)	0.06250	0.00228	-2.09613
	recovery	CLK_N (F)	0.06189	0.00342	-2.09740
	removal	CLK_N (F)	0.00323	0.06333	2.20775
	removal	CLK_N (F)	0.00328	0.06451	2.20692
	removal	CLK_N (F)	0.00656	0.06333	2.20882

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 ()	0.12209	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.11107	0.58472	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.12870	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.11548	0.58472	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)	-0.00914	-0.08621	-2.02183
	removal	CLK_N (F)	0.01689	0.09914	2.22576
	hold	RESET_B (R)	-0.03980	-0.05814	-0.41000
	setup	RESET_B (R)	0.06941	0.08633	0.84746
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.00633	-0.08328	-1.82704
	removal	CLK_N (F)	0.01542	0.09517	2.20154
	hold	RESET_B (R)	-0.04944	-0.07695	-0.47682
	setup	RESET_B (R)	0.07368	0.10004	0.84930

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)	-0.00971	-0.08621	-2.02183
	recovery	CLK_N (F)	-0.00966	-0.08621	-2.02219
	recovery	CLK_N (F)	-0.00914	-0.08628	-2.02284
	removal	CLK_N (F)	0.01689	0.09914	2.21991
	removal	CLK_N (F)	0.01689	0.09914	2.22576
	removal	CLK_N (F)	0.01689	0.09914	2.22283
	hold	RESET_B (R)	-0.03980	-0.05814	-0.42021
	hold	RESET_B (R)	-0.04009	-0.05954	-0.41000
	setup	RESET_B (R)	0.06941	0.08633	0.60727
	setup	RESET_B (R)	0.05536	0.08189	0.84746
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.00787	-0.08328	-1.82768
	recovery	CLK_N (F)	-0.00763	-0.08328	-1.82963
	recovery	CLK_N (F)	-0.00633	-0.08328	-1.82704
	removal	CLK_N (F)	0.01542	0.09517	2.19462
	removal	CLK_N (F)	0.01542	0.09517	2.20154
	removal	CLK_N (F)	0.01542	0.09517	2.19754
	hold	RESET_B (R)	-0.05050	-0.08070	-0.48292
	hold	RESET_B (R)	-0.04944	-0.07695	-0.47682
	setup	RESET_B (R)	0.07368	0.10004	0.71164
	setup	RESET_B (R)	0.06107	0.09532	0.84930

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 ()	0.09565	0.58472	16.50020
	min_pulse_width	SET_B ()	0.08023	0.58472	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.10447	0.58472	16.50020
	min_pulse_width	SET_B ()	0.09125	0.58472	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 ()	0.11768	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.09345	0.58472	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.11768	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.09786	0.58472	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 ()	0.10226	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.11768	0.58472	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.11107	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.11989	0.58472	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	0.03827	0.04709	0.21909
	CLK_N	0.04109	0.04992	0.22049
	SET_B	0.03519	0.05017	0.32208
	SET_B	0.04057	0.05552	0.32658
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.04458	0.05028	0.22392
	CLK_N	0.04728	0.05299	0.22401
	SET_B	0.04031	0.05351	0.32913
	SET_B	0.04555	0.05868	0.33292

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.03288	0.04255	0.20998
	CLK_N	0.03537	0.04504	0.21188
	RESET_B	0.03361	0.03941	0.14310
	RESET_B	0.03523	0.04101	0.14424
	SET_B	0.03367	0.04654	0.32217
	SET_B	0.02832	0.04118	0.31672
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.03946	0.04770	0.21407
	CLK_N	0.04199	0.05022	0.21612
	RESET_B	0.04064	0.04510	0.14899
	RESET_B	0.04231	0.04670	0.14987
	SET_B	0.04047	0.05215	0.32981
	SET_B	0.03524	0.04692	0.32390

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.04148	0.05115	0.22015
	CLK_N	0.04397	0.05364	0.22131
	RESET_B	0.04013	0.04596	0.15132
	RESET_B	0.04176	0.04757	0.15139
	SET_B	0.04045	0.05338	0.32976
	SET_B	0.03510	0.04797	0.32427
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.04854	0.05675	0.22651
	CLK_N	0.05107	0.05928	0.22644
	RESET_B	0.04768	0.05218	0.15545
	RESET_B	0.04935	0.05376	0.15699
	SET_B	0.04776	0.05954	0.33712
	SET_B	0.04253	0.05426	0.33157

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.03136	0.04019	0.21065
	CLK_N	0.03418	0.04302	0.21302
	SET_B	0.02980	0.04477	0.31539
	SET_B	0.03517	0.05012	0.32040
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.03798	0.04367	0.21486
	CLK_N	0.04069	0.04638	0.21659
	SET_B	0.03523	0.04837	0.32158
	SET_B	0.04047	0.05358	0.32667

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)**	0.01129	0.01131	0.01141
	(CLK_N * SCD * SCE)	0.00905	0.00904	0.00916
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02367	0.03170	0.18696
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02016	0.02817	0.18344
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01948	0.02561	0.15590
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01544	0.02154	0.15185
	(CLK_N * !SCD * SCE)	0.01862	0.01862	0.01860
	(CLK_N * !SCD * SCE)	0.01609	0.01606	0.01605
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01882	0.02487	0.15457
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01482	0.02085	0.15057
	(!CLK_N * SCD * SCE)	0.01807	0.01809	0.01819
	(!CLK_N * SCD * SCE)	0.01583	0.01582	0.01594
	(!CLK_N * !SCE)	0.02162	0.02867	0.16009
	(!CLK_N * !SCE)	0.01761	0.02467	0.15609
	(!CLK_N * !SCD * SCE)	0.01463	0.01464	0.01461
	(!CLK_N * !SCD * SCE)	0.01209	0.01207	0.01206

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.01045	0.01049	0.01058
	(CLK_N * SCD * SCE)	0.00817	0.00816	0.00829
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02496	0.03285	0.18659
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02135	0.02922	0.18296
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01883	0.02481	0.15345
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01473	0.02069	0.14933
	(CLK_N * !SCD * SCE)	0.01780	0.01780	0.01778
	(CLK_N * !SCD * SCE)	0.01523	0.01521	0.01519
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02000	0.02591	0.15396
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01594	0.02183	0.14989
	(!CLK_N * SCD * SCE)	0.01174	0.01177	0.01186
	(!CLK_N * SCD * SCE)	0.00945	0.00944	0.00957
	(!CLK_N * !SCE)	0.01527	0.02227	0.15319
	(!CLK_N * !SCE)	0.01120	0.01818	0.14912
	(!CLK_N * !SCD * SCE)	0.01149	0.01148	0.01145
	(!CLK_N * !SCD * SCE)	0.00891	0.00888	0.00887

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)**	0.00900	0.00897	0.00854
	(CLK_N * SCD * SCE)	0.01127	0.01124	0.01081
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02828	0.03614	0.18514
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.03179	0.03967	0.18865
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01155	0.01859	0.15065
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01560	0.02265	0.15470
	(CLK_N * !SCD * SCE)	0.01751	0.01749	0.01750
	(CLK_N * !SCD * SCE)	0.02006	0.02006	0.02005
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01252	0.01968	0.15261
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01653	0.02370	0.15661
	(!CLK_N * SCD * SCE)	0.01579	0.01575	0.01532
	(!CLK_N * SCD * SCE)	0.01805	0.01802	0.01759
	(!CLK_N * !SCE)	0.01512	0.02296	0.15738
	(!CLK_N * !SCE)	0.01912	0.02696	0.16138
	(!CLK_N * !SCD * SCE)	0.01345	0.01344	0.01345
	(!CLK_N * !SCD * SCE)	0.01600	0.01601	0.01600

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00811	0.00808	0.00765
	(CLK_N * SCD * SCE)	0.01041	0.01038	0.00995
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.03055	0.03825	0.18543
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.03418	0.04188	0.18905
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01105	0.01794	0.14833
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01518	0.02206	0.15244
	(CLK_N * !SCD * SCE)	0.01661	0.01660	0.01660
	(CLK_N * !SCD * SCE)	0.01921	0.01920	0.01919
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01409	0.02110	0.15236
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01817	0.02518	0.15643
	(!CLK_N * SCD * SCE)	0.00940	0.00936	0.00893
	(!CLK_N * SCD * SCE)	0.01170	0.01167	0.01124
	(!CLK_N * !SCE)	0.01215	0.01972	0.15084
	(!CLK_N * !SCE)	0.01623	0.02379	0.15490
	(!CLK_N * !SCD * SCE)	0.01018	0.01016	0.01018
	(!CLK_N * !SCD * SCE)	0.01278	0.01279	0.01276

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)**	0.02294	0.02852	0.15666
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01734	0.02292	0.15106
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02724	0.03454	0.18668
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02217	0.02946	0.18161
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02228	0.02778	0.15527
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01672	0.02221	0.14972
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.02469	0.02992	0.15733
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01886	0.02409	0.15151
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02901	0.03604	0.18767
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02372	0.03073	0.18238
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02403	0.02918	0.15594
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01824	0.02339	0.15016
	(!CLK_N * D * SCE)	0.02508	0.03129	0.16046
	(!CLK_N * D * SCE)	0.01952	0.02572	0.15491
	(!CLK_N * !D * SCE)	0.02683	0.03264	0.16113
	(!CLK_N * !D * SCE)	0.02104	0.02684	0.15535
	!SCE	0.01089	0.01058	0.01148
	!SCE	0.00795	0.00763	0.00856

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.02221	0.02761	0.15369
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01665	0.02204	0.14813
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02844	0.03560	0.18562
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02337	0.03051	0.18057
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02338	0.02875	0.15415
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01786	0.02321	0.14863
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.02394	0.02905	0.15434
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01815	0.02326	0.14855
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03019	0.03706	0.18656
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02490	0.03175	0.18127
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02511	0.03015	0.15479
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01936	0.02439	0.14905
	(!CLK_N * D * SCE)	0.01865	0.02482	0.15300
	(!CLK_N * D * SCE)	0.01313	0.01929	0.14749
	(!CLK_N * !D * SCE)	0.02038	0.02617	0.15366
	(!CLK_N * !D * SCE)	0.01463	0.02041	0.14792
	!SCE	0.01001	0.00970	0.01061
	!SCE	0.00709	0.00676	0.00769

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)**	0.01513	0.02081	0.15029
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.02075	0.02645	0.15587
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03225	0.03844	0.18250
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03733	0.04353	0.18754
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01611	0.02191	0.15227
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02167	0.02750	0.15780
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01457	0.02042	0.15043
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.02040	0.02626	0.15624
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03186	0.03832	0.18323
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03715	0.04362	0.18850
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01554	0.02152	0.15240
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02132	0.02731	0.15816
	(!CLK_N * D * SCE)	0.01874	0.02511	0.15668
	(!CLK_N * D * SCE)	0.02430	0.03069	0.16220
	(!CLK_N * !D * SCE)	0.01817	0.02476	0.15682
	(!CLK_N * !D * SCE)	0.02395	0.03056	0.16257
	!SCE	0.00915	0.00909	0.00883
	!SCE	0.01207	0.01206	0.01177

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.01464	0.02019	0.14756
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.02022	0.02579	0.15308
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03455	0.04059	0.18221
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03962	0.04567	0.18725
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01768	0.02336	0.15160
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02321	0.02890	0.15710
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01407	0.01981	0.14769
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01987	0.02562	0.15344
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03416	0.04046	0.18285
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03945	0.04576	0.18813
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01711	0.02298	0.15173
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02286	0.02874	0.15746
	(!CLK_N * D * SCE)	0.01577	0.02190	0.14969
	(!CLK_N * D * SCE)	0.02129	0.02744	0.15518
	(!CLK_N * !D * SCE)	0.01519	0.02155	0.14981
	(!CLK_N * !D * SCE)	0.02094	0.02730	0.15553
	!SCE	0.00829	0.00824	0.00797
	!SCE	0.01121	0.01120	0.01091

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)	0.01560	0.02666	0.20600
	(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)	0.00826	0.01930	0.19867
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.03908	0.05038	0.24268
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.03349	0.04475	0.23704
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.02202	0.03352	0.22649
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01696	0.02845	0.22139
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.02300	0.03456	0.22822
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01790	0.02944	0.22307
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.02717	0.04467	0.35002
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01799	0.03546	0.34084
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.03140	0.05069	0.38301
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02276	0.04200	0.37437
	(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)	0.02047	0.03155	0.20987
	(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)	0.01380	0.02487	0.20318
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.02651	0.04370	0.34863
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01738	0.03454	0.33949
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.02349	0.03456	0.21388
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.01615	0.02719	0.20656
	(!CLK_N * D * !SCD)	0.02592	0.03744	0.23197
	(!CLK_N * D * !SCD)	0.02081	0.03231	0.22681
	(!CLK_N * !D * SCD)	0.02945	0.04749	0.35389
	(!CLK_N * !D * SCD)	0.02031	0.03833	0.34475

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)	0.01677	0.02786	0.20767
	(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)	0.00936	0.02043	0.20027
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.04144	0.05277	0.24519
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.03583	0.04713	0.23953
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.02157	0.03314	0.22627
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01647	0.02800	0.22112
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.02463	0.03622	0.23008
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01947	0.03107	0.22488
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.02658	0.04392	0.34786
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01729	0.03464	0.33859
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.03275	0.05212	0.38294
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02396	0.04331	0.37414
	(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)	0.02164	0.03275	0.21155
	(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)	0.01488	0.02597	0.20478
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.02775	0.04502	0.34831
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01851	0.03577	0.33907
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.01722	0.02831	0.20813
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00981	0.02088	0.20072
	(!CLK_N * D * !SCD)	0.02301	0.03448	0.22796
	(!CLK_N * D * !SCD)	0.01786	0.02930	0.22275
	(!CLK_N * !D * SCD)	0.02316	0.04133	0.34726
	(!CLK_N * !D * SCD)	0.01392	0.03207	0.33803

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)	0.00708	0.01876	0.19897
	(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)	0.01443	0.02610	0.20632
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02428	0.03587	0.23021
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02991	0.04148	0.23562
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.02007	0.03132	0.22065
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.02516	0.03643	0.22552
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01940	0.03061	0.21922
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.02454	0.03575	0.22413
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01157	0.02945	0.33781
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.02079	0.03870	0.34701
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02828	0.04673	0.37054
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.03696	0.05544	0.37917
	(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)	0.01215	0.02385	0.20374
	(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)	0.01881	0.03056	0.21044
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01254	0.03056	0.33978
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.02171	0.03974	0.34892
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.01470	0.02637	0.20659
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.02205	0.03375	0.21394
	(!CLK_N * D * !SCD)	0.02210	0.03345	0.22322
	(!CLK_N * D * !SCD)	0.02724	0.03853	0.22814
	(!CLK_N * !D * SCD)	0.01501	0.03375	0.34449
	(!CLK_N * !D * SCD)	0.02418	0.04291	0.35365

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)	0.00807	0.01977	0.20048
	(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)	0.01549	0.02719	0.20790
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02543	0.03701	0.23145
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.03107	0.04266	0.23687
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01928	0.03054	0.22001
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.02443	0.03571	0.22494
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.02045	0.03166	0.22041
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.02564	0.03685	0.22539
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01101	0.02874	0.33561
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.02032	0.03807	0.34490
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.03050	0.04879	0.37098
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.03930	0.05761	0.37978
	(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)	0.01316	0.02489	0.20526
	(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)	0.01992	0.03169	0.21203
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01405	0.03192	0.33965
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.02331	0.04118	0.34890
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00823	0.01994	0.20065
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.01565	0.02736	0.20807
	(!CLK_N * D * !SCD)	0.01562	0.02710	0.21864
	(!CLK_N * D * !SCD)	0.02081	0.03225	0.22361
	(!CLK_N * !D * SCD)	0.01197	0.03044	0.33807
	(!CLK_N * !D * SCD)	0.02123	0.03971	0.34732

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)	0.02448	0.03484	0.23246
	(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)	0.02091	0.03126	0.22888
	(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)	0.02316	0.03235	0.20767
	(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)	0.01910	0.02828	0.20361
	(!SET_B * Q * !Q_N)	0.01885	0.02849	0.20570
	(!SET_B * Q * !Q_N)	0.01469	0.02432	0.20155

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)	0.02527	0.03557	0.23269
	(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)	0.02178	0.03207	0.22920
	(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)	0.02390	0.03308	0.20798
	(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)	0.01996	0.02913	0.20404
	(!SET_B * Q * !Q_N)	0.01783	0.02748	0.20433
	(!SET_B * Q * !Q_N)	0.01380	0.02345	0.20030

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)**	0.02458	0.03549	0.23145
	(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)	0.02815	0.03907	0.23502
	(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)	0.01321	0.02359	0.20408
	(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)	0.01727	0.02763	0.20813
	(!SET_B * Q * !Q_N)	0.01083	0.02122	0.19987
	(!SET_B * Q * !Q_N)	0.01501	0.02542	0.20404

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)**	0.02642	0.03728	0.23275
	(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)	0.02991	0.04077	0.23624
	(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)	0.01453	0.02488	0.20495
	(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)	0.01847	0.02882	0.20889
	(!SET_B * Q * !Q_N)	0.01000	0.02039	0.19867
	(!SET_B * Q * !Q_N)	0.01406	0.02445	0.20272

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)**	0.01387	0.01394	0.01390
	(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)	0.00456	0.00451	0.00455
	(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)	0.03238	0.04380	0.27782
	(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)	0.02236	0.03369	0.26775
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)**	0.01314	0.01320	0.01316
	(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)	0.00386	0.00382	0.00385
	(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)	0.03226	0.04347	0.27706
	(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)	0.02232	0.03347	0.26708

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)	0.00604	0.00566	0.00558
	(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)	0.01542	0.01511	0.01493
	(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)	0.01149	0.02567	0.26877
	(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)	0.02158	0.03578	0.27883

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)**	0.00505	0.00470	0.00460
	(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)	0.01438	0.01409	0.01391
	(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)	0.01046	0.02456	0.26728
	(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)	0.02046	0.03460	0.27725

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)	0.03472	0.05513	0.40110
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02991	0.05027	0.39626
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02517	0.04440	0.37832
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01984	0.03906	0.37299
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.03405	0.05446	0.40042
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02923	0.04959	0.39556
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02445	0.04368	0.37760
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01912	0.03834	0.37227
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04583	0.06570	0.41037
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04006	0.05991	0.40459
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02932	0.04858	0.38204
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02401	0.04322	0.37671
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02562	0.04583	0.39368
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02032	0.04053	0.38839
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02992	0.04999	0.39093
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02461	0.04464	0.38559
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02919	0.04926	0.39020
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02389	0.04391	0.38486
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03547	0.05588	0.40185
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03066	0.05102	0.39700
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02590	0.04514	0.37906
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02058	0.03980	0.37373
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.04429	0.06417	0.40904
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.03848	0.05835	0.40323
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04580	0.06572	0.41045
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04000	0.05990	0.40465
	(!D * !SCE * SET_B * !Q * Q_N)	0.02786	0.04712	0.38058
	(!D * !SCE * SET_B * !Q * Q_N)	0.02255	0.04177	0.37525
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02416	0.04437	0.39252
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01886	0.03909	0.38722
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02931	0.04858	0.38203
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02401	0.04322	0.37670
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02562	0.04585	0.39377
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02032	0.04057	0.38847
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03065	0.05072	0.39166
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02535	0.04538	0.38633

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03618	0.05654	0.40197
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03139	0.05172	0.39715
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02423	0.04347	0.37698
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01900	0.03820	0.37172
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.03550	0.05586	0.40127
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.03071	0.05104	0.39645
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02350	0.04274	0.37625
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01827	0.03747	0.37099
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04563	0.06552	0.40992
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03999	0.05983	0.40425
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03041	0.04967	0.38271
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02517	0.04439	0.37745
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02466	0.04491	0.39227
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01946	0.03965	0.38704
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03122	0.05125	0.39178
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02598	0.04598	0.38652
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03048	0.05052	0.39105
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02524	0.04524	0.38578
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03693	0.05729	0.40270
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03214	0.05247	0.39788
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02497	0.04421	0.37772
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01973	0.03894	0.37246
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.04407	0.06397	0.40856
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.03840	0.05825	0.40286
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04559	0.06552	0.41000
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03993	0.05981	0.40431
	(!D * !SCE * SET_B * !Q * Q_N)	0.02894	0.04821	0.38124
	(!D * !SCE * SET_B * !Q * Q_N)	0.02370	0.04292	0.37598
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02319	0.04345	0.39107
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01799	0.03819	0.38584
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03040	0.04967	0.38271
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02516	0.04438	0.37744
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02466	0.04493	0.39234
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01946	0.03969	0.38711
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03195	0.05199	0.39252
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02671	0.04672	0.38725

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)**	0.02301	0.04288	0.37463
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02833	0.04824	0.37996
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02209	0.04196	0.37371
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02741	0.04731	0.37904
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02667	0.04650	0.37840
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03199	0.05185	0.38373
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02861	0.04910	0.39137
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03390	0.05440	0.39666
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02740	0.04719	0.38139
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03271	0.05252	0.38673
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02648	0.04627	0.38046
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03179	0.05160	0.38580
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02375	0.04362	0.37537
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02907	0.04898	0.38070
	(!D * !SCE * SET_B * !Q * Q_N)	0.02501	0.04483	0.37679
	(!D * !SCE * SET_B * !Q * Q_N)	0.03033	0.05019	0.38213
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02695	0.04744	0.39004
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03224	0.05274	0.39535
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02667	0.04649	0.37844
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03198	0.05184	0.38378
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02859	0.04912	0.39144
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03388	0.05444	0.39675
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02814	0.04793	0.38212
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03345	0.05327	0.38746

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.02216	0.04195	0.37319
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02739	0.04723	0.37844
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02124	0.04105	0.37227
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02648	0.04634	0.37752
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02769	0.04749	0.37884
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03296	0.05275	0.38409
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02775	0.04819	0.38991
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03299	0.05342	0.39515
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02872	0.04844	0.38196
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03395	0.05371	0.38721
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02780	0.04753	0.38104
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03304	0.05280	0.38628
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02289	0.04270	0.37392
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02813	0.04799	0.37918
	(!D * !SCE * SET_B * !Q * Q_N)	0.02604	0.04584	0.37721
	(!D * !SCE * SET_B * !Q * Q_N)	0.03131	0.05109	0.38248
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02610	0.04654	0.38856
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03134	0.05177	0.39380
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02769	0.04748	0.37886
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03295	0.05274	0.38412
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02774	0.04820	0.38992
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03297	0.05345	0.39516
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02946	0.04918	0.38269
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03469	0.05443	0.38794

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00201	0.00187	0.00417	0.00175	0.00626	0.00295	1.65707	1.55230

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	1212.15000	2073.21000

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)	0.23312	0.60408	5.59483
	SET_B->Q (FR)	0.10582	0.64372	8.08278

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.18913	0.40075	2.73431
	RESET_B->Q (FF)	0.15218	0.52559	5.13669
	SET_B->Q (RF)	0.10288	0.31230	2.55139

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)	0.16697	0.55128	5.54444
	RESET_B->Q_N (FR)	0.13071	0.67925	7.95214
	SET_B->Q_N (RR)	0.08071	0.47443	5.78345

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)	0.19696	0.44515	2.68569
	SET_B->Q_N (FF)	0.07377	0.49003	5.50963

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)	-0.06777	-0.11956	-0.74802
	setup	CLK (R)	0.08361	0.12814	0.75079

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)	-0.09500	-0.18800	-2.86580
	setup	CLK (R)	0.12240	0.21745	2.89123

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)	-0.06777	-0.11956	-0.74802
	setup	CLK (R)	0.08361	0.12814	0.75079

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)	-0.09500	-0.18800	-2.86580
	setup	CLK (R)	0.12240	0.21745	2.89123

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)	-0.08477	-0.13014	-0.71723
	setup	CLK (R)	0.10365	0.14377	0.72816

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)	-0.13458	-0.20691	-2.92063
	setup	CLK (R)	0.16580	0.23707	2.94722

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)	-0.08477	-0.13014	-0.71723
	hold	CLK (R)	-0.08675	-0.13585	-0.72231
	setup	CLK (R)	0.09875	0.13815	0.71887
	setup	CLK (R)	0.10365	0.14377	0.72816

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)	-0.13786	-0.20953	-2.92063
	hold	CLK (R)	-0.13458	-0.20691	-2.92517
	setup	CLK (R)	0.16580	0.23707	2.93694
	setup	CLK (R)	0.16233	0.23696	2.94722

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)	-0.07934	-0.13931	-0.33862
	setup	CLK (R)	0.16490	0.17456	1.05449

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)	-0.09878	-0.16914	-2.57296
	setup	CLK (R)	0.12849	0.20487	2.65824

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)	-0.13707	-0.14500	-0.33862
	hold	CLK (R)	-0.07934	-0.13931	-1.05061
	setup	CLK (R)	0.16490	0.17456	0.39137
	setup	CLK (R)	0.09552	0.14940	1.05449

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)	-0.10380	-0.19663	-2.65047
	hold	CLK (R)	-0.09878	-0.16914	-2.57296
	setup	CLK (R)	0.12070	0.20487	2.65824
	setup	CLK (R)	0.12849	0.19922	2.59616

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)	0.04036	0.04674	0.12572
	removal	CLK (R)	-0.02361	-0.02776	-0.04604

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)	0.04036	0.04665	0.12558
	recovery	CLK (R)	0.04027	0.04674	0.12545
	recovery	CLK (R)	0.04029	0.04673	0.12572
	removal	CLK (R)	-0.02361	-0.02776	-0.04604
	removal	CLK (R)	-0.02361	-0.02776	-0.04604
	removal	CLK (R)	-0.02361	-0.02776	-0.04604

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 ()	0.10887	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.11328	0.58472	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)	0.00087	0.00666	1.15503
	removal	CLK (R)	0.04155	0.05948	-0.10646
	hold	RESET_B (R)	-0.04237	-0.06778	-0.60539
	setup	RESET_B (R)	0.06520	0.09279	0.98782

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)	0.00087	0.00665	1.14259
	recovery	CLK (R)	0.00086	0.00666	1.15503
	recovery	CLK (R)	0.00087	0.00659	1.14859
	removal	CLK (R)	0.04155	0.05948	-0.10646
	removal	CLK (R)	0.04155	0.05948	-0.10646
	removal	CLK (R)	0.04155	0.05948	-0.10646
	hold	RESET_B (R)	-0.04318	-0.06970	-0.61963
	hold	RESET_B (R)	-0.04237	-0.06778	-0.60539
	setup	RESET_B (R)	0.05956	0.09279	0.98782
	setup	RESET_B (R)	0.06520	0.09056	0.79746

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 ()	0.07142	0.58472	16.50020
	min_pulse_width	SET_B ()	0.08244	0.58472	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 ()	0.07142	0.58472	16.50020
	min_pulse_width	CLK ()	0.08244	0.58472	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 ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.12429	0.58472	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	0.04008	0.04847	0.21331
	CLK	0.03736	0.04564	0.21036
	SET_B	0.03433	0.05053	0.33163
	SET_B	0.04005	0.05625	0.33650

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.03285	0.04300	0.22102
	CLK	0.02988	0.03999	0.21784
	RESET_B	0.02845	0.03439	0.14741
	RESET_B	0.02977	0.03569	0.14801
	SET_B	0.03222	0.04538	0.32875
	SET_B	0.02650	0.03960	0.32275

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.04173	0.05189	0.23101
	CLK	0.03877	0.04889	0.22792
	RESET_B	0.03515	0.04111	0.15537
	RESET_B	0.03648	0.04241	0.15547
	SET_B	0.03919	0.05233	0.33626
	SET_B	0.03347	0.04658	0.33047

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.03238	0.04070	0.20431
	CLK	0.02966	0.03794	0.20155
	SET_B	0.02829	0.04451	0.32436
	SET_B	0.03401	0.05023	0.32966

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.01810	0.01811	0.01822
	(CLK * SCD * SCE)	0.01584	0.01584	0.01596
	(CLK * !SCE)	0.02148	0.02879	0.15897
	(CLK * !SCE)	0.01744	0.02474	0.15493
	(CLK * !SCD * SCE)	0.01466	0.01466	0.01464
	(CLK * !SCD * SCE)	0.01210	0.01210	0.01209
	(!CLK * SCD * SCE)	0.01129	0.01133	0.01142
	(!CLK * SCD * SCE)	0.00905	0.00903	0.00916
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02362	0.03176	0.18618
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01981	0.02792	0.18237
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01905	0.02519	0.15404
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01468	0.02080	0.14966
	(!CLK * !SCD * SCE)	0.01863	0.01863	0.01860
	(!CLK * !SCD * SCE)	0.01609	0.01607	0.01605
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01858	0.02465	0.15293
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01424	0.02029	0.14857

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.01579	0.01576	0.01533
	(CLK * SCD * SCE)	0.01806	0.01803	0.01760
	(CLK * !SCE)	0.01379	0.02181	0.15496
	(CLK * !SCE)	0.01782	0.02585	0.15899
	(CLK * !SCD * SCE)	0.01346	0.01345	0.01346
	(CLK * !SCD * SCE)	0.01602	0.01603	0.01602
	(!CLK * SCD * SCE)	0.00899	0.00896	0.00853
	(!CLK * SCD * SCE)	0.01126	0.01123	0.01080
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02580	0.03374	0.18178
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02962	0.03756	0.18560
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01138	0.01838	0.14898
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01575	0.02278	0.15335
	(!CLK * !SCD * SCE)	0.01750	0.01748	0.01749
	(!CLK * !SCD * SCE)	0.02006	0.02006	0.02005
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01212	0.01925	0.15073
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01647	0.02363	0.15508

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * SCE)	0.02495	0.03125	0.15837
	(CLK * D * SCE)	0.01937	0.02567	0.15281
	(CLK * !D * SCE)	0.02669	0.03258	0.15904
	(CLK * !D * SCE)	0.02089	0.02677	0.15325
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.02250	0.02796	0.15390
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01659	0.02205	0.14801
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02719	0.03455	0.18509
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02183	0.02919	0.17974
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02204	0.02748	0.15274
sky130_fd_sc_hs__sdfbbp_1	**(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)**	0.01614	0.02157	0.14685
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.02425	0.02941	0.15457
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01811	0.02328	0.14844
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02896	0.03603	0.18611
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02337	0.03046	0.18054
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02378	0.02888	0.15342
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01766	0.02276	0.14731
	!SCE	0.01768	0.01738	0.01828
	!SCE	0.01475	0.01442	0.01535

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.01740	0.02385	0.15333
	(CLK * D * SCE)	0.02298	0.02943	0.15887
	(CLK * !D * SCE)	0.01684	0.02352	0.15346
	(CLK * !D * SCE)	0.02264	0.02934	0.15924
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01493	0.02057	0.14775
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.02085	0.02649	0.15362
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02984	0.03606	0.17824
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03520	0.04144	0.18357
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01567	0.02144	0.14951
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02157	0.02734	0.15538
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01438	0.02019	0.14789
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.02052	0.02635	0.15399
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02950	0.03595	0.17895
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.03507	0.04154	0.18451
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01512	0.02106	0.14965
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.02123	0.02720	0.15574
	!SCE	0.01593	0.01587	0.01561
	!SCE	0.01887	0.01886	0.01857

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)	0.02332	0.03412	0.21047
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01611	0.02688	0.20330
	(CLK * D * !SCD)	0.02445	0.03571	0.22698
	(CLK * D * !SCD)	0.01951	0.03074	0.22200
	(CLK * !D * SCD)	0.02916	0.04722	0.34896
	(CLK * !D * SCD)	0.02012	0.03814	0.33992
	(!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)	0.01580	0.02660	0.20295
	(!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)	0.00859	0.01935	0.19578
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.03687	0.04790	0.23681
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.03171	0.04271	0.23159
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02201	0.03327	0.22282
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01742	0.02865	0.21816
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.02277	0.03408	0.22434
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01815	0.02943	0.21965
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02697	0.04408	0.34481
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01759	0.03471	0.33543
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.03158	0.05083	0.37892
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02276	0.04200	0.37010
	(!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)	0.02070	0.03152	0.20689
	(!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)	0.01416	0.02498	0.20033
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.02650	0.04354	0.34363
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01714	0.03417	0.33427

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)	0.01497	0.02641	0.20365
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.02218	0.03366	0.21087
	(CLK * D * !SCD)	0.02220	0.03338	0.21995
	(CLK * D * !SCD)	0.02718	0.03831	0.22471
	(CLK * !D * SCD)	0.01392	0.03267	0.33893
	(CLK * !D * SCD)	0.02299	0.04177	0.34798
	(!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)	0.00695	0.01838	0.19563
	(!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)	0.01416	0.02563	0.20286
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02407	0.03545	0.22648
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02926	0.04064	0.23144
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01947	0.03052	0.21643
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02411	0.03515	0.22086
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01900	0.03000	0.21520
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.02366	0.03464	0.21962
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01125	0.02892	0.33259
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02066	0.03835	0.34199
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02566	0.04398	0.36369
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.03451	0.05286	0.37252
	(!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)	0.01202	0.02346	0.20041
	(!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)	0.01857	0.03003	0.20697
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01199	0.02981	0.33436
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.02138	0.03920	0.34373

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)	0.02431	0.03366	0.20630
	(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)	0.02091	0.03025	0.20290
	(!SET_B * Q * !Q_N)	0.01942	0.02925	0.20369
	(!SET_B * Q * !Q_N)	0.01594	0.02574	0.20019
	(!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)	0.02359	0.03396	0.22848
	(!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)	0.02073	0.03110	0.22562

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)	0.01543	0.02580	0.20351
	(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)	0.01882	0.02921	0.20691
	(!SET_B * Q * !Q_N)	0.01121	0.02163	0.19742
	(!SET_B * Q * !Q_N)	0.01472	0.02516	0.20092
	(!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)	0.02223	0.03306	0.22539
	(!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)	0.02508	0.03593	0.22825

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)	0.01541	0.01543	0.01540
	(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)	0.00488	0.00487	0.00489
	(!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)	0.02968	0.04191	0.28122
	(!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)	0.01849	0.03065	0.27000

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)	0.00709	0.00668	0.00664
	(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)	0.01756	0.01718	0.01715
	(!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)	0.01221	0.02714	0.27521
	(!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)	0.02343	0.03839	0.28646

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)**	0.02903	0.04795	0.37885
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02338	0.04224	0.37316
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02849	0.04741	0.37832
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02284	0.04170	0.37262
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03196	0.05097	0.38240
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02631	0.04528	0.37674
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03477	0.05361	0.38351
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02879	0.04760	0.37751
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03229	0.05177	0.39259
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02696	0.04639	0.38725
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.03176	0.05122	0.39206
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02643	0.04585	0.38671
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02977	0.04868	0.37959
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02411	0.04298	0.37390
	(!D * !SCE * SET_B * !Q * Q_N)	0.03068	0.04968	0.38112
	(!D * !SCE * SET_B * !Q * Q_N)	0.02503	0.04400	0.37547
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03348	0.05233	0.38223
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02749	0.04630	0.37621
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03196	0.05096	0.38240
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02630	0.04526	0.37674
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03476	0.05359	0.38354
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02877	0.04757	0.37752
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03304	0.05238	0.39333
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02770	0.04700	0.38798

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)	0.02874	0.04943	0.39348
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03464	0.05533	0.39937
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01934	0.03922	0.37057
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02503	0.04493	0.37625
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02768	0.04836	0.39240
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.03358	0.05427	0.39830
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01823	0.03812	0.36947
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02393	0.04383	0.37515
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04070	0.06080	0.40086
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04623	0.06633	0.40639
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02429	0.04399	0.37439
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02997	0.04968	0.38006
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02248	0.04295	0.37973
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02851	0.04900	0.38577
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02338	0.04367	0.38370
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02874	0.04905	0.38906
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02226	0.04255	0.38258
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02763	0.04794	0.38794
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02948	0.05016	0.39420
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.03537	0.05606	0.40010
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02007	0.03996	0.37131
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02577	0.04567	0.37699
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.03871	0.05883	0.39904
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.04421	0.06433	0.40455
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04073	0.06083	0.40113
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.04624	0.06635	0.40663
	(!D * !SCE * SET_B * !Q * Q_N)	0.02244	0.04214	0.37256
	(!D * !SCE * SET_B * !Q * Q_N)	0.02812	0.04783	0.37824
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02063	0.04110	0.37795
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02667	0.04715	0.38398
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02428	0.04398	0.37438
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02996	0.04967	0.38006
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02248	0.04299	0.37977
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02852	0.04903	0.38578
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02411	0.04439	0.38442
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02947	0.04978	0.38978

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00192	0.00200	0.00434	0.00605	0.00309	1.69664	1.74859
sky130_fd_sc_hs__sdfrbp_2	0.00194	0.00203	0.00445	0.00611	0.00303	3.40105	3.37850

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrbp_1	0.00000	752.41600	1259.24000
sky130_fd_sc_hs__sdfrbp_2	0.00000	803.02500	1160.38000

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)	0.14082	0.49711	5.32563
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.16123	0.43735	5.54822

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.13785	0.34310	2.60129
	RESET_B->Q (FF)	0.18818	0.58219	5.45506
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.15923	0.32610	2.79790
	RESET_B->Q (FF)	0.20511	0.55122	5.72053

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)	0.11511	0.48012	5.36926
	RESET_B->Q_N (FR)	0.16526	0.71563	8.21008
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.11881	0.40005	5.22528
	RESET_B->Q_N (FR)	0.16259	0.62562	8.14527

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)	0.10727	0.36658	2.95113
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.11209	0.32299	2.69974

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)	-0.06705	-0.15268	-1.35305
	setup	CLK (R)	0.11257	0.18439	1.37212
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06634	-0.15618	-1.39968
	setup	CLK (R)	0.11756	0.19009	1.41691

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)	-0.06249	-0.15300	-2.62425
	setup	CLK (R)	0.11453	0.21335	2.67544
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06529	-0.15809	-2.68419
	setup	CLK (R)	0.12274	0.22060	2.74571

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)	-0.06705	-0.15268	-1.35305
	hold	CLK (R)	-0.06720	-0.15268	-1.35606
	setup	CLK (R)	0.11257	0.18374	1.37197
	setup	CLK (R)	0.11245	0.18439	1.37212
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06634	-0.15618	-1.39968
	hold	CLK (R)	-0.06643	-0.15618	-1.39990
	setup	CLK (R)	0.11756	0.18959	1.41569
	setup	CLK (R)	0.11719	0.19009	1.41691

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)	-0.06388	-0.15329	-2.62824
	hold	CLK (R)	-0.06249	-0.15300	-2.62425
	setup	CLK (R)	0.11448	0.21335	2.67544
	setup	CLK (R)	0.11453	0.21300	2.67384
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06529	-0.15839	-2.68716
	hold	CLK (R)	-0.06529	-0.15809	-2.68419
	setup	CLK (R)	0.12274	0.22000	2.74571
	setup	CLK (R)	0.12086	0.22060	2.74198

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)	-0.08412	-0.16018	-1.28803
	setup	CLK (R)	0.13573	0.19609	1.30996
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08489	-0.16096	-1.32874
	setup	CLK (R)	0.14053	0.20202	1.35456

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)	-0.08755	-0.16541	-2.73587
	setup	CLK (R)	0.14936	0.23089	2.77907
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08863	-0.17186	-2.78956
	setup	CLK (R)	0.15536	0.23915	2.83724

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)	-0.08412	-0.16018	-1.28803
	hold	CLK (R)	-0.08603	-0.16724	-1.29249
	setup	CLK (R)	0.13150	0.19131	1.30241
	setup	CLK (R)	0.13573	0.19609	1.30996
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08489	-0.16096	-1.32874
	hold	CLK (R)	-0.09015	-0.16924	-1.33637
	setup	CLK (R)	0.13240	0.19409	1.34455
	setup	CLK (R)	0.14053	0.20202	1.35456

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)	-0.09071	-0.16926	-2.73778
	hold	CLK (R)	-0.08755	-0.16541	-2.73587
	setup	CLK (R)	0.14936	0.23089	2.77439
	setup	CLK (R)	0.14643	0.22977	2.77907
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09415	-0.17697	-2.78956
	hold	CLK (R)	-0.08863	-0.17186	-2.79149
	setup	CLK (R)	0.15403	0.23915	2.83641
	setup	CLK (R)	0.15536	0.23821	2.83724

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)	-0.07090	-0.11553	-0.45323
	setup	CLK (R)	0.15769	0.19009	1.51948
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07002	-0.12000	-0.50538
	setup	CLK (R)	0.15996	0.19409	1.57237

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)	-0.07209	-0.14362	-2.46998
	setup	CLK (R)	0.15680	0.25214	2.94952
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07236	-0.14756	-2.52120
	setup	CLK (R)	0.15639	0.25466	3.00185

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)	-0.09750	-0.11553	-0.45323
	hold	CLK (R)	-0.07090	-0.15896	-1.50370
	setup	CLK (R)	0.15769	0.17539	0.47283
	setup	CLK (R)	0.11909	0.19009	1.51948
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09863	-0.12000	-0.50538
	hold	CLK (R)	-0.07002	-0.16096	-1.55308
	setup	CLK (R)	0.15996	0.17740	0.52441
	setup	CLK (R)	0.11799	0.19409	1.57237

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)	-0.10669	-0.22153	-2.93515
	hold	CLK (R)	-0.07209	-0.14362	-2.46998
	setup	CLK (R)	0.15680	0.25214	2.94952
	setup	CLK (R)	0.12524	0.20243	2.51712
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10983	-0.22334	-2.98590
	hold	CLK (R)	-0.07236	-0.14756	-2.52120
	setup	CLK (R)	0.15639	0.25466	3.00185
	setup	CLK (R)	0.12735	0.20632	2.56503

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)	0.15257	0.20071	2.30213
	removal	CLK (R)	-0.12049	-0.16924	-2.22932
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.15533	0.20437	2.35763
	removal	CLK (R)	-0.12178	-0.17338	-2.28219

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)	0.14610	0.19609	2.23980
	recovery	CLK (R)	0.13873	0.18382	2.30213
	recovery	CLK (R)	0.13587	0.17952	2.30149
	recovery	CLK (R)	0.15257	0.20071	2.23289
	removal	CLK (R)	-0.12829	-0.18374	-2.23767
	removal	CLK (R)	-0.12178	-0.17338	-2.30052
	removal	CLK (R)	-0.12049	-0.16924	-2.29816
	removal	CLK (R)	-0.13451	-0.18995	-2.22932
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.14923	0.19779	2.29403
	recovery	CLK (R)	0.14094	0.19086	2.35763
	recovery	CLK (R)	0.13719	0.18329	2.35668
	recovery	CLK (R)	0.15533	0.20437	2.28656
	removal	CLK (R)	-0.13230	-0.18939	-2.28745
	removal	CLK (R)	-0.12773	-0.17899	-2.35375
	removal	CLK (R)	-0.12178	-0.17338	-2.35184
	removal	CLK (R)	-0.13980	-0.19409	-2.28219

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 ()	0.09565	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.08684	0.58472	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.09786	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.09786	0.58472	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 ()	0.08023	0.58472	16.50020
	min_pulse_width	CLK ()	0.05820	0.58472	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.07142	0.58472	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 ()	0.11107	0.58472	16.50020
	min_pulse_width	CLK ()	0.11548	0.58472	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.11107	0.58472	16.50020
	min_pulse_width	CLK ()	0.11548	0.58472	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	0.03689	0.04518	0.21542
	CLK	0.03398	0.04228	0.21226
sky130_fd_sc_hs__sdfrbp_2	CLK	0.04279	0.04907	0.22228
	CLK	0.03982	0.04608	0.21872

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.02420	0.03329	0.19905
	CLK	0.02133	0.03044	0.19617
	RESET_B	0.02192	0.03326	0.20500
	RESET_B	0.02910	0.04039	0.21091
sky130_fd_sc_hs__sdfrbp_2	CLK	0.03052	0.03857	0.20562
	CLK	0.02784	0.03590	0.20241
	RESET_B	0.02845	0.03857	0.20783
	RESET_B	0.03578	0.04585	0.21496

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.02736	0.03646	0.20341
	CLK	0.02449	0.03359	0.20031
	RESET_B	0.02505	0.03641	0.20803
	RESET_B	0.03224	0.04357	0.21467
sky130_fd_sc_hs__sdfrbp_2	CLK	0.03404	0.04220	0.20953
	CLK	0.03137	0.03946	0.20674
	RESET_B	0.03196	0.04207	0.21377
	RESET_B	0.03930	0.04935	0.21964

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.03065	0.03896	0.20824
	CLK	0.02774	0.03603	0.20506
sky130_fd_sc_hs__sdfrbp_2	CLK	0.03639	0.04264	0.21384
	CLK	0.03342	0.03967	0.21076

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00921	0.00923	0.00934
	(CLK * RESET_B * SCD * SCE)	0.00702	0.00702	0.00714
	(CLK * RESET_B * SCD * !SCE)	0.01353	0.01999	0.14089
	(CLK * RESET_B * SCD * !SCE)	0.00911	0.01558	0.13646
	(CLK * RESET_B * !SCD * !SCE)	0.01491	0.02135	0.14153
	(CLK * RESET_B * !SCD * !SCE)	0.01050	0.01692	0.13711
	(CLK * !SCD * SCE)	0.00579	0.00579	0.00577
	(CLK * !SCD * SCE)	0.00330	0.00328	0.00327
	(CLK * !RESET_B * SCD * SCE)	0.00575	0.00576	0.00573
	(CLK * !RESET_B * SCD * SCE)	0.00328	0.00327	0.00325
	(CLK * !RESET_B * SCD * !SCE)	0.00395	0.00395	0.00388
	(CLK * !RESET_B * SCD * !SCE)	0.00153	0.00151	0.00141
	(CLK * !RESET_B * !SCD * !SCE)	0.00395	0.00395	0.00389
	(CLK * !RESET_B * !SCD * !SCE)	0.00147	0.00146	0.00138
	(!CLK * RESET_B * SCD * SCE)	0.01161	0.01162	0.01173
	(!CLK * RESET_B * SCD * SCE)	0.00941	0.00941	0.00953
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.02599	0.03453	0.19159
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.02135	0.02988	0.18693
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02737	0.03586	0.19223
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02274	0.03120	0.18759
	(!CLK * !SCD * SCE)	0.01062	0.01062	0.01060
	(!CLK * !SCD * SCE)	0.00813	0.00812	0.00810
	(!CLK * !RESET_B * SCD * SCE)	0.00588	0.00589	0.00586
	(!CLK * !RESET_B * SCD * SCE)	0.00341	0.00340	0.00338
	(!CLK * !RESET_B * SCD * !SCE)	0.00408	0.00408	0.00401
	(!CLK * !RESET_B * SCD * !SCE)	0.00166	0.00164	0.00154
	(!CLK * !RESET_B * !SCD * !SCE)	0.00408	0.00408	0.00402
	(!CLK * !RESET_B * !SCD * !SCE)	0.00161	0.00159	0.00152

	(CLK * RESET_B * SCD * SCE)	0.01034	0.01036	0.01047
	(CLK * RESET_B * SCD * SCE)	0.00812	0.00812	0.00824
	(CLK * RESET_B * SCD * !SCE)	0.01499	0.02133	0.14213
	(CLK * RESET_B * SCD * !SCE)	0.01049	0.01682	0.13763
	(CLK * RESET_B * !SCD * !SCE)	0.01637	0.02269	0.14278
	(CLK * RESET_B * !SCD * !SCE)	0.01188	0.01818	0.13828
	(CLK * !SCD * SCE)	0.00689	0.00689	0.00687
	(CLK * !SCD * SCE)	0.00437	0.00436	0.00434
	(CLK * !RESET_B * SCD * SCE)	0.00685	0.00686	0.00684
	(CLK * !RESET_B * SCD * SCE)	0.00435	0.00434	0.00433
	(CLK * !RESET_B * SCD * !SCE)	0.00503	0.00503	0.00496
	(CLK * !RESET_B * SCD * !SCE)	0.00257	0.00255	0.00245
	(CLK * !RESET_B * !SCD * !SCE)	0.00502	0.00502	0.00497
	(CLK * !RESET_B * !SCD * !SCE)	0.00252	0.00250	0.00243
	(!CLK * RESET_B * SCD * SCE)	0.01078	0.01080	0.01090
	(!CLK * RESET_B * SCD * SCE)	0.00856	0.00855	0.00867
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.02560	0.03405	0.19127
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.02087	0.02931	0.18653
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02696	0.03538	0.19192
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02224	0.03064	0.18718
	(!CLK * !SCD * SCE)	0.00976	0.00976	0.00974
	(!CLK * !SCD * SCE)	0.00724	0.00723	0.00721
	(!CLK * !RESET_B * SCD * SCE)	0.00698	0.00699	0.00697
	(!CLK * !RESET_B * SCD * SCE)	0.00448	0.00447	0.00446
	(!CLK * !RESET_B * SCD * !SCE)	0.00516	0.00516	0.00509
	(!CLK * !RESET_B * SCD * !SCE)	0.00270	0.00269	0.00258
	(!CLK * !RESET_B * !SCD * !SCE)	0.00515	0.00516	0.00510
	(!CLK * !RESET_B * !SCD * !SCE)	0.00265	0.00263	0.00256

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00704	0.00700	0.00657
	(CLK * RESET_B * SCD * SCE)	0.00925	0.00922	0.00879
	(CLK * RESET_B * SCD * !SCE)	0.00417	0.01148	0.13568
	(CLK * RESET_B * SCD * !SCE)	0.00858	0.01591	0.14010
	(CLK * RESET_B * !SCD * !SCE)	0.00418	0.01153	0.13636
	(CLK * RESET_B * !SCD * !SCE)	0.00858	0.01595	0.14078
	(CLK * !SCD * SCE)	0.00428	0.00426	0.00427
	(CLK * !SCD * SCE)	0.00676	0.00679	0.00677
	(CLK * !RESET_B * SCD * SCE)	0.00429	0.00429	0.00428
	(CLK * !RESET_B * SCD * SCE)	0.00676	0.00676	0.00676
	(CLK * !RESET_B * SCD * !SCE)	0.00301	0.00301	0.00302
	(CLK * !RESET_B * SCD * !SCE)	0.00548	0.00551	0.00549
	(CLK * !RESET_B * !SCD * !SCE)	0.00301	0.00300	0.00301
	(CLK * !RESET_B * !SCD * !SCE)	0.00549	0.00551	0.00549
	(!CLK * RESET_B * SCD * SCE)	0.00943	0.00939	0.00896
	(!CLK * RESET_B * SCD * SCE)	0.01164	0.01161	0.01117
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.02061	0.02976	0.18808
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.02525	0.03442	0.19273
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02062	0.02975	0.18883
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02525	0.03439	0.19348
	(!CLK * !SCD * SCE)	0.00913	0.00911	0.00912
	(!CLK * !SCD * SCE)	0.01162	0.01164	0.01162
	(!CLK * !RESET_B * SCD * SCE)	0.00442	0.00442	0.00442
	(!CLK * !RESET_B * SCD * SCE)	0.00689	0.00690	0.00690
	(!CLK * !RESET_B * SCD * !SCE)	0.00315	0.00314	0.00315
	(!CLK * !RESET_B * SCD * !SCE)	0.00562	0.00564	0.00562
	(!CLK * !RESET_B * !SCD * !SCE)	0.00314	0.00314	0.00314
	(!CLK * !RESET_B * !SCD * !SCE)	0.00562	0.00564	0.00563

	(CLK * RESET_B * SCD * SCE)	0.00809	0.00805	0.00763
	(CLK * RESET_B * SCD * SCE)	0.01034	0.01031	0.00988
	(CLK * RESET_B * SCD * !SCE)	0.00539	0.01260	0.13674
	(CLK * RESET_B * SCD * !SCE)	0.00988	0.01710	0.14125
	(CLK * RESET_B * !SCD * !SCE)	0.00539	0.01265	0.13741
	(CLK * RESET_B * !SCD * !SCE)	0.00988	0.01714	0.14192
	(CLK * !SCD * SCE)	0.00535	0.00534	0.00535
	(CLK * !SCD * SCE)	0.00788	0.00790	0.00788
	(CLK * !RESET_B * SCD * SCE)	0.00536	0.00536	0.00536
	(CLK * !RESET_B * SCD * SCE)	0.00787	0.00788	0.00787
	(CLK * !RESET_B * SCD * !SCE)	0.00412	0.00412	0.00413
	(CLK * !RESET_B * SCD * !SCE)	0.00662	0.00665	0.00663
	(CLK * !RESET_B * !SCD * !SCE)	0.00412	0.00411	0.00412
	(CLK * !RESET_B * !SCD * !SCE)	0.00663	0.00666	0.00664
	(!CLK * RESET_B * SCD * SCE)	0.00853	0.00849	0.00806
	(!CLK * RESET_B * SCD * SCE)	0.01077	0.01075	0.01031
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.02000	0.02906	0.18770
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.02473	0.03381	0.19244
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02001	0.02905	0.18845
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02473	0.03378	0.19319
	(!CLK * !SCD * SCE)	0.00825	0.00823	0.00824
	(!CLK * !SCD * SCE)	0.01078	0.01078	0.01077
	(!CLK * !RESET_B * SCD * SCE)	0.00550	0.00550	0.00550
	(!CLK * !RESET_B * SCD * SCE)	0.00801	0.00801	0.00801
	(!CLK * !RESET_B * SCD * !SCE)	0.00426	0.00425	0.00426
	(!CLK * !RESET_B * SCD * !SCE)	0.00676	0.00678	0.00677
	(!CLK * !RESET_B * !SCD * !SCE)	0.00425	0.00425	0.00425
	(!CLK * !RESET_B * !SCD * !SCE)	0.00676	0.00677	0.00677

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.01657	0.02233	0.14086
	(CLK * D * RESET_B * SCE)	0.01067	0.01643	0.13495
	(CLK * D * RESET_B * !SCE)	0.00873	0.00854	0.00953
	(CLK * D * RESET_B * !SCE)	0.00573	0.00551	0.00654
	(CLK * D * !RESET_B * SCE)	0.00568	0.00569	0.00565
	(CLK * D * !RESET_B * SCE)	0.00321	0.00320	0.00322
	(CLK * D * !RESET_B * !SCE)	0.00391	0.00391	0.00392
	(CLK * D * !RESET_B * !SCE)	0.00150	0.00149	0.00150
	(CLK * !D * RESET_B * SCE)	0.01832	0.02366	0.14155
	(CLK * !D * RESET_B * SCE)	0.01220	0.01752	0.13542
	(CLK * !D * !RESET_B * SCE)	0.00568	0.00569	0.00565
	(CLK * !D * !RESET_B * SCE)	0.00321	0.00319	0.00321
	(!D * RESET_B * !SCE)	0.00456	0.00457	0.00457
	(!D * RESET_B * !SCE)	0.00156	0.00156	0.00156
	(!D * !RESET_B * !SCE)	0.00406	0.00406	0.00406
	(!D * !RESET_B * !SCE)	0.00136	0.00136	0.00137
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.02918	0.03693	0.18814
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.02304	0.03078	0.18201
	(!CLK * D * RESET_B * !SCE)	0.01112	0.01093	0.01192
	(!CLK * D * RESET_B * !SCE)	0.00812	0.00790	0.00893
	(!CLK * D * !RESET_B * SCE)	0.00581	0.00582	0.00578
	(!CLK * D * !RESET_B * SCE)	0.00334	0.00333	0.00335
	(!CLK * D * !RESET_B * !SCE)	0.00404	0.00405	0.00405
	(!CLK * D * !RESET_B * !SCE)	0.00163	0.00162	0.00163
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.03096	0.03840	0.18954
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02461	0.03204	0.18318
	(!CLK * !D * !RESET_B * SCE)	0.00581	0.00582	0.00578
	(!CLK * !D * !RESET_B * SCE)	0.00334	0.00333	0.00335

	(CLK * D * RESET_B * SCE)	0.01792	0.02361	0.14205
	(CLK * D * RESET_B * SCE)	0.01193	0.01760	0.13607
	(CLK * D * RESET_B * !SCE)	0.00983	0.00965	0.01065
	(CLK * D * RESET_B * !SCE)	0.00679	0.00659	0.00762
	(CLK * D * !RESET_B * SCE)	0.00680	0.00681	0.00677
	(CLK * D * !RESET_B * SCE)	0.00430	0.00428	0.00430
	(CLK * D * !RESET_B * !SCE)	0.00502	0.00502	0.00502
	(CLK * D * !RESET_B * !SCE)	0.00258	0.00256	0.00257
	(CLK * !D * RESET_B * SCE)	0.01967	0.02497	0.14273
	(CLK * !D * RESET_B * SCE)	0.01346	0.01875	0.13652
	(CLK * !D * !RESET_B * SCE)	0.00680	0.00681	0.00677
	(CLK * !D * !RESET_B * SCE)	0.00430	0.00428	0.00430
	(!D * RESET_B * !SCE)	0.00568	0.00569	0.00568
	(!D * RESET_B * !SCE)	0.00265	0.00263	0.00264
	(!D * !RESET_B * !SCE)	0.00516	0.00516	0.00516
	(!D * !RESET_B * !SCE)	0.00243	0.00243	0.00244
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.02863	0.03635	0.18790
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.02241	0.03011	0.18167
	(!CLK * D * RESET_B * !SCE)	0.01026	0.01008	0.01109
	(!CLK * D * RESET_B * !SCE)	0.00724	0.00702	0.00806
	(!CLK * D * !RESET_B * SCE)	0.00693	0.00694	0.00690
	(!CLK * D * !RESET_B * SCE)	0.00443	0.00442	0.00444
	(!CLK * D * !RESET_B * !SCE)	0.00515	0.00515	0.00515
	(!CLK * D * !RESET_B * !SCE)	0.00271	0.00269	0.00271
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.03044	0.03785	0.18937
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02400	0.03140	0.18292
	(!CLK * !D * !RESET_B * SCE)	0.00693	0.00694	0.00690
	(!CLK * !D * !RESET_B * SCE)	0.00443	0.00441	0.00443

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00765	0.01375	0.13485
	(CLK * D * RESET_B * SCE)	0.01357	0.01969	0.14073
	(CLK * D * RESET_B * !SCE)	0.00701	0.00695	0.00670
	(CLK * D * RESET_B * !SCE)	0.01000	0.00999	0.00971
	(CLK * D * !RESET_B * SCE)	0.00439	0.00438	0.00438
	(CLK * D * !RESET_B * SCE)	0.00681	0.00684	0.00679
	(CLK * D * !RESET_B * !SCE)	0.00300	0.00299	0.00298
	(CLK * D * !RESET_B * !SCE)	0.00543	0.00544	0.00540
	(CLK * !D * RESET_B * SCE)	0.00699	0.01336	0.13495
	(CLK * !D * RESET_B * SCE)	0.01312	0.01950	0.14106
	(CLK * !D * !RESET_B * SCE)	0.00439	0.00438	0.00438
	(CLK * !D * !RESET_B * SCE)	0.00682	0.00683	0.00679
	(!D * RESET_B * !SCE)	0.00250	0.00239	0.00237
	(!D * RESET_B * !SCE)	0.00550	0.00541	0.00537
	(!D * !RESET_B * !SCE)	0.00287	0.00285	0.00280
	(!D * !RESET_B * !SCE)	0.00569	0.00567	0.00557
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.02479	0.03201	0.18140
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.03093	0.03817	0.18751
	(!CLK * D * RESET_B * !SCE)	0.00940	0.00935	0.00909
	(!CLK * D * RESET_B * !SCE)	0.01239	0.01237	0.01210
	(!CLK * D * !RESET_B * SCE)	0.00452	0.00452	0.00451
	(!CLK * D * !RESET_B * SCE)	0.00695	0.00697	0.00693
	(!CLK * D * !RESET_B * !SCE)	0.00313	0.00313	0.00312
	(!CLK * D * !RESET_B * !SCE)	0.00557	0.00558	0.00554
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02438	0.03197	0.18270
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.03074	0.03834	0.18904
	(!CLK * !D * !RESET_B * SCE)	0.00452	0.00452	0.00451
	(!CLK * !D * !RESET_B * SCE)	0.00695	0.00697	0.00693

	(CLK * D * RESET_B * SCE)	0.00881	0.01489	0.13593
	(CLK * D * RESET_B * SCE)	0.01482	0.02090	0.14190
	(CLK * D * RESET_B * !SCE)	0.00807	0.00801	0.00776
	(CLK * D * RESET_B * !SCE)	0.01110	0.01109	0.01081
	(CLK * D * !RESET_B * SCE)	0.00545	0.00545	0.00544
	(CLK * D * !RESET_B * SCE)	0.00791	0.00793	0.00789
	(CLK * D * !RESET_B * !SCE)	0.00408	0.00408	0.00406
	(CLK * D * !RESET_B * !SCE)	0.00655	0.00656	0.00652
	(CLK * !D * RESET_B * SCE)	0.00824	0.01455	0.13607
	(CLK * !D * RESET_B * SCE)	0.01446	0.02078	0.14227
	(CLK * !D * !RESET_B * SCE)	0.00545	0.00545	0.00544
	(CLK * !D * !RESET_B * SCE)	0.00791	0.00793	0.00789
	(!D * RESET_B * !SCE)	0.00357	0.00346	0.00344
	(!D * RESET_B * !SCE)	0.00661	0.00651	0.00648
	(!D * !RESET_B * !SCE)	0.00397	0.00394	0.00389
	(!D * !RESET_B * !SCE)	0.00678	0.00679	0.00669
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.02408	0.03134	0.18082
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.03032	0.03758	0.18701
	(!CLK * D * RESET_B * !SCE)	0.00850	0.00845	0.00820
	(!CLK * D * RESET_B * !SCE)	0.01154	0.01152	0.01125
	(!CLK * D * !RESET_B * SCE)	0.00559	0.00558	0.00558
	(!CLK * D * !RESET_B * SCE)	0.00804	0.00806	0.00802
	(!CLK * D * !RESET_B * !SCE)	0.00421	0.00421	0.00419
	(!CLK * D * !RESET_B * !SCE)	0.00668	0.00669	0.00665
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02383	0.03139	0.18215
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.03028	0.03785	0.18858
	(!CLK * !D * !RESET_B * SCE)	0.00559	0.00558	0.00558
	(!CLK * !D * !RESET_B * SCE)	0.00804	0.00806	0.00802

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)**	0.01570	0.02614	0.20666
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00787	0.01829	0.19886
	(CLK * D * RESET_B * !SCD)	0.01589	0.02705	0.22222
	(CLK * D * RESET_B * !SCD)	0.01077	0.02187	0.21703
	(CLK * !D * RESET_B * SCD)	0.02268	0.03938	0.33298
	(CLK * !D * RESET_B * SCD)	0.01261	0.02927	0.32291
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.01809	0.02853	0.20905
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.01026	0.02068	0.20125
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.03277	0.04389	0.24142
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02785	0.03894	0.23646
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.01275	0.02345	0.20328
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00538	0.01605	0.19592
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.03518	0.05440	0.38488
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02489	0.04408	0.37457

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.01628	0.02684	0.20712
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00820	0.01875	0.19907
	(CLK * D * RESET_B * !SCD)	0.01663	0.02787	0.22296
	(CLK * D * RESET_B * !SCD)	0.01128	0.02249	0.21757
	(CLK * !D * RESET_B * SCD)	0.02354	0.04032	0.33421
	(CLK * !D * RESET_B * SCD)	0.01318	0.02991	0.32385
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.01672	0.02728	0.20756
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00864	0.01918	0.19951
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.03169	0.04291	0.24035
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02659	0.03777	0.23521
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.01339	0.02427	0.20379
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00579	0.01663	0.19619
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.03419	0.05355	0.38479
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02360	0.04292	0.37417

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)**	0.00627	0.01766	0.19913
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.01409	0.02551	0.20696
	(CLK * D * RESET_B * !SCD)	0.01450	0.02574	0.21704
	(CLK * D * RESET_B * !SCD)	0.01967	0.03091	0.22199
	(CLK * !D * RESET_B * SCD)	0.00470	0.02218	0.32046
	(CLK * !D * RESET_B * SCD)	0.01480	0.03231	0.33056
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00866	0.02002	0.20152
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.01648	0.02788	0.20935
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02695	0.03843	0.23403
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.03190	0.04339	0.23875
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00303	0.01439	0.19572
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.01037	0.02177	0.20306
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02111	0.03970	0.36599
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.03143	0.05002	0.37632

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00741	0.01887	0.20008
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.01547	0.02697	0.20816
	(CLK * D * RESET_B * !SCD)	0.01601	0.02728	0.21832
	(CLK * D * RESET_B * !SCD)	0.02138	0.03265	0.22347
	(CLK * !D * RESET_B * SCD)	0.00590	0.02344	0.32202
	(CLK * !D * RESET_B * SCD)	0.01629	0.03383	0.33242
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00785	0.01929	0.20052
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.01591	0.02739	0.20860
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02658	0.03811	0.23356
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.03173	0.04326	0.23847
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00412	0.01549	0.19660
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.01171	0.02310	0.20419
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02049	0.03914	0.36598
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.03112	0.04977	0.37660

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)**	0.02076	0.02786	0.18646
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00706	0.01409	0.17273
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01944	0.02673	0.18498
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00629	0.01354	0.17180
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00944	0.00947	0.00945
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00058	-0.00060	-0.00058
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.02010	0.02772	0.18538
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00768	0.01524	0.17292
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.02252	0.02922	0.18713
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00860	0.01528	0.17319
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00785	0.00788	0.00786
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00214	-0.00216	-0.00214
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00944	0.00946	0.00945
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00058	-0.00059	-0.00058
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00788	0.00792	0.00787
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00218	-0.00220	-0.00216
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.03203	0.04188	0.27575
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01811	0.02790	0.26182
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.03057	0.04067	0.27664
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01723	0.02727	0.26324
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00956	0.00959	0.00957
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00045	-0.00047	-0.00045
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.03124	0.04166	0.27680
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01858	0.02898	0.26417
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.03381	0.04328	0.27694
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01967	0.02912	0.26277
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00797	0.00803	0.00799
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00202	-0.00205	-0.00201
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00956	0.00961	0.00957
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00045	-0.00048	-0.00045
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00797	0.00803	0.00798
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00203	-0.00206	-0.00203

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.02193	0.02897	0.18726
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00819	0.01513	0.17348
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.02074	0.02793	0.18583
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00760	0.01471	0.17261
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.01039	0.01041	0.01040
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00039	0.00038	0.00039
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.02143	0.02896	0.18623
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00895	0.01638	0.17373
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.02369	0.03029	0.18790
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00972	0.01634	0.17390
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00880	0.00886	0.00881
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00117	-0.00122	-0.00117
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.01038	0.01041	0.01039
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00039	0.00037	0.00039
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00880	0.00886	0.00881
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00119	-0.00123	-0.00119
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.03321	0.04298	0.27670
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01926	0.02901	0.26275
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.03194	0.04192	0.27768
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01854	0.02849	0.26423
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.01049	0.01052	0.01050
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00050	0.00049	0.00051
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.03260	0.04292	0.27789
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01993	0.03019	0.26516
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.03503	0.04447	0.27793
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02085	0.03021	0.26371
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00891	0.00893	0.00892
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00106	-0.00107	-0.00106
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.01049	0.01051	0.01050
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00050	0.00049	0.00051
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00890	0.00894	0.00891
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00108	-0.00109	-0.00107

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)**	0.00596	0.01501	0.17673
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01969	0.02880	0.19039
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00300	0.01203	0.17343
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01617	0.02519	0.18655
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00092	0.00058	0.00061
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.01088	0.01073	0.01063
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00260	0.01190	0.17406
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01503	0.02440	0.18648
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00531	0.01463	0.17676
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01924	0.02862	0.19066
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00057	-0.00095	-0.00093
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00938	0.00918	0.00908
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00090	0.00058	0.00060
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.01086	0.01072	0.01063
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00061	-0.00091	-0.00094
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00936	0.00908	0.00908
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01598	0.02965	0.27707
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02992	0.04367	0.29097
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01291	0.02644	0.27450
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02630	0.03988	0.28782
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00096	0.00070	0.00073
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.01091	0.01084	0.01076
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01245	0.02622	0.27482
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02510	0.03893	0.28743
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01533	0.02949	0.27776
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02949	0.04367	0.29188
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00053	-0.00078	-0.00081
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00941	0.00920	0.00920
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00094	0.00070	0.00072
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.01089	0.01083	0.01075
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00057	-0.00079	-0.00082
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00940	0.00919	0.00920

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00726	0.01624	0.17770
	(CLK * D * SCD * SCE * !Q * Q_N)	0.02103	0.03008	0.19142
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00424	0.01319	0.17431
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01746	0.02641	0.18748
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00216	0.00187	0.00185
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.01210	0.01187	0.01185
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00385	0.01307	0.17494
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01632	0.02560	0.18740
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00669	0.01592	0.17779
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.02067	0.02994	0.19172
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00067	0.00032	0.00031
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.01059	0.01033	0.01030
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00214	0.00186	0.00184
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.01208	0.01186	0.01184
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00063	0.00031	0.00030
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01058	0.01033	0.01029
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01733	0.03089	0.27815
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.03132	0.04497	0.29210
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01422	0.02760	0.27562
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02766	0.04110	0.28903
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00222	0.00199	0.00198
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.01214	0.01200	0.01198
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01375	0.02738	0.27594
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02644	0.04016	0.28864
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01677	0.03078	0.27890
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.03097	0.04506	0.29307
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00072	0.00045	0.00044
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.01064	0.01046	0.01043
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00220	0.00200	0.00198
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.01212	0.01198	0.01198
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00069	0.00044	0.00043
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.01063	0.01045	0.01043

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)**	0.02768	0.04556	0.36420
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.02194	0.03977	0.35844
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.02686	0.04474	0.36338
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.02111	0.03895	0.35762
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02833	0.04621	0.36486
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02259	0.04042	0.35909
	(D * !SCD * SCE * !Q * Q_N)	0.02280	0.04067	0.35933
	(D * !SCD * SCE * !Q * Q_N)	0.01705	0.03488	0.35357
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02279	0.04064	0.35929
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01704	0.03485	0.35353
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.02122	0.03910	0.35773
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01548	0.03331	0.35197
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.02122	0.03909	0.35773
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01548	0.03331	0.35197
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02842	0.04630	0.36494
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02267	0.04051	0.35918
	(!D * !SCE * !Q * Q_N)	0.02124	0.03911	0.35777
	(!D * !SCE * !Q * Q_N)	0.01549	0.03332	0.35201
	(!D * !SCD * SCE * !Q * Q_N)	0.02279	0.04065	0.35933
	(!D * !SCD * SCE * !Q * Q_N)	0.01705	0.03487	0.35356
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02279	0.04064	0.35929
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01704	0.03487	0.35353

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.02697	0.04489	0.36651
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.02133	0.03922	0.36085
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.02614	0.04407	0.36569
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.02050	0.03840	0.36003
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02762	0.04554	0.36716
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02197	0.03987	0.36150
	(D * !SCD * SCE * !Q * Q_N)	0.02394	0.04184	0.36350
	(D * !SCD * SCE * !Q * Q_N)	0.01830	0.03617	0.35785
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02393	0.04187	0.36347
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01829	0.03616	0.35781
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.02236	0.04027	0.36190
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01672	0.03459	0.35625
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.02236	0.04027	0.36190
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01672	0.03459	0.35625
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02770	0.04563	0.36724
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02206	0.03996	0.36159
	(!D * !SCE * !Q * Q_N)	0.02238	0.04028	0.36185
	(!D * !SCE * !Q * Q_N)	0.01674	0.03460	0.35620
	(!D * !SCD * SCE * !Q * Q_N)	0.02394	0.04184	0.36349
	(!D * !SCD * SCE * !Q * Q_N)	0.01829	0.03617	0.35784
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02393	0.04184	0.36346
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01829	0.03616	0.35781

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)	0.01939	0.03855	0.35848
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.02518	0.04433	0.36425
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02623	0.04608	0.38247
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.03178	0.05161	0.38800
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01857	0.03773	0.35765
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.02435	0.04351	0.36343
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02551	0.04532	0.38150
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.03107	0.05088	0.38704
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.03117	0.05092	0.38010
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.03722	0.05698	0.38613
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02004	0.03920	0.35912
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02582	0.04498	0.36490
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02695	0.04676	0.38285
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.03251	0.05232	0.38839
	(D * !SCD * SCE * !Q * Q_N)	0.01383	0.03298	0.35293
	(D * !SCD * SCE * !Q * Q_N)	0.01961	0.03874	0.35869
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01381	0.03295	0.35291
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01960	0.03872	0.35868
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01225	0.03139	0.35135
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01804	0.03716	0.35712
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01225	0.03139	0.35135
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01804	0.03716	0.35712
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02013	0.03929	0.35921
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02591	0.04507	0.36499
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02696	0.04679	0.38313
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.03252	0.05235	0.38867
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02956	0.04927	0.37826
	(!D * RESET_B * !SCE * Q * !Q_N)	0.03558	0.05529	0.38427
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.03115	0.05093	0.38066
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.03718	0.05696	0.38669
	(!D * !SCE * !Q * Q_N)	0.01227	0.03142	0.35137
	(!D * !SCE * !Q * Q_N)	0.01805	0.03718	0.35713
	(!D * !SCD * SCE * !Q * Q_N)	0.01382	0.03298	0.35292
	(!D * !SCD * SCE * !Q * Q_N)	0.01961	0.03874	0.35869
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01382	0.03295	0.35291
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01960	0.03872	0.35868

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01849	0.03811	0.36222
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.02412	0.04378	0.36788
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02736	0.04770	0.38834
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.03275	0.05314	0.39375
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01767	0.03729	0.36140
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.02330	0.04296	0.36706
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02663	0.04704	0.38727
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.03203	0.05248	0.39270
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.03026	0.05048	0.38380
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.03617	0.05642	0.38973
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01914	0.03876	0.36286
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02477	0.04443	0.36853
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02808	0.04838	0.38870
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.03348	0.05383	0.39412
	(D * !SCD * SCE * !Q * Q_N)	0.01497	0.03460	0.35874
	(D * !SCD * SCE * !Q * Q_N)	0.02061	0.04026	0.36440
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01496	0.03458	0.35873
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02059	0.04023	0.36439
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01340	0.03302	0.35717
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01903	0.03867	0.36283
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01340	0.03302	0.35714
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01903	0.03867	0.36280
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01923	0.03885	0.36296
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02486	0.04452	0.36862
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02809	0.04842	0.38918
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.03349	0.05386	0.39461
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02866	0.04883	0.38215
	(!D * RESET_B * !SCE * Q * !Q_N)	0.03453	0.05473	0.38805
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.03024	0.05047	0.38445
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.03612	0.05640	0.39037
	(!D * !SCE * !Q * Q_N)	0.01341	0.03305	0.35718
	(!D * !SCE * !Q * Q_N)	0.01905	0.03870	0.36284
	(!D * !SCD * SCE * !Q * Q_N)	0.01497	0.03460	0.35871
	(!D * !SCD * SCE * !Q * Q_N)	0.02061	0.04025	0.36437
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01496	0.03458	0.35870
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02059	0.04023	0.36436

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00203	0.00199	0.00428	0.00595	0.00291	1.67377

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	710.52600	1139.55000

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)	0.15299	0.67092	7.84389

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)	0.13480	0.49980	5.09462
	RESET_B->Q (FF)	0.17919	0.56930	5.37673

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)	-0.02995	-0.01232	1.68371
	setup	CLK_N (F)	0.09122	0.06736	-1.61686

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)	-0.06653	-0.09164	-0.16631
	setup	CLK_N (F)	0.14177	0.15262	0.21812

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)	-0.03186	-0.01232	1.68371
	hold	CLK_N (F)	-0.02995	-0.01475	1.68248
	setup	CLK_N (F)	0.09122	0.06736	-1.61980
	setup	CLK_N (F)	0.09122	0.06736	-1.61686

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)	-0.06674	-0.09164	-0.17031
	hold	CLK_N (F)	-0.06653	-0.09164	-0.16631
	setup	CLK_N (F)	0.14170	0.15262	0.21812
	setup	CLK_N (F)	0.14177	0.15215	0.21239

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)	-0.04542	-0.01725	1.67770
	setup	CLK_N (F)	0.11247	0.07497	-1.60595

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)	-0.09113	-0.09885	-0.20549
	setup	CLK_N (F)	0.17483	0.16582	0.25558

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)	-0.04542	-0.01725	1.67770
	hold	CLK_N (F)	-0.05264	-0.02712	1.66510
	setup	CLK_N (F)	0.10774	0.06840	-1.62010
	setup	CLK_N (F)	0.11247	0.07497	-1.60595

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)	-0.09369	-0.10381	-0.20784
	hold	CLK_N (F)	-0.09113	-0.09885	-0.20549
	setup	CLK_N (F)	0.17483	0.16525	0.25466
	setup	CLK_N (F)	0.17306	0.16582	0.25558

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)	-0.03510	-0.01762	2.04107
	setup	CLK_N (F)	0.17713	0.10707	-1.48966

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)	-0.07269	-0.08266	-0.06149
	setup	CLK_N (F)	0.15332	0.14341	0.15979

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)	-0.09810	-0.04820	2.04107
	hold	CLK_N (F)	-0.03510	-0.01762	1.54610
	setup	CLK_N (F)	0.17713	0.10707	-2.01140
	setup	CLK_N (F)	0.09408	0.07172	-1.48966

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)	-0.07269	-0.08266	-0.13490
	hold	CLK_N (F)	-0.07769	-0.08565	-0.06149
	setup	CLK_N (F)	0.13517	0.12610	0.15979
	setup	CLK_N (F)	0.15332	0.14341	0.10398

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)	0.12892	0.07394	-0.93708
	removal	CLK_N (F)	-0.09828	-0.04664	0.97783

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)	0.12265	0.06840	-0.94460
	recovery	CLK_N (F)	0.11643	0.05839	-0.96336
	recovery	CLK_N (F)	0.11212	0.05500	-0.97393
	recovery	CLK_N (F)	0.12892	0.07394	-0.93708
	removal	CLK_N (F)	-0.10923	-0.06210	0.94656
	removal	CLK_N (F)	-0.10199	-0.05082	0.96735
	removal	CLK_N (F)	-0.09828	-0.04664	0.97783
	removal	CLK_N (F)	-0.11118	-0.06754	0.94408

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 ()	0.07803	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.09345	0.58472	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 ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.10667	0.58472	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 ()	0.08684	0.58472	16.50020
	min_pulse_width	CLK_N ()	0.08464	0.58472	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	0.06223	0.08270	0.41596
	CLK_N	0.06806	0.08853	0.42243

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.03812	0.05922	0.40215
	CLK_N	0.04325	0.06434	0.40567
	RESET_B	0.04035	0.06291	0.40390
	RESET_B	0.05358	0.07632	0.41475

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)**	0.01062	0.01065	0.01074
	(CLK_N * RESET_B * SCD * SCE)	0.00826	0.00824	0.00838
	(CLK_N * RESET_B * SCD * !SCE)	0.02569	0.03389	0.18867
	(CLK_N * RESET_B * SCD * !SCE)	0.02115	0.02933	0.18413
	(CLK_N * RESET_B * !SCD * !SCE)	0.02706	0.03522	0.18933
	(CLK_N * RESET_B * !SCD * !SCE)	0.02252	0.03066	0.18479
	(CLK_N * !SCD * SCE)	0.00966	0.00966	0.00964
	(CLK_N * !SCD * SCE)	0.00701	0.00700	0.00698
	(CLK_N * !RESET_B * SCD * SCE)	0.00595	0.00596	0.00594
	(CLK_N * !RESET_B * SCD * SCE)	0.00331	0.00330	0.00329
	(CLK_N * !RESET_B * SCD * !SCE)	0.00398	0.00398	0.00392
	(CLK_N * !RESET_B * SCD * !SCE)	0.00139	0.00137	0.00127
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00397	0.00398	0.00392
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00133	0.00131	0.00125
	(!CLK_N * RESET_B * SCD * SCE)	0.00924	0.00926	0.00937
	(!CLK_N * RESET_B * SCD * SCE)	0.00689	0.00688	0.00700
	(!CLK_N * RESET_B * SCD * !SCE)	0.01379	0.01993	0.13925
	(!CLK_N * RESET_B * SCD * !SCE)	0.00921	0.01533	0.13465
	(!CLK_N * RESET_B * !SCD * !SCE)	0.01517	0.02128	0.13990
	(!CLK_N * RESET_B * !SCD * !SCE)	0.01059	0.01669	0.13531
	(!CLK_N * !SCD * SCE)	0.00585	0.00586	0.00584
	(!CLK_N * !SCD * SCE)	0.00320	0.00319	0.00318
	(!CLK_N * !RESET_B * SCD * SCE)	0.00582	0.00583	0.00581
	(!CLK_N * !RESET_B * SCD * SCE)	0.00318	0.00317	0.00316
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00385	0.00385	0.00379
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00126	0.00123	0.00114
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00384	0.00384	0.00379
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00120	0.00118	0.00112

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)**	0.00833	0.00829	0.00786
	(CLK_N * RESET_B * SCD * SCE)	0.01071	0.01068	0.01024
	(CLK_N * RESET_B * SCD * !SCE)	0.02128	0.03006	0.18650
	(CLK_N * RESET_B * SCD * !SCE)	0.02582	0.03462	0.19105
	(CLK_N * RESET_B * !SCD * !SCE)	0.02125	0.03006	0.18727
	(CLK_N * RESET_B * !SCD * !SCE)	0.02579	0.03462	0.19181
	(CLK_N * !SCD * SCE)	0.00798	0.00798	0.00798
	(CLK_N * !SCD * SCE)	0.01064	0.01064	0.01064
	(CLK_N * !RESET_B * SCD * SCE)	0.00429	0.00428	0.00429
	(CLK_N * !RESET_B * SCD * SCE)	0.00693	0.00694	0.00694
	(CLK_N * !RESET_B * SCD * !SCE)	0.00319	0.00319	0.00319
	(CLK_N * !RESET_B * SCD * !SCE)	0.00584	0.00586	0.00584
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00319	0.00318	0.00319
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00585	0.00587	0.00585
	(!CLK_N * RESET_B * SCD * SCE)	0.00696	0.00691	0.00649
	(!CLK_N * RESET_B * SCD * SCE)	0.00934	0.00931	0.00887
	(!CLK_N * RESET_B * SCD * !SCE)	0.00482	0.01189	0.13456
	(!CLK_N * RESET_B * SCD * !SCE)	0.00940	0.01648	0.13916
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00482	0.01194	0.13526
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00940	0.01652	0.13985
	(!CLK_N * !SCD * SCE)	0.00415	0.00414	0.00415
	(!CLK_N * !SCD * SCE)	0.00682	0.00683	0.00682
	(!CLK_N * !RESET_B * SCD * SCE)	0.00416	0.00416	0.00415
	(!CLK_N * !RESET_B * SCD * SCE)	0.00680	0.00680	0.00681
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00306	0.00306	0.00306
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00570	0.00573	0.00571
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00305	0.00305	0.00306
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00571	0.00574	0.00571

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)	0.02881	0.03635	0.18635
	(CLK_N * D * RESET_B * SCE)	0.02292	0.03044	0.18045
	(CLK_N * D * RESET_B * !SCE)	0.00997	0.00979	0.01080
	(CLK_N * D * RESET_B * !SCE)	0.00694	0.00673	0.00777
	(CLK_N * D * !RESET_B * SCE)	0.00588	0.00589	0.00585
	(CLK_N * D * !RESET_B * SCE)	0.00338	0.00337	0.00340
	(CLK_N * D * !RESET_B * !SCE)	0.00402	0.00402	0.00403
	(CLK_N * D * !RESET_B * !SCE)	0.00159	0.00159	0.00158
	(CLK_N * !D * RESET_B * SCE)	0.03058	0.03786	0.18772
	(CLK_N * !D * RESET_B * SCE)	0.02447	0.03172	0.18161
	(CLK_N * !D * !RESET_B * SCE)	0.00588	0.00589	0.00585
	(CLK_N * !D * !RESET_B * SCE)	0.00338	0.00337	0.00339
	(!D * RESET_B * !SCE)	0.00837	0.00838	0.00838
	(!D * RESET_B * !SCE)	0.00534	0.00533	0.00534
	(!D * !RESET_B * !SCE)	0.00415	0.00415	0.00415
	(!D * !RESET_B * !SCE)	0.00143	0.00143	0.00144
	(!CLK_N * D * RESET_B * SCE)	0.01679	0.02242	0.14019
	(!CLK_N * D * RESET_B * SCE)	0.01086	0.01647	0.13425
	(!CLK_N * D * RESET_B * !SCE)	0.00859	0.00841	0.00943
	(!CLK_N * D * RESET_B * !SCE)	0.00557	0.00536	0.00640
	(!CLK_N * D * !RESET_B * SCE)	0.00575	0.00575	0.00572
	(!CLK_N * D * !RESET_B * SCE)	0.00325	0.00324	0.00326
	(!CLK_N * D * !RESET_B * !SCE)	0.00389	0.00389	0.00389
	(!CLK_N * D * !RESET_B * !SCE)	0.00145	0.00146	0.00145
	(!CLK_N * !D * RESET_B * SCE)	0.01851	0.02376	0.14085
	(!CLK_N * !D * RESET_B * SCE)	0.01236	0.01759	0.13470
	(!CLK_N * !D * !RESET_B * SCE)	0.00575	0.00576	0.00572
	(!CLK_N * !D * !RESET_B * SCE)	0.00325	0.00324	0.00326

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)	0.02508	0.03215	0.18049
	(CLK_N * D * RESET_B * SCE)	0.03098	0.03807	0.18636
	(CLK_N * D * RESET_B * !SCE)	0.00843	0.00838	0.00813
	(CLK_N * D * RESET_B * !SCE)	0.01146	0.01143	0.01117
	(CLK_N * D * !RESET_B * SCE)	0.00440	0.00439	0.00439
	(CLK_N * D * !RESET_B * SCE)	0.00685	0.00686	0.00683
	(CLK_N * D * !RESET_B * !SCE)	0.00311	0.00310	0.00309
	(CLK_N * D * !RESET_B * !SCE)	0.00556	0.00559	0.00554
	(CLK_N * !D * RESET_B * SCE)	0.02482	0.03219	0.18183
	(CLK_N * !D * RESET_B * SCE)	0.03094	0.03833	0.18794
	(CLK_N * !D * !RESET_B * SCE)	0.00440	0.00439	0.00439
	(CLK_N * !D * !RESET_B * SCE)	0.00685	0.00686	0.00683
	(!D * RESET_B * !SCE)	0.00627	0.00616	0.00614
	(!D * RESET_B * !SCE)	0.00931	0.00921	0.00917
	(!D * !RESET_B * !SCE)	0.00300	0.00297	0.00293
	(!D * !RESET_B * !SCE)	0.00582	0.00582	0.00571
	(!CLK_N * D * RESET_B * SCE)	0.00808	0.01409	0.13447
	(!CLK_N * D * RESET_B * SCE)	0.01403	0.02005	0.14039
	(!CLK_N * D * RESET_B * !SCE)	0.00705	0.00701	0.00675
	(!CLK_N * D * RESET_B * !SCE)	0.01009	0.01007	0.00980
	(!CLK_N * D * !RESET_B * SCE)	0.00426	0.00426	0.00425
	(!CLK_N * D * !RESET_B * SCE)	0.00671	0.00673	0.00669
	(!CLK_N * D * !RESET_B * !SCE)	0.00297	0.00296	0.00295
	(!CLK_N * D * !RESET_B * !SCE)	0.00543	0.00546	0.00541
	(!CLK_N * !D * RESET_B * SCE)	0.00752	0.01376	0.13463
	(!CLK_N * !D * RESET_B * SCE)	0.01369	0.01994	0.14077
	(!CLK_N * !D * !RESET_B * SCE)	0.00426	0.00426	0.00425
	(!CLK_N * !D * !RESET_B * SCE)	0.00671	0.00673	0.00669

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)	0.01648	0.02697	0.20388
	(CLK_N * D * RESET_B * SCD)	0.00855	0.01908	0.19601
	(CLK_N * D * RESET_B * !SCD)	0.03261	0.04361	0.23745
	(CLK_N * D * RESET_B * !SCD)	0.02739	0.03838	0.23218
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.01217	0.02284	0.19923
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00473	0.01539	0.19180
	(CLK_N * !D * RESET_B * SCD)	0.03435	0.05296	0.37380
	(CLK_N * !D * RESET_B * SCD)	0.02426	0.04285	0.36369
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.01510	0.02559	0.20250
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00718	0.01770	0.19464
	(!CLK_N * D * RESET_B * !SCD)	0.01582	0.02689	0.21840
	(!CLK_N * D * RESET_B * !SCD)	0.01064	0.02167	0.21315
	(!CLK_N * !D * RESET_B * SCD)	0.02238	0.03848	0.32278
	(!CLK_N * !D * RESET_B * SCD)	0.01224	0.02830	0.31264

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)	0.00766	0.01889	0.19686
	(CLK_N * D * RESET_B * SCD)	0.01553	0.02681	0.20475
	(CLK_N * D * RESET_B * !SCD)	0.02682	0.03811	0.22987
	(CLK_N * D * RESET_B * !SCD)	0.03207	0.04340	0.23492
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00303	0.01421	0.19212
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.01043	0.02165	0.19952
	(CLK_N * !D * RESET_B * SCD)	0.02174	0.03952	0.35634
	(CLK_N * !D * RESET_B * SCD)	0.03184	0.04966	0.36645
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00629	0.01753	0.19549
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.01415	0.02544	0.20338
	(!CLK_N * D * RESET_B * !SCD)	0.01495	0.02603	0.21349
	(!CLK_N * D * RESET_B * !SCD)	0.02016	0.03126	0.21849
	(!CLK_N * !D * RESET_B * SCD)	0.00530	0.02206	0.31096
	(!CLK_N * !D * RESET_B * SCD)	0.01543	0.03223	0.32112

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.03322	0.04268	0.27454
	(CLK_N * D * SCD * SCE * !Q)	0.01950	0.02892	0.26081
	(CLK_N * D * SCD * !SCE * !Q)	0.03197	0.04162	0.27523
	(CLK_N * D * SCD * !SCE * !Q)	0.01880	0.02840	0.26204
	(CLK_N * D * !SCD * SCE * !Q)	0.01012	0.01017	0.01013
	(CLK_N * D * !SCD * SCE * !Q)	0.00005	0.00003	0.00005
	(CLK_N * D * !SCD * !SCE * !Q)	0.03260	0.04262	0.27542
	(CLK_N * D * !SCD * !SCE * !Q)	0.02015	0.03011	0.26295
	(CLK_N * !D * SCD * SCE * !Q)	0.03501	0.04411	0.27568
	(CLK_N * !D * SCD * SCE * !Q)	0.02106	0.03011	0.26172
	(CLK_N * !D * SCD * !SCE * !Q)	0.00853	0.00858	0.00855
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00151	-0.00153	-0.00151
	(CLK_N * !D * !SCD * SCE * !Q)	0.01011	0.01015	0.01013
	(CLK_N * !D * !SCD * SCE * !Q)	0.00005	0.00004	0.00005
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00853	0.00858	0.00854
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00152	-0.00154	-0.00152
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.02146	0.02836	0.18576
	(!CLK_N * D * SCD * SCE * !Q)	0.00770	0.01454	0.17198
	(!CLK_N * D * SCD * !SCE * !Q)	0.02032	0.02739	0.18448
	(!CLK_N * D * SCD * !SCE * !Q)	0.00711	0.01412	0.17126
	(!CLK_N * D * !SCD * SCE * !Q)	0.00990	0.00992	0.00988
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00022	-0.00022	-0.00020
	(!CLK_N * D * !SCD * !SCE * !Q)	0.02099	0.02836	0.18488
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00849	0.01582	0.17237
	(!CLK_N * !D * SCD * SCE * !Q)	0.02321	0.02973	0.18640
	(!CLK_N * !D * SCD * SCE * !Q)	0.00921	0.01568	0.17238
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00826	0.00831	0.00830
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00173	-0.00177	-0.00176
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00984	0.00991	0.00988
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00017	-0.00022	-0.00020
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00826	0.00832	0.00830
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00174	-0.00180	-0.00177

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01670	0.02999	0.27572
	(CLK_N * D * SCD * SCE * !Q)	0.03042	0.04379	0.28942
	(CLK_N * D * SCD * !SCE * !Q)	0.01358	0.02668	0.27293
	(CLK_N * D * SCD * !SCE * !Q)	0.02674	0.03989	0.28605
	(CLK_N * D * !SCD * SCE * !Q)	0.00038	0.00017	0.00013
	(CLK_N * D * !SCD * SCE * !Q)	0.01036	0.01023	0.01020
	(CLK_N * D * !SCD * !SCE * !Q)	0.01310	0.02646	0.27325
	(CLK_N * D * !SCD * !SCE * !Q)	0.02553	0.03895	0.28568
	(CLK_N * !D * SCD * SCE * !Q)	0.01616	0.02989	0.27649
	(CLK_N * !D * SCD * SCE * !Q)	0.03010	0.04387	0.29039
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00110	-0.00140	-0.00141
	(CLK_N * !D * SCD * !SCE * !Q)	0.00887	0.00871	0.00865
	(CLK_N * !D * !SCD * SCE * !Q)	0.00036	0.00013	0.00012
	(CLK_N * !D * !SCD * SCE * !Q)	0.01034	0.01025	0.01019
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00114	-0.00141	-0.00142
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00885	0.00871	0.00865
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00583	0.01466	0.17531
	(!CLK_N * D * SCD * SCE * !Q)	0.01960	0.02851	0.18901
	(!CLK_N * D * SCD * !SCE * !Q)	0.00279	0.01161	0.17205
	(!CLK_N * D * SCD * !SCE * !Q)	0.01601	0.02490	0.18524
	(!CLK_N * D * !SCD * SCE * !Q)	0.00045	0.00010	0.00013
	(!CLK_N * D * !SCD * SCE * !Q)	0.01045	0.01029	0.01020
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00239	0.01150	0.17269
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01487	0.02405	0.18516
	(!CLK_N * !D * SCD * SCE * !Q)	0.00528	0.01437	0.17539
	(!CLK_N * !D * SCD * SCE * !Q)	0.01927	0.02839	0.18935
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00103	-0.00142	-0.00142
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00895	0.00875	0.00865
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00044	0.00010	0.00012
	(!CLK_N * !D * !SCD * SCE * !Q)	0.01043	0.01028	0.01019
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00107	-0.00144	-0.00143
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00893	0.00874	0.00865

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)**	0.02527	0.04454	0.37280
	(D * RESET_B * SCD * SCE * Q)	0.01979	0.03904	0.36730
	(D * RESET_B * SCD * SCE * !Q)	0.03502	0.05477	0.39365
	(D * RESET_B * SCD * SCE * !Q)	0.02956	0.04929	0.38819
	(D * RESET_B * SCD * !SCE * Q)	0.02445	0.04371	0.37196
	(D * RESET_B * SCD * !SCE * Q)	0.01896	0.03821	0.36646
	(D * RESET_B * SCD * !SCE * !Q)	0.03430	0.05405	0.39276
	(D * RESET_B * SCD * !SCE * !Q)	0.02885	0.04858	0.38729
	(D * RESET_B * !SCD * SCE * Q)	0.03590	0.05566	0.39506
	(D * RESET_B * !SCD * SCE * Q)	0.03040	0.05015	0.38956
	(D * RESET_B * !SCD * !SCE * Q)	0.02592	0.04518	0.37340
	(D * RESET_B * !SCD * !SCE * Q)	0.02043	0.03968	0.36790
	(D * RESET_B * !SCD * !SCE * !Q)	0.03575	0.05549	0.39416
	(D * RESET_B * !SCD * !SCE * !Q)	0.03030	0.05002	0.38869
	(D * !SCD * SCE * !Q)	0.02118	0.04047	0.36866
	(D * !SCD * SCE * !Q)	0.01568	0.03496	0.36316
	(D * !RESET_B * SCD * SCE * !Q)	0.02117	0.04046	0.36861
	(D * !RESET_B * SCD * SCE * !Q)	0.01568	0.03495	0.36311
	(D * !RESET_B * SCD * !SCE * !Q)	0.01961	0.03890	0.36705
	(D * !RESET_B * SCD * !SCE * !Q)	0.01412	0.03339	0.36154
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01961	0.03890	0.36704
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01412	0.03339	0.36154
	(!D * RESET_B * SCD * SCE * Q)	0.02601	0.04527	0.37352
	(!D * RESET_B * SCD * SCE * Q)	0.02052	0.03978	0.36803
	(!D * RESET_B * SCD * SCE * !Q)	0.03575	0.05551	0.39434
	(!D * RESET_B * SCD * SCE * !Q)	0.03030	0.05003	0.38889
	(!D * RESET_B * !SCE * Q)	0.03430	0.05404	0.39350
	(!D * RESET_B * !SCE * Q)	0.02878	0.04850	0.38796
	(!D * RESET_B * !SCD * SCE * Q)	0.03583	0.05562	0.39511
	(!D * RESET_B * !SCD * SCE * Q)	0.03031	0.05007	0.38958
	(!D * !SCE * !Q)	0.01962	0.03891	0.36710
	(!D * !SCE * !Q)	0.01412	0.03340	0.36160
	(!D * !SCD * SCE * !Q)	0.02117	0.04047	0.36866
	(!D * !SCD * SCE * !Q)	0.01568	0.03495	0.36316
	(!D * !RESET_B * SCD * SCE * !Q)	0.02117	0.04046	0.36861
	(!D * !RESET_B * SCD * SCE * !Q)	0.01568	0.03495	0.36311

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)	0.02142	0.04121	0.36656
	(D * RESET_B * SCD * SCE * Q)	0.02690	0.04674	0.37206
	(D * RESET_B * SCD * !SCE * Q)	0.02060	0.04039	0.36572
	(D * RESET_B * SCD * !SCE * Q)	0.02608	0.04592	0.37122
	(D * RESET_B * !SCD * !SCE * Q)	0.02207	0.04188	0.36717
	(D * RESET_B * !SCD * !SCE * Q)	0.02755	0.04738	0.37267
	(D * !SCD * SCE * !Q)	0.01707	0.03687	0.36241
	(D * !SCD * SCE * !Q)	0.02255	0.04238	0.36792
	(D * !RESET_B * SCD * SCE * !Q)	0.01707	0.03681	0.36241
	(D * !RESET_B * SCD * SCE * !Q)	0.02254	0.04232	0.36791
	(D * !RESET_B * SCD * !SCE * !Q)	0.01550	0.03528	0.36085
	(D * !RESET_B * SCD * !SCE * !Q)	0.02098	0.04078	0.36635
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01550	0.03528	0.36085
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02098	0.04078	0.36635
	(!D * RESET_B * SCD * SCE * Q)	0.02216	0.04195	0.36729
	(!D * RESET_B * SCD * SCE * Q)	0.02763	0.04748	0.37279
	(!D * !SCE * !Q)	0.01551	0.03531	0.36085
	(!D * !SCE * !Q)	0.02099	0.04082	0.36635
	(!D * !SCD * SCE * !Q)	0.01707	0.03687	0.36241
	(!D * !SCD * SCE * !Q)	0.02254	0.04238	0.36791
	(!D * !RESET_B * SCD * SCE * !Q)	0.01707	0.03684	0.36241
	(!D * !RESET_B * SCD * SCE * !Q)	0.02254	0.04236	0.36791

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00195	0.00204	0.00429	0.00594	0.00310	1.72225
sky130_fd_sc_hs__sdfrtp_2	0.00188	0.00205	0.00437	0.00604	0.00310	3.39708
sky130_fd_sc_hs__sdfrtp_4	0.00189	0.00202	0.00440	0.00594	0.00310	6.25288

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	710.56700	1139.58000
sky130_fd_sc_hs__sdfrtp_2	0.00000	718.25000	1114.35000
sky130_fd_sc_hs__sdfrtp_4	0.00000	1073.13000	1507.98000

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)	0.12747	0.48446	5.35721
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.13350	0.40680	5.33820
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.15685	0.37132	5.33836

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.13064	0.33715	2.63747
	RESET_B->Q (FF)	0.17874	0.57320	5.48264
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.13504	0.29773	2.61886
	RESET_B->Q (FF)	0.18396	0.53555	5.46893
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.14007	0.26449	2.45054
	RESET_B->Q (FF)	0.18775	0.50151	5.30281

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)	-0.07498	-0.16251	-1.38096
	setup	CLK (R)	0.12294	0.19928	1.39860
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07345	-0.16169	-1.40182
	setup	CLK (R)	0.12337	0.19492	1.41541
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07604	-0.16169	-1.39481
	setup	CLK (R)	0.11763	0.19241	1.41296

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)	-0.06635	-0.15618	-2.64661
	setup	CLK (R)	0.12136	0.22214	2.69974
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.06404	-0.15376	-2.62339
	setup	CLK (R)	0.11262	0.21235	2.67054
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.06377	-0.15365	-2.61414
	setup	CLK (R)	0.11138	0.21235	2.65863

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)	-0.07498	-0.16369	-1.38096
	hold	CLK (R)	-0.07570	-0.16251	-1.38181
	setup	CLK (R)	0.12294	0.19889	1.39848
	setup	CLK (R)	0.12280	0.19928	1.39860
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07345	-0.16169	-1.40182
	hold	CLK (R)	-0.07648	-0.16169	-1.40206
	setup	CLK (R)	0.12326	0.19476	1.41495
	setup	CLK (R)	0.12337	0.19492	1.41541
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07604	-0.16169	-1.39481
	hold	CLK (R)	-0.07604	-0.16169	-1.39784
	setup	CLK (R)	0.11641	0.19241	1.41170
	setup	CLK (R)	0.11763	0.19078	1.41296

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)	-0.06635	-0.15618	-2.64729
	hold	CLK (R)	-0.06643	-0.15618	-2.64661
	setup	CLK (R)	0.12136	0.22214	2.69974
	setup	CLK (R)	0.12124	0.22214	2.69739
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.06404	-0.15401	-2.62431
	hold	CLK (R)	-0.06616	-0.15376	-2.62339
	setup	CLK (R)	0.11261	0.21235	2.67054
	setup	CLK (R)	0.11262	0.21235	2.67008
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.06377	-0.15464	-2.61557
	hold	CLK (R)	-0.06404	-0.15365	-2.61414
	setup	CLK (R)	0.11138	0.21235	2.65863
	setup	CLK (R)	0.11112	0.21235	2.65711

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)	-0.08893	-0.17005	-1.31971
	setup	CLK (R)	0.14648	0.20801	1.34296
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09133	-0.16844	-1.32095
	setup	CLK (R)	0.14308	0.20720	1.34079
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09216	-0.16750	-1.30481
	setup	CLK (R)	0.13840	0.20222	1.32430

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)	-0.09057	-0.16711	-2.74334
	setup	CLK (R)	0.15596	0.23621	2.78440
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09184	-0.16910	-2.74352
	setup	CLK (R)	0.15291	0.23411	2.78718
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09091	-0.17151	-2.74529
	setup	CLK (R)	0.14935	0.23411	2.78761

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)	-0.08893	-0.17005	-1.31971
	hold	CLK (R)	-0.09722	-0.17665	-1.32689
	setup	CLK (R)	0.14024	0.20306	1.33414
	setup	CLK (R)	0.14648	0.20801	1.34296
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09133	-0.16844	-1.32095
	hold	CLK (R)	-0.09838	-0.17483	-1.32683
	setup	CLK (R)	0.13922	0.19925	1.33435
	setup	CLK (R)	0.14308	0.20720	1.34079
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09216	-0.16750	-1.30481
	hold	CLK (R)	-0.09493	-0.17552	-1.31170
	setup	CLK (R)	0.13626	0.19616	1.31787
	setup	CLK (R)	0.13840	0.20222	1.32430

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)	-0.09574	-0.16959	-2.74334
	hold	CLK (R)	-0.09057	-0.16711	-2.74696
	setup	CLK (R)	0.15596	0.23608	2.78043
	setup	CLK (R)	0.15306	0.23621	2.78440
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09547	-0.17213	-2.74352
	hold	CLK (R)	-0.09184	-0.16910	-2.74741
	setup	CLK (R)	0.15291	0.23411	2.78247
	setup	CLK (R)	0.14881	0.23082	2.78718
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09831	-0.17389	-2.74693
	hold	CLK (R)	-0.09091	-0.17151	-2.74529
	setup	CLK (R)	0.14935	0.23411	2.78138
	setup	CLK (R)	0.14577	0.22882	2.78761

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)	-0.07563	-0.11610	-0.45420
	setup	CLK (R)	0.15899	0.20379	1.54830
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07689	-0.11318	-0.47160
	setup	CLK (R)	0.15242	0.19979	1.60344
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07815	-0.11576	-0.47045
	setup	CLK (R)	0.15446	0.19779	1.58656

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)	-0.07404	-0.14475	-2.48541
	setup	CLK (R)	0.16204	0.26052	2.95919
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07147	-0.14149	-2.42224
	setup	CLK (R)	0.15924	0.25204	2.93105
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07272	-0.14359	-2.42105
	setup	CLK (R)	0.15691	0.25204	2.92191

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)	-0.10054	-0.11610	-0.45420
	hold	CLK (R)	-0.07563	-0.16851	-1.53291
	setup	CLK (R)	0.15899	0.17740	0.47579
	setup	CLK (R)	0.12584	0.20379	1.54830
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09925	-0.11318	-0.47160
	hold	CLK (R)	-0.07689	-0.16851	-1.59041
	setup	CLK (R)	0.15242	0.17053	0.49367
	setup	CLK (R)	0.12736	0.19979	1.60344
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09830	-0.11576	-0.47045
	hold	CLK (R)	-0.07815	-0.16859	-1.57179
	setup	CLK (R)	0.15446	0.17020	0.48668
	setup	CLK (R)	0.12291	0.19779	1.58656

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)	-0.11390	-0.23044	-2.94566
	hold	CLK (R)	-0.07404	-0.14475	-2.48541
	setup	CLK (R)	0.16204	0.26052	2.95919
	setup	CLK (R)	0.12959	0.20762	2.52866
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11102	-0.22473	-2.91527
	hold	CLK (R)	-0.07147	-0.14149	-2.42224
	setup	CLK (R)	0.15924	0.25204	2.93105
	setup	CLK (R)	0.12073	0.19803	2.46190
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11465	-0.22473	-2.90645
	hold	CLK (R)	-0.07272	-0.14359	-2.42105
	setup	CLK (R)	0.15691	0.25204	2.92191
	setup	CLK (R)	0.11808	0.19778	2.45962

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)	0.16049	0.21244	2.30522
	removal	CLK (R)	-0.12257	-0.17623	-2.23233
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.15896	0.20773	2.29724
	removal	CLK (R)	-0.12515	-0.17414	-2.22966
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.15384	0.20437	2.29316
	removal	CLK (R)	-0.12400	-0.17275	-2.21790

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)	0.15804	0.20550	2.24515
	recovery	CLK (R)	0.15031	0.19540	2.30522
	recovery	CLK (R)	0.14709	0.19078	2.29996
	recovery	CLK (R)	0.16049	0.21244	2.23570
	removal	CLK (R)	-0.13557	-0.19087	-2.23986
	removal	CLK (R)	-0.12586	-0.18041	-2.29773
	removal	CLK (R)	-0.12257	-0.17623	-2.29730
	removal	CLK (R)	-0.13880	-0.19563	-2.23233
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.15539	0.20350	2.23921
	recovery	CLK (R)	0.14763	0.19278	2.29724
	recovery	CLK (R)	0.14296	0.18677	2.29621
	recovery	CLK (R)	0.15896	0.20773	2.23343
	removal	CLK (R)	-0.13545	-0.19087	-2.23428
	removal	CLK (R)	-0.12656	-0.17832	-2.29417
	removal	CLK (R)	-0.12515	-0.17414	-2.29116
	removal	CLK (R)	-0.14005	-0.19563	-2.22966
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.15242	0.19979	2.22891
	recovery	CLK (R)	0.14587	0.18877	2.29316
	recovery	CLK (R)	0.14016	0.18555	2.28901
	recovery	CLK (R)	0.15384	0.20437	2.22001
	removal	CLK (R)	-0.13428	-0.18939	-2.22316
	removal	CLK (R)	-0.12491	-0.17832	-2.29057
	removal	CLK (R)	-0.12400	-0.17275	-2.28578
	removal	CLK (R)	-0.13734	-0.19409	-2.21790

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 ()	0.09125	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.07583	0.58472	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.09345	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.07803	0.58472	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.09125	0.58472	16.50020
	min_pulse_width	RESET_B ()	0.08023	0.58472	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 ()	0.06481	0.58472	16.50020
	min_pulse_width	CLK ()	0.05380	0.58472	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.06922	0.58472	16.50020
	min_pulse_width	CLK ()	0.05380	0.58472	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.08244	0.58472	16.50020
	min_pulse_width	CLK ()	0.05600	0.58472	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 ()	0.11107	0.58472	16.50020
	min_pulse_width	CLK ()	0.11107	0.58472	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.11768	0.58472	16.50020
	min_pulse_width	CLK ()	0.11548	0.58472	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.11328	0.58472	16.50020
	min_pulse_width	CLK ()	0.11107	0.58472	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	0.06395	0.08313	0.42514
	CLK	0.05816	0.07733	0.41962
sky130_fd_sc_hs__sdfrtp_2	CLK	0.06353	0.08243	0.42623
	CLK	0.05756	0.07649	0.42081
sky130_fd_sc_hs__sdfrtp_4	CLK	0.08973	0.10601	0.44738
	CLK	0.08389	0.10018	0.44249

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.04400	0.06281	0.39373
	CLK	0.03833	0.05706	0.38750
	RESET_B	0.03939	0.06259	0.40433
	RESET_B	0.05372	0.07682	0.41646
sky130_fd_sc_hs__sdfrtp_2	CLK	0.05071	0.06845	0.39818
	CLK	0.04514	0.06288	0.39172
	RESET_B	0.04678	0.06899	0.40783
	RESET_B	0.06118	0.08329	0.42112
sky130_fd_sc_hs__sdfrtp_4	CLK	0.06626	0.08257	0.41356
	CLK	0.06058	0.07680	0.40791
	RESET_B	0.06265	0.08397	0.42247
	RESET_B	0.07691	0.09768	0.43666

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)**	0.00923	0.00925	0.00935
	(CLK * RESET_B * SCD * SCE)	0.00695	0.00695	0.00707
	(CLK * RESET_B * SCD * !SCE)	0.01455	0.02075	0.14160
	(CLK * RESET_B * SCD * !SCE)	0.01002	0.01621	0.13707
	(CLK * RESET_B * !SCD * !SCE)	0.01593	0.02210	0.14225
	(CLK * RESET_B * !SCD * !SCE)	0.01141	0.01757	0.13772
	(CLK * !SCD * SCE)	0.00578	0.00578	0.00576
	(CLK * !SCD * SCE)	0.00321	0.00319	0.00318
	(CLK * !RESET_B * SCD * SCE)	0.00574	0.00575	0.00573
	(CLK * !RESET_B * SCD * SCE)	0.00319	0.00317	0.00316
	(CLK * !RESET_B * SCD * !SCE)	0.00394	0.00395	0.00388
	(CLK * !RESET_B * SCD * !SCE)	0.00144	0.00142	0.00132
	(CLK * !RESET_B * !SCD * !SCE)	0.00394	0.00394	0.00389
	(CLK * !RESET_B * !SCD * !SCE)	0.00138	0.00137	0.00129
	(!CLK * RESET_B * SCD * SCE)	0.01060	0.01062	0.01073
	(!CLK * RESET_B * SCD * SCE)	0.00833	0.00832	0.00844
	(!CLK * RESET_B * SCD * !SCE)	0.02618	0.03455	0.19194
	(!CLK * RESET_B * SCD * !SCE)	0.02141	0.02976	0.18717
	(!CLK * RESET_B * !SCD * !SCE)	0.02754	0.03588	0.19259
	(!CLK * RESET_B * !SCD * !SCE)	0.02279	0.03111	0.18782
	(!CLK * !SCD * SCE)	0.00958	0.00959	0.00956
	(!CLK * !SCD * SCE)	0.00701	0.00700	0.00698
	(!CLK * !RESET_B * SCD * SCE)	0.00587	0.00588	0.00586
	(!CLK * !RESET_B * SCD * SCE)	0.00332	0.00331	0.00329
	(!CLK * !RESET_B * SCD * !SCE)	0.00408	0.00408	0.00401
	(!CLK * !RESET_B * SCD * !SCE)	0.00157	0.00155	0.00145
	(!CLK * !RESET_B * !SCD * !SCE)	0.00407	0.00407	0.00402
	(!CLK * !RESET_B * !SCD * !SCE)	0.00151	0.00150	0.00143

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.01022	0.01024	0.01035
	(CLK * RESET_B * SCD * SCE)	0.00807	0.00806	0.00818
	(CLK * RESET_B * SCD * !SCE)	0.01453	0.02103	0.14288
	(CLK * RESET_B * SCD * !SCE)	0.01019	0.01670	0.13853
	(CLK * RESET_B * !SCD * !SCE)	0.01591	0.02240	0.14350
	(CLK * RESET_B * !SCD * !SCE)	0.01157	0.01804	0.13918
	(CLK * !SCD * SCE)	0.00682	0.00683	0.00680
	(CLK * !SCD * SCE)	0.00437	0.00436	0.00434
	(CLK * !RESET_B * SCD * SCE)	0.00679	0.00679	0.00677
	(CLK * !RESET_B * SCD * SCE)	0.00435	0.00434	0.00433
	(CLK * !RESET_B * SCD * !SCE)	0.00499	0.00499	0.00493
	(CLK * !RESET_B * SCD * !SCE)	0.00261	0.00259	0.00249
	(CLK * !RESET_B * !SCD * !SCE)	0.00499	0.00499	0.00493
	(CLK * !RESET_B * !SCD * !SCE)	0.00255	0.00254	0.00246
	(!CLK * RESET_B * SCD * SCE)	0.00861	0.00862	0.00873
	(!CLK * RESET_B * SCD * SCE)	0.00645	0.00645	0.00657
	(!CLK * RESET_B * SCD * !SCE)	0.02331	0.03168	0.18854
	(!CLK * RESET_B * SCD * !SCE)	0.01875	0.02710	0.18397
	(!CLK * RESET_B * !SCD * !SCE)	0.02467	0.03302	0.18918
	(!CLK * RESET_B * !SCD * !SCE)	0.02011	0.02844	0.18461
	(!CLK * !SCD * SCE)	0.00762	0.00763	0.00760
	(!CLK * !SCD * SCE)	0.00517	0.00516	0.00514
	(!CLK * !RESET_B * SCD * SCE)	0.00692	0.00692	0.00690
	(!CLK * !RESET_B * SCD * SCE)	0.00448	0.00447	0.00446
	(!CLK * !RESET_B * SCD * !SCE)	0.00512	0.00513	0.00506
	(!CLK * !RESET_B * SCD * !SCE)	0.00274	0.00272	0.00262
	(!CLK * !RESET_B * !SCD * !SCE)	0.00512	0.00512	0.00507
	(!CLK * !RESET_B * !SCD * !SCE)	0.00268	0.00267	0.00260

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.01228	0.01230	0.01241
	(CLK * RESET_B * SCD * SCE)	0.01013	0.01012	0.01024
	(CLK * RESET_B * SCD * !SCE)	0.01667	0.02316	0.14485
	(CLK * RESET_B * SCD * !SCE)	0.01228	0.01878	0.14045
	(CLK * RESET_B * !SCD * !SCE)	0.01805	0.02452	0.14548
	(CLK * RESET_B * !SCD * !SCE)	0.01367	0.02012	0.14109
	(CLK * !SCD * SCE)	0.00887	0.00888	0.00885
	(CLK * !SCD * SCE)	0.00642	0.00640	0.00639
	(CLK * !RESET_B * SCD * SCE)	0.00884	0.00884	0.00882
	(CLK * !RESET_B * SCD * SCE)	0.00640	0.00639	0.00637
	(CLK * !RESET_B * SCD * !SCE)	0.00706	0.00706	0.00699
	(CLK * !RESET_B * SCD * !SCE)	0.00468	0.00466	0.00456
	(CLK * !RESET_B * !SCD * !SCE)	0.00705	0.00706	0.00700
	(CLK * !RESET_B * !SCD * !SCE)	0.00462	0.00461	0.00453
	(!CLK * RESET_B * SCD * SCE)	0.01374	0.01375	0.01386
	(!CLK * RESET_B * SCD * SCE)	0.01158	0.01158	0.01170
	(!CLK * RESET_B * SCD * !SCE)	0.02869	0.03723	0.19561
	(!CLK * RESET_B * SCD * !SCE)	0.02407	0.03261	0.19098
	(!CLK * RESET_B * !SCD * !SCE)	0.03005	0.03857	0.19624
	(!CLK * RESET_B * !SCD * !SCE)	0.02543	0.03395	0.19162
	(!CLK * !SCD * SCE)	0.01281	0.01281	0.01279
	(!CLK * !SCD * SCE)	0.01036	0.01034	0.01032
	(!CLK * !RESET_B * SCD * SCE)	0.00897	0.00897	0.00895
	(!CLK * !RESET_B * SCD * SCE)	0.00653	0.00652	0.00650
	(!CLK * !RESET_B * SCD * !SCE)	0.00719	0.00719	0.00712
	(!CLK * !RESET_B * SCD * !SCE)	0.00481	0.00479	0.00469
	(!CLK * !RESET_B * !SCD * !SCE)	0.00719	0.00719	0.00713
	(!CLK * !RESET_B * !SCD * !SCE)	0.00475	0.00474	0.00466

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)	0.00697	0.00693	0.00651
	(CLK * RESET_B * SCD * SCE)	0.00927	0.00925	0.00881
	(CLK * RESET_B * SCD * !SCE)	0.00423	0.01135	0.13560
	(CLK * RESET_B * SCD * !SCE)	0.00876	0.01590	0.14013
	(CLK * RESET_B * !SCD * !SCE)	0.00423	0.01141	0.13628
	(CLK * RESET_B * !SCD * !SCE)	0.00875	0.01593	0.14081
	(CLK * !SCD * SCE)	0.00423	0.00421	0.00423
	(CLK * !SCD * SCE)	0.00680	0.00683	0.00681
	(CLK * !RESET_B * SCD * SCE)	0.00424	0.00424	0.00424
	(CLK * !RESET_B * SCD * SCE)	0.00679	0.00680	0.00680
	(CLK * !RESET_B * SCD * !SCE)	0.00297	0.00297	0.00297
	(CLK * !RESET_B * SCD * !SCE)	0.00553	0.00555	0.00554
	(CLK * !RESET_B * !SCD * !SCE)	0.00296	0.00296	0.00297
	(CLK * !RESET_B * !SCD * !SCE)	0.00554	0.00556	0.00554
	(!CLK * RESET_B * SCD * SCE)	0.00834	0.00830	0.00788
	(!CLK * RESET_B * SCD * SCE)	0.01064	0.01062	0.01018
	(!CLK * RESET_B * SCD * !SCE)	0.01999	0.02904	0.18792
	(!CLK * RESET_B * SCD * !SCE)	0.02476	0.03382	0.19269
	(!CLK * RESET_B * !SCD * !SCE)	0.01994	0.02903	0.18868
	(!CLK * RESET_B * !SCD * !SCE)	0.02470	0.03378	0.19345
	(!CLK * !SCD * SCE)	0.00806	0.00806	0.00805
	(!CLK * !SCD * SCE)	0.01063	0.01063	0.01064
	(!CLK * !RESET_B * SCD * SCE)	0.00438	0.00437	0.00437
	(!CLK * !RESET_B * SCD * SCE)	0.00693	0.00694	0.00694
	(!CLK * !RESET_B * SCD * !SCE)	0.00310	0.00310	0.00311
	(!CLK * !RESET_B * SCD * !SCE)	0.00566	0.00568	0.00567
	(!CLK * !RESET_B * !SCD * !SCE)	0.00310	0.00309	0.00310
	(!CLK * !RESET_B * !SCD * !SCE)	0.00567	0.00569	0.00567

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00812	0.00807	0.00765
	(CLK * RESET_B * SCD * SCE)	0.01029	0.01027	0.00983
	(CLK * RESET_B * SCD * !SCE)	0.00536	0.01271	0.13787
	(CLK * RESET_B * SCD * !SCE)	0.00970	0.01706	0.14221
	(CLK * RESET_B * !SCD * !SCE)	0.00536	0.01276	0.13853
	(CLK * RESET_B * !SCD * !SCE)	0.00969	0.01710	0.14288
	(CLK * !SCD * SCE)	0.00533	0.00531	0.00532
	(CLK * !SCD * SCE)	0.00777	0.00780	0.00778
	(CLK * !RESET_B * SCD * SCE)	0.00534	0.00534	0.00533
	(CLK * !RESET_B * SCD * SCE)	0.00777	0.00777	0.00777
	(CLK * !RESET_B * SCD * !SCE)	0.00406	0.00405	0.00406
	(CLK * !RESET_B * SCD * !SCE)	0.00649	0.00651	0.00650
	(CLK * !RESET_B * !SCD * !SCE)	0.00405	0.00405	0.00405
	(CLK * !RESET_B * !SCD * !SCE)	0.00650	0.00650	0.00650
	(!CLK * RESET_B * SCD * SCE)	0.00650	0.00646	0.00603
	(!CLK * RESET_B * SCD * SCE)	0.00867	0.00865	0.00821
	(!CLK * RESET_B * SCD * !SCE)	0.01853	0.02744	0.18451
	(!CLK * RESET_B * SCD * !SCE)	0.02309	0.03201	0.18906
	(!CLK * RESET_B * !SCD * !SCE)	0.01850	0.02748	0.18521
	(!CLK * RESET_B * !SCD * !SCE)	0.02305	0.03206	0.18977
	(!CLK * !SCD * SCE)	0.00615	0.00612	0.00614
	(!CLK * !SCD * SCE)	0.00860	0.00862	0.00860
	(!CLK * !RESET_B * SCD * SCE)	0.00547	0.00547	0.00547
	(!CLK * !RESET_B * SCD * SCE)	0.00790	0.00791	0.00791
	(!CLK * !RESET_B * SCD * !SCE)	0.00419	0.00419	0.00419
	(!CLK * !RESET_B * SCD * !SCE)	0.00662	0.00664	0.00663
	(!CLK * !RESET_B * !SCD * !SCE)	0.00418	0.00418	0.00419
	(!CLK * !RESET_B * !SCD * !SCE)	0.00663	0.00664	0.00664

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.01018	0.01013	0.00971
	(CLK * RESET_B * SCD * SCE)	0.01235	0.01233	0.01189
	(CLK * RESET_B * SCD * !SCE)	0.00735	0.01469	0.13969
	(CLK * RESET_B * SCD * !SCE)	0.01174	0.01909	0.14408
	(CLK * RESET_B * !SCD * !SCE)	0.00735	0.01474	0.14036
	(CLK * RESET_B * !SCD * !SCE)	0.01173	0.01913	0.14475
	(CLK * !SCD * SCE)	0.00739	0.00738	0.00739
	(CLK * !SCD * SCE)	0.00986	0.00988	0.00986
	(CLK * !RESET_B * SCD * SCE)	0.00741	0.00741	0.00741
	(CLK * !RESET_B * SCD * SCE)	0.00984	0.00985	0.00985
	(CLK * !RESET_B * SCD * !SCE)	0.00610	0.00610	0.00611
	(CLK * !RESET_B * SCD * !SCE)	0.00854	0.00856	0.00855
	(CLK * !RESET_B * !SCD * !SCE)	0.00610	0.00609	0.00610
	(CLK * !RESET_B * !SCD * !SCE)	0.00855	0.00856	0.00855
	(!CLK * RESET_B * SCD * SCE)	0.01163	0.01158	0.01116
	(!CLK * RESET_B * SCD * SCE)	0.01380	0.01378	0.01334
	(!CLK * RESET_B * SCD * !SCE)	0.02343	0.03250	0.19099
	(!CLK * RESET_B * SCD * !SCE)	0.02805	0.03713	0.19562
	(!CLK * RESET_B * !SCD * !SCE)	0.02344	0.03254	0.19173
	(!CLK * RESET_B * !SCD * !SCE)	0.02805	0.03718	0.19635
	(!CLK * !SCD * SCE)	0.01135	0.01133	0.01135
	(!CLK * !SCD * SCE)	0.01381	0.01383	0.01381
	(!CLK * !RESET_B * SCD * SCE)	0.00755	0.00754	0.00754
	(!CLK * !RESET_B * SCD * SCE)	0.00998	0.00999	0.00998
	(!CLK * !RESET_B * SCD * !SCE)	0.00624	0.00623	0.00624
	(!CLK * !RESET_B * SCD * !SCE)	0.00867	0.00869	0.00868
	(!CLK * !RESET_B * !SCD * !SCE)	0.00623	0.00623	0.00623
	(!CLK * !RESET_B * !SCD * !SCE)	0.00868	0.00869	0.00868

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)	0.01741	0.02301	0.14123
	(CLK * D * RESET_B * SCE)	0.01142	0.01700	0.13524
	(CLK * D * RESET_B * !SCE)	0.00872	0.00854	0.00955
	(CLK * D * RESET_B * !SCE)	0.00565	0.00545	0.00648
	(CLK * D * !RESET_B * SCE)	0.00570	0.00571	0.00567
	(CLK * D * !RESET_B * SCE)	0.00317	0.00316	0.00318
	(CLK * D * !RESET_B * !SCE)	0.00390	0.00391	0.00391
	(CLK * D * !RESET_B * !SCE)	0.00144	0.00142	0.00143
	(CLK * !D * RESET_B * SCE)	0.01916	0.02438	0.14191
	(CLK * !D * RESET_B * SCE)	0.01294	0.01815	0.13569
	(CLK * !D * !RESET_B * SCE)	0.00570	0.00571	0.00567
	(CLK * !D * !RESET_B * SCE)	0.00317	0.00316	0.00318
	(!D * RESET_B * !SCE)	0.00457	0.00458	0.00457
	(!D * RESET_B * !SCE)	0.00151	0.00150	0.00150
	(!D * !RESET_B * !SCE)	0.00405	0.00405	0.00405
	(!D * !RESET_B * !SCE)	0.00129	0.00129	0.00130
	(!CLK * D * RESET_B * SCE)	0.02916	0.03678	0.18773
	(!CLK * D * RESET_B * SCE)	0.02293	0.03054	0.18150
	(!CLK * D * RESET_B * !SCE)	0.01009	0.00991	0.01092
	(!CLK * D * RESET_B * !SCE)	0.00704	0.00682	0.00786
	(!CLK * D * !RESET_B * SCE)	0.00583	0.00584	0.00580
	(!CLK * D * !RESET_B * SCE)	0.00330	0.00329	0.00331
	(!CLK * D * !RESET_B * !SCE)	0.00404	0.00404	0.00404
	(!CLK * D * !RESET_B * !SCE)	0.00157	0.00155	0.00157
	(!CLK * !D * RESET_B * SCE)	0.03094	0.03831	0.18907
	(!CLK * !D * RESET_B * SCE)	0.02449	0.03185	0.18261
	(!CLK * !D * !RESET_B * SCE)	0.00583	0.00584	0.00580
	(!CLK * !D * !RESET_B * SCE)	0.00330	0.00329	0.00331

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.01765	0.02338	0.14183
	(CLK * D * RESET_B * SCE)	0.01173	0.01745	0.13591
	(CLK * D * RESET_B * !SCE)	0.00983	0.00963	0.01063
	(CLK * D * RESET_B * !SCE)	0.00677	0.00655	0.00758
	(CLK * D * !RESET_B * SCE)	0.00672	0.00673	0.00669
	(CLK * D * !RESET_B * SCE)	0.00420	0.00419	0.00421
	(CLK * D * !RESET_B * !SCE)	0.00496	0.00496	0.00496
	(CLK * D * !RESET_B * !SCE)	0.00250	0.00248	0.00250
	(CLK * !D * RESET_B * SCE)	0.01940	0.02470	0.14251
	(CLK * !D * RESET_B * SCE)	0.01326	0.01855	0.13637
	(CLK * !D * !RESET_B * SCE)	0.00672	0.00673	0.00669
	(CLK * !D * !RESET_B * SCE)	0.00420	0.00419	0.00421
	(!D * RESET_B * !SCE)	0.00562	0.00563	0.00563
	(!D * RESET_B * !SCE)	0.00257	0.00256	0.00257
	(!D * !RESET_B * !SCE)	0.00510	0.00510	0.00510
	(!D * !RESET_B * !SCE)	0.00235	0.00235	0.00236
	(!CLK * D * RESET_B * SCE)	0.02655	0.03411	0.18398
	(!CLK * D * RESET_B * SCE)	0.02041	0.02796	0.17784
	(!CLK * D * RESET_B * !SCE)	0.00821	0.00802	0.00902
	(!CLK * D * RESET_B * !SCE)	0.00517	0.00493	0.00596
	(!CLK * D * !RESET_B * SCE)	0.00685	0.00686	0.00683
	(!CLK * D * !RESET_B * SCE)	0.00433	0.00432	0.00434
	(!CLK * D * !RESET_B * !SCE)	0.00509	0.00510	0.00510
	(!CLK * D * !RESET_B * !SCE)	0.00263	0.00261	0.00263
	(!CLK * !D * RESET_B * SCE)	0.02833	0.03561	0.18532
	(!CLK * !D * RESET_B * SCE)	0.02197	0.02925	0.17895
	(!CLK * !D * !RESET_B * SCE)	0.00685	0.00686	0.00683
	(!CLK * !D * !RESET_B * SCE)	0.00433	0.00432	0.00434

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.01974	0.02549	0.14411
	(CLK * D * RESET_B * SCE)	0.01381	0.01954	0.13817
	(CLK * D * RESET_B * !SCE)	0.01185	0.01166	0.01266
	(CLK * D * RESET_B * !SCE)	0.00884	0.00861	0.00964
	(CLK * D * !RESET_B * SCE)	0.00877	0.00878	0.00875
	(CLK * D * !RESET_B * SCE)	0.00630	0.00628	0.00630
	(CLK * D * !RESET_B * !SCE)	0.00701	0.00702	0.00702
	(CLK * D * !RESET_B * !SCE)	0.00459	0.00458	0.00459
	(CLK * !D * RESET_B * SCE)	0.02149	0.02682	0.14480
	(CLK * !D * RESET_B * SCE)	0.01533	0.02065	0.13864
	(CLK * !D * !RESET_B * SCE)	0.00877	0.00878	0.00875
	(CLK * !D * !RESET_B * SCE)	0.00630	0.00628	0.00630
	(!D * RESET_B * !SCE)	0.00768	0.00769	0.00768
	(!D * RESET_B * !SCE)	0.00466	0.00465	0.00466
	(!D * !RESET_B * !SCE)	0.00716	0.00716	0.00716
	(!D * !RESET_B * !SCE)	0.00445	0.00445	0.00445
	(!CLK * D * RESET_B * SCE)	0.03187	0.03963	0.19112
	(!CLK * D * RESET_B * SCE)	0.02571	0.03345	0.18494
	(!CLK * D * RESET_B * !SCE)	0.01330	0.01311	0.01411
	(!CLK * D * RESET_B * !SCE)	0.01030	0.01007	0.01109
	(!CLK * D * !RESET_B * SCE)	0.00891	0.00891	0.00888
	(!CLK * D * !RESET_B * SCE)	0.00643	0.00642	0.00644
	(!CLK * D * !RESET_B * !SCE)	0.00715	0.00715	0.00715
	(!CLK * D * !RESET_B * !SCE)	0.00472	0.00471	0.00472
	(!CLK * !D * RESET_B * SCE)	0.03366	0.04112	0.19253
	(!CLK * !D * RESET_B * SCE)	0.02727	0.03472	0.18614
	(!CLK * !D * !RESET_B * SCE)	0.00891	0.00891	0.00888
	(!CLK * !D * !RESET_B * SCE)	0.00643	0.00641	0.00644

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)	0.00770	0.01370	0.13455
	(CLK * D * RESET_B * SCE)	0.01371	0.01972	0.14052
	(CLK * D * RESET_B * !SCE)	0.00694	0.00689	0.00664
	(CLK * D * RESET_B * !SCE)	0.01000	0.00998	0.00971
	(CLK * D * !RESET_B * SCE)	0.00432	0.00431	0.00431
	(CLK * D * !RESET_B * SCE)	0.00681	0.00682	0.00678
	(CLK * D * !RESET_B * !SCE)	0.00296	0.00295	0.00294
	(CLK * D * !RESET_B * !SCE)	0.00546	0.00546	0.00542
	(CLK * !D * RESET_B * SCE)	0.00712	0.01334	0.13469
	(CLK * !D * RESET_B * SCE)	0.01335	0.01958	0.14088
	(CLK * !D * !RESET_B * SCE)	0.00432	0.00431	0.00431
	(CLK * !D * !RESET_B * SCE)	0.00680	0.00682	0.00678
	(!D * RESET_B * !SCE)	0.00245	0.00234	0.00231
	(!D * RESET_B * !SCE)	0.00552	0.00541	0.00538
	(!D * !RESET_B * !SCE)	0.00284	0.00282	0.00277
	(!D * !RESET_B * !SCE)	0.00569	0.00570	0.00559
	(!CLK * D * RESET_B * SCE)	0.02411	0.03129	0.18053
	(!CLK * D * RESET_B * SCE)	0.03036	0.03755	0.18674
	(!CLK * D * RESET_B * !SCE)	0.00831	0.00826	0.00801
	(!CLK * D * RESET_B * !SCE)	0.01138	0.01136	0.01109
	(!CLK * D * !RESET_B * SCE)	0.00445	0.00444	0.00444
	(!CLK * D * !RESET_B * SCE)	0.00694	0.00695	0.00691
	(!CLK * D * !RESET_B * !SCE)	0.00309	0.00309	0.00307
	(!CLK * D * !RESET_B * !SCE)	0.00559	0.00560	0.00556
	(!CLK * !D * RESET_B * SCE)	0.02383	0.03134	0.18188
	(!CLK * !D * RESET_B * SCE)	0.03029	0.03780	0.18832
	(!CLK * !D * !RESET_B * SCE)	0.00445	0.00444	0.00444
	(!CLK * !D * !RESET_B * SCE)	0.00694	0.00695	0.00691

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00875	0.01482	0.13586
	(CLK * D * RESET_B * SCE)	0.01467	0.02076	0.14175
	(CLK * D * RESET_B * !SCE)	0.00799	0.00794	0.00769
	(CLK * D * RESET_B * !SCE)	0.01105	0.01103	0.01076
	(CLK * D * !RESET_B * SCE)	0.00543	0.00542	0.00542
	(CLK * D * !RESET_B * SCE)	0.00791	0.00793	0.00789
	(CLK * D * !RESET_B * !SCE)	0.00404	0.00404	0.00402
	(CLK * D * !RESET_B * !SCE)	0.00653	0.00652	0.00650
	(CLK * !D * RESET_B * SCE)	0.00816	0.01448	0.13599
	(CLK * !D * RESET_B * SCE)	0.01430	0.02063	0.14212
	(CLK * !D * !RESET_B * SCE)	0.00543	0.00542	0.00542
	(CLK * !D * !RESET_B * SCE)	0.00791	0.00793	0.00789
	(!D * RESET_B * !SCE)	0.00353	0.00341	0.00339
	(!D * RESET_B * !SCE)	0.00659	0.00650	0.00645
	(!D * !RESET_B * !SCE)	0.00392	0.00390	0.00385
	(!D * !RESET_B * !SCE)	0.00679	0.00677	0.00666
	(!CLK * D * RESET_B * SCE)	0.02259	0.02965	0.17706
	(!CLK * D * RESET_B * SCE)	0.02874	0.03582	0.18317
	(!CLK * D * RESET_B * !SCE)	0.00638	0.00633	0.00607
	(!CLK * D * RESET_B * !SCE)	0.00943	0.00941	0.00914
	(!CLK * D * !RESET_B * SCE)	0.00556	0.00556	0.00555
	(!CLK * D * !RESET_B * SCE)	0.00804	0.00806	0.00802
	(!CLK * D * !RESET_B * !SCE)	0.00417	0.00417	0.00415
	(!CLK * D * !RESET_B * !SCE)	0.00666	0.00665	0.00663
	(!CLK * !D * RESET_B * SCE)	0.02230	0.02966	0.17837
	(!CLK * !D * RESET_B * SCE)	0.02865	0.03603	0.18470
	(!CLK * !D * !RESET_B * SCE)	0.00556	0.00556	0.00555
	(!CLK * !D * !RESET_B * SCE)	0.00804	0.00806	0.00802

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.01084	0.01692	0.13811
	(CLK * D * RESET_B * SCE)	0.01678	0.02288	0.14402
	(CLK * D * RESET_B * !SCE)	0.01009	0.01003	0.00978
	(CLK * D * RESET_B * !SCE)	0.01310	0.01309	0.01281
	(CLK * D * !RESET_B * SCE)	0.00749	0.00748	0.00748
	(CLK * D * !RESET_B * SCE)	0.00993	0.00995	0.00991
	(CLK * D * !RESET_B * !SCE)	0.00610	0.00610	0.00608
	(CLK * D * !RESET_B * !SCE)	0.00854	0.00854	0.00852
	(CLK * !D * RESET_B * SCE)	0.01017	0.01652	0.13820
	(CLK * !D * RESET_B * SCE)	0.01633	0.02268	0.14434
	(CLK * !D * !RESET_B * SCE)	0.00749	0.00748	0.00748
	(CLK * !D * !RESET_B * SCE)	0.00993	0.00995	0.00991
	(!D * RESET_B * !SCE)	0.00559	0.00547	0.00546
	(!D * RESET_B * !SCE)	0.00862	0.00853	0.00848
	(!D * !RESET_B * !SCE)	0.00598	0.00596	0.00591
	(!D * !RESET_B * !SCE)	0.00881	0.00879	0.00869
	(!CLK * D * RESET_B * SCE)	0.02770	0.03483	0.18364
	(!CLK * D * RESET_B * SCE)	0.03388	0.04103	0.18979
	(!CLK * D * RESET_B * !SCE)	0.01154	0.01149	0.01123
	(!CLK * D * RESET_B * !SCE)	0.01455	0.01454	0.01426
	(!CLK * D * !RESET_B * SCE)	0.00763	0.00762	0.00762
	(!CLK * D * !RESET_B * SCE)	0.01006	0.01008	0.01004
	(!CLK * D * !RESET_B * !SCE)	0.00623	0.00623	0.00621
	(!CLK * D * !RESET_B * !SCE)	0.00868	0.00867	0.00865
	(!CLK * !D * RESET_B * SCE)	0.02727	0.03478	0.18493
	(!CLK * !D * RESET_B * SCE)	0.03366	0.04117	0.19129
	(!CLK * !D * !RESET_B * SCE)	0.00762	0.00762	0.00762
	(!CLK * !D * !RESET_B * SCE)	0.01007	0.01008	0.01004

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)	0.01501	0.02563	0.20603
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00720	0.01780	0.19825
	(CLK * D * RESET_B * !SCD)	0.01537	0.02669	0.22176
	(CLK * D * RESET_B * !SCD)	0.01030	0.02156	0.21662
	(CLK * !D * RESET_B * SCD)	0.02286	0.03958	0.33285
	(CLK * !D * RESET_B * SCD)	0.01279	0.02947	0.32277
	(!CLK * D * RESET_B * SCD)	0.01638	0.02701	0.20740
	(!CLK * D * RESET_B * SCD)	0.00857	0.01917	0.19962
	(!CLK * D * RESET_B * !SCD)	0.03157	0.04286	0.24039
	(!CLK * D * RESET_B * !SCD)	0.02674	0.03797	0.23550
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.01216	0.02311	0.20275
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00483	0.01574	0.19543
	(!CLK * !D * RESET_B * SCD)	0.03456	0.05387	0.38403
	(!CLK * !D * RESET_B * SCD)	0.02424	0.04355	0.37372

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.01609	0.02690	0.20939
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00819	0.01899	0.20153
	(CLK * D * RESET_B * !SCD)	0.01633	0.02786	0.22509
	(CLK * D * RESET_B * !SCD)	0.01109	0.02257	0.21979
	(CLK * !D * RESET_B * SCD)	0.02304	0.04033	0.33935
	(CLK * !D * RESET_B * SCD)	0.01295	0.03019	0.32925
	(!CLK * D * RESET_B * SCD)	0.01448	0.02529	0.20778
	(!CLK * D * RESET_B * SCD)	0.00658	0.01737	0.19992
	(!CLK * D * RESET_B * !SCD)	0.02998	0.04141	0.24071
	(!CLK * D * RESET_B * !SCD)	0.02496	0.03635	0.23563
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.01315	0.02419	0.20598
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00573	0.01676	0.19856
	(!CLK * !D * RESET_B * SCD)	0.03187	0.05149	0.38589
	(!CLK * !D * RESET_B * SCD)	0.02156	0.04115	0.37556

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.01816	0.02899	0.21148
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.01025	0.02105	0.20360
	(CLK * D * RESET_B * !SCD)	0.01842	0.02994	0.22715
	(CLK * D * RESET_B * !SCD)	0.01321	0.02468	0.22192
	(CLK * !D * RESET_B * SCD)	0.02517	0.04247	0.34166
	(CLK * !D * RESET_B * SCD)	0.01502	0.03228	0.33149
	(!CLK * D * RESET_B * SCD)	0.01962	0.03044	0.21293
	(!CLK * D * RESET_B * SCD)	0.01171	0.02250	0.20506
	(!CLK * D * RESET_B * !SCD)	0.03500	0.04646	0.24597
	(!CLK * D * RESET_B * !SCD)	0.03003	0.04144	0.24094
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.01520	0.02626	0.20804
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00776	0.01879	0.20061
	(!CLK * !D * RESET_B * SCD)	0.03724	0.05706	0.39324
	(!CLK * !D * RESET_B * SCD)	0.02685	0.04662	0.38283

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)**	0.00634	0.01783	0.19917
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.01413	0.02566	0.20698
	(CLK * D * RESET_B * !SCD)	0.01557	0.02686	0.21782
	(CLK * D * RESET_B * !SCD)	0.02068	0.03200	0.22271
	(CLK * !D * RESET_B * SCD)	0.00478	0.02222	0.32015
	(CLK * !D * RESET_B * SCD)	0.01487	0.03234	0.33025
	(!CLK * D * RESET_B * SCD)	0.00771	0.01920	0.20054
	(!CLK * D * RESET_B * SCD)	0.01550	0.02701	0.20835
	(!CLK * D * RESET_B * !SCD)	0.02719	0.03870	0.23412
	(!CLK * D * RESET_B * !SCD)	0.03206	0.04358	0.23878
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00301	0.01443	0.19565
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.01031	0.02178	0.20296
	(!CLK * !D * RESET_B * SCD)	0.02049	0.03909	0.36511
	(!CLK * !D * RESET_B * SCD)	0.03082	0.04944	0.37545

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00726	0.01896	0.20238
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.01516	0.02686	0.21027
	(CLK * D * RESET_B * !SCD)	0.01547	0.02703	0.22030
	(CLK * D * RESET_B * !SCD)	0.02076	0.03229	0.22535
	(CLK * !D * RESET_B * SCD)	0.00585	0.02383	0.32754
	(CLK * !D * RESET_B * SCD)	0.01592	0.03396	0.33764
	(!CLK * D * RESET_B * SCD)	0.00565	0.01733	0.20076
	(!CLK * D * RESET_B * SCD)	0.01355	0.02524	0.20866
	(!CLK * D * RESET_B * !SCD)	0.02422	0.03596	0.23333
	(!CLK * D * RESET_B * !SCD)	0.02929	0.04101	0.23817
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00401	0.01563	0.19891
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.01143	0.02306	0.20628
	(!CLK * !D * RESET_B * SCD)	0.01899	0.03786	0.36812
	(!CLK * !D * RESET_B * SCD)	0.02929	0.04822	0.37846

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00928	0.02098	0.20440
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.01720	0.02890	0.21232
	(CLK * D * RESET_B * !SCD)	0.01756	0.02912	0.22237
	(CLK * D * RESET_B * !SCD)	0.02282	0.03435	0.22739
	(CLK * !D * RESET_B * SCD)	0.00783	0.02582	0.32969
	(CLK * !D * RESET_B * SCD)	0.01797	0.03600	0.33987
	(!CLK * D * RESET_B * SCD)	0.01073	0.02242	0.20586
	(!CLK * D * RESET_B * SCD)	0.01865	0.03035	0.21377
	(!CLK * D * RESET_B * !SCD)	0.02956	0.04129	0.23896
	(!CLK * D * RESET_B * !SCD)	0.03458	0.04632	0.24374
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00606	0.01772	0.20097
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.01349	0.02518	0.20836
	(!CLK * !D * RESET_B * SCD)	0.02388	0.04288	0.37458
	(!CLK * !D * RESET_B * SCD)	0.03425	0.05331	0.38499

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)**	0.02148	0.02832	0.18651
	(CLK * D * SCD * SCE * !Q)	0.00784	0.01463	0.17285
	(CLK * D * SCD * !SCE * !Q)	0.02034	0.02738	0.18515
	(CLK * D * SCD * !SCE * !Q)	0.00724	0.01419	0.17207
	(CLK * D * !SCD * SCE * !Q)	0.00931	0.00937	0.00932
	(CLK * D * !SCD * SCE * !Q)	-0.00059	-0.00063	-0.00059
	(CLK * D * !SCD * !SCE * !Q)	0.02101	0.02830	0.18555
	(CLK * D * !SCD * !SCE * !Q)	0.00863	0.01591	0.17318
	(CLK * !D * SCD * SCE * !Q)	0.02323	0.02972	0.18716
	(CLK * !D * SCD * SCE * !Q)	0.00937	0.01580	0.17328
	(CLK * !D * SCD * !SCE * !Q)	0.00772	0.00778	0.00773
	(CLK * !D * SCD * !SCE * !Q)	-0.00215	-0.00219	-0.00215
	(CLK * !D * !SCD * SCE * !Q)	0.00931	0.00937	0.00932
	(CLK * !D * !SCD * SCE * !Q)	-0.00059	-0.00063	-0.00059
	(CLK * !D * !SCD * !SCE * !Q)	0.00772	0.00778	0.00773
	(CLK * !D * !SCD * !SCE * !Q)	-0.00217	-0.00221	-0.00217
	(!CLK * D * SCD * SCE * !Q)	0.03290	0.04248	0.27586
	(!CLK * D * SCD * SCE * !Q)	0.01905	0.02854	0.26197
	(!CLK * D * SCD * !SCE * !Q)	0.03165	0.04144	0.27679
	(!CLK * D * SCD * !SCE * !Q)	0.01836	0.02806	0.26344
	(!CLK * D * !SCD * SCE * !Q)	0.00945	0.00950	0.00946
	(!CLK * D * !SCD * SCE * !Q)	-0.00045	-0.00048	-0.00045
	(!CLK * D * !SCD * !SCE * !Q)	0.03228	0.04238	0.27699
	(!CLK * D * !SCD * !SCE * !Q)	0.01973	0.02978	0.26437
	(!CLK * !D * SCD * SCE * !Q)	0.03471	0.04393	0.27704
	(!CLK * !D * SCD * SCE * !Q)	0.02064	0.02977	0.26292
	(!CLK * !D * SCD * !SCE * !Q)	0.00786	0.00791	0.00787
	(!CLK * !D * SCD * !SCE * !Q)	-0.00201	-0.00204	-0.00201
	(!CLK * !D * !SCD * SCE * !Q)	0.00944	0.00949	0.00945
	(!CLK * !D * !SCD * SCE * !Q)	-0.00045	-0.00048	-0.00045
	(!CLK * !D * !SCD * !SCE * !Q)	0.00786	0.00791	0.00787
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00203	-0.00206	-0.00202

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.02168	0.02877	0.18721
	(CLK * D * SCD * SCE * !Q)	0.00807	0.01511	0.17358
	(CLK * D * SCD * !SCE * !Q)	0.02034	0.02764	0.18574
	(CLK * D * SCD * !SCE * !Q)	0.00729	0.01456	0.17266
	(CLK * D * !SCD * SCE * !Q)	0.01039	0.01042	0.01040
	(CLK * D * !SCD * SCE * !Q)	0.00045	0.00043	0.00045
	(CLK * D * !SCD * !SCE * !Q)	0.02101	0.02867	0.18615
	(CLK * D * !SCD * !SCE * !Q)	0.00867	0.01624	0.17378
	(CLK * !D * SCD * SCE * !Q)	0.02344	0.03018	0.18785
	(CLK * !D * SCD * SCE * !Q)	0.00961	0.01625	0.17401
	(CLK * !D * SCD * !SCE * !Q)	0.00882	0.00882	0.00881
	(CLK * !D * SCD * !SCE * !Q)	-0.00114	-0.00113	-0.00112
	(CLK * !D * !SCD * SCE * !Q)	0.01038	0.01041	0.01039
	(CLK * !D * !SCD * SCE * !Q)	0.00045	0.00043	0.00045
	(CLK * !D * !SCD * !SCE * !Q)	0.00880	0.00882	0.00880
	(CLK * !D * !SCD * !SCE * !Q)	-0.00114	-0.00115	-0.00113
	(!CLK * D * SCD * SCE * !Q)	0.03326	0.04289	0.27454
	(!CLK * D * SCD * SCE * !Q)	0.01947	0.02903	0.26071
	(!CLK * D * SCD * !SCE * !Q)	0.03183	0.04172	0.27511
	(!CLK * D * SCD * !SCE * !Q)	0.01859	0.02839	0.26182
	(!CLK * D * !SCD * SCE * !Q)	0.01049	0.01052	0.01050
	(!CLK * D * !SCD * SCE * !Q)	0.00056	0.00054	0.00056
	(!CLK * D * !SCD * !SCE * !Q)	0.03247	0.04269	0.27531
	(!CLK * D * !SCD * !SCE * !Q)	0.01996	0.03008	0.26274
	(!CLK * !D * SCD * SCE * !Q)	0.03507	0.04435	0.27564
	(!CLK * !D * SCD * SCE * !Q)	0.02105	0.03025	0.26158
	(!CLK * !D * SCD * !SCE * !Q)	0.00890	0.00896	0.00891
	(!CLK * !D * SCD * !SCE * !Q)	-0.00101	-0.00104	-0.00100
	(!CLK * !D * !SCD * SCE * !Q)	0.01049	0.01054	0.01050
	(!CLK * !D * !SCD * SCE * !Q)	0.00056	0.00053	0.00056
	(!CLK * !D * !SCD * !SCE * !Q)	0.00890	0.00896	0.00891
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00102	-0.00106	-0.00102

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.02378	0.03087	0.18932
	(CLK * D * SCD * SCE * !Q)	0.01022	0.01725	0.17574
	(CLK * D * SCD * !SCE * !Q)	0.02245	0.02973	0.18778
	(CLK * D * SCD * !SCE * !Q)	0.00943	0.01668	0.17474
	(CLK * D * !SCD * SCE * !Q)	0.01239	0.01245	0.01240
	(CLK * D * !SCD * SCE * !Q)	0.00254	0.00250	0.00254
	(CLK * D * !SCD * !SCE * !Q)	0.02312	0.03072	0.18819
	(CLK * D * !SCD * !SCE * !Q)	0.01081	0.01838	0.17586
	(CLK * !D * SCD * SCE * !Q)	0.02555	0.03223	0.18999
	(CLK * !D * SCD * SCE * !Q)	0.01176	0.01844	0.17619
	(CLK * !D * SCD * !SCE * !Q)	0.01080	0.01085	0.01081
	(CLK * !D * SCD * !SCE * !Q)	0.00097	0.00093	0.00097
	(CLK * !D * !SCD * SCE * !Q)	0.01238	0.01244	0.01239
	(CLK * !D * !SCD * SCE * !Q)	0.00254	0.00250	0.00254
	(CLK * !D * !SCD * !SCE * !Q)	0.01080	0.01086	0.01081
	(CLK * !D * !SCD * !SCE * !Q)	0.00096	0.00092	0.00096
	(!CLK * D * SCD * SCE * !Q)	0.03545	0.04527	0.27819
	(!CLK * D * SCD * SCE * !Q)	0.02167	0.03142	0.26438
	(!CLK * D * SCD * !SCE * !Q)	0.03400	0.04403	0.27879
	(!CLK * D * SCD * !SCE * !Q)	0.02077	0.03078	0.26554
	(!CLK * D * !SCD * SCE * !Q)	0.01248	0.01253	0.01249
	(!CLK * D * !SCD * SCE * !Q)	0.00264	0.00261	0.00264
	(!CLK * D * !SCD * !SCE * !Q)	0.03465	0.04500	0.27898
	(!CLK * D * !SCD * !SCE * !Q)	0.02212	0.03246	0.26645
	(!CLK * !D * SCD * SCE * !Q)	0.03723	0.04666	0.27935
	(!CLK * !D * SCD * SCE * !Q)	0.02323	0.03258	0.26532
	(!CLK * !D * SCD * !SCE * !Q)	0.01090	0.01095	0.01091
	(!CLK * !D * SCD * !SCE * !Q)	0.00107	0.00104	0.00108
	(!CLK * !D * !SCD * SCE * !Q)	0.01248	0.01253	0.01249
	(!CLK * !D * !SCD * SCE * !Q)	0.00264	0.00261	0.00264
	(!CLK * !D * !SCD * !SCE * !Q)	0.01089	0.01094	0.01090
	(!CLK * !D * !SCD * !SCE * !Q)	0.00106	0.00103	0.00106

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)**	0.00615	0.01503	0.17648
	(CLK * D * SCD * SCE * !Q)	0.01982	0.02875	0.19009
	(CLK * D * SCD * !SCE * !Q)	0.00310	0.01194	0.17312
	(CLK * D * SCD * !SCE * !Q)	0.01621	0.02512	0.18618
	(CLK * D * !SCD * SCE * !Q)	0.00101	0.00067	0.00069
	(CLK * D * !SCD * SCE * !Q)	0.01085	0.01069	0.01060
	(CLK * D * !SCD * !SCE * !Q)	0.00270	0.01184	0.17375
	(CLK * D * !SCD * !SCE * !Q)	0.01507	0.02427	0.18611
	(CLK * !D * SCD * SCE * !Q)	0.00558	0.01470	0.17656
	(CLK * !D * SCD * SCE * !Q)	0.01945	0.02864	0.19040
	(CLK * !D * SCD * !SCE * !Q)	-0.00048	-0.00087	-0.00085
	(CLK * !D * SCD * !SCE * !Q)	0.00935	0.00914	0.00904
	(CLK * !D * !SCD * SCE * !Q)	0.00099	0.00066	0.00068
	(CLK * !D * !SCD * SCE * !Q)	0.01083	0.01068	0.01059
	(CLK * !D * !SCD * !SCE * !Q)	-0.00052	-0.00088	-0.00086
	(CLK * !D * !SCD * !SCE * !Q)	0.00933	0.00914	0.00904
	(!CLK * D * SCD * SCE * !Q)	0.01639	0.02994	0.27717
	(!CLK * D * SCD * SCE * !Q)	0.03028	0.04391	0.29102
	(!CLK * D * SCD * !SCE * !Q)	0.01323	0.02665	0.27455
	(!CLK * D * SCD * !SCE * !Q)	0.02657	0.04002	0.28781
	(!CLK * D * !SCD * SCE * !Q)	0.00103	0.00077	0.00080
	(!CLK * D * !SCD * SCE * !Q)	0.01087	0.01078	0.01070
	(!CLK * D * !SCD * !SCE * !Q)	0.01277	0.02643	0.27481
	(!CLK * D * !SCD * !SCE * !Q)	0.02537	0.03908	0.28741
	(!CLK * !D * SCD * SCE * !Q)	0.01582	0.02983	0.27792
	(!CLK * !D * SCD * SCE * !Q)	0.02993	0.04397	0.29197
	(!CLK * !D * SCD * !SCE * !Q)	-0.00046	-0.00076	-0.00075
	(!CLK * !D * SCD * !SCE * !Q)	0.00936	0.00924	0.00915
	(!CLK * !D * !SCD * SCE * !Q)	0.00101	0.00077	0.00079
	(!CLK * !D * !SCD * SCE * !Q)	0.01085	0.01078	0.01069
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00049	-0.00078	-0.00076
	(!CLK * !D * !SCD * !SCE * !Q)	0.00935	0.00924	0.00915

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00708	0.01614	0.17770
	(CLK * D * SCD * SCE * !Q)	0.02071	0.02983	0.19126
	(CLK * D * SCD * !SCE * !Q)	0.00414	0.01317	0.17445
	(CLK * D * SCD * !SCE * !Q)	0.01721	0.02626	0.18747
	(CLK * D * !SCD * SCE * !Q)	0.00207	0.00173	0.00175
	(CLK * D * !SCD * SCE * !Q)	0.01195	0.01179	0.01170
	(CLK * D * !SCD * !SCE * !Q)	0.00374	0.01305	0.17508
	(CLK * D * !SCD * !SCE * !Q)	0.01607	0.02546	0.18740
	(CLK * !D * SCD * SCE * !Q)	0.00650	0.01582	0.17777
	(CLK * !D * SCD * SCE * !Q)	0.02034	0.02970	0.19157
	(CLK * !D * SCD * !SCE * !Q)	0.00058	0.00023	0.00021
	(CLK * !D * SCD * !SCE * !Q)	0.01044	0.01017	0.01014
	(CLK * !D * !SCD * SCE * !Q)	0.00205	0.00172	0.00175
	(CLK * !D * !SCD * SCE * !Q)	0.01193	0.01178	0.01169
	(CLK * !D * !SCD * !SCE * !Q)	0.00054	0.00022	0.00020
	(CLK * !D * !SCD * !SCE * !Q)	0.01043	0.01017	0.01014
	(!CLK * D * SCD * SCE * !Q)	0.01796	0.03114	0.27510
	(!CLK * D * SCD * SCE * !Q)	0.03179	0.04506	0.28888
	(!CLK * D * SCD * !SCE * !Q)	0.01492	0.02797	0.27225
	(!CLK * D * SCD * !SCE * !Q)	0.02820	0.04131	0.28550
	(!CLK * D * !SCD * SCE * !Q)	0.00212	0.00186	0.00189
	(!CLK * D * !SCD * SCE * !Q)	0.01200	0.01192	0.01183
	(!CLK * D * !SCD * !SCE * !Q)	0.01446	0.02776	0.27261
	(!CLK * D * !SCD * !SCE * !Q)	0.02700	0.04036	0.28511
	(!CLK * !D * SCD * SCE * !Q)	0.01740	0.03103	0.27579
	(!CLK * !D * SCD * SCE * !Q)	0.03145	0.04512	0.28982
	(!CLK * !D * SCD * !SCE * !Q)	0.00063	0.00037	0.00034
	(!CLK * !D * SCD * !SCE * !Q)	0.01049	0.01029	0.01028
	(!CLK * !D * !SCD * SCE * !Q)	0.00210	0.00185	0.00188
	(!CLK * !D * !SCD * SCE * !Q)	0.01198	0.01191	0.01183
	(!CLK * !D * !SCD * !SCE * !Q)	0.00060	0.00036	0.00033
	(!CLK * !D * !SCD * !SCE * !Q)	0.01048	0.01028	0.01028

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00916	0.01818	0.17977
	(CLK * D * SCD * SCE * !Q)	0.02275	0.03183	0.19329
	(CLK * D * SCD * !SCE * !Q)	0.00622	0.01520	0.17646
	(CLK * D * SCD * !SCE * !Q)	0.01925	0.02829	0.18945
	(CLK * D * !SCD * SCE * !Q)	0.00418	0.00385	0.00387
	(CLK * D * !SCD * SCE * !Q)	0.01397	0.01382	0.01372
	(CLK * D * !SCD * !SCE * !Q)	0.00582	0.01511	0.17710
	(CLK * D * !SCD * !SCE * !Q)	0.01811	0.02745	0.18938
	(CLK * !D * SCD * SCE * !Q)	0.00850	0.01779	0.17980
	(CLK * !D * SCD * SCE * !Q)	0.02230	0.03166	0.19356
	(CLK * !D * SCD * !SCE * !Q)	0.00269	0.00231	0.00233
	(CLK * !D * SCD * !SCE * !Q)	0.01247	0.01227	0.01217
	(CLK * !D * !SCD * SCE * !Q)	0.00417	0.00384	0.00386
	(CLK * !D * !SCD * SCE * !Q)	0.01396	0.01381	0.01372
	(CLK * !D * !SCD * !SCE * !Q)	0.00266	0.00230	0.00232
	(CLK * !D * !SCD * !SCE * !Q)	0.01246	0.01227	0.01217
	(!CLK * D * SCD * SCE * !Q)	0.01972	0.03322	0.27887
	(!CLK * D * SCD * SCE * !Q)	0.03353	0.04711	0.29263
	(!CLK * D * SCD * !SCE * !Q)	0.01668	0.02997	0.27617
	(!CLK * D * SCD * !SCE * !Q)	0.02993	0.04328	0.28939
	(!CLK * D * !SCD * SCE * !Q)	0.00425	0.00399	0.00402
	(!CLK * D * !SCD * SCE * !Q)	0.01403	0.01395	0.01387
	(!CLK * D * !SCD * !SCE * !Q)	0.01621	0.02976	0.27649
	(!CLK * D * !SCD * !SCE * !Q)	0.02872	0.04234	0.28900
	(!CLK * !D * SCD * SCE * !Q)	0.01908	0.03303	0.27955
	(!CLK * !D * SCD * SCE * !Q)	0.03310	0.04713	0.29351
	(!CLK * !D * SCD * !SCE * !Q)	0.00276	0.00245	0.00247
	(!CLK * !D * SCD * !SCE * !Q)	0.01253	0.01241	0.01232
	(!CLK * !D * !SCD * SCE * !Q)	0.00423	0.00399	0.00401
	(!CLK * !D * !SCD * SCE * !Q)	0.01401	0.01394	0.01386
	(!CLK * !D * !SCD * !SCE * !Q)	0.00272	0.00244	0.00246
	(!CLK * !D * !SCD * !SCE * !Q)	0.01251	0.01240	0.01231

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)	0.02689	0.04471	0.36308
	(D * RESET_B * SCD * SCE * Q)	0.02115	0.03893	0.35733
	(D * RESET_B * SCD * !SCE * Q)	0.02606	0.04389	0.36226
	(D * RESET_B * SCD * !SCE * Q)	0.02033	0.03811	0.35651
	(D * RESET_B * !SCD * !SCE * Q)	0.02754	0.04536	0.36373
	(D * RESET_B * !SCD * !SCE * Q)	0.02180	0.03959	0.35799
	(D * !SCD * SCE * !Q)	0.02300	0.04070	0.35921
	(D * !SCD * SCE * !Q)	0.01727	0.03493	0.35346
	(D * !RESET_B * SCD * SCE * !Q)	0.02299	0.04068	0.35917
	(D * !RESET_B * SCD * SCE * !Q)	0.01726	0.03492	0.35342
	(D * !RESET_B * SCD * !SCE * !Q)	0.02143	0.03914	0.35761
	(D * !RESET_B * SCD * !SCE * !Q)	0.01570	0.03337	0.35186
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02143	0.03912	0.35761
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01570	0.03336	0.35186
	(!D * RESET_B * SCD * SCE * Q)	0.02762	0.04545	0.36381
	(!D * RESET_B * SCD * SCE * Q)	0.02189	0.03967	0.35807
	(!D * !SCE * !Q)	0.02144	0.03914	0.35765
	(!D * !SCE * !Q)	0.01571	0.03337	0.35190
	(!D * !SCD * SCE * !Q)	0.02300	0.04069	0.35920
	(!D * !SCD * SCE * !Q)	0.01727	0.03493	0.35346
	(!D * !RESET_B * SCD * SCE * !Q)	0.02299	0.04066	0.35917
	(!D * !RESET_B * SCD * SCE * !Q)	0.01726	0.03489	0.35342

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.02493	0.04279	0.36158
	(D * RESET_B * SCD * SCE * Q)	0.01916	0.03697	0.35579
	(D * RESET_B * SCD * !SCE * Q)	0.02411	0.04197	0.36076
	(D * RESET_B * SCD * !SCE * Q)	0.01834	0.03615	0.35497
	(D * RESET_B * !SCD * !SCE * Q)	0.02558	0.04344	0.36223
	(D * RESET_B * !SCD * !SCE * Q)	0.01981	0.03762	0.35644
	(D * !SCD * SCE * !Q)	0.02413	0.04183	0.36073
	(D * !SCD * SCE * !Q)	0.01836	0.03602	0.35495
	(D * !RESET_B * SCD * SCE * !Q)	0.02411	0.04182	0.36070
	(D * !RESET_B * SCD * SCE * !Q)	0.01835	0.03601	0.35491
	(D * !RESET_B * SCD * !SCE * !Q)	0.02255	0.04026	0.35913
	(D * !RESET_B * SCD * !SCE * !Q)	0.01678	0.03445	0.35335
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02255	0.04026	0.35913
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01678	0.03445	0.35335
	(!D * RESET_B * SCD * SCE * Q)	0.02567	0.04353	0.36232
	(!D * RESET_B * SCD * SCE * Q)	0.01990	0.03771	0.35653
	(!D * !SCE * !Q)	0.02257	0.04028	0.35917
	(!D * !SCE * !Q)	0.01680	0.03447	0.35339
	(!D * !SCD * SCE * !Q)	0.02412	0.04183	0.36073
	(!D * !SCD * SCE * !Q)	0.01835	0.03602	0.35495
	(!D * !RESET_B * SCD * SCE * !Q)	0.02412	0.04182	0.36070
	(!D * !RESET_B * SCD * SCE * !Q)	0.01835	0.03602	0.35491

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.02981	0.04769	0.36610
	(D * RESET_B * SCD * SCE * Q)	0.02405	0.04188	0.36033
	(D * RESET_B * SCD * !SCE * Q)	0.02899	0.04687	0.36528
	(D * RESET_B * SCD * !SCE * Q)	0.02322	0.04105	0.35951
	(D * RESET_B * !SCD * !SCE * Q)	0.03046	0.04834	0.36675
	(D * RESET_B * !SCD * !SCE * Q)	0.02470	0.04253	0.36098
	(D * !SCD * SCE * !Q)	0.02590	0.04364	0.36219
	(D * !SCD * SCE * !Q)	0.02013	0.03783	0.35641
	(D * !RESET_B * SCD * SCE * !Q)	0.02588	0.04363	0.36216
	(D * !RESET_B * SCD * SCE * !Q)	0.02012	0.03784	0.35637
	(D * !RESET_B * SCD * !SCE * !Q)	0.02432	0.04204	0.36059
	(D * !RESET_B * SCD * !SCE * !Q)	0.01856	0.03623	0.35481
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02432	0.04204	0.36059
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01856	0.03623	0.35481
	(!D * RESET_B * SCD * SCE * Q)	0.03055	0.04843	0.36684
	(!D * RESET_B * SCD * SCE * Q)	0.02478	0.04261	0.36106
	(!D * !SCE * !Q)	0.02434	0.04208	0.36063
	(!D * !SCE * !Q)	0.01857	0.03628	0.35485
	(!D * !SCD * SCE * !Q)	0.02589	0.04363	0.36219
	(!D * !SCD * SCE * !Q)	0.02013	0.03783	0.35641
	(!D * !RESET_B * SCD * SCE * !Q)	0.02589	0.04363	0.36216
	(!D * !RESET_B * SCD * SCE * !Q)	0.02012	0.03783	0.35637

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)**	0.01834	0.03746	0.35660
	(D * RESET_B * SCD * SCE * Q)	0.02411	0.04322	0.36235
	(D * RESET_B * SCD * SCE * !Q)	0.02624	0.04603	0.38211
	(D * RESET_B * SCD * SCE * !Q)	0.03173	0.05156	0.38762
	(D * RESET_B * SCD * !SCE * Q)	0.01751	0.03663	0.35578
	(D * RESET_B * SCD * !SCE * Q)	0.02328	0.04240	0.36153
	(D * RESET_B * SCD * !SCE * !Q)	0.02551	0.04537	0.38120
	(D * RESET_B * SCD * !SCE * !Q)	0.03100	0.05090	0.38670
	(D * RESET_B * !SCD * SCE * Q)	0.03024	0.04996	0.37863
	(D * RESET_B * !SCD * SCE * Q)	0.03629	0.05601	0.38465
	(D * RESET_B * !SCD * !SCE * Q)	0.01898	0.03811	0.35725
	(D * RESET_B * !SCD * !SCE * Q)	0.02476	0.04387	0.36300
	(D * RESET_B * !SCD * !SCE * !Q)	0.02695	0.04671	0.38261
	(D * RESET_B * !SCD * !SCE * !Q)	0.03245	0.05224	0.38811
	(D * !SCD * SCE * !Q)	0.01382	0.03293	0.35259
	(D * !SCD * SCE * !Q)	0.01956	0.03866	0.35835
	(D * !RESET_B * SCD * SCE * !Q)	0.01381	0.03290	0.35258
	(D * !RESET_B * SCD * SCE * !Q)	0.01954	0.03864	0.35833
	(D * !RESET_B * SCD * !SCE * !Q)	0.01225	0.03134	0.35102
	(D * !RESET_B * SCD * !SCE * !Q)	0.01798	0.03708	0.35676
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01225	0.03134	0.35052
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01798	0.03708	0.35628
	(!D * RESET_B * SCD * SCE * Q)	0.01907	0.03820	0.35734
	(!D * RESET_B * SCD * SCE * Q)	0.02484	0.04396	0.36309
	(!D * RESET_B * SCD * SCE * !Q)	0.02697	0.04675	0.38280
	(!D * RESET_B * SCD * SCE * !Q)	0.03246	0.05228	0.38832
	(!D * RESET_B * !SCE * Q)	0.02863	0.04833	0.37703
	(!D * RESET_B * !SCE * Q)	0.03465	0.05435	0.38303
	(!D * RESET_B * !SCD * SCE * Q)	0.03020	0.04994	0.37860
	(!D * RESET_B * !SCD * SCE * Q)	0.03622	0.05597	0.38461
	(!D * !SCE * !Q)	0.01226	0.03140	0.35053
	(!D * !SCE * !Q)	0.01800	0.03716	0.35629
	(!D * !SCD * SCE * !Q)	0.01382	0.03292	0.35259
	(!D * !SCD * SCE * !Q)	0.01955	0.03866	0.35834
	(!D * !RESET_B * SCD * SCE * !Q)	0.01381	0.03290	0.35258
	(!D * !RESET_B * SCD * SCE * !Q)	0.01954	0.03864	0.35833

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01643	0.03562	0.35579
	(D * RESET_B * SCD * SCE * Q)	0.02224	0.04142	0.36159
	(D * RESET_B * SCD * SCE * !Q)	0.02764	0.04746	0.38359
	(D * RESET_B * SCD * SCE * !Q)	0.03318	0.05304	0.38914
	(D * RESET_B * SCD * !SCE * Q)	0.01561	0.03479	0.35497
	(D * RESET_B * SCD * !SCE * Q)	0.02142	0.04059	0.36076
	(D * RESET_B * SCD * !SCE * !Q)	0.02692	0.04670	0.38264
	(D * RESET_B * SCD * !SCE * !Q)	0.03247	0.05227	0.38821
	(D * RESET_B * !SCD * SCE * Q)	0.02908	0.04878	0.37792
	(D * RESET_B * !SCD * SCE * Q)	0.03515	0.05485	0.38396
	(D * RESET_B * !SCD * !SCE * Q)	0.01708	0.03627	0.35643
	(D * RESET_B * !SCD * !SCE * Q)	0.02289	0.04207	0.36223
	(D * RESET_B * !SCD * !SCE * !Q)	0.02836	0.04814	0.38401
	(D * RESET_B * !SCD * !SCE * !Q)	0.03391	0.05371	0.38958
	(D * !SCD * SCE * !Q)	0.01492	0.03407	0.35423
	(D * !SCD * SCE * !Q)	0.02070	0.03989	0.36002
	(D * !RESET_B * SCD * SCE * !Q)	0.01491	0.03405	0.35422
	(D * !RESET_B * SCD * SCE * !Q)	0.02068	0.03983	0.36001
	(D * !RESET_B * SCD * !SCE * !Q)	0.01335	0.03249	0.35218
	(D * !RESET_B * SCD * !SCE * !Q)	0.01912	0.03826	0.35796
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01335	0.03249	0.35218
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01912	0.03826	0.35796
	(!D * RESET_B * SCD * SCE * Q)	0.01717	0.03636	0.35653
	(!D * RESET_B * SCD * SCE * Q)	0.02298	0.04216	0.36232
	(!D * RESET_B * SCD * SCE * !Q)	0.02837	0.04818	0.38427
	(!D * RESET_B * SCD * SCE * !Q)	0.03392	0.05376	0.38984
	(!D * RESET_B * !SCE * Q)	0.02743	0.04708	0.37605
	(!D * RESET_B * !SCE * Q)	0.03347	0.05312	0.38206
	(!D * RESET_B * !SCD * SCE * Q)	0.02908	0.04885	0.37845
	(!D * RESET_B * !SCD * SCE * Q)	0.03513	0.05490	0.38449
	(!D * !SCE * !Q)	0.01336	0.03250	0.35267
	(!D * !SCE * !Q)	0.01913	0.03832	0.35846
	(!D * !SCD * SCE * !Q)	0.01492	0.03406	0.35423
	(!D * !SCD * SCE * !Q)	0.02069	0.03988	0.36002
	(!D * !RESET_B * SCD * SCE * !Q)	0.01491	0.03405	0.35422
	(!D * !RESET_B * SCD * SCE * !Q)	0.02068	0.03983	0.36001

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.02152	0.04069	0.36034
	(D * RESET_B * SCD * SCE * Q)	0.02733	0.04648	0.36613
	(D * RESET_B * SCD * SCE * !Q)	0.02964	0.04946	0.38561
	(D * RESET_B * SCD * SCE * !Q)	0.03516	0.05502	0.39115
	(D * RESET_B * SCD * !SCE * Q)	0.02070	0.03986	0.35951
	(D * RESET_B * SCD * !SCE * Q)	0.02651	0.04566	0.36530
	(D * RESET_B * SCD * !SCE * !Q)	0.02893	0.04871	0.38451
	(D * RESET_B * SCD * !SCE * !Q)	0.03446	0.05428	0.39006
	(D * RESET_B * !SCD * SCE * Q)	0.03395	0.05366	0.38275
	(D * RESET_B * !SCD * SCE * Q)	0.04003	0.05974	0.38882
	(D * RESET_B * !SCD * !SCE * Q)	0.02217	0.04134	0.36098
	(D * RESET_B * !SCD * !SCE * Q)	0.02798	0.04713	0.36677
	(D * RESET_B * !SCD * !SCE * !Q)	0.03037	0.05014	0.38591
	(D * RESET_B * !SCD * !SCE * !Q)	0.03590	0.05571	0.39147
	(D * !SCD * SCE * !Q)	0.01688	0.03602	0.35570
	(D * !SCD * SCE * !Q)	0.02265	0.04180	0.36149
	(D * !RESET_B * SCD * SCE * !Q)	0.01687	0.03599	0.35569
	(D * !RESET_B * SCD * SCE * !Q)	0.02263	0.04177	0.36147
	(D * !RESET_B * SCD * !SCE * !Q)	0.01530	0.03443	0.35412
	(D * !RESET_B * SCD * !SCE * !Q)	0.02107	0.04021	0.35991
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01530	0.03443	0.35412
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02107	0.04021	0.35991
	(!D * RESET_B * SCD * SCE * Q)	0.02226	0.04143	0.36107
	(!D * RESET_B * SCD * SCE * Q)	0.02807	0.04722	0.36686
	(!D * RESET_B * SCD * SCE * !Q)	0.03037	0.05018	0.38620
	(!D * RESET_B * SCD * SCE * !Q)	0.03591	0.05574	0.39175
	(!D * RESET_B * !SCE * Q)	0.03230	0.05196	0.38088
	(!D * RESET_B * !SCE * Q)	0.03834	0.05800	0.38692
	(!D * RESET_B * !SCD * SCE * Q)	0.03394	0.05373	0.38277
	(!D * RESET_B * !SCD * SCE * Q)	0.04000	0.05976	0.38882
	(!D * !SCE * !Q)	0.01532	0.03445	0.35414
	(!D * !SCE * !Q)	0.02109	0.04024	0.35993
	(!D * !SCD * SCE * !Q)	0.01688	0.03601	0.35570
	(!D * !SCD * SCE * !Q)	0.02264	0.04179	0.36149
	(!D * !RESET_B * SCD * SCE * !Q)	0.01687	0.03599	0.35569
	(!D * !RESET_B * SCD * SCE * !Q)	0.02263	0.04177	0.36147

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00195	0.00216	0.00414	0.00359	0.00300	1.63729	1.56368
sky130_fd_sc_hs__sdfsbp_2	0.00202	0.00210	0.00433	0.00365	0.00303	3.35028	3.36234

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	774.21100	1026.91000
sky130_fd_sc_hs__sdfsbp_2	0.00000	840.94700	1508.62000

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)	0.17344	0.52503	5.26849
	SET_B->Q (FR)	0.15197	0.71212	8.21763
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.19411	0.46462	5.34538
	SET_B->Q (FR)	0.20524	0.68377	8.31936

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.15779	0.35717	2.45407
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.17046	0.34456	2.71897

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)	0.13586	0.51894	5.39009
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.13009	0.42693	5.41172

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)	0.13946	0.38266	2.35488
	SET_B->Q_N (FF)	0.11702	0.56446	5.27015
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.14190	0.35288	2.75034
	SET_B->Q_N (FF)	0.14432	0.57932	5.70759

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)	-0.06509	-0.14059	-0.96045
	setup	CLK (R)	0.09261	0.15862	0.95846
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08286	-0.15702	-0.95282
	setup	CLK (R)	0.11349	0.17915	0.96240

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)	-0.06279	-0.15866	-3.10126
	setup	CLK (R)	0.12787	0.23342	3.09960
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08415	-0.16964	-2.85482
	setup	CLK (R)	0.15066	0.25165	3.01627

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)	-0.06509	-0.14059	-0.96045
	setup	CLK (R)	0.09261	0.15862	0.95846
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08286	-0.15702	-0.95282
	setup	CLK (R)	0.11349	0.17915	0.96240

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)	-0.06279	-0.15866	-3.10126
	setup	CLK (R)	0.12787	0.23342	3.09960
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08415	-0.16964	-2.85482
	setup	CLK (R)	0.15066	0.25165	3.01627

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)	-0.08281	-0.14551	-0.93866
	setup	CLK (R)	0.11406	0.16627	0.93976
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09744	-0.15733	-0.88953
	setup	CLK (R)	0.13347	0.18477	0.90674

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)	-0.08625	-0.16762	-3.12174
	setup	CLK (R)	0.15822	0.24312	3.12722
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10462	-0.18182	-2.90382
	setup	CLK (R)	0.18350	0.26685	3.06047

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)	-0.08281	-0.14551	-0.93866
	hold	CLK (R)	-0.08393	-0.15015	-0.94631
	setup	CLK (R)	0.10816	0.16441	0.93741
	setup	CLK (R)	0.11406	0.16627	0.93976
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09744	-0.15733	-0.88953
	hold	CLK (R)	-0.10213	-0.16251	-0.89714
	setup	CLK (R)	0.13156	0.17942	0.89987
	setup	CLK (R)	0.13347	0.18477	0.90674

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)	-0.09006	-0.17045	-3.12174
	hold	CLK (R)	-0.08625	-0.16762	-3.12900
	setup	CLK (R)	0.15822	0.24312	3.12392
	setup	CLK (R)	0.15726	0.24193	3.12722
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11226	-0.18386	-2.90557
	hold	CLK (R)	-0.10462	-0.18182	-2.90382
	setup	CLK (R)	0.18350	0.26488	3.05986
	setup	CLK (R)	0.18235	0.26685	3.06047

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)	-0.07498	-0.10726	-0.49639
	setup	CLK (R)	0.15840	0.17701	1.13845
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09007	-0.11747	-0.36902
	setup	CLK (R)	0.18679	0.19800	1.18114

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)	-0.07420	-0.15115	-2.91272
	setup	CLK (R)	0.13828	0.22726	2.91921
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09299	-0.15719	-2.61298
	setup	CLK (R)	0.15966	0.24092	2.77401

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)	-0.09098	-0.10726	-0.49639
	hold	CLK (R)	-0.07498	-0.14847	-1.13804
	setup	CLK (R)	0.15840	0.17701	0.51354
	setup	CLK (R)	0.10089	0.16841	1.13845
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11096	-0.11747	-0.36902
	hold	CLK (R)	-0.09007	-0.16800	-1.17179
	setup	CLK (R)	0.18679	0.19800	0.43776
	setup	CLK (R)	0.12147	0.19040	1.18114

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)	-0.10156	-0.21261	-2.91272
	hold	CLK (R)	-0.07420	-0.15115	-2.92005
	setup	CLK (R)	0.12688	0.22726	2.90395
	setup	CLK (R)	0.13828	0.22205	2.91921
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11820	-0.22090	-2.75941
	hold	CLK (R)	-0.09299	-0.15719	-2.61298
	setup	CLK (R)	0.15035	0.24092	2.76837
	setup	CLK (R)	0.15966	0.24031	2.77401

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)	-0.05629	-0.08154	-0.22309
	removal	CLK (R)	0.07688	0.10311	0.39227
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.08737	-0.13087	-0.43740
	removal	CLK (R)	0.10226	0.16259	2.05577

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)	-0.05633	-0.08154	-0.22309
	recovery	CLK (R)	-0.05629	-0.08158	-0.22705
	recovery	CLK (R)	-0.05645	-0.08168	-0.22589
	removal	CLK (R)	0.07688	0.10311	0.39227
	removal	CLK (R)	0.07688	0.10311	0.39227
	removal	CLK (R)	0.07688	0.10311	0.39227
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.08737	-0.13087	-0.43740
	recovery	CLK (R)	-0.08737	-0.13087	-0.43740
	recovery	CLK (R)	-0.08737	-0.13087	-0.43740
	removal	CLK (R)	0.10226	0.16259	2.04806
	removal	CLK (R)	0.10226	0.16259	2.03246
	removal	CLK (R)	0.10171	0.16259	2.05577

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 ()	0.12870	0.58472	16.50020
	min_pulse_width	SET_B ()	0.11768	0.58472	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.14852	0.58472	16.50020
	min_pulse_width	SET_B ()	0.15734	0.58472	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 ()	0.10447	0.58472	16.50020
	min_pulse_width	CLK ()	0.07142	0.58472	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.10667	0.58472	16.50020
	min_pulse_width	CLK ()	0.07362	0.58472	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 ()	0.10667	0.58472	16.50020
	min_pulse_width	CLK ()	0.13971	0.58472	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.13751	0.58472	16.50020
	min_pulse_width	CLK ()	0.17496	0.58472	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	0.03627	0.04357	0.21392
	CLK	0.03354	0.04074	0.21104
	SET_B	0.02599	0.03192	0.14058
	SET_B	0.02941	0.03535	0.14352
sky130_fd_sc_hs__sdfsbp_2	CLK	0.04465	0.05119	0.23882
	CLK	0.04182	0.04828	0.23552
	SET_B	0.03453	0.03630	0.14485
	SET_B	0.03798	0.03976	0.14816

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.02521	0.03388	0.19518
	CLK	0.02232	0.03096	0.19219
sky130_fd_sc_hs__sdfsbp_2	CLK	0.03600	0.04431	0.21324
	CLK	0.03315	0.04143	0.20994

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.02861	0.03730	0.20000
	CLK	0.02571	0.03436	0.19704
sky130_fd_sc_hs__sdfsbp_2	CLK	0.04123	0.04950	0.21975
	CLK	0.03838	0.04665	0.21645

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.03030	0.03754	0.20731
	CLK	0.02757	0.03477	0.20446
	SET_B	0.02121	0.02715	0.13579
	SET_B	0.02463	0.03057	0.13834
sky130_fd_sc_hs__sdfsbp_2	CLK	0.03968	0.04617	0.23217
	CLK	0.03684	0.04328	0.22911
	SET_B	0.03065	0.03240	0.14051
	SET_B	0.03410	0.03583	0.14377

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(CLK * SCD * SCE)	0.00972	0.00975	0.00985
	(CLK * SCD * SCE)	0.00749	0.00748	0.00760
	(CLK * !SCE)	0.01275	0.02032	0.15134
	(CLK * !SCE)	0.00867	0.01623	0.14725
	(CLK * !SCD * SCE)	0.00833	0.00834	0.00832
	(CLK * !SCD * SCE)	0.00580	0.00579	0.00577
	(!CLK * SCD * SCE)	0.00957	0.00959	0.00969
	(!CLK * SCD * SCE)	0.00733	0.00732	0.00744
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.02215	0.02913	0.17011
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01764	0.02460	0.16559
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01893	0.02490	0.15282
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01428	0.02023	0.14815
	(!CLK * !SCD * SCE)	0.00838	0.00838	0.00836
	(!CLK * !SCD * SCE)	0.00585	0.00584	0.00582

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.01105	0.01109	0.01117
	(CLK * SCD * SCE)	0.00875	0.00874	0.00886
	(CLK * !SCE)	0.01422	0.02179	0.15448
	(CLK * !SCE)	0.01006	0.01764	0.15033
	(CLK * !SCD * SCE)	0.00914	0.00914	0.00912
	(CLK * !SCD * SCE)	0.00654	0.00652	0.00651
	(!CLK * SCD * SCE)	0.00881	0.00882	0.00893
	(!CLK * SCD * SCE)	0.00650	0.00650	0.00662
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.02346	0.03020	0.17219
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01907	0.02579	0.16779
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.02014	0.02587	0.15433
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01558	0.02129	0.14976
	(!CLK * !SCD * SCE)	0.00761	0.00762	0.00759
	(!CLK * !SCD * SCE)	0.00501	0.00500	0.00499

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00752	0.00747	0.00705
	(CLK * SCD * SCE)	0.00977	0.00975	0.00931
	(CLK * !SCE)	0.00686	0.01500	0.14736
	(CLK * !SCE)	0.01093	0.01909	0.15144
	(CLK * !SCD * SCE)	0.00678	0.00677	0.00678
	(CLK * !SCD * SCE)	0.00932	0.00932	0.00932
	(!CLK * SCD * SCE)	0.00736	0.00731	0.00689
	(!CLK * SCD * SCE)	0.00961	0.00959	0.00915
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01677	0.02441	0.16685
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.02128	0.02894	0.17137
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01103	0.01783	0.14768
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01570	0.02252	0.15234
	(!CLK * !SCD * SCE)	0.00683	0.00682	0.00683
	(!CLK * !SCD * SCE)	0.00938	0.00938	0.00937

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00865	0.00861	0.00818
	(CLK * SCD * SCE)	0.01097	0.01095	0.01051
	(CLK * !SCE)	0.00779	0.01595	0.15036
	(CLK * !SCE)	0.01194	0.02011	0.15451
	(CLK * !SCD * SCE)	0.00749	0.00749	0.00750
	(CLK * !SCD * SCE)	0.01011	0.01011	0.01011
	(!CLK * SCD * SCE)	0.00640	0.00636	0.00594
	(!CLK * SCD * SCE)	0.00873	0.00870	0.00827
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01900	0.02638	0.17000
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.02339	0.03079	0.17440
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01266	0.01921	0.14983
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01723	0.02380	0.15440
	(!CLK * !SCD * SCE)	0.00597	0.00595	0.00597
	(!CLK * !SCD * SCE)	0.00859	0.00860	0.00858

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.01606	0.02282	0.15208
	(CLK * D * SCE)	0.01013	0.01689	0.14616
	(CLK * !D * SCE)	0.01781	0.02412	0.15276
	(CLK * !D * SCE)	0.01166	0.01797	0.14663
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02532	0.03180	0.16979
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01896	0.02544	0.16343
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.02205	0.02770	0.15412
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01554	0.02120	0.14762
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02708	0.03329	0.17096
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02049	0.02670	0.16437
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.02380	0.02911	0.15482
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01707	0.02238	0.14808
	!SCE	0.00960	0.00940	0.01043
	!SCE	0.00620	0.00599	0.00703

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.01732	0.02408	0.15319
	(CLK * D * SCE)	0.01149	0.01822	0.14735
	(CLK * !D * SCE)	0.01908	0.02539	0.15388
	(CLK * !D * SCE)	0.01302	0.01932	0.14781
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02645	0.03278	0.16988
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02038	0.02668	0.16380
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.02309	0.02861	0.15398
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01685	0.02235	0.14774
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02822	0.03423	0.17097
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02192	0.02791	0.16467
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.02484	0.03003	0.15467
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01838	0.02354	0.14820
	!SCE	0.01073	0.01053	0.01156
	!SCE	0.00742	0.00722	0.00825

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00998	0.01684	0.14668
	(CLK * D * SCE)	0.01589	0.02279	0.15257
	(CLK * !D * SCE)	0.00939	0.01652	0.14686
	(CLK * !D * SCE)	0.01554	0.02268	0.15296
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02022	0.02659	0.16503
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02657	0.03297	0.17136
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01429	0.02002	0.14772
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.02079	0.02656	0.15420
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01976	0.02636	0.16562
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02632	0.03294	0.17218
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01372	0.01964	0.14788
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.02044	0.02639	0.15459
	!SCE	0.00710	0.00707	0.00680
	!SCE	0.01052	0.01047	0.01022

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.01098	0.01784	0.14792
	(CLK * D * SCE)	0.01683	0.02370	0.15373
	(CLK * !D * SCE)	0.01040	0.01751	0.14808
	(CLK * !D * SCE)	0.01647	0.02358	0.15412
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02253	0.02860	0.16625
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02862	0.03469	0.17230
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01595	0.02144	0.14829
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.02222	0.02771	0.15449
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02207	0.02833	0.16670
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02838	0.03464	0.17298
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01538	0.02102	0.14841
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.02186	0.02750	0.15486
	!SCE	0.00844	0.00839	0.00814
	!SCE	0.01175	0.01173	0.01146

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)**	0.01519	0.02569	0.20288
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00769	0.01824	0.19542
	(CLK * D * !SCD)	0.01763	0.02878	0.22097
	(CLK * D * !SCD)	0.01245	0.02359	0.21575
	(CLK * !D * SCD)	0.02087	0.03812	0.33166
	(CLK * !D * SCD)	0.01152	0.02875	0.32234
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.01504	0.02553	0.20272
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00754	0.01808	0.19526
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02737	0.03856	0.23040
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02263	0.03380	0.22561
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02146	0.03266	0.22332
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01687	0.02805	0.21871
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.03029	0.04732	0.35143
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02051	0.03753	0.34165
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02704	0.04313	0.33402
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01711	0.03316	0.32410
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.01418	0.02474	0.20125
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00731	0.01791	0.19440

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.01669	0.02741	0.20761
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00893	0.01965	0.19992
	(CLK * D * !SCD)	0.01880	0.03017	0.22551
	(CLK * D * !SCD)	0.01338	0.02473	0.22007
	(CLK * !D * SCD)	0.02249	0.04030	0.34289
	(CLK * !D * SCD)	0.01287	0.03067	0.33330
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.01445	0.02516	0.20537
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00669	0.01741	0.19767
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02988	0.04121	0.23579
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02471	0.03601	0.23056
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02330	0.03466	0.22797
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01830	0.02965	0.22292
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.03176	0.04918	0.36161
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02190	0.03931	0.35176
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02839	0.04479	0.34388
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01838	0.03475	0.33387
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.01353	0.02428	0.20370
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00643	0.01721	0.19660

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)**	0.00681	0.01818	0.19623
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01427	0.02564	0.20370
	(CLK * D * !SCD)	0.01393	0.02521	0.21431
	(CLK * D * !SCD)	0.01912	0.03036	0.21926
	(CLK * !D * SCD)	0.00730	0.02517	0.32152
	(CLK * !D * SCD)	0.01663	0.03455	0.33087
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00666	0.01800	0.19607
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.01412	0.02547	0.20354
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02329	0.03432	0.22246
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02804	0.03910	0.22699
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02006	0.03104	0.21792
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02466	0.03568	0.22229
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01721	0.03438	0.33866
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02698	0.04420	0.34846
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01148	0.02802	0.32164
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02140	0.03800	0.33158
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00616	0.01744	0.19553
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.01299	0.02430	0.20239

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00782	0.01939	0.20052
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01552	0.02711	0.20825
	(CLK * D * !SCD)	0.01502	0.02644	0.21848
	(CLK * D * !SCD)	0.02047	0.03182	0.22370
	(CLK * !D * SCD)	0.00823	0.02663	0.33252
	(CLK * !D * SCD)	0.01783	0.03624	0.34213
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00558	0.01713	0.19827
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.01328	0.02487	0.20600
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02422	0.03542	0.22611
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02941	0.04064	0.23109
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02089	0.03204	0.22145
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02591	0.03706	0.22625
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01942	0.03679	0.34966
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02927	0.04667	0.35949
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01310	0.02986	0.33178
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02312	0.03991	0.34179
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00521	0.01672	0.19769
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.01231	0.02384	0.20479

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)	0.01160	0.01163	0.01161
	(CLK * Q * !Q_N)	0.00521	0.00519	0.00520
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.01163	0.01167	0.01165
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00525	0.00524	0.00524
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.01449	0.02080	0.13450
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00784	0.01411	0.12783
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.01085	0.01088	0.01086
	(CLK * Q * !Q_N)	0.00429	0.00428	0.00429
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.01079	0.01082	0.01080
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00422	0.00422	0.00422
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.01405	0.02025	0.13287
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00719	0.01337	0.12601

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)	0.00490	0.00482	0.00481
	(CLK * Q * !Q_N)	0.01133	0.01125	0.01121
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00462	0.00447	0.00445
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.01106	0.01091	0.01085
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00708	0.01414	0.12825
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.01377	0.02084	0.13491
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00404	0.00393	0.00391
	(CLK * Q * !Q_N)	0.01058	0.01053	0.01048
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00380	0.00362	0.00359
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.01035	0.01023	0.01016
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00603	0.01298	0.12601
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.01285	0.01986	0.13286

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)	0.02613	0.04384	0.36555
	(D * SCD * SCE * Q * !Q_N)	0.02051	0.03820	0.35993
	(D * !SCE * Q * !Q_N)	0.02531	0.04302	0.36473
	(D * !SCE * Q * !Q_N)	0.01969	0.03738	0.35911
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02289	0.04056	0.36214
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01728	0.03491	0.35653
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04481	0.06312	0.38557
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03863	0.05694	0.37938
	(!D * SCD * SCE * Q * !Q_N)	0.02687	0.04458	0.36629
	(!D * SCD * SCE * Q * !Q_N)	0.02125	0.03894	0.36066
	(!D * !SCE * SET_B * !Q * Q_N)	0.02134	0.03900	0.36058
	(!D * !SCE * SET_B * !Q * Q_N)	0.01572	0.03335	0.35497
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04324	0.06157	0.38400
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03704	0.05533	0.37779
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02289	0.04055	0.36224
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01727	0.03490	0.35661
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04485	0.06311	0.38557
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03866	0.05691	0.37937

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.03075	0.04931	0.38764
	(D * SCD * SCE * Q * !Q_N)	0.02509	0.04363	0.38196
	(D * !SCE * Q * !Q_N)	0.02992	0.04849	0.38682
	(D * !SCE * Q * !Q_N)	0.02426	0.04281	0.38114
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.03150	0.04994	0.38732
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02583	0.04425	0.38162
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.07919	0.09923	0.44171
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.07314	0.09313	0.43565
	(!D * SCD * SCE * Q * !Q_N)	0.03148	0.05005	0.38838
	(!D * SCD * SCE * Q * !Q_N)	0.02582	0.04437	0.38270
	(!D * !SCE * SET_B * !Q * Q_N)	0.02994	0.04841	0.38576
	(!D * !SCE * SET_B * !Q * Q_N)	0.02427	0.04270	0.38006
	(!D * !SCE * !SET_B * Q * !Q_N)	0.07763	0.09768	0.44014
	(!D * !SCE * !SET_B * Q * !Q_N)	0.07156	0.09156	0.43406
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.03150	0.04996	0.38731
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02583	0.04425	0.38162
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.07929	0.09919	0.44186
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.07323	0.09309	0.43577

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)**	0.02548	0.04560	0.38600
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.03069	0.05080	0.39120
	(D * SCD * SCE * Q * !Q_N)	0.01806	0.03756	0.36227
	(D * SCD * SCE * Q * !Q_N)	0.02366	0.04321	0.36790
	(D * !SCE * SET_B * !Q * Q_N)	0.02465	0.04477	0.38515
	(D * !SCE * SET_B * !Q * Q_N)	0.02987	0.05000	0.39035
	(D * !SCE * Q * !Q_N)	0.01724	0.03674	0.36145
	(D * !SCE * Q * !Q_N)	0.02284	0.04239	0.36708
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02941	0.04939	0.37809
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.03548	0.05547	0.38420
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01492	0.03452	0.35941
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02056	0.04017	0.36505
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02384	0.04378	0.37248
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03003	0.05000	0.37871
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02619	0.04631	0.38669
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.03141	0.05151	0.39189
	(!D * SCD * SCE * Q * !Q_N)	0.01880	0.03830	0.36301
	(!D * SCD * SCE * Q * !Q_N)	0.02440	0.04395	0.36864
	(!D * !SCE * SET_B * Q * !Q_N)	0.02784	0.04782	0.37663
	(!D * !SCE * SET_B * Q * !Q_N)	0.03388	0.05391	0.38271
	(!D * !SCE * SET_B * !Q * Q_N)	0.01336	0.03296	0.35785
	(!D * !SCE * SET_B * !Q * Q_N)	0.01900	0.03861	0.36349
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02227	0.04222	0.37106
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02846	0.04846	0.37728
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02939	0.04937	0.37810
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.03544	0.05544	0.38419
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01491	0.03452	0.35936
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02056	0.04016	0.36500
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02384	0.04378	0.37250
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03003	0.05000	0.37873

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.03575	0.05584	0.41831
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.04118	0.06128	0.42376
	(D * SCD * SCE * Q * !Q_N)	0.01956	0.03926	0.37685
	(D * SCD * SCE * Q * !Q_N)	0.02522	0.04497	0.38254
	(D * !SCE * SET_B * !Q * Q_N)	0.03493	0.05500	0.41730
	(D * !SCE * SET_B * !Q * Q_N)	0.04036	0.06046	0.42276
	(D * !SCE * Q * !Q_N)	0.01873	0.03842	0.37603
	(D * !SCE * Q * !Q_N)	0.02440	0.04412	0.38172
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.03477	0.05495	0.39742
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.04071	0.06090	0.40338
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01848	0.03824	0.37695
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02415	0.04395	0.38264
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02838	0.04856	0.39091
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03446	0.05467	0.39700
sky130_fd_sc_hs__sdfsbp_2	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.03646	0.05654	0.41809
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.04189	0.06199	0.42355
	(!D * SCD * SCE * Q * !Q_N)	0.02029	0.04000	0.37759
	(!D * SCD * SCE * Q * !Q_N)	0.02596	0.04571	0.38328
	(!D * !SCE * SET_B * Q * !Q_N)	0.03311	0.05332	0.39584
	(!D * !SCE * SET_B * Q * !Q_N)	0.03903	0.05927	0.40178
	(!D * !SCE * SET_B * !Q * Q_N)	0.01692	0.03668	0.37539
	(!D * !SCE * SET_B * !Q * Q_N)	0.02259	0.04239	0.38108
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02682	0.04699	0.38935
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03290	0.05311	0.39544
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.03478	0.05493	0.39744
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.04070	0.06089	0.40339
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01848	0.03824	0.37694
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02415	0.04395	0.38264
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02839	0.04855	0.39093
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03447	0.05466	0.39704

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00194	0.00217	0.00412	0.00350	0.00298	1.64320
sky130_fd_sc_hs__sdfstp_2	0.00194	0.00213	0.00412	0.00360	0.00299	3.33526
sky130_fd_sc_hs__sdfstp_4	0.00194	0.00217	0.00418	0.00361	0.00299	6.14731

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfstp_1	0.00000	693.63800	907.42800
sky130_fd_sc_hs__sdfstp_2	0.00000	679.63100	1502.51000
sky130_fd_sc_hs__sdfstp_4	0.00000	1150.82000	1738.62000

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)	0.14528	0.49815	5.22518
	SET_B->Q (FR)	0.17527	0.72536	8.16002
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.13758	0.40199	5.14758
	SET_B->Q (FR)	0.14892	0.62159	8.19971
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.16189	0.36557	5.06856
	SET_B->Q (FR)	0.18007	0.59643	8.11963

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.14820	0.34835	2.47006
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.15314	0.31860	2.57302
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.15653	0.28996	2.53021

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)	-0.06539	-0.14052	-0.95237
	setup	CLK (R)	0.09245	0.15862	0.94559
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08096	-0.15607	-0.99918
	setup	CLK (R)	0.11164	0.17727	0.99415
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08228	-0.15807	-1.00478
	setup	CLK (R)	0.11036	0.17698	1.00268

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)	-0.05817	-0.15144	-3.08397
	setup	CLK (R)	0.12302	0.22925	3.09023
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.06965	-0.15948	-3.10980
	setup	CLK (R)	0.14504	0.24973	3.14594
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.07130	-0.16443	-3.08192
	setup	CLK (R)	0.14085	0.24885	3.14873

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)	-0.06539	-0.14052	-0.95237
	setup	CLK (R)	0.09245	0.15862	0.94559
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08096	-0.15607	-0.99918
	setup	CLK (R)	0.11164	0.17727	0.99415
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08228	-0.15807	-1.00478
	setup	CLK (R)	0.11036	0.17698	1.00268

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)	-0.05817	-0.15144	-3.08397
	setup	CLK (R)	0.12302	0.22925	3.09023
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.06965	-0.15948	-3.10980
	setup	CLK (R)	0.14504	0.24973	3.14594
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.07130	-0.16443	-3.08192
	setup	CLK (R)	0.14085	0.24885	3.14873

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)	-0.08196	-0.14581	-0.92969
	setup	CLK (R)	0.11507	0.16821	0.93260
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10002	-0.16096	-0.96453
	setup	CLK (R)	0.13075	0.18580	0.97032
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09670	-0.16166	-0.96583
	setup	CLK (R)	0.13234	0.18438	0.97144

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)	-0.07836	-0.16170	-3.10703
	setup	CLK (R)	0.15244	0.24124	3.11775
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09233	-0.17064	-3.12976
	setup	CLK (R)	0.17398	0.25915	3.16662
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09375	-0.17497	-3.10251
	setup	CLK (R)	0.17256	0.25834	3.16839

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)	-0.08196	-0.14581	-0.92969
	hold	CLK (R)	-0.08810	-0.15069	-0.93673
	setup	CLK (R)	0.10891	0.16262	0.92640
	setup	CLK (R)	0.11507	0.16821	0.93260
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10002	-0.16096	-0.96453
	hold	CLK (R)	-0.10276	-0.16625	-0.97174
	setup	CLK (R)	0.13044	0.18276	0.96534
	setup	CLK (R)	0.13075	0.18580	0.97032
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09670	-0.16166	-0.96583
	hold	CLK (R)	-0.10087	-0.16394	-0.97321
	setup	CLK (R)	0.12774	0.18228	0.96624
	setup	CLK (R)	0.13234	0.18438	0.97144

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)	-0.08194	-0.16534	-3.10703
	hold	CLK (R)	-0.07836	-0.16170	-3.11227
	setup	CLK (R)	0.15244	0.23912	3.11021
	setup	CLK (R)	0.15152	0.24124	3.11775
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09569	-0.17314	-3.12976
	hold	CLK (R)	-0.09233	-0.17064	-3.13345
	setup	CLK (R)	0.17323	0.25905	3.15766
	setup	CLK (R)	0.17398	0.25915	3.16662
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09978	-0.17777	-3.10251
	hold	CLK (R)	-0.09375	-0.17497	-3.10856
	setup	CLK (R)	0.17256	0.25834	3.16271
	setup	CLK (R)	0.17205	0.25717	3.16839

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)	-0.07502	-0.10096	-0.48069
	setup	CLK (R)	0.15542	0.17295	1.12760
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09198	-0.10621	-0.51616
	setup	CLK (R)	0.17460	0.19218	1.17357
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08857	-0.11028	-0.49323
	setup	CLK (R)	0.17327	0.19103	1.17230

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)	-0.07116	-0.14276	-2.89963
	setup	CLK (R)	0.13512	0.22726	2.90854
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08049	-0.15065	-2.91161
	setup	CLK (R)	0.15217	0.24210	2.95926
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08385	-0.15544	-2.90366
	setup	CLK (R)	0.15159	0.24166	2.96438

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)	-0.08475	-0.10096	-0.48069
	hold	CLK (R)	-0.07502	-0.14847	-1.12946
	setup	CLK (R)	0.15542	0.17295	0.50135
	setup	CLK (R)	0.10046	0.17146	1.12760
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09747	-0.10621	-0.51616
	hold	CLK (R)	-0.09198	-0.16724	-1.17113
	setup	CLK (R)	0.17460	0.19218	0.51441
	setup	CLK (R)	0.12162	0.18957	1.17357
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09955	-0.11028	-0.49323
	hold	CLK (R)	-0.08857	-0.16815	-1.16950
	setup	CLK (R)	0.17327	0.19103	0.51576
	setup	CLK (R)	0.11819	0.18839	1.17230

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)	-0.10347	-0.21223	-2.90801
	hold	CLK (R)	-0.07116	-0.14276	-2.89963
	setup	CLK (R)	0.13129	0.22726	2.90124
	setup	CLK (R)	0.13512	0.21729	2.90854
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12044	-0.22476	-2.91161
	hold	CLK (R)	-0.08049	-0.15065	-2.92436
	setup	CLK (R)	0.14790	0.24210	2.90834
	setup	CLK (R)	0.15217	0.23886	2.95926
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11798	-0.22476	-2.91757
	hold	CLK (R)	-0.08385	-0.15544	-2.90366
	setup	CLK (R)	0.14579	0.24166	2.91342
	setup	CLK (R)	0.15159	0.23826	2.96438

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)	-0.06025	-0.09117	-0.26534
	removal	CLK (R)	0.07879	0.11104	0.51737
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.09394	-0.12293	-0.21926
	removal	CLK (R)	0.14143	0.34897	6.41429
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.08881	-0.12293	-0.28548
	removal	CLK (R)	0.13343	0.31328	5.74660

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)	-0.06025	-0.09117	-0.26534
	recovery	CLK (R)	-0.06025	-0.09117	-0.26534
	recovery	CLK (R)	-0.06025	-0.09117	-0.26534
	removal	CLK (R)	0.07879	0.11104	0.51337
	removal	CLK (R)	0.07879	0.11104	0.51737
	removal	CLK (R)	0.07879	0.11104	0.51337
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.09394	-0.12293	-0.21926
	recovery	CLK (R)	-0.09394	-0.12293	-0.21926
	recovery	CLK (R)	-0.09394	-0.12293	-0.21926
	removal	CLK (R)	0.13828	0.34897	6.41429
	removal	CLK (R)	0.13828	0.34897	6.35572
	removal	CLK (R)	0.14143	0.34897	6.36489
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.08881	-0.12293	-0.28548
	recovery	CLK (R)	-0.08881	-0.12293	-0.28948
	recovery	CLK (R)	-0.08881	-0.12293	-0.28656
	removal	CLK (R)	0.13343	0.31328	5.71260
	removal	CLK (R)	0.13343	0.31328	5.74660
	removal	CLK (R)	0.13343	0.31328	5.71218

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 ()	0.11768	0.58472	16.50020
	min_pulse_width	SET_B ()	0.09786	0.58472	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.12870	0.58472	16.50020
	min_pulse_width	SET_B ()	0.11107	0.58472	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.13090	0.58472	16.50020
	min_pulse_width	SET_B ()	0.12429	0.58472	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 ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.06261	0.58472	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.06701	0.58472	16.50020
	min_pulse_width	CLK ()	0.06481	0.58472	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.06481	0.58472	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 ()	0.10667	0.58472	16.50020
	min_pulse_width	CLK ()	0.13751	0.58472	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.13531	0.58472	16.50020
	min_pulse_width	CLK ()	0.16615	0.58472	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.13310	0.58472	16.50020
	min_pulse_width	CLK ()	0.16395	0.58472	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	0.05950	0.07755	0.41895
	CLK	0.05420	0.07225	0.41355
	SET_B	0.03935	0.05433	0.26916
	SET_B	0.04608	0.06102	0.27598
sky130_fd_sc_hs__sdfstp_2	CLK	0.06169	0.08038	0.43581
	CLK	0.05644	0.07518	0.43032
	SET_B	0.03954	0.05371	0.27316
	SET_B	0.04646	0.06066	0.28015
sky130_fd_sc_hs__sdfstp_4	CLK	0.08736	0.10429	0.45699
	CLK	0.08220	0.09912	0.45128
	SET_B	0.06742	0.07919	0.29269
	SET_B	0.07430	0.08613	0.30021

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.04581	0.06336	0.38526
	CLK	0.04004	0.05760	0.37922
sky130_fd_sc_hs__sdfstp_2	CLK	0.06045	0.07673	0.39587
	CLK	0.05479	0.07102	0.38949
sky130_fd_sc_hs__sdfstp_4	CLK	0.07607	0.09070	0.41041
	CLK	0.07028	0.08493	0.40444

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00867	0.00870	0.00880
	(CLK * SCD * SCE)	0.00645	0.00645	0.00657
	(CLK * !SCE)	0.01177	0.01935	0.15044
	(CLK * !SCE)	0.00771	0.01529	0.14638
	(CLK * !SCD * SCE)	0.00729	0.00729	0.00727
	(CLK * !SCD * SCE)	0.00478	0.00476	0.00475
	(!CLK * SCD * SCE)	0.00851	0.00853	0.00864
	(!CLK * SCD * SCE)	0.00630	0.00629	0.00641
	(!CLK * !SCE * SET_B)	0.02071	0.02772	0.16877
	(!CLK * !SCE * SET_B)	0.01631	0.02331	0.16436
	(!CLK * !SCE * !SET_B * Q)	0.01765	0.02364	0.15165
	(!CLK * !SCE * !SET_B * Q)	0.01313	0.01910	0.14711
	(!CLK * !SCD * SCE)	0.00733	0.00734	0.00732
	(!CLK * !SCD * SCE)	0.00482	0.00481	0.00479
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00681	0.00683	0.00693
	(CLK * SCD * SCE)	0.00459	0.00458	0.00470
	(CLK * !SCE)	0.00984	0.01743	0.14849
	(CLK * !SCE)	0.00580	0.01336	0.14443
	(CLK * !SCD * SCE)	0.00542	0.00543	0.00540
	(CLK * !SCD * SCE)	0.00291	0.00289	0.00288
	(!CLK * SCD * SCE)	0.00662	0.00664	0.00674
	(!CLK * SCD * SCE)	0.00440	0.00439	0.00451
	(!CLK * !SCE * SET_B)	0.02115	0.02786	0.16812
	(!CLK * !SCE * SET_B)	0.01659	0.02329	0.16355
	(!CLK * !SCE * !SET_B * Q)	0.01777	0.02348	0.15040
	(!CLK * !SCE * !SET_B * Q)	0.01308	0.01878	0.14571
	(!CLK * !SCD * SCE)	0.00547	0.00548	0.00546
	(!CLK * !SCD * SCE)	0.00296	0.00295	0.00293

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.01295	0.01297	0.01307
	(CLK * SCD * SCE)	0.01074	0.01073	0.01085
	(CLK * !SCE)	0.01616	0.02366	0.15450
	(CLK * !SCE)	0.01211	0.01960	0.15044
	(CLK * !SCD * SCE)	0.01110	0.01111	0.01108
	(CLK * !SCD * SCE)	0.00859	0.00858	0.00856
	(!CLK * SCD * SCE)	0.01174	0.01175	0.01186
	(!CLK * SCD * SCE)	0.00952	0.00952	0.00964
	(!CLK * !SCE * SET_B)	0.02614	0.03285	0.17312
	(!CLK * !SCE * SET_B)	0.02169	0.02840	0.16865
	(!CLK * !SCE * !SET_B * Q)	0.02280	0.02850	0.15541
	(!CLK * !SCE * !SET_B * Q)	0.01823	0.02390	0.15082
	(!CLK * !SCD * SCE)	0.01060	0.01061	0.01059
	(!CLK * !SCD * SCE)	0.00810	0.00809	0.00807

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00649	0.00644	0.00602
	(CLK * SCD * SCE)	0.00873	0.00870	0.00826
	(CLK * !SCE)	0.00569	0.01386	0.14630
	(CLK * !SCE)	0.00975	0.01793	0.15035
	(CLK * !SCD * SCE)	0.00574	0.00574	0.00574
	(CLK * !SCD * SCE)	0.00827	0.00827	0.00827
	(!CLK * SCD * SCE)	0.00633	0.00628	0.00586
	(!CLK * SCD * SCE)	0.00857	0.00854	0.00810
	(!CLK * !SCE * SET_B)	0.01567	0.02332	0.16582
	(!CLK * !SCE * SET_B)	0.02007	0.02775	0.17023
	(!CLK * !SCE * !SET_B * Q)	0.01013	0.01694	0.14686
	(!CLK * !SCE * !SET_B * Q)	0.01467	0.02150	0.15140
	(!CLK * !SCD * SCE)	0.00580	0.00578	0.00580
	(!CLK * !SCD * SCE)	0.00833	0.00833	0.00832
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00463	0.00458	0.00416
	(CLK * SCD * SCE)	0.00686	0.00684	0.00640
	(CLK * !SCE)	0.00390	0.01206	0.14447
	(CLK * !SCE)	0.00795	0.01613	0.14852
	(CLK * !SCD * SCE)	0.00388	0.00388	0.00388
	(CLK * !SCD * SCE)	0.00641	0.00641	0.00641
	(!CLK * SCD * SCE)	0.00443	0.00439	0.00397
	(!CLK * SCD * SCE)	0.00667	0.00665	0.00621
	(!CLK * !SCE * SET_B)	0.01577	0.02320	0.16510
	(!CLK * !SCE * SET_B)	0.02033	0.02777	0.16967
	(!CLK * !SCE * !SET_B * Q)	0.00974	0.01632	0.14537
	(!CLK * !SCE * !SET_B * Q)	0.01444	0.02103	0.15006
	(!CLK * !SCD * SCE)	0.00394	0.00393	0.00394
	(!CLK * !SCD * SCE)	0.00647	0.00648	0.00647

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.01078	0.01073	0.01031
	(CLK * SCD * SCE)	0.01301	0.01298	0.01255
	(CLK * !SCE)	0.00971	0.01782	0.15041
	(CLK * !SCE)	0.01376	0.02188	0.15447
	(CLK * !SCD * SCE)	0.00955	0.00954	0.00955
	(CLK * !SCD * SCE)	0.01208	0.01208	0.01207
	(!CLK * SCD * SCE)	0.00956	0.00952	0.00909
	(!CLK * SCD * SCE)	0.01179	0.01177	0.01133
	(!CLK * !SCE * SET_B)	0.02101	0.02844	0.17034
	(!CLK * !SCE * SET_B)	0.02547	0.03289	0.17480
	(!CLK * !SCE * !SET_B * Q)	0.01502	0.02158	0.15061
	(!CLK * !SCE * !SET_B * Q)	0.01960	0.02617	0.15519
	(!CLK * !SCD * SCE)	0.00907	0.00905	0.00907
	(!CLK * !SCD * SCE)	0.01159	0.01160	0.01159

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.01507	0.02183	0.15099
	(CLK * D * SCE)	0.00914	0.01589	0.14507
	(CLK * !D * SCE)	0.01682	0.02312	0.15167
	(CLK * !D * SCE)	0.01067	0.01698	0.14554
	(!CLK * D * SCE * SET_B)	0.02388	0.03037	0.16825
	(!CLK * D * SCE * SET_B)	0.01760	0.02410	0.16198
	(!CLK * D * SCE * !SET_B * Q)	0.02077	0.02643	0.15277
	(!CLK * D * SCE * !SET_B * Q)	0.01437	0.02003	0.14637
	(!CLK * !D * SCE * SET_B)	0.02565	0.03187	0.16945
	(!CLK * !D * SCE * SET_B)	0.01915	0.02536	0.16295
	(!CLK * !D * SCE * !SET_B * Q)	0.02252	0.02784	0.15346
	(!CLK * !D * SCE * !SET_B * Q)	0.01590	0.02121	0.14684
	!SCE	0.00855	0.00835	0.00938
	!SCE	0.00514	0.00494	0.00597
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.01310	0.01985	0.14908
	(CLK * D * SCE)	0.00723	0.01397	0.14321
	(CLK * !D * SCE)	0.01485	0.02115	0.14976
	(CLK * !D * SCE)	0.00876	0.01506	0.14368
	(!CLK * D * SCE * SET_B)	0.02427	0.03060	0.16787
	(!CLK * D * SCE * SET_B)	0.01789	0.02420	0.16150
	(!CLK * D * SCE * !SET_B * Q)	0.02084	0.02634	0.15183
	(!CLK * D * SCE * !SET_B * Q)	0.01434	0.01983	0.14532
	(!CLK * !D * SCE * SET_B)	0.02602	0.03204	0.16902
	(!CLK * !D * SCE * SET_B)	0.01942	0.02542	0.16241
	(!CLK * !D * SCE * !SET_B * Q)	0.02260	0.02777	0.15252
	(!CLK * !D * SCE * !SET_B * Q)	0.01587	0.02102	0.14578
	!SCE	0.00663	0.00646	0.00747
	!SCE	0.00329	0.00307	0.00411

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.01946	0.02617	0.15516
	(CLK * D * SCE)	0.01354	0.02022	0.14924
	(CLK * !D * SCE)	0.02122	0.02748	0.15586
	(CLK * !D * SCE)	0.01507	0.02131	0.14971
	(!CLK * D * SCE * SET_B)	0.02929	0.03558	0.17291
	(!CLK * D * SCE * SET_B)	0.02296	0.02925	0.16659
	(!CLK * D * SCE * !SET_B * Q)	0.02592	0.03135	0.15687
	(!CLK * D * SCE * !SET_B * Q)	0.01946	0.02490	0.15042
	(!CLK * !D * SCE * SET_B)	0.03105	0.03705	0.17400
	(!CLK * !D * SCE * SET_B)	0.02450	0.03049	0.16745
	(!CLK * !D * SCE * !SET_B * Q)	0.02767	0.03280	0.15755
	(!CLK * !D * SCE * !SET_B * Q)	0.02099	0.02614	0.15088
	!SCE	0.01283	0.01263	0.01366
	!SCE	0.00942	0.00921	0.01025

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00882	0.01570	0.14545
	(CLK * D * SCE)	0.01476	0.02165	0.15134
	(CLK * !D * SCE)	0.00824	0.01539	0.14563
	(CLK * !D * SCE)	0.01440	0.02154	0.15174
	(!CLK * D * SCE * SET_B)	0.01912	0.02549	0.16386
	(!CLK * D * SCE * SET_B)	0.02541	0.03179	0.17010
	(!CLK * D * SCE * !SET_B * Q)	0.01338	0.01913	0.14673
	(!CLK * D * SCE * !SET_B * Q)	0.01980	0.02556	0.15310
	(!CLK * !D * SCE * SET_B)	0.01865	0.02527	0.16442
	(!CLK * !D * SCE * SET_B)	0.02515	0.03178	0.17091
	(!CLK * !D * SCE * !SET_B * Q)	0.01281	0.01874	0.14689
	(!CLK * !D * SCE * !SET_B * Q)	0.01945	0.02538	0.15349
	!SCE	0.00608	0.00604	0.00578
	!SCE	0.00949	0.00945	0.00919
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00711	0.01399	0.14380
	(CLK * D * SCE)	0.01299	0.01989	0.14964
	(CLK * !D * SCE)	0.00653	0.01368	0.14395
	(CLK * !D * SCE)	0.01263	0.01978	0.15003
	(!CLK * D * SCE * SET_B)	0.01931	0.02545	0.16330
	(!CLK * D * SCE * SET_B)	0.02570	0.03183	0.16965
	(!CLK * D * SCE * !SET_B * Q)	0.01307	0.01860	0.14558
	(!CLK * D * SCE * !SET_B * Q)	0.01960	0.02514	0.15207
	(!CLK * !D * SCE * SET_B)	0.01885	0.02520	0.16383
	(!CLK * !D * SCE * SET_B)	0.02546	0.03182	0.17041
	(!CLK * !D * SCE * !SET_B * Q)	0.01250	0.01820	0.14571
	(!CLK * !D * SCE * !SET_B * Q)	0.01924	0.02496	0.15242
	!SCE	0.00426	0.00422	0.00395
	!SCE	0.00763	0.00758	0.00733

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.01284	0.01968	0.14968
	(CLK * D * SCE)	0.01877	0.02563	0.15557
	(CLK * !D * SCE)	0.01226	0.01936	0.14983
	(CLK * !D * SCE)	0.01841	0.02552	0.15596
	(!CLK * D * SCE * SET_B)	0.02448	0.03061	0.16845
	(!CLK * D * SCE * SET_B)	0.03082	0.03694	0.17474
	(!CLK * D * SCE * !SET_B * Q)	0.01827	0.02379	0.15074
	(!CLK * D * SCE * !SET_B * Q)	0.02474	0.03027	0.15717
	(!CLK * !D * SCE * SET_B)	0.02402	0.03035	0.16898
	(!CLK * !D * SCE * SET_B)	0.03057	0.03692	0.17551
	(!CLK * !D * SCE * !SET_B * Q)	0.01770	0.02339	0.15088
	(!CLK * !D * SCE * !SET_B * Q)	0.02439	0.03009	0.15753
	!SCE	0.01036	0.01032	0.01006
	!SCE	0.01378	0.01374	0.01348

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

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

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01417	0.02466	0.20184
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00669	0.01723	0.19441
	(CLK * D * !SCD)	0.01649	0.02767	0.21985
	(CLK * D * !SCD)	0.01135	0.02249	0.21464
	(CLK * !D * SCD)	0.01990	0.03716	0.33069
	(CLK * !D * SCD)	0.01058	0.02782	0.32139
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.01402	0.02450	0.20169
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00653	0.01708	0.19425
sky130_fd_sc_hs__sdfstp_1	**(!CLK * D * !SCD * SET_B)**	0.02631	0.03749	0.22933
	(!CLK * D * !SCD * SET_B)	0.02151	0.03267	0.22448
	(!CLK * D * !SCD * !SET_B * Q)	0.02058	0.03179	0.22244
	(!CLK * D * !SCD * !SET_B * Q)	0.01592	0.02709	0.21774
	(!CLK * !D * SCD * SET_B)	0.02886	0.04592	0.35001
	(!CLK * !D * SCD * SET_B)	0.01920	0.03624	0.34035
	(!CLK * !D * SCD * !SET_B * Q)	0.02577	0.04185	0.33278
	(!CLK * !D * SCD * !SET_B * Q)	0.01599	0.03205	0.32299
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01317	0.02373	0.20024
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00632	0.01692	0.19341

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01232	0.02281	0.19979
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00483	0.01532	0.19235
	(CLK * D * !SCD)	0.01476	0.02591	0.21790
	(CLK * D * !SCD)	0.00959	0.02070	0.21267
	(CLK * !D * SCD)	0.01798	0.03521	0.32851
	(CLK * !D * SCD)	0.00867	0.02586	0.31920
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.01213	0.02258	0.19959
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00464	0.01515	0.19215
sky130_fd_sc_hs__sdfstp_2	**(!CLK * D * !SCD * SET_B)**	0.02647	0.03759	0.22899
	(!CLK * D * !SCD * SET_B)	0.02180	0.03291	0.22426
	(!CLK * D * !SCD * !SET_B * Q)	0.02023	0.03139	0.22157
	(!CLK * D * !SCD * !SET_B * Q)	0.01570	0.02683	0.21698
	(!CLK * !D * SCD * SET_B)	0.02929	0.04624	0.34944
	(!CLK * !D * SCD * SET_B)	0.01947	0.03638	0.33961
	(!CLK * !D * SCD * !SET_B * Q)	0.02589	0.04177	0.33156
	(!CLK * !D * SCD * !SET_B * Q)	0.01594	0.03178	0.32160
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01133	0.02187	0.19821
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00449	0.01504	0.19136

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.01852	0.02899	0.20617
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01096	0.02149	0.19867
	(CLK * D * !SCD)	0.02055	0.03171	0.22403
	(CLK * D * !SCD)	0.01532	0.02645	0.21875
	(CLK * !D * SCD)	0.02436	0.04157	0.33489
	(CLK * !D * SCD)	0.01498	0.03215	0.32552
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.01731	0.02777	0.20496
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00975	0.02028	0.19745
	(!CLK * D * !SCD * SET_B)	0.03171	0.04282	0.23441
	(!CLK * D * !SCD * SET_B)	0.02688	0.03798	0.22955
	(!CLK * D * !SCD * !SET_B * Q)	0.02551	0.03666	0.22703
	(!CLK * D * !SCD * !SET_B * Q)	0.02081	0.03193	0.22229
	(!CLK * !D * SCD * SET_B)	0.03434	0.05128	0.35477
	(!CLK * !D * SCD * SET_B)	0.02456	0.04147	0.34498
	(!CLK * !D * SCD * !SET_B * Q)	0.03098	0.04685	0.33692
	(!CLK * !D * SCD * !SET_B * Q)	0.02107	0.03690	0.32699
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01650	0.02705	0.20357
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00960	0.02016	0.19666

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

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

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00581	0.01714	0.19518
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01324	0.02461	0.20264
	(CLK * D * !SCD)	0.01298	0.02424	0.21333
	(CLK * D * !SCD)	0.01817	0.02937	0.21827
	(CLK * !D * SCD)	0.00614	0.02402	0.32036
	(CLK * !D * SCD)	0.01546	0.03335	0.32968
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00565	0.01695	0.19503
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.01308	0.02441	0.20248
sky130_fd_sc_hs__sdfstp_1	**(!CLK * D * !SCD * SET_B)**	0.02189	0.03289	0.22107
	(!CLK * D * !SCD * SET_B)	0.02672	0.03775	0.22569
	(!CLK * D * !SCD * !SET_B * Q)	0.01882	0.02978	0.21666
	(!CLK * D * !SCD * !SET_B * Q)	0.02352	0.03450	0.22112
	(!CLK * !D * SCD * SET_B)	0.01610	0.03328	0.33755
	(!CLK * !D * SCD * SET_B)	0.02577	0.04297	0.34723
	(!CLK * !D * SCD * !SET_B * Q)	0.01058	0.02713	0.32073
	(!CLK * !D * SCD * !SET_B * Q)	0.02039	0.03693	0.33054
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00513	0.01638	0.19447
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01195	0.02323	0.20130

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00393	0.01527	0.19314
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01138	0.02272	0.20060
	(CLK * D * !SCD)	0.01104	0.02230	0.21124
	(CLK * D * !SCD)	0.01626	0.02745	0.21621
	(CLK * !D * SCD)	0.00434	0.02221	0.31833
	(CLK * !D * SCD)	0.01367	0.03157	0.32765
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00374	0.01506	0.19295
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.01121	0.02252	0.20041
sky130_fd_sc_hs__sdfstp_2	**(!CLK * D * !SCD * SET_B)**	0.02229	0.03329	0.22074
	(!CLK * D * !SCD * SET_B)	0.02700	0.03799	0.22521
	(!CLK * D * !SCD * !SET_B * Q)	0.01890	0.02987	0.21606
	(!CLK * D * !SCD * !SET_B * Q)	0.02349	0.03442	0.22039
	(!CLK * !D * SCD * SET_B)	0.01622	0.03314	0.33652
	(!CLK * !D * SCD * SET_B)	0.02606	0.04299	0.34636
	(!CLK * !D * SCD * !SET_B * Q)	0.01019	0.02651	0.31902
	(!CLK * !D * SCD * !SET_B * Q)	0.02016	0.03648	0.32899
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00326	0.01451	0.19243
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01009	0.02137	0.19928

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01001	0.02137	0.19942
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01754	0.02889	0.20695
	(CLK * D * !SCD)	0.01730	0.02854	0.21734
	(CLK * D * !SCD)	0.02258	0.03373	0.22238
	(CLK * !D * SCD)	0.01011	0.02792	0.32451
	(CLK * !D * SCD)	0.01951	0.03736	0.33391
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00882	0.02014	0.19821
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.01632	0.02767	0.20574
sky130_fd_sc_hs__sdfstp_4	**(!CLK * D * !SCD * SET_B)**	0.02723	0.03823	0.22581
	(!CLK * D * !SCD * SET_B)	0.03207	0.04310	0.23043
	(!CLK * D * !SCD * !SET_B * Q)	0.02389	0.03485	0.22116
	(!CLK * D * !SCD * !SET_B * Q)	0.02861	0.03957	0.22567
	(!CLK * !D * SCD * SET_B)	0.02141	0.03834	0.34197
	(!CLK * !D * SCD * SET_B)	0.03121	0.04816	0.35178
	(!CLK * !D * SCD * !SET_B * Q)	0.01542	0.03173	0.32449
	(!CLK * !D * SCD * !SET_B * Q)	0.02535	0.04171	0.33443
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00834	0.01960	0.19770
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.01523	0.02653	0.20461

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.01031	0.01035	0.01033
	(CLK * Q)	0.00415	0.00413	0.00414
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.01043	0.01046	0.01043
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00423	0.00422	0.00424
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01320	0.01956	0.13319
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00677	0.01312	0.12676
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00877	0.00879	0.00879
	(CLK * Q)	0.00233	0.00232	0.00234
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00889	0.00893	0.00892
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00248	0.00246	0.00247
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01166	0.01802	0.13245
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00498	0.01132	0.12577

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.01365	0.01367	0.01366
	(CLK * Q)	0.00732	0.00731	0.00732
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.01375	0.01379	0.01377
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00743	0.00742	0.00743
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01659	0.02287	0.13567
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01003	0.01627	0.12908

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00411	0.00402	0.00401
	(CLK * Q)	0.01032	0.01024	0.01019
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00377	0.00361	0.00359
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00999	0.00984	0.00978
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00600	0.01312	0.12710
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01244	0.01955	0.13352

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00197	0.00185	0.00182
	(CLK * Q)	0.00838	0.00833	0.00827
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00153	0.00134	0.00131
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00794	0.00782	0.00776
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00406	0.01119	0.12599
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01077	0.01787	0.13266
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00733	0.00721	0.00719
	(CLK * Q)	0.01364	0.01358	0.01353
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00692	0.00673	0.00670
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.01323	0.01310	0.01304
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00934	0.01633	0.12951
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.01588	0.02294	0.13609

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)**	0.02520	0.04301	0.36418
	(D * SCD * SCE * Q)	0.01968	0.03745	0.35865
	(D * !SCE * Q)	0.02438	0.04220	0.36336
	(D * !SCE * Q)	0.01885	0.03663	0.35783
	(D * !SCD * SCE * SET_B * !Q)	0.02284	0.04048	0.36175
	(D * !SCD * SCE * SET_B * !Q)	0.01731	0.03492	0.35621
	(D * !SCD * SCE * !SET_B * Q)	0.04341	0.06173	0.38351
	(D * !SCD * SCE * !SET_B * Q)	0.03742	0.05572	0.37753
	(!D * SCD * SCE * Q)	0.02594	0.04375	0.36492
	(!D * SCD * SCE * Q)	0.02041	0.03819	0.35939
	(!D * !SCE * SET_B * !Q)	0.02128	0.03892	0.36019
	(!D * !SCE * SET_B * !Q)	0.01575	0.03336	0.35465
	(!D * !SCE * !SET_B * Q)	0.04183	0.06015	0.38193
	(!D * !SCE * !SET_B * Q)	0.03583	0.05413	0.37594
	(!D * !SCD * SCE * SET_B * !Q)	0.02284	0.04047	0.36174
	(!D * !SCD * SCE * SET_B * !Q)	0.01730	0.03491	0.35620
	(!D * !SCD * SCE * !SET_B * Q)	0.04345	0.06170	0.38350
	(!D * !SCD * SCE * !SET_B * Q)	0.03745	0.05569	0.37752

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.02608	0.04326	0.36405
	(D * SCD * SCE * Q)	0.02061	0.03777	0.35856
	(D * !SCE * Q)	0.02526	0.04244	0.36323
	(D * !SCE * Q)	0.01979	0.03695	0.35774
	(D * !SCD * SCE * SET_B * !Q)	0.02961	0.04664	0.36647
	(D * !SCD * SCE * SET_B * !Q)	0.02410	0.04111	0.36098
	(D * !SCD * SCE * !SET_B * Q)	0.06359	0.08203	0.40695
	(D * !SCD * SCE * !SET_B * Q)	0.05756	0.07598	0.40091
	(!D * SCD * SCE * Q)	0.02681	0.04400	0.36478
	(!D * SCD * SCE * Q)	0.02135	0.03851	0.35931
	(!D * !SCE * SET_B * !Q)	0.02805	0.04508	0.36491
	(!D * !SCE * SET_B * !Q)	0.02254	0.03955	0.35942
	(!D * !SCE * !SET_B * Q)	0.06202	0.08046	0.40538
	(!D * !SCE * !SET_B * Q)	0.05597	0.07439	0.39932
	(!D * !SCD * SCE * SET_B * !Q)	0.02960	0.04663	0.36647
	(!D * !SCD * SCE * SET_B * !Q)	0.02410	0.04110	0.36097
	(!D * !SCD * SCE * !SET_B * Q)	0.06366	0.08202	0.40696
	(!D * !SCD * SCE * !SET_B * Q)	0.05762	0.07595	0.40091

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.03096	0.04822	0.36909
	(D * SCD * SCE * Q)	0.02548	0.04271	0.36361
	(D * !SCE * Q)	0.03014	0.04740	0.36827
	(D * !SCE * Q)	0.02466	0.04189	0.36279
	(D * !SCD * SCE * SET_B * !Q)	0.03147	0.04857	0.36841
	(D * !SCD * SCE * SET_B * !Q)	0.02595	0.04304	0.36291
	(D * !SCD * SCE * !SET_B * Q)	0.07123	0.08992	0.41647
	(D * !SCD * SCE * !SET_B * Q)	0.06527	0.08396	0.41050
	(!D * SCD * SCE * Q)	0.03169	0.04896	0.36982
	(!D * SCD * SCE * Q)	0.02622	0.04345	0.36434
	(!D * !SCE * SET_B * !Q)	0.02991	0.04701	0.36686
	(!D * !SCE * SET_B * !Q)	0.02439	0.04148	0.36136
	(!D * !SCE * !SET_B * Q)	0.06965	0.08835	0.41490
	(!D * !SCE * !SET_B * Q)	0.06368	0.08236	0.40892
	(!D * !SCD * SCE * SET_B * !Q)	0.03146	0.04857	0.36843
	(!D * !SCD * SCE * SET_B * !Q)	0.02596	0.04303	0.36291
	(!D * !SCD * SCE * !SET_B * Q)	0.07131	0.09001	0.41647
	(!D * !SCD * SCE * !SET_B * Q)	0.06535	0.08403	0.41050

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)**	0.02505	0.04509	0.38542
	(D * SCD * SCE * SET_B * !Q)	0.03026	0.05030	0.39060
	(D * SCD * SCE * Q)	0.01694	0.03641	0.36078
	(D * SCD * SCE * Q)	0.02248	0.04197	0.36632
	(D * !SCE * SET_B * !Q)	0.02422	0.04430	0.38457
	(D * !SCE * SET_B * !Q)	0.02943	0.04952	0.38976
	(D * !SCE * Q)	0.01612	0.03559	0.35996
	(D * !SCE * Q)	0.02166	0.04115	0.36550
	(D * !SCD * SCE * SET_B * Q)	0.02846	0.04839	0.37701
	(D * !SCD * SCE * SET_B * Q)	0.03439	0.05432	0.38294
	(D * !SCD * SCE * SET_B * !Q)	0.01499	0.03452	0.35905
	(D * !SCD * SCE * SET_B * !Q)	0.02054	0.04008	0.36457
	(D * !SCD * SCE * !SET_B * Q)	0.02306	0.04297	0.37126
	(D * !SCD * SCE * !SET_B * Q)	0.02909	0.04898	0.37729
	(!D * SCD * SCE * SET_B * !Q)	0.02576	0.04580	0.38610
	(!D * SCD * SCE * SET_B * !Q)	0.03097	0.05101	0.39130
	(!D * SCD * SCE * Q)	0.01768	0.03715	0.36151
	(!D * SCD * SCE * Q)	0.02322	0.04271	0.36706
	(!D * !SCE * SET_B * Q)	0.02688	0.04682	0.37520
	(!D * !SCE * SET_B * Q)	0.03278	0.05271	0.38110
	(!D * !SCE * SET_B * !Q)	0.01343	0.03298	0.35749
	(!D * !SCE * SET_B * !Q)	0.01898	0.03855	0.36301
	(!D * !SCE * !SET_B * Q)	0.02150	0.04141	0.36969
	(!D * !SCE * !SET_B * Q)	0.02753	0.04745	0.37571
	(!D * !SCD * SCE * SET_B * Q)	0.02844	0.04837	0.37701
	(!D * !SCD * SCE * SET_B * Q)	0.03435	0.05427	0.38292
	(!D * !SCD * SCE * SET_B * !Q)	0.01499	0.03454	0.35905
	(!D * !SCD * SCE * SET_B * !Q)	0.02053	0.04011	0.36457
	(!D * !SCD * SCE * !SET_B * Q)	0.02307	0.04297	0.37128
	(!D * !SCD * SCE * !SET_B * Q)	0.02910	0.04899	0.37731

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.03451	0.05395	0.40066
	(D * SCD * SCE * SET_B * !Q)	0.03950	0.05895	0.40566
	(D * SCD * SCE * Q)	0.01671	0.03577	0.35942
	(D * SCD * SCE * Q)	0.02220	0.04128	0.36491
	(D * !SCE * SET_B * !Q)	0.03367	0.05311	0.39981
	(D * !SCE * SET_B * !Q)	0.03867	0.05811	0.40480
	(D * !SCE * Q)	0.01589	0.03495	0.35860
	(D * !SCE * Q)	0.02138	0.04046	0.36408
	(D * !SCD * SCE * SET_B * Q)	0.03077	0.05029	0.37830
	(D * !SCD * SCE * SET_B * Q)	0.03675	0.05628	0.38429
	(D * !SCD * SCE * SET_B * !Q)	0.01719	0.03633	0.36103
	(D * !SCD * SCE * SET_B * !Q)	0.02270	0.04186	0.36655
	(D * !SCD * SCE * !SET_B * Q)	0.02476	0.04427	0.37219
	(D * !SCD * SCE * !SET_B * Q)	0.03084	0.05036	0.37827
	(!D * SCD * SCE * SET_B * !Q)	0.03521	0.05458	0.40133
	(!D * SCD * SCE * SET_B * !Q)	0.04021	0.05958	0.40632
	(!D * SCD * SCE * Q)	0.01745	0.03651	0.36015
	(!D * SCD * SCE * Q)	0.02294	0.04201	0.36564
	(!D * !SCE * SET_B * Q)	0.02917	0.04870	0.37672
	(!D * !SCE * SET_B * Q)	0.03512	0.05464	0.38267
	(!D * !SCE * SET_B * !Q)	0.01563	0.03477	0.35947
	(!D * !SCE * SET_B * !Q)	0.02115	0.04030	0.36499
	(!D * !SCE * !SET_B * Q)	0.02320	0.04271	0.37081
	(!D * !SCE * !SET_B * Q)	0.02928	0.04879	0.37689
	(!D * !SCD * SCE * SET_B * Q)	0.03077	0.05027	0.37899
	(!D * !SCD * SCE * SET_B * Q)	0.03673	0.05624	0.38495
	(!D * !SCD * SCE * SET_B * !Q)	0.01718	0.03632	0.36103
	(!D * !SCD * SCE * SET_B * !Q)	0.02270	0.04184	0.36654
	(!D * !SCD * SCE * !SET_B * Q)	0.02476	0.04427	0.37288
	(!D * !SCD * SCE * !SET_B * Q)	0.03084	0.05036	0.37896

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.03598	0.05546	0.40233
	(D * SCD * SCE * SET_B * !Q)	0.04109	0.06057	0.40744
	(D * SCD * SCE * Q)	0.02158	0.04069	0.36439
	(D * SCD * SCE * Q)	0.02708	0.04620	0.36989
	(D * !SCE * SET_B * !Q)	0.03514	0.05462	0.40145
	(D * !SCE * SET_B * !Q)	0.04026	0.05974	0.40656
	(D * !SCE * Q)	0.02076	0.03987	0.36357
	(D * !SCE * Q)	0.02626	0.04537	0.36907
	(D * !SCD * SCE * SET_B * Q)	0.03540	0.05498	0.38314
	(D * !SCD * SCE * SET_B * Q)	0.04131	0.06090	0.38905
	(D * !SCD * SCE * SET_B * !Q)	0.01888	0.03806	0.36286
	(D * !SCD * SCE * SET_B * !Q)	0.02440	0.04359	0.36838
	(D * !SCD * SCE * !SET_B * Q)	0.02944	0.04901	0.37703
	(D * !SCD * SCE * !SET_B * Q)	0.03545	0.05501	0.38304
	(!D * SCD * SCE * SET_B * !Q)	0.03668	0.05608	0.40299
	(!D * SCD * SCE * SET_B * !Q)	0.04180	0.06121	0.40811
	(!D * SCD * SCE * Q)	0.02232	0.04143	0.36513
	(!D * SCD * SCE * Q)	0.02782	0.04693	0.37063
	(!D * !SCE * SET_B * Q)	0.03381	0.05339	0.38163
	(!D * !SCE * SET_B * Q)	0.03968	0.05926	0.38750
	(!D * !SCE * SET_B * !Q)	0.01732	0.03650	0.36130
	(!D * !SCE * SET_B * !Q)	0.02284	0.04203	0.36682
	(!D * !SCE * !SET_B * Q)	0.02788	0.04737	0.37561
	(!D * !SCE * !SET_B * Q)	0.03389	0.05338	0.38161
	(!D * !SCD * SCE * SET_B * Q)	0.03539	0.05496	0.38373
	(!D * !SCD * SCE * SET_B * Q)	0.04127	0.06085	0.38961
	(!D * !SCD * SCE * SET_B * !Q)	0.01887	0.03806	0.36286
	(!D * !SCD * SCE * SET_B * !Q)	0.02439	0.04359	0.36837
	(!D * !SCD * SCE * !SET_B * Q)	0.02945	0.04901	0.37773
	(!D * !SCD * SCE * !SET_B * Q)	0.03545	0.05501	0.38373

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00195	0.00199	0.00418	0.00298	1.74731	1.65597
sky130_fd_sc_hs__sdfxbp_2	0.00193	0.00196	0.00424	0.00298	3.35916	3.35169

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	988.01200	1373.43000
sky130_fd_sc_hs__sdfxbp_2	0.00000	1000.20000	1413.55000

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)	0.13642	0.49550	5.45346
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.13189	0.40577	5.32523

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.14284	0.36255	2.78591
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.15173	0.32633	2.63321

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)	0.16802	0.52924	5.44116
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.19544	0.46352	5.40980

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)	0.15908	0.36163	2.59832
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.16923	0.33233	2.74449

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)	-0.04316	-0.10707	-0.80740
	setup	CLK (R)	0.08665	0.13725	0.82734
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04423	-0.10807	-0.84207
	setup	CLK (R)	0.08412	0.13881	0.86051

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)	-0.05374	-0.14487	-2.90503
	setup	CLK (R)	0.10372	0.20741	2.94998
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05301	-0.14500	-2.94517
	setup	CLK (R)	0.10354	0.20904	2.99933

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)	-0.04316	-0.10707	-0.80740
	setup	CLK (R)	0.08665	0.13725	0.82734
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04423	-0.10807	-0.84207
	setup	CLK (R)	0.08412	0.13881	0.86051

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)	-0.05374	-0.14487	-2.90503
	setup	CLK (R)	0.10372	0.20741	2.94998
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05301	-0.14500	-2.94517
	setup	CLK (R)	0.10354	0.20904	2.99933

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)	-0.06065	-0.11104	-0.75371
	setup	CLK (R)	0.10793	0.15462	0.77465
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06018	-0.11104	-0.75514
	setup	CLK (R)	0.10695	0.15263	0.78088

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)	-0.07610	-0.16714	-3.06404
	setup	CLK (R)	0.13920	0.22536	3.10849
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07544	-0.16729	-3.17413
	setup	CLK (R)	0.13892	0.22882	3.21783

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)	-0.06065	-0.11104	-0.75371
	hold	CLK (R)	-0.06499	-0.11897	-0.75973
	setup	CLK (R)	0.10410	0.14978	0.76980
	setup	CLK (R)	0.10793	0.15462	0.77465
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06018	-0.11104	-0.75514
	hold	CLK (R)	-0.06226	-0.11897	-0.76234
	setup	CLK (R)	0.10131	0.14690	0.77394
	setup	CLK (R)	0.10695	0.15263	0.78088

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)	-0.08043	-0.16971	-3.06404
	hold	CLK (R)	-0.07610	-0.16714	-3.06974
	setup	CLK (R)	0.13920	0.22536	3.10447
	setup	CLK (R)	0.13737	0.22500	3.10849
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08207	-0.17103	-3.17413
	hold	CLK (R)	-0.07544	-0.16729	-3.17742
	setup	CLK (R)	0.13892	0.22882	3.21443
	setup	CLK (R)	0.13579	0.22757	3.21783

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)	-0.05288	-0.10743	-0.50940
	setup	CLK (R)	0.13944	0.16164	1.11698
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04998	-0.11058	-0.54912
	setup	CLK (R)	0.13934	0.16247	1.11601

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)	-0.06307	-0.13041	-2.38011
	setup	CLK (R)	0.12432	0.20821	2.74569
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06586	-0.13496	-2.55352
	setup	CLK (R)	0.12150	0.21211	2.79053

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)	-0.08181	-0.10743	-0.50940
	hold	CLK (R)	-0.05288	-0.11897	-1.08521
	setup	CLK (R)	0.13944	0.16164	0.52559
	setup	CLK (R)	0.09611	0.15662	1.11698
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08577	-0.11058	-0.54912
	hold	CLK (R)	-0.04998	-0.11897	-1.09259
	setup	CLK (R)	0.13934	0.16247	0.56707
	setup	CLK (R)	0.09627	0.15462	1.11601

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)	-0.08121	-0.18242	-2.73315
	hold	CLK (R)	-0.06307	-0.13041	-2.38011
	setup	CLK (R)	0.12432	0.20821	2.74569
	setup	CLK (R)	0.11415	0.19473	2.58919
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08315	-0.18638	-2.77492
	hold	CLK (R)	-0.06586	-0.13496	-2.55352
	setup	CLK (R)	0.12150	0.21211	2.79053
	setup	CLK (R)	0.11588	0.19778	2.69204

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 ()	0.06481	0.58472	16.50020
	min_pulse_width	CLK ()	0.05159	0.58472	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.06481	0.58472	16.50020
	min_pulse_width	CLK ()	0.05380	0.58472	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 ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.11768	0.58472	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.11989	0.58472	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	0.02938	0.03988	0.21905
	CLK	0.02660	0.03711	0.21598
sky130_fd_sc_hs__sdfxbp_2	CLK	0.03584	0.04585	0.22569
	CLK	0.03307	0.04304	0.22250

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.02899	0.03908	0.20928
	CLK	0.02620	0.03619	0.20630
sky130_fd_sc_hs__sdfxbp_2	CLK	0.03369	0.04245	0.21493
	CLK	0.03092	0.03965	0.21168

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.03521	0.04522	0.21671
	CLK	0.03242	0.04240	0.21364
sky130_fd_sc_hs__sdfxbp_2	CLK	0.03956	0.04830	0.22195
	CLK	0.03680	0.04551	0.21872

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.02497	0.03551	0.21367
	CLK	0.02219	0.03270	0.21073
sky130_fd_sc_hs__sdfxbp_2	CLK	0.03112	0.04112	0.21997
	CLK	0.02836	0.03831	0.21692

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.01283	0.01287	0.01296
	(CLK * SCD * SCE)	0.01052	0.01050	0.01063
	(CLK * !SCE)	0.01592	0.02355	0.15630
	(CLK * !SCE)	0.01169	0.01931	0.15206
	(CLK * !SCD * SCE)	0.01100	0.01101	0.01098
	(CLK * !SCD * SCE)	0.00838	0.00836	0.00835
	(!CLK * SCD * SCE)	0.00756	0.00760	0.00769
	(!CLK * SCD * SCE)	0.00524	0.00523	0.00536
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01865	0.02829	0.19373
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01442	0.02406	0.18949
	(!CLK * !SCD * SCE)	0.01213	0.01213	0.01210
	(!CLK * !SCD * SCE)	0.00951	0.00949	0.00947
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.01200	0.01204	0.01213
	(CLK * SCD * SCE)	0.00968	0.00967	0.00979
	(CLK * !SCE)	0.01495	0.02258	0.15528
	(CLK * !SCE)	0.01076	0.01837	0.15108
	(CLK * !SCD * SCE)	0.01018	0.01019	0.01016
	(CLK * !SCD * SCE)	0.00756	0.00755	0.00753
	(!CLK * SCD * SCE)	0.00865	0.00868	0.00877
	(!CLK * SCD * SCE)	0.00632	0.00631	0.00644
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01979	0.02941	0.19469
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01560	0.02521	0.19051
	(!CLK * !SCD * SCE)	0.01322	0.01323	0.01320
	(!CLK * !SCD * SCE)	0.01061	0.01059	0.01057

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.01044	0.01039	0.00997
	(CLK * SCD * SCE)	0.01278	0.01276	0.01232
	(CLK * !SCE)	0.00956	0.01775	0.15228
	(CLK * !SCE)	0.01379	0.02200	0.15652
	(CLK * !SCD * SCE)	0.00920	0.00919	0.00920
	(CLK * !SCD * SCE)	0.01184	0.01184	0.01184
	(!CLK * SCD * SCE)	0.00516	0.00513	0.00470
	(!CLK * SCD * SCE)	0.00751	0.00748	0.00705
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.02131	0.03020	0.18858
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.02554	0.03444	0.19281
	(!CLK * !SCD * SCE)	0.01039	0.01036	0.01038
	(!CLK * !SCD * SCE)	0.01303	0.01303	0.01301
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00957	0.00952	0.00910
	(CLK * SCD * SCE)	0.01191	0.01189	0.01145
	(CLK * !SCE)	0.00885	0.01703	0.15152
	(CLK * !SCE)	0.01304	0.02125	0.15572
	(CLK * !SCD * SCE)	0.00831	0.00831	0.00832
	(CLK * !SCD * SCE)	0.01095	0.01096	0.01095
	(!CLK * SCD * SCE)	0.00621	0.00618	0.00574
	(!CLK * SCD * SCE)	0.00856	0.00852	0.00809
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.02243	0.03130	0.18956
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.02662	0.03550	0.19375
	(!CLK * !SCD * SCE)	0.01142	0.01139	0.01141
	(!CLK * !SCD * SCE)	0.01406	0.01406	0.01404

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.01910	0.02578	0.15453
	(CLK * D * SCE)	0.01344	0.02011	0.14886
	(CLK * !D * SCE)	0.02086	0.02711	0.15523
	(CLK * !D * SCE)	0.01497	0.02120	0.14932
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.02199	0.03060	0.18985
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01633	0.02493	0.18418
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.02379	0.03206	0.19125
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01790	0.02616	0.18535
	!SCE	0.01230	0.01212	0.01311
	!SCE	0.00923	0.00900	0.01003
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.01810	0.02482	0.15399
	(CLK * D * SCE)	0.01251	0.01922	0.14839
	(CLK * !D * SCE)	0.01986	0.02615	0.15469
	(CLK * !D * SCE)	0.01403	0.02031	0.14886
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.02309	0.03171	0.19116
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01749	0.02610	0.18556
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.02487	0.03317	0.19257
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01905	0.02733	0.18674
	!SCE	0.01140	0.01121	0.01221
	!SCE	0.00834	0.00813	0.00916

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.01281	0.01963	0.14935
	(CLK * D * SCE)	0.01850	0.02532	0.15499
	(CLK * !D * SCE)	0.01223	0.01931	0.14951
	(CLK * !D * SCE)	0.01813	0.02521	0.15538
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.02519	0.03237	0.18207
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.03087	0.03807	0.18771
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.02488	0.03241	0.18327
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.03077	0.03832	0.18915
	!SCE	0.01046	0.01040	0.01015
	!SCE	0.01354	0.01353	0.01325
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.01208	0.01895	0.14910
	(CLK * D * SCE)	0.01768	0.02456	0.15467
	(CLK * !D * SCE)	0.01150	0.01862	0.14926
	(CLK * !D * SCE)	0.01732	0.02445	0.15505
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.02627	0.03346	0.18342
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.03187	0.03909	0.18899
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.02597	0.03351	0.18461
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.03178	0.03934	0.19042
	!SCE	0.00965	0.00960	0.00935
	!SCE	0.01270	0.01268	0.01241

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)**	0.01855	0.02945	0.20965
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01079	0.02167	0.20191
	(CLK * D * !SCD)	0.02044	0.03191	0.22733
	(CLK * D * !SCD)	0.01504	0.02649	0.22191
	(CLK * !D * SCD)	0.02449	0.04237	0.34508
	(CLK * !D * SCD)	0.01478	0.03265	0.33538
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.01328	0.02418	0.20438
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00552	0.01640	0.19664
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.03249	0.04377	0.23843
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02709	0.03834	0.23299
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02733	0.04761	0.38489
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01762	0.03789	0.37518
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01801	0.02888	0.20841
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01090	0.02172	0.20127

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.01796	0.02879	0.20906
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01004	0.02085	0.20116
	(CLK * D * !SCD)	0.01997	0.03139	0.22688
	(CLK * D * !SCD)	0.01437	0.02576	0.22124
	(CLK * !D * SCD)	0.02382	0.04164	0.34464
	(CLK * !D * SCD)	0.01399	0.03181	0.33482
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.01461	0.02544	0.20571
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00669	0.01749	0.19781
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.03384	0.04506	0.23978
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02824	0.03943	0.23415
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02875	0.04890	0.38638
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01892	0.03909	0.37657
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01932	0.03013	0.20973
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01205	0.02282	0.20242

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)**	0.00960	0.02109	0.20231
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01735	0.02887	0.21008
	(CLK * D * !SCD)	0.01687	0.02826	0.22035
	(CLK * D * !SCD)	0.02229	0.03359	0.22556
	(CLK * !D * SCD)	0.00993	0.02817	0.33417
	(CLK * !D * SCD)	0.01963	0.03791	0.34388
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00433	0.01583	0.19704
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.01208	0.02361	0.20481
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01959	0.03112	0.22823
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02501	0.03656	0.23341
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02167	0.04023	0.36715
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.03138	0.04994	0.37685
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00970	0.02121	0.20226
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01685	0.02836	0.20941

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00870	0.02013	0.20141
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01660	0.02806	0.20934
	(CLK * D * !SCD)	0.01589	0.02721	0.21940
	(CLK * D * !SCD)	0.02150	0.03277	0.22481
	(CLK * !D * SCD)	0.00918	0.02735	0.33365
	(CLK * !D * SCD)	0.01900	0.03722	0.34348
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00534	0.01678	0.19806
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.01325	0.02472	0.20599
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02071	0.03220	0.22937
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02633	0.03785	0.23475
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02276	0.04123	0.36828
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.03258	0.05105	0.37810
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01074	0.02219	0.20331
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.01804	0.02951	0.21061

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)	0.02308	0.04268	0.37146
	(D * SCD * SCE * Q * !Q_N)	0.01753	0.03708	0.36590
	(D * !SCE * Q * !Q_N)	0.02223	0.04183	0.37064
	(D * !SCE * Q * !Q_N)	0.01668	0.03624	0.36508
	(D * !SCD * SCE * !Q * Q_N)	0.02673	0.04632	0.37571
	(D * !SCD * SCE * !Q * Q_N)	0.02119	0.04073	0.37015
	(!D * SCD * SCE * Q * !Q_N)	0.02381	0.04342	0.37218
	(!D * SCD * SCE * Q * !Q_N)	0.01827	0.03781	0.36663
	(!D * !SCE * !Q * Q_N)	0.02518	0.04474	0.37362
	(!D * !SCE * !Q * Q_N)	0.01963	0.03916	0.36806
	(!D * !SCD * SCE * !Q * Q_N)	0.02673	0.04631	0.37570
	(!D * !SCD * SCE * !Q * Q_N)	0.02119	0.04073	0.37014
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.02447	0.04411	0.37526
	(D * SCD * SCE * Q * !Q_N)	0.01893	0.03853	0.36970
	(D * !SCE * Q * !Q_N)	0.02363	0.04329	0.37449
	(D * !SCE * Q * !Q_N)	0.01809	0.03771	0.36893
	(D * !SCD * SCE * !Q * Q_N)	0.02624	0.04588	0.37767
	(D * !SCD * SCE * !Q * Q_N)	0.02070	0.04030	0.37211
	(!D * SCD * SCE * Q * !Q_N)	0.02520	0.04485	0.37599
	(!D * SCD * SCE * Q * !Q_N)	0.01966	0.03927	0.37043
	(!D * !SCE * !Q * Q_N)	0.02469	0.04431	0.37558
	(!D * !SCE * !Q * Q_N)	0.01914	0.03873	0.37002
	(!D * !SCD * SCE * !Q * Q_N)	0.02625	0.04587	0.37766
	(!D * !SCD * SCE * !Q * Q_N)	0.02068	0.04030	0.37210

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)**	0.01596	0.03589	0.36214
	(D * SCD * SCE * Q * !Q_N)	0.02150	0.04146	0.36770
	(D * SCD * SCE * !Q * Q_N)	0.02866	0.04910	0.39178
	(D * SCD * SCE * !Q * Q_N)	0.03420	0.05466	0.39734
	(D * !SCE * Q * !Q_N)	0.01514	0.03507	0.36137
	(D * !SCE * Q * !Q_N)	0.02068	0.04065	0.36693
	(D * !SCE * !Q * Q_N)	0.02783	0.04860	0.39352
	(D * !SCE * !Q * Q_N)	0.03338	0.05417	0.39906
	(D * !SCD * SCE * Q * !Q_N)	0.03336	0.05364	0.39027
	(D * !SCD * SCE * Q * !Q_N)	0.03894	0.05925	0.39586
	(D * !SCD * SCE * !Q * Q_N)	0.02040	0.04040	0.36690
	(D * !SCD * SCE * !Q * Q_N)	0.02594	0.04599	0.37245
	(!D * SCD * SCE * Q * !Q_N)	0.01670	0.03663	0.36287
	(!D * SCD * SCE * Q * !Q_N)	0.02224	0.04220	0.36843
	(!D * SCD * SCE * !Q * Q_N)	0.02937	0.04980	0.39248
	(!D * SCD * SCE * !Q * Q_N)	0.03491	0.05536	0.39804
	(!D * !SCE * Q * !Q_N)	0.03149	0.05172	0.38690
	(!D * !SCE * Q * !Q_N)	0.03704	0.05728	0.39247
	(!D * !SCE * !Q * Q_N)	0.01879	0.03877	0.36511
	(!D * !SCE * !Q * Q_N)	0.02434	0.04434	0.37068
	(!D * !SCD * SCE * Q * !Q_N)	0.03339	0.05375	0.39043
	(!D * !SCD * SCE * Q * !Q_N)	0.03895	0.05934	0.39599
	(!D * !SCD * SCE * !Q * Q_N)	0.02039	0.04040	0.36690
	(!D * !SCD * SCE * !Q * Q_N)	0.02594	0.04596	0.37247

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01717	0.03721	0.36572
	(D * SCD * SCE * Q * !Q_N)	0.02271	0.04277	0.37127
	(D * SCD * SCE * !Q * Q_N)	0.02814	0.04881	0.39444
	(D * SCD * SCE * !Q * Q_N)	0.03367	0.05438	0.39999
	(D * !SCE * Q * !Q_N)	0.01635	0.03639	0.36502
	(D * !SCE * Q * !Q_N)	0.02189	0.04195	0.37058
	(D * !SCE * !Q * Q_N)	0.02731	0.04819	0.39431
	(D * !SCE * !Q * Q_N)	0.03285	0.05377	0.39986
	(D * !SCD * SCE * Q * !Q_N)	0.03446	0.05485	0.39363
	(D * !SCD * SCE * Q * !Q_N)	0.04004	0.06044	0.39922
	(D * !SCD * SCE * !Q * Q_N)	0.01966	0.03978	0.36856
	(D * !SCD * SCE * !Q * Q_N)	0.02520	0.04534	0.37411
	(!D * SCD * SCE * Q * !Q_N)	0.01791	0.03795	0.36645
	(!D * SCD * SCE * Q * !Q_N)	0.02345	0.04351	0.37200
	(!D * SCD * SCE * !Q * Q_N)	0.02885	0.04946	0.39513
	(!D * SCD * SCE * !Q * Q_N)	0.03439	0.05503	0.40069
	(!D * !SCE * Q * !Q_N)	0.03259	0.05287	0.39022
	(!D * !SCE * Q * !Q_N)	0.03814	0.05845	0.39579
	(!D * !SCE * !Q * Q_N)	0.01805	0.03815	0.36675
	(!D * !SCE * !Q * Q_N)	0.02359	0.04371	0.37229
	(!D * !SCD * SCE * Q * !Q_N)	0.03450	0.05491	0.39377
	(!D * !SCD * SCE * Q * !Q_N)	0.04005	0.06050	0.39936
	(!D * !SCD * SCE * !Q * Q_N)	0.01965	0.03974	0.36856
	(!D * !SCD * SCE * !Q * Q_N)	0.02519	0.04532	0.37412

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00197	0.00208	0.00433	0.00296	1.71167
sky130_fd_sc_hs__sdfxtp_2	0.00200	0.00205	0.00419	0.00299	3.22494
sky130_fd_sc_hs__sdfxtp_4	0.00198	0.00203	0.00432	0.00296	6.21466

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	853.97400	1391.91000
sky130_fd_sc_hs__sdfxtp_2	0.00000	804.55100	1169.67000
sky130_fd_sc_hs__sdfxtp_4	0.00000	1220.07000	1771.34000

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)**	0.12489	0.48454	5.41249
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.12706	0.40191	5.23283
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.15118	0.36851	5.41901

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.13546	0.34721	2.69137
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.14090	0.30886	2.54509
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.14030	0.27327	2.62548

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)	-0.04301	-0.10864	-0.80738
	setup	CLK (R)	0.08606	0.13777	0.82967
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04561	-0.10855	-0.81016
	setup	CLK (R)	0.08705	0.14005	0.83337
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04320	-0.10311	-0.80176
	setup	CLK (R)	0.08171	0.13394	0.82260

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)	-0.05563	-0.14502	-2.90162
	setup	CLK (R)	0.10662	0.21019	2.94888
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05933	-0.14887	-2.92360
	setup	CLK (R)	0.11095	0.21591	2.97251
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05405	-0.14748	-2.90707
	setup	CLK (R)	0.10822	0.20904	2.95756

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)	-0.04301	-0.10864	-0.80738
	setup	CLK (R)	0.08606	0.13777	0.82967
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04561	-0.10855	-0.81016
	setup	CLK (R)	0.08705	0.14005	0.83337
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04320	-0.10311	-0.80176
	setup	CLK (R)	0.08171	0.13394	0.82260

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)	-0.05563	-0.14502	-2.90162
	setup	CLK (R)	0.10662	0.21019	2.94888
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05933	-0.14887	-2.92360
	setup	CLK (R)	0.11095	0.21591	2.97251
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05405	-0.14748	-2.90707
	setup	CLK (R)	0.10822	0.20904	2.95756

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)	-0.05895	-0.11104	-0.75773
	setup	CLK (R)	0.11214	0.15662	0.78207
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06095	-0.11500	-0.76194
	setup	CLK (R)	0.11146	0.15862	0.78940
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05828	-0.11104	-0.74740
	setup	CLK (R)	0.10605	0.15000	0.77379

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)	-0.07944	-0.16941	-3.05483
	setup	CLK (R)	0.14097	0.23053	3.09855
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08402	-0.17276	-3.07058
	setup	CLK (R)	0.14809	0.23422	3.11901
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08183	-0.17212	-3.05477
	setup	CLK (R)	0.14303	0.22848	3.10216

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)	-0.05895	-0.11104	-0.75773
	hold	CLK (R)	-0.06613	-0.11897	-0.76382
	setup	CLK (R)	0.10635	0.15263	0.77549
	setup	CLK (R)	0.11214	0.15662	0.78207
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06095	-0.11500	-0.76194
	hold	CLK (R)	-0.06479	-0.11897	-0.76846
	setup	CLK (R)	0.11047	0.15420	0.78045
	setup	CLK (R)	0.11146	0.15862	0.78940
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05828	-0.11104	-0.74740
	hold	CLK (R)	-0.06344	-0.11897	-0.75465
	setup	CLK (R)	0.10216	0.14676	0.76543
	setup	CLK (R)	0.10605	0.15000	0.77379

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)	-0.08639	-0.17234	-3.05483
	hold	CLK (R)	-0.07944	-0.16941	-3.05605
	setup	CLK (R)	0.14097	0.23053	3.09548
	setup	CLK (R)	0.13842	0.22723	3.09855
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08714	-0.17656	-3.07058
	hold	CLK (R)	-0.08402	-0.17276	-3.07722
	setup	CLK (R)	0.14809	0.23422	3.11463
	setup	CLK (R)	0.14509	0.23316	3.11901
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08576	-0.17422	-3.05477
	hold	CLK (R)	-0.08183	-0.17212	-3.06118
	setup	CLK (R)	0.14303	0.22848	3.09940
	setup	CLK (R)	0.14121	0.22757	3.10216

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)	-0.05195	-0.11310	-0.50158
	setup	CLK (R)	0.14254	0.16500	1.12345
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05221	-0.11435	-0.50981
	setup	CLK (R)	0.14784	0.16770	1.12910
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05169	-0.11490	-0.50640
	setup	CLK (R)	0.14511	0.16414	1.11128

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)	-0.06539	-0.13296	-2.34326
	setup	CLK (R)	0.12631	0.21402	2.75592
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06738	-0.13537	-2.36803
	setup	CLK (R)	0.12790	0.21270	2.75472
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06786	-0.13550	-2.37882
	setup	CLK (R)	0.12077	0.20821	2.74775

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)	-0.08413	-0.11310	-0.50158
	hold	CLK (R)	-0.05195	-0.11897	-1.09271
	setup	CLK (R)	0.14254	0.16500	0.52177
	setup	CLK (R)	0.09873	0.15862	1.12345
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08667	-0.11435	-0.50981
	hold	CLK (R)	-0.05221	-0.12017	-1.09493
	setup	CLK (R)	0.14784	0.16770	0.52853
	setup	CLK (R)	0.09990	0.16062	1.12910
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08557	-0.11490	-0.50640
	hold	CLK (R)	-0.05169	-0.11897	-1.07975
	setup	CLK (R)	0.14511	0.16414	0.52730
	setup	CLK (R)	0.09462	0.15462	1.11128

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)	-0.08327	-0.18742	-2.74222
	hold	CLK (R)	-0.06539	-0.13296	-2.34326
	setup	CLK (R)	0.12631	0.21402	2.75592
	setup	CLK (R)	0.11853	0.19941	2.57220
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08430	-0.18638	-2.74226
	hold	CLK (R)	-0.06738	-0.13537	-2.36803
	setup	CLK (R)	0.12790	0.21270	2.75472
	setup	CLK (R)	0.12227	0.20375	2.59729
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08240	-0.18638	-2.73195
	hold	CLK (R)	-0.06786	-0.13550	-2.37882
	setup	CLK (R)	0.12077	0.20821	2.74775
	setup	CLK (R)	0.11947	0.19873	2.58594

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 ()	0.06041	0.58472	16.50020
	min_pulse_width	CLK ()	0.05159	0.58472	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.06261	0.58472	16.50020
	min_pulse_width	CLK ()	0.05380	0.58472	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.08244	0.58472	16.50020
	min_pulse_width	CLK ()	0.05600	0.58472	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 ()	0.10226	0.58472	16.50020
	min_pulse_width	CLK ()	0.11768	0.58472	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.10447	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.09786	0.58472	16.50020
	min_pulse_width	CLK ()	0.11989	0.58472	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	0.05216	0.07346	0.42866
	CLK	0.04666	0.06797	0.42358
sky130_fd_sc_hs__sdfxtp_2	CLK	0.05158	0.07248	0.42844
	CLK	0.04603	0.06697	0.42332
sky130_fd_sc_hs__sdfxtp_4	CLK	0.07822	0.09657	0.45144
	CLK	0.07270	0.09106	0.44741

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.04333	0.06392	0.40823
	CLK	0.03782	0.05841	0.40227
sky130_fd_sc_hs__sdfxtp_2	CLK	0.05068	0.06998	0.41236
	CLK	0.04514	0.06434	0.40632
sky130_fd_sc_hs__sdfxtp_4	CLK	0.06583	0.08360	0.42797
	CLK	0.06031	0.07804	0.42262

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00970	0.00972	0.00983
	(CLK * SCD * SCE)	0.00734	0.00733	0.00745
	(CLK * !SCE)	0.01277	0.02036	0.15294
	(CLK * !SCE)	0.00843	0.01601	0.14860
	(CLK * !SCD * SCE)	0.00786	0.00787	0.00784
	(CLK * !SCD * SCE)	0.00520	0.00519	0.00517
	(!CLK * SCD * SCE)	0.00845	0.00849	0.00858
	(!CLK * SCD * SCE)	0.00609	0.00607	0.00620
	(!CLK * !SCE)	0.01980	0.02942	0.19477
	(!CLK * !SCE)	0.01546	0.02507	0.19043
	(!CLK * !SCD * SCE)	0.01304	0.01305	0.01302
	(!CLK * !SCD * SCE)	0.01039	0.01037	0.01035
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.01080	0.01084	0.01093
	(CLK * SCD * SCE)	0.00838	0.00837	0.00850
	(CLK * !SCE)	0.01422	0.02169	0.15430
	(CLK * !SCE)	0.00981	0.01727	0.14988
	(CLK * !SCD * SCE)	0.00895	0.00895	0.00893
	(CLK * !SCD * SCE)	0.00622	0.00622	0.00620
	(!CLK * SCD * SCE)	0.00660	0.00664	0.00673
	(!CLK * SCD * SCE)	0.00419	0.00417	0.00430
	(!CLK * !SCE)	0.01887	0.02836	0.19344
	(!CLK * !SCE)	0.01445	0.02392	0.18902
	(!CLK * !SCD * SCE)	0.01115	0.01115	0.01112
	(!CLK * !SCD * SCE)	0.00842	0.00842	0.00840

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.01285	0.01289	0.01298
	(CLK * SCD * SCE)	0.01047	0.01046	0.01059
	(CLK * !SCE)	0.01590	0.02351	0.15622
	(CLK * !SCE)	0.01157	0.01917	0.15189
	(CLK * !SCD * SCE)	0.01102	0.01103	0.01100
	(CLK * !SCD * SCE)	0.00834	0.00832	0.00831
	(!CLK * SCD * SCE)	0.01171	0.01175	0.01183
	(!CLK * SCD * SCE)	0.00932	0.00931	0.00944
	(!CLK * !SCE)	0.02301	0.03261	0.19790
	(!CLK * !SCE)	0.01868	0.02826	0.19357
	(!CLK * !SCD * SCE)	0.01638	0.01638	0.01636
	(!CLK * !SCD * SCE)	0.01370	0.01368	0.01367

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00721	0.00716	0.00674
	(CLK * SCD * SCE)	0.00959	0.00957	0.00913
	(CLK * !SCE)	0.00649	0.01464	0.14901
	(CLK * !SCE)	0.01083	0.01900	0.15336
	(CLK * !SCD * SCE)	0.00598	0.00598	0.00598
	(CLK * !SCD * SCE)	0.00866	0.00865	0.00865
	(!CLK * SCD * SCE)	0.00596	0.00591	0.00549
	(!CLK * SCD * SCE)	0.00834	0.00832	0.00788
	(!CLK * !SCE)	0.02206	0.03093	0.18917
	(!CLK * !SCE)	0.02640	0.03528	0.19351
	(!CLK * !SCD * SCE)	0.01123	0.01120	0.01122
	(!CLK * !SCD * SCE)	0.01390	0.01391	0.01389

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00821	0.00816	0.00774
	(CLK * SCD * SCE)	0.01064	0.01062	0.01018
	(CLK * !SCE)	0.00761	0.01568	0.15007
	(CLK * !SCE)	0.01205	0.02010	0.15449
	(CLK * !SCD * SCE)	0.00699	0.00698	0.00699
	(CLK * !SCD * SCE)	0.00972	0.00973	0.00972
	(!CLK * SCD * SCE)	0.00400	0.00397	0.00354
	(!CLK * SCD * SCE)	0.00644	0.00641	0.00598
	(!CLK * !SCE)	0.02035	0.02911	0.18714
	(!CLK * !SCE)	0.02478	0.03355	0.19156
	(!CLK * !SCD * SCE)	0.00925	0.00922	0.00924
	(!CLK * !SCD * SCE)	0.01198	0.01199	0.01197
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.01031	0.01026	0.00984
	(CLK * SCD * SCE)	0.01271	0.01269	0.01225
	(CLK * !SCE)	0.00956	0.01773	0.15223
	(CLK * !SCE)	0.01388	0.02208	0.15656
	(CLK * !SCD * SCE)	0.00907	0.00907	0.00908
	(CLK * !SCD * SCE)	0.01177	0.01178	0.01177
	(!CLK * SCD * SCE)	0.00916	0.00913	0.00869
	(!CLK * SCD * SCE)	0.01157	0.01153	0.01110
	(!CLK * !SCE)	0.02571	0.03451	0.19265
	(!CLK * !SCE)	0.03003	0.03886	0.19698
	(!CLK * !SCD * SCE)	0.01450	0.01447	0.01449
	(!CLK * !SCD * SCE)	0.01720	0.01720	0.01718

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.01607	0.02269	0.15102
	(CLK * D * SCE)	0.01022	0.01683	0.14517
	(CLK * !D * SCE)	0.01782	0.02401	0.15172
	(CLK * !D * SCE)	0.01175	0.01792	0.14563
	(!CLK * D * SCE)	0.02327	0.03183	0.19076
	(!CLK * D * SCE)	0.01742	0.02596	0.18491
	(!CLK * !D * SCE)	0.02506	0.03328	0.19216
	(!CLK * !D * SCE)	0.01898	0.02720	0.18608
	!SCE	0.00915	0.00896	0.00996
	!SCE	0.00596	0.00574	0.00676
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.01730	0.02386	0.15223
	(CLK * D * SCE)	0.01149	0.01804	0.14642
	(CLK * !D * SCE)	0.01906	0.02518	0.15293
	(CLK * !D * SCE)	0.01302	0.01915	0.14689
	(!CLK * D * SCE)	0.02211	0.03057	0.18931
	(!CLK * D * SCE)	0.01630	0.02475	0.18350
	(!CLK * !D * SCE)	0.02390	0.03203	0.19070
	(!CLK * !D * SCE)	0.01787	0.02599	0.18466
	!SCE	0.01019	0.01001	0.01102
	!SCE	0.00707	0.00685	0.00789
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.01914	0.02581	0.15453
	(CLK * D * SCE)	0.01341	0.02005	0.14879
	(CLK * !D * SCE)	0.02089	0.02713	0.15523
	(CLK * !D * SCE)	0.01493	0.02115	0.14925
	(!CLK * D * SCE)	0.02641	0.03498	0.19411
	(!CLK * D * SCE)	0.02068	0.02922	0.18837
	(!CLK * !D * SCE)	0.02820	0.03644	0.19552
	(!CLK * !D * SCE)	0.02224	0.03045	0.18955
	!SCE	0.01224	0.01206	0.01305
	!SCE	0.00912	0.00890	0.00993

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00966	0.01640	0.14572
	(CLK * D * SCE)	0.01552	0.02228	0.15154
	(CLK * !D * SCE)	0.00907	0.01608	0.14587
	(CLK * !D * SCE)	0.01515	0.02217	0.15193
	(!CLK * D * SCE)	0.02587	0.03302	0.18231
	(!CLK * D * SCE)	0.03173	0.03888	0.18813
	(!CLK * !D * SCE)	0.02556	0.03304	0.18350
	(!CLK * !D * SCE)	0.03164	0.03913	0.18956
	!SCE	0.00725	0.00720	0.00694
	!SCE	0.01044	0.01042	0.01015
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.01089	0.01761	0.14696
	(CLK * D * SCE)	0.01672	0.02344	0.15274
	(CLK * !D * SCE)	0.01031	0.01728	0.14712
	(CLK * !D * SCE)	0.01635	0.02332	0.15313
	(!CLK * D * SCE)	0.02423	0.03135	0.18049
	(!CLK * D * SCE)	0.03005	0.03719	0.18628
	(!CLK * !D * SCE)	0.02396	0.03135	0.18169
	(!CLK * !D * SCE)	0.03000	0.03741	0.18771
	!SCE	0.00828	0.00823	0.00798
	!SCE	0.01142	0.01139	0.01112

sky130_fd_sc_hs__sdfxtp_4	(CLK * D * SCE)	0.01276	0.01955	0.14926
	(CLK * D * SCE)	0.01852	0.02532	0.15498
	(CLK * !D * SCE)	0.01218	0.01923	0.14942
	(CLK * !D * SCE)	0.01815	0.02520	0.15537
	(!CLK * D * SCE)	0.02949	0.03662	0.18612
	(!CLK * D * SCE)	0.03524	0.04239	0.19184
	(!CLK * !D * SCE)	0.02918	0.03665	0.18732
	(!CLK * !D * SCE)	0.03515	0.04263	0.19326
	!SCE	0.01041	0.01037	0.01010
	!SCE	0.01353	0.01350	0.01324

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)	0.01576	0.02656	0.20691
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00760	0.01837	0.19877
	(CLK * D * !SCD)	0.01775	0.02913	0.22465
	(CLK * D * !SCD)	0.01205	0.02338	0.21888
	(CLK * !D * SCD)	0.02173	0.03950	0.34201
	(CLK * !D * SCD)	0.01155	0.02931	0.33185
	(!CLK * D * SCD)	0.01451	0.02531	0.20566
	(!CLK * D * SCD)	0.00635	0.01711	0.19752
	(!CLK * D * !SCD)	0.03363	0.04480	0.23959
	(!CLK * D * !SCD)	0.02790	0.03906	0.23382
	(!CLK * !D * SCD)	0.02887	0.04904	0.38627
	(!CLK * !D * SCD)	0.01869	0.03885	0.37610
	(!CLK * !D * !SCD)	0.01927	0.03015	0.20972
	(!CLK * !D * !SCD)	0.01175	0.02261	0.20217

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.01652	0.02739	0.20757
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00864	0.01949	0.19972
	(CLK * D * !SCD)	0.01865	0.03009	0.22547
	(CLK * D * !SCD)	0.01326	0.02465	0.22002
	(CLK * !D * SCD)	0.02281	0.04077	0.34287
	(CLK * !D * SCD)	0.01289	0.03085	0.33297
	(!CLK * D * SCD)	0.01232	0.02319	0.20337
	(!CLK * D * SCD)	0.00444	0.01529	0.19553
	(!CLK * D * !SCD)	0.03170	0.04296	0.23755
	(!CLK * D * !SCD)	0.02630	0.03752	0.23210
	(!CLK * !D * SCD)	0.02756	0.04767	0.38446
	(!CLK * !D * SCD)	0.01764	0.03774	0.37455
	(!CLK * !D * !SCD)	0.01712	0.02795	0.20747
	(!CLK * !D * !SCD)	0.00987	0.02067	0.20022
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.01887	0.02963	0.20976
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01074	0.02147	0.20164
	(CLK * D * !SCD)	0.02082	0.03216	0.22748
	(CLK * D * !SCD)	0.01507	0.02638	0.22170
	(CLK * !D * SCD)	0.02486	0.04259	0.34511
	(CLK * !D * SCD)	0.01473	0.03246	0.33499
	(!CLK * D * SCD)	0.01772	0.02849	0.20862
	(!CLK * D * SCD)	0.00959	0.02032	0.20050
	(!CLK * D * !SCD)	0.03721	0.04835	0.24285
	(!CLK * D * !SCD)	0.03146	0.04259	0.23708
	(!CLK * !D * SCD)	0.03207	0.05215	0.38919
	(!CLK * !D * SCD)	0.02195	0.04200	0.37908
	(!CLK * !D * !SCD)	0.02255	0.03343	0.21274
	(!CLK * !D * !SCD)	0.01505	0.02591	0.20522

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)	0.00639	0.01777	0.19914
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01453	0.02594	0.20730
	(CLK * D * !SCD)	0.01374	0.02499	0.21717
	(CLK * D * !SCD)	0.01946	0.03070	0.22271
	(CLK * !D * SCD)	0.00681	0.02489	0.33071
	(CLK * !D * SCD)	0.01699	0.03510	0.34089
	(!CLK * D * SCD)	0.00514	0.01653	0.19788
	(!CLK * D * SCD)	0.01328	0.02471	0.20605
	(!CLK * D * !SCD)	0.02075	0.03220	0.22941
	(!CLK * D * !SCD)	0.02647	0.03797	0.23492
	(!CLK * !D * SCD)	0.02240	0.04078	0.36753
	(!CLK * !D * SCD)	0.03255	0.05097	0.37771
	(!CLK * !D * !SCD)	0.01058	0.02198	0.20316
	(!CLK * !D * !SCD)	0.01809	0.02952	0.21071

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00745	0.01891	0.20013
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01531	0.02680	0.20800
	(CLK * D * !SCD)	0.01513	0.02642	0.21841
	(CLK * D * !SCD)	0.02056	0.03181	0.22364
	(CLK * !D * SCD)	0.00795	0.02604	0.33168
	(CLK * !D * SCD)	0.01786	0.03599	0.34160
	(!CLK * D * SCD)	0.00326	0.01472	0.19593
	(!CLK * D * SCD)	0.01112	0.02261	0.20381
	(!CLK * D * !SCD)	0.01976	0.03124	0.22819
	(!CLK * D * !SCD)	0.02519	0.03669	0.23341
	(!CLK * !D * SCD)	0.02069	0.03907	0.36545
	(!CLK * !D * SCD)	0.03060	0.04901	0.37537
	(!CLK * !D * !SCD)	0.00860	0.02007	0.20111
	(!CLK * !D * !SCD)	0.01585	0.02732	0.20837
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00955	0.02093	0.20207
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.01768	0.02909	0.21022
	(CLK * D * !SCD)	0.01688	0.02818	0.22017
	(CLK * D * !SCD)	0.02266	0.03388	0.22573
	(CLK * !D * SCD)	0.00993	0.02803	0.33384
	(CLK * !D * SCD)	0.02005	0.03818	0.34397
	(!CLK * D * SCD)	0.00841	0.01979	0.20092
	(!CLK * D * SCD)	0.01653	0.02795	0.20907
	(!CLK * D * !SCD)	0.02398	0.03544	0.23248
	(!CLK * D * !SCD)	0.02976	0.04121	0.23802
	(!CLK * !D * SCD)	0.02605	0.04443	0.37097
	(!CLK * !D * SCD)	0.03616	0.05454	0.38107
	(!CLK * !D * !SCD)	0.01390	0.02531	0.20628
	(!CLK * !D * !SCD)	0.02144	0.03286	0.21381

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)	0.02374	0.04329	0.37153
	(D * SCD * SCE * Q)	0.01825	0.03777	0.36602
	(D * !SCE * Q)	0.02289	0.04245	0.37069
	(D * !SCE * Q)	0.01740	0.03693	0.36518
	(D * !SCD * SCE * !Q)	0.02355	0.04309	0.37192
	(D * !SCD * SCE * !Q)	0.01806	0.03757	0.36641
	(!D * SCD * SCE * Q)	0.02448	0.04403	0.37226
	(!D * SCD * SCE * Q)	0.01899	0.03850	0.36675
	(!D * !SCE * !Q)	0.02199	0.04152	0.36984
	(!D * !SCE * !Q)	0.01650	0.03600	0.36433
	(!D * !SCD * SCE * !Q)	0.02355	0.04308	0.37191
	(!D * !SCD * SCE * !Q)	0.01805	0.03756	0.36641
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.02216	0.04157	0.36978
	(D * SCD * SCE * Q)	0.01662	0.03600	0.36422
	(D * !SCE * Q)	0.02131	0.04074	0.36895
	(D * !SCE * Q)	0.01577	0.03516	0.36339
	(D * !SCD * SCE * !Q)	0.02509	0.04449	0.37330
	(D * !SCD * SCE * !Q)	0.01955	0.03892	0.36774
	(!D * SCD * SCE * Q)	0.02289	0.04231	0.37051
	(!D * SCD * SCE * Q)	0.01736	0.03674	0.36495
	(!D * !SCE * !Q)	0.02353	0.04293	0.37122
	(!D * !SCE * !Q)	0.01799	0.03735	0.36566
	(!D * !SCD * SCE * !Q)	0.02509	0.04448	0.37329
	(!D * !SCD * SCE * !Q)	0.01955	0.03891	0.36773

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.02715	0.04668	0.37503
	(D * SCD * SCE * Q)	0.02164	0.04114	0.36950
	(D * !SCE * Q)	0.02631	0.04584	0.37420
	(D * !SCE * Q)	0.02079	0.04030	0.36867
	(D * !SCD * SCE * !Q)	0.02679	0.04632	0.37525
	(D * !SCD * SCE * !Q)	0.02128	0.04077	0.36972
	(!D * SCD * SCE * Q)	0.02789	0.04742	0.37576
	(!D * SCD * SCE * Q)	0.02238	0.04187	0.37023
	(!D * !SCE * !Q)	0.02523	0.04474	0.37317
	(!D * !SCE * !Q)	0.01972	0.03919	0.36764
	(!D * !SCD * SCE * !Q)	0.02679	0.04631	0.37524
	(!D * !SCD * SCE * !Q)	0.02127	0.04076	0.36971

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)**	0.01698	0.03689	0.36261
	(D * SCD * SCE * Q)	0.02247	0.04241	0.36812
	(D * SCD * SCE * !Q)	0.02579	0.04619	0.38824
	(D * SCD * SCE * !Q)	0.03127	0.05170	0.39375
	(D * !SCE * Q)	0.01616	0.03606	0.36185
	(D * !SCE * Q)	0.02165	0.04157	0.36736
	(D * !SCE * !Q)	0.02496	0.04572	0.39032
	(D * !SCE * !Q)	0.03044	0.05123	0.39583
	(D * !SCD * SCE * Q)	0.03408	0.05435	0.39046
	(D * !SCD * SCE * Q)	0.03960	0.05991	0.39599
	(D * !SCD * SCE * !Q)	0.01721	0.03718	0.36312
	(D * !SCD * SCE * !Q)	0.02270	0.04269	0.36863
	(!D * SCD * SCE * Q)	0.01772	0.03763	0.36334
	(!D * SCD * SCE * Q)	0.02320	0.04314	0.36885
	(!D * SCD * SCE * !Q)	0.02650	0.04687	0.38894
	(!D * SCD * SCE * !Q)	0.03198	0.05238	0.39446
	(!D * !SCE * Q)	0.03221	0.05237	0.38693
	(!D * !SCE * Q)	0.03770	0.05790	0.39245
	(!D * !SCE * !Q)	0.01561	0.03555	0.36134
	(!D * !SCE * !Q)	0.02109	0.04106	0.36685
	(!D * !SCD * SCE * Q)	0.03411	0.05437	0.39061
	(!D * !SCD * SCE * Q)	0.03961	0.05991	0.39611
	(!D * !SCD * SCE * !Q)	0.01720	0.03717	0.36313
	(!D * !SCD * SCE * !Q)	0.02269	0.04269	0.36864

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.01549	0.03533	0.36089
	(D * SCD * SCE * Q)	0.02104	0.04090	0.36645
	(D * SCD * SCE * !Q)	0.02777	0.04813	0.38984
	(D * SCD * SCE * !Q)	0.03331	0.05370	0.39539
	(D * !SCE * Q)	0.01467	0.03451	0.36020
	(D * !SCE * Q)	0.02022	0.04006	0.36574
	(D * !SCE * !Q)	0.02694	0.04765	0.39177
	(D * !SCE * !Q)	0.03248	0.05321	0.39733
	(D * !SCD * SCE * Q)	0.03261	0.05288	0.38870
	(D * !SCD * SCE * Q)	0.03820	0.05847	0.39430
	(D * !SCD * SCE * !Q)	0.01850	0.03842	0.36426
	(D * !SCD * SCE * !Q)	0.02404	0.04397	0.36981
	(!D * SCD * SCE * Q)	0.01623	0.03607	0.36162
	(!D * SCD * SCE * Q)	0.02177	0.04164	0.36718
	(!D * SCD * SCE * !Q)	0.02848	0.04882	0.39052
	(!D * SCD * SCE * !Q)	0.03403	0.05441	0.39609
	(!D * !SCE * Q)	0.03075	0.05090	0.38435
	(!D * !SCE * Q)	0.03630	0.05647	0.38990
	(!D * !SCE * !Q)	0.01690	0.03679	0.36248
	(!D * !SCE * !Q)	0.02244	0.04235	0.36804
	(!D * !SCD * SCE * Q)	0.03265	0.05292	0.38885
	(!D * !SCD * SCE * Q)	0.03821	0.05849	0.39443
	(!D * !SCD * SCE * !Q)	0.01849	0.03841	0.36427
	(!D * !SCD * SCE * !Q)	0.02404	0.04397	0.36982

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.02016	0.04005	0.36593
	(D * SCD * SCE * Q)	0.02567	0.04559	0.37146
	(D * SCD * SCE * !Q)	0.02892	0.04932	0.39134
	(D * SCD * SCE * !Q)	0.03442	0.05483	0.39686
	(D * !SCE * Q)	0.01935	0.03922	0.36516
	(D * !SCE * Q)	0.02485	0.04477	0.37069
	(D * !SCE * !Q)	0.02809	0.04883	0.39317
	(D * !SCE * !Q)	0.03359	0.05438	0.39870
	(D * !SCD * SCE * Q)	0.03779	0.05803	0.39479
	(D * !SCD * SCE * Q)	0.04333	0.06359	0.40036
	(D * !SCD * SCE * !Q)	0.02036	0.04031	0.36641
	(D * !SCD * SCE * !Q)	0.02587	0.04586	0.37193
	(!D * SCD * SCE * Q)	0.02090	0.04079	0.36660
	(!D * SCD * SCE * Q)	0.02640	0.04634	0.37212
	(!D * SCD * SCE * !Q)	0.02963	0.05000	0.39204
	(!D * SCD * SCE * !Q)	0.03513	0.05551	0.39756
	(!D * !SCE * Q)	0.03593	0.05611	0.39041
	(!D * !SCE * Q)	0.04144	0.06163	0.39593
	(!D * !SCE * !Q)	0.01875	0.03866	0.36462
	(!D * !SCE * !Q)	0.02426	0.04419	0.37015
	(!D * !SCD * SCE * Q)	0.03782	0.05809	0.39494
	(!D * !SCD * SCE * Q)	0.04334	0.06364	0.40048
	(!D * !SCD * SCE * !Q)	0.02035	0.04029	0.36641
	(!D * !SCD * SCE * !Q)	0.02586	0.04582	0.37194

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00240	0.00222	0.00476	1.63092
sky130_fd_sc_hs__sdlclkp_2	0.00239	0.00220	0.00503	3.12949
sky130_fd_sc_hs__sdlclkp_4	0.00227	0.00209	0.00513	6.13372

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	1000.74000	1475.30000
sky130_fd_sc_hs__sdlclkp_2	0.00000	933.49000	1441.98000
sky130_fd_sc_hs__sdlclkp_4	0.00000	1080.02000	1680.90000

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)	0.04805	0.39737	5.54362
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.05097	0.32010	5.28722
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.06872	0.30849	5.63779

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.05410	0.43600	5.61322
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.06056	0.41191	5.56167
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.07636	0.40741	5.58210

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)	-0.03067	-0.07535	-0.58851
	setup	CLK (R)	0.09205	0.19009	0.69282
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.02819	-0.07535	-0.57907
	setup	CLK (R)	0.09132	0.17112	0.68713
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.02798	-0.07535	-0.57936
	setup	CLK (R)	0.08855	0.15055	0.69453

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)	-0.05701	-0.16731	-3.41750
	setup	CLK (R)	0.08734	0.20740	3.49946
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06070	-0.16577	-3.40417
	setup	CLK (R)	0.08141	0.20647	3.47974
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.06099	-0.16878	-3.40893
	setup	CLK (R)	0.08301	0.20869	3.47683

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)	-0.03067	-0.07535	-0.58851
	setup	CLK (R)	0.09205	0.19009	0.69282
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.02819	-0.07535	-0.57907
	setup	CLK (R)	0.09132	0.17112	0.68713
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.02798	-0.07535	-0.57936
	setup	CLK (R)	0.08855	0.15055	0.69453

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)	-0.05701	-0.16731	-3.41750
	setup	CLK (R)	0.08734	0.20740	3.49946
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06070	-0.16577	-3.40417
	setup	CLK (R)	0.08141	0.20647	3.47974
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.06099	-0.16878	-3.40893
	setup	CLK (R)	0.08301	0.20869	3.47683

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)	-0.03096	-0.08724	-0.82210
	setup	CLK (R)	0.09669	0.19823	0.90466
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.02964	-0.08328	-0.81932
	setup	CLK (R)	0.09369	0.18188	0.89769
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.02968	-0.08724	-0.80721
	setup	CLK (R)	0.09052	0.16099	0.90030

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)	-0.06408	-0.15548	-3.20261
	setup	CLK (R)	0.09427	0.19760	3.26882
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06640	-0.15473	-3.18934
	setup	CLK (R)	0.08835	0.19791	3.26150
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07100	-0.15915	-3.19768
	setup	CLK (R)	0.08988	0.20109	3.26769

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)	-0.03096	-0.08724	-0.82210
	setup	CLK (R)	0.09669	0.19823	0.90466
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.02964	-0.08328	-0.81932
	setup	CLK (R)	0.09369	0.18188	0.89769
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.02968	-0.08724	-0.80721
	setup	CLK (R)	0.09052	0.16099	0.90030

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)	-0.06408	-0.15548	-3.20261
	setup	CLK (R)	0.09427	0.19760	3.26882
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06640	-0.15473	-3.18934
	setup	CLK (R)	0.08835	0.19791	3.26150
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.07100	-0.15915	-3.19768
	setup	CLK (R)	0.08988	0.20109	3.26769

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 ()	0.03397	0.58472	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.04058	0.58472	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.06041	0.58472	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 ()	0.12429	0.58472	16.50020
	min_pulse_width	CLK ()	0.09565	0.58472	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.11989	0.58472	16.50020
	min_pulse_width	CLK ()	0.09786	0.58472	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.11989	0.58472	16.50020
	min_pulse_width	CLK ()	0.10006	0.58472	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	0.05431	0.08754	0.63859
	CLK	0.04553	0.07875	0.63017
sky130_fd_sc_hs__sdlclkp_2	CLK	0.04772	0.07994	0.62665
	CLK	0.03840	0.07062	0.61775
sky130_fd_sc_hs__sdlclkp_4	CLK	0.05764	0.08922	0.65594
	CLK	0.04810	0.07972	0.64768

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.02382	0.05878	0.61025
	CLK	0.03263	0.06750	0.61835
sky130_fd_sc_hs__sdlclkp_2	CLK	0.03066	0.06314	0.60371
	CLK	0.04001	0.07232	0.61224
sky130_fd_sc_hs__sdlclkp_4	CLK	0.04956	0.07807	0.63749
	CLK	0.05913	0.08758	0.64420

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.01029	0.01033	0.01053
	(CLK * SCE)	0.00764	0.00763	0.00786
	(CLK * !SCE)	0.01736	0.03002	0.23424
	(CLK * !SCE)	0.01276	0.02543	0.22964
	(!CLK * SCE * !GCLK)	0.00617	0.00620	0.00641
	(!CLK * SCE * !GCLK)	0.00351	0.00351	0.00374
	(!CLK * !SCE * !GCLK)	0.02264	0.03621	0.27404
	(!CLK * !SCE * !GCLK)	0.01854	0.03212	0.26995
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.01131	0.01134	0.01155
	(CLK * SCE)	0.00866	0.00866	0.00889
	(CLK * !SCE)	0.01832	0.03100	0.23524
	(CLK * !SCE)	0.01375	0.02643	0.23066
	(!CLK * SCE * !GCLK)	0.00718	0.00722	0.00742
	(!CLK * SCE * !GCLK)	0.00454	0.00453	0.00476
	(!CLK * !SCE * !GCLK)	0.02346	0.03715	0.27613
	(!CLK * !SCE * !GCLK)	0.01942	0.03312	0.27211
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.01333	0.01335	0.01355
	(CLK * SCE)	0.01077	0.01077	0.01100
	(CLK * !SCE)	0.02024	0.03286	0.23659
	(CLK * !SCE)	0.01586	0.02848	0.23221
	(!CLK * SCE * !GCLK)	0.00922	0.00924	0.00944
	(!CLK * SCE * !GCLK)	0.00666	0.00666	0.00689
	(!CLK * !SCE * !GCLK)	0.02562	0.03926	0.27773
	(!CLK * !SCE * !GCLK)	0.02175	0.03540	0.27386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00812	0.00805	0.00727
	(CLK * SCE)	0.01080	0.01075	0.00996
	(CLK * !SCE)	0.00613	0.01971	0.22952
	(CLK * !SCE)	0.01072	0.02431	0.23411
	(!CLK * SCE * !GCLK)	0.00408	0.00402	0.00324
	(!CLK * SCE * !GCLK)	0.00676	0.00671	0.00592
	(!CLK * !SCE * !GCLK)	0.02057	0.03480	0.27242
	(!CLK * !SCE * !GCLK)	0.02465	0.03891	0.27651
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00915	0.00908	0.00830
	(CLK * SCE)	0.01182	0.01177	0.01098
	(CLK * !SCE)	0.00719	0.02077	0.23059
	(CLK * !SCE)	0.01175	0.02534	0.23517
	(!CLK * SCE * !GCLK)	0.00512	0.00505	0.00427
	(!CLK * SCE * !GCLK)	0.00779	0.00774	0.00695
	(!CLK * !SCE * !GCLK)	0.02168	0.03602	0.27476
	(!CLK * !SCE * !GCLK)	0.02571	0.04004	0.27880
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.01131	0.01124	0.01046
	(CLK * SCE)	0.01387	0.01382	0.01303
	(CLK * !SCE)	0.00960	0.02309	0.23242
	(CLK * !SCE)	0.01399	0.02746	0.23679
	(!CLK * SCE * !GCLK)	0.00726	0.00719	0.00641
	(!CLK * SCE * !GCLK)	0.00982	0.00977	0.00898
	(!CLK * !SCE * !GCLK)	0.02412	0.03839	0.27670
	(!CLK * !SCE * !GCLK)	0.02799	0.04228	0.28057

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.01073	0.01055	0.01263
	(CLK * GATE)	0.00709	0.00686	0.00900
	(CLK * !GATE)	0.01740	0.02908	0.22436
	(CLK * !GATE)	0.01179	0.02346	0.21874
	(!CLK * GATE * !GCLK)	0.00665	0.00647	0.00855
	(!CLK * GATE * !GCLK)	0.00301	0.00278	0.00492
	(!CLK * !GATE * !GCLK)	0.02273	0.03613	0.26662
	(!CLK * !GATE * !GCLK)	0.01762	0.03100	0.26150
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.01174	0.01156	0.01364
	(CLK * GATE)	0.00811	0.00789	0.01002
	(CLK * !GATE)	0.01836	0.03004	0.22534
	(CLK * !GATE)	0.01278	0.02447	0.21975
	(!CLK * GATE * !GCLK)	0.00766	0.00748	0.00956
	(!CLK * GATE * !GCLK)	0.00403	0.00381	0.00595
	(!CLK * !GATE * !GCLK)	0.02355	0.03709	0.26880
	(!CLK * !GATE * !GCLK)	0.01850	0.03203	0.26376
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.01376	0.01357	0.01565
	(CLK * GATE)	0.01024	0.01001	0.01214
	(CLK * !GATE)	0.02030	0.03195	0.22703
	(CLK * !GATE)	0.01491	0.02654	0.22163
	(!CLK * GATE * !GCLK)	0.00968	0.00949	0.01157
	(!CLK * GATE * !GCLK)	0.00616	0.00593	0.00806
	(!CLK * !GATE * !GCLK)	0.02571	0.03920	0.27065
	(!CLK * !GATE * !GCLK)	0.02083	0.03431	0.26577

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00992	0.00983	0.00924
	(CLK * GATE)	0.01357	0.01351	0.01289
	(CLK * !GATE)	0.00622	0.01808	0.21752
	(CLK * !GATE)	0.01182	0.02371	0.22314
	(!CLK * GATE * !GCLK)	0.00584	0.00575	0.00516
	(!CLK * GATE * !GCLK)	0.00949	0.00943	0.00881
	(!CLK * !GATE * !GCLK)	0.02057	0.03265	0.25701
	(!CLK * !GATE * !GCLK)	0.02567	0.03777	0.26213
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.01095	0.01086	0.01028
	(CLK * GATE)	0.01459	0.01453	0.01391
	(CLK * !GATE)	0.00728	0.01914	0.21859
	(CLK * !GATE)	0.01284	0.02474	0.22418
	(!CLK * GATE * !GCLK)	0.00688	0.00679	0.00620
	(!CLK * GATE * !GCLK)	0.01051	0.01045	0.00983
	(!CLK * !GATE * !GCLK)	0.02168	0.03386	0.25925
	(!CLK * !GATE * !GCLK)	0.02671	0.03892	0.26430
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.01311	0.01302	0.01243
	(CLK * GATE)	0.01663	0.01658	0.01596
	(CLK * !GATE)	0.00969	0.02149	0.22073
	(CLK * !GATE)	0.01506	0.02689	0.22612
	(!CLK * GATE * !GCLK)	0.00903	0.00894	0.00835
	(!CLK * GATE * !GCLK)	0.01255	0.01250	0.01188
	(!CLK * !GATE * !GCLK)	0.02417	0.03627	0.26142
	(!CLK * !GATE * !GCLK)	0.02905	0.04116	0.26630

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.01859	0.03824	0.35685
	(!GATE * !SCE * !GCLK)	0.01017	0.02974	0.34840
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.01977	0.03954	0.35895
	(!GATE * !SCE * !GCLK)	0.01089	0.03059	0.35004
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.02204	0.04181	0.36161
	(!GATE * !SCE * !GCLK)	0.01297	0.03266	0.35250

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.02014	0.04136	0.42945
	(GATE * SCE * !GCLK)	0.02921	0.05049	0.43854
	(GATE * !SCE * !GCLK)	0.02316	0.04430	0.43076
	(GATE * !SCE * !GCLK)	0.03224	0.05341	0.43985
	(!GATE * SCE * !GCLK)	0.02145	0.04266	0.43000
	(!GATE * SCE * !GCLK)	0.03052	0.05176	0.43910
	(!GATE * !SCE * !GCLK)	0.01183	0.03157	0.34690
	(!GATE * !SCE * !GCLK)	0.02025	0.04002	0.35534
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.02071	0.04205	0.43269
	(GATE * SCE * !GCLK)	0.03031	0.05172	0.44231
	(GATE * !SCE * !GCLK)	0.02374	0.04499	0.43373
	(GATE * !SCE * !GCLK)	0.03333	0.05463	0.44335
	(!GATE * SCE * !GCLK)	0.02203	0.04334	0.43309
	(!GATE * SCE * !GCLK)	0.03162	0.05299	0.44271
	(!GATE * !SCE * !GCLK)	0.01256	0.03234	0.34849
	(!GATE * !SCE * !GCLK)	0.02144	0.04130	0.35739
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.02331	0.04461	0.43573
	(GATE * SCE * !GCLK)	0.03307	0.05442	0.44551
	(GATE * !SCE * !GCLK)	0.02633	0.04754	0.43684
	(GATE * !SCE * !GCLK)	0.03609	0.05733	0.44664
	(!GATE * SCE * !GCLK)	0.02461	0.04589	0.43618
	(!GATE * SCE * !GCLK)	0.03437	0.05570	0.44596
	(!GATE * !SCE * !GCLK)	0.01490	0.03466	0.35123
	(!GATE * !SCE * !GCLK)	0.02397	0.04379	0.36034

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00205	0.00395	0.00184	0.00395	0.00283	1.70642	1.69420
sky130_fd_sc_hs__sedfxbp_2	0.00214	0.00399	0.00186	0.00403	0.00283	2.72965	2.82986

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	943.65600	1565.97000
sky130_fd_sc_hs__sedfxbp_2	0.00000	1053.65000	1666.14000

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)	0.13003	0.49640	5.40602
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.13568	0.42509	5.03851

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.11251	0.36391	2.84048
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.12331	0.31356	2.03264

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)	0.16811	0.52523	5.41501
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.19801	0.46953	5.10805

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)	0.17958	0.40310	2.75622
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.19480	0.35502	2.19016

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)	-0.11802	-0.19816	-1.05200
	setup	CLK (R)	0.13961	0.21593	1.06210
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.11725	-0.20066	-1.10557
	setup	CLK (R)	0.14099	0.21823	1.11570

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)	-0.15316	-0.26413	-3.12864
	setup	CLK (R)	0.19653	0.30811	3.14954
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15399	-0.26583	-3.18081
	setup	CLK (R)	0.19367	0.31041	3.19929

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)	-0.11802	-0.19816	-1.05200
	setup	CLK (R)	0.13961	0.21593	1.06210
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.11725	-0.20066	-1.10557
	setup	CLK (R)	0.14099	0.21823	1.11570

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)	-0.15316	-0.26413	-3.12864
	setup	CLK (R)	0.19653	0.30811	3.14954
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15399	-0.26583	-3.18081
	setup	CLK (R)	0.19367	0.31041	3.19929

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)	-0.03093	-0.03880	0.21073
	setup	CLK (R)	0.21892	0.24015	0.87633
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.02880	-0.04093	0.15466
	setup	CLK (R)	0.21920	0.24093	0.93057

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)	-0.15815	-0.25540	-2.87958
	setup	CLK (R)	0.17630	0.26912	3.16452
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15616	-0.25837	-2.93809
	setup	CLK (R)	0.17462	0.27098	3.21743

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)	-0.03093	-0.03880	0.21073
	hold	CLK (R)	-0.09013	-0.09706	-0.29663
	setup	CLK (R)	0.14029	0.19424	0.87633
	setup	CLK (R)	0.21892	0.24015	0.49291
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.02880	-0.04093	0.15466
	hold	CLK (R)	-0.09001	-0.09991	-0.34947
	setup	CLK (R)	0.14307	0.19802	0.93057
	setup	CLK (R)	0.21920	0.24093	0.54104

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)	-0.16347	-0.25540	-3.15824
	hold	CLK (R)	-0.15815	-0.26117	-2.87958
	setup	CLK (R)	0.17630	0.26685	3.16452
	setup	CLK (R)	0.16976	0.26912	2.88395
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16325	-0.25837	-3.21284
	hold	CLK (R)	-0.15616	-0.26230	-2.93809
	setup	CLK (R)	0.17462	0.26818	3.21743
	setup	CLK (R)	0.16951	0.27098	2.93990

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)	-0.07255	-0.12719	-0.80198
	setup	CLK (R)	0.08678	0.13880	0.80419
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07544	-0.13088	-0.85842
	setup	CLK (R)	0.08999	0.14276	0.86080

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)	-0.10876	-0.19352	-2.94792
	setup	CLK (R)	0.14593	0.23300	2.97460
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10997	-0.19593	-3.00194
	setup	CLK (R)	0.14252	0.23778	3.02140

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)	-0.07255	-0.12719	-0.80198
	setup	CLK (R)	0.08678	0.13880	0.80419
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07544	-0.13088	-0.85842
	setup	CLK (R)	0.08999	0.14276	0.86080

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)	-0.10876	-0.19352	-2.94792
	setup	CLK (R)	0.14593	0.23300	2.97460
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10997	-0.19593	-3.00194
	setup	CLK (R)	0.14252	0.23778	3.02140

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)	0.00165	0.01190	0.49730
	setup	CLK (R)	0.15737	0.17854	0.59559
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00386	0.00793	0.43194
	setup	CLK (R)	0.15876	0.18300	0.64971

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)	-0.07400	-0.17635	-2.96615
	setup	CLK (R)	0.12649	0.23112	3.19080
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07504	-0.18074	-3.03470
	setup	CLK (R)	0.12787	0.23757	3.23900

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)	-0.12482	-0.13564	-0.27757
	hold	CLK (R)	0.00165	0.01190	0.49730
	hold	CLK (R)	-0.06165	-0.12315	-0.54451
	hold	CLK (R)	-0.06201	-0.07183	-0.17126
	setup	CLK (R)	0.15737	0.17854	0.35018
	setup	CLK (R)	0.07718	0.13483	0.59559
	setup	CLK (R)	0.07573	0.13483	0.59559
	setup	CLK (R)	0.15734	0.17840	0.34634
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12374	-0.14027	-0.34187
	hold	CLK (R)	0.00386	0.00793	0.43194
	hold	CLK (R)	-0.06171	-0.12452	-0.59937
	hold	CLK (R)	-0.06089	-0.07682	-0.23202
	setup	CLK (R)	0.15876	0.18289	0.39746
	setup	CLK (R)	0.07493	0.13880	0.64971
	setup	CLK (R)	0.07653	0.13880	0.64971
	setup	CLK (R)	0.15871	0.18300	0.39760

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)	-0.10781	-0.21964	-2.99866
	hold	CLK (R)	-0.07400	-0.17635	-3.14707
	hold	CLK (R)	-0.07431	-0.17792	-3.17160
	hold	CLK (R)	-0.10277	-0.21348	-2.96615
	setup	CLK (R)	0.12649	0.23112	3.00358
	setup	CLK (R)	0.08895	0.18874	3.15131
	setup	CLK (R)	0.11584	0.21905	3.19080
	setup	CLK (R)	0.11512	0.21996	2.96904
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.11005	-0.22539	-3.06543
	hold	CLK (R)	-0.07605	-0.18109	-3.19987
	hold	CLK (R)	-0.07504	-0.18074	-3.22687
	hold	CLK (R)	-0.10403	-0.21937	-3.03470
	setup	CLK (R)	0.12787	0.23757	3.07071
	setup	CLK (R)	0.08929	0.19142	3.20599
	setup	CLK (R)	0.11569	0.22315	3.23900
	setup	CLK (R)	0.11671	0.22396	3.03778

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 ()	0.06701	0.58472	16.50020
	min_pulse_width	CLK ()	0.06701	0.58472	16.50020
	min_pulse_width	CLK ()	0.09125	0.58472	16.50020
	min_pulse_width	CLK ()	0.06701	0.58472	16.50020
	min_pulse_width	CLK ()	0.09125	0.58472	16.50020
	min_pulse_width	CLK ()	0.06701	0.58472	16.50020
	min_pulse_width	CLK ()	0.08904	0.58472	16.50020
	min_pulse_width	CLK ()	0.08904	0.58472	16.50020
	min_pulse_width	CLK ()	0.06701	0.58472	16.50020
	min_pulse_width	CLK ()	0.09125	0.58472	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.11768	0.58472	16.50020
	min_pulse_width	CLK ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.11768	0.58472	16.50020
	min_pulse_width	CLK ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.11768	0.58472	16.50020
	min_pulse_width	CLK ()	0.11768	0.58472	16.50020
	min_pulse_width	CLK ()	0.07803	0.58472	16.50020
	min_pulse_width	CLK ()	0.11768	0.58472	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 ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.12429	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12429	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12870	0.58472	16.50020
	min_pulse_width	CLK ()	0.12429	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12429	0.58472	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12649	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	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	0.03571	0.04461	0.20979
	CLK	0.03229	0.04120	0.20613
sky130_fd_sc_hs__sedfxbp_2	CLK	0.04259	0.04975	0.21578
	CLK	0.03921	0.04634	0.21235

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.03320	0.04201	0.21713
	CLK	0.03043	0.03919	0.21399
sky130_fd_sc_hs__sedfxbp_2	CLK	0.03918	0.04531	0.22130
	CLK	0.03637	0.04249	0.21844

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.04128	0.05012	0.22583
	CLK	0.03851	0.04729	0.22284
sky130_fd_sc_hs__sedfxbp_2	CLK	0.04974	0.05593	0.23268
	CLK	0.04692	0.05308	0.22981

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.03083	0.03979	0.20343
	CLK	0.02742	0.03633	0.19992
sky130_fd_sc_hs__sedfxbp_2	CLK	0.03547	0.04257	0.20760
	CLK	0.03209	0.03919	0.20416

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.01928	0.02620	0.15709
	(DE * SCE)	0.01516	0.02208	0.15297
	(CLK * DE * !SCE)	0.02352	0.02919	0.15715
	(CLK * DE * !SCE)	0.01806	0.02372	0.15170
	(CLK * !DE * !SCE)	0.00703	0.00703	0.00702
	(CLK * !DE * !SCE)	0.00434	0.00433	0.00432
	(!DE * SCE)	0.01125	0.01122	0.01120
	(!DE * SCE)	0.00856	0.00852	0.00851
	(!CLK * DE * !SCE * Q * !Q_N)	0.03079	0.03910	0.20345
	(!CLK * DE * !SCE * Q * !Q_N)	0.02538	0.03367	0.19803
	(!CLK * DE * !SCE * !Q * Q_N)	0.03134	0.03942	0.20307
	(!CLK * DE * !SCE * !Q * Q_N)	0.02588	0.03397	0.19761
	(!CLK * !DE * !SCE)	0.00698	0.00697	0.00695
	(!CLK * !DE * !SCE)	0.00428	0.00427	0.00426
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.02027	0.02721	0.15808
	(DE * SCE)	0.01599	0.02293	0.15381
	(CLK * DE * !SCE)	0.02467	0.03031	0.15819
	(CLK * DE * !SCE)	0.01900	0.02465	0.15255
	(CLK * !DE * !SCE)	0.00792	0.00792	0.00790
	(CLK * !DE * !SCE)	0.00512	0.00511	0.00510
	(!DE * SCE)	0.01214	0.01211	0.01209
	(!DE * SCE)	0.00934	0.00929	0.00928
	(!CLK * DE * !SCE * Q * !Q_N)	0.03196	0.04028	0.20447
	(!CLK * DE * !SCE * Q * !Q_N)	0.02634	0.03467	0.19887
	(!CLK * DE * !SCE * !Q * Q_N)	0.03231	0.04037	0.20391
	(!CLK * DE * !SCE * !Q * Q_N)	0.02664	0.03472	0.19826
	(!CLK * !DE * !SCE)	0.00786	0.00786	0.00784
	(!CLK * !DE * !SCE)	0.00506	0.00505	0.00503

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.01458	0.02250	0.15436
	(DE * SCE)	0.01870	0.02662	0.15848
	(CLK * DE * !SCE)	0.01222	0.01922	0.15026
	(CLK * DE * !SCE)	0.01770	0.02467	0.15571
	(CLK * !DE * !SCE)	0.00617	0.00616	0.00617
	(CLK * !DE * !SCE)	0.00885	0.00887	0.00886
	(!DE * SCE)	0.01032	0.01032	0.01032
	(!DE * SCE)	0.01302	0.01302	0.01301
	(!CLK * DE * !SCE * Q * !Q_N)	0.02735	0.03556	0.19620
	(!CLK * DE * !SCE * Q * !Q_N)	0.03275	0.04097	0.20162
	(!CLK * DE * !SCE * !Q * Q_N)	0.02866	0.03725	0.19967
	(!CLK * DE * !SCE * !Q * Q_N)	0.03413	0.04272	0.20513
	(!CLK * !DE * !SCE)	0.00618	0.00616	0.00616
	(!CLK * !DE * !SCE)	0.00885	0.00886	0.00886
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.01517	0.02311	0.15496
	(DE * SCE)	0.01944	0.02739	0.15923
	(CLK * DE * !SCE)	0.01293	0.01990	0.15086
	(CLK * DE * !SCE)	0.01859	0.02554	0.15651
	(CLK * !DE * !SCE)	0.00702	0.00702	0.00703
	(CLK * !DE * !SCE)	0.00984	0.00985	0.00983
	(!DE * SCE)	0.01118	0.01117	0.01117
	(!DE * SCE)	0.01398	0.01399	0.01398
	(!CLK * DE * !SCE * Q * !Q_N)	0.02813	0.03634	0.19690
	(!CLK * DE * !SCE * Q * !Q_N)	0.03373	0.04194	0.20251
	(!CLK * DE * !SCE * !Q * Q_N)	0.02928	0.03787	0.20020
	(!CLK * DE * !SCE * !Q * Q_N)	0.03493	0.04353	0.20585
	(!CLK * !DE * !SCE)	0.00703	0.00702	0.00702
	(!CLK * !DE * !SCE)	0.00984	0.00984	0.00983

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.02518	0.04185	0.33575
	SCE	0.01624	0.03286	0.32677
	(CLK * !SCE)	0.02943	0.04498	0.33626
	(CLK * !SCE)	0.01912	0.03464	0.32594
	(!CLK * D * !SCE * Q * !Q_N)	0.01347	0.02379	0.19902
	(!CLK * D * !SCE * Q * !Q_N)	0.00617	0.01644	0.19172
	(!CLK * D * !SCE * !Q * Q_N)	0.03725	0.05476	0.37778
	(!CLK * D * !SCE * !Q * Q_N)	0.02694	0.04442	0.36747
	(!CLK * !D * !SCE * Q * !Q_N)	0.03594	0.04650	0.23561
	(!CLK * !D * !SCE * Q * !Q_N)	0.03163	0.04214	0.23128
	(!CLK * !D * !SCE * !Q * Q_N)	0.01548	0.02600	0.20110
	(!CLK * !D * !SCE * !Q * Q_N)	0.00818	0.01866	0.19378
sky130_fd_sc_hs__sedfxbp_2	SCE	0.02609	0.04282	0.33666
	SCE	0.01698	0.03367	0.32753
	(CLK * !SCE)	0.03048	0.04605	0.33722
	(CLK * !SCE)	0.01999	0.03555	0.32672
	(!CLK * D * !SCE * Q * !Q_N)	0.01448	0.02480	0.20003
	(!CLK * D * !SCE * Q * !Q_N)	0.00706	0.01736	0.19261
	(!CLK * D * !SCE * !Q * Q_N)	0.03812	0.05568	0.37854
	(!CLK * D * !SCE * !Q * Q_N)	0.02762	0.04516	0.36804
	(!CLK * !D * !SCE * Q * !Q_N)	0.03676	0.04735	0.23643
	(!CLK * !D * !SCE * Q * !Q_N)	0.03242	0.04296	0.23207
	(!CLK * !D * !SCE * !Q * Q_N)	0.01636	0.02691	0.20198
	(!CLK * !D * !SCE * !Q * Q_N)	0.00895	0.01945	0.19455

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.01400	0.03154	0.32779
	SCE	0.02295	0.04054	0.33673
	(CLK * !SCE)	0.01159	0.02826	0.32386
	(CLK * !SCE)	0.02189	0.03860	0.33415
	(!CLK * D * !SCE * Q * !Q_N)	0.00427	0.01513	0.19198
	(!CLK * D * !SCE * Q * !Q_N)	0.01157	0.02245	0.19930
	(!CLK * D * !SCE * !Q * Q_N)	0.02743	0.04491	0.36552
	(!CLK * D * !SCE * !Q * Q_N)	0.03772	0.05525	0.37580
	(!CLK * !D * !SCE * Q * !Q_N)	0.02976	0.04072	0.23018
	(!CLK * !D * !SCE * Q * !Q_N)	0.03410	0.04505	0.23454
	(!CLK * !D * !SCE * !Q * Q_N)	0.00626	0.01733	0.19398
	(!CLK * !D * !SCE * !Q * Q_N)	0.01356	0.02468	0.20130
sky130_fd_sc_hs__sedfxbp_2	SCE	0.01458	0.03215	0.32835
	SCE	0.02368	0.04131	0.33744
	(CLK * !SCE)	0.01228	0.02895	0.32442
	(CLK * !SCE)	0.02277	0.03948	0.33491
	(!CLK * D * !SCE * Q * !Q_N)	0.00527	0.01614	0.19295
	(!CLK * D * !SCE * Q * !Q_N)	0.01268	0.02357	0.20039
	(!CLK * D * !SCE * !Q * Q_N)	0.02803	0.04553	0.36602
	(!CLK * D * !SCE * !Q * Q_N)	0.03851	0.05604	0.37651
	(!CLK * !D * !SCE * Q * !Q_N)	0.03080	0.04177	0.23120
	(!CLK * !D * !SCE * Q * !Q_N)	0.03517	0.04615	0.23558
	(!CLK * !D * !SCE * !Q * Q_N)	0.00704	0.01813	0.19474
	(!CLK * !D * !SCE * !Q * Q_N)	0.01445	0.02559	0.20217

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.02044	0.02697	0.15604
	(CLK * SCE)	0.01599	0.02251	0.15158
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.02751	0.03591	0.19622
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.02306	0.03145	0.19177
	!SCE	0.01254	0.01237	0.01338
	!SCE	0.00960	0.00939	0.01044
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.02147	0.02798	0.15698
	(CLK * SCE)	0.01693	0.02343	0.15244
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.02836	0.03676	0.19700
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.02382	0.03221	0.19246
	!SCE	0.01341	0.01323	0.01424
	!SCE	0.01041	0.01021	0.01125

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.01718	0.02401	0.15273
	(CLK * SCE)	0.02164	0.02846	0.15715
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.03059	0.03814	0.19138
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.03505	0.04261	0.19581
	!SCE	0.01105	0.01100	0.01075
	!SCE	0.01400	0.01397	0.01371
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.01801	0.02482	0.15348
	(CLK * SCE)	0.02256	0.02936	0.15799
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.03136	0.03891	0.19210
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.03591	0.04347	0.19662
	!SCE	0.01193	0.01188	0.01163
	!SCE	0.01493	0.01491	0.01464

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.02154	0.03850	0.32256
	(CLK * D)	0.01386	0.03078	0.31485
	(CLK * !D)	0.02309	0.03989	0.32100
	(CLK * !D)	0.01540	0.03217	0.31329
	(!CLK * D * SCD * Q * !Q_N)	0.01450	0.02509	0.20010
	(!CLK * D * SCD * Q * !Q_N)	0.00814	0.01869	0.19373
	(!CLK * D * DE * SCD * !Q * Q_N)	0.01600	0.02659	0.20161
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00964	0.02020	0.19524
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.03803	0.04812	0.29576
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.03294	0.04299	0.29063
	(!CLK * D * !SCD * Q * !Q_N)	0.03733	0.04740	0.29473
	(!CLK * D * !SCD * Q * !Q_N)	0.03224	0.04227	0.28959
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02852	0.04743	0.36521
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02085	0.03969	0.35753
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.01509	0.02569	0.20123
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00858	0.01918	0.19469
	(!CLK * !D * SCD * !Q * Q_N)	0.03006	0.04881	0.36349
	(!CLK * !D * SCD * !Q * Q_N)	0.02238	0.04108	0.35577
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.03012	0.04885	0.36397
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02244	0.04112	0.35625
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.01710	0.02773	0.20324
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.01058	0.02119	0.19670
	(!CLK * !D * !SCD * !Q * Q_N)	0.01665	0.02727	0.20279
	(!CLK * !D * !SCD * !Q * Q_N)	0.01013	0.02074	0.19625
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.01368	0.02426	0.19928
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00732	0.01787	0.19292
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.03653	0.04658	0.29412
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.03144	0.04145	0.28898

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.02259	0.03964	0.32344
	(CLK * D)	0.01468	0.03171	0.31551
	(CLK * !D)	0.02413	0.04104	0.32180
	(CLK * !D)	0.01623	0.03312	0.31387
	(!CLK * D * SCD * Q * !Q_N)	0.01567	0.02619	0.20101
	(!CLK * D * SCD * Q * !Q_N)	0.00912	0.01962	0.19447
	(!CLK * D * DE * SCD * !Q * Q_N)	0.01702	0.02755	0.20237
	(!CLK * D * DE * SCD * !Q * Q_N)	0.01048	0.02098	0.19583
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.03905	0.04908	0.29654
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.03382	0.04381	0.29127
	(!CLK * D * !SCD * Q * !Q_N)	0.03845	0.04844	0.29564
	(!CLK * D * !SCD * Q * !Q_N)	0.03321	0.04317	0.29035
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02938	0.04860	0.36589
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02149	0.04065	0.35796
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.01617	0.02685	0.20206
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00948	0.02013	0.19534
	(!CLK * !D * SCD * !Q * Q_N)	0.03092	0.04999	0.36407
	(!CLK * !D * SCD * !Q * Q_N)	0.02302	0.04203	0.35613
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.03119	0.05022	0.36477
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02328	0.04229	0.35683
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.01833	0.02903	0.20421
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.01163	0.02231	0.19750
	(!CLK * !D * !SCD * !Q * Q_N)	0.01773	0.02844	0.20361
	(!CLK * !D * !SCD * !Q * Q_N)	0.01104	0.02171	0.19690
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.01485	0.02537	0.20019
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00830	0.01880	0.19365
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.03765	0.04762	0.29499
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.03241	0.04237	0.28970

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00784	0.02631	0.31450
	(CLK * D)	0.01555	0.03403	0.32222
	(CLK * !D)	0.00940	0.02778	0.31326
	(CLK * !D)	0.01711	0.03549	0.32097
	(!CLK * D * SCD * Q * !Q_N)	0.00568	0.01712	0.19414
	(!CLK * D * SCD * Q * !Q_N)	0.01205	0.02350	0.20051
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00765	0.01909	0.19611
	(!CLK * D * DE * SCD * !Q * Q_N)	0.01402	0.02547	0.20248
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02682	0.04350	0.30316
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.03194	0.04863	0.30806
	(!CLK * D * !SCD * Q * !Q_N)	0.02563	0.04238	0.30265
	(!CLK * D * !SCD * Q * !Q_N)	0.03076	0.04751	0.30754
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02270	0.04164	0.36092
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.03042	0.04939	0.36863
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00603	0.01736	0.19424
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.01256	0.02388	0.20078
	(!CLK * !D * SCD * !Q * Q_N)	0.02454	0.04341	0.36116
	(!CLK * !D * SCD * !Q * Q_N)	0.03227	0.05113	0.36888
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02407	0.04277	0.35986
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.03180	0.05049	0.36757
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00757	0.01889	0.19578
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.01410	0.02543	0.20231
	(!CLK * !D * !SCD * !Q * Q_N)	0.00759	0.01891	0.19579
	(!CLK * !D * !SCD * !Q * Q_N)	0.01411	0.02545	0.20233
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00485	0.01630	0.19332
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.01122	0.02268	0.19969
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02462	0.04140	0.30198
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02974	0.04653	0.30688

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00875	0.02712	0.31516
	(CLK * D)	0.01669	0.03509	0.32309
	(CLK * !D)	0.01031	0.02854	0.31385
	(CLK * !D)	0.01826	0.03651	0.32178
	(!CLK * D * SCD * Q * !Q_N)	0.00683	0.01819	0.19503
	(!CLK * D * SCD * Q * !Q_N)	0.01339	0.02476	0.20157
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00861	0.01997	0.19680
	(!CLK * D * DE * SCD * !Q * Q_N)	0.01517	0.02653	0.20335
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02780	0.04441	0.30406
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.03307	0.04969	0.30910
	(!CLK * D * !SCD * Q * !Q_N)	0.02688	0.04355	0.30381
	(!CLK * D * !SCD * Q * !Q_N)	0.03214	0.04882	0.30885
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02354	0.04240	0.36138
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.03148	0.05035	0.36931
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00694	0.01816	0.19486
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.01364	0.02490	0.20158
	(!CLK * !D * SCD * !Q * Q_N)	0.02539	0.04417	0.36156
	(!CLK * !D * SCD * !Q * Q_N)	0.03334	0.05209	0.36949
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02505	0.04364	0.36039
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.03299	0.05159	0.36832
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00867	0.01990	0.19659
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.01537	0.02662	0.20331
	(!CLK * !D * !SCD * !Q * Q_N)	0.00849	0.01972	0.19642
	(!CLK * !D * !SCD * !Q * Q_N)	0.01520	0.02644	0.20313
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00601	0.01737	0.19420
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.01257	0.02393	0.20075
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02586	0.04259	0.30302
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.03113	0.04783	0.30806

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)	0.02687	0.04620	0.37455
	(SCD * SCE * Q * !Q_N)	0.02154	0.04086	0.36919
	(D * !SCE * Q * !Q_N)	0.02457	0.04389	0.37225
	(D * !SCE * Q * !Q_N)	0.01923	0.03855	0.36690
	(D * !DE * !SCE * !Q * Q_N)	0.02493	0.04435	0.37299
	(D * !DE * !SCE * !Q * Q_N)	0.01958	0.03898	0.36764
	(!SCD * SCE * !Q * Q_N)	0.03198	0.05141	0.38004
	(!SCD * SCE * !Q * Q_N)	0.02663	0.04604	0.37469
	(!D * !SCE * !Q * Q_N)	0.02649	0.04591	0.37455
	(!D * !SCE * !Q * Q_N)	0.02114	0.04054	0.36920
	(!D * !DE * !SCE * Q * !Q_N)	0.02374	0.04307	0.37142
	(!D * !DE * !SCE * Q * !Q_N)	0.01841	0.03773	0.36607
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.02780	0.04742	0.37956
	(SCD * SCE * Q * !Q_N)	0.02247	0.04205	0.37422
	(D * !SCE * Q * !Q_N)	0.02549	0.04510	0.37725
	(D * !SCE * Q * !Q_N)	0.02016	0.03973	0.37191
	(D * !DE * !SCE * !Q * Q_N)	0.02584	0.04555	0.37798
	(D * !DE * !SCE * !Q * Q_N)	0.02050	0.04016	0.37264
	(!SCD * SCE * !Q * Q_N)	0.03290	0.05262	0.38505
	(!SCD * SCE * !Q * Q_N)	0.02757	0.04723	0.37970
	(!D * !SCE * !Q * Q_N)	0.02739	0.04711	0.37954
	(!D * !SCE * !Q * Q_N)	0.02206	0.04172	0.37419
	(!D * !DE * !SCE * Q * !Q_N)	0.02466	0.04427	0.37642
	(!D * !DE * !SCE * Q * !Q_N)	0.01933	0.03891	0.37108

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)	0.01836	0.03821	0.36477
	(SCD * SCE * Q * !Q_N)	0.02369	0.04356	0.37012
	(SCD * SCE * !Q * Q_N)	0.03033	0.05090	0.38908
	(SCD * SCE * !Q * Q_N)	0.03565	0.05625	0.39443
	(D * DE * !SCE * !Q * Q_N)	0.02816	0.04867	0.38614
	(D * DE * !SCE * !Q * Q_N)	0.03348	0.05403	0.39149
	(D * !SCE * Q * !Q_N)	0.01607	0.03592	0.36248
	(D * !SCE * Q * !Q_N)	0.02140	0.04127	0.36783
	(D * !DE * !SCE * !Q * Q_N)	0.01711	0.03677	0.36278
	(D * !DE * !SCE * !Q * Q_N)	0.02244	0.04213	0.36814
	(!SCD * SCE * Q * !Q_N)	0.03713	0.05747	0.39217
	(!SCD * SCE * Q * !Q_N)	0.04248	0.06284	0.39754
	(!SCD * SCE * !Q * Q_N)	0.02416	0.04382	0.36981
	(!SCD * SCE * !Q * Q_N)	0.02948	0.04918	0.37517
	(!D * DE * !SCE * Q * !Q_N)	0.03361	0.05402	0.38708
	(!D * DE * !SCE * Q * !Q_N)	0.03895	0.05937	0.39244
	(!D * !SCE * !Q * Q_N)	0.01867	0.03833	0.36434
	(!D * !SCE * !Q * Q_N)	0.02400	0.04369	0.36969
	(!D * !DE * !SCE * Q * !Q_N)	0.01524	0.03510	0.36166
	(!D * !DE * !SCE * Q * !Q_N)	0.02058	0.04046	0.36701

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.01957	0.03963	0.36968
	(SCD * SCE * Q * !Q_N)	0.02489	0.04499	0.37502
	(SCD * SCE * !Q * Q_N)	0.03106	0.05185	0.39331
	(SCD * SCE * !Q * Q_N)	0.03637	0.05722	0.39866
	(D * DE * !SCE * !Q * Q_N)	0.02891	0.04965	0.39132
	(D * DE * !SCE * !Q * Q_N)	0.03422	0.05501	0.39665
	(D * !SCE * Q * !Q_N)	0.01729	0.03735	0.36740
	(D * !SCE * Q * !Q_N)	0.02261	0.04272	0.37274
	(D * !DE * !SCE * !Q * Q_N)	0.01801	0.03792	0.36737
	(D * !DE * !SCE * !Q * Q_N)	0.02332	0.04326	0.37271
	(!SCD * SCE * Q * !Q_N)	0.03819	0.05873	0.39688
	(!SCD * SCE * Q * !Q_N)	0.04353	0.06411	0.40224
	(!SCD * SCE * !Q * Q_N)	0.02504	0.04496	0.37439
	(!SCD * SCE * !Q * Q_N)	0.03035	0.05030	0.37973
	(!D * DE * !SCE * Q * !Q_N)	0.03464	0.05526	0.39168
	(!D * DE * !SCE * Q * !Q_N)	0.03997	0.06064	0.39704
	(!D * !SCE * !Q * Q_N)	0.01957	0.03948	0.36893
	(!D * !SCE * !Q * Q_N)	0.02488	0.04482	0.37427
	(!D * !DE * !SCE * Q * !Q_N)	0.01647	0.03652	0.36657
	(!D * !DE * !SCE * Q * !Q_N)	0.02179	0.04189	0.37192

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00206	0.00402	0.00188	0.00391	0.00281	1.70813
sky130_fd_sc_hs__sedfxtp_2	0.00215	0.00404	0.00190	0.00396	0.00283	3.36263
sky130_fd_sc_hs__sedfxtp_4	0.00216	0.00402	0.00190	0.00393	0.00293	6.33540

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxtp_1	0.00000	899.67500	1601.88000
sky130_fd_sc_hs__sedfxtp_2	0.00000	960.84100	1721.39000
sky130_fd_sc_hs__sedfxtp_4	0.00000	1083.14000	1960.35000

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)**	0.12672	0.49144	5.40098
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.13224	0.41860	5.41825
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.15314	0.38249	5.43081

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.10569	0.34409	2.71877
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.11890	0.32706	2.76199
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.15625	0.34519	2.85802

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)	-0.11630	-0.19797	-1.05886
	setup	CLK (R)	0.13961	0.21593	1.07119
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.12046	-0.19941	-1.06062
	setup	CLK (R)	0.14346	0.21623	1.07102
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.11771	-0.20031	-1.06172
	setup	CLK (R)	0.14021	0.21520	1.07264

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)	-0.15057	-0.26515	-3.13933
	setup	CLK (R)	0.19534	0.30922	3.16027
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.15048	-0.26395	-3.13100
	setup	CLK (R)	0.19562	0.30913	3.15881
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.15267	-0.26694	-3.13768
	setup	CLK (R)	0.18998	0.30585	3.16413

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)	-0.02875	-0.03936	0.20459
	setup	CLK (R)	0.22103	0.23848	0.88410
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03093	-0.03880	0.20192
	setup	CLK (R)	0.21864	0.24014	0.88627
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.02875	-0.03936	0.20172
	setup	CLK (R)	0.21336	0.23389	0.88679

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)	-0.15891	-0.25607	-2.89453
	setup	CLK (R)	0.17698	0.26980	3.17884
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.15800	-0.25474	-2.90018
	setup	CLK (R)	0.17668	0.27166	3.17269
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16050	-0.25827	-2.89584
	setup	CLK (R)	0.17521	0.27003	3.17666

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)	-0.02875	-0.03936	0.20459
	hold	CLK (R)	-0.08985	-0.09991	-0.30502
	setup	CLK (R)	0.14029	0.19424	0.88410
	setup	CLK (R)	0.22103	0.23848	0.49709
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03093	-0.03880	0.20192
	hold	CLK (R)	-0.08743	-0.09706	-0.29499
	setup	CLK (R)	0.14223	0.19624	0.88627
	setup	CLK (R)	0.21864	0.24014	0.49729
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.02875	-0.03936	0.20172
	hold	CLK (R)	-0.08825	-0.09801	-0.29644
	setup	CLK (R)	0.14174	0.19424	0.88679
	setup	CLK (R)	0.21336	0.23389	0.50811

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)	-0.16326	-0.25607	-3.17305
	hold	CLK (R)	-0.15891	-0.26150	-2.89453
	setup	CLK (R)	0.17698	0.26818	3.17884
	setup	CLK (R)	0.16769	0.26980	2.89916
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16189	-0.25474	-3.16462
	hold	CLK (R)	-0.15800	-0.26307	-2.90018
	setup	CLK (R)	0.17668	0.26533	3.17269
	setup	CLK (R)	0.17256	0.27166	2.90204
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16435	-0.25827	-3.17144
	hold	CLK (R)	-0.16050	-0.26506	-2.89584
	setup	CLK (R)	0.17521	0.26685	3.17666
	setup	CLK (R)	0.17064	0.27003	2.89963

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)	-0.07525	-0.12690	-0.81299
	setup	CLK (R)	0.08995	0.13880	0.81508
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.07350	-0.12941	-0.81158
	setup	CLK (R)	0.08995	0.13880	0.81207
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07533	-0.12865	-0.81071
	setup	CLK (R)	0.08596	0.13880	0.81457

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)	-0.11148	-0.19509	-2.95854
	setup	CLK (R)	0.14545	0.23725	2.98534
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.11008	-0.19393	-2.95485
	setup	CLK (R)	0.14448	0.23449	2.98154
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.11264	-0.19593	-2.95818
	setup	CLK (R)	0.14234	0.23000	2.99285

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)	0.00165	0.01190	0.48579
	setup	CLK (R)	0.15903	0.18250	0.60583
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00303	0.01190	0.48577
	setup	CLK (R)	0.15919	0.18132	0.60326
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00303	0.01190	0.49158
	setup	CLK (R)	0.15555	0.17700	0.60309

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)	-0.07322	-0.17603	-2.98893
	setup	CLK (R)	0.13009	0.23572	3.20140
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.07414	-0.17590	-2.99154
	setup	CLK (R)	0.13023	0.23572	3.19819
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07483	-0.17879	-2.99273
	setup	CLK (R)	0.12892	0.23342	3.20987

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)	-0.12320	-0.13805	-0.29206
	hold	CLK (R)	0.00165	0.01190	0.48579
	hold	CLK (R)	-0.06050	-0.12256	-0.55459
	hold	CLK (R)	-0.06345	-0.07421	-0.18771
	setup	CLK (R)	0.15835	0.18219	0.36079
	setup	CLK (R)	0.07490	0.13483	0.60583
	setup	CLK (R)	0.07490	0.13483	0.60583
	setup	CLK (R)	0.15903	0.18250	0.36198
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.12219	-0.13827	-0.28886
	hold	CLK (R)	0.00303	0.01190	0.48577
	hold	CLK (R)	-0.06247	-0.12302	-0.55014
	hold	CLK (R)	-0.06074	-0.07445	-0.18301
	setup	CLK (R)	0.15919	0.18132	0.36371
	setup	CLK (R)	0.07490	0.13483	0.60052
	setup	CLK (R)	0.07490	0.13483	0.60326
	setup	CLK (R)	0.15905	0.18132	0.36345
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.12648	-0.13827	-0.29272
	hold	CLK (R)	0.00303	0.01190	0.49158
	hold	CLK (R)	-0.06325	-0.12388	-0.55114
	hold	CLK (R)	-0.06283	-0.07445	-0.17993
	setup	CLK (R)	0.15555	0.17699	0.36912
	setup	CLK (R)	0.07490	0.13483	0.60185
	setup	CLK (R)	0.07490	0.13483	0.60309
	setup	CLK (R)	0.15555	0.17700	0.36743

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)	-0.11078	-0.22183	-3.02107
	hold	CLK (R)	-0.07466	-0.17603	-3.15944
	hold	CLK (R)	-0.07322	-0.17792	-3.18375
	hold	CLK (R)	-0.10530	-0.21745	-2.98893
	setup	CLK (R)	0.13009	0.23572	3.02549
	setup	CLK (R)	0.08707	0.19010	3.16342
	setup	CLK (R)	0.11517	0.22045	3.20140
	setup	CLK (R)	0.11595	0.22167	2.99507
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.10824	-0.22485	-3.01724
	hold	CLK (R)	-0.07414	-0.17695	-3.15144
	hold	CLK (R)	-0.07424	-0.17590	-3.17525
	hold	CLK (R)	-0.10447	-0.21690	-2.99154
	setup	CLK (R)	0.13023	0.23572	3.02290
	setup	CLK (R)	0.08761	0.18864	3.16047
	setup	CLK (R)	0.11727	0.22057	3.19819
	setup	CLK (R)	0.11557	0.22367	2.99239
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.10854	-0.22534	-3.02520
	hold	CLK (R)	-0.07634	-0.17896	-3.15768
	hold	CLK (R)	-0.07483	-0.17879	-3.18540
	hold	CLK (R)	-0.10447	-0.21756	-2.99273
	setup	CLK (R)	0.12892	0.23342	3.02779
	setup	CLK (R)	0.08619	0.18731	3.16220
	setup	CLK (R)	0.11302	0.21897	3.20987
	setup	CLK (R)	0.11463	0.22256	2.99567

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 ()**	0.06481	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.06481	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.08684	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.06481	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.08684	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.06481	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.08684	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.08684	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.06481	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.08684	0.58472	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.07362	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.07362	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11107	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.07583	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11328	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.07362	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11107	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11107	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.07583	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11328	0.58472	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.09345	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.09345	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.15513	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.09565	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.15734	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.09565	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.15513	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.15513	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.09565	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.15734	0.58472	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 ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12649	0.58472	16.50020
	min_pulse_width	CLK ()	0.12429	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.10006	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12649	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020
	min_pulse_width	CLK ()	0.09345	0.58472	16.50020
	min_pulse_width	CLK ()	0.12209	0.58472	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.09125	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.09786	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11768	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.09125	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11768	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.09125	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.12209	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11768	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.09125	0.58472	16.50020
	min_pulse_width	**CLK ()**	0.11768	0.58472	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	0.05747	0.07706	0.40888
	CLK	0.05252	0.07210	0.40423
sky130_fd_sc_hs__sedfxtp_2	CLK	0.06317	0.08153	0.41426
	CLK	0.05821	0.07657	0.40984
sky130_fd_sc_hs__sedfxtp_4	CLK	0.07642	0.09061	0.42380
	CLK	0.07132	0.08564	0.42032

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.05898	0.07806	0.42835
	CLK	0.05338	0.07246	0.42237
sky130_fd_sc_hs__sedfxtp_2	CLK	0.07081	0.08533	0.43368
	CLK	0.06513	0.07959	0.42783
sky130_fd_sc_hs__sedfxtp_4	CLK	0.09957	0.10010	0.44943
	CLK	0.09370	0.09420	0.43813

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.01952	0.02649	0.15739
	(DE * SCE)	0.01540	0.02236	0.15327
	(CLK * DE * !SCE)	0.02383	0.02952	0.15748
	(CLK * DE * !SCE)	0.01833	0.02402	0.15199
	(CLK * !DE * !SCE)	0.00736	0.00735	0.00734
	(CLK * !DE * !SCE)	0.00465	0.00464	0.00463
	(!DE * SCE)	0.01157	0.01154	0.01153
	(!DE * SCE)	0.00886	0.00882	0.00881
	(!CLK * DE * !SCE * Q)	0.02974	0.03803	0.20234
	(!CLK * DE * !SCE * Q)	0.02428	0.03258	0.19690
	(!CLK * DE * !SCE * !Q)	0.03165	0.03975	0.20335
	(!CLK * DE * !SCE * !Q)	0.02615	0.03425	0.19786
	(!CLK * !DE * !SCE)	0.00730	0.00729	0.00727
	(!CLK * !DE * !SCE)	0.00459	0.00458	0.00456
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.02078	0.02770	0.15855
	(DE * SCE)	0.01645	0.02338	0.15424
	(CLK * DE * !SCE)	0.02516	0.03080	0.15869
	(CLK * DE * !SCE)	0.01945	0.02510	0.15301
	(CLK * !DE * !SCE)	0.00840	0.00840	0.00838
	(CLK * !DE * !SCE)	0.00557	0.00556	0.00555
	(!DE * SCE)	0.01262	0.01259	0.01257
	(!DE * SCE)	0.00979	0.00974	0.00974
	(!CLK * DE * !SCE * Q)	0.02993	0.03819	0.20247
	(!CLK * DE * !SCE * Q)	0.02426	0.03254	0.19682
	(!CLK * DE * !SCE * !Q)	0.03293	0.04105	0.20456
	(!CLK * DE * !SCE * !Q)	0.02723	0.03535	0.19886
	(!CLK * !DE * !SCE)	0.00834	0.00833	0.00832
	(!CLK * !DE * !SCE)	0.00551	0.00550	0.00548

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.02286	0.02979	0.16066
	(DE * SCE)	0.01852	0.02546	0.15633
	(CLK * DE * !SCE)	0.02729	0.03291	0.16073
	(CLK * DE * !SCE)	0.02158	0.02721	0.15504
	(CLK * !DE * !SCE)	0.01048	0.01048	0.01046
	(CLK * !DE * !SCE)	0.00764	0.00763	0.00762
	(!DE * SCE)	0.01470	0.01467	0.01465
	(!DE * SCE)	0.01186	0.01182	0.01181
	(!CLK * DE * !SCE * Q)	0.02986	0.03812	0.20238
	(!CLK * DE * !SCE * Q)	0.02419	0.03247	0.19674
	(!CLK * DE * !SCE * !Q)	0.03481	0.04294	0.20644
	(!CLK * DE * !SCE * !Q)	0.02910	0.03723	0.20074
	(!CLK * !DE * !SCE)	0.01042	0.01042	0.01040
	(!CLK * !DE * !SCE)	0.00759	0.00757	0.00756

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.01477	0.02272	0.15461
	(DE * SCE)	0.01889	0.02685	0.15873
	(CLK * DE * !SCE)	0.01245	0.01944	0.15048
	(CLK * DE * !SCE)	0.01793	0.02494	0.15597
	(CLK * !DE * !SCE)	0.00648	0.00647	0.00647
	(CLK * !DE * !SCE)	0.00917	0.00919	0.00919
	(!DE * SCE)	0.01062	0.01062	0.01062
	(!DE * SCE)	0.01334	0.01334	0.01333
	(!CLK * DE * !SCE * Q)	0.02604	0.03426	0.19490
	(!CLK * DE * !SCE * Q)	0.03148	0.03972	0.20035
	(!CLK * DE * !SCE * !Q)	0.02874	0.03743	0.19975
	(!CLK * DE * !SCE * !Q)	0.03425	0.04293	0.20525
	(!CLK * !DE * !SCE)	0.00648	0.00647	0.00647
	(!CLK * !DE * !SCE)	0.00918	0.00918	0.00918
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.01573	0.02366	0.15549
	(DE * SCE)	0.02006	0.02798	0.15980
	(CLK * DE * !SCE)	0.01338	0.02035	0.15133
	(CLK * DE * !SCE)	0.01909	0.02604	0.15702
	(CLK * !DE * !SCE)	0.00751	0.00750	0.00751
	(CLK * !DE * !SCE)	0.01035	0.01036	0.01035
	(!DE * SCE)	0.01167	0.01165	0.01166
	(!DE * SCE)	0.01449	0.01451	0.01449
	(!CLK * DE * !SCE * Q)	0.02598	0.03418	0.19476
	(!CLK * DE * !SCE * Q)	0.03162	0.03984	0.20041
	(!CLK * DE * !SCE * !Q)	0.02962	0.03821	0.20056
	(!CLK * DE * !SCE * !Q)	0.03532	0.04391	0.20624
	(!CLK * !DE * !SCE)	0.00751	0.00750	0.00751
	(!CLK * !DE * !SCE)	0.01035	0.01036	0.01034

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.01774	0.02569	0.15753
	(DE * SCE)	0.02208	0.03000	0.16185
	(CLK * DE * !SCE)	0.01568	0.02262	0.15352
	(CLK * DE * !SCE)	0.02138	0.02831	0.15921
	(CLK * !DE * !SCE)	0.00958	0.00958	0.00959
	(CLK * !DE * !SCE)	0.01243	0.01244	0.01243
	(!DE * SCE)	0.01375	0.01373	0.01374
	(!DE * SCE)	0.01658	0.01659	0.01658
	(!CLK * DE * !SCE * Q)	0.02615	0.03435	0.19490
	(!CLK * DE * !SCE * Q)	0.03179	0.04000	0.20055
	(!CLK * DE * !SCE * !Q)	0.03190	0.04048	0.20280
	(!CLK * DE * !SCE * !Q)	0.03760	0.04618	0.20849
	(!CLK * !DE * !SCE)	0.00959	0.00958	0.00959
	(!CLK * !DE * !SCE)	0.01244	0.01244	0.01243

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.02551	0.04224	0.33624
	SCE	0.01643	0.03313	0.32715
	(CLK * !SCE)	0.02981	0.04542	0.33679
	(CLK * !SCE)	0.01936	0.03495	0.32633
	(!CLK * D * !SCE * Q)	0.01245	0.02276	0.19822
	(!CLK * D * !SCE * Q)	0.00501	0.01530	0.19079
	(!CLK * D * !SCE * !Q)	0.03763	0.05519	0.37826
	(!CLK * D * !SCE * !Q)	0.02718	0.04471	0.36781
	(!CLK * !D * !SCE * Q)	0.03471	0.04524	0.23458
	(!CLK * !D * !SCE * Q)	0.03027	0.04079	0.23015
	(!CLK * !D * !SCE * !Q)	0.01586	0.02640	0.20169
	(!CLK * !D * !SCE * !Q)	0.00842	0.01894	0.19425

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.02671	0.04342	0.33744
	SCE	0.01747	0.03413	0.32818
	(CLK * !SCE)	0.03109	0.04667	0.33804
	(CLK * !SCE)	0.02045	0.03601	0.32741
	(!CLK * D * !SCE * Q)	0.01252	0.02282	0.19830
	(!CLK * D * !SCE * Q)	0.00497	0.01526	0.19077
	(!CLK * D * !SCE * !Q)	0.03885	0.05641	0.37955
	(!CLK * D * !SCE * !Q)	0.02822	0.04574	0.36891
	(!CLK * !D * !SCE * Q)	0.03473	0.04530	0.23460
	(!CLK * !D * !SCE * Q)	0.03027	0.04081	0.23014
	(!CLK * !D * !SCE * !Q)	0.01695	0.02748	0.20279
	(!CLK * !D * !SCE * !Q)	0.00940	0.01992	0.19524
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.02877	0.04550	0.33954
	SCE	0.01955	0.03624	0.33031
	(CLK * !SCE)	0.03320	0.04877	0.34009
	(CLK * !SCE)	0.02261	0.03816	0.32949
	(!CLK * D * !SCE * Q)	0.01255	0.02287	0.19834
	(!CLK * D * !SCE * Q)	0.00503	0.01533	0.19085
	(!CLK * D * !SCE * !Q)	0.04072	0.05828	0.38142
	(!CLK * D * !SCE * !Q)	0.03013	0.04765	0.37083
	(!CLK * !D * !SCE * Q)	0.03489	0.04546	0.23475
	(!CLK * !D * !SCE * Q)	0.03046	0.04100	0.23031
	(!CLK * !D * !SCE * !Q)	0.01901	0.02955	0.20487
	(!CLK * !D * !SCE * !Q)	0.01150	0.02202	0.19736

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.01419	0.03172	0.32805
	SCE	0.02326	0.04080	0.33710
	(CLK * !SCE)	0.01181	0.02845	0.32409
	(CLK * !SCE)	0.02225	0.03889	0.33453
	(!CLK * D * !SCE * Q)	0.00316	0.01400	0.19102
	(!CLK * D * !SCE * Q)	0.01057	0.02143	0.19847
	(!CLK * D * !SCE * !Q)	0.02751	0.04496	0.36561
	(!CLK * D * !SCE * !Q)	0.03795	0.05544	0.37603
	(!CLK * !D * !SCE * Q)	0.02865	0.03960	0.22926
	(!CLK * !D * !SCE * Q)	0.03308	0.04405	0.23372
	(!CLK * !D * !SCE * !Q)	0.00653	0.01758	0.19442
	(!CLK * !D * !SCE * !Q)	0.01396	0.02508	0.20187
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.01523	0.03272	0.32907
	SCE	0.02446	0.04198	0.33830
	(CLK * !SCE)	0.01281	0.02942	0.32508
	(CLK * !SCE)	0.02343	0.04005	0.33570
	(!CLK * D * !SCE * Q)	0.00316	0.01402	0.19103
	(!CLK * D * !SCE * Q)	0.01068	0.02157	0.19858
	(!CLK * D * !SCE * !Q)	0.02845	0.04590	0.36656
	(!CLK * D * !SCE * !Q)	0.03907	0.05652	0.37716
	(!CLK * !D * !SCE * Q)	0.02871	0.03965	0.22926
	(!CLK * !D * !SCE * Q)	0.03317	0.04412	0.23374
	(!CLK * !D * !SCE * !Q)	0.00754	0.01860	0.19544
	(!CLK * !D * !SCE * !Q)	0.01508	0.02617	0.20299

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.01724	0.03476	0.33113
	SCE	0.02645	0.04398	0.34032
	(CLK * !SCE)	0.01511	0.03169	0.32729
	(CLK * !SCE)	0.02569	0.04229	0.33787
	(!CLK * D * !SCE * Q)	0.00321	0.01405	0.19109
	(!CLK * D * !SCE * Q)	0.01069	0.02155	0.19861
	(!CLK * D * !SCE * !Q)	0.03075	0.04816	0.36880
	(!CLK * D * !SCE * !Q)	0.04133	0.05877	0.37938
	(!CLK * !D * !SCE * Q)	0.02863	0.03957	0.22918
	(!CLK * !D * !SCE * Q)	0.03306	0.04401	0.23363
	(!CLK * !D * !SCE * !Q)	0.00962	0.02068	0.19753
	(!CLK * !D * !SCE * !Q)	0.01712	0.02822	0.20505

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.02076	0.02729	0.15629
	(CLK * SCE)	0.01621	0.02272	0.15173
	(!CLK * SCE)	0.02782	0.03631	0.19647
	(!CLK * SCE)	0.02327	0.03175	0.19191
	!SCE	0.01283	0.01264	0.01367
	!SCE	0.00981	0.00961	0.01065
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.02196	0.02848	0.15755
	(CLK * SCE)	0.01735	0.02386	0.15294
	(!CLK * SCE)	0.02897	0.03746	0.19766
	(!CLK * SCE)	0.02436	0.03284	0.19306
	!SCE	0.01391	0.01372	0.01474
	!SCE	0.01084	0.01064	0.01168
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.02404	0.03052	0.15954
	(CLK * SCE)	0.01947	0.02592	0.15494
	(!CLK * SCE)	0.03080	0.03928	0.19954
	(!CLK * SCE)	0.02622	0.03469	0.19495
	!SCE	0.01597	0.01579	0.01681
	!SCE	0.01292	0.01272	0.01376

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.01753	0.02436	0.15301
	(CLK * SCE)	0.02209	0.02891	0.15753
	(!CLK * SCE)	0.03084	0.03840	0.19158
	(!CLK * SCE)	0.03540	0.04297	0.19611
	!SCE	0.01139	0.01134	0.01108
	!SCE	0.01440	0.01439	0.01412
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.01845	0.02528	0.15401
	(CLK * SCE)	0.02306	0.02988	0.15859
	(!CLK * SCE)	0.03169	0.03925	0.19251
	(!CLK * SCE)	0.03630	0.04387	0.19710
	!SCE	0.01240	0.01235	0.01209
	!SCE	0.01546	0.01544	0.01517
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.02088	0.02764	0.15631
	(CLK * SCE)	0.02547	0.03224	0.16087
	(!CLK * SCE)	0.03410	0.04164	0.19487
	(!CLK * SCE)	0.03869	0.04625	0.19944
	!SCE	0.01449	0.01444	0.01418
	!SCE	0.01753	0.01752	0.01725

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.02170	0.03868	0.32256
	(CLK * D)	0.01403	0.03098	0.31487
	(CLK * !D)	0.02325	0.04007	0.32097
	(CLK * !D)	0.01558	0.03237	0.31328
	(!CLK * D * SCD * Q)	0.01326	0.02384	0.19873
	(!CLK * D * SCD * Q)	0.00694	0.01750	0.19242
	(!CLK * D * DE * SCD * !Q)	0.01620	0.02678	0.20168
	(!CLK * D * DE * SCD * !Q)	0.00989	0.02044	0.19536
	(!CLK * D * DE * !SCD * !Q)	0.03836	0.04840	0.29596
	(!CLK * D * DE * !SCD * !Q)	0.03334	0.04335	0.29090
	(!CLK * D * !SCD * Q)	0.03617	0.04619	0.29330
	(!CLK * D * !SCD * Q)	0.03115	0.04114	0.28824
	(!CLK * D * !DE * SCD * !Q)	0.02867	0.04760	0.36517
	(!CLK * D * !DE * SCD * !Q)	0.02101	0.03989	0.35751
	(!CLK * D * !DE * !SCD * !Q)	0.01540	0.02599	0.20141
	(!CLK * D * !DE * !SCD * !Q)	0.00893	0.01952	0.19492
	(!CLK * !D * SCD * !Q)	0.03022	0.04899	0.36341
	(!CLK * !D * SCD * !Q)	0.02255	0.04127	0.35571
	(!CLK * !D * DE * SCD * Q)	0.02887	0.04772	0.36250
	(!CLK * !D * DE * SCD * Q)	0.02120	0.04000	0.35480
	(!CLK * !D * DE * !SCD * Q)	0.01596	0.02658	0.20197
	(!CLK * !D * DE * !SCD * Q)	0.00950	0.02009	0.19549
	(!CLK * !D * !SCD * !Q)	0.01696	0.02757	0.20296
	(!CLK * !D * !SCD * !Q)	0.01049	0.02108	0.19648
	(!CLK * !D * !DE * SCD * Q)	0.01244	0.02302	0.19791
	(!CLK * !D * !DE * SCD * Q)	0.00612	0.01667	0.19160
	(!CLK * !D * !DE * !SCD * Q)	0.03536	0.04537	0.29265
	(!CLK * !D * !DE * !SCD * Q)	0.03035	0.04032	0.28760

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.02292	0.03989	0.32387
	(CLK * D)	0.01515	0.03208	0.31606
	(CLK * !D)	0.02447	0.04127	0.32220
	(CLK * !D)	0.01669	0.03346	0.31440
	(!CLK * D * SCD * Q)	0.01337	0.02393	0.19873
	(!CLK * D * SCD * Q)	0.00695	0.01748	0.19231
	(!CLK * D * DE * SCD * !Q)	0.01734	0.02790	0.20270
	(!CLK * D * DE * SCD * !Q)	0.01092	0.02145	0.19628
	(!CLK * D * DE * !SCD * !Q)	0.03931	0.04935	0.29681
	(!CLK * D * DE * !SCD * !Q)	0.03421	0.04421	0.29165
	(!CLK * D * !SCD * Q)	0.03616	0.04614	0.29318
	(!CLK * D * !SCD * Q)	0.03106	0.04104	0.28803
	(!CLK * D * !DE * SCD * !Q)	0.02985	0.04876	0.36637
	(!CLK * D * !DE * SCD * !Q)	0.02208	0.04094	0.35857
	(!CLK * D * !DE * !SCD * !Q)	0.01651	0.02707	0.20241
	(!CLK * D * !DE * !SCD * !Q)	0.00995	0.02053	0.19582
	(!CLK * !D * SCD * !Q)	0.03139	0.05013	0.36453
	(!CLK * !D * SCD * !Q)	0.02362	0.04233	0.35672
	(!CLK * !D * DE * SCD * Q)	0.02896	0.04772	0.36253
	(!CLK * !D * DE * SCD * Q)	0.02118	0.03990	0.35472
	(!CLK * !D * DE * !SCD * Q)	0.01605	0.02665	0.20195
	(!CLK * !D * DE * !SCD * Q)	0.00949	0.02006	0.19536
	(!CLK * !D * !SCD * !Q)	0.01807	0.02866	0.20397
	(!CLK * !D * !SCD * !Q)	0.01150	0.02208	0.19738
	(!CLK * !D * !DE * SCD * Q)	0.01255	0.02310	0.19791
	(!CLK * !D * !DE * SCD * Q)	0.00613	0.01666	0.19149
	(!CLK * !D * !DE * !SCD * Q)	0.03536	0.04533	0.29252
	(!CLK * !D * !DE * !SCD * Q)	0.03025	0.04022	0.28737

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.02503	0.04195	0.32606
	(CLK * D)	0.01731	0.03418	0.31831
	(CLK * !D)	0.02657	0.04333	0.32439
	(CLK * !D)	0.01885	0.03557	0.31664
	(!CLK * D * SCD * Q)	0.01337	0.02395	0.19900
	(!CLK * D * SCD * Q)	0.00700	0.01756	0.19263
	(!CLK * D * DE * SCD * !Q)	0.01937	0.02996	0.20500
	(!CLK * D * DE * SCD * !Q)	0.01300	0.02356	0.19863
	(!CLK * D * DE * !SCD * !Q)	0.04166	0.05171	0.29947
	(!CLK * D * DE * !SCD * !Q)	0.03660	0.04661	0.29435
	(!CLK * D * !SCD * Q)	0.03643	0.04644	0.29375
	(!CLK * D * !SCD * Q)	0.03136	0.04134	0.28864
	(!CLK * D * !DE * SCD * !Q)	0.03169	0.05060	0.36848
	(!CLK * D * !DE * SCD * !Q)	0.02397	0.04286	0.36076
	(!CLK * D * !DE * !SCD * !Q)	0.01856	0.02915	0.20473
	(!CLK * D * !DE * !SCD * !Q)	0.01204	0.02264	0.19819
	(!CLK * !D * SCD * !Q)	0.03323	0.05201	0.36667
	(!CLK * !D * SCD * !Q)	0.02551	0.04423	0.35891
	(!CLK * !D * DE * SCD * Q)	0.02882	0.04760	0.36269
	(!CLK * !D * DE * SCD * Q)	0.02110	0.03983	0.35494
	(!CLK * !D * DE * !SCD * Q)	0.01606	0.02669	0.20223
	(!CLK * !D * DE * !SCD * Q)	0.00955	0.02015	0.19569
	(!CLK * !D * !SCD * !Q)	0.02011	0.03073	0.20628
	(!CLK * !D * !SCD * !Q)	0.01360	0.02419	0.19974
	(!CLK * !D * !DE * SCD * Q)	0.01255	0.02313	0.19818
	(!CLK * !D * !DE * SCD * Q)	0.00618	0.01673	0.19181
	(!CLK * !D * !DE * !SCD * Q)	0.03562	0.04563	0.29310
	(!CLK * !D * !DE * !SCD * Q)	0.03056	0.04052	0.28799

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00826	0.02670	0.31467
	(CLK * D)	0.01597	0.03438	0.32236
	(CLK * !D)	0.00982	0.02810	0.31338
	(CLK * !D)	0.01753	0.03583	0.32107
	(!CLK * D * SCD * Q)	0.00485	0.01625	0.19315
	(!CLK * D * SCD * Q)	0.01119	0.02259	0.19948
	(!CLK * D * DE * SCD * !Q)	0.00817	0.01956	0.19647
	(!CLK * D * DE * SCD * !Q)	0.01450	0.02590	0.20279
	(!CLK * D * DE * !SCD * !Q)	0.02743	0.04408	0.30385
	(!CLK * D * DE * !SCD * !Q)	0.03248	0.04911	0.30867
	(!CLK * D * !SCD * Q)	0.02494	0.04165	0.30204
	(!CLK * D * !SCD * Q)	0.02999	0.04670	0.30686
	(!CLK * D * !DE * SCD * !Q)	0.02301	0.04191	0.36087
	(!CLK * D * !DE * SCD * !Q)	0.03072	0.04962	0.36857
	(!CLK * D * !DE * !SCD * !Q)	0.00645	0.01773	0.19449
	(!CLK * D * !DE * !SCD * !Q)	0.01293	0.02422	0.20097
	(!CLK * !D * SCD * !Q)	0.02486	0.04367	0.36107
	(!CLK * !D * SCD * !Q)	0.03257	0.05138	0.36876
	(!CLK * !D * DE * SCD * Q)	0.02300	0.04163	0.35838
	(!CLK * !D * DE * SCD * Q)	0.03070	0.04935	0.36607
	(!CLK * !D * DE * !SCD * Q)	0.00665	0.01792	0.19468
	(!CLK * !D * DE * !SCD * Q)	0.01312	0.02441	0.20117
	(!CLK * !D * !SCD * !Q)	0.00801	0.01928	0.19605
	(!CLK * !D * !SCD * !Q)	0.01449	0.02577	0.20253
	(!CLK * !D * !DE * SCD * Q)	0.00403	0.01543	0.19233
	(!CLK * !D * !DE * SCD * Q)	0.01036	0.02177	0.19866
	(!CLK * !D * !DE * !SCD * Q)	0.02393	0.04068	0.30139
	(!CLK * !D * !DE * !SCD * Q)	0.02898	0.04572	0.30621

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00923	0.02765	0.31571
	(CLK * D)	0.01704	0.03545	0.32352
	(CLK * !D)	0.01079	0.02906	0.31439
	(CLK * !D)	0.01860	0.03689	0.32219
	(!CLK * D * SCD * Q)	0.00484	0.01622	0.19303
	(!CLK * D * SCD * Q)	0.01127	0.02266	0.19945
	(!CLK * D * DE * SCD * !Q)	0.00915	0.02054	0.19735
	(!CLK * D * DE * SCD * !Q)	0.01559	0.02697	0.20377
	(!CLK * D * DE * !SCD * !Q)	0.02844	0.04507	0.30471
	(!CLK * D * DE * !SCD * !Q)	0.03358	0.05020	0.30962
	(!CLK * D * !SCD * Q)	0.02489	0.04156	0.30172
	(!CLK * D * !SCD * Q)	0.03003	0.04667	0.30664
	(!CLK * D * !DE * SCD * !Q)	0.02389	0.04280	0.36192
	(!CLK * D * !DE * SCD * !Q)	0.03170	0.05063	0.36972
	(!CLK * D * !DE * !SCD * !Q)	0.00746	0.01872	0.19539
	(!CLK * D * !DE * !SCD * !Q)	0.01404	0.02531	0.20197
	(!CLK * !D * SCD * !Q)	0.02574	0.04455	0.36210
	(!CLK * !D * SCD * !Q)	0.03355	0.05236	0.36991
	(!CLK * !D * DE * SCD * Q)	0.02293	0.04157	0.35847
	(!CLK * !D * DE * SCD * Q)	0.03075	0.04939	0.36627
	(!CLK * !D * DE * !SCD * Q)	0.00665	0.01790	0.19458
	(!CLK * !D * DE * !SCD * Q)	0.01323	0.02450	0.20116
	(!CLK * !D * !SCD * !Q)	0.00902	0.02027	0.19694
	(!CLK * !D * !SCD * !Q)	0.01559	0.02686	0.20353
	(!CLK * !D * !DE * SCD * Q)	0.00401	0.01539	0.19221
	(!CLK * !D * !DE * SCD * Q)	0.01044	0.02183	0.19863
	(!CLK * !D * !DE * !SCD * Q)	0.02388	0.04059	0.30103
	(!CLK * !D * !DE * !SCD * Q)	0.02902	0.04570	0.30595

	(CLK * D)	0.01165	0.03002	0.31824
	(CLK * D)	0.01941	0.03775	0.32599
	(CLK * !D)	0.01321	0.03147	0.31692
	(CLK * !D)	0.02097	0.03922	0.32467
	(!CLK * D * SCD * Q)	0.00491	0.01632	0.19337
	(!CLK * D * SCD * Q)	0.01130	0.02271	0.19974
	(!CLK * D * DE * SCD * !Q)	0.01127	0.02267	0.19972
	(!CLK * D * DE * SCD * !Q)	0.01765	0.02906	0.20610
	(!CLK * D * DE * !SCD * !Q)	0.03033	0.04698	0.30700
	(!CLK * D * DE * !SCD * !Q)	0.03543	0.05209	0.31187
	(!CLK * D * !SCD * Q)	0.02480	0.04153	0.30215
	(!CLK * D * !SCD * Q)	0.02990	0.04662	0.30702
	(!CLK * D * !DE * SCD * !Q)	0.02631	0.04518	0.36444
	(!CLK * D * !DE * SCD * !Q)	0.03406	0.05297	0.37218
sky130_fd_sc_hs__sedfxtp_4	**(!CLK * D * !DE * !SCD * !Q)**	0.00956	0.02084	0.19776
	(!CLK * D * !DE * !SCD * !Q)	0.01609	0.02739	0.20429
	(!CLK * !D * SCD * !Q)	0.02816	0.04694	0.36460
	(!CLK * !D * SCD * !Q)	0.03592	0.05470	0.37235
	(!CLK * !D * DE * SCD * Q)	0.02327	0.04187	0.35888
	(!CLK * !D * DE * SCD * Q)	0.03102	0.04964	0.36663
	(!CLK * !D * DE * !SCD * Q)	0.00672	0.01800	0.19491
	(!CLK * !D * DE * !SCD * Q)	0.01325	0.02454	0.20145
	(!CLK * !D * !SCD * !Q)	0.01112	0.02240	0.19931
	(!CLK * !D * !SCD * !Q)	0.01765	0.02894	0.20585
	(!CLK * !D * !DE * SCD * Q)	0.00409	0.01549	0.19255
	(!CLK * !D * !DE * SCD * Q)	0.01047	0.02188	0.19892
	(!CLK * !D * !DE * !SCD * Q)	0.02379	0.04056	0.30148
	(!CLK * !D * !DE * !SCD * Q)	0.02888	0.04564	0.30635

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.02534	0.04476	0.37387
	(SCD * SCE * Q)	0.02006	0.03948	0.36858
	(D * !SCE * Q)	0.02302	0.04245	0.37157
	(D * !SCE * Q)	0.01774	0.03715	0.36627
	(D * !DE * !SCE * !Q)	0.02510	0.04462	0.37402
	(D * !DE * !SCE * !Q)	0.01981	0.03931	0.36873
	(!SCD * SCE * !Q)	0.03216	0.05169	0.38108
	(!SCD * SCE * !Q)	0.02687	0.04637	0.37578
	(!D * !SCE * !Q)	0.02666	0.04618	0.37558
	(!D * !SCE * !Q)	0.02136	0.04086	0.37029
	(!D * !DE * !SCE * Q)	0.02220	0.04163	0.37074
	(!D * !DE * !SCE * Q)	0.01692	0.03633	0.36544
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.02556	0.04500	0.37448
	(SCD * SCE * Q)	0.02026	0.03966	0.36915
	(D * !SCE * Q)	0.02325	0.04269	0.37218
	(D * !SCE * Q)	0.01794	0.03734	0.36685
	(D * !DE * !SCE * !Q)	0.02635	0.04589	0.37566
	(D * !DE * !SCE * !Q)	0.02104	0.04052	0.37033
	(!SCD * SCE * !Q)	0.03341	0.05295	0.38271
	(!SCD * SCE * !Q)	0.02810	0.04758	0.37738
	(!D * !SCE * !Q)	0.02791	0.04745	0.37722
	(!D * !SCE * !Q)	0.02260	0.04208	0.37189
	(!D * !DE * !SCE * Q)	0.02243	0.04187	0.37135
	(!D * !DE * !SCE * Q)	0.01712	0.03652	0.36602

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.02561	0.04501	0.37391
	(SCD * SCE * Q)	0.02013	0.03950	0.36842
	(D * !SCE * Q)	0.02330	0.04269	0.37161
	(D * !SCE * Q)	0.01782	0.03718	0.36611
	(D * !DE * !SCE * !Q)	0.02827	0.04775	0.37696
	(D * !DE * !SCE * !Q)	0.02278	0.04223	0.37146
	(!SCD * SCE * !Q)	0.03533	0.05481	0.38402
	(!SCD * SCE * !Q)	0.02984	0.04929	0.37852
	(!D * !SCE * !Q)	0.02983	0.04931	0.37852
	(!D * !SCE * !Q)	0.02433	0.04379	0.37302
	(!D * !DE * !SCE * Q)	0.02248	0.04187	0.37078
	(!D * !DE * !SCE * Q)	0.01699	0.03636	0.36528

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.01739	0.03736	0.36462
	(SCD * SCE * Q)	0.02267	0.04266	0.36992
	(SCD * SCE * !Q)	0.03047	0.05115	0.38999
	(SCD * SCE * !Q)	0.03574	0.05646	0.39529
	(D * DE * !SCE * !Q)	0.02832	0.04894	0.38709
	(D * DE * !SCE * !Q)	0.03359	0.05425	0.39238
	(D * !SCE * Q)	0.01511	0.03508	0.36233
	(D * !SCE * Q)	0.02039	0.04038	0.36764
	(D * !DE * !SCE * !Q)	0.01722	0.03700	0.36371
	(D * !DE * !SCE * !Q)	0.02249	0.04231	0.36901
	(!SCD * SCE * Q)	0.03597	0.05637	0.39185
	(!SCD * SCE * Q)	0.04127	0.06170	0.39717
	(!SCD * SCE * !Q)	0.02426	0.04404	0.37073
	(!SCD * SCE * !Q)	0.02953	0.04935	0.37604
	(!D * DE * !SCE * Q)	0.03243	0.05296	0.38681
	(!D * DE * !SCE * Q)	0.03772	0.05827	0.39213
	(!D * !SCE * !Q)	0.01878	0.03856	0.36527
	(!D * !SCE * !Q)	0.02405	0.04387	0.37057
	(!D * !DE * !SCE * Q)	0.01429	0.03426	0.36151
	(!D * !DE * !SCE * Q)	0.01957	0.03958	0.36682

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.01750	0.03738	0.36508
	(SCD * SCE * Q)	0.02280	0.04274	0.37041
	(SCD * SCE * !Q)	0.03148	0.05215	0.39144
	(SCD * SCE * !Q)	0.03681	0.05751	0.39677
	(D * DE * !SCE * !Q)	0.02932	0.04995	0.38851
	(D * DE * !SCE * !Q)	0.03465	0.05526	0.39382
	(D * !SCE * Q)	0.01521	0.03516	0.36279
	(D * !SCE * Q)	0.02051	0.04049	0.36812
	(D * !DE * !SCE * !Q)	0.01832	0.03809	0.36511
	(D * !DE * !SCE * !Q)	0.02365	0.04343	0.37044
	(!SCD * SCE * Q)	0.03606	0.05643	0.39204
	(!SCD * SCE * Q)	0.04138	0.06175	0.39738
	(!SCD * SCE * !Q)	0.02536	0.04513	0.37214
	(!SCD * SCE * !Q)	0.03069	0.05048	0.37747
	(!D * DE * !SCE * Q)	0.03250	0.05299	0.38708
	(!D * DE * !SCE * Q)	0.03781	0.05835	0.39241
	(!D * !SCE * !Q)	0.01987	0.03964	0.36667
	(!D * !SCE * !Q)	0.02521	0.04499	0.37199
	(!D * !DE * !SCE * Q)	0.01438	0.03434	0.36197
	(!D * !DE * !SCE * Q)	0.01969	0.03967	0.36730

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01725	0.03714	0.36428
	(SCD * SCE * Q)	0.02273	0.04265	0.36979
	(SCD * SCE * !Q)	0.03323	0.05387	0.39248
	(SCD * SCE * !Q)	0.03870	0.05938	0.39798
	(D * DE * !SCE * !Q)	0.03107	0.05169	0.38958
	(D * DE * !SCE * !Q)	0.03654	0.05720	0.39508
	(D * !SCE * Q)	0.01497	0.03489	0.36200
	(D * !SCE * Q)	0.02045	0.04039	0.36750
	(D * !DE * !SCE * !Q)	0.02030	0.04004	0.36659
	(D * !DE * !SCE * !Q)	0.02577	0.04555	0.37209
	(!SCD * SCE * Q)	0.03568	0.05600	0.39146
	(!SCD * SCE * Q)	0.04117	0.06153	0.39699
	(!SCD * SCE * !Q)	0.02734	0.04707	0.37361
	(!SCD * SCE * !Q)	0.03281	0.05258	0.37912
	(!D * DE * !SCE * Q)	0.03209	0.05251	0.38640
	(!D * DE * !SCE * Q)	0.03758	0.05803	0.39191
	(!D * !SCE * !Q)	0.02186	0.04160	0.36815
	(!D * !SCE * !Q)	0.02733	0.04711	0.37365
	(!D * !DE * !SCE * Q)	0.01415	0.03406	0.36118
	(!D * !DE * !SCE * Q)	0.01963	0.03957	0.36668

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00511	0.00533	0.90434
sky130_fd_sc_hs__xnor2_2	0.00848	0.00848	1.57652
sky130_fd_sc_hs__xnor2_4	0.01518	0.01515	2.47709

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor2_1	0.00000	291.99200	726.87900
sky130_fd_sc_hs__xnor2_2	0.00000	289.12400	479.31700
sky130_fd_sc_hs__xnor2_4	0.00000	680.15000	1454.76000

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	0.05145	0.29274	2.79291
	A->Y (FR)	!B	0.05297	0.66822	8.66234
	B->Y (RR)	A	0.04587	0.29864	2.99709
	B->Y (FR)	!A	0.04432	0.70436	9.30241
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.05514	0.23772	2.40361
	A->Y (FR)	!B	0.05224	0.55303	8.18221
	B->Y (RR)	A	0.05300	0.25073	2.54825
	B->Y (FR)	!A	0.04169	0.58649	8.76717
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.06552	0.35256	5.27008
	A->Y (FR)	!B	0.05471	0.48741	7.96068
	B->Y (RR)	A	0.06277	0.36041	5.36483
	B->Y (FR)	!A	0.04214	0.53375	8.75599

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	0.06074	0.42703	4.74205
	A->Y (RF)	!B	0.03101	0.33435	4.18513
	B->Y (FF)	A	0.05901	0.42916	4.86063
	B->Y (RF)	!A	0.02381	0.31876	4.06125
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.07124	0.42429	4.95115
	A->Y (RF)	!B	0.02912	0.25538	3.73899
	B->Y (FF)	A	0.06652	0.38254	4.42435
	B->Y (RF)	!A	0.02461	0.25088	3.77930
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.06492	0.37490	4.81938
	A->Y (RF)	!B	0.03152	0.19864	3.32084
	B->Y (FF)	A	0.06192	0.34053	4.32734
	B->Y (RF)	!A	0.02515	0.19093	3.36202

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	0.02444	0.04126	0.31967
	A	B	0.01384	0.03067	0.30926
	A	!B	-0.00104	0.00401	0.09264
	A	!B	0.00980	0.01485	0.10338
	B	A	0.02337	0.04041	0.31397
	B	A	0.01535	0.03238	0.30592
	B	!A	0.00022	0.00704	0.10788
	B	!A	0.00870	0.01551	0.11639
sky130_fd_sc_hs__xnor2_2	A	B	0.02481	0.03940	0.30082
	A	B	0.00929	0.02386	0.28491
	A	!B	-0.00005	0.01059	0.17978
	A	!B	0.01897	0.02961	0.19857
	B	A	0.02372	0.03707	0.26094
	B	A	0.01209	0.02541	0.24890
	B	!A	0.00082	0.01397	0.18994
	B	!A	0.01614	0.02931	0.20504
sky130_fd_sc_hs__xnor2_4	A	B	0.07028	0.09916	0.61632
	A	B	0.04234	0.07112	0.58777
	A	!B	-0.00084	0.02029	0.33012
	A	!B	0.03544	0.05664	0.36674
	B	A	0.06868	0.09468	0.53807
	B	A	0.04835	0.07429	0.51749
	B	!A	0.00040	0.02456	0.32912
	B	!A	0.02975	0.05399	0.35792

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	0.00670	0.02474	0.30407
	A	B	0.01729	0.03524	0.31466
	A	!B	0.01541	0.01959	0.09344
	A	!B	0.00457	0.00866	0.08185
	B	A	0.00828	0.02508	0.30040
	B	A	0.01624	0.03298	0.30762
	B	!A	0.01208	0.01625	0.08362
	B	!A	0.00387	0.00798	0.07497
sky130_fd_sc_hs__xnor2_2	A	B	0.01496	0.03038	0.28835
	A	B	0.03049	0.04579	0.30285
	A	!B	0.02954	0.03877	0.18574
	A	!B	0.01049	0.01968	0.16647
	B	A	0.01680	0.03079	0.28537
	B	A	0.02824	0.04218	0.29587
	B	!A	0.02424	0.03355	0.16754
	B	!A	0.00922	0.01856	0.15131
sky130_fd_sc_hs__xnor2_4	A	B	0.02329	0.05469	0.57374
	A	B	0.05129	0.08260	0.60135
	A	!B	0.05196	0.07277	0.37423
	A	!B	0.01556	0.03620	0.33759
	B	A	0.02432	0.05252	0.54612
	B	A	0.04435	0.07254	0.56461
	B	!A	0.04259	0.06297	0.32471
	B	!A	0.01402	0.03430	0.29515

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00266	0.00682	0.00433	1.65154
sky130_fd_sc_hs__xnor3_2	0.00271	0.00687	0.00438	3.23137
sky130_fd_sc_hs__xnor3_4	0.00270	0.00686	0.00428	6.24651

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	1243.89000	1442.63000
sky130_fd_sc_hs__xnor3_2	0.00000	1306.14000	1567.00000
sky130_fd_sc_hs__xnor3_4	0.00000	1434.86000	1817.99000

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)	0.17078	0.71228	7.98669
	B->X (-R)	0.11928	0.63881	8.02913
	C->X (-R)	0.08520	0.59709	7.85481
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.18426	0.64795	8.01027
	B->X (-R)	0.13008	0.56734	7.96330
	C->X (-R)	0.09402	0.52575	7.80793
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.21712	0.62286	7.91560
	B->X (-R)	0.16623	0.54946	7.97553
	C->X (-R)	0.12722	0.50149	7.73385

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.11877	0.58697	5.88685
	B->X (-F)	0.11218	0.57935	6.44565
	C->X (-F)	0.06489	0.50599	6.15318
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.13286	0.56328	5.78597
	B->X (-F)	0.12250	0.54291	6.26165
	C->X (-F)	0.07362	0.47343	5.98054
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.15871	0.56019	5.77019
	B->X (-F)	0.15408	0.54997	6.30990
	C->X (-F)	0.10647	0.48215	6.04250

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.06192	0.07835	0.39170
	A	0.05521	0.07165	0.38508
	B	0.06194	0.09344	0.68351
	B	0.04786	0.07936	0.66971
	C	0.04839	0.06638	0.36513
	C	0.04019	0.05819	0.35719
sky130_fd_sc_hs__xnor3_2	A	0.06771	0.08212	0.38439
	A	0.06089	0.07538	0.37825
	B	0.06751	0.09733	0.68343
	B	0.05342	0.08327	0.67011
	C	0.05391	0.07145	0.37379
	C	0.04562	0.06319	0.36604
sky130_fd_sc_hs__xnor3_4	A	0.08542	0.09661	0.42256
	A	0.07869	0.08998	0.41654
	B	0.08510	0.11044	0.70689
	B	0.07118	0.09667	0.69367
	C	0.07132	0.08538	0.41869
	C	0.06318	0.07726	0.41214

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.05126	0.06467	0.37205
	A	0.05798	0.07138	0.37880
	B	0.04072	0.07130	0.66014
	B	0.05479	0.08536	0.67037
	C	0.02792	0.04664	0.35783
	C	0.03609	0.05481	0.36461
sky130_fd_sc_hs__xnor3_2	A	0.06359	0.07042	0.36477
	A	0.07042	0.07724	0.37163
	B	0.05209	0.07653	0.65397
	B	0.06617	0.09060	0.66793
	C	0.03882	0.05265	0.37011
	C	0.04711	0.06081	0.37843
sky130_fd_sc_hs__xnor3_4	A	0.09816	0.09111	0.39675
	A	0.10487	0.09788	0.40128
	B	0.08533	0.09472	0.67309
	B	0.09922	0.10860	0.68704
	C	0.07357	0.06987	0.39455
	C	0.08170	0.07778	0.40050

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00522	0.00539	0.79447
sky130_fd_sc_hs__xor2_2	0.00798	0.00790	1.45298
sky130_fd_sc_hs__xor2_4	0.01621	0.01571	2.43756

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor2_1	0.00000	121.45200	146.17200
sky130_fd_sc_hs__xor2_2	0.00000	186.68900	267.40900
sky130_fd_sc_hs__xor2_4	0.00000	370.69800	534.74100

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	0.05872	0.49272	4.84093
	A->X (FR)	B	0.06537	0.69759	8.65613
	B->X (RR)	!A	0.06782	0.50831	4.99992
	B->X (FR)	A	0.04848	0.65597	8.29321
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.05233	0.38798	4.67107
	A->X (FR)	B	0.05639	0.58769	8.54963
	B->X (RR)	!A	0.05759	0.36302	4.32103
	B->X (FR)	A	0.04502	0.57458	8.49808
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.04885	0.29554	4.37485
	A->X (FR)	B	0.05704	0.48716	7.94167
	B->X (RR)	!A	0.05037	0.26099	3.84975
	B->X (FR)	A	0.04727	0.48219	8.09056

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	0.07200	0.36645	3.70224
	A->X (RF)	B	0.02978	0.30103	3.53141
	B->X (FF)	!A	0.06454	0.38288	3.92371
	B->X (RF)	A	0.02310	0.33363	4.07276
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.09586	0.46978	5.53864
	A->X (RF)	B	0.02696	0.24719	3.54208
	B->X (FF)	!A	0.08421	0.48760	5.78311
	B->X (RF)	A	0.02415	0.32850	4.78862
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.09866	0.43369	5.49601
	A->X (RF)	B	0.02881	0.19416	3.24651
	B->X (FF)	!A	0.08358	0.44679	5.56775
	B->X (RF)	A	0.02601	0.25109	4.19879

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	0.00438	0.00945	0.10558
	A	B	0.01535	0.02038	0.11657
	A	!B	0.01685	0.02897	0.23662
	A	!B	0.00574	0.01783	0.22576
	B	A	0.00251	0.00767	0.10103
	B	A	0.01070	0.01585	0.10912
	B	!A	0.01677	0.02812	0.23581
	B	!A	0.00846	0.01980	0.22746
sky130_fd_sc_hs__xor2_2	A	B	0.00589	0.01601	0.18102
	A	B	0.02385	0.03394	0.19867
	A	!B	0.02209	0.03547	0.26418
	A	!B	0.00675	0.02015	0.24888
	B	A	0.00273	0.01241	0.16576
	B	A	0.01663	0.02628	0.17938
	B	!A	0.02308	0.03472	0.26251
	B	!A	0.01182	0.02347	0.25130
sky130_fd_sc_hs__xor2_4	A	B	0.01039	0.03101	0.33543
	A	B	0.04822	0.06881	0.37359
	A	!B	0.04414	0.06861	0.49753
	A	!B	0.01411	0.03851	0.46742
	B	A	0.00590	0.02606	0.31426
	B	A	0.03505	0.05519	0.34327
	B	!A	0.04162	0.06392	0.48191
	B	!A	0.02021	0.04251	0.46093

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	0.01350	0.01743	0.09571
	A	B	0.00252	0.00641	0.08438
	A	!B	0.00444	0.01560	0.21894
	A	!B	0.01553	0.02667	0.22992
	B	A	0.01150	0.01628	0.09451
	B	A	0.00327	0.00800	0.08549
	B	!A	0.00606	0.01832	0.22346
	B	!A	0.01477	0.02697	0.23210
sky130_fd_sc_hs__xor2_2	A	B	0.02376	0.03252	0.17978
	A	B	0.00582	0.01447	0.16086
	A	!B	0.00770	0.01849	0.24105
	A	!B	0.02292	0.03368	0.25528
	B	A	0.02070	0.02899	0.15426
	B	A	0.00675	0.01490	0.13835
	B	!A	0.01016	0.02196	0.24544
	B	!A	0.02230	0.03412	0.25671
sky130_fd_sc_hs__xor2_4	A	B	0.04893	0.06827	0.36517
	A	B	0.01114	0.03051	0.32662
	A	!B	0.01612	0.03695	0.45894
	A	!B	0.04597	0.06679	0.48750
	B	A	0.04191	0.06068	0.31703
	B	A	0.01254	0.03119	0.28662
	B	!A	0.02163	0.04442	0.43611
	B	!A	0.04465	0.06744	0.45782

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_ff_1.95v_100C.ccs
Cell Library: Process , Voltage 1.95,
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	0.00265	0.00701	0.00432	1.67572
sky130_fd_sc_hs__xor3_2	0.00267	0.00714	0.00431	3.19286
sky130_fd_sc_hs__xor3_4	0.00266	0.00725	0.00427	6.18404

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	1243.89000	1455.90000
sky130_fd_sc_hs__xor3_2	0.00000	1307.22000	1579.39000
sky130_fd_sc_hs__xor3_4	0.00000	1434.36000	1826.55000

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)	0.16756	0.70410	7.92682
	B->X (-R)	0.11485	0.62319	7.88684
	C->X (-R)	0.08254	0.59243	7.78553
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.17785	0.63486	7.83718
	B->X (-R)	0.12735	0.55603	7.78414
	C->X (-R)	0.09166	0.52311	7.66390
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.20624	0.61010	7.87412
	B->X (-R)	0.15995	0.53516	7.84376
	C->X (-R)	0.11547	0.49540	7.72024

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.11749	0.57796	5.74971
	B->X (-F)	0.10920	0.56096	6.28636
	C->X (-F)	0.06283	0.50016	6.09797
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.12964	0.55274	5.66756
	B->X (-F)	0.12182	0.53448	6.18689
	C->X (-F)	0.07391	0.47901	6.02430
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.16199	0.56493	5.76301
	B->X (-F)	0.15655	0.54669	6.28279
	C->X (-F)	0.10210	0.48961	6.11155

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.06644	0.08256	0.39368
	A	0.05969	0.07583	0.38712
	B	0.06040	0.09265	0.69755
	B	0.04587	0.07810	0.68319
	C	0.04608	0.06461	0.37642
	C	0.03787	0.05643	0.36854
sky130_fd_sc_hs__xor3_2	A	0.07256	0.08813	0.40304
	A	0.06599	0.08164	0.39689
	B	0.06669	0.09753	0.70343
	B	0.05205	0.08289	0.68937
	C	0.05258	0.07006	0.39385
	C	0.04438	0.06195	0.38643
sky130_fd_sc_hs__xor3_4	A	0.08876	0.10073	0.42643
	A	0.08211	0.09409	0.42053
	B	0.08353	0.11001	0.72632
	B	0.06888	0.09550	0.71239
	C	0.07105	0.08286	0.41803
	C	0.06296	0.07485	0.41068

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.05257	0.06560	0.37193
	A	0.05932	0.07238	0.37811
	B	0.03557	0.06697	0.66535
	B	0.05013	0.08150	0.67981
	C	0.02710	0.04577	0.36249
	C	0.03530	0.05395	0.36755
sky130_fd_sc_hs__xor3_2	A	0.06584	0.07282	0.37902
	A	0.07241	0.07939	0.38334
	B	0.04702	0.07336	0.67048
	B	0.06169	0.08740	0.68355
	C	0.03896	0.05234	0.36984
	C	0.04715	0.06044	0.37804
sky130_fd_sc_hs__xor3_4	A	0.10193	0.09437	0.39638
	A	0.10859	0.10107	0.40305
	B	0.08863	0.09598	0.68110
	B	0.10299	0.11032	0.68859
	C	0.07469	0.07193	0.39702
	C	0.08280	0.07995	0.40059